

Service
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Service Manual



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3141 785 30062

Version 1.2



PHILIPS

SPECIFICATIONS**GENERAL:**

Mains voltage : 110-127V/220-240V Switchable for /21/21M
 120V for /37
 220V for /33
 220-230V for /22/25
 230-240V for /30

Mains frequency : 50/60Hz

Power consumption : 45W at 1/8 P_{rated}
 < 15W at Standby (Demo mode off)
 < 0.5W at ECO Standby

Clock accuracy : < 4 seconds per day

Dimension centre unit : 175 x 252 x 350mm

TUNER:**FM**

Tuning range : 87.5-108MHz

Grid : 50kHz
 100kHz for /37

IF frequency : 10.7MHz ± 25kHz

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

Sensitivity at 26dB S/N : < 7uV

Selectivity at 600kHz bandwidth : > 25dB

Image rejection : > 25dB [> 75dB]

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

-3dB Limiting point : < 8uV

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

MW

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

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

IF frequency : 450kHz ± 1kHz

Aerial input : Frame aerial

Sensitivity at 26dB S/N : < 4.4mV/M

Selectivity at 18kHz bandwidth : > 18dB

IF rejection : > 45dB

Image rejection : > 28dB

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

AMPLIFIER:

Output power (12 ohm, 1kHz, 10% THD)
 L & R : 2 x 28W RMS

Output power (12 ohm, 60Hz-12.5kHz, 10% THD)
 L & R : 2 x 25W FTC /37

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

Bass : 60Hz ± 3 Steps

Treble : 12kHz ± 3 Steps

Incredible Surround : On / Off

Input sensitivity

Aux in (at 1kHz) : 500mV at 600 ohm
 CDR in (at 1kHz) : 1000mV at 600 ohm

Output sensitivity

Headphone output at 32 ohm : 15mW ± 2dB (Max. vol.)
 CD Headphone output at 32 ohm : 5mW ± 2dB (Max. vol.)

CASSETTE RECORDER:

Number of track : 2 tracks (stereo)

Tape speed : 4.76 cm/sec ± 2%

Wow and flutter : < 0.4% DIN

Fast-wind/Rewind time C60 : 130 sec

Bias system : 78kHz ± 10kHz

Rec/Pb frequency response within 8dB : 80Hz - 10kHz

Signal to Noise Ratio (Type I) : > 48dBA

Signal to Noise Ratio (Type II) : > 52dBA

COMPACT DISC:

Measurement done directly at the connector on the board.

Output Resistance : < 100 ohm

Output Voltage (0dB, 1kHz) : 0.5Vrms ± 1dB (unloaded)

Channel Unbalance : < ±1dB

Channel Separation (1kHz) : > 60dB

Frequency Response (±3dB) : 20Hz-20kHz

Signal to Noise Ratio : > 76dBA

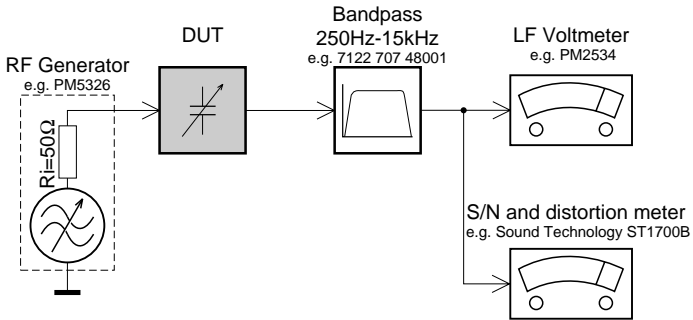
MP3-CD Bit Rate : 32-256 kbps

Sampling Frequencies : 32, 44.1, 48 kHz

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

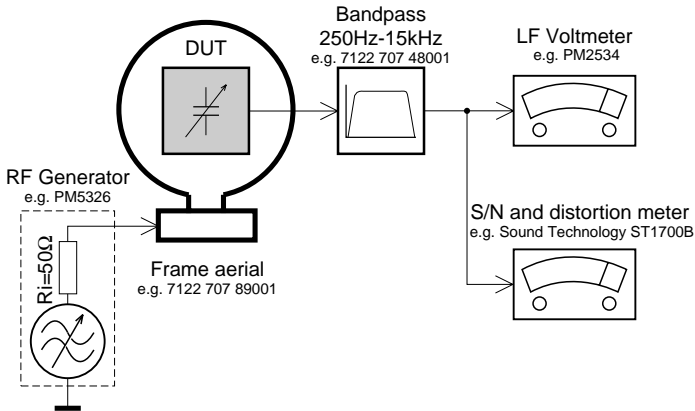
MEASUREMENT SETUP

Tuner FM



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

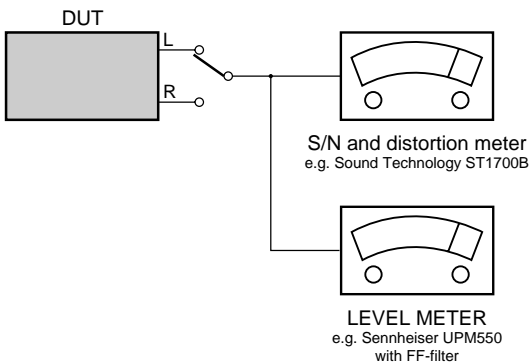
Tuner AM (MW,LW)



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).

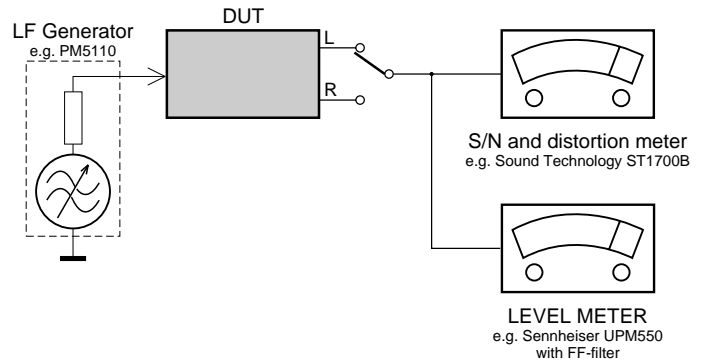
CD

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

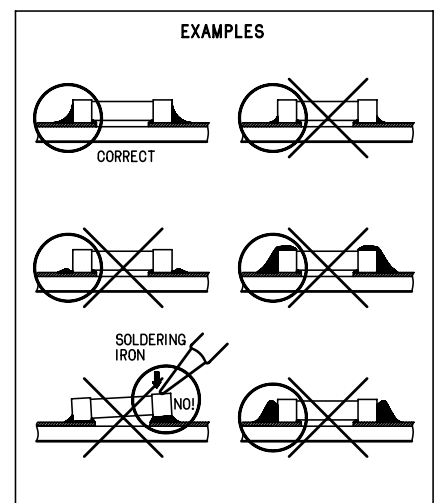
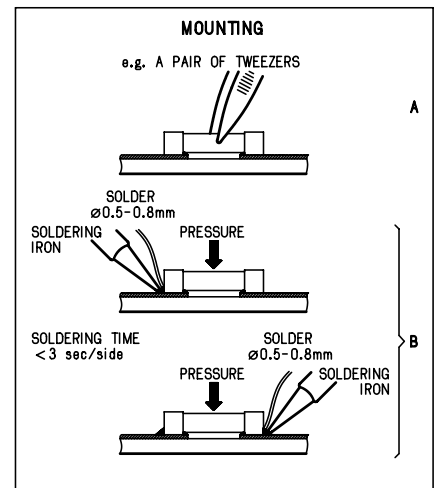
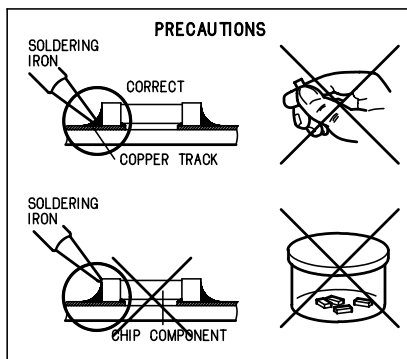
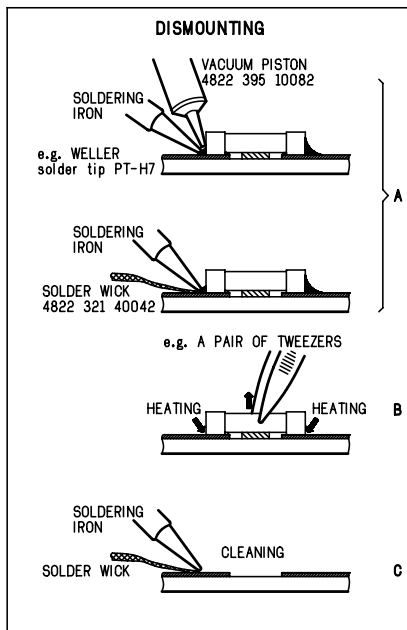
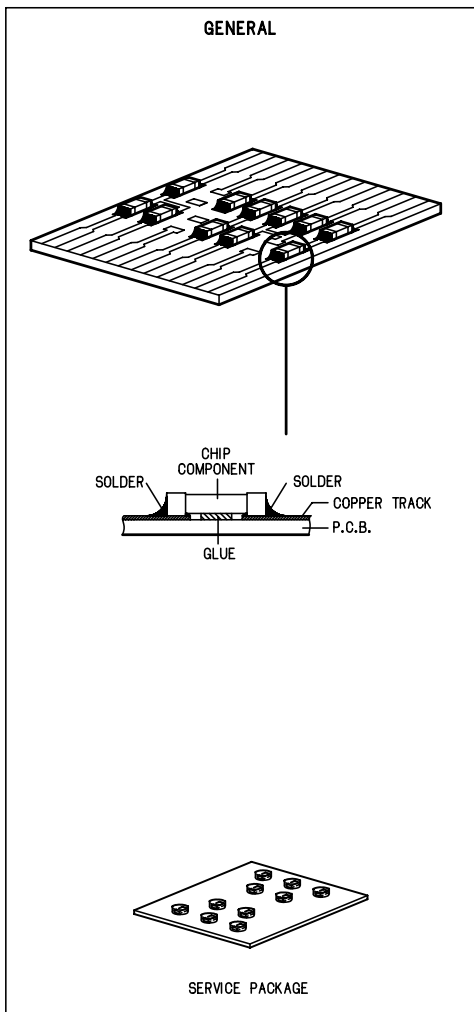
Service Tools:

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

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

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.

(F) ATTENTION

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

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

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

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

(D) WARNUNG

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

Unvorsichtige Behandlung im Reparaturfall kann die Lebensdauer drastisch reduzieren.

Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes.

Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

(NL) WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD). Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen.

Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.

Houd componenten en hulpmiddelen ook op hetzelfde potentiaal.

(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.

ESD**(GB) ESD PROTECTION EQUIPMENT:**

Complete Kit ESD3 (small tablemat, wristband, connection box, extension cable and earth cable) 4822 310 10671
Wristband tester 4822 344 13999

(GB)

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

Safety components are marked by the symbol \triangle .

(NL)

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

De Veiligheidsonderdelen zijn aangeduid met het symbool \triangle .

(F)

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

Less composants de sécurité sont marqués \triangle .

(D)

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

Sicherheitsbauteile sind durch das Symbol \triangle markiert.

(I)

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

Componenti di sicurezza sono marcati con \triangle .

(GB)

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

**(GB) Warning !**

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

(S) Varning !

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

(SF) Varoitus !

Avatussa laitteessa ja suoalukituksen ohitettaessa olet alltiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

(DK) Advarse !

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

(F)

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

DISMANTLING INSTRUCTIONS

Dismantling of the Cover Cassette and Universal Loader

- 1) Remove the Cover Cassette (pos 150) in the direction as shown in Figure 1.
- 2) Loosen 4 screws to remove the Cover Top (pos 240) by sliding it out towards the rear before lifting up.
 - 2 screws on the rear
 - 1 screw each on the left & right side
- 3) Loosen 2 screws each to remove the Panel Left (pos 180) and Panel Right (pos 181). The Panels are removed by sliding it towards the rear and outwards.
 - 1 screw on the rear
 - 1 screw on the side
 - see Service position A
- 4) Use a screw driver to give a push in the direction as shown in Figure 2 and Figure 2A to unlock the Loader Tray before sliding it out.
- 5) Slide out the Loader Tray and remove the Cover CD (pos 110 + pos 111) in the direction as shown in Figure 3.
- 6) Loosen 4 screws A (see Figure 4) to remove the Bracket Module Mounting (pos 156) and Universal Loader (pos 1103).
 - 2 screws each on the left & right side

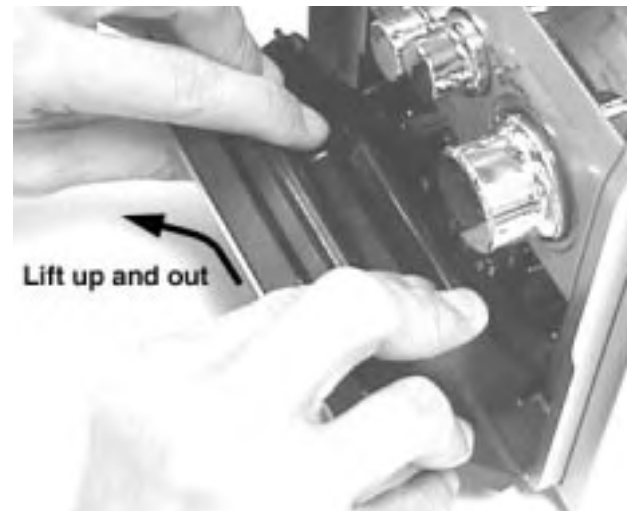


Figure 1

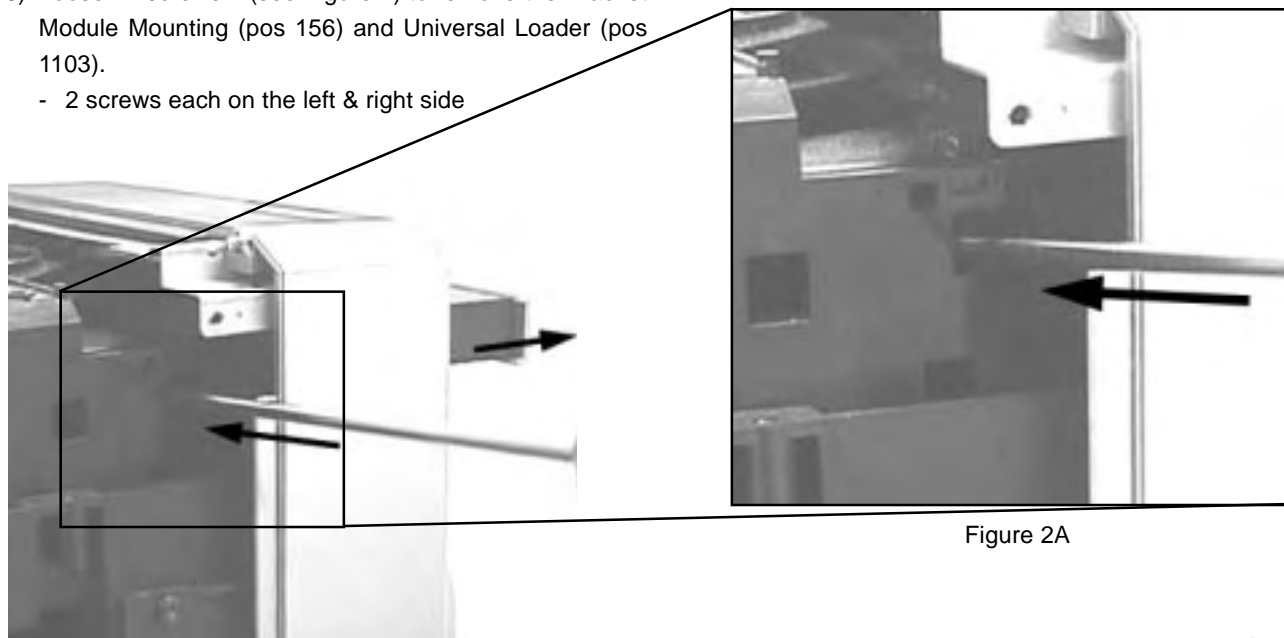


Figure 2A

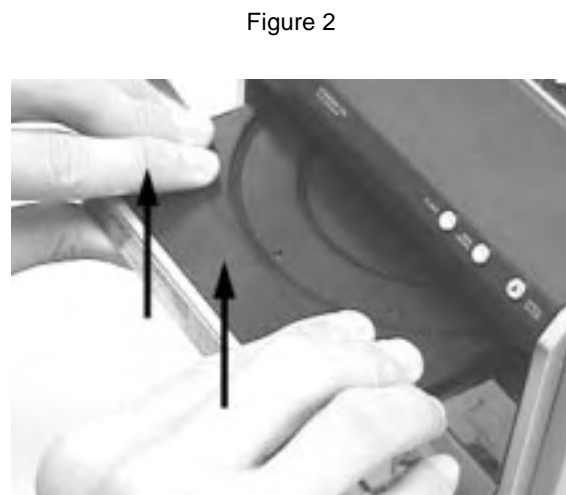


Figure 3

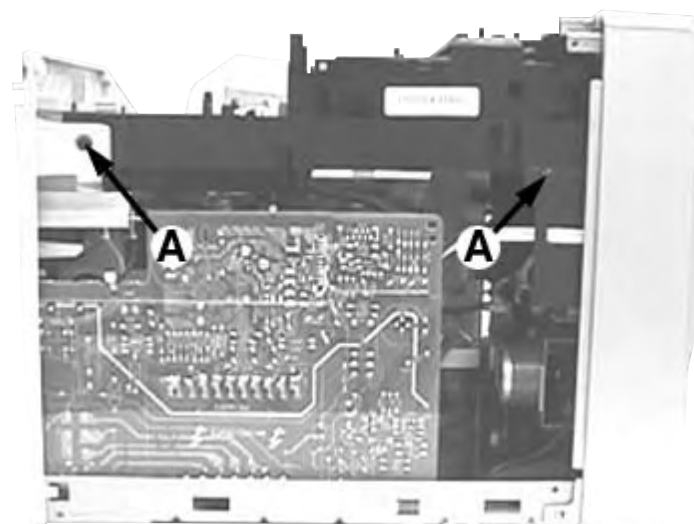


Figure 4

Detaching the Universal Loader from the Bracket Module Mounting

- 1) Slide out the Loader Tray fully and remove 4 screws B (see Figure 5) to detach the Universal Loader (pos 1103) from the Bracket Module Mounting (pos 156).
 - see Service position B

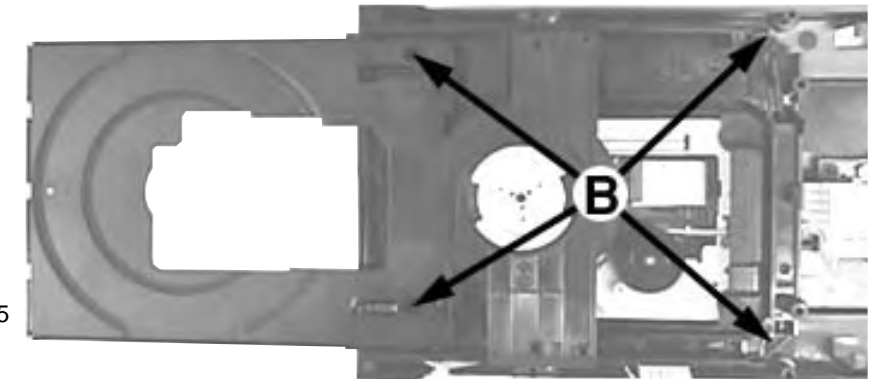


Figure 5

Detaching the Front Panel assembly from the Bottom/Rear assembly

- 1) Remove 2 screws C (see Figure 6) from the bottom of the Cabinet Front (pos 101).



Figure 6

- 2) Release the fixation of the Combi Board (pos 1102-1003) to Bracket Combi (pos 155) by releasing the 2 catches C1 (see Figure 7) and pulling the Combi Board outwards as shown in Figure 7A.
- 3) Uncatch 2 catches C2 (see Figure 7) on the left & right sides of the Cabinet Front (pos 101) and slides the Front Panel assembly out towards the front.
 - see Service position C

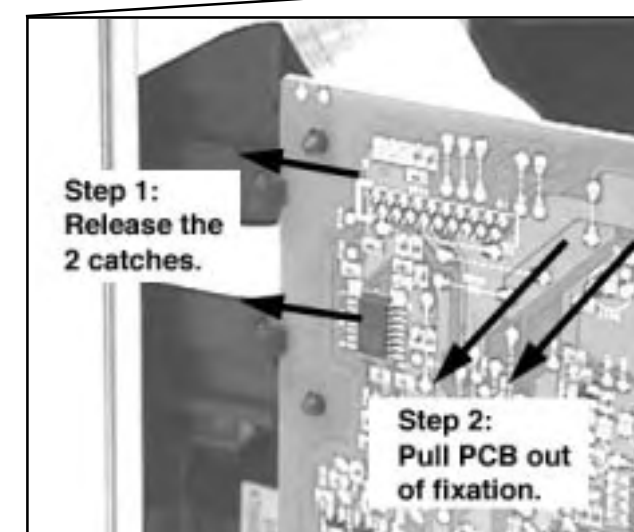


Figure 7A

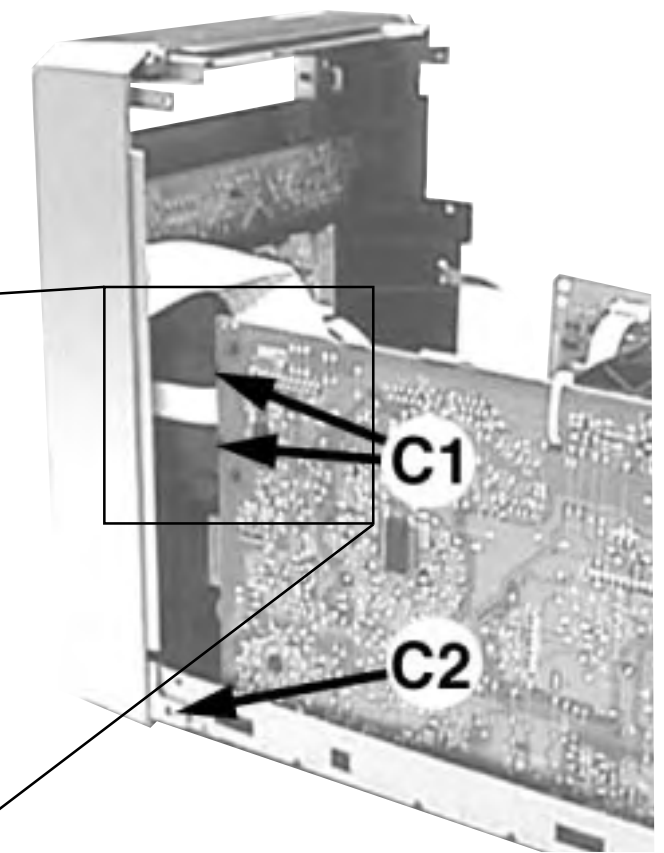


Figure 7

DISMANTLING INSTRUCTIONS

Dismantling of the Front Panel assembly

- 1) The Knob Volume (pos 141) can be removed by pulling it out in the direction as shown in Figure 8.
- 2) The Knob Bass/Knob Treble (pos 140) can be removed by pulling it out in the direction as shown in Figure 9.
- 3) Loosen 4 screws D (see Figure 12) to remove the Shield Tape Deck and Module Tape Deck (pos 1107).
- 4) Loosen 2 screws E (see Figure 11) to remove the Bracket Top Support (pos 113).



Figure 8



Figure 9

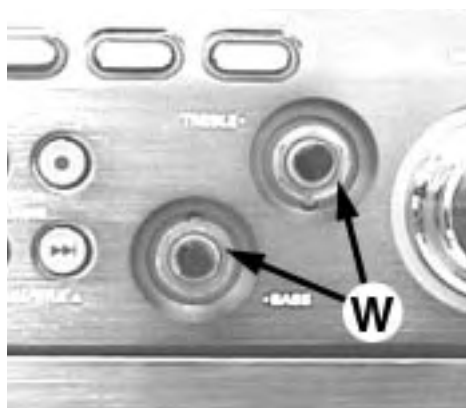


Figure 10

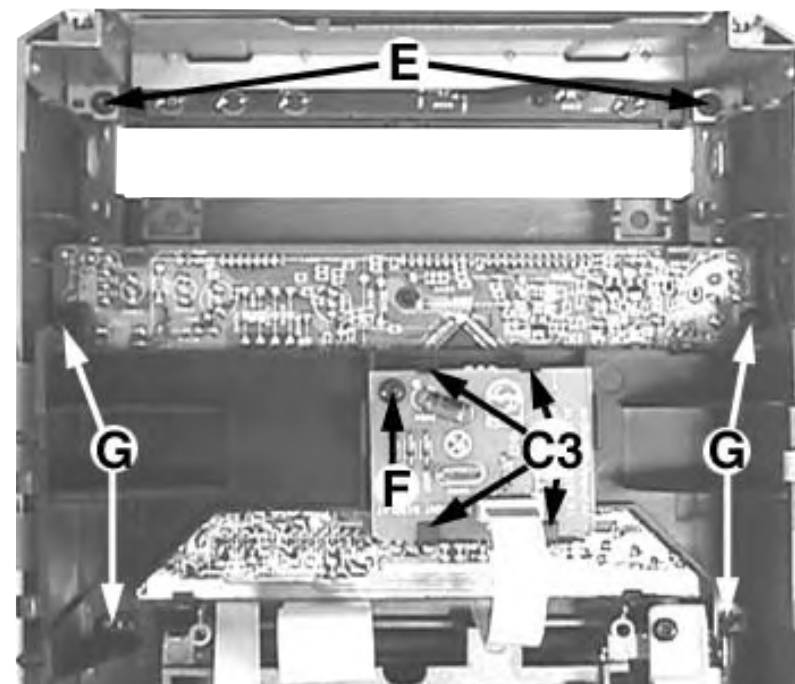


Figure 11

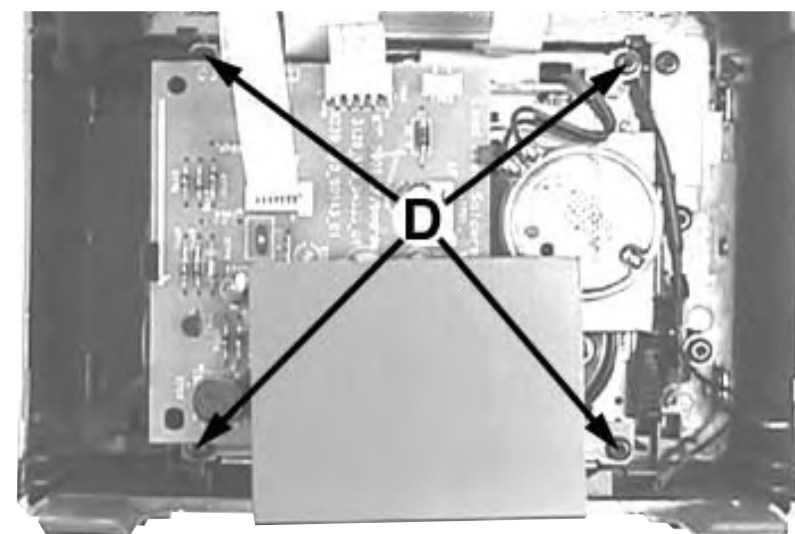


Figure 12

- 5) Loosen 1 screw F and 4 catches C3 (see Figure 11) to remove the Eeprom Board (pos 1105D).
- 6) Loosen 4 screws G (see Figure 11) to remove the Bracket Combi (pos 155).
- 7) Uncatch 4 catches C4 (see Figure 13) to remove the Display Board (pos 1105A).
- 8) Loosen 4 screws H (see Figure 13) to remove the Top Key Board (pos 1105C).
- 9) Loosen 5 screws J (see Figure 14) and 2 nuts W (see Figure 10) to remove the Control Board (pos 1105B).

Dismantling of the Front Panel assembly

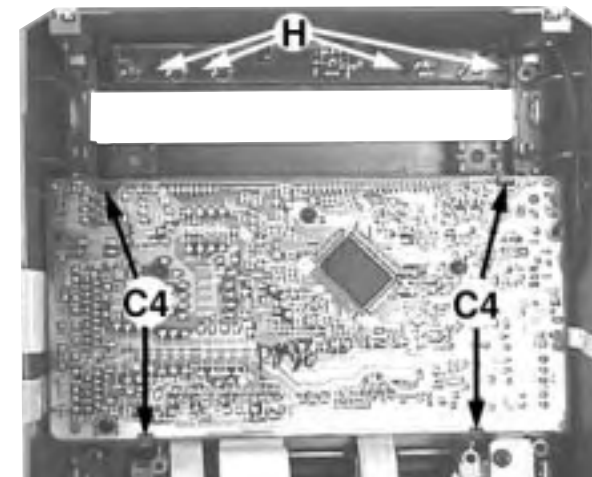


Figure 13



Figure 14

Dismantling of the Rear Panel assembly

- 1) Loosen 3 screws K and 2 catches C5 (see Figure 15) to remove the Tuner Board assembly.
- 2) Loosen 3 screws L (see Figure 15) to free the Combi Board (pos 1102-1003).
- 3) Loosen 1 screw M (see Figure 15) to free the Mains Socket Board (pos 1102-1001B).

- 4) Loosen 1 screw N and 2 catches C6 (see Figure 15) to free the Panel Rear (pos 230) by sliding it out towards the rear.

Note : Tuner Board assembly and Mains Socket Board can also be removed together with the Panel Rear.

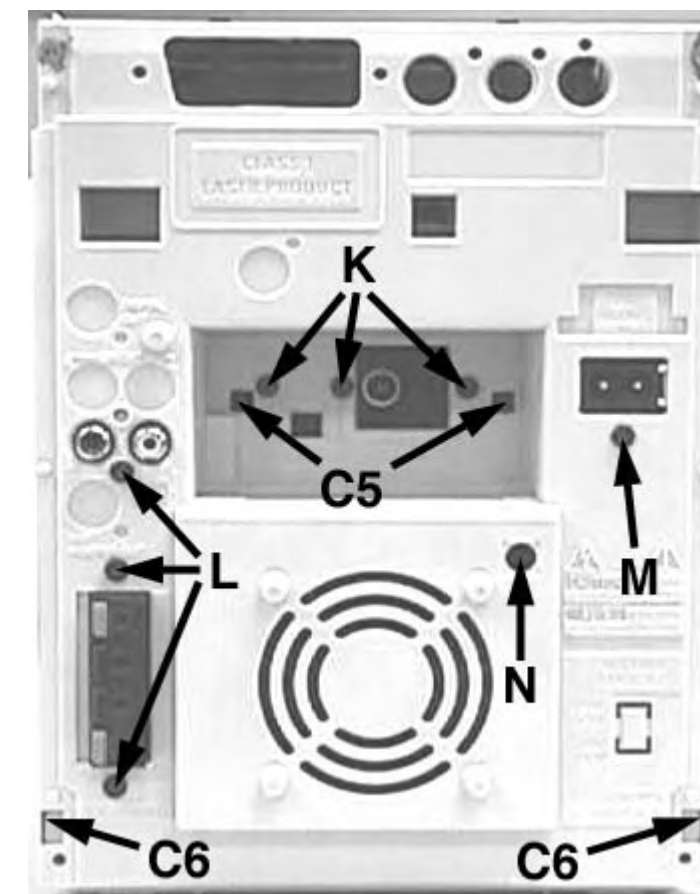


Figure 15

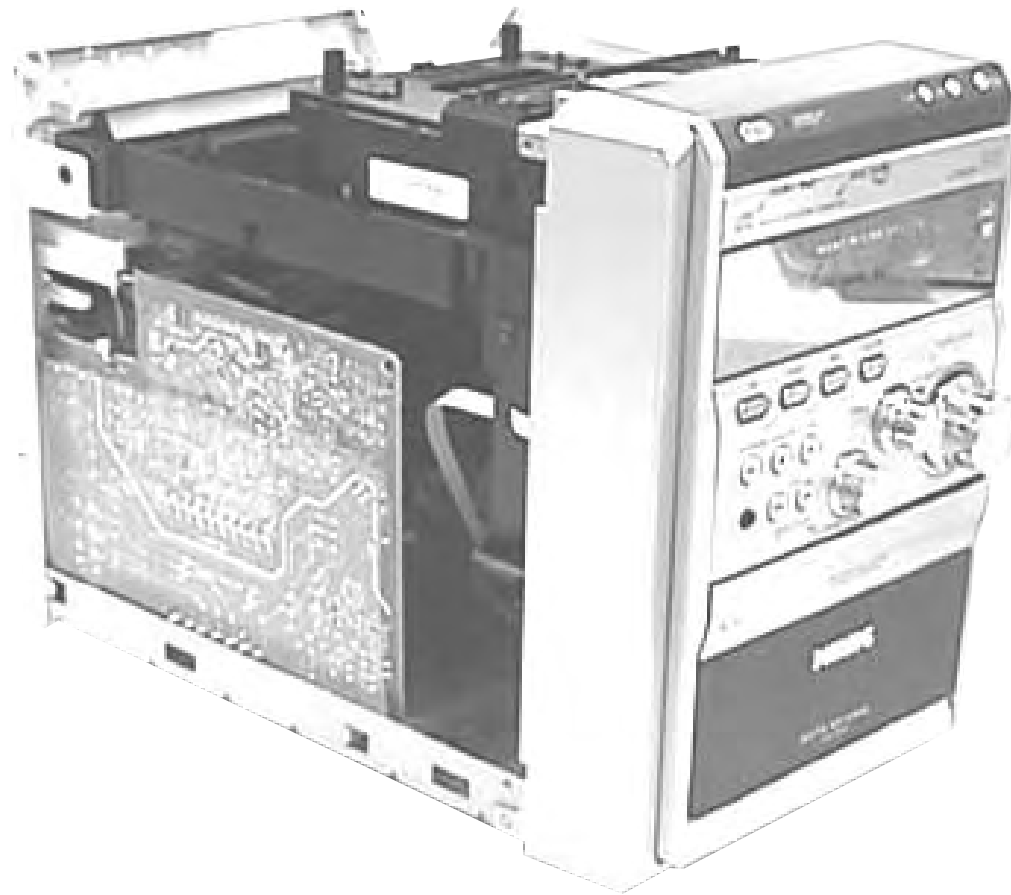
DISMANTLING INSTRUCTIONS

Repair Hints & Service Positions

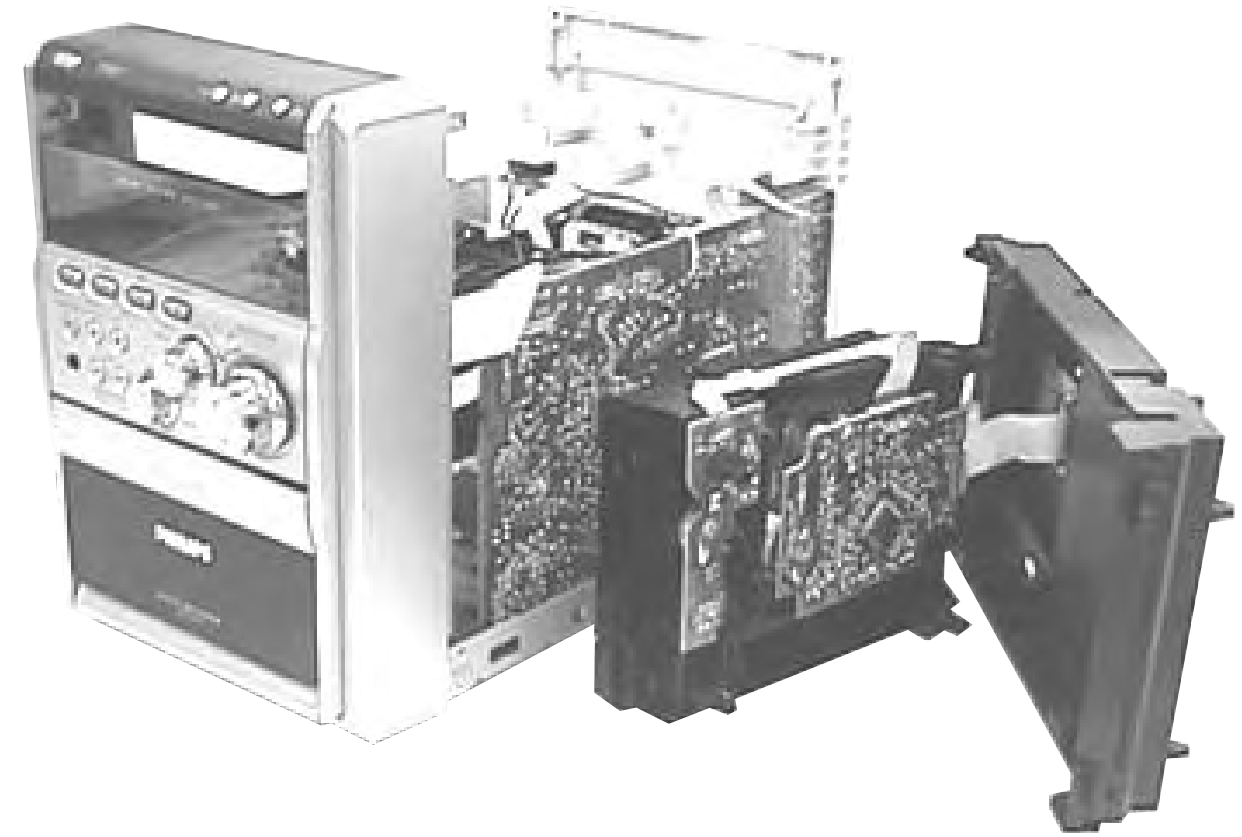
- 1) During repair it is possible to disconnect the Tuner Board and/or CD Module completely unless the fault is suspected to be in that area. This will not affect the performance of the rest of the set.

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

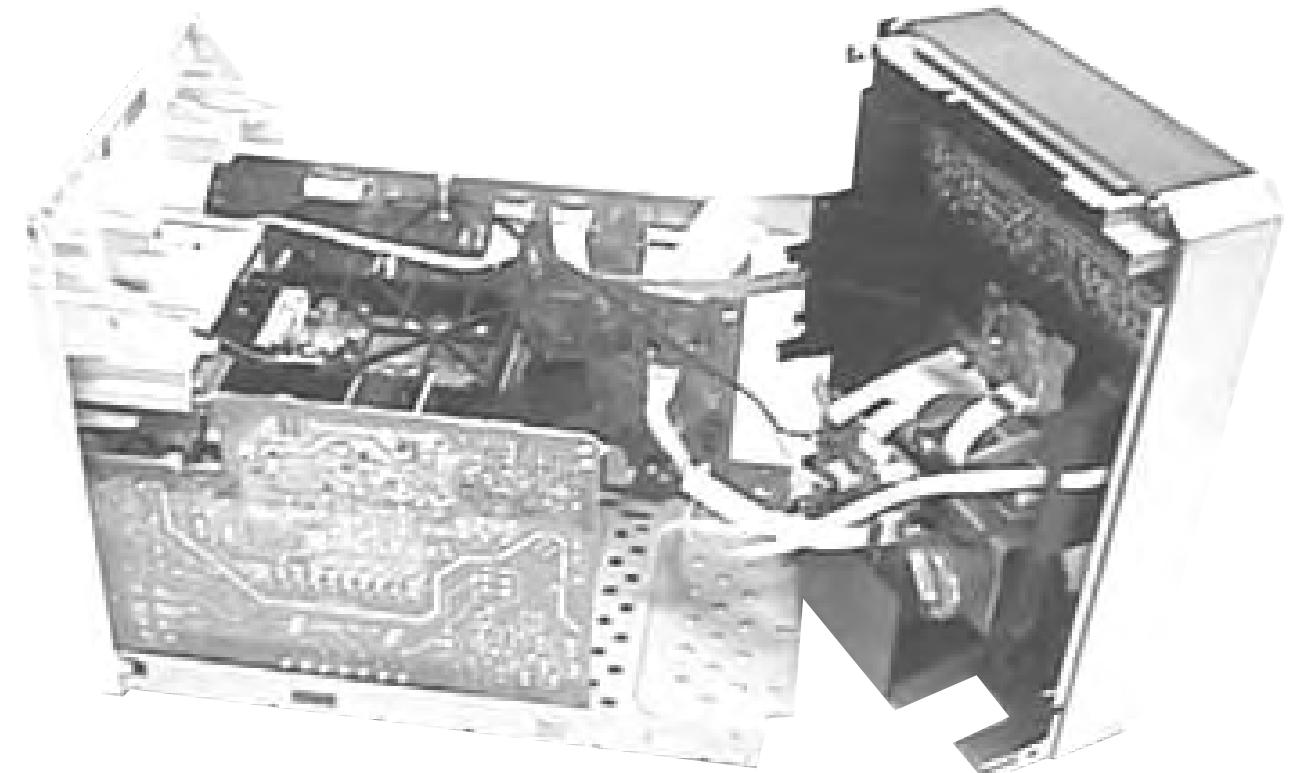
Service position A



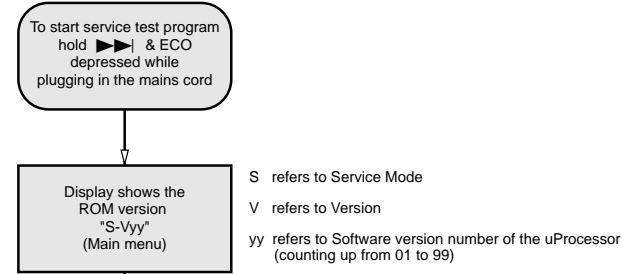
Service position B



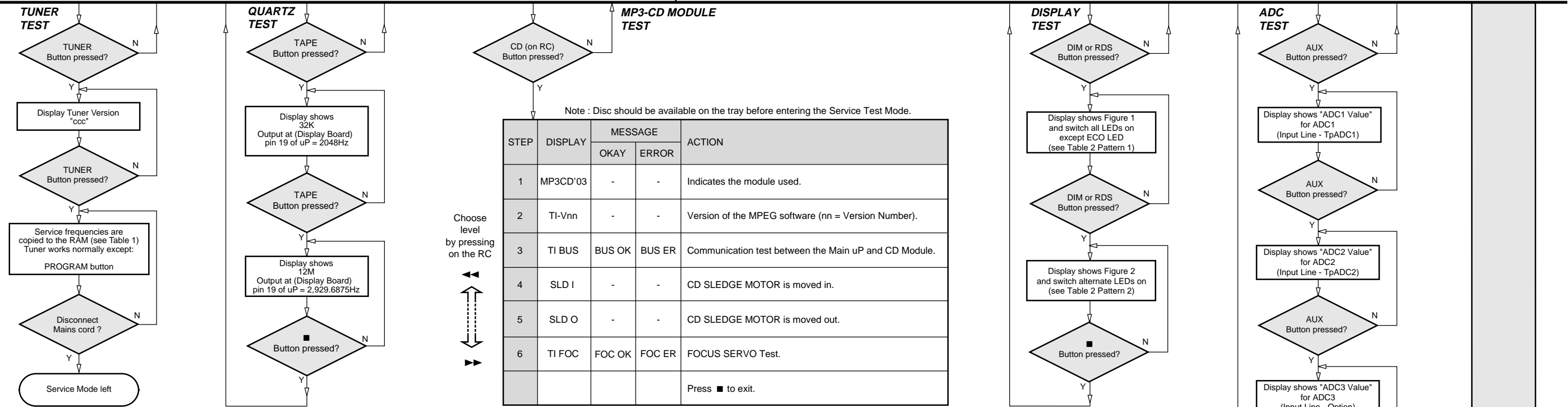
Service position C



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)



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

Table 1

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

LEDs	Pattern 1	Pattern 2
ECO	Off	Off
CD	On	On
TUNER	On	Off
TAPE	On	On
AUX	On	Off
Volume Rotary	On	On

Table 2

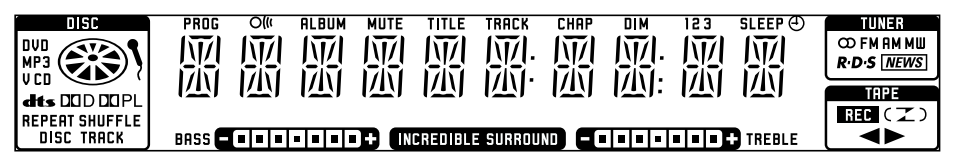


Figure 1

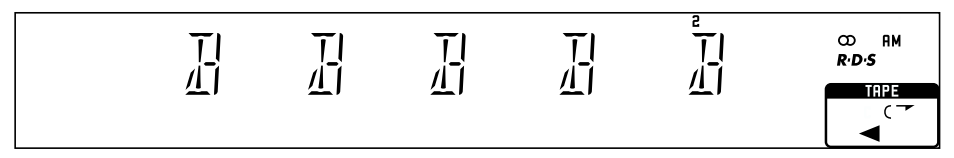
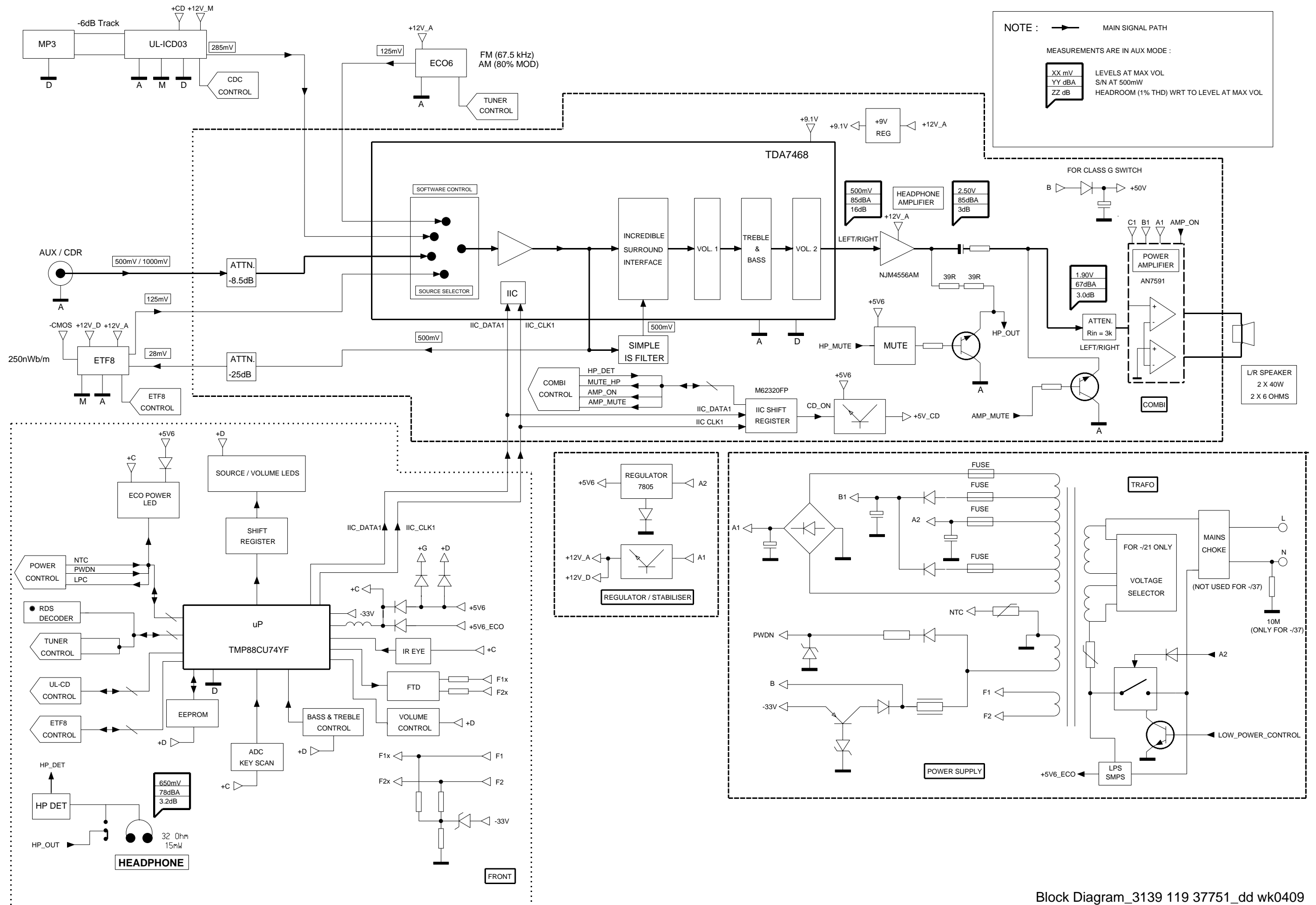


Figure 2

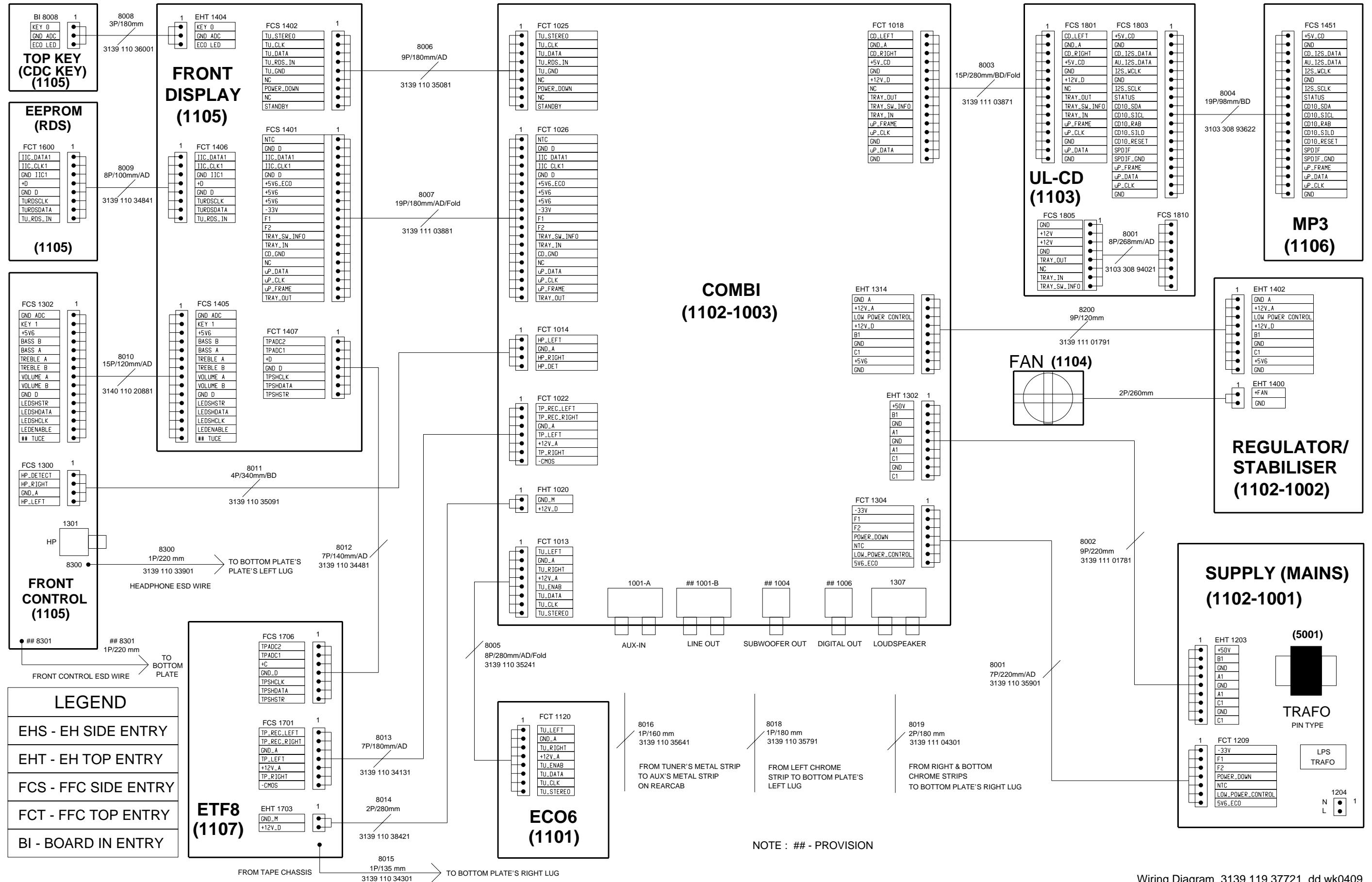
ADC Test is used for checking the ADC inputs to the microprocessor.
 The display shows an ADC value between 0 and 255 for an input signal between 0 and 5V.

TEST	Activated with	ACTION
EEPROM TEST	[TUNER] button	Test patterns will be sent to the EEPROM. "PASS" is displayed if the uProcessor read back the test patterns correctly, otherwise "FAIL" will be displayed.
EEPROM FORMAT TEST	[ECO] button	Load default data. Display shows "NEW" for 1 second. Caution! All presets from the customer will be lost!!
DEMO TOGGLE	[TUNER] button	Pressing this button will toggle between DEMO ON and DEMO OFF. The DEMO status will scroll once across the Display.
ROTARY ENCODER TEST	Volume, Treble or Bass Knob	Display shows value for 2 seconds. Values increases or decreases until Volume Maximum (0dB) or Volume Minimum (VOL MUTE) is reached.
LEAVE SERVICE TEST PROGRAM	Disconnect mains cord	

SET BLOCK DIAGRAM



SET WIRING DIAGRAM



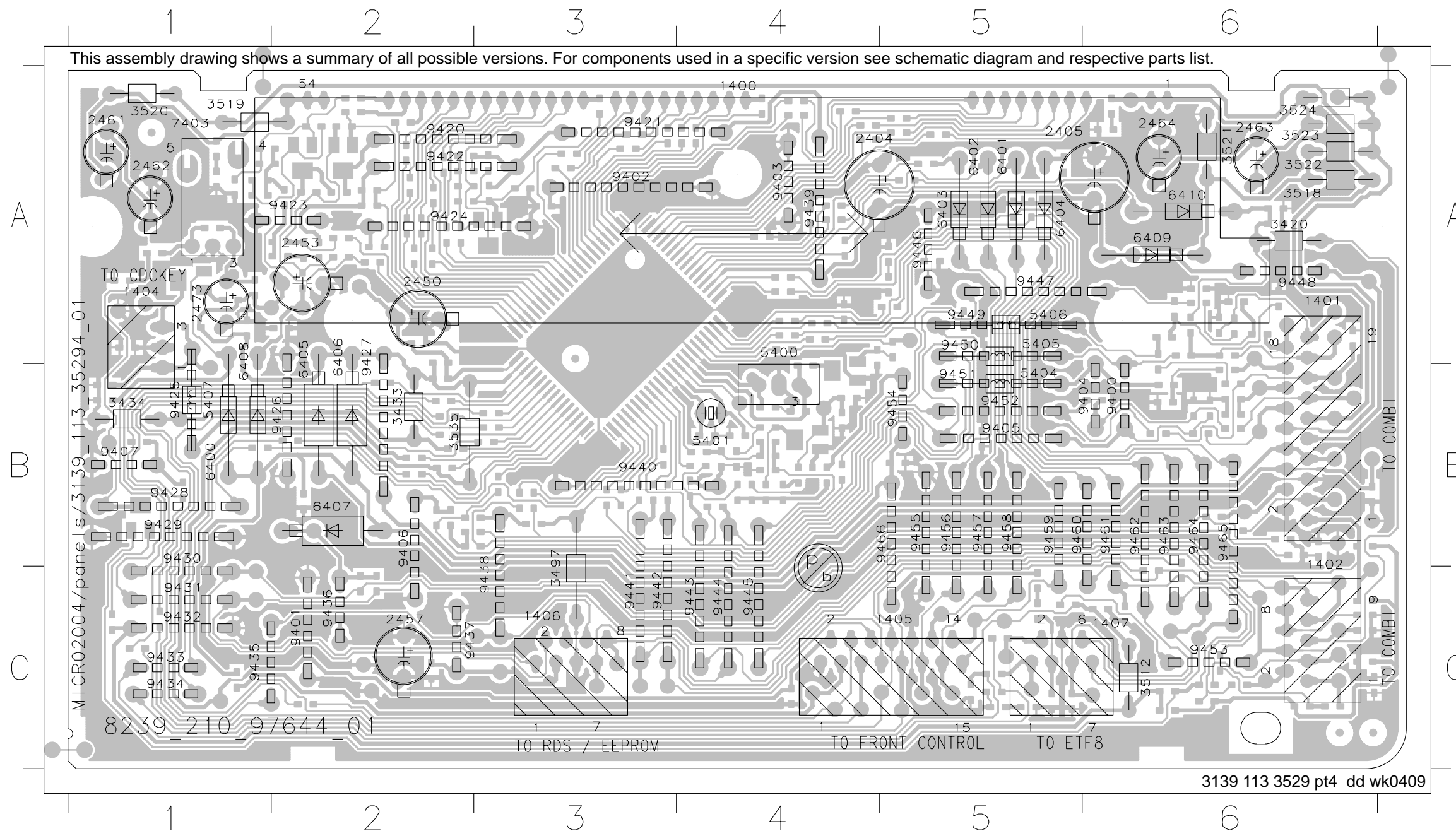
FRONT BOARD

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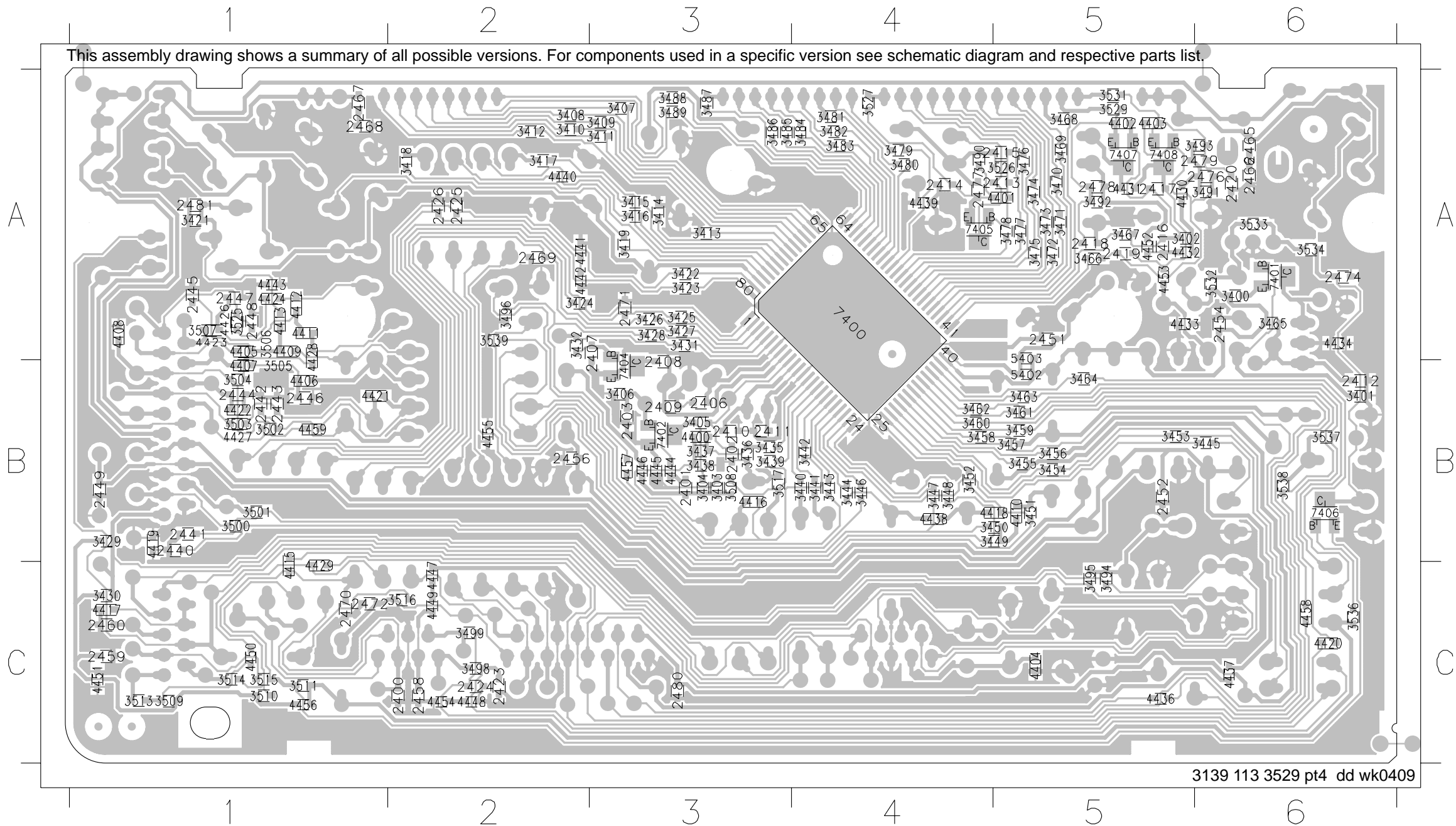
DISPLAY BOARD - COMPONENT LAYOUT

1400	A4	2405	A5	2473	A1	3520	A1	5404	B5	6404	A5	9400	B6	9420	A2	9428	B1	9436	C2	9444	C4	9452	B5	9460	B5
1401	A6	2450	A2	3420	A6	3521	A6	5405	A5	6405	A2	9401	C2	9421	A3	9429	B1	9437	C2	9445	C4	9453	C6	9461	B6
1402	B6	2453	A2	3433	B2	3522	A6	5406	A5	6406	A2	9402	A3	9422	A2	9430	B1	9438	C3	9446	A5	9454	B5	9462	B6
1404	A1	2457	C2	3434	B1	3523	A6	5407	B1	6407	B2	9403	A4	9423	A2	9431	C1	9439	A4	9447	A5	9455	B5	9463	B6
1405	C5	2461	A1	3497	C3	3524	A6	6400	B1	6408	A1	9404	B6	9424	A2	9432	C1	9440	B3	9448	A6	9456	B5	9464	B6
1406	C3	2462	A1	3512	C6	3535	B2	6401	A5	6409	A6	9405	B5	9425	B1	9433	C1	9441	C3	9449	A5	9457	B5	9465	B6
1407	C6	2463	A6	3518	A6	5400	A4	6402	A5	6410	A6	9406	B2	9426	B2	9434	C1	9442	C3	9450	A5	9458	B5	9466	B5
2404	A4	2464	A6	3519	A1	5401	B4	6403	A5	7403	A1	9407	B1	9427	A2	9435	C1	9443	C4	9451	B5	9459	B5		

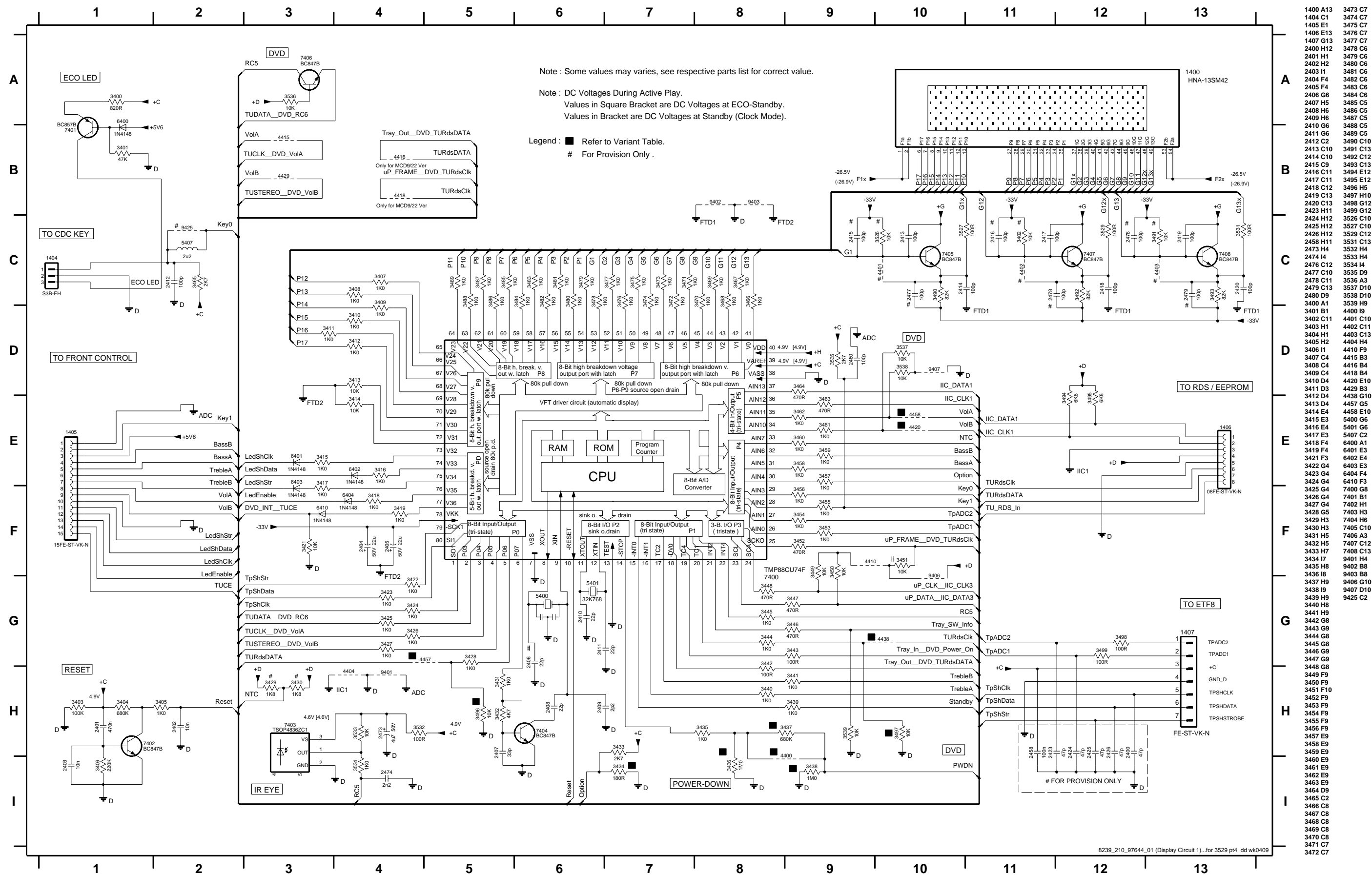


DISPLAY BOARD - CHIP LAYOUT

2400	C2	2423	C2	2459	C1	3402	A5	3422	A3	3443	B4	3462	B4	3481	A4	3501	B1	3529	A5	4410	B5	4431	A5	4451	C1
2401	B3	2424	C2	2460	C1	3403	B3	3423	A3	3444	B4	3463	B5	3482	A4	3502	B1	3531	A5	4411	A1	4432	A5	4452	A5
2402	B3	2425	A2	2465	A6	3404	B3	3424	A2	3445	B6	3464	B5	3483	A4	3503	B1	3532	A6	4412	A1	4433	A5	4453	A5
2403	B3	2426	A2	2466	A6	3405	B3	3425	A3	3446	B4	3465	A6	3484	A4	3504	B1	3533	A6	4413	A1	4434	A6	4454	C2
2406	B3	2440	B1	2467	A1	3406	B3	3426	A3	3447	B4	3466	A5	3485	A3	3505	B1	3534	A6	4415	C1	4436	C5	4455	B2
2407	A3	2441	B1	2468	A1	3407	A3	3427	A3	3448	B4	3467	A5	3486	A3	3506	A1	3535	C6	4416	B3	4437	C6	4456	C1
2408	B3	2442	B1	2469	A2	3408	A2	3428	A3	3449	B5	3468	A5	3487	A3	3507	A1	3537	B6	4417	C1	4438	B4	4457	B3
2409	B3	2443	B1	2470	C1	3409	A3	3429	B1	3450	B5	3469	A5	3488	A3	3508	B3	3538	B6	4418	B5	4439	A4	4458	C6
2410	B3	2444	B1	2471	A3	3410	A2	3430	C1	3451	B5	3470	A5	3489	A3	3509	C1	3539	A2	4419	B1	4440	A2	4459	B1
2411	B3	2445	A1	2472	C1	3411	A3	3431	A3	3452	B4	3471	A5	3490	A4	3510	C1	4400	B3	4420	C6	4441	A2	5402	B5
2412	B6	2446	B1	2474	A6	3412	A2	3432	A2	3453	B5	3472	A5	3491	A6	3511	C1	4401	A5	4421	B1	4442	A2	5403	A5
2413	A5	2447	A1	2476	A6	3413	A3	3435	B3	3454	B5	3473	A5	3492	A5	3513	C1	4402	A5	4422	B1	4443	A1	7400	A4
2414	A4	2448	A1	2477	A4	3414	A3	3436	B3	3455	B5	3474	A5	3493	A6	3514	C1	4403	A5	4423	A1	4444	B3	7401	A6
2415	A5	2449	B1	2478	A5	3415	A3	3437	B3	3456	B5	3475	A5	3494	C5	3515	C1	4404	C5	4424	A1	4445	B3	7402	B3
2416	A5	2451	A5	2479	A6	3416	A3	3438	B3	3457	B5	3476	A5	3495	C5	3516	C2	4405	A1	4426	A1	4446	B3	7404	B3
2417	A5	2452	B5	2480	C3	3417	A2	3439	B3	3458	B4	3477	A5	3496	A2	3517	B3	4406	B1	4427	B1	4447	C2	7405	A4
2418	A5	2454	A6	2481	A1	3418	A2	3440	B4	3459	B5	3478	A5	3498	C2	3525	A1	4407	B1	4428	A1	4448	C2	7406	B6
2419	A5	2456	B2	3400	A6	3419	A3	3441	B4	3460	B4	3479	A4	3499	C2	3526	A5	4408	A1	4429	C1	4449	C2	7407	A5
2420	A6	2458	C2	3401	B6	3421	A1	3442	B4	3461	B5	3480	A4	3500	B1	3527	A4	4409	A1	4430	A5	4450	C1	7408	A5



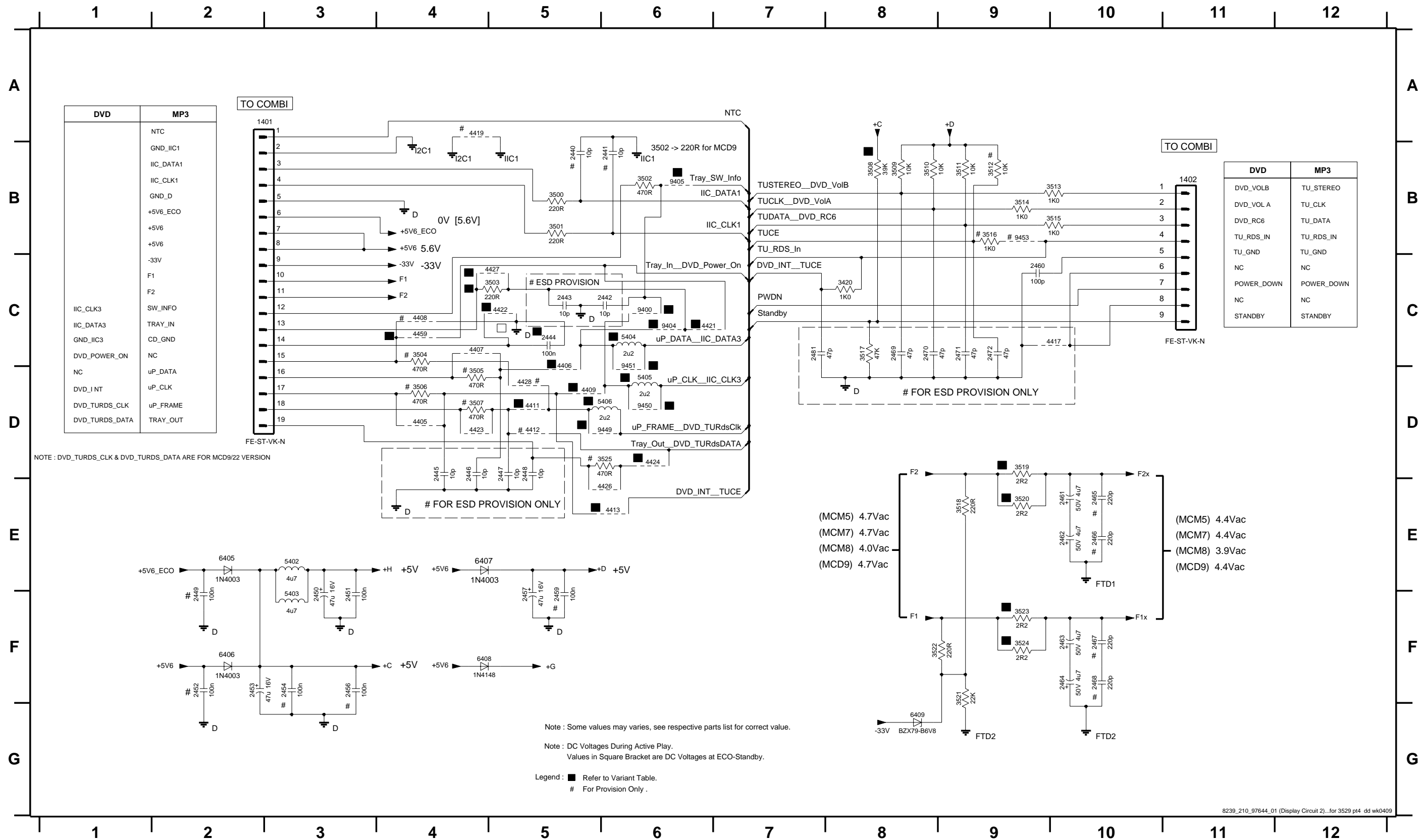
DISPLAY BOARD - CIRCUIT DIAGRAM PART 1



1400 A13	3473 C7
1404 C1	3474 C7
1405 E1	3475 C7
1406 E13	3476 C7
1407 G13	3477 C7
2400 H12	3478 C6
2401 H1	3479 C6
2402 H2	3480 C6
2403 I1	3481 C6
2404 F4	3482 C6
2405 F4	3483 C6
2406 G6	3484 C6
2407 H5	3485 C5
2408 H6	3486 C5
2409 H6	3487 C5
2410 G6	3488 C5
2411 G6	3489 C5
2412 C2	3490 C10
2413 C10	3491 C13
2414 C10	3492 C12
2415 C9	3493 C13
2416 C11	3494 E12
2417 C11	3495 E12
2418 C12	3496 H5
2419 C13	3497 H10
2420 C13	3498 G12
2423 H11	3499 G12
2424 H12	3526 C10
2425 H12	3527 C10
2426 H12	3529 C12
2428 H11	3531 C13
2429 H11	3532 H4
2430 H1	3533 H4
2431 H1	3534 I4
2432 H1	3535 D9
2433 H1	3536 A3
2434 H1	3537 D10
2435 H1	3538 D10
2436 H1	3539 H9
2437 H1	4400 I9
2438 H1	4401 C10
2439 H1	4402 C11
2440 H1	4403 C13
2441 H1	4404 H4
2442 H1	4405 F9
2443 H1	4406 B3
2444 H1	4407 C4
2445 H1	4408 B4
2446 H1	4409 C4
2447 H1	4410 E10
2448 H1	4411 D3
2449 H1	4412 B3
2450 H1	4413 G10
2451 H1	4414 E4
2452 H1	4415 G5
2453 H1	4416 E10
2454 H1	5400 G6
2455 H1	5401 G6
2456 H1	5402 C2
2457 H1	6400 A1
2458 H1	6401 E3
2459 H1	6402 E4
2460 H1	6403 E3
2461 H1	6404 F4
2462 H1	6405 F3
2463 H1	6406 G8
2464 H1	6407 F3
2465 H1	7400 G8
2466 H1	7401 B1
2467 H1	7402 H1
2468 H1	7403 H3
2469 H1	7404 H6
2470 H1	7405 C10
2471 H1	7406 A3
2472 H1	7407 C12
2473 H1	7408 C13
2474 H1	9401 H4
2475 H1	9402 B8
2476 H1	9403 B8
2477 H1	9404 B8
2478 H1	9405 G10
2479 H1	9406 G10
2480 H1	9407 D10
2481 H1	9408 C2

DISPLAY BOARD - CIRCUIT DIAGRAM PART 2

1401 A3	2442 C6	2446 D4	2450 F3	2454 F3	2460 C9	2464 F10	2468 F10	2472 C9	3501 B5	3505 D4	3509 B8	3513 B10	3517 C8	3521 F9	3525 D6	4408 C4	4413 E6	4422 C5	4427 C5	5403 F3	6405 E2	6409 G8	9449 D6
1402 B11	2443 C5	2447 D5	2451 F3	2456 F3	2461 E10	2465 E10	2469 C8	2481 C7	3502 B6	3506 D4	3510 B8	3514 B9	3518 E9	3522 F8	4405 D4	4409 D5	4417 C10	4423 D4	4428 D5	5404 C6	6406 F2	9400 C6	9450 D6
2440 B5	2444 C5	2448 D5	2452 F2	2457 F5	2462 E10	2466 E10	2470 C8	3420 C8	3503 C5	3507 D4	3511 B9	3515 B10	3519 D9	3523 F9	4406 D5	4411 D5	4419 A4	4424 D6	4459 C4	5405 D6	6407 E4	9404 C6	9451 D6
2441 B6	2445 D4	2449 F2	2453 F2	2459 F5	2463 F10	2467 F10	2471 C9	3500 B5	3504 C4	3508 B8	3512 B9	3516 B9	3520 E9	3524 F9	4407 C4	4412 D5	4421 C6	4426 E6	5402 E3	5406 D6	6408 F4	9405 B6	9453 B9

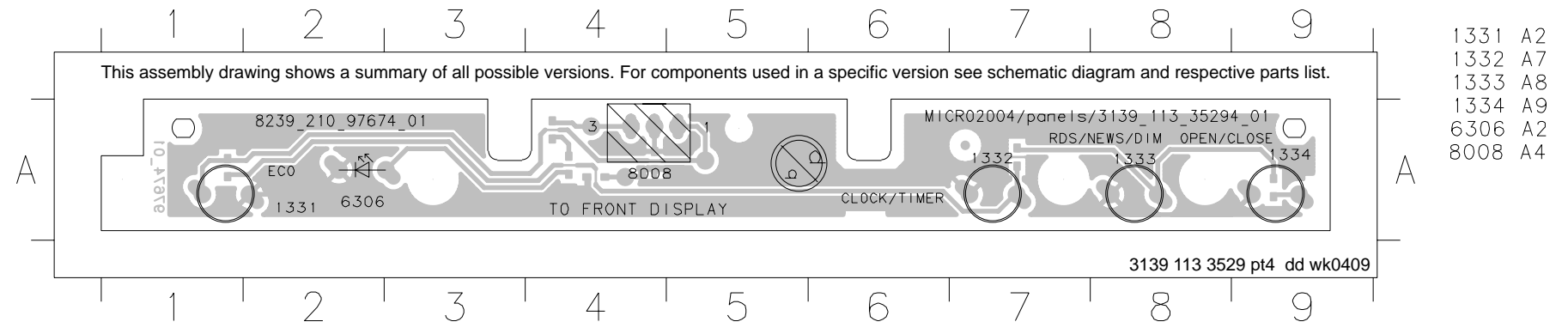


DISPLAY BOARD - VARIANT TABLE

	MCM7/22 MCM7/25	MCM7/37	MCM8/22 MCM8/25	MCM8/21
2444	100N	100N	100N	100N
3434	180R	180R	470R	470R
3436	1M	1M	2M2	2M2
3437	680K	680K	-	-
3438	1M	1M	-	-
3496	-	10K	-	10K
3497	-	10K	-	10K
3503	-	-	-	-
3508	39K	39K	-	-
3519	2R2	2R2	1R	1R
3520	2R2	2R2	1R	1R
3523	2R2	2R2	1R	1R
3524	2R2	2R2	1R	1R
4400	-	-	X	X
4406	X	X	X	X
4409	X	X	X	X
4411	X	X	X	X
4413	-	-	-	-
4420	X	X	X	X
4421	X	X	X	X
4422	-	-	-	-
4424	X	X	X	X
4427	X	X	X	X
4438	X	-	X	-
4457	X	-	X	-
4458	X	X	X	X
4459	-	-	-	-
5404	2U2	2U2	2U2	2U2
5405	2U2	2U2	2U2	2U2
5406	2U2	2U2	2U2	2U2
9400	-	-	-	-
9404	-	-	-	-
9405	X	X	X	X
9449	-	-	-	-
9450	-	-	-	-
9451	-	-	-	-

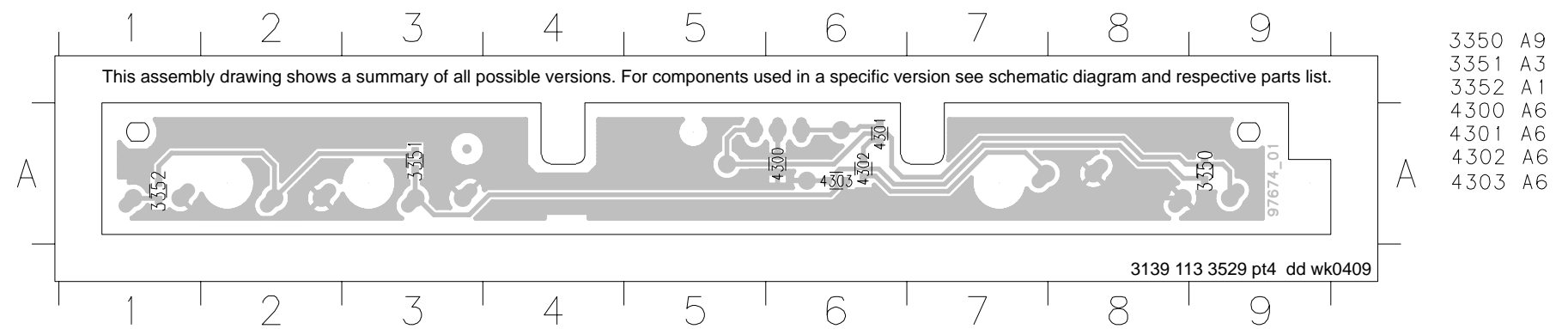
X - Item in use.

TOP KEY BOARD - COMPONENT LAYOUT



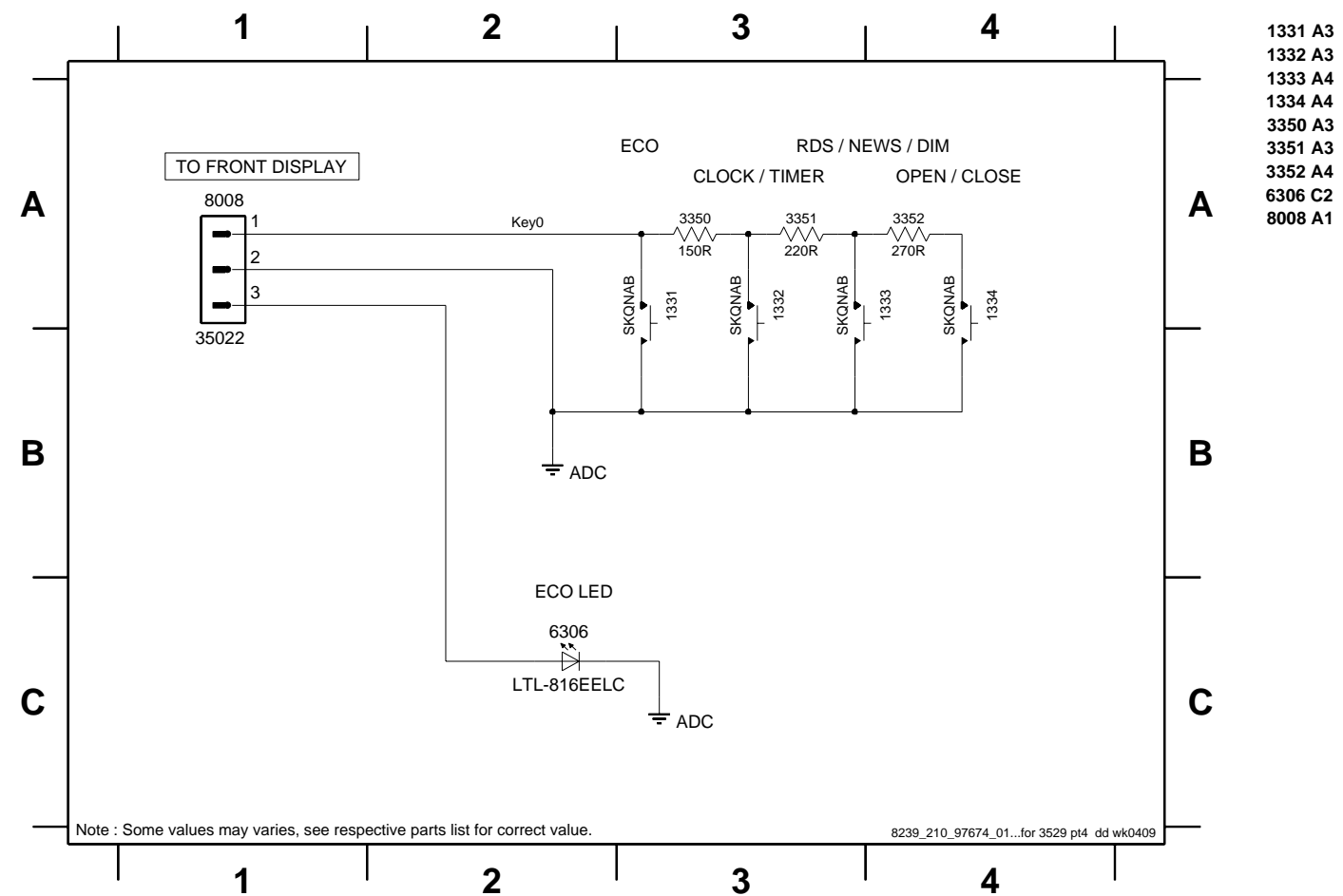
- 1331 A2
- 1332 A7
- 1333 A8
- 1334 A9
- 6306 A2
- 8008 A4

TOP KEY BOARD - CHIP LAYOUT



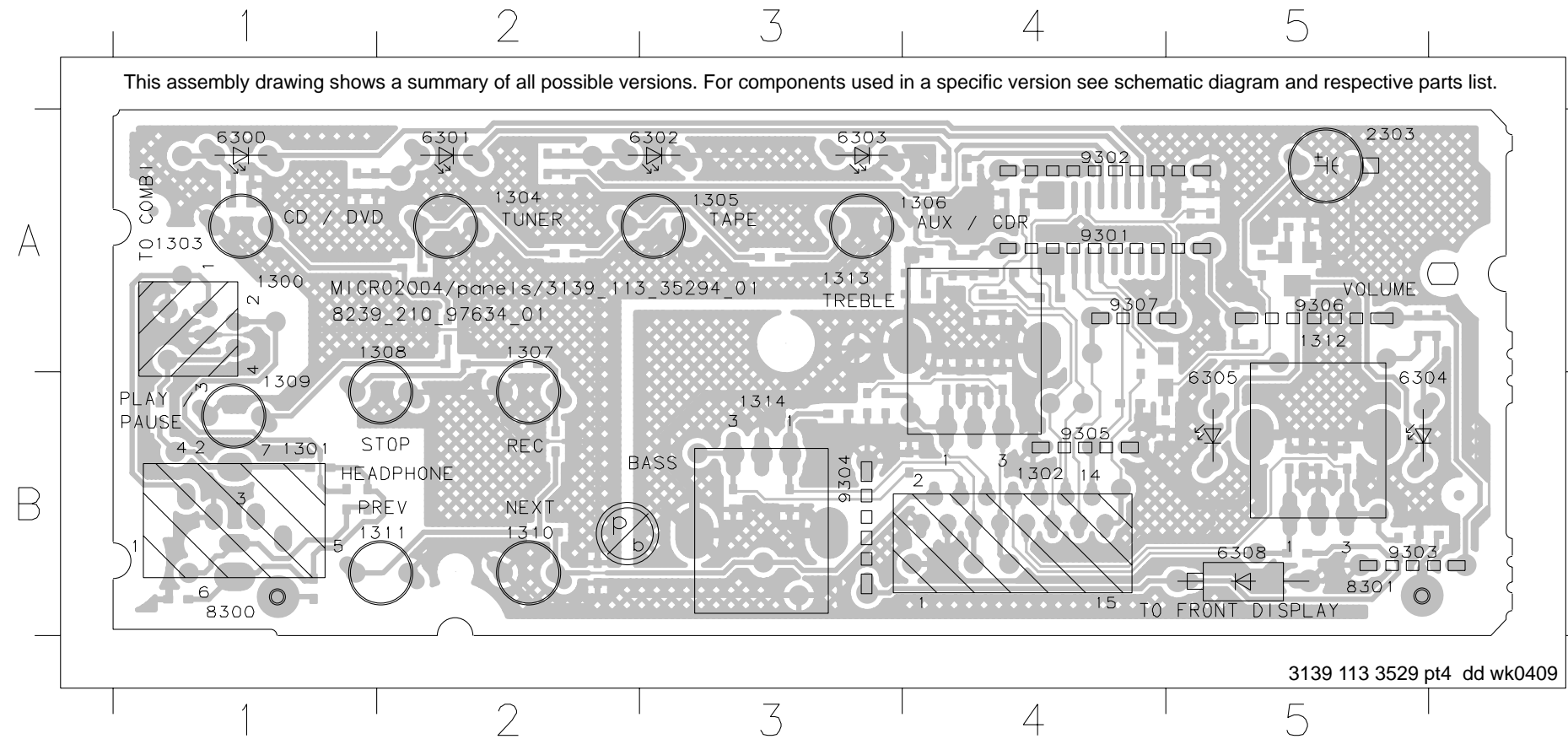
- 3350 A9
- 3351 A3
- 3352 A1
- 4300 A6
- 4301 A6
- 4302 A6
- 4303 A6

TOP KEY BOARD - CIRCUIT DIAGRAM



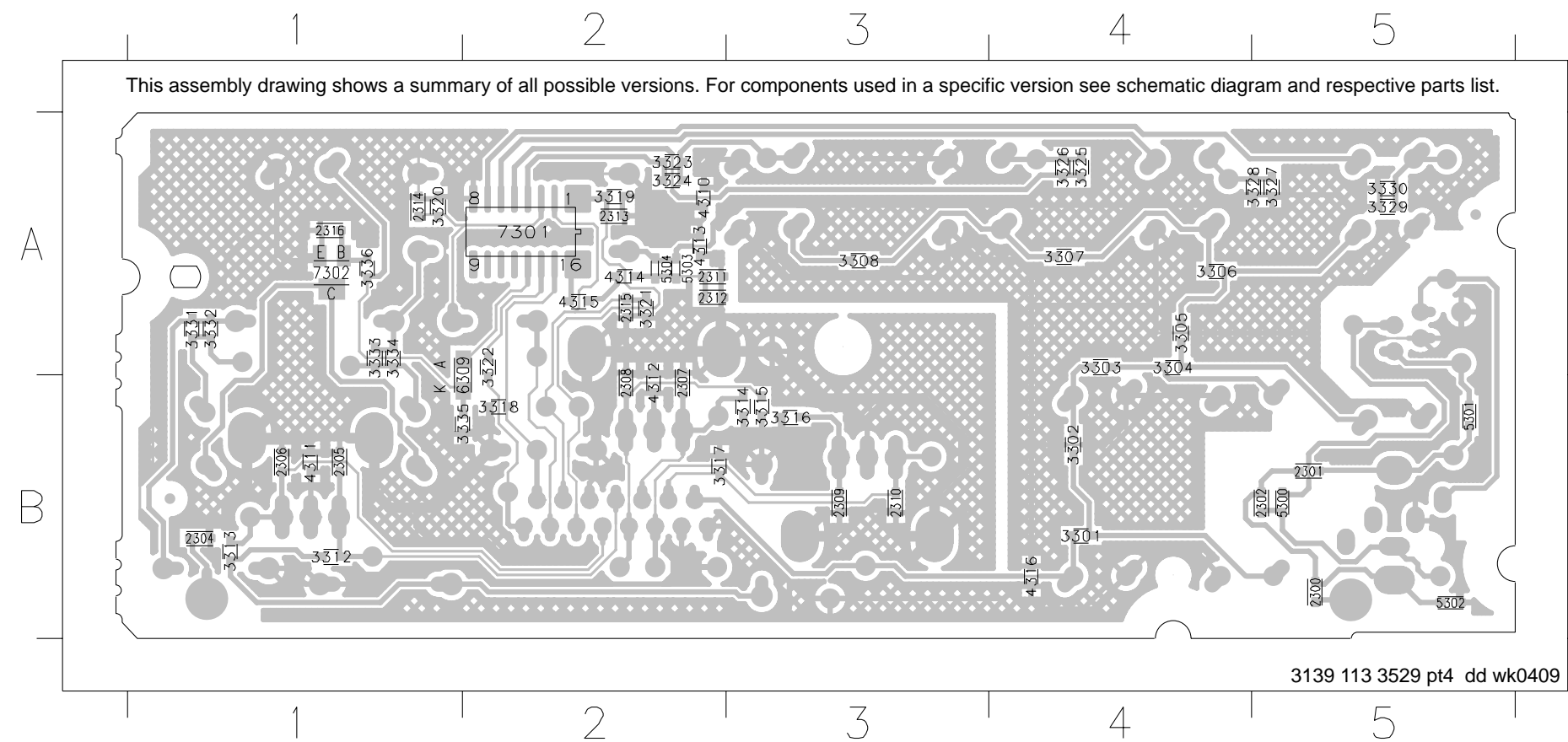
- 1331 A3
- 1332 A3
- 1333 A4
- 1334 A4
- 3350 A3
- 3351 A3
- 3352 A4
- 6306 C2
- 8008 A1

CONTROL BOARD - COMPONENT LAYOUT



- | | | | |
|------|----|------|----|
| 1300 | A1 | 9305 | B4 |
| 1301 | B1 | 9306 | A5 |
| 1302 | B4 | 9307 | A4 |
| 1303 | A1 | | |
| 1304 | A2 | | |
| 1305 | A3 | | |
| 1306 | A4 | | |
| 1307 | A2 | | |
| 1308 | A2 | | |
| 1309 | B1 | | |
| 1310 | B2 | | |
| 1311 | B2 | | |
| 1312 | A5 | | |
| 1313 | A3 | | |
| 1314 | B3 | | |
| 2303 | A5 | | |
| 6300 | A1 | | |
| 6301 | A2 | | |
| 6302 | A3 | | |
| 6303 | A3 | | |
| 6304 | B5 | | |
| 6305 | B5 | | |
| 6308 | B5 | | |
| 8300 | B1 | | |
| 8301 | B5 | | |
| 9301 | A4 | | |
| 9302 | A4 | | |
| 9303 | B5 | | |
| 9304 | B3 | | |

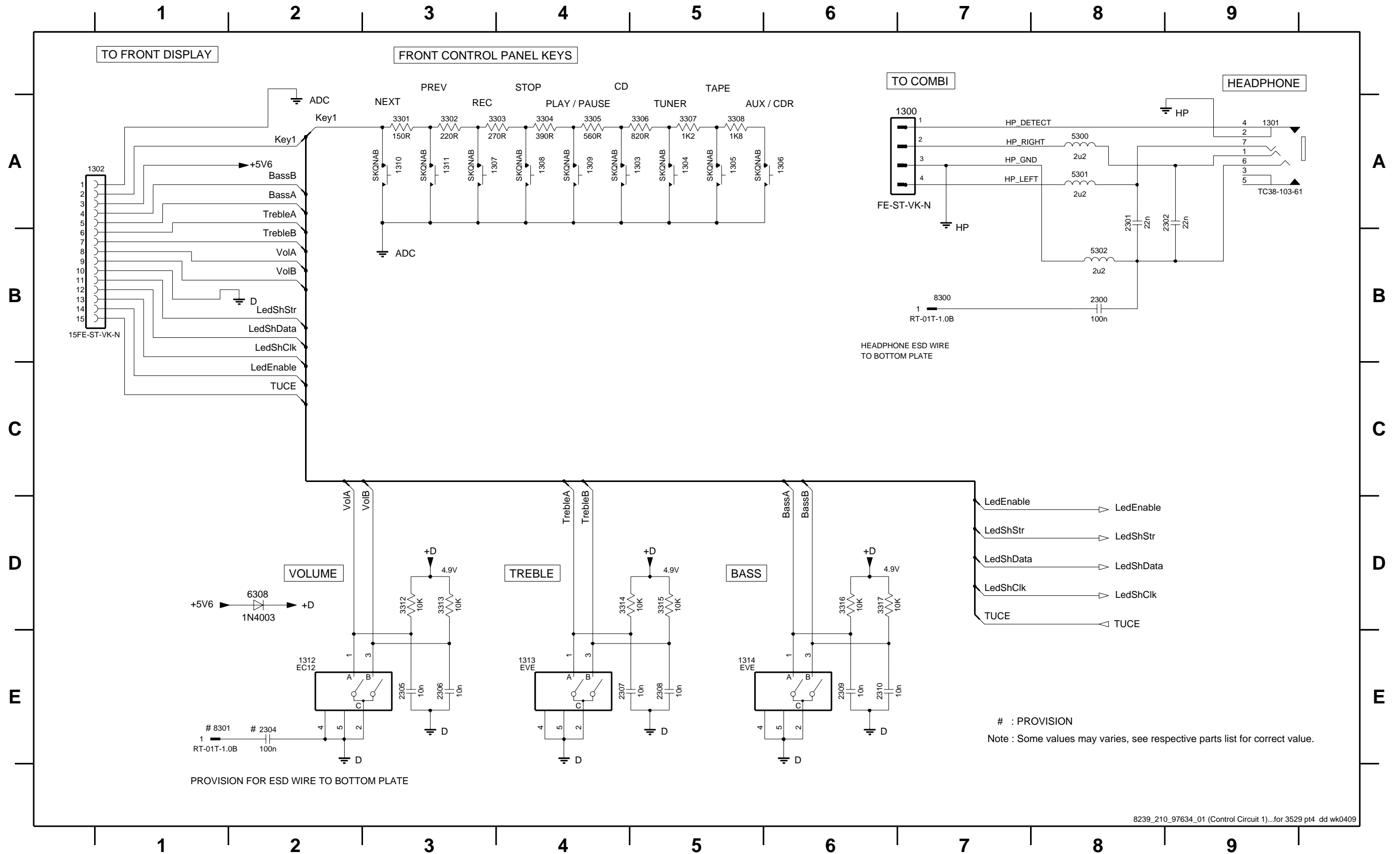
CONTROL BOARD - CHIP LAYOUT



- | | | | | | |
|------|----|------|----|------|----|
| 2300 | B5 | 3317 | B2 | 5302 | B5 |
| 2301 | B5 | 3318 | B2 | 5303 | A2 |
| 2302 | B5 | 3319 | A2 | 5304 | A2 |
| 2304 | B1 | 3320 | A1 | 6309 | A1 |
| 2305 | B1 | 3321 | A2 | 7301 | A2 |
| 2306 | B1 | 3322 | A2 | 7302 | A1 |
| 2307 | B2 | 3323 | A2 | | |
| 2308 | B2 | 3324 | A2 | | |
| 2309 | B3 | 3325 | A4 | | |
| 2310 | B3 | 3326 | A4 | | |
| 2311 | A2 | 3327 | A5 | | |
| 2312 | A2 | 3328 | A5 | | |
| 2313 | A2 | 3329 | A5 | | |
| 2314 | A1 | 3330 | A5 | | |
| 2315 | A2 | 3331 | A1 | | |
| 2316 | A1 | 3332 | A1 | | |
| 3301 | B4 | 3333 | A1 | | |
| 3302 | B4 | 3334 | A1 | | |
| 3303 | A4 | 3335 | B1 | | |
| 3304 | A4 | 3336 | A1 | | |
| 3305 | A4 | 4310 | A2 | | |
| 3306 | A4 | 4311 | B1 | | |
| 3307 | A4 | 4312 | B2 | | |
| 3308 | A3 | 4313 | A2 | | |
| 3312 | B1 | 4314 | A2 | | |
| 3313 | B1 | 4315 | A2 | | |
| 3314 | B3 | 4316 | B4 | | |
| 3315 | B3 | 5300 | B5 | | |
| 3316 | B3 | 5301 | B5 | | |

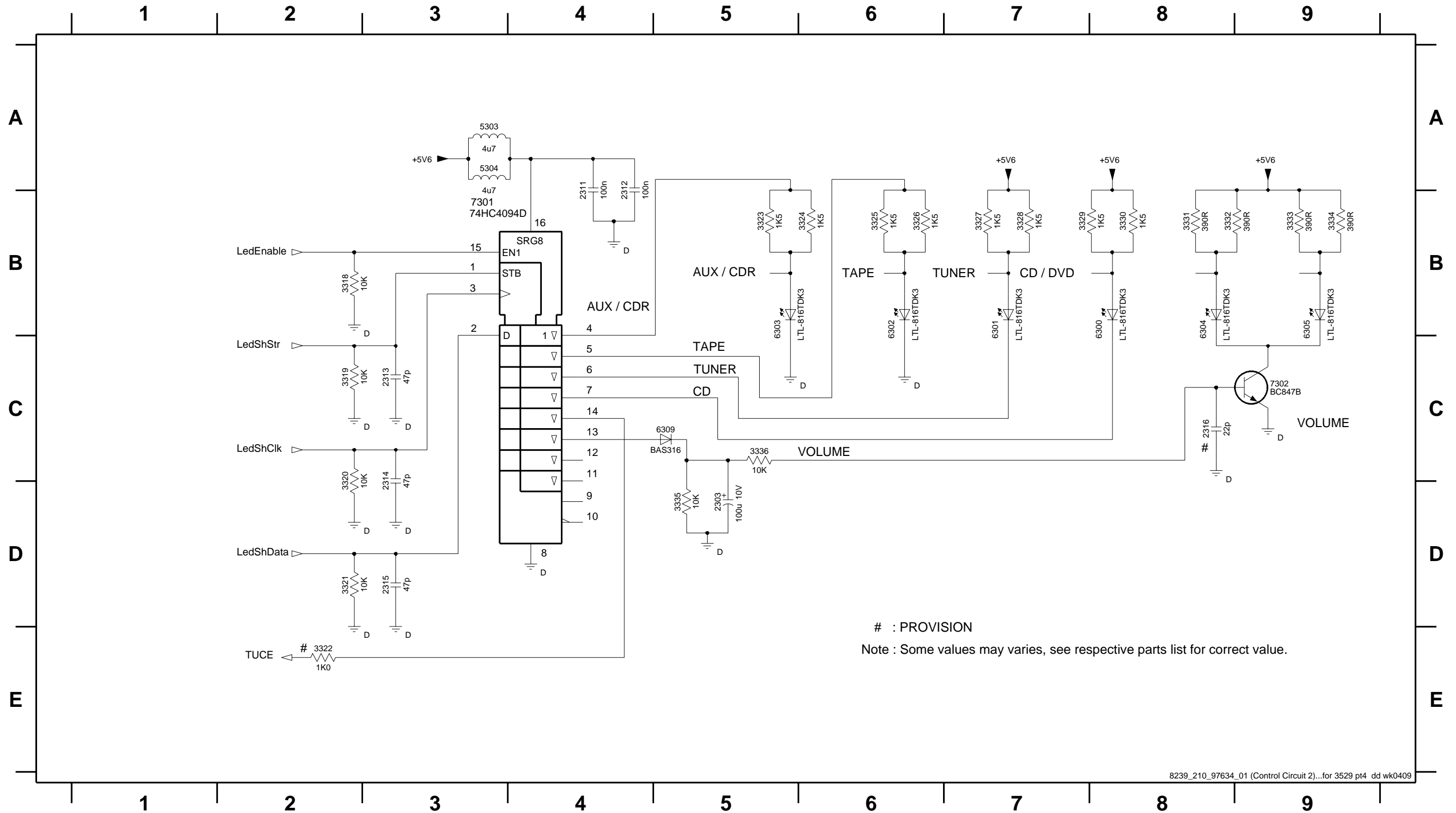
CONTROL BOARD - CIRCUIT DIAGRAM PART 1

1300 A7 1302 A1 1304 A5 1306 A6 1308 A4 1310 A3 1312 E2 1314 E5 2301 A8 2304 E2 2306 E3 2308 E5 2310 E6 3302 A3 3304 A4 3306 A5 3308 A5 3313 D3 3315 D5 3317 D6 5301 A8 6308 D2 8301 E2
 1301 A9 1303 A5 1305 A5 1307 A3 1309 A4 1311 A3 1313 E4 2300 B8 2302 A9 2305 E3 2307 E4 2309 E6 3301 A3 3303 A4 3305 A4 3307 A5 3312 D3 3314 D4 3316 D6 5300 A8 5302 B8 8300 B7



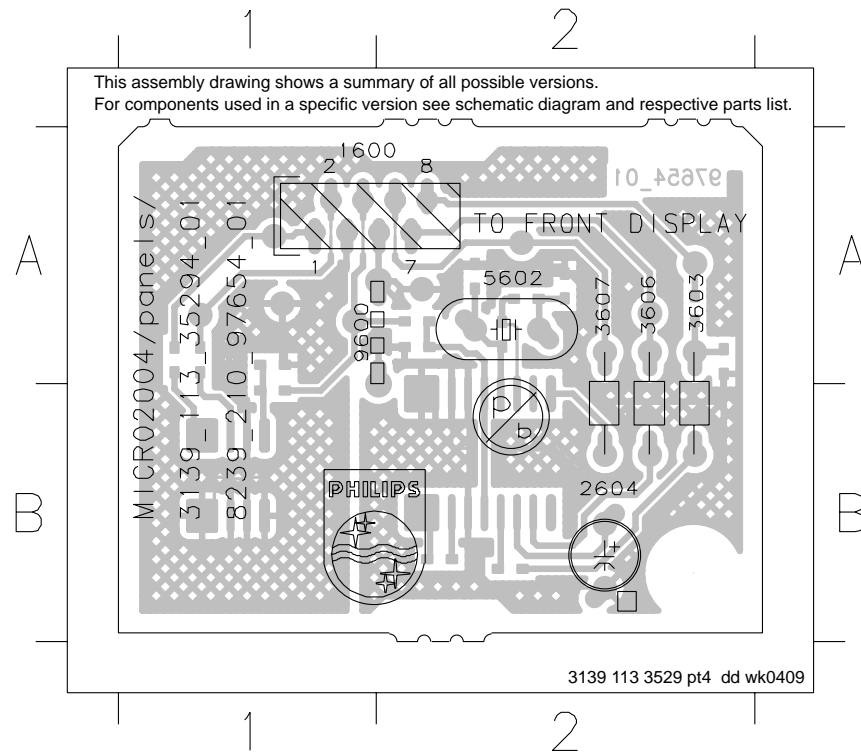
CONTROL BOARD - CIRCUIT DIAGRAM PART 2

2303 D5 2312 A4 2314 C3 2316 C8 3319 C2 3321 D2 3323 B5 3325 B6 3327 B7 3329 B7 3331 B8 3333 B9 3335 D5 5303 A3 6300 B8 6302 B6 6304 B8 6309 C5 7302 C9
 2311 A4 2313 C3 2315 D3 3318 B2 3320 C2 3322 E2 3324 B6 3326 B6 3328 B7 3330 B8 3332 B8 3334 B9 3336 C5 5304 A3 6301 B7 6303 B5 6305 B9 7301 B3



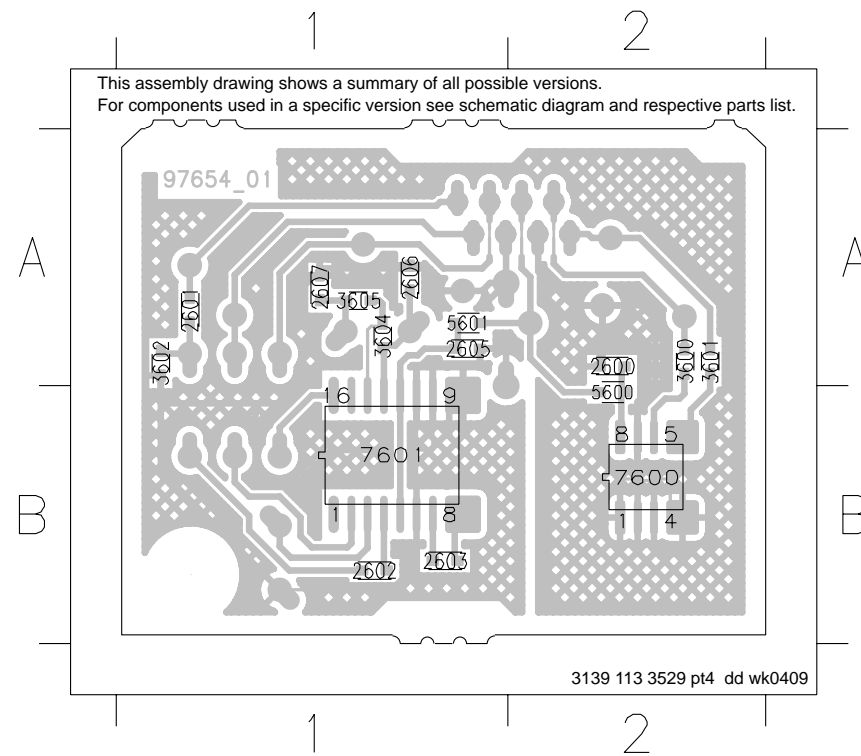
EEPROM BOARD - COMPONENT LAYOUT

1600 A1	3603 A2	3607 A2	9600 A1
2604 B2	3606 A2	5602 A2	



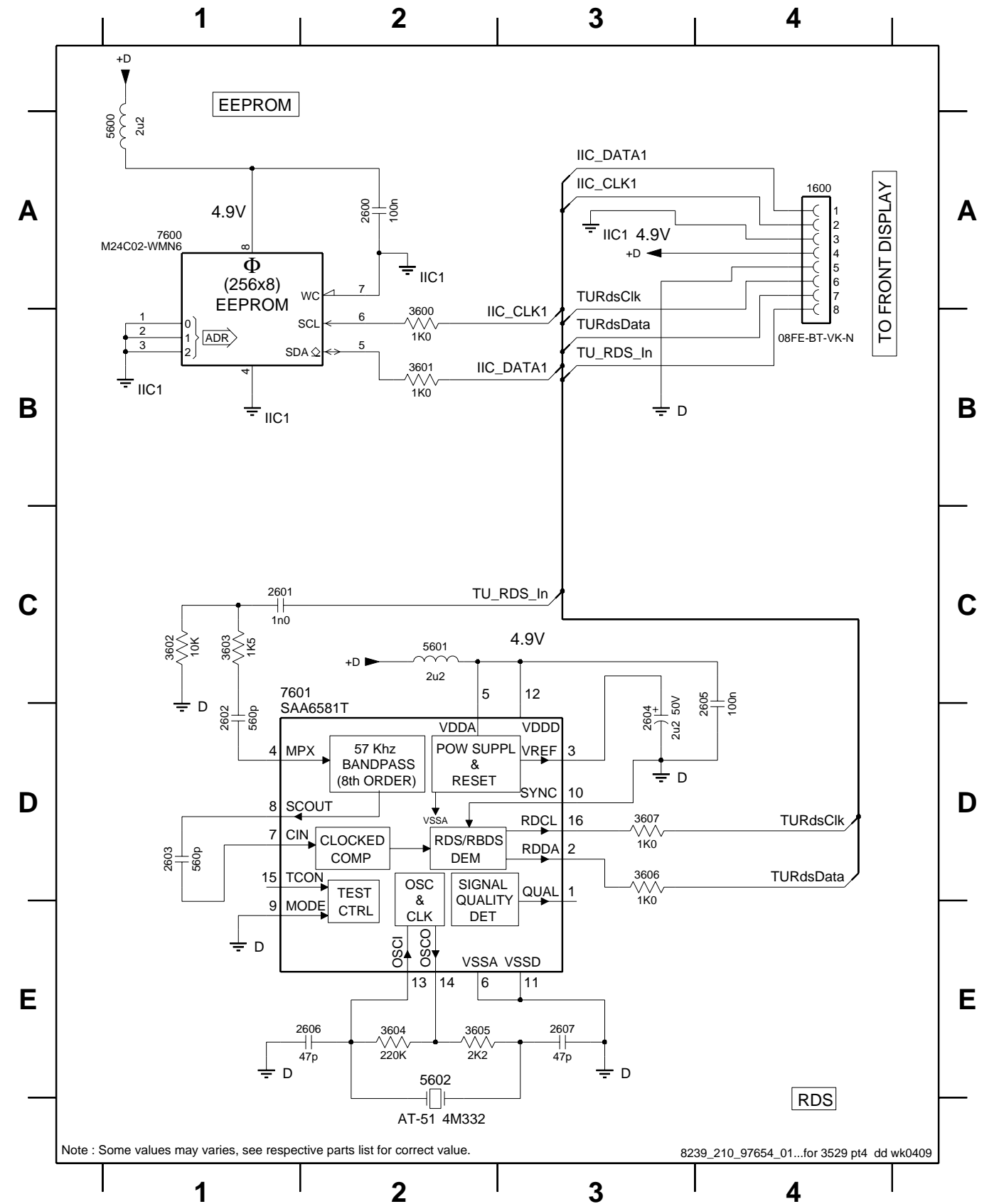
EEPROM BOARD - CHIP LAYOUT

2600 A2	2605 A1	3601 A2	5600 B2
2601 A1	2606 A1	3602 A1	5601 A1
2602 B1	2607 A1	3604 A1	7600 B2
2603 B1	3600 A2	3605 A1	7601 B1



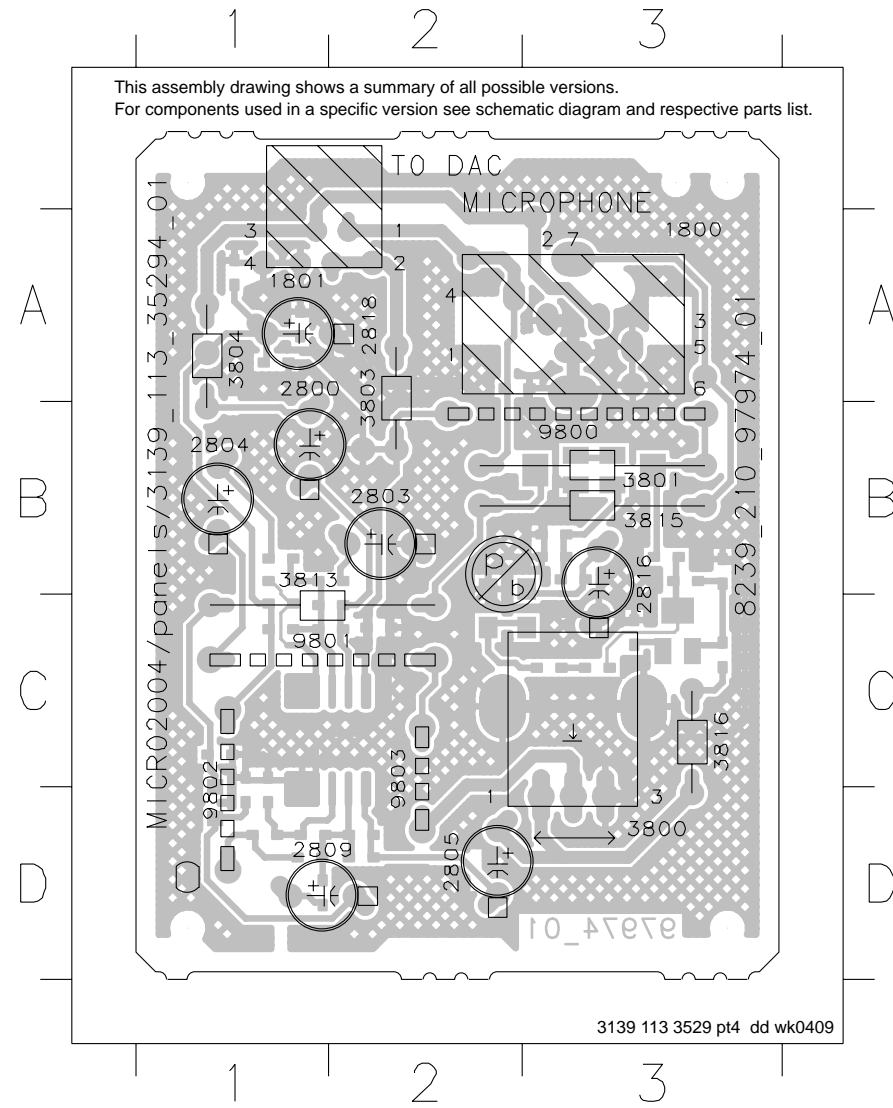
EEPROM BOARD - CIRCUIT DIAGRAM

1600 A4	2601 C1	2603 D1	2605 D4	2607 E3	3601 B2	3603 C1	3605 E2	3607 D3	5601 C2	7600 A1
2600 A2	2602 D1	2604 D3	2606 E2	3600 B2	3602 C1	3604 E2	3606 D3	5600 A1	5602 E2	7601 C1



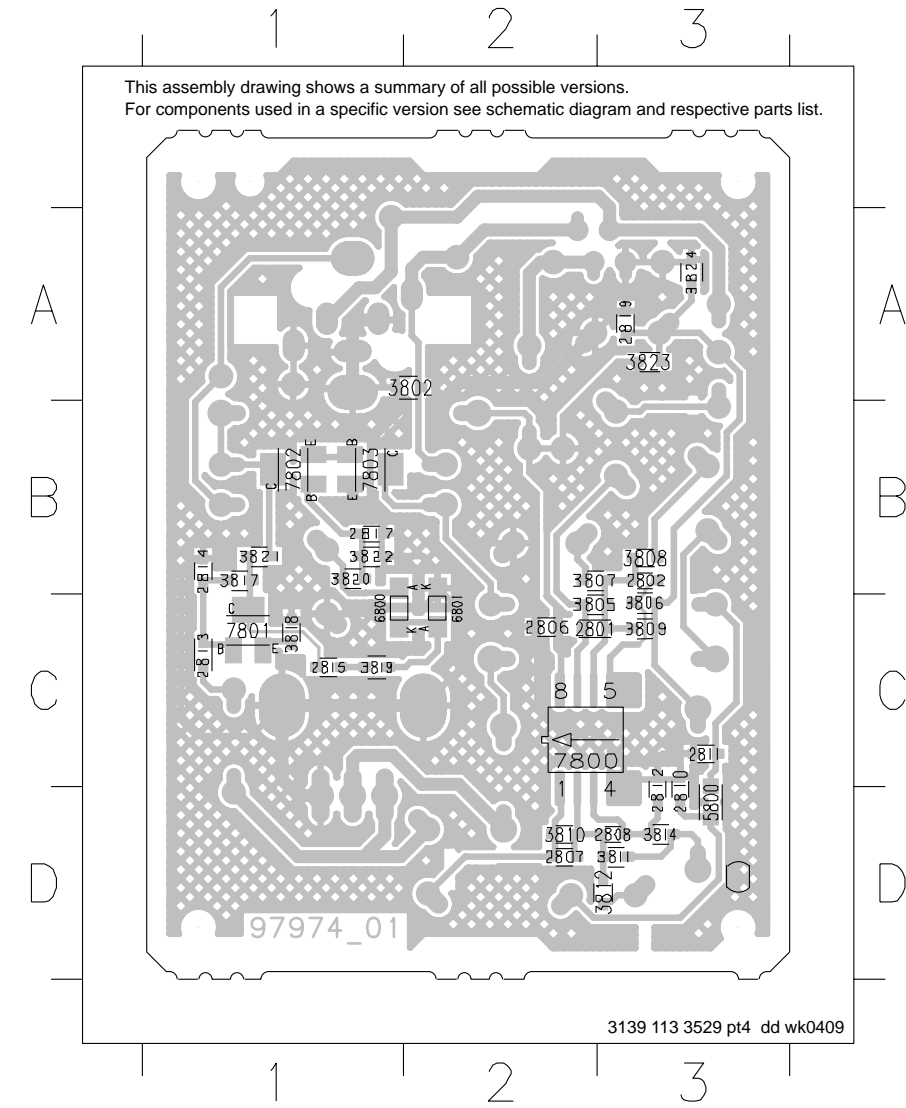
KARAOKE BOARD - COMPONENT LAYOUT (For MCD9 only)

1800 A3	2805 D2	3801 B3	3816 C3
1801 A1	2809 D1	3803 A2	9800 B3
2800 A1	2816 B3	3804 A1	9801 C1
2803 B2	2818 A2	3813 B1	9802 D1
2804 B1	3800 D3	3815 B3	9803 C2



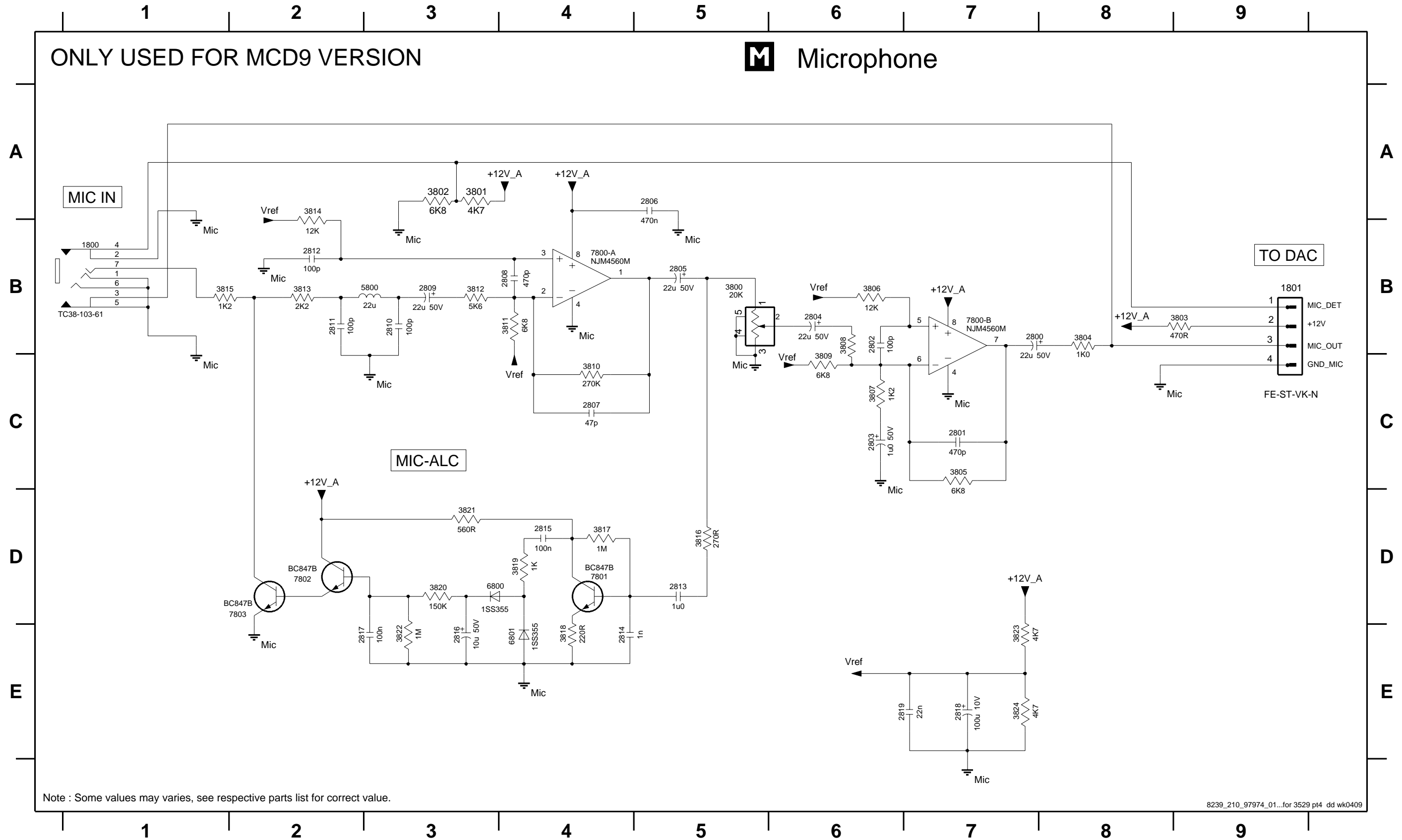
KARAOKE BOARD - CHIP LAYOUT (For MCD9 only)

2801 C2	2815 C1	3811 D3	3824 A3
2802 B3	2817 B1	3812 D3	5800 D3
2806 C2	2819 A3	3814 D3	6800 C1
2807 D2	3802 A2	3817 B1	6801 C2
2808 D3	3805 C2	3818 C1	7800 C2
2810 D3	3806 C3	3819 C1	7801 C1
2811 C3	3807 B2	3820 B1	7802 B1
2812 D3	3808 B3	3821 B1	7803 B1
2813 C1	3809 C3	3822 B1	
2814 B1	3810 D2	3823 A3	



KARAOKE BOARD - CIRCUIT DIAGRAM (For MCD9 only)

1800 B1	2801 C7	2804 B6	2807 C4	2810 B3	2813 D5	2816 E3	2819 E6	3802 A3	3805 C7	3808 B6	3811 B4	3814 A2	3817 D4	3820 D3	3823 E7	6800 D3	7800-B B7	7803 D2
1801 B9	2802 B6	2805 B5	2808 B4	2811 B2	2814 E4	2817 E2	3800 B5	3803 B9	3806 B6	3809 C6	3812 B3	3815 B1	3818 E4	3821 D3	3824 E7	6801 E4	7801 D4	
2800 B7	2803 C6	2806 A5	2809 B3	2812 B2	2815 D4	2818 E7	3801 A3	3804 B8	3807 C6	3810 C4	3813 B2	3816 D5	3819 D4	3822 E3	5800 B3	7800-A B4	7802 D2	



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

ELECTRICAL PARTS LIST - FRONT BOARD

MISCELLANEOUS

1300	4822 265 11183	Flex Connector 4P	2410	4822 122 33761	22pF 5% 50V
1301	2422 026 05563	Headphone Socket	2411	4822 122 33761	22pF 5% 50V
1302	4822 265 10979	Flex Connector 15P	2412	2020 552 94427	100pF 5% 50V
1303	4822 276 13775	Tact Switch	2413	2020 552 94427	100pF 5% 50V
1304	4822 276 13775	Tact Switch	2414	2020 552 94427	100pF 5% 50V
1305	4822 276 13775	Tact Switch	2417	2020 552 94427	100pF 5% 50V
1306	4822 276 13775	Tact Switch	2418	2020 552 94427	100pF 5% 50V
1307	4822 276 13775	Tact Switch	2419	2020 552 94427	100pF 5% 50V
1308	4822 276 13775	Tact Switch	2420	2020 552 94427	100pF 5% 50V
1309	4822 276 13775	Tact Switch	2444	2238 586 59812	100nF +80/-20% 50V
1310	4822 276 13775	Tact Switch	2450	4822 124 81286	47uF 20% 16V
1311	4822 276 13775	Tact Switch	2451	2238 586 59812	100nF +80/-20% 50V
1312	2422 129 16708	Rotary Encoder 24P	2453	4822 124 81286	47uF 20% 16V
1313	2422 129 00039	Rotary Encoder 24P	2457	4822 124 81286	47uF 20% 16V
1314	2422 129 00039	Rotary Encoder 24P	2460	2020 552 94427	100pF 5% 50V
1331	4822 276 13775	Tact Switch	2461	4822 124 12032	4,7uF 20% 50V
1332	4822 276 13775	Tact Switch	2462	4822 124 12032	4,7uF 20% 50V
1333	4822 276 13775	Tact Switch	2463	4822 124 12032	4,7uF 20% 50V
1334	4822 276 13775	Tact Switch	2464	4822 124 12032	4,7uF 20% 50V
1400	3139 110 53601	FTD HNA-13SM42	2473	4822 124 12032	4,7uF 20% 50V
1401	4822 265 11545	Flex Connector 19P	2474	4822 126 14238	2,2nF 50V
1402	4822 265 11531	Flex Connector 9P	2480	2020 552 94427	100pF 5% 50V
1405	4822 265 10979	Flex Connector 15P	2600	2238 586 59812	100nF +80/-20% 50V
1406	4822 265 11535	Flex Connector 8P	2601	5322 126 11578	1nF 10% 50V /22/25
1407	4822 267 10956	Flex Connector 7P	2602	4822 126 14249	560pF 10% 50V /22/25
1600	4822 265 11515	Flex Connector 8P	2603	4822 126 14249	560pF 10% 50V /22/25
			2604	4822 124 22652	2,2uF 20% 50V /22/25
			2605	2238 586 59812	100nF +80/-20% 50V/22/25
			2606	4822 126 11785	47pF 5% 50V /22/25
			2607	4822 126 11785	47pF 5% 50V /22/25

CAPACITORS

2300	2238 586 59812	100nF +80/-20% 50V
2301	2238 916 15641	22nF 10% 25V
2302	2238 916 15641	22nF 10% 25V
2303	9965 000 14169	100uF 10V 20%
2305	5322 126 11583	10nF 10% 50V
2306	5322 126 11583	10nF 10% 50V
2307	5322 126 11583	10nF 10% 50V
2308	5322 126 11583	10nF 10% 50V
2309	5322 126 11583	10nF 10% 50V
2310	5322 126 11583	10nF 10% 50V
2311	2238 586 59812	100nF +80/-20% 50V
2312	2238 586 59812	100nF +80/-20% 50V
2313	4822 126 11785	47pF 5% 50V
2314	4822 126 11785	47pF 5% 50V
2315	4822 126 11785	47pF 5% 50V
2401	3198 017 44740	470nF 10V
2402	5322 126 11583	10nF 10% 50V
2403	5322 126 11583	10nF 10% 50V
2404	3198 028 52290	22uF 20% 50V
2405	3198 028 52290	22uF 20% 50V
2407	2222 867 15339	33pF 5% 50V
2408	4822 122 33761	22pF 5% 50V
2409	4822 126 14223	2,2pF 50V

RESISTORS

3301	4822 051 30151	150R 5% 0,062W
3302	4822 051 30221	220R 5% 0,062W
3303	4822 051 30271	270R 5% 0,062W
3304	4822 051 30391	390R 5% 0,062W
3305	4822 051 30561	560R 5% 0,062W
3306	4822 117 12968	820R 5% 0,62W
3307	4822 117 11817	1k2 1% 1/16W
3308	4822 117 12903	1k8 1% 0,063W
3312	4822 051 30103	10k 5% 0,062W
3313	4822 051 30103	10k 5% 0,062W
3314	4822 051 30103	10k 5% 0,062W
3315	4822 051 30103	10k 5% 0,062W
3316	4822 051 30103	10k 5% 0,062W
3317	4822 051 30103	10k 5% 0,062W
3318	4822 051 30103	10k 5% 0,062W
3319	4822 051 30103	10k 5% 0,062W
3320	4822 051 30103	10k 5% 0,062W
3321	4822 051 30103	10k 5% 0,062W
3323	4822 051 30152	1k5 5% 0,062W

ELECTRICAL PARTS LIST - FRONT BOARD

3324	4822 051 30152	1k5 5% 0,062W	3438	4822 051 30105	1M 5% 0,062W
3325	4822 051 30152	1k5 5% 0,062W	3439	4822 051 30102	1k 5% 0,062W
3326	4822 051 30152	1k5 5% 0,062W	3440	4822 051 30102	1k 5% 0,062W
3327	4822 051 30152	1k5 5% 0,062W	3441	4822 051 30102	1k 5% 0,062W
3328	4822 051 30152	1k5 5% 0,062W	3442	4822 051 30101	100R 5% 0,062W
3329	4822 051 30152	1k5 5% 0,062W	3443	4822 051 30101	100R 5% 0,062W
3330	4822 051 30152	1k5 5% 0,062W	3444	4822 051 30102	1k 5% 0,062W
3331	4822 051 30391	390R 5% 0,062W	3445	4822 051 30102	1k 5% 0,062W
3332	4822 051 30391	390R 5% 0,062W	3446	4822 051 30471	470R 5% 0,062W
3333	4822 051 30391	390R 5% 0,062W	3447	4822 051 30471	470R 5% 0,062W
3334	4822 051 30391	390R 5% 0,062W	3448	4822 051 30471	470R 5% 0,062W
3335	4822 051 30103	10k 5% 0,062W	3452	4822 051 30471	470R 5% 0,062W
3336	4822 051 30103	10k 5% 0,062W	3453	4822 051 30102	1k 5% 0,062W
3350	4822 051 30151	150R 5% 0,062W	3454	4822 051 30102	1k 5% 0,062W
3351	4822 051 30221	220R 5% 0,062W	3455	4822 051 30102	1k 5% 0,062W
3352	4822 051 30271	270R 5% 0,062W	3456	4822 051 30102	1k 5% 0,062W
3400	4822 117 12968	820R 5% 0,62W	3457	4822 051 30102	1k 5% 0,062W
3401	4822 117 12925	47k 1% 0,063W	3458	4822 051 30102	1k 5% 0,062W
3403	4822 117 13632	100k 1% 0,62W	3459	4822 051 30102	1k 5% 0,062W
3404	4822 051 30684	680k 5% 0,062W	3460	4822 051 30102	1k 5% 0,062W
3405	4822 051 30102	1k 5% 0,062W	3461	4822 051 30102	1k 5% 0,062W
3406	4822 117 12891	220k 1%	3462	4822 051 30102	1k 5% 0,062W
3407	4822 051 30102	1k 5% 0,062W	3463	4822 051 30471	470R 5% 0,062W
3408	4822 051 30102	1k 5% 0,062W	3464	4822 051 30471	470R 5% 0,062W
3409	4822 051 30102	1k 5% 0,062W	3465	4822 051 30272	2k7 5% 0,062W
3410	4822 051 30102	1k 5% 0,062W	3466	4822 051 30102	1k 5% 0,062W
3411	4822 051 30102	1k 5% 0,062W	3467	4822 051 30102	1k 5% 0,062W
3412	4822 051 30102	1k 5% 0,062W	3468	4822 051 30102	1k 5% 0,062W
3413	4822 051 30103	10k 5% 0,062W	3469	4822 051 30102	1k 5% 0,062W
3414	4822 051 30103	10k 5% 0,062W	3470	4822 051 30102	1k 5% 0,062W
3415	4822 051 30102	1k 5% 0,062W	3471	4822 051 30102	1k 5% 0,062W
3416	4822 051 30102	1k 5% 0,062W	3472	4822 051 30102	1k 5% 0,062W
3417	4822 051 30102	1k 5% 0,062W	3473	4822 051 30102	1k 5% 0,062W
3418	4822 051 30102	1k 5% 0,062W	3474	4822 051 30102	1k 5% 0,062W
3419	4822 051 30102	1k 5% 0,062W	3475	4822 051 30102	1k 5% 0,062W
3420	4822 050 21003	10k 1% 0,6W	3476	4822 051 30102	1k 5% 0,062W
3421	4822 051 30103	10k 5% 0,062W	3477	4822 051 30102	1k 5% 0,062W
3422	4822 051 30102	1k 5% 0,062W	3478	4822 051 30102	1k 5% 0,062W
3423	4822 051 30102	1k 5% 0,062W	3479	4822 051 30102	1k 5% 0,062W
3424	4822 051 30102	1k 5% 0,062W	3480	4822 051 30102	1k 5% 0,062W
3425	4822 051 30102	1k 5% 0,062W	3481	4822 051 30102	1k 5% 0,062W
3426	4822 051 30102	1k 5% 0,062W	3482	4822 051 30102	1k 5% 0,062W
3427	4822 051 30102	1k 5% 0,062W	3483	4822 051 30102	1k 5% 0,062W
3428	4822 051 30102	1k 5% 0,062W	3484	4822 051 30102	1k 5% 0,062W
3431	4822 051 30102	1k 5% 0,062W	3485	4822 051 30102	1k 5% 0,062W
3432	4822 051 30472	4k7 5% 0,062W	3486	4822 051 30102	1k 5% 0,062W
3433	4822 116 52263	2k7 5% 0,5W	3487	4822 051 30102	1k 5% 0,062W
3434	4822 116 52213	180R 5% 0,5W	3488	4822 051 30102	1k 5% 0,062W
3435	4822 051 30102	1k 5% 0,062W /22/25	3489	4822 051 30102	1k 5% 0,062W
3436	4822 051 30105	1M 5% 0,062W	3490	4822 117 12864	82k 5% 0,6W
3437	4822 051 30684	680k 5% 0,062W	3491	4822 051 30103	10k 5% 0,062W /37

ELECTRICAL PARTS LIST - FRONT BOARD**RESISTORS**

3492	4822 117 12864	82k 5% 0,6W	4404	4822 051 30008	OR Jumper 0603
3493	4822 117 12864	82k 5% 0,6W	4405	4822 051 30008	OR Jumper 0603
3494	4822 051 30682	6k8 5% 0,062W	4406	4822 051 30008	OR Jumper 0603
3495	4822 051 30682	6k8 5% 0,062W	4407	4822 051 30008	OR Jumper 0603
3496	4822 051 30103	10k 5% 0,062W /37	4409	4822 051 30008	OR Jumper 0603
3497	4822 050 21003	10k 1% 0,6W /37	4411	4822 051 30008	OR Jumper 0603
3498	4822 051 30101	100R 5% 0,062W	4420	4822 051 30008	OR Jumper 0603
3499	4822 051 30101	100R 5% 0,062W	4421	4822 051 30008	OR Jumper 0603
3500	4822 051 30221	220R 5% 0,062W	4423	4822 051 30008	OR Jumper 0603
3501	4822 051 30221	220R 5% 0,062W	4424	4822 051 30008	OR Jumper 0603
3502	4822 051 30471	470R 5% 0,062W	4426	4822 051 30008	OR Jumper 0603
3508	4822 051 30393	39k 5% 0,062W	4427	4822 051 30008	OR Jumper 0603
3509	4822 051 30103	10k 5% 0,062W	4430	4822 051 30008	OR Jumper 0603
3510	4822 051 30103	10k 5% 0,062W	4431	4822 051 30008	OR Jumper 0603
3511	4822 051 30103	10k 5% 0,062W	4432	4822 051 30008	OR Jumper 0603
3513	4822 051 30102	1k 5% 0,062W	4433	4822 051 30008	OR Jumper 0603
3514	4822 051 30102	1k 5% 0,062W	4434	4822 051 30008	OR Jumper 0603
3515	4822 051 30102	1k 5% 0,062W	4436	4822 051 30008	OR Jumper 0603
3518	4822 116 83872	220R 5% 0,5W	4437	4822 051 30008	OR Jumper 0603
3519	4822 116 81154	2R2 5% 0,5W	4438	4822 051 30008	OR Jumper 0603 /22/25
3520	4822 116 81154	2R2 5% 0,5W	4439	4822 051 30008	OR Jumper 0603
3521	4822 116 52257	22k 5% 0,5W	4440	4822 051 30008	OR Jumper 0603
3522	4822 116 83872	220R 5% 0,5W	4441	4822 051 30008	OR Jumper 0603
3523	4822 116 81154	2R2 5% 0,5W	4442	4822 051 30008	OR Jumper 0603
3524	4822 116 81154	2R2 5% 0,5W	4443	4822 051 30008	OR Jumper 0603
3527	4822 051 30101	100R 5% 0,062W	4444	4822 051 30008	OR Jumper 0603
3529	4822 051 30101	100R 5% 0,062W	4445	4822 051 30008	OR Jumper 0603
3531	4822 051 30101	100R 5% 0,062W	4446	4822 051 30008	OR Jumper 0603
3532	4822 051 30101	100R 5% 0,062W	4447	4822 051 30008	OR Jumper 0603
3533	4822 051 30103	10k 5% 0,062W	4448	4822 051 30008	OR Jumper 0603
3534	4822 051 30102	1k 5% 0,062W	4449	4822 051 30008	OR Jumper 0603
3535	4822 116 52263	2k7 5% 0,5W	4450	4822 051 30008	OR Jumper 0603
3600	4822 051 30102	1k 5% 0,062W	4451	4822 051 30008	OR Jumper 0603
3601	4822 051 30102	1k 5% 0,062W	4452	4822 051 30008	OR Jumper 0603
3602	4822 051 30103	10k 5% 0,062W /22/25	4453	4822 051 30008	OR Jumper 0603
3603	4822 116 52243	1k5 5% 0,5W /22/25	4454	4822 051 30008	OR Jumper 0603
3604	4822 117 12891	220k 1% /22/25	4455	4822 051 30008	OR Jumper 0603
3605	4822 051 30222	2k2 5% 0,062W /22/25	4456	4822 051 30008	OR Jumper 0603
3606	4822 050 11002	1k 1% 0,4W /22/25	4457	4822 051 30008	OR Jumper 0603 /22/25
3607	4822 050 11002	1k 1% 0,4W /22/25	4458	4822 051 30008	OR Jumper 0603
4300	4822 051 30008	OR Jumper 0603			
4301	4822 051 30008	OR Jumper 0603			
4302	4822 051 30008	OR Jumper 0603			
4303	4822 051 30008	OR Jumper 0603			
4310	4822 051 30008	OR Jumper 0603			
4311	4822 051 30008	OR Jumper 0603			
4312	4822 051 30008	OR Jumper 0603			
4313	4822 051 30008	OR Jumper 0603			
4314	4822 051 30008	OR Jumper 0603			
4315	4822 051 30008	OR Jumper 0603			
4316	4822 051 30008	OR Jumper 0603			

COILS & FILTERS

5300	3198 018 52280	FXDIND SM 0603 2U2 10%
5301	3198 018 52280	FXDIND SM 0603 2U2 10%
5302	3198 018 52280	FXDIND SM 0603 2U2 10%
5303	3198 018 54780	FXDIND SM 0603 4U7 10%
5304	3198 018 54780	FXDIND SM 0603 4U7 10%
5400	5322 242 73686	RES CER 12MHz
5401	2422 543 01069	RES XTL 32,768kHz
5402	3198 018 54780	FXDIND SM 0603 4U7 10%
5403	3198 018 54780	FXDIND SM 0603 4U7 10%

ELECTRICAL PARTS LIST - FRONT BOARD

5404	4822 157 62552	Coil 2,2uH 5%
5405	4822 157 62552	Coil 2,2uH 5%
5406	4822 157 62552	Coil 2,2uH 5%
5407	4822 157 62552	Coil 2,2uH 5%
5600	3198 018 52280	FXDIND SM 0603 2U2 10%
5601	3198 018 52280	FXDIND SM 0603 2U2 10% /22/25
5602	4822 242 11033	RES XTL 4,332MHz /22/25

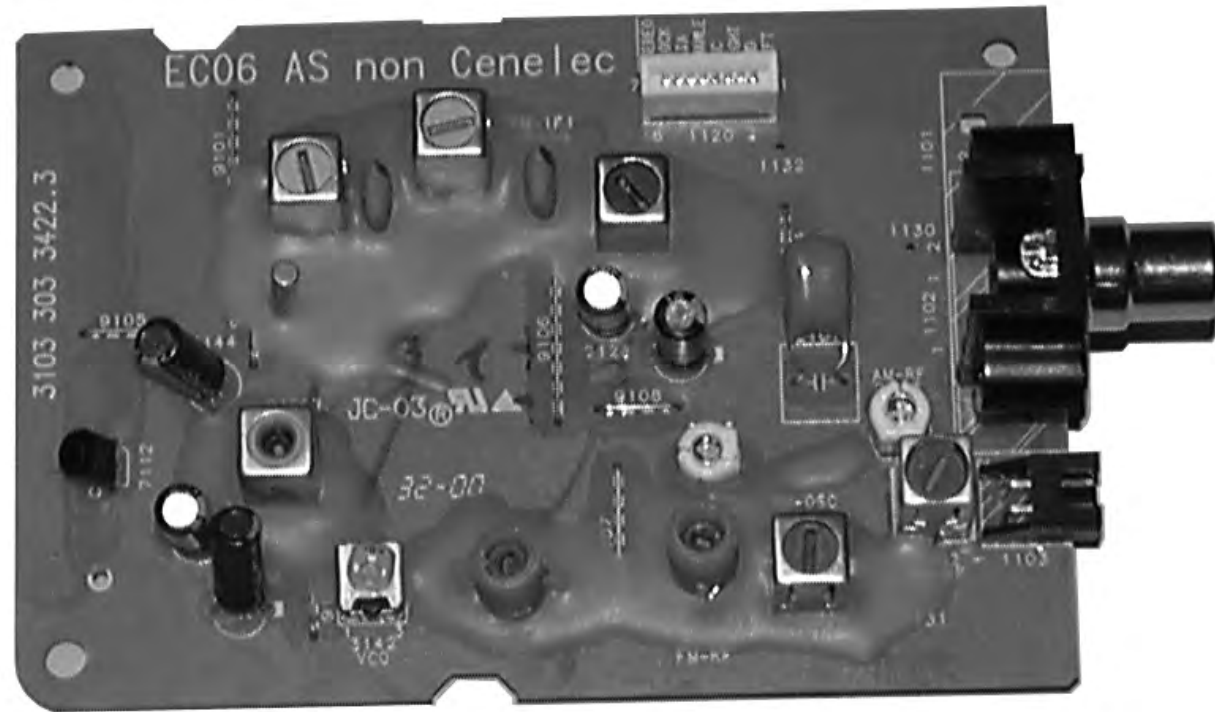
DIODES

6300	9322 190 55676	LED VS LTL-816TDK3
6301	9322 190 55676	LED VS LTL-816TDK3
6302	9322 190 55676	LED VS LTL-816TDK3
6303	9322 190 55676	LED VS LTL-816TDK3
6304	9322 190 55676	LED VS LTL-816TDK3
6305	9322 190 55676	LED VS LTL-816TDK3
6306	9322 179 76676	LED VS LTL-816EELC
6308	4822 130 31878	1N4003G
6309	4822 130 11397	BAS316
6400	4822 130 30621	1N4148
6401	4822 130 30621	1N4148
6402	4822 130 30621	1N4148
6403	4822 130 30621	1N4148
6404	4822 130 30621	1N4148
6405	4822 130 31878	1N4003G
6406	4822 130 31878	1N4003G
6407	4822 130 31878	1N4003G
6408	4822 130 30621	1N4148
6409	4822 130 34278	BZX79-B6V8
6410	4822 130 30621	1N4148

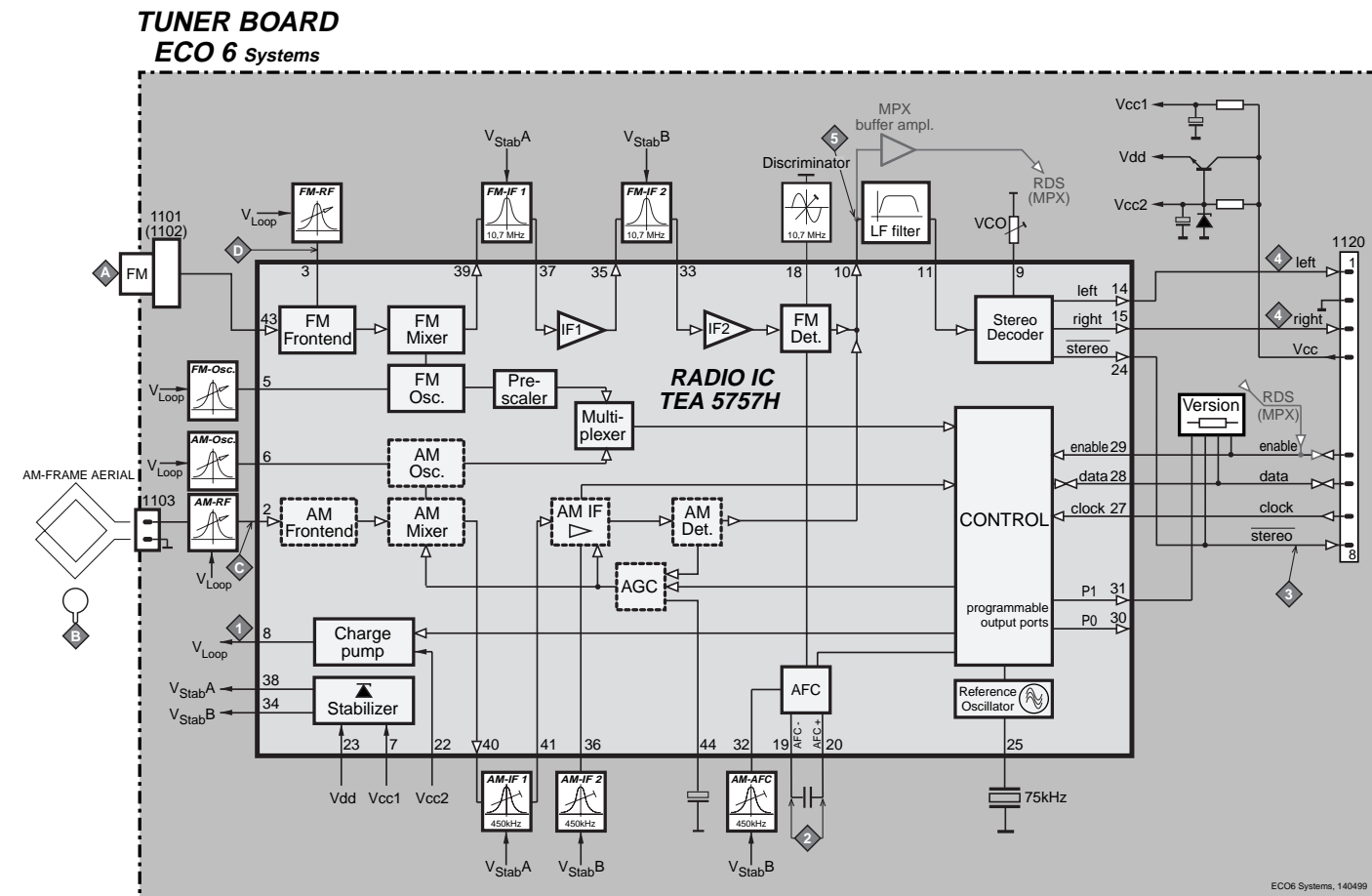
TRANSISTORS & INTEGRATED CIRCUITS

7301	4822 209 15449	IC SM 74HC4094D
7302	5322 130 60159	BC847B
7400	3139 110 53741	TMP88CU74YF - 'MCM7/8S53741'
7401	4822 130 60373	BC857B
7402	5322 130 60159	BC847B
7403	9322 185 95667	IR Receiver TSOP4836ZC1
7404	5322 130 60159	BC847B
7405	5322 130 60159	BC847B
7407	5322 130 60159	BC847B
7408	5322 130 60159	BC847B
7600	9322 145 26668	IC SM M24C02-WMN6
7601	9352 686 05118	IC SM SAA6581T /22/25

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



BLOCK DIAGRAM

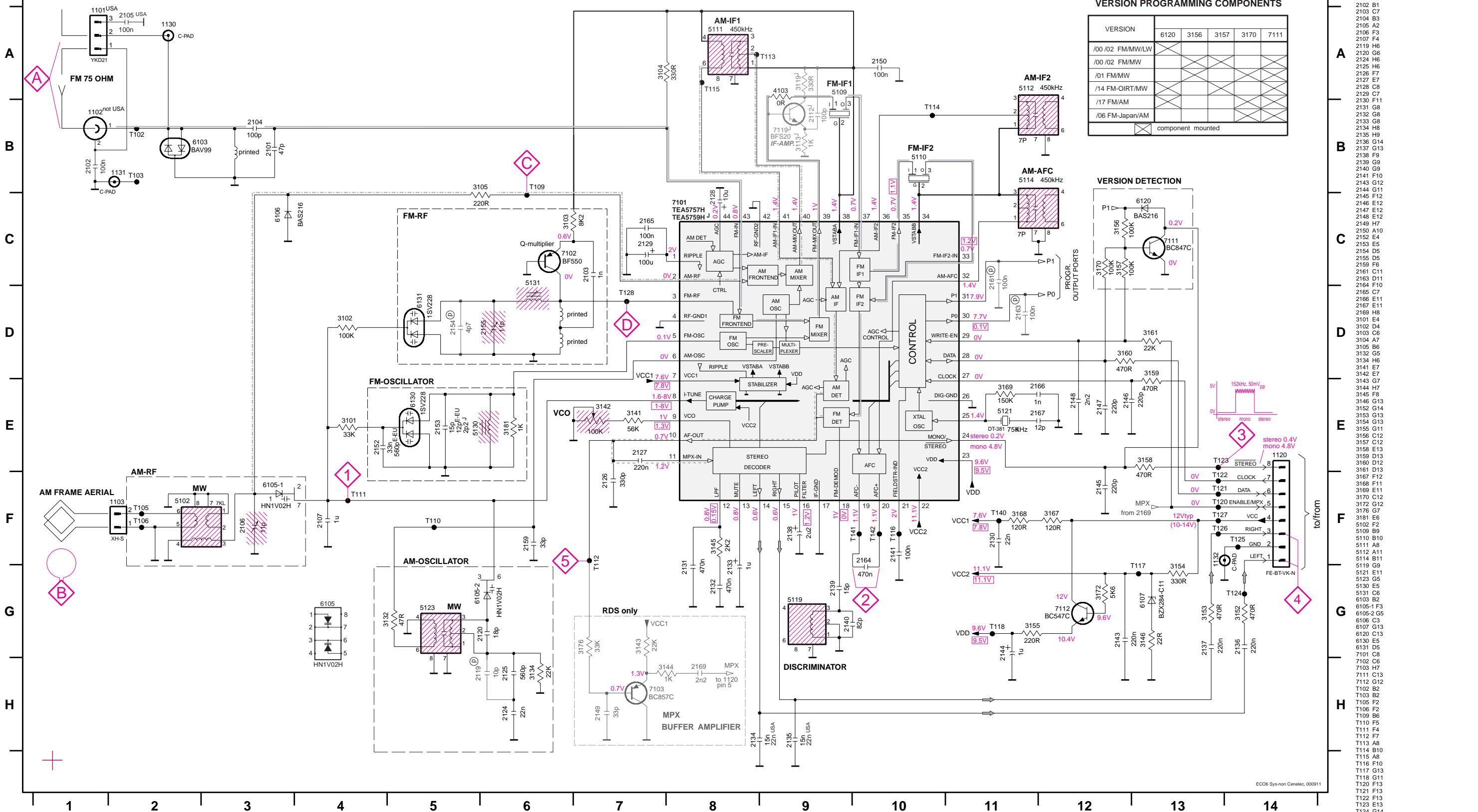


ECO6 Tuner Board
version: *SYSTEMS non-CENELEC*

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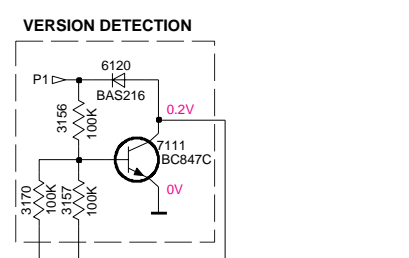
TUNER BOARD ECO6 / SYSTEMS NON CENELEC



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



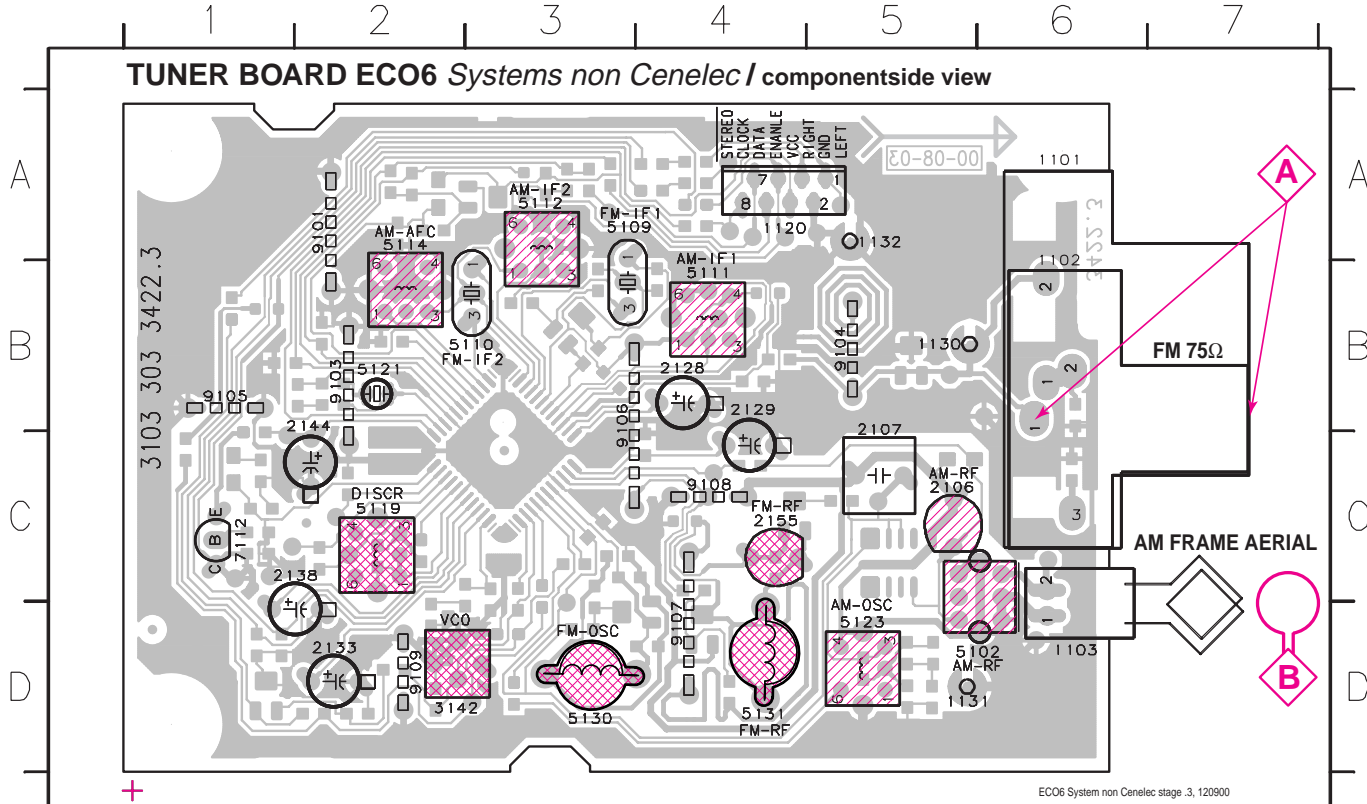
- 1101 A1
- 1102 B1
- 1103 F2
- 1120 E14
- 1130 A2
- 1131 B2
- 1132 G13
- 2101 B3
- 2102 B1
- 2103 C7
- 2104 B3
- 2105 A2
- 2106 F3
- 2107 F4
- 2119 H6
- 2120 G6
- 2124 H6
- 2125 H6
- 2126 F7
- 2127 E7
- 2128 C8
- 2129 C7
- 2130 F11
- 2131 G8
- 2132 G8
- 2133 G8
- 2134 H8
- 2135 H9
- 2136 G14
- 2137 G13
- 2138 F9
- 2139 G9
- 2140 G9
- 2141 F10
- 2143 G12
- 2144 G11
- 2145 F12
- 2146 E12
- 2147 E12
- 2148 E12
- 2149 H7
- 2150 A10
- 2152 A4
- 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 C12
- 3158 E13
- 3159 D13
- 3160 D12
- 3161 D13
- 3167 F12
- 3168 F11
- 3169 E11
- 3170 C12
- 3172 G12
- 3176 G7
- 3181 E6
- 5102 E2
- 5109 B9
- 5110 B10
- 5111 A8
- 5112 A11
- 5114 A11
- 5119 G9
- 5121 E11
- 5123 G5
- 530 E5
- 531 C6
- 6103 B2
- 6105 F3
- 6105-2 G5
- 6106 C3
- 6107 G13
- 6120 C13
- 6130 E5
- 6131 D5
- 7101 C8
- 7102 C6
- 7103 H7
- 7111 C13
- 7127 F13
- T102 B2
- T103 B2
- T105 F2
- T106 F2
- T109 B6
- T110 F5
- T111 F4
- T112 F7
- T113 A8
- T114 B10
- T115 A8
- T116 F10
- T117 G13
- T118 G13
- T120 F13
- T121 F13
- T122 F13
- T123 F13
- T124 F13
- T125 F13
- T126 F13
- T127 F13
- T128 D7
- T140 F11
- T141 F10
- T142 F10

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

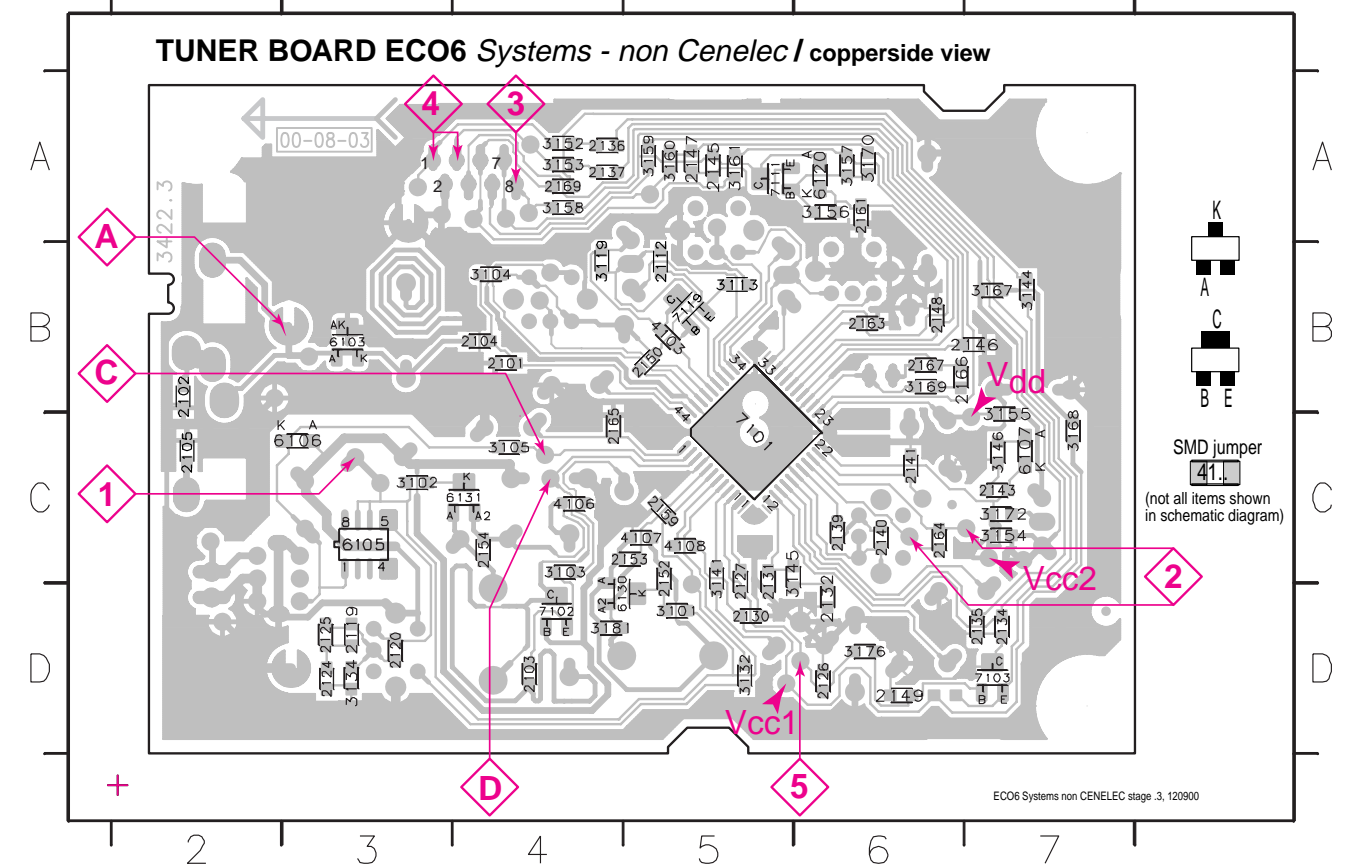
...V FM mode stereo
 ...V MW mode
 ...V LW mode
 voltages measured while set is tuned to a strong transmitter

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

1101 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		108MHz	5130		8V ±0.2V
	87.5MHz (65.81MHz)		87.5MHz (65.81MHz)	check		4.3V ±0.5V (1.2V ±0.5V)
MW FM/AM-version, 10kHz grid 530 - 1700kHz	1700kHz		1700kHz	5123		8V ±0.2V
	530kHz		530kHz	check		1.1V ±0.4V
FM/MW-version, 9kHz grid 531 - 1602kHz	1602kHz		1602kHz	5123	1	6.9V ±0.2V
	531kHz		531kHz	check		1.1V ±0.4V
LW 153 - 279kHz	279kHz		279kHz	5122		8V ±0.2V
	153kHz		153kHz	check		1.1V ±0.4V
MW FM/MW/LW- version, 9kHz grid 531 - 1602kHz	1602kHz		1602kHz	5123		8V ±0.2V
	531kHz		531kHz	check		1.1V ±0.4V
FM IF						
FM	10.7MHz, 45mV continuous wave	D		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	
2139	4822 126 14236	15pF	5%	50V	
2140	4822 126 13695	82pF	1%	63V	
2141	4822 126 13838	100nF	10%	50V	
2143	4822 126 14076	220nF	20%	25V	
2144	4822 124 21913	1μF	20%	63V	
2145	4822 122 33575	220pF	5%	50V	
2146	4822 122 33575	220pF	5%	50V	
2147	4822 122 33575	220pF	5%	50V	
2148	4822 122 33127	2,2nF	10%	63V	
2149	5322 122 32659	33pF	5%	50V	RDS only
2150	4822 126 13838	100nF	10%	50V	
2152	4822 126 12105	33nF	5%	63V	not for East Europe
2152	5322 116 80853	560pF	5%	63V	for East Europe only
2153	4822 126 13486	15pF	2%	63V	not for East Europe
2153	4822 122 33926	12pF	2%	50V	for East Europe only
2155	2020 800 00191	3-11pF TRIMCAP.,N450			
2159	5322 122 32659	33pF	5%	50V	
2164	4822 126 13482	470nF	20%	16V	
2165	4822 126 13838	100nF	10%	50V	
2166	5322 122 31647	1nF	10%	63V	
2167	4822 122 33926	12pF	5%	50V	
2169	4822 122 33127	2,2nF	10%	63V	RDS only

RESISTORS

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

RESISTORS

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

COILS

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

DIODES

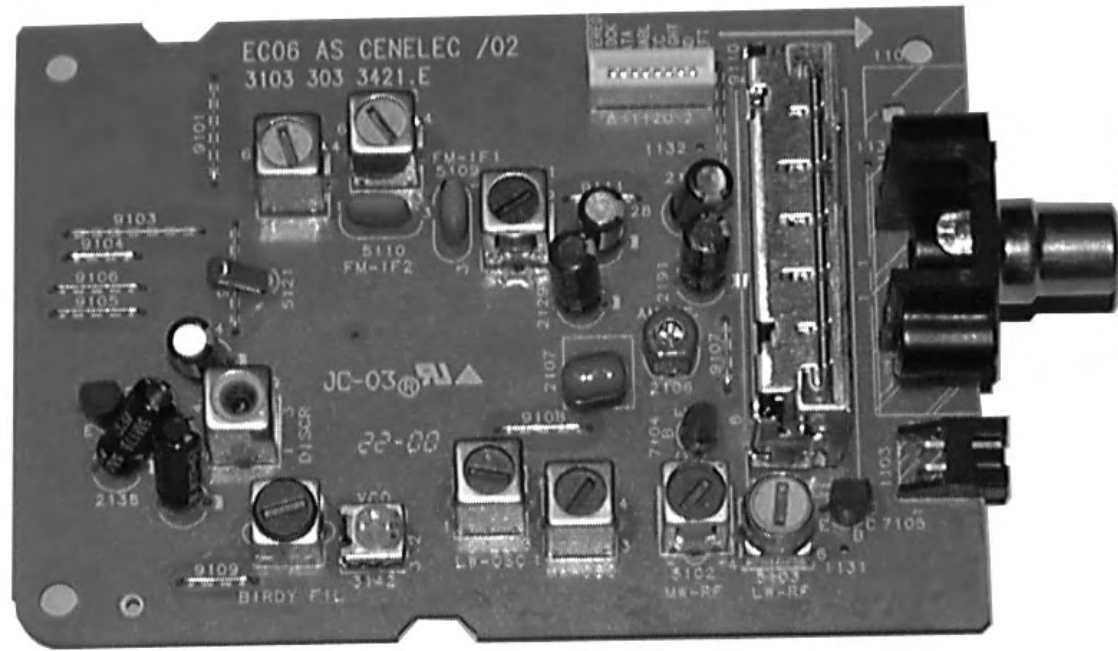
6103	5322 130 34337	BAV99
6105	4822 130 83075	HN1V02H
6106	4822 130 83757	BAS216
6107	9340 386 90115	BZX284-C11
6120	4822 130 83757	BAS216
6130	4822 130 82833	1SV228
6131	4822 130 82833	1SV228

TRANSISTORS

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

INTEGRATED CIRCUITS

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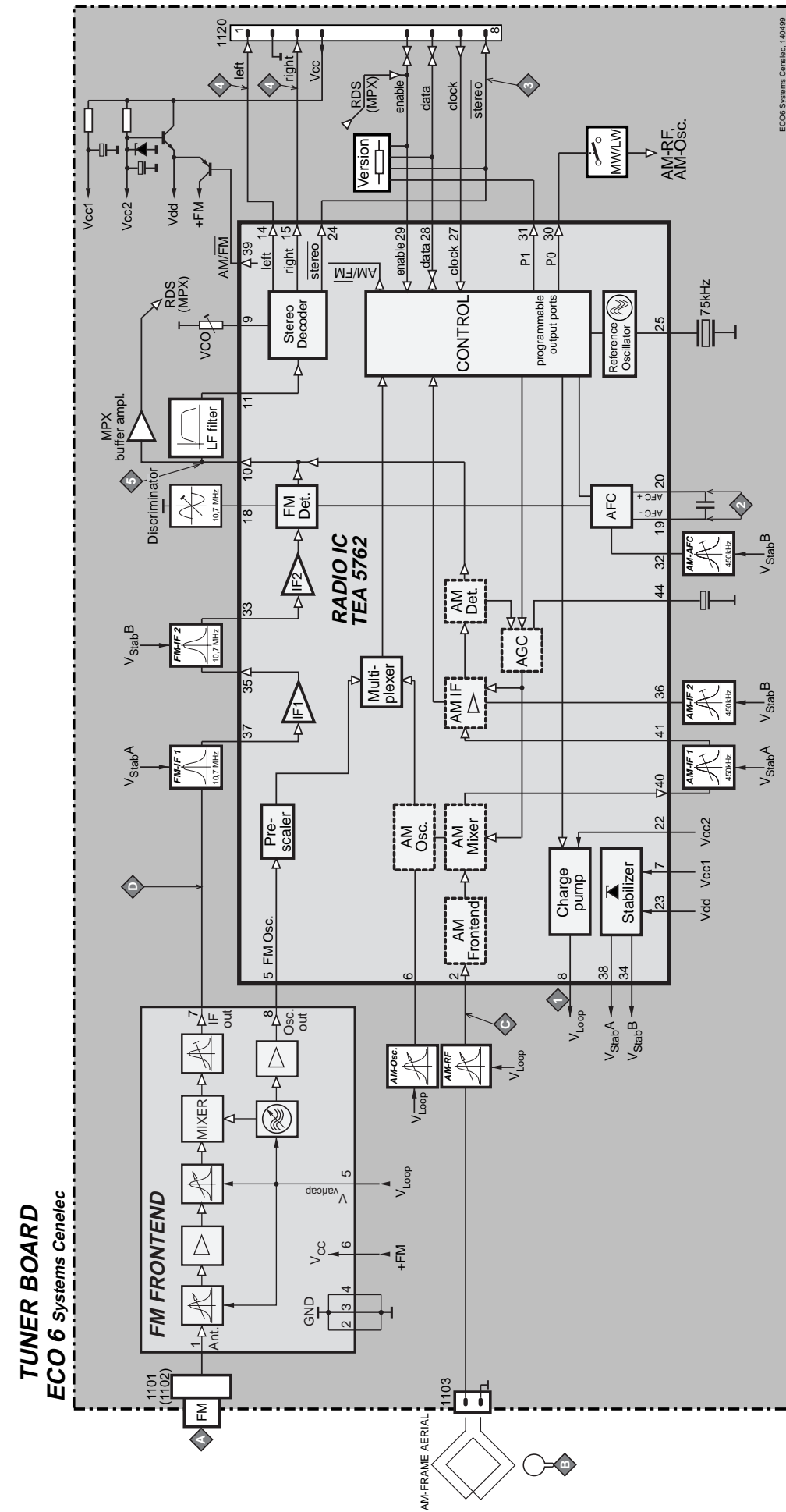
ECO6 Tuner Board

version: **SYSTEMS CENELEC**

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- Blockdiagram.....7B-1
- Schematic Diagram.....7B-2
- Component Layout.....7B-3
- Adjustment table7B-3
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BLOCK DIAGRAM



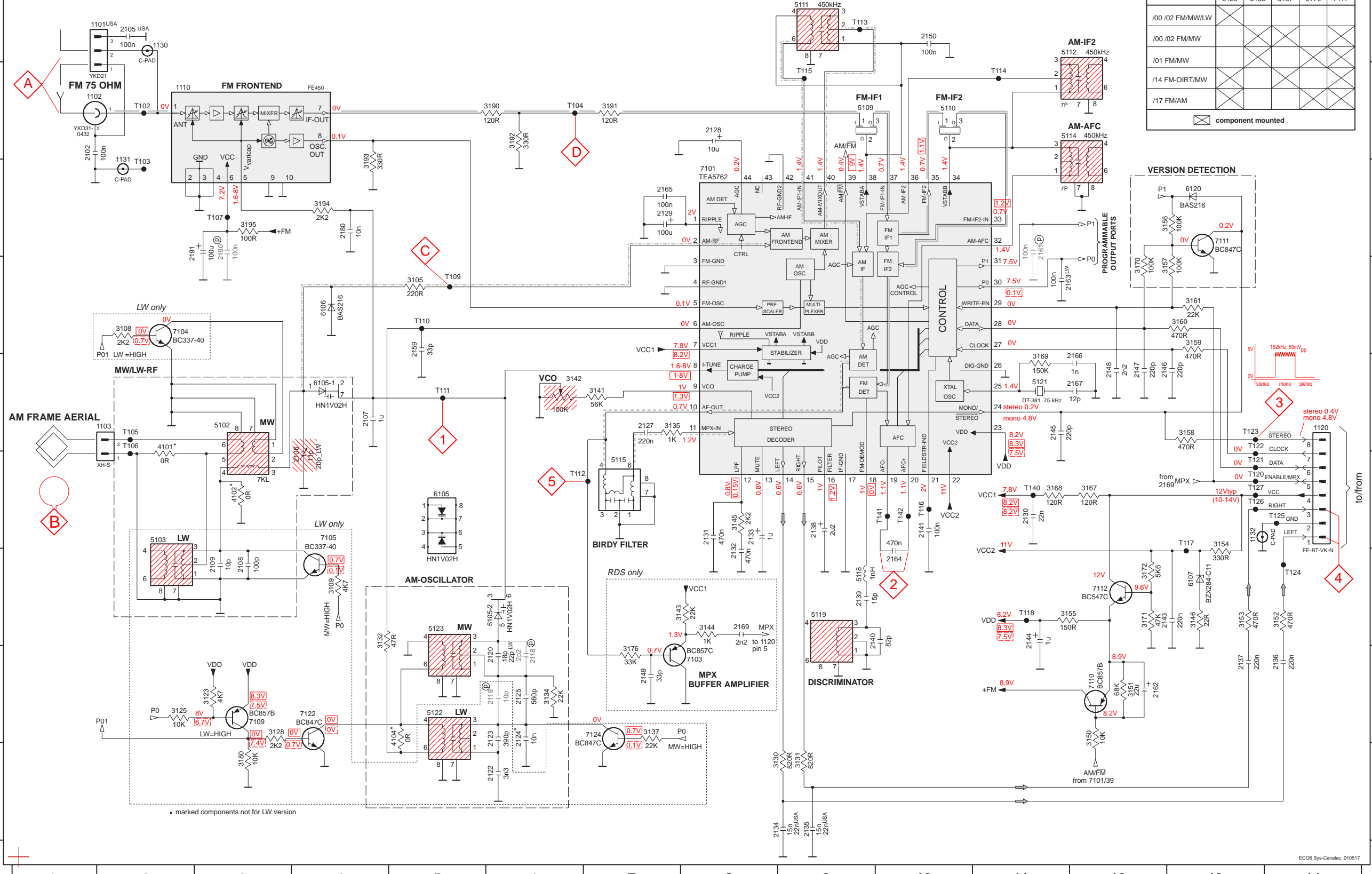
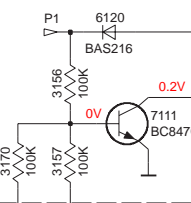
TUNER BOARD ECO6 / SYSTEMS-CENELEC

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

VERSION DETECTION



- 1101 A2
- 1102 B1
- 1103 E5
- 1110 B4
- 1120 E14
- 1130 A2
- 1131 C2
- 1132 F13
- 1132 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 B7
- 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 G4
- 3123 H3
- 3125 H2
- 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
- 6105-1 E4
- 6105-2 G6
- 6106 D4
- 6107 G13
- 6120 C13
- 7101 C8
- 7103 H8
- 7104 D2
- 7105 F4
- 7109 H3
- 7110 H12
- 7111 C13
- 7112 G12
- 7122 H4
- 7124 H7
- T102 B2
- T103 B2
- T104 B6
- T105 B6
- T106 B6
- T107 B6
- T109 C6
- T110 C6
- T111 C6
- T112 C6
- T113 C6
- T114 C6
- T115 C6
- T120 C6
- T121 C6
- T122 C6
- T123 C6
- T124 C6
- T125 C6
- T126 C6
- T127 C6
- T128 C6
- T129 C6
- T130 C6
- T131 C6
- T132 C6
- T133 C6
- T134 C6
- T135 C6
- T136 C6
- T137 C6
- T138 C6
- T139 C6
- T140 C6
- T141 C6
- T142 C6
- T143 C6
- T144 C6
- T145 C6
- T146 C6
- T147 C6
- T148 C6
- T149 C6
- T150 C6

LEGEND

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

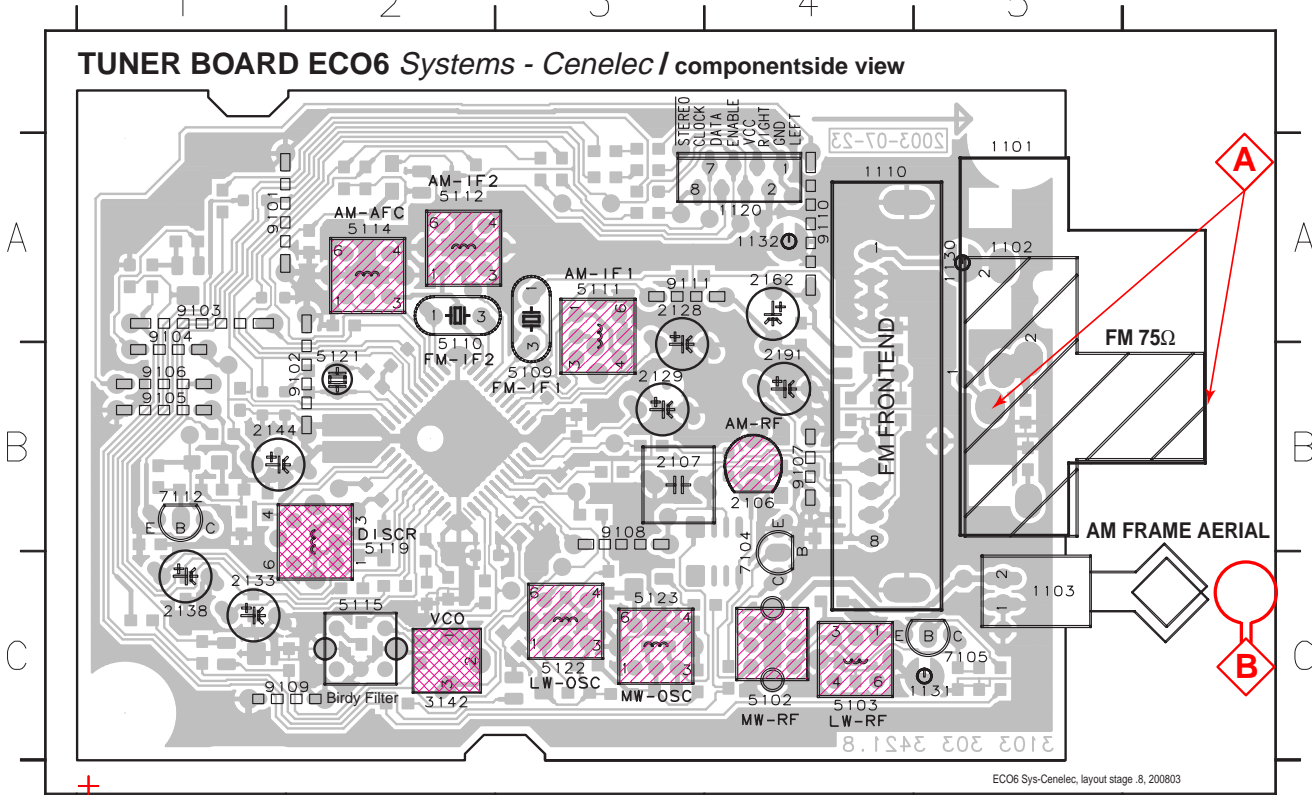
- SMD jumper
- 41xx
- OR

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

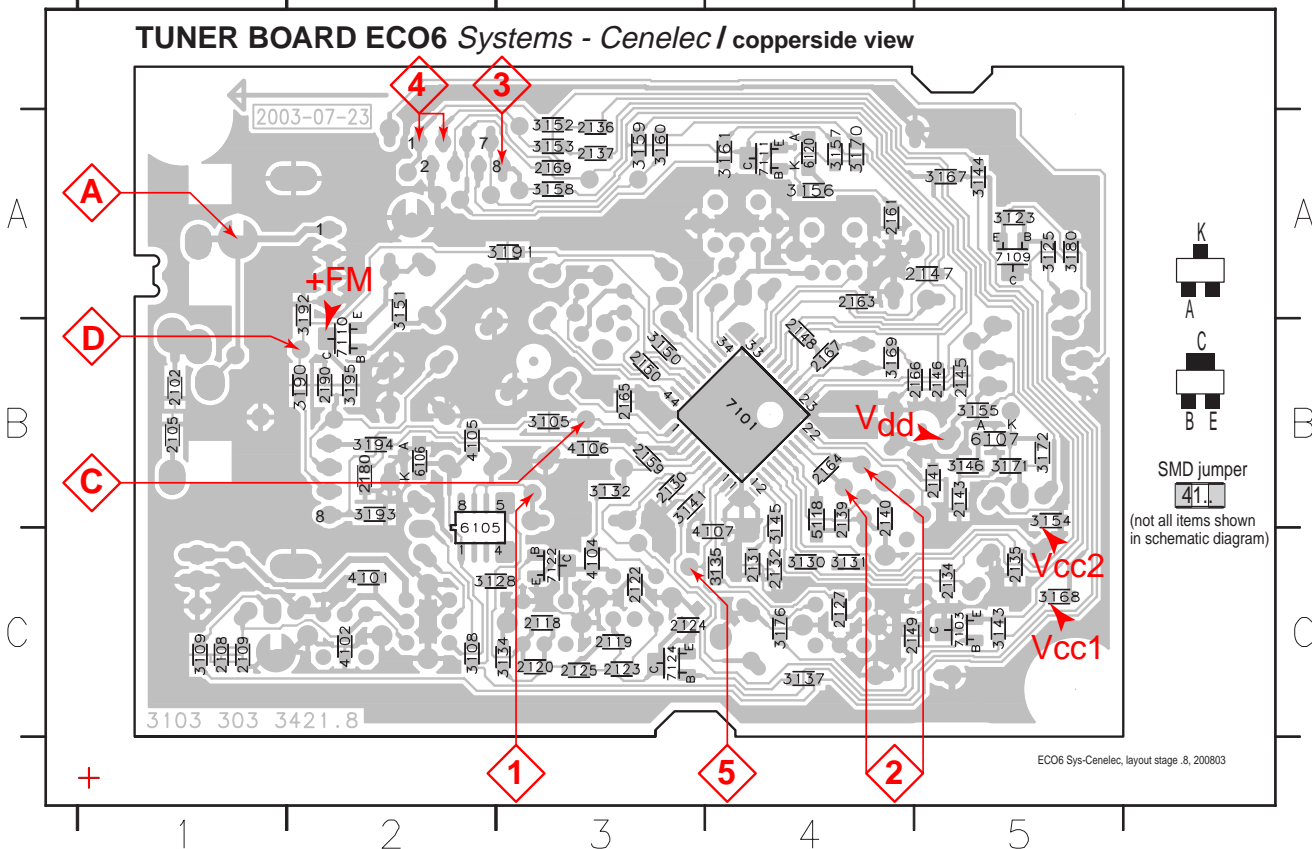
Signal path

- 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
VARICAP ALIGNMENT						
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
FM - IF						
FM	10.7MHz, 45mV continuous wave	D		5119	2	0mV ±3mV
FM - VCO						
FM	98MHz, 1mV continuous wave	A	98MHz	3142	3	152kHz ±1kHz ¹⁾
FM RF (channel separation) Note: The FM-frontend unit has already been adjusted by the factory and needs therefore no further adjustments for service purposes.						
FM	98MHz, 1mV 90% Left + 9% pilot mod=1kHz	A	98MHz	IF coil inside FM frontend 1110	4	right channel min.
AM IF						
MW	450kHz connect pin 6 of IC 7101 (AM Osc.) with 3.3kΩ to Vcc	C		5111	5	
				5112		
AM AFC MW		C		5114	2	0mV ±2mV
AM RF³⁾						
MW	1494kHz	B		1494kHz	5	
	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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MAINS BOARD

TABLE OF CONTENTS

Brief introduction	8-1
Mains Socket - Circuit diagram & Component layout	8-1
Mains Board - Component layout	8-2
Mains Board - Chip layout	8-3
Mains Board - Circuit diagram	8-4
Electrical parts list	8-5

Brief introduction of the Mains Board

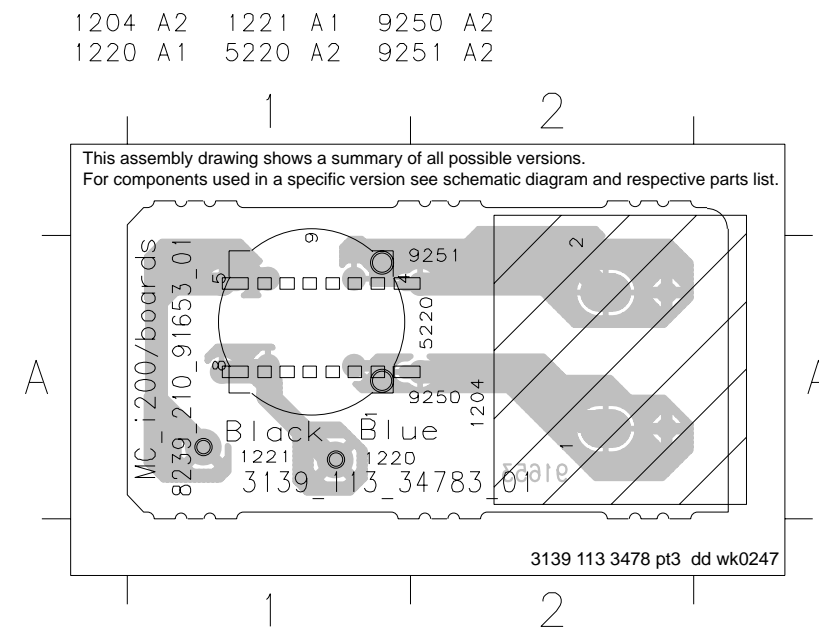
ECO Power

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.

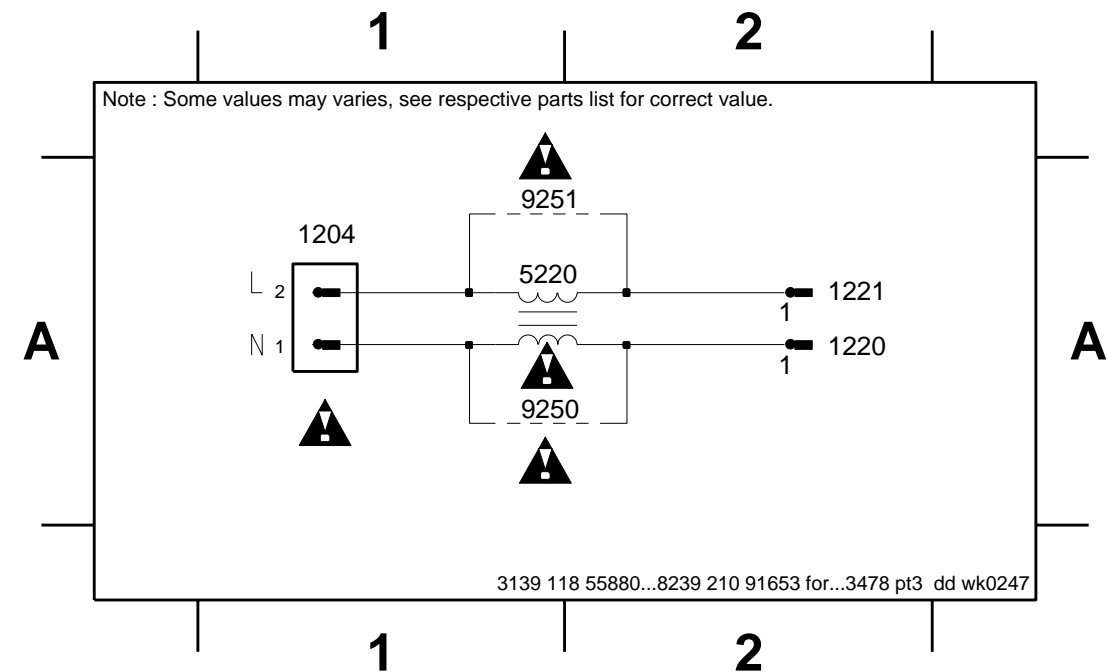
The Mains transformer provides the following:

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

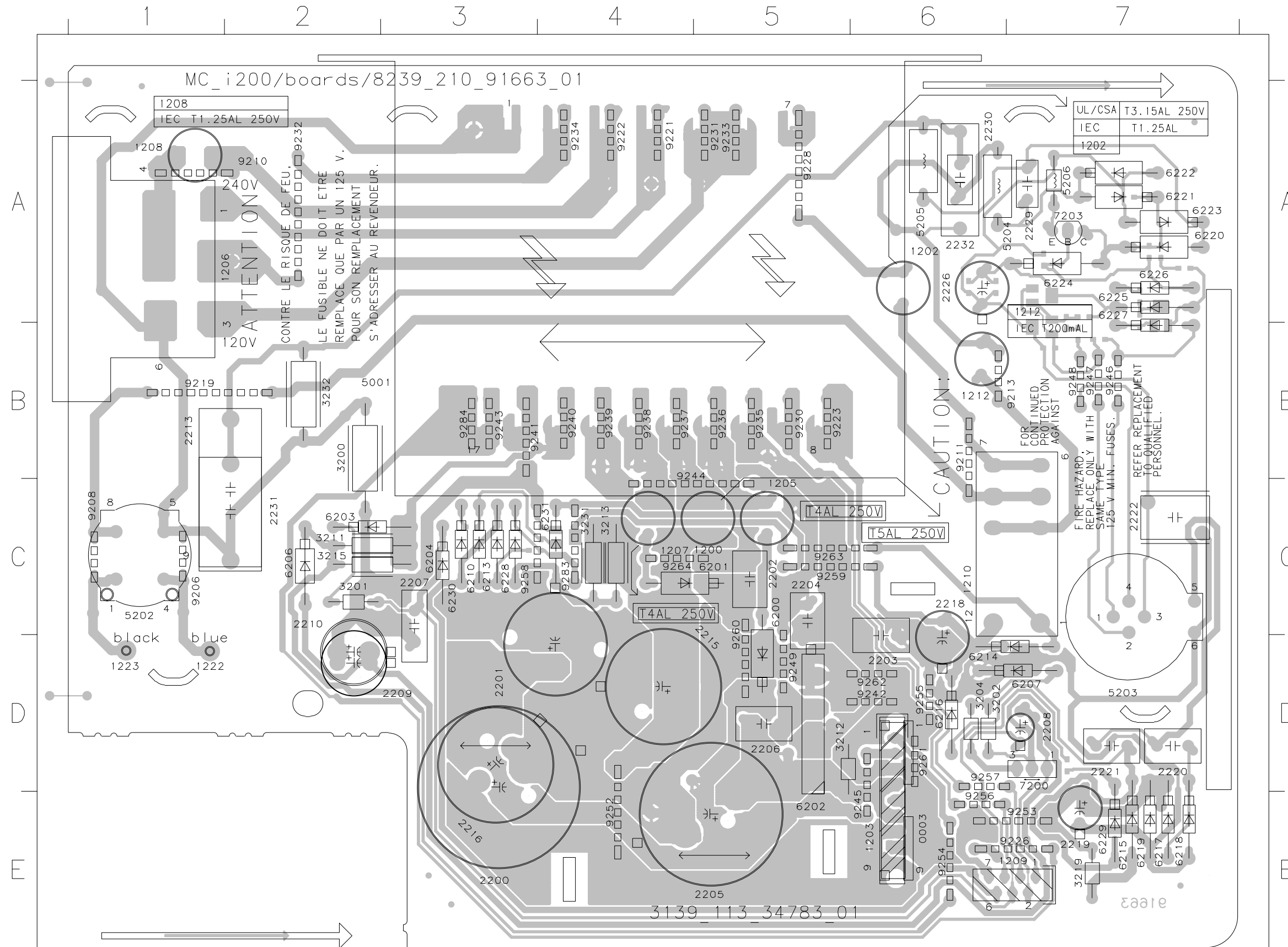
MAINS SOCKET - CIRCUIT DIAGRAM & COMPONENT LAYOUT



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



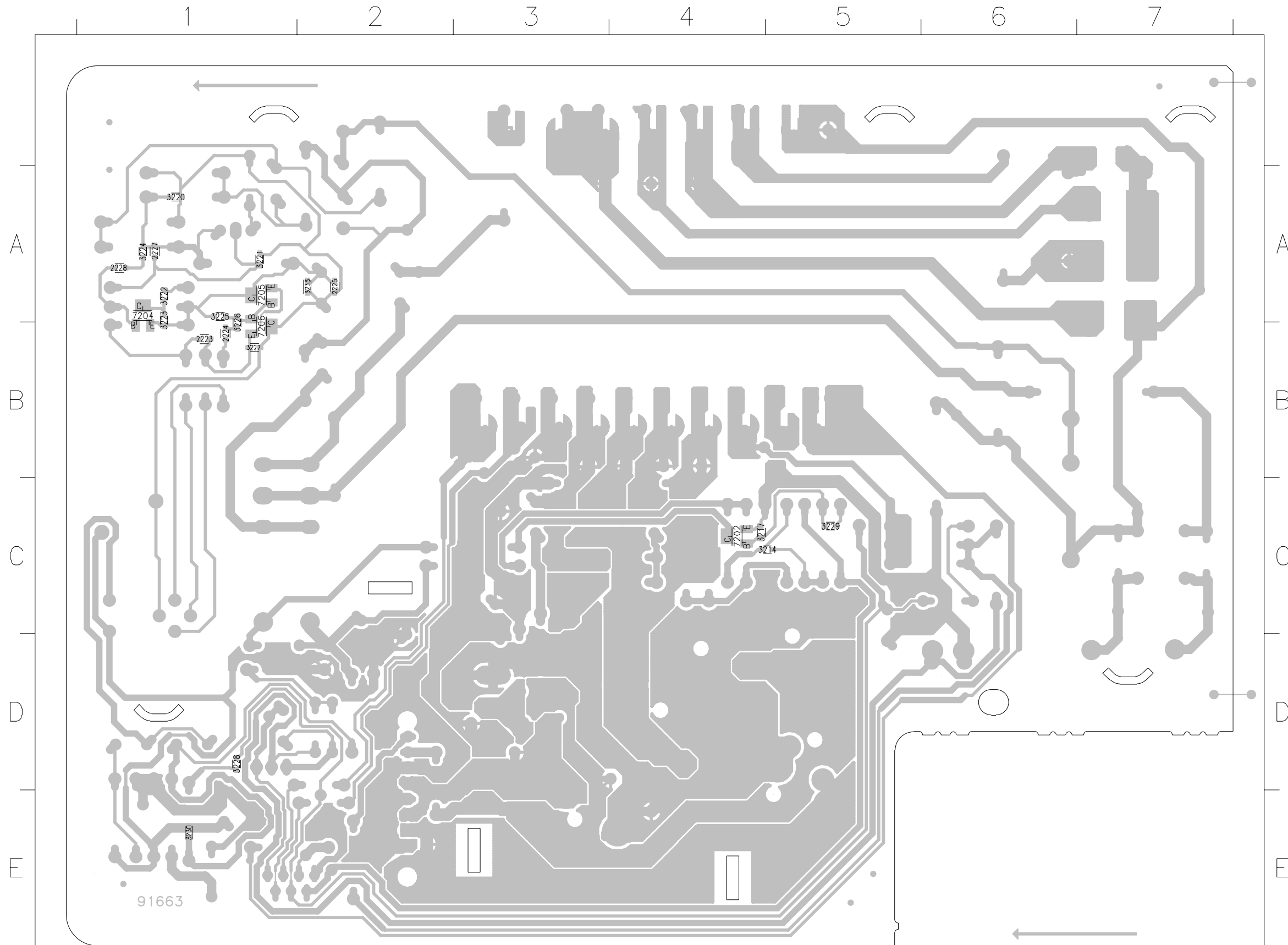
MAINS BOARD - COMPONENT LAYOUT



This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list. 3139 113 3478 pt3 dd wk0247

000	F6
003	E6
009	A4
010	A4
011	A4
012	A4
013	A4
014	A4
015	A4
016	A4
017	A4
018	A4
019	A4
020	A4
021	A4
022	A4
023	A4
024	A4
025	A4
026	A4
027	A4
028	A4
029	A4
030	A4
031	A4
032	A4
033	A4
034	A4
035	A4
036	A4
037	A4
038	A4
039	A4
040	A4
041	A4
042	A4
043	A4
044	A4
045	A4
046	A4
047	A4
048	A4
049	A4
050	A4
051	A4
052	A4
053	A4
054	A4
055	A4
056	A4
057	A4
058	A4
059	A4
060	A4
061	A4
062	A4
063	A4
064	A4
065	A4
066	A4
067	A4
068	A4
069	A4
070	A4
071	A4
072	A4
073	A4
074	A4
075	A4
076	A4
077	A4
078	A4
079	A4
080	A4
081	A4
082	A4
083	A4
084	A4
085	A4
086	A4
087	A4
088	A4
089	A4
090	A4
091	A4
092	A4
093	A4
094	A4
095	A4
096	A4
097	A4
098	A4
099	A4
100	A4

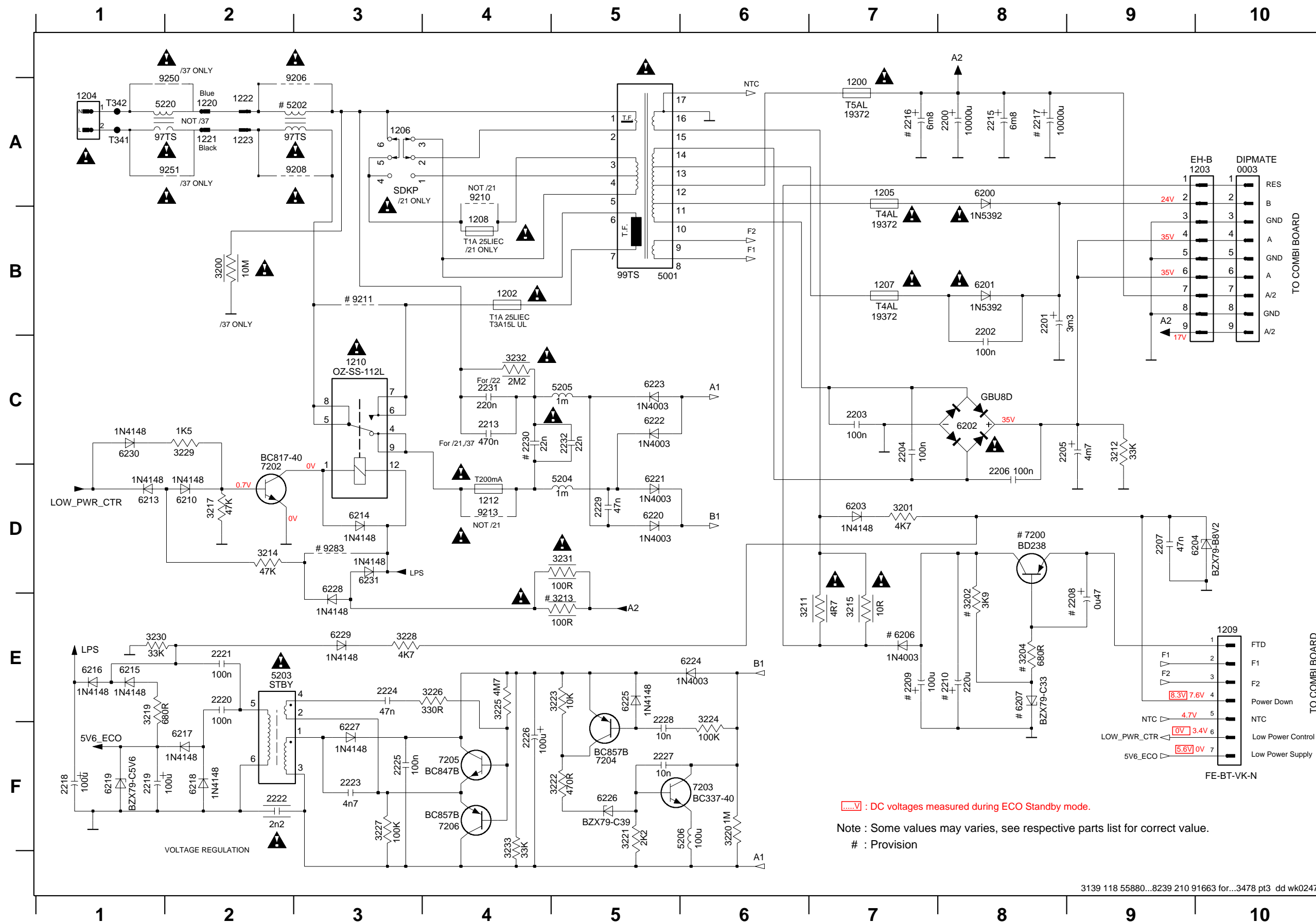
MAINS BOARD - CHIP LAYOUT



- 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
- 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 pt3 dd wk0247

MAINS BOARD - CIRCUIT DIAGRAM



- 0003 A10
- 1200 A7
- 1202 B4
- 1203 A9
- 1205 A7
- 1206 A3
- 1207 B7
- 1208 B4
- 1209 E10
- 1210 C3
- 1212 D4
- 1222 A2
- 1223 A2
- 2200 A8
- 2201 B8
- 2202 B8
- 2203 C7
- 2204 C7
- 2205 C8
- 2206 D8
- 2207 D9
- 2208 E9
- 2209 E7
- 2210 E8
- 2213 C4
- 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
- 6219 F1
- 6220 D5
- 6221 D5
- 6222 C5
- 6223 C5
- 6224 E6
- 6225 E5
- 6226 F5
- 6227 F3
- 6228 D3
- 6229 E3
- 6230 C1
- 6231 D3
- 7200 D8
- 7202 D2
- 7203 F6
- 7204 E5
- 7205 F4
- 7206 F4
- 9206 A3
- 9208 A3
- 9210 A4
- 9211 B3
- 9213 D4
- 9283 D3

[...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 250V	
1202	4822 071 51252	△ Fuse RAD LT 1,25A 250V/22/25	
1202	4822 252 51121	△ Fuse RAD LT 3,15A 250V	/37
1204	4822 265 31015	△ Mains Socket	/22/25
1204	2422 030 00328	△ Mains Socket	/37
1205	2422 086 10786	△ Fuse RAD LT 4A 250V	
1207	2422 086 10786	△ Fuse RAD LT 4A 250V	
1209	4822 267 10953	Flex Connector 7P	
1210	2422 132 07519	△ Relay 1P 12V 16A OZ-SS	

CAPACITORS

2200	4822 124 12012	4700uF 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 126 14559	47nF 50V	
2208	5322 124 41948	470nF 20% 50V	
2210	2020 012 93547	100uF 20% 63V	
2213	4822 126 13589	△ 470nF 275V	/37
2218	2020 012 93583	100uF 20% 25V	/22/25
2218	3198 029 31010	100uF 20% 25V	/37
2219	4822 124 23052	100uF 20% 16V	
2220	5322 121 42386	100nF 5% 63V	
2221	5322 121 42386	100nF 5% 63V	
2222	2020 554 90173	△ 2,2nF 20% 250V	
2223	4822 126 13193	4,7nF 10% 63V	
2224	3198 017 34730	47nF 16V	
2225	2238 586 59812	100nF +80/-20% 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	2222 338 22224	△ 220nF 20% 275V	/22/25
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	
3202	4822 116 52276	3k9 5% 0,5W	
3204	4822 116 52228	680R 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 30472	4k7 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	△ FIL MAINS 400uH 3A	/22/25

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	
6206	4822 130 31878	1N4003G	
6207	4822 130 34142	BZX79-C33	
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

7200	4822 130 40917	BD238	
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ELECTRICAL PARTS LIST - MAINS BOARD

TRANSISTORS & INTEGRATED CIRCUITS

7202	4822 130 42804	BC817-25
7203	4822 130 40855	BC337-40
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.

ETF8 TAPE MODULE

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Connector assignment	9-1
Tape Module Wiring	9-2
Tape Mechanism electronics	9-2
Tape adjustment / Check Table	9-3
HEF4094BT Functional Block & Application Logic Table ...	9-3
ETF8 Board layouts - Components & Chips	9-4
ETF8 Circuit diagram	9-5
Exploded Views & mechanical parts list	9-6
Electrical parts list	9-8

CONNECTORS ASSIGNMENTS:

CONNECTOR 1701

○	1	REC-L
○	2	REC-R
○	3	GND A
○	4	TAPE-L
○	5	+12V
○	6	TAPE-R
○	7	-CMOS

INTERCONNECTION TO AF BOARD

Record input left
Record input right
AF Ground
Playback output left
D.C. supply (+12V) for AF electronics
Playback output right
Negative d.c. supply (-9V) for controlling JFET J111

CONNECTOR 1703

○	1	GND M
○	2	+MOTOR

INTERCONNECTION TO AF BOARD

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

CONNECTOR 1706

○	1	CR_IN
○	2	AD1
○	3	+5V
○	4	GND _P
○	5	CLK
○	6	DATA
○	7	STROBE

INTERCONNECTION TO FRONT BOARD

Deck sensing Chrome Tape
Deck sensing switches output voltage / Deck EOT
DC supply (+5V) for deck status ADC network (ref to microprocessor's supply)
Control & Oscillator Ground
HEF4094BT shift register Clock line
HEF4094BT shift register Data line
HEF4094BT shift register Strobe line

CONNECTOR 1710

○	1	GND A
○	2	ERASE HEAD
○	3	R/P HD Rch
○	4	Common
○	5	R/P HD Lch

TAPE HEAD CONNECTIONS

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

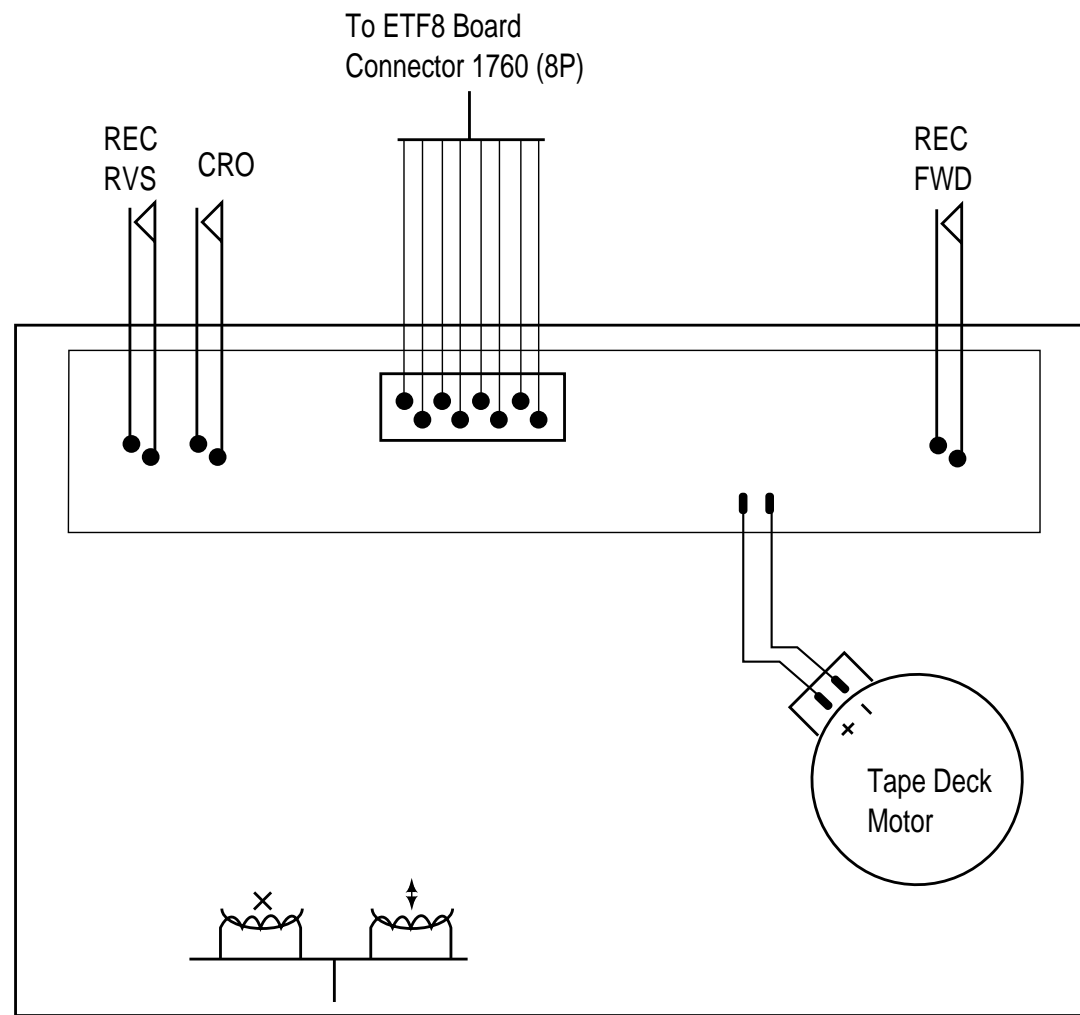
CONNECTOR 1760

○	1	Vcc 12V
○	2	PHOTO
○	3	GND_M
○	4	MODE
○	5	SoI_supply
○	6	CR_IN
○	7	REC FWD
○	8	REC REW

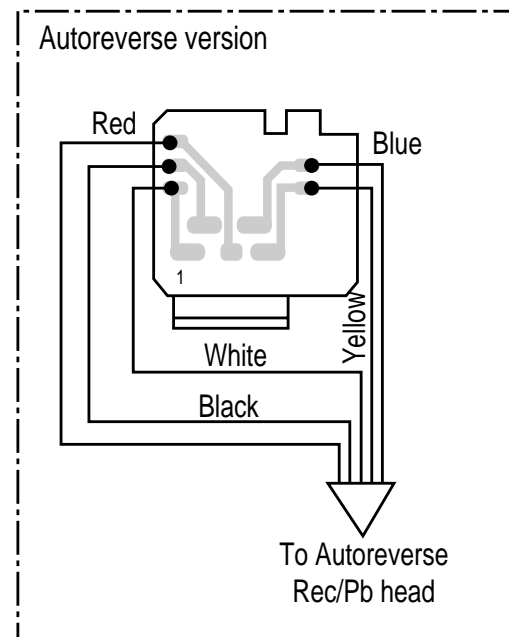
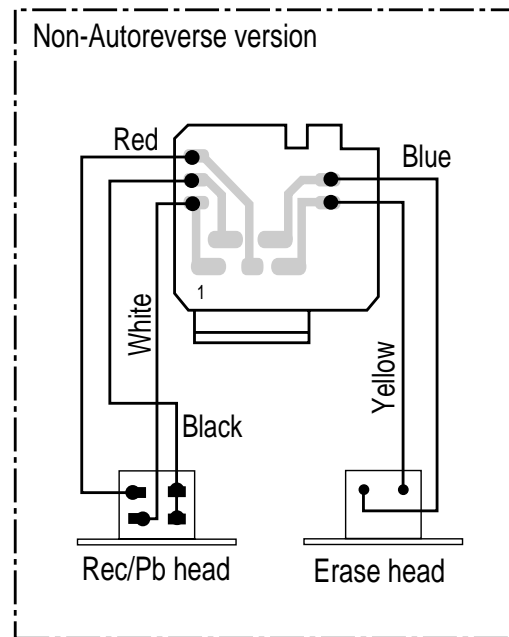
DECK CONTROL INTERFACE

Deck / Motor supply
Photo sensor output (tape movement indication)
Deck / Motor ground
Mode switch (head engagement)
Solenoid supply
Chrome tape detection switch
Record tab protection status switch (forward)
Record tab protection status switch (reverse)

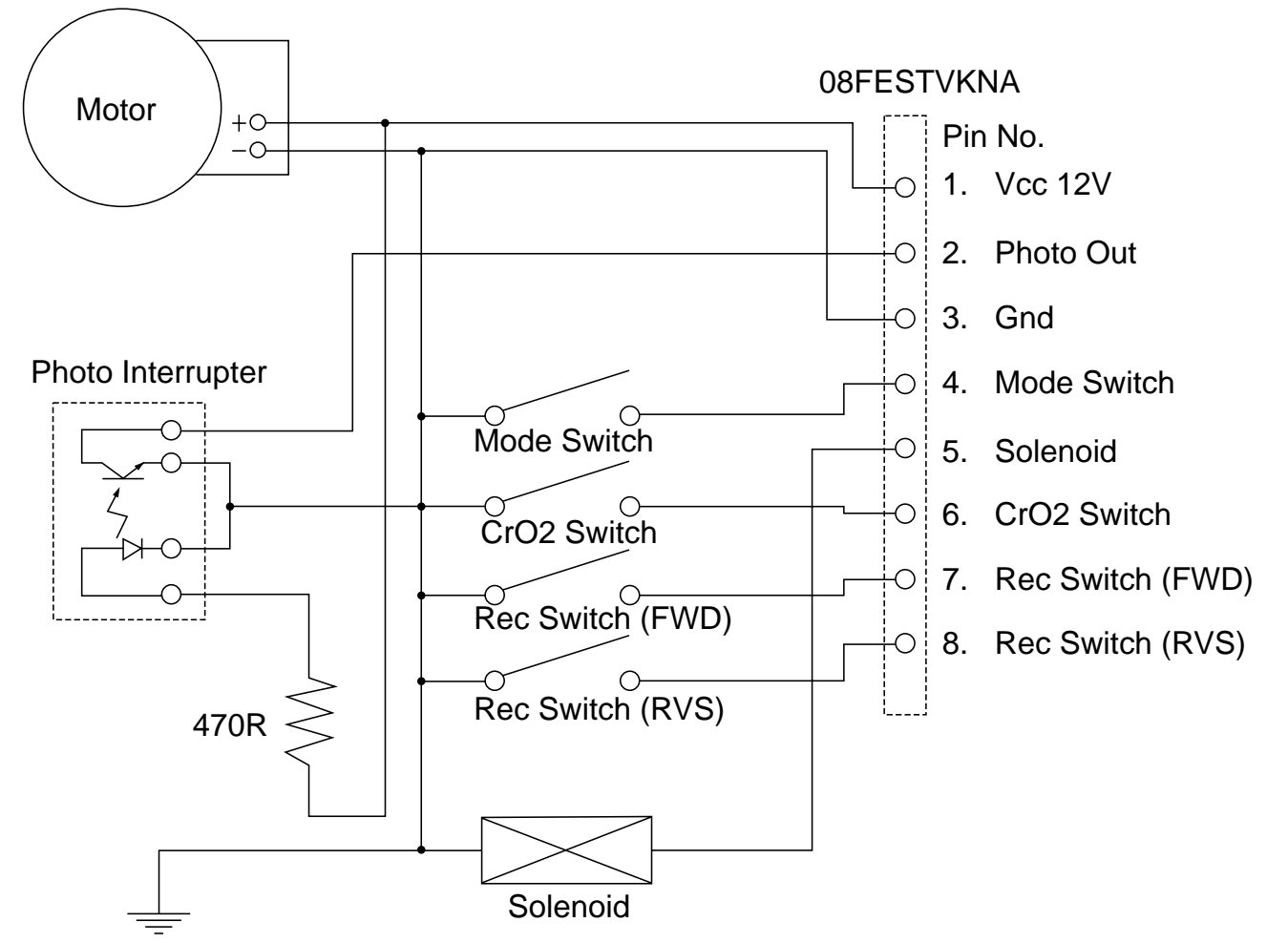
TAPE DECK WIRING



To ETF8 Board
Connector 1710 (5P)



TAPE MECHANISM ELECTRONICS



TAPE ADJUSTMENT & CHECK TABLE

	TEST CASSETTE	RECORDER MODE	MEASURE ON	READ ON	ADJUST	
					with	to
MOTOR SPEED	SBC420 3150Hz	PLAY		frequency counter	check	3150Hz +/- 2%
WOW & FLUTTER	SBC420 3150Hz	PLAY		W&F-meter	check	< 0.4 % DIN
ADJUST AZIMUTH	SBC420 10kHz	PLAY FWD	1 or 2 LEFT RIGHT	mV-meter	left hand screw	max. output level & left=right
		PLAY REV ^			right hand screw	
PLAYBACK FREQ. RESPONSE	SBC420	PLAY		mV-meter	check	limits see fig. 1 *
CHECK RECORD/PLAYBACK FREQUENCY AND DISTORTION						
Inject 8.85mV signals 100Hz, 250Hz, 1kHz, 10kHz, 12.5kHz via 3 or 4	SBC419A or SBC420	RECORD				
	RECORDED CASSETTE	PLAY	1 or 2 LEFT RIGHT	mV-meter	check	limits see fig. 2 *
Inject 1kHz 28mV via 3 or 4	SBC419A or SBC420	RECORD				
	RECORDED CASSETTE	PLAY	1 or 2 LEFT RIGHT	THD-meter	check	< 3% *

SBC419A : 4822 397 30069
SBC420 : 4822 397 30071

^ For Auto-reverse version only
* If high frequencies are not within limits, decrease bias and re-measure.
If distortion is too high, increase bias and re-measure

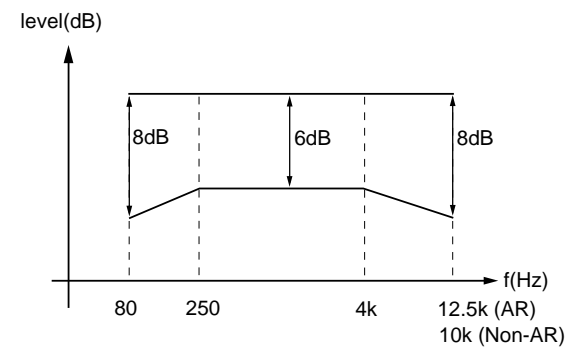


figure. 1

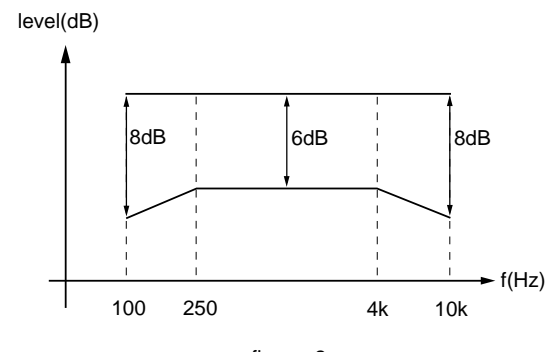
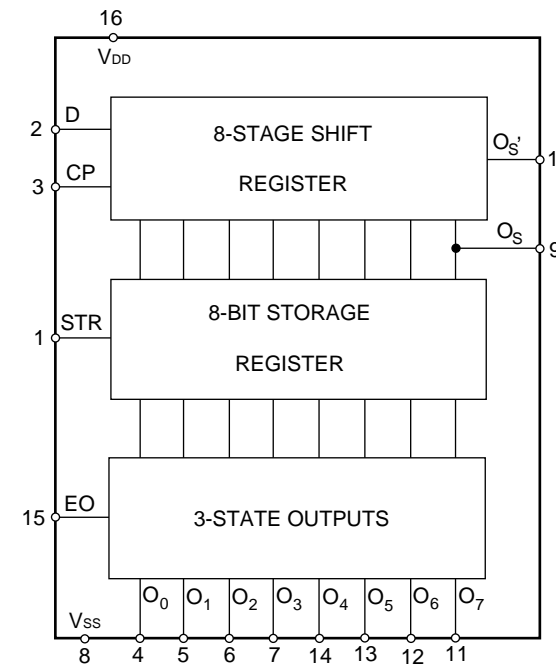


figure. 2

HEF4094BT FUNCTIONAL BLOCK DIAGRAM



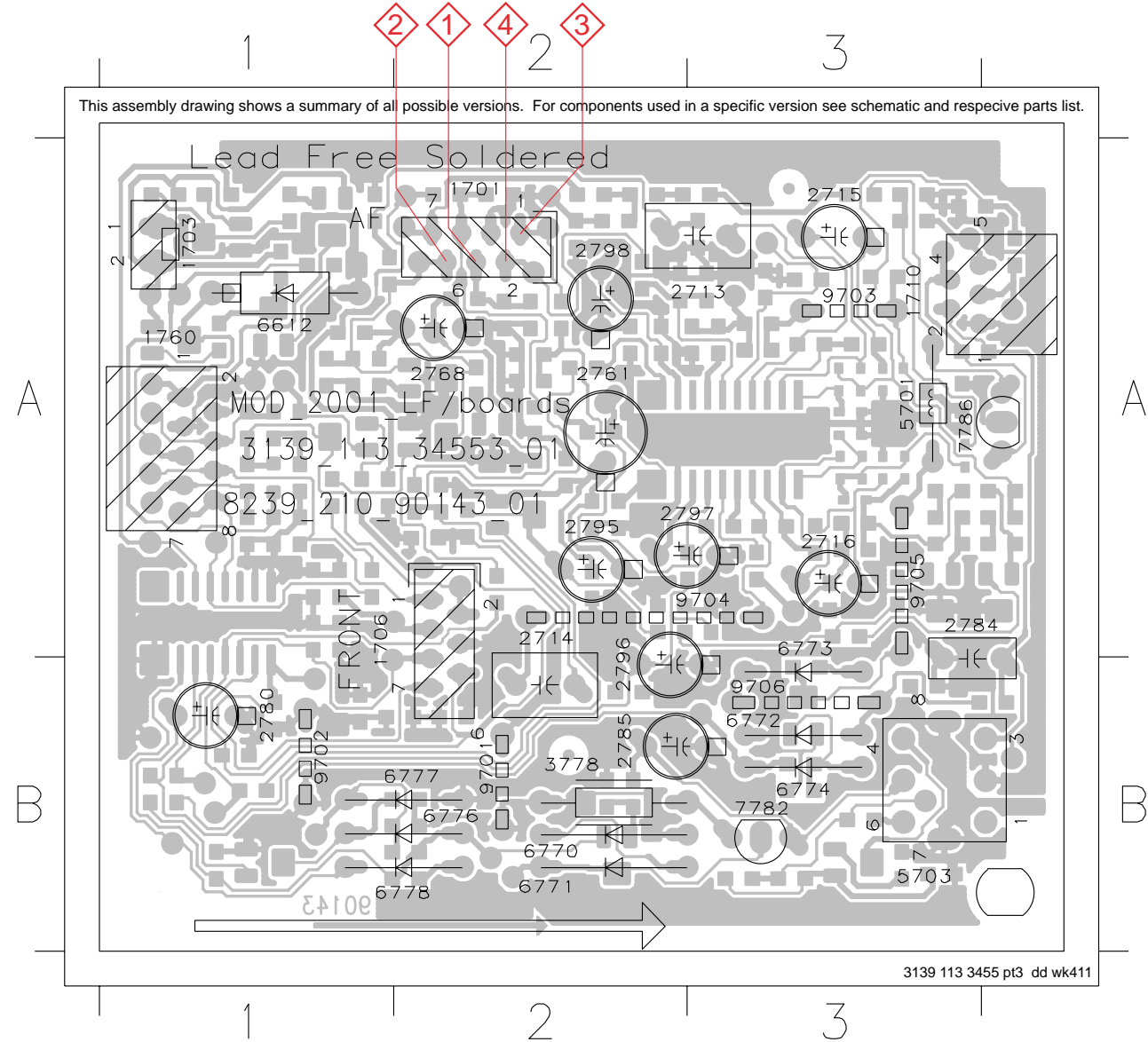
AF Control Logic State Table

State of Module	Control lines from HEF4094BT							
	O ₀	O ₁	O ₂	O ₃	O ₄	O ₅	O ₆	O ₇
	CR_SEL	REC	BIAS_OFF	CR_BIAS		SOL	MUTE_OFF	MOT
Stop	0	0	1	X	Not in used	Deck Mechanism Timing	0	0
Playback (Ferro)	0	0	1	0			1	1
Playback (Chrome)	1	0	1	1			1	1
Record (Ferro)	0	1	0	0			0	1
Record (Chrome)	1	1	0	1			0	1
FWD	0	0	1	X			0	1
REW	0	0	1	X			0	1

Note: 0 = Logic Low
1 = Logic High
X = Not applicable

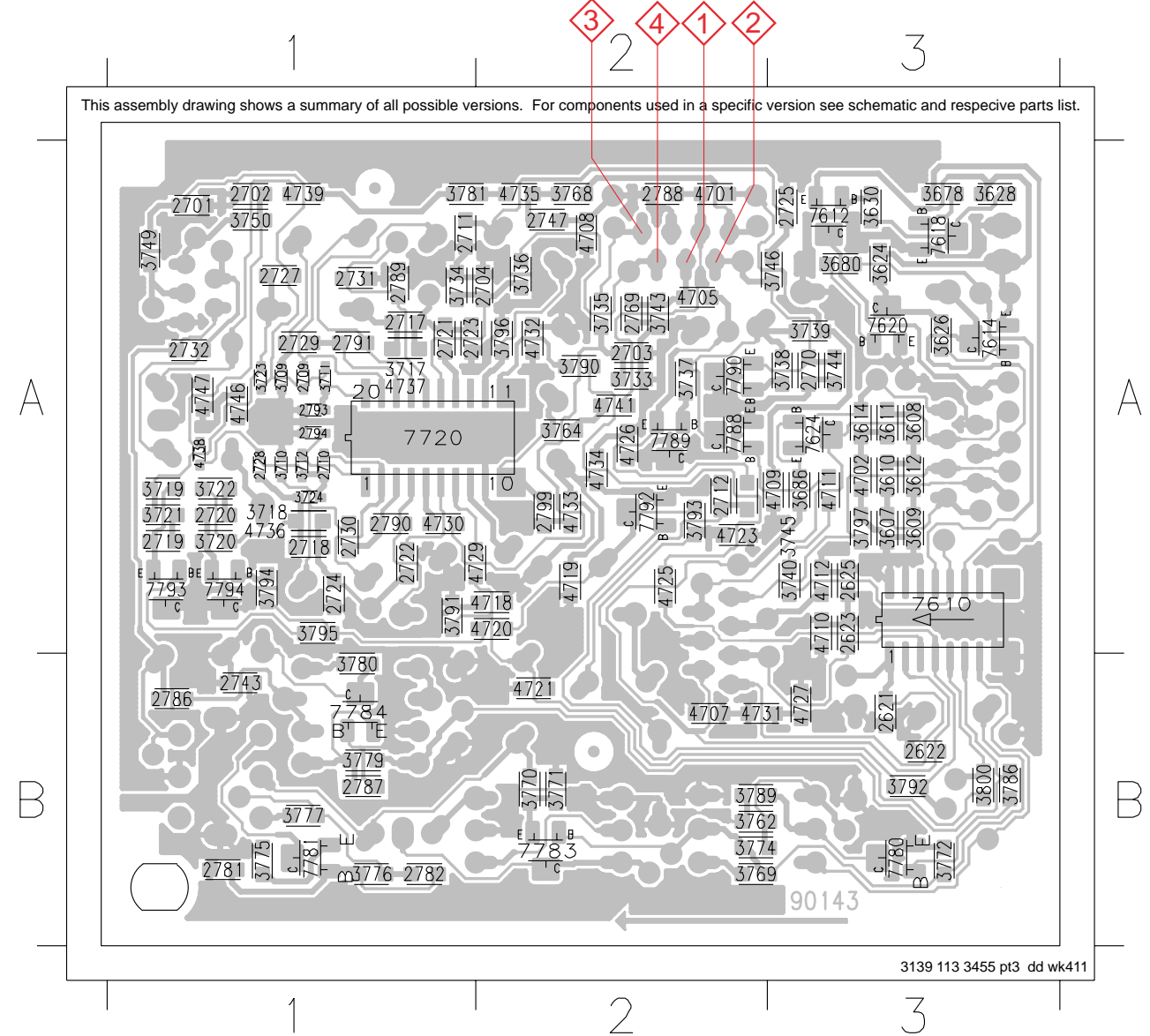
COMPONENT LAYOUT

1701 A2	2715 A3	2795 A2	6612 A1	6777 B2	9704 A3
1703 A1	2716 A3	2796 B2	6770 B2	6778 B2	9705 A3
1706 A1	2761 A2	2797 A2	6771 B2	7782 B3	9706 B3
1710 A3	2768 A2	2798 A2	6772 B3	7786 A3	
1760 A1	2780 B1	3778 B2	6773 A3	9701 B2	
2713 A3	2784 A3	5701 A3	6774 B3	9702 B1	
2714 A2	2785 B2	5703 B3	6776 B2	9703 A3	

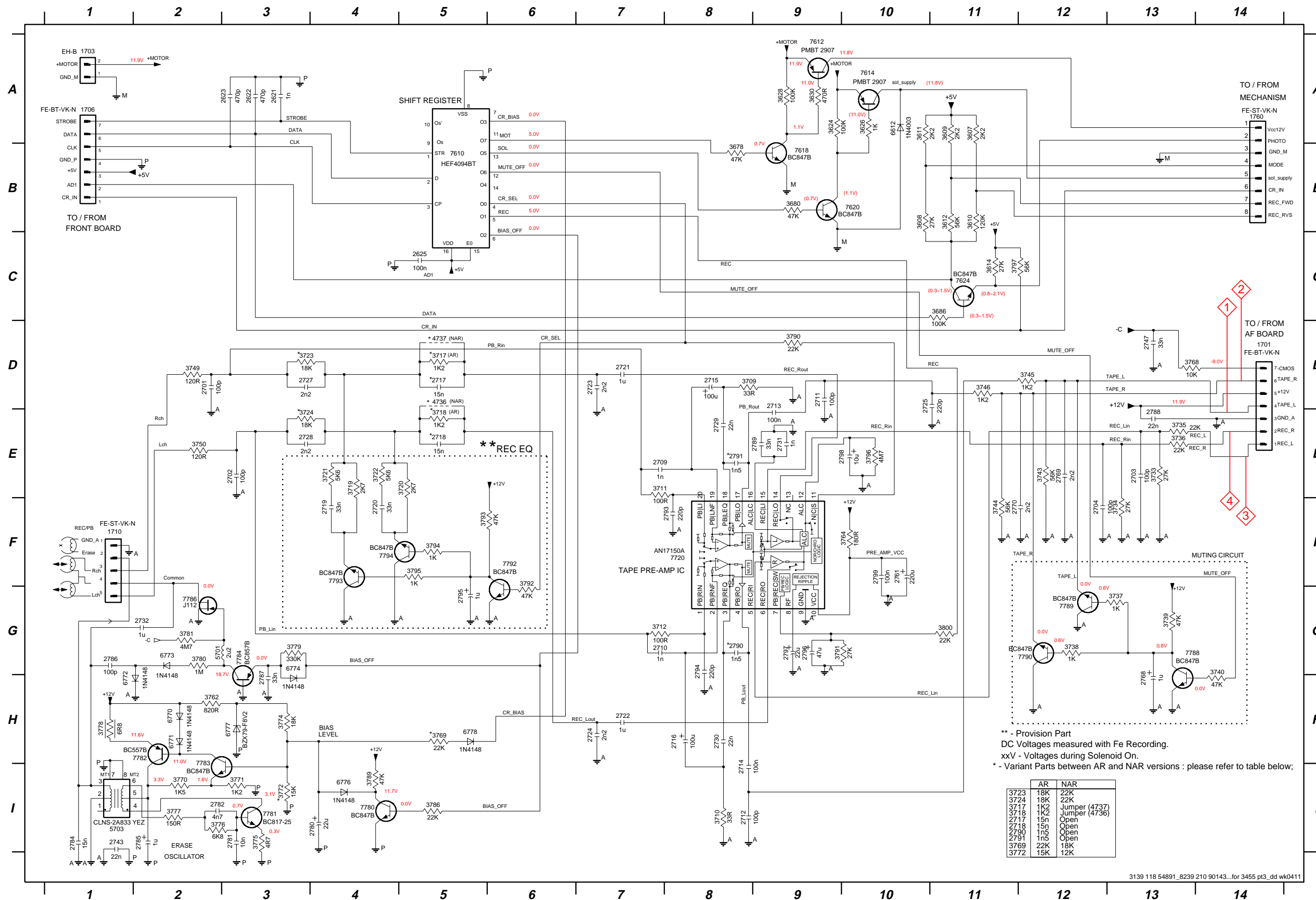


CHIP LAYOUT

2621 B3	2732 A1	3630 A3	3745 A3	3796 A2	4735 A2
2622 B3	2743 B1	3678 A3	3746 A3	3797 A3	4736 A1
2623 A3	2747 A2	3680 A3	3749 A1	3800 B3	4737 A1
2625 A3	2769 A2	3686 A3	3750 A1	4701 A2	4738 A1
2701 A1	2770 A3	3709 A1	3762 B2	4702 A3	4739 A1
2702 A1	2781 B1	3710 A1	3764 A2	4705 A2	4741 A2
2703 A2	2782 B1	3711 A1	3768 A2	4707 B2	4746 A1
2704 A2	2786 B1	3712 A1	3769 B2	4708 A2	4747 A1
2709 A1	2787 B1	3717 A1	3770 B2	4709 A3	7610 A3
2710 A1	2788 A2	3718 A1	3771 B2	4710 A3	7612 A3
2711 A1	2789 A1	3719 A1	3772 B3	4711 A3	7614 A3
2712 A2	2790 A1	3720 A1	3774 B2	4712 A3	7618 A3
2717 A1	2791 A1	3721 A1	3775 B1	4718 A2	7620 A3
2718 A1	2793 A1	3722 A1	3776 B1	4719 A2	7624 A3
2719 A1	2794 A1	3723 A1	3777 B1	4720 A2	7720 A1
2720 A1	2799 A2	3724 A1	3779 B1	4721 B2	7780 B3
2721 A1	3607 A3	3733 A2	3780 B1	4723 A2	7781 B1
2722 A1	3608 A3	3734 A1	3781 A1	4725 A2	7783 B2
2723 A1	3609 A3	3735 A2	3786 B3	4726 A2	7784 B1
2724 A1	3610 A3	3736 A2	3789 B2	4727 B3	7788 A2
2725 A3	3611 A3	3737 A2	3790 A2	4729 A1	7789 A2
2727 A1	3612 A3	3738 A3	3791 A1	4730 A1	7790 A2
2728 A1	3614 A3	3739 A3	3792 B3	4731 B2	7792 A2
2729 A1	3624 A3	3740 A3	3793 A2	4732 A2	7793 A1
2730 A1	3626 A3	3743 A2	3794 A1	4733 A2	7794 A1
2731 A1	3628 A3	3744 A3	3795 A1	4734 A2	



CIRCUIT DIAGRAM



- 1701 D14
- 1703 A1
- 1706 A1
- 1710 F1
- 1760 A14
- 2621 A3
- 2622 A3
- 2623 A3
- 2625 C5
- 2701 D2
- 2702 E3
- 2703 E13
- 2704 F12
- 2709 E7
- 2710 G7
- 2711 D9
- 2712 B8
- 2713 D9
- 2714 B8
- 2715 D8
- 2716 H8
- 2717 D5
- 2718 E5
- 2719 F4
- 2720 F4
- 2721 D7
- 2722 H7
- 2723 D7
- 2724 H7
- 2725 D10
- 2727 D3
- 2728 E3
- 2729 E8
- 2730 H8
- 2731 E9
- 2732 G2
- 2743 H1
- 2747 D13
- 2761 F10
- 2768 H13
- 2769 E12
- 2770 F11
- 2780 A4
- 2781 I3
- 2782 I2
- 2784 I1
- 2785 I2
- 2786 G1
- 2787 H3
- 2788 E13
- 2789 E9
- 2790 G8
- 2791 E8
- 2793 F8
- 2794 G8
- 2795 G5
- 2796 G9
- 2797 G9
- 2798 E9
- 2799 F10
- 3607 A11
- 3608 B10
- 3609 A11
- 3610 B11
- 3611 A10
- 3612 B11
- 3614 C11
- 3624 A9
- 3626 A10
- 3628 A9
- 3630 A9
- 3678 B8
- 3680 B9
- 3686 C11
- 3709 D8
- 3710 I8
- 3711 E7
- 3712 G7
- 3717 D5
- 3718 E5
- 3719 E4
- 3720 E5
- 3721 E4
- 3722 E4
- 3723 D3
- 3724 E3
- 3733 E13
- 3734 F13
- 3735 E13
- 3736 E13
- 3737 G13
- 3738 G12
- 3739 G13
- 3740 G14
- 3743 E12
- 3744 F11
- 3744 D12
- 3746 D11
- 3749 D2
- 3750 E2
- 3762 H2
- 3764 F10
- 3768 D13
- 3769 H5
- 3770 I2
- 3771 I3
- 3772 I3
- 3774 H3
- 3775 I3
- 3776 I2
- 3777 I2
- 3778 H1
- 3779 G3
- 3780 G2
- 3781 G2
- 3786 I5
- 3789 I4
- 3790 D9
- 3791 G9
- 3792 F6
- 3793 F5
- 3794 F5
- 3795 F5
- 3796 E10
- 3797 C11
- 3800 G11
- 4736 D5
- 4737 D5
- 5701 G2
- 5703 I1
- 5712 A10
- 5770 H2
- 5771 H2
- 5772 H1
- 5773 G2
- 5774 G3
- 5775 I4
- 5776 I4
- 5777 I4
- 5778 H1
- 5779 G3
- 5780 G2
- 5781 G2

** - Provision Part
 DC Voltages measured with Fe Recording.
 xxV - Voltages during Solenoid On.
 * - Variant Parts between AR and NAR versions : please refer to table below;

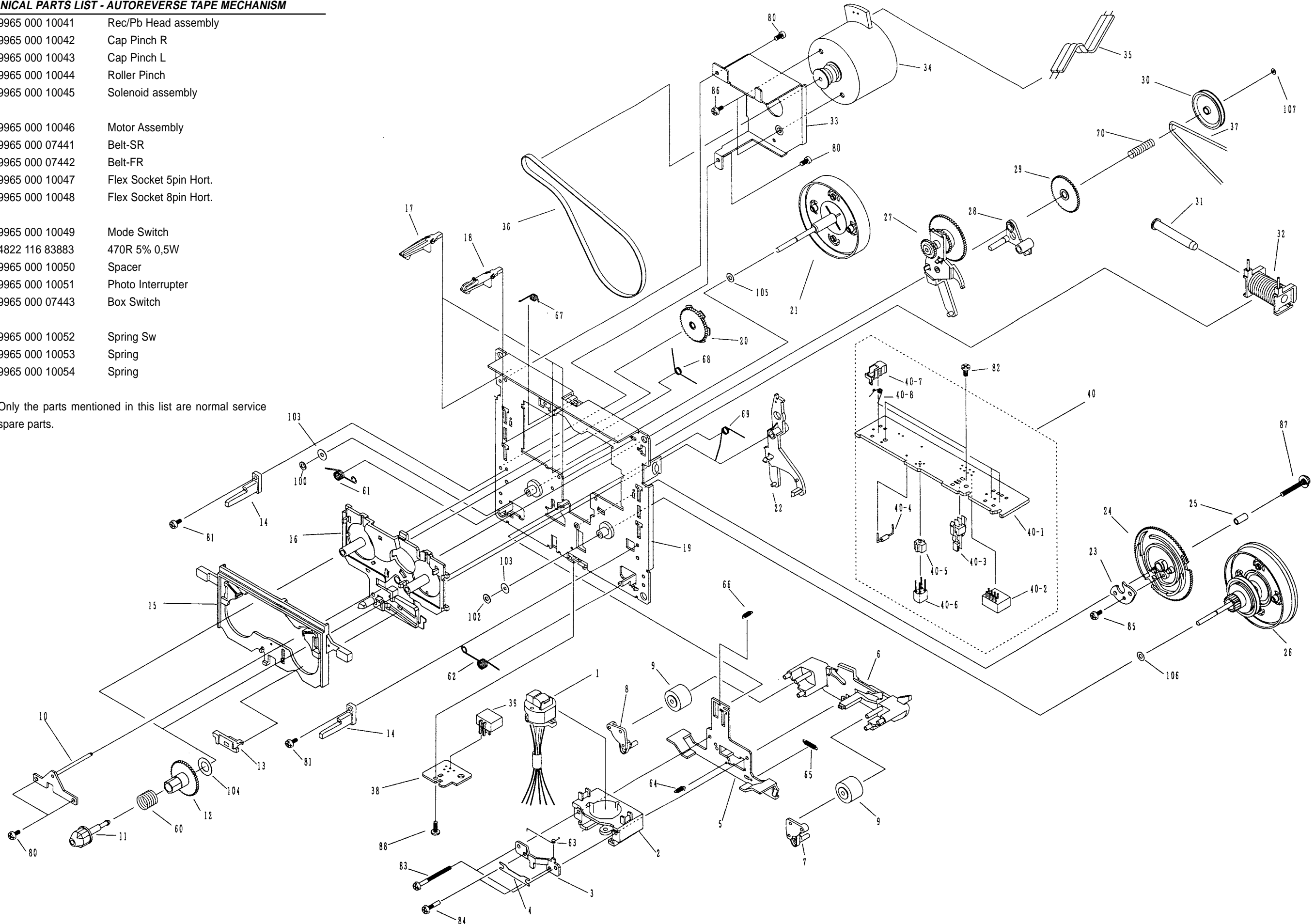
	AR	NAR
3723	18K	22K
3724	18K	22K
3717	1K2	Jumper (4737)
3718	1K2	Jumper (4736)
2717	15n	Open
2718	15n5	Open
2730	1n5	Open
2791	1n5	Open
3769	22K	18K
3772	15K	12K

AUTOREVERSE (AR) TAPE MECHANISM

MECHANICAL PARTS LIST - AUTOREVERSE TAPE MECHANISM

1	9965 000 10041	Rec/Pb Head assembly
7	9965 000 10042	Cap Pinch R
8	9965 000 10043	Cap Pinch L
9	9965 000 10044	Roller Pinch
32	9965 000 10045	Solenoid assembly
34	9965 000 10046	Motor Assembly
36	9965 000 07441	Belt-SR
37	9965 000 07442	Belt-FR
39	9965 000 10047	Flex Socket 5pin Hort.
40-2	9965 000 10048	Flex Socket 8pin Hort.
40-3	9965 000 10049	Mode Switch
40-4	4822 116 83883	470R 5% 0,5W
40-5	9965 000 10050	Spacer
40-6	9965 000 10051	Photo Interrupter
40-7	9965 000 07443	Box Switch
40-8	9965 000 10052	Spring Sw
61	9965 000 10053	Spring
62	9965 000 10054	Spring

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

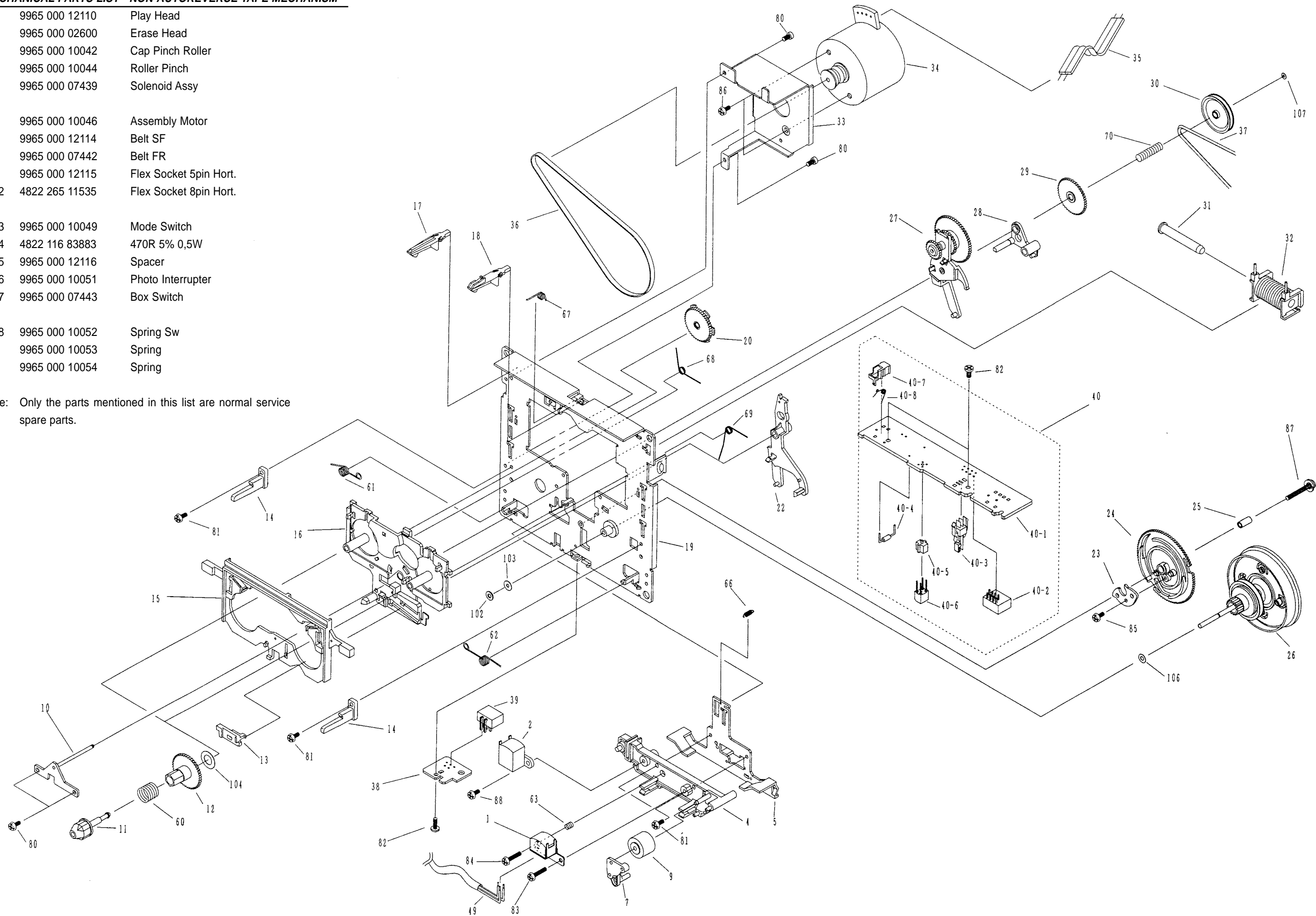


NON-AUTOREVERSE (NAR) TAPE MECHANISM

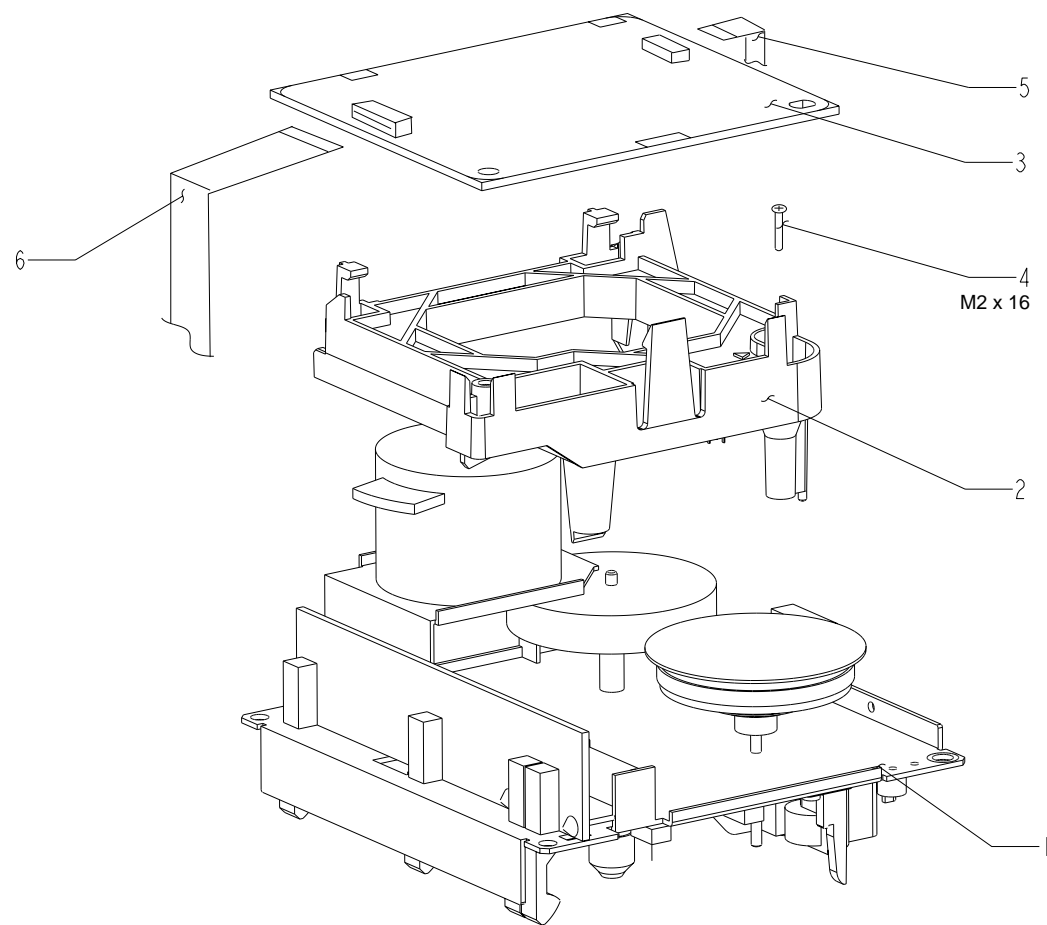
MECHANICAL PARTS LIST - NON-AUTOREVERSE TAPE MECHANISM

1	9965 000 12110	Play Head
2	9965 000 02600	Erase Head
7	9965 000 10042	Cap Pinch Roller
9	9965 000 10044	Roller Pinch
32	9965 000 07439	Solenoid Assy
34	9965 000 10046	Assembly Motor
36	9965 000 12114	Belt SF
37	9965 000 07442	Belt FR
39	9965 000 12115	Flex Socket 5pin Hort.
40-2	4822 265 11535	Flex Socket 8pin Hort.
40-3	9965 000 10049	Mode Switch
40-4	4822 116 83883	470R 5% 0,5W
40-5	9965 000 12116	Spacer
40-6	9965 000 10051	Photo Interrupter
40-7	9965 000 07443	Box Switch
40-8	9965 000 10052	Spring Sw
61	9965 000 10053	Spring
62	9965 000 10054	Spring

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



TAPE MODULE EXPLODED VIEW



MECHANICAL PARTS LIST - TAPE MODULE

1	3139 118 78740	AR Tape Mech. CRL4438
1	3139 118 79220	Non-AR Tape Mech. CFL4217
5	3139 110 35580	Flex Cable 5pin 40mm AD
6	3139 110 35590	Flex Cable 8pin 48mm AD

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

ELECTRICAL PARTS LIST - ETF8 BOARD

MISCELLANEOUS

1701	4822 267 10953	Flex Socket 7pin Vert.
1706	4822 267 10953	Flex Socket 7pin Vert.
1710	4822 267 10958	Flex Socket 5pin Hort.
1760	4822 265 11535	Flex Socket 8pin Hort.

CAPACITORS

2621	5322 126 11578	1nF 10% 50V
2621	5322 122 31647	1nF 10% 63V
2622	4822 126 13881	470pF 5% 50V
2622	5322 122 32268	470pF 5% 50V
2623	4822 126 13881	470pF 5% 50V
2623	5322 122 32268	470pF 5% 50V
2625	4822 126 14305	100nF 10% 16V
2625	2238 586 59812	100nF +80/-20% 50V
2701	4822 122 31765	100pF 2% 63V
2701	5322 122 32531	100pF 5% 50V
2702	4822 122 31765	100pF 2% 63V
2702	5322 122 32531	100pF 5% 50V
2703	4822 122 31765	100pF 2% 63V
2703	5322 122 32531	100pF 5% 50V
2704	4822 122 31765	100pF 2% 63V
2704	5322 122 32531	100pF 5% 50V
2709	5322 126 11578	1nF 10% 50V
2710	5322 126 11578	1nF 10% 50V
2711	4822 122 31765	100pF 2% 63V
2711	5322 122 32531	100pF 5% 50V
2712	4822 122 31765	100pF 2% 63V
2712	5322 122 32531	100pF 5% 50V
2713	5322 121 42386	100nF 5% 63V
2714	5322 121 42386	100nF 5% 63V
2715	4822 124 41584	100uF 20% 10V
2716	4822 124 41584	100uF 20% 10V
2717	3198 017 31530	15nF 50V
2717	4822 126 13188	15nF 5% 63V
2718	3198 017 31530	15nF 50V
2718	4822 126 13188	15nF 5% 63V
2721	3198 017 41050	1uF 10V
2721	4822 126 14043	1uF +80/-20% 16V
2722	3198 017 41050	1uF 10V
2722	4822 126 14043	1uF +80/-20% 16V
2723	4822 126 14238	2,2nF 50V
2724	4822 126 14238	2,2nF 50V
2725	4822 126 13883	220pF 5% 50V
2727	4822 126 14238	2,2nF 50V
2728	4822 126 14238	2,2nF 50V
2729	4822 126 14494	22nF 10% 25V
2729	2238 916 15641	22nF 10% 25V
2730	4822 126 14494	22nF 10% 25V
2730	2238 916 15641	22nF 10% 25V
2731	5322 126 11578	1nF 10% 50V
2731	5322 122 31647	1nF 10% 63V
2732	3198 017 41050	1uF 10V

2732	4822 126 14043	1uF +80/-20% 16V
2743	4822 126 14494	22nF 10% 25V
2743	2238 916 15641	22nF 10% 25V
2747	4822 126 14549	33nF 16V
2761	4822 124 40196	220uF 20% 16V
2768	4822 124 40756	1uF 20% 100V
2769	4822 126 14238	2,2nF 50V
2770	4822 126 14238	2,2nF 50V
2780	4822 124 81151	22uF 50V
2781	5322 126 11583	10nF 10% 50V
2781	4822 122 33177	10nF 20% 50V
2782	4822 126 13193	4,7nF 10% 63V
2784	4822 121 51305	15nF 10% 50V
2785	4822 124 21913	1uF 20% 63V
2786	4822 122 31765	100pF 2% 63V
2786	5322 122 32531	100pF 5% 50V
2787	4822 126 14549	33nF 16V
2788	4822 126 14494	22nF 10% 25V
2788	2238 916 15641	22nF 10% 25V
2789	4822 126 14549	33nF 16V
2790	4822 126 14247	1,5nF 50V
2791	4822 126 14247	1,5nF 50V
2793	4822 126 13883	220pF 5% 50V
2794	4822 126 13883	220pF 5% 50V
2796	4822 124 40433	47uF 20% 25V
2797	4822 124 81151	22uF 50V
2798	4822 124 21732	10uF 20% 25V
2799	4822 126 14305	100nF 10% 16V
2799	2238 586 59812	100nF +80/-20% 50V

RESISTORS

3607	4822 051 30222	2k2 5% 0,062W
3607	4822 117 11449	2k2 5% 0,1W
3608	4822 051 30273	27k 5% 0,062W
3609	4822 051 30222	2k2 5% 0,062W
3609	4822 117 11449	2k2 5% 0,1W
3610	4822 051 20124	120k 5% 0,1W
3611	4822 051 30222	2k2 5% 0,062W
3611	4822 117 11449	2k2 5% 0,1W
3612	4822 051 30563	56k 5% 0,062W
3614	4822 051 30273	27k 5% 0,062W
3624	4822 117 13632	100k 1% 0,062W
3624	4822 117 10837	100k 1% 0,1W
3626	4822 051 30102	1k 5% 0,062W
3628	4822 117 13632	100k 1% 0,062W
3628	4822 117 10837	100k 1% 0,1W
3630	4822 051 30471	470R 5% 0,062W
3678	4822 117 12925	47k 1% 0,063W
3680	4822 117 12925	47k 1% 0,063W
3686	4822 117 13632	100k 1% 0,062W
3686	4822 117 10837	100k 1% 0,1W
3709	4822 051 30339	33R 5% 0,062W

AR
AR

ELECTRICAL PARTS LIST - ETF8 BOARD

RESISTORS

3710	4822 051 30339	33R 5% 0,062W	
3711	4822 051 30101	100R 5% 0,062W	
3712	4822 051 30101	100R 5% 0,062W	
3717	4822 117 11817	1k2 1% 1/16W	AR
3717	4822 051 20122	1k2 5% 0,1W	AR
3718	4822 117 11817	1k2 1% 1/16W	AR
3718	4822 051 20122	1k2 5% 0,1W	AR
3723	4822 051 30183	18k 5% 0,062W	AR
3723	4822 051 30223	22k 5% 0,062W	Non-AR
3724	4822 051 30183	18k 5% 0,062W	AR
3724	4822 051 30223	22k 5% 0,062W	Non-AR
3733	4822 051 30273	27k 5% 0,062W	
3734	4822 051 30273	27k 5% 0,062W	
3735	4822 051 30223	22k 5% 0,062W	
3735	4822 051 20223	22k 5% 0,1W	
3736	4822 051 30223	22k 5% 0,062W	
3736	4822 051 20223	22k 5% 0,1W	
3737	4822 051 30102	1k 5% 0,062W	
3737	4822 051 10102	1k 2% 0,25W	
3738	4822 051 30102	1k 5% 0,062W	
3738	4822 051 10102	1k 2% 0,25W	
3739	4822 117 12925	47k 1% 0,063W	
3740	4822 117 12925	47k 1% 0,063W	
3743	4822 051 30563	56k 5% 0,062W	
3744	4822 051 30563	56k 5% 0,062W	
3745	4822 117 11817	1k2 1% 1/16W	
3745	4822 051 20122	1k2 5% 0,1W	
3746	4822 117 11817	1k2 1% 1/16W	
3746	4822 051 20122	1k2 5% 0,1W	
3749	4822 051 30121	120R 5% 0,062W	
3749	4822 051 20121	120R 5% 0,1W	
3750	4822 051 30121	120R 5% 0,062W	
3750	4822 051 20121	120R 5% 0,1W	
3762	4822 117 12968	820R 5% 0,62W	
3764	4822 051 30181	180R 5% 0,062W	
3764	4822 117 11448	180R 1% 0,1W	
3768	4822 051 30103	10k 5% 0,062W	
3768	4822 117 10833	10k 1% 0,1W	
3769	4822 051 30223	22k 5% 0,062W	AR
3769	4822 051 30183	18k 5% 0,062W	Non-AR
3770	4822 051 30152	1k5 5% 0,062W	
3771	4822 117 11817	1k2 1% 1/16W	
3771	4822 051 20122	1k2 5% 0,1W	
3772	4822 051 30153	15k 5% 0,062W	AR
3772	4822 051 30123	12k 5% 0,062W	Non-AR
3774	4822 051 30183	18k 5% 0,062W	
3775	4822 117 13608	4,7R 5% 0,063W	
3776	4822 051 30682	6k8 5% 0,062W	
3777	4822 051 30151	150R 5% 0,062W	
3777	4822 117 10353	150R 1% 0,1W	
3778	4822 052 10688	6R8 5% 0,33W	
3779	4822 051 30334	330k 5% 0,062W	

3780	4822 051 30105	1M 5% 0,062W	
3780	4822 051 20105	1M 5% 0,1W	
3781	4822 051 30475	4M7 5% 0,062W	
3786	4822 051 30223	22k 5% 0,062W	
3786	4822 051 20223	22k 5% 0,1W	
3789	4822 117 12925	47k 1% 0,063W	
3790	4822 051 30223	22k 5% 0,062W	
3790	4822 051 20223	22k 5% 0,1W	
3791	4822 051 30273	27k 5% 0,062W	
3796	4822 051 30475	4M7 5% 0,062W	
3797	4822 051 30563	56k 5% 0,062W	
3800	4822 051 30223	22k 5% 0,062W	
3800	4822 051 20223	22k 5% 0,1W	
4701	4822 051 30008	0R Jumper 0603	
4702	4822 051 30008	0R Jumper 0603	
4705	4822 051 30008	0R Jumper 0603	
4707	4822 051 30008	0R Jumper 0603	
4708	4822 051 30008	0R Jumper 0603	
4709	4822 051 30008	0R Jumper 0603	
4710	4822 051 30008	0R Jumper 0603	
4711	4822 051 30008	0R Jumper 0603	
4712	4822 051 30008	0R Jumper 0603	
4718	4822 051 30008	0R Jumper 0603	
4719	4822 051 30008	0R Jumper 0603	
4720	4822 051 30008	0R Jumper 0603	
4721	4822 051 30008	0R Jumper 0603	
4723	4822 051 30008	0R Jumper 0603	
4725	4822 051 30008	0R Jumper 0603	
4726	4822 051 30008	0R Jumper 0603	
4727	4822 051 30008	0R Jumper 0603	
4729	4822 051 30008	0R Jumper 0603	
4730	4822 051 30008	0R Jumper 0603	
4731	4822 051 30008	0R Jumper 0603	
4732	4822 051 30008	0R Jumper 0603	
4733	4822 051 30008	0R Jumper 0603	
4734	4822 051 30008	0R Jumper 0603	
4735	4822 051 30008	0R Jumper 0603	
4736	4822 051 30008	0R Jumper 0603	Non-AR
4737	4822 051 30008	0R Jumper 0603	Non-AR
4738	4822 051 30008	0R Jumper 0603	
4739	4822 051 30008	0R Jumper 0603	
4741	4822 051 30008	0R Jumper 0603	
4746	4822 051 30008	0R Jumper 0603	
4747	4822 051 30008	0R Jumper 0603	

COILS & FILTERS

5701	4822 157 62552	Coil 2,2uH 5%
5703	4822 156 20946	Osc Coil 100kHz

DIODES

6612	4822 130 31878	1N4003G
6770	4822 130 30621	1N4148

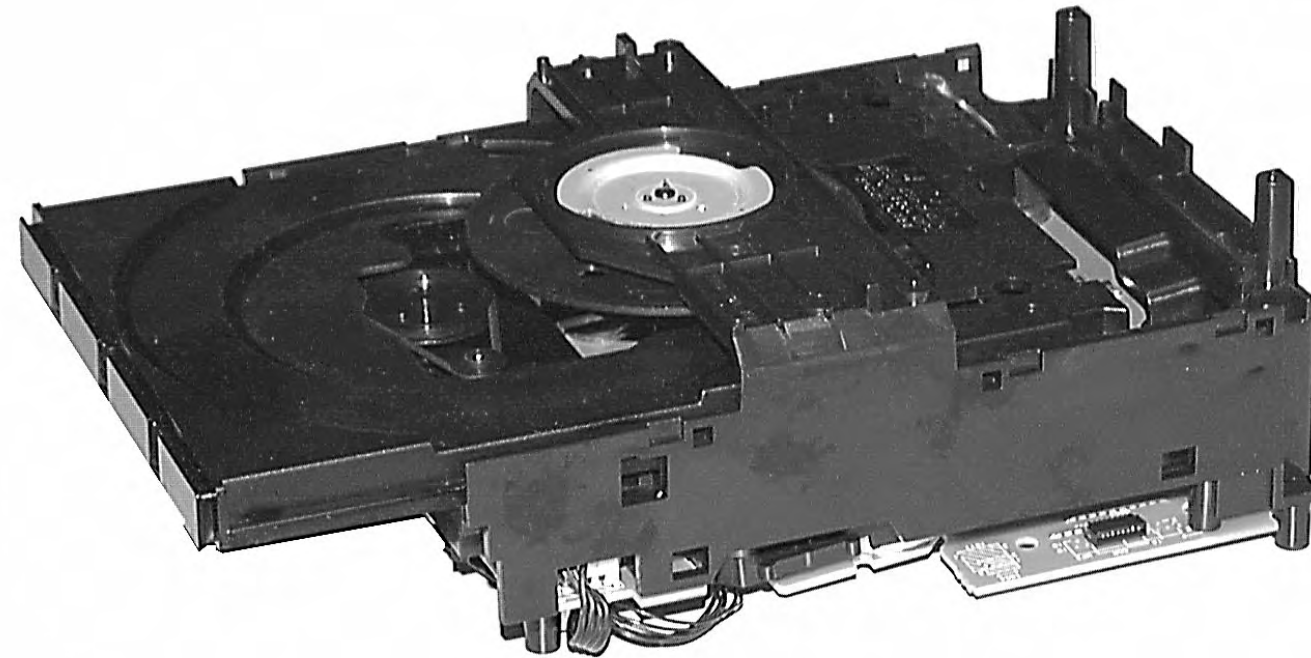
ELECTRICAL PARTS LIST - ETF8 BOARD

6771	4822 130 30621	1N4148
6772	4822 130 30621	1N4148
6773	4822 130 30621	1N4148
6774	4822 130 30621	1N4148
6776	4822 130 30621	1N4148
6777	4822 130 34382	BZX79-B8V2
6778	4822 130 30621	1N4148

TRANSISTORS & INTEGRATED CIRCUIT

7610	5322 209 11306	HEF4094BT
7612	4822 130 11201	PMBT2907
7614	4822 130 11201	PMBT2907
7618	5322 130 60159	BC847B
7620	5322 130 60159	BC847B
7624	5322 130 60159	BC847B
7720	9322 167 09668	AN17150ATA
7780	5322 130 60159	BC847B
7781	4822 130 42804	BC817-25
7782	4822 130 44568	BC557B
7783	5322 130 60159	BC847B
7784	4822 130 60373	BC857B
7786	9340 052 70126	FET SIG J112
7788	5322 130 60159	BC847B
7789	5322 130 60159	BC847B
7790	5322 130 60159	BC847B

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



Universal Loader

(Single Disc Tray Loader)

MP3 version, ICD03 PHONIC Layout stage .3

This document describes 2 versions, the version with the Mitsumi CD drive **MCD2** and the version with the Sanyo CD drive **DA12**.
The CD drive used in a specific application is stated on the type plate, located on one of the side walls of the changer module.



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Service hints

In case of symptom „skipping tracks“ perform following actions:

1. VERIFY THE COMPLAINT

PLAYABILITY CHECK

use CD-RW Printed Audio Disk7104 099 96611
 TR 3 (Fingerprint)
 TR 8 (600µ black dot) **maximum at 01:00**

- playback of these two tracks without audible disturbance playing time for: Fingerprint ≥10seconds
 Black dot from 00:50 to 01:10
- jump forward/backward (search) within a reasonable time

2. CLEAN THE LENS

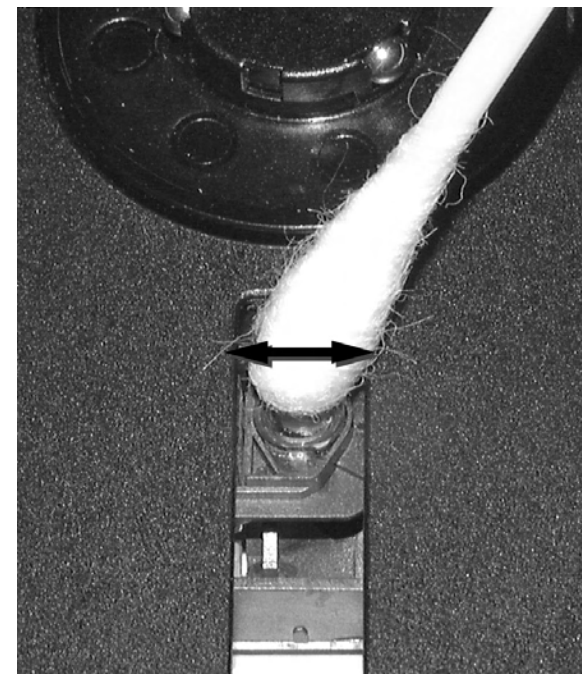
CD DRIVE – LENS CLEANING

Before touching the lens it is advised to clean the surface of the lens by blowing clean air over it in order to avoid that little particles make scratches on the lens.

Because the material of the lens is synthetic and coated with a special anti-reflectivity layer, cleaning must be done with a non-aggressive cleaning fluid. It is advised to use “Cleaning Solvent B4”, available with codenumber 4822 389 10026.

The actuator is a very precise mechanical component and may not be damaged in order to guarantee its full function. It is advised to clean the lens gently (don't press too hard) with a soft and clean cotton bud moistened with the special lens cleaner.

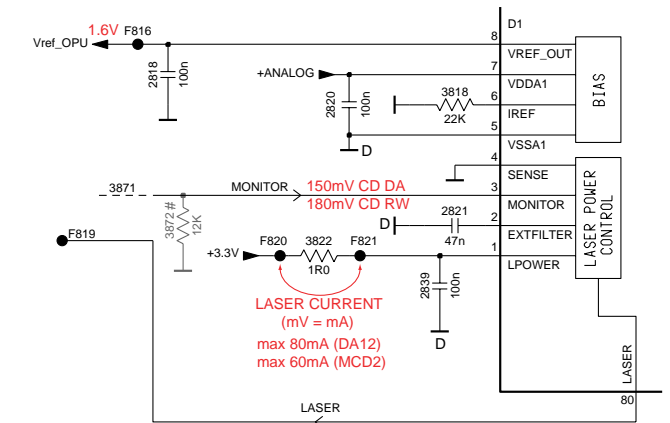
The direction of cleaning must be in the way as indicated in the picture below.



3. MEASURE THE LASER CURRENT

CD DRIVE – LASER CURRENT MEASUREMENT

The laser current can be measured as a voltage drop on resistor 3822. Typical value 50mV (MCD2 disc drive) respectively 55mV (DA12 disc drive).



If the value is higher than 60mV (MCD2 disc drive) respectively 80mV (DA12 disc drive) or the current increases just after switching the laser on - the laserdiode is most probably defective. In that case the CD drive has to be replaced.

4. GENERAL HINTS

Since the HF pre-amplifier is integrated into the new "CD18" signal processor the well-known eye pattern signal is not available as external signal and cannot be measured anymore. Also measuring the offset voltages is not necessary because the new signal processor contains an automatic offset compensation.

However the circuitry offers some new aspects for checking the system:

- the Monitor voltage shows if the sensitivity is set correctly (attention: ESD sensitive line!):
 CD DA: 150mV
 CD RW: 180mV
- the Focus search algorithm is divided into 4 steps:
 1st step: CD DA sensitivity
 2nd step: CD DA enforced sensitivity
 3rd step: CD RW sensitivity
 4th step: CD RW enforced sensitivity

The used sensitivity can be found out by either measuring the Monitor voltage or counting the up/down movements of the OPU until focus is found.
 e.g. when a normal CD DA is played back Monitor voltage should measure 150mV respectively Focus should be found within the first up/down movement of the OPU.

- In case a higher sensitivity setting can be observed than defined, there are following possible reasons:
- disc scratched or dirty
 - poor reflectivity of the disc - disc not conform standard
 - lens of the OPU dirty
 - laser power too low

CAUTION

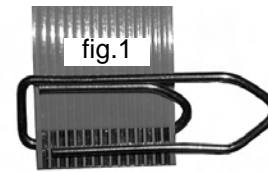
CHARGED CAPACITORS ON THE SERVO BOARD MAY DAMAGE THE CD DRIVE ELECTRONICS WHEN CONNECTING A NEW CD MECHANISM. THAT'S WHY, BESIDES THE SAFETY MEASURES LIKE

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

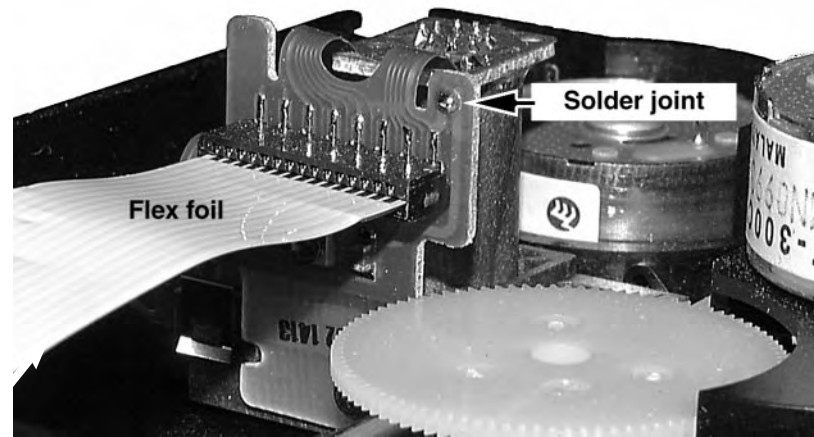
ADDITIONAL ACTIONS MUST BE TAKEN BY THE REPAIR TECHNICIAN.

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

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

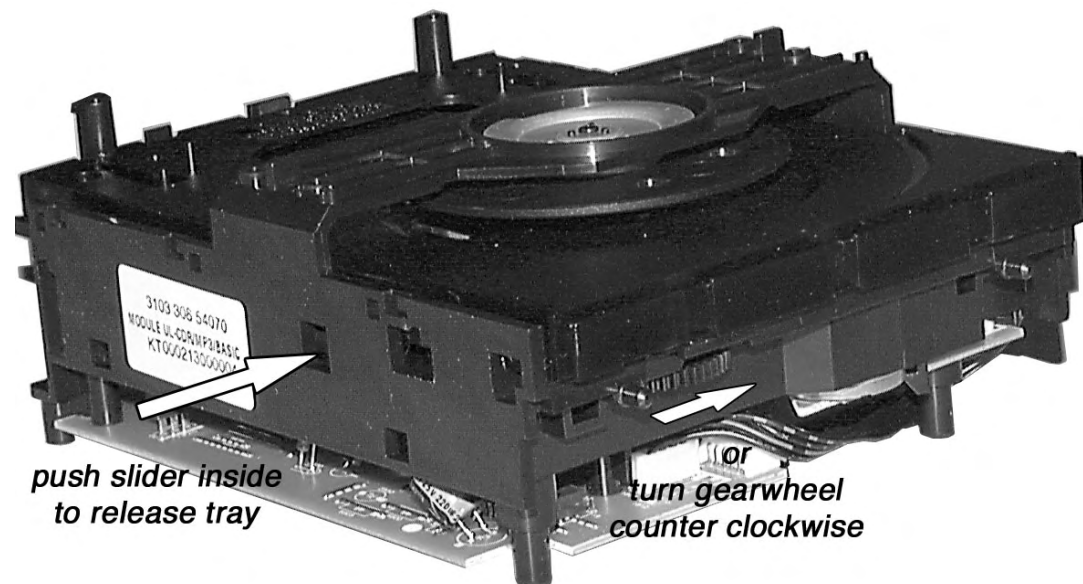


Attention: The laser diode of this CD drive is protected against ESD by a solder joint which short-circuits the laser diode to ground.
For proper functionality of the CD drive this solder joint must be removed **after** connecting the drive to the set.



Emergency open

- In case of a Supply fault, the drawer can be opened manually.
1. Remove the top cover of the set to get access to the CD Module.
 2. Proceed as shown in picture below.



Dismantling of Drawer

1. Open the drawer and release 2 catches as shown in fig. 2
2. Pull drawer out.

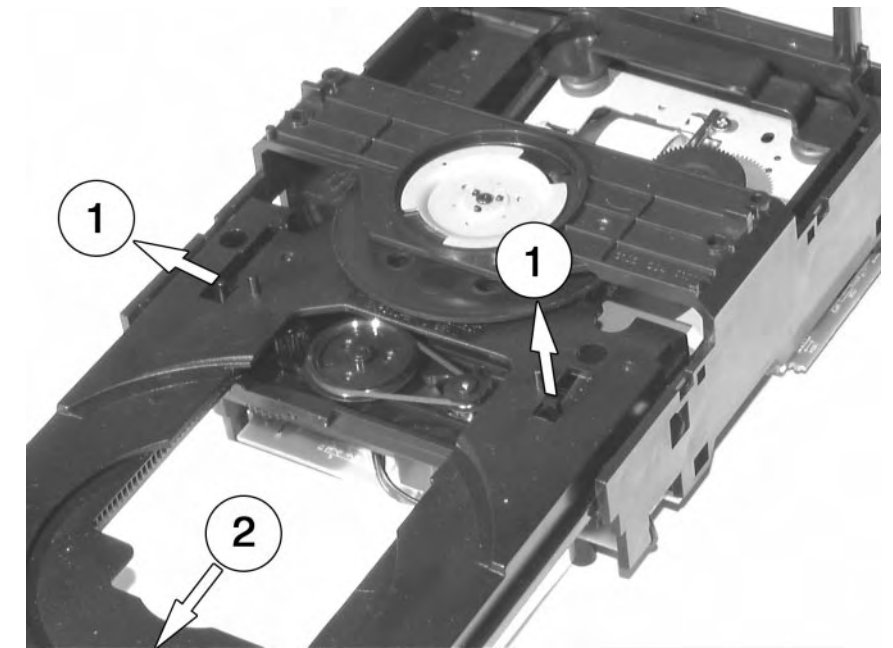
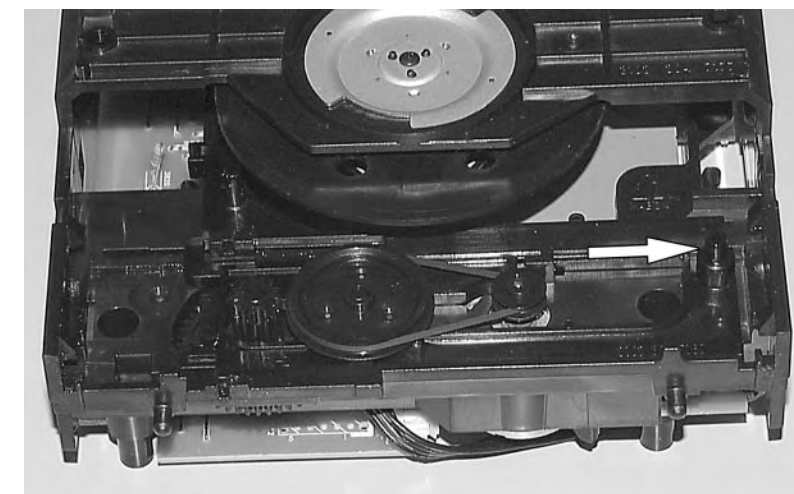


fig.2

Assembling of Drawer

1. Check if slider is on the right side → see picture below.
2. If necessary - move slider to the right end position first.
3. Insert the Drawer.



Abbreviations

10-3

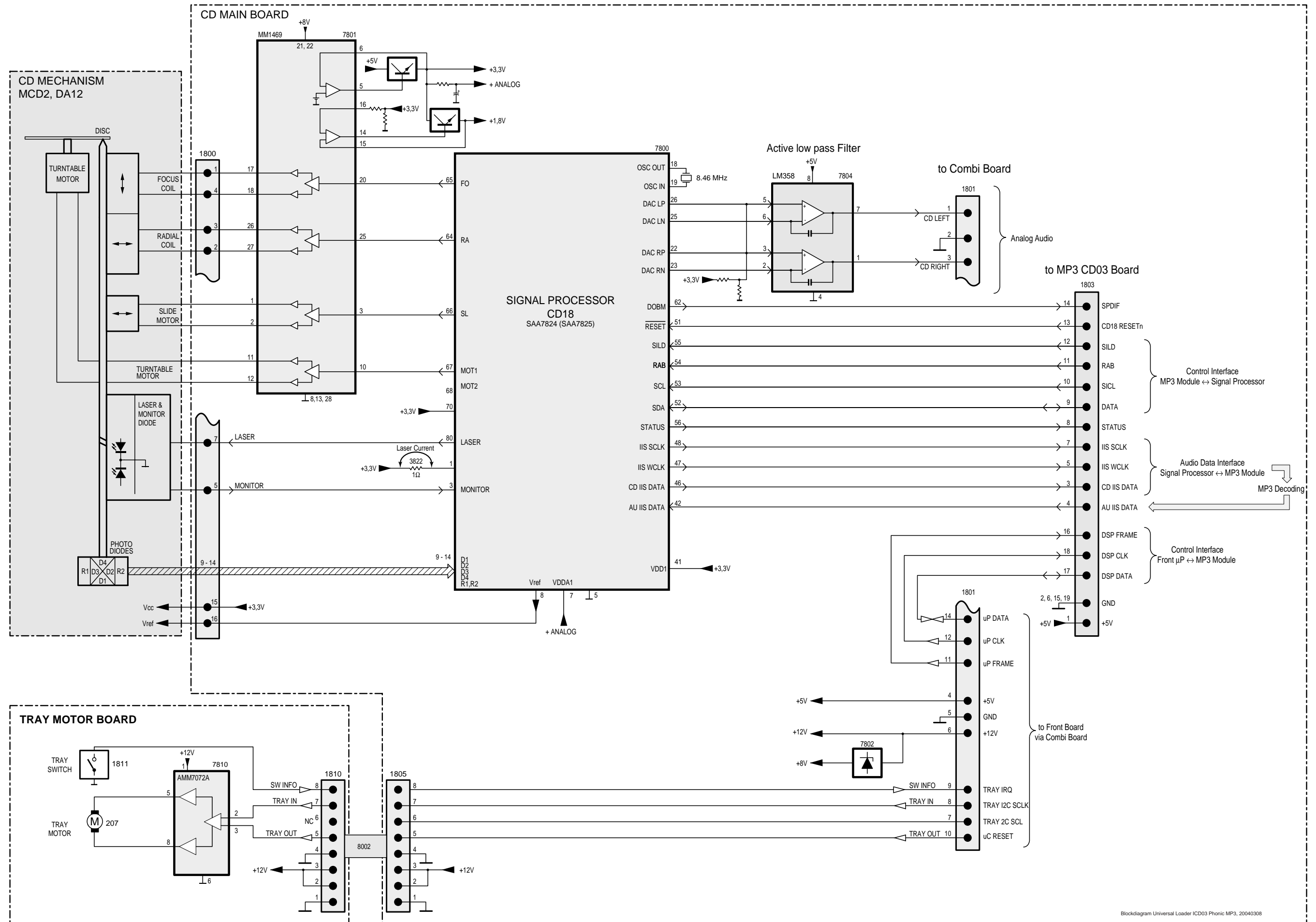
SIGNAL PROCESSOR (CD18) SAA7825

SYMBOL	PIN	I/O	DESCRIPTION
LFPOWER	1	I	laser power supply
EXFILTER	2	O	10 nF capacitor for laser start-up control
MONITOR	3	I	laser monitor diode
SENSE	4	I	OPU ground reference point for MONITOR measurement
V _{SSA1}	5	SUP	analog ground 1
I _{REF}	6	O	reference current output (22 kΩ resistor connected to analog ground)
V _{DDA1}	7	SUP	analog supply voltage 1
V _{REFO}	8	I/O	servo reference voltage
D1	9	I	diode voltage/current input (central diode signal input)
D2	10	I	diode voltage/current input (central diode signal input)
D3	11	I	diode voltage/current input (central diode signal input)
D4	12	I	diode voltage/current input (central diode signal input)
R1	13	I	diode voltage/current input (satellite diode signal input)
R2	14	I	diode voltage/current input (satellite diode signal input)
CSLICE	15	I/O	22 nF capacitor for adaptive HF data slicer
V _{DDA2}	16	SUP	analog supply voltage 2
V _{SSA2}	17	SUP	analog ground 2
OSCOUT	18	O	crystal/resonator output
OSCIN	19	I	crystal/resonator input
V _{SSA3}	20	SUP	analog ground 3
DACGND	21	I	audio DAC ground
DACRP	22	O	audio DAC right channel differential positive output
DACRN	23	O	audio DAC right channel differential negative output
DACV _{ref}	24	I/O	audio DAC decoupling point (10 μF or 100 nF to ground)
DACLN	25	O	audio DAC left channel differential negative output
DACLP	26	O	audio DAC left channel differential positive output
DACV _{pos}	27	I	audio DAC positive supply voltage
BUFV _{pos}	28	I	audio buffer positive supply voltage
BUFINR	29	I	audio buffer right input
BUFOUR	30	O	audio buffer right output
BUFOUTL	31	O	audio buffer left output
BUFINL	32	I	audio buffer left input
BUFGND	33	I	audio buffer ground
LKILL	34	O	KILL output for left channel (configurable as open-drain)
RKILL	35	O	KILL output for right channel (configurable as open-drain)
CDTRDY	36	O	CD text output to microcontroller ready $\bar{f}g$
CDTDATA	37	O	CD text output data to microcontroller
CDTCLK	38	I	CD text microcontroller clock input
CFLAG	39	O	correction $\bar{f}g$ output (open-drain)
V _{SSD1}	40	SUP	digital ground 1

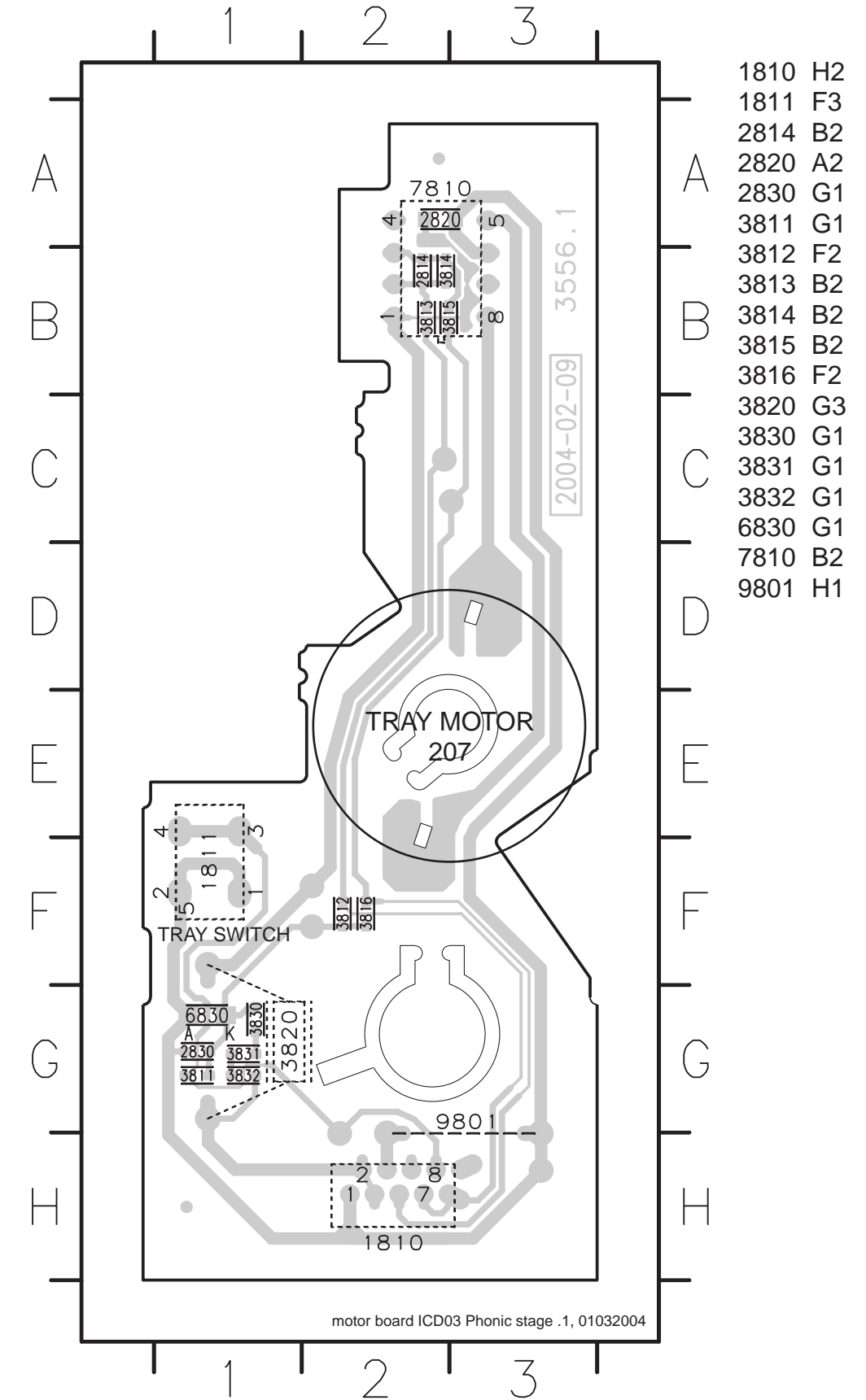
10-3

SYMBOL	PIN	I/O	DESCRIPTION
V _{DDD1}	41	SUP	digital supply voltage 1
SDI	42	I	serial data input (loopback)
WCLI	43	I	word clock input (loopback)
SCLI	44	I	serial bit clock input (loopback)
EF	45	O	C2 error $\bar{f}g$ output
DATA	46	O	serial data output
WCLK	47	O	word clock output
SCLK	48	O	serial clock output
CLK16	49	O	16 MHz clock output
CLK4/12	50	O	configurable 4 MHz or 12 MHz clock output
RESET	51	I	power-on reset input (active LOW)
SDA	52	I/O	microcontroller interface data input/output (open-drain)
SCL	53	I	microcontroller interface clock input
RAB	54	I	microcontroller interface R/W and load control input (4-wire)
SILD	55	I	microcontroller interface R/W and load control input (4-wire)
STATUS	56	O	servo interrupt request line/decoder status register/DC offset value readback output
RCK	57	I	subcode clock input
SUB	58	O	P to W subcode output
SFSY	59	O	subcode frame sync output
SBSY	60	O	subcode block sync output
V _{SSD2}	61	SUP	digital ground 2
DOBM	62	O	bi-phase mark output (externally buffered)
V _{DDD2}	63	SUP	digital supply voltage 2
RA	64	O	radial actuator output
FO	65	O	focus actuator output
SL	66	O	sledge actuator output
MOTO1	67	O	motor output 1 output
MOTO2	68	O	motor output 2 output
V _{SSD3}	69	SUP	digital ground 3
V _{DDD3}	70	SUP	digital supply voltage 3
V1	71	I	versatile pin 1 input
V2	72	I	versatile pin 2 input
V3	73	O	versatile pin 3 output
V4	74	O	versatile pin 4 output
V5	75	O	versatile pin 5 output
TEST1	76	I	test pin 1 input
TEST2	77	I	test pin 2 input
TEST3	78	I	test pin 3 input
TEST4	79	I	test pin 4 input
LASER	80	O	laser drive output

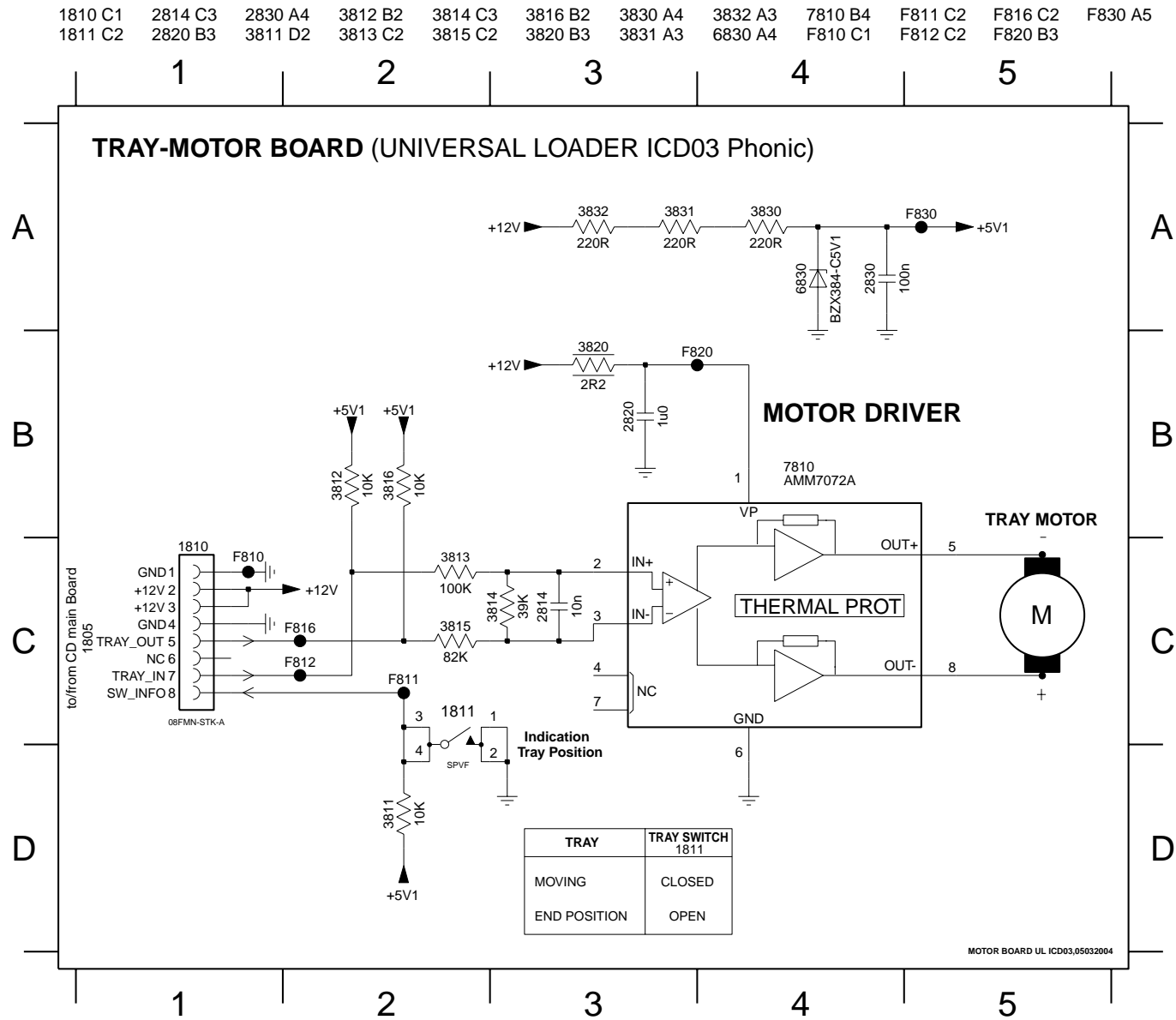
BLOCK DIAGRAM Universal Loader / ICD03 PhonIC MP3



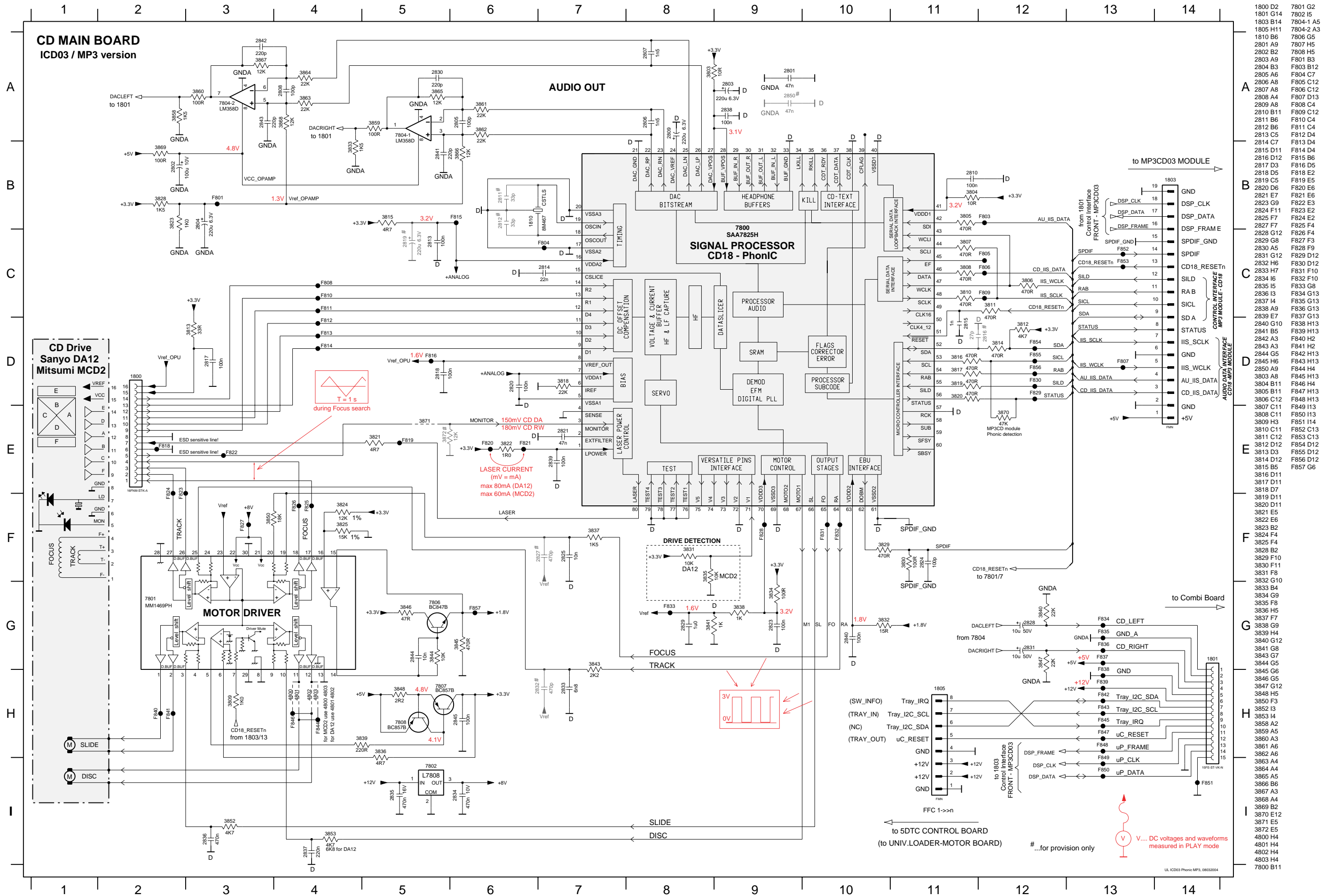
TRAY MOTOR BOARD / copper side view



- 1810 H2
- 1811 F3
- 2814 B2
- 2820 A2
- 2830 G1
- 3811 G1
- 3812 F2
- 3813 B2
- 3814 B2
- 3815 B2
- 3816 F2
- 3820 G3
- 3830 G1
- 3831 G1
- 3832 G1
- 6830 G1
- 7810 B2
- 9801 H1



- 1810 C1
- 1811 C2
- 2814 C3
- 2820 B3
- 2830 A4
- 3811 D2
- 3812 B2
- 3813 C2
- 3814 C3
- 3815 C2
- 3816 B2
- 3820 B3
- 3830 A4
- 3831 A3
- 3832 A3
- 6830 A4
- 7810 B4
- F810 C1
- F811 C2
- F812 C2
- F816 C2
- F820 B3
- F830 A5



1800 D2	7801 G2
1801 G14	7802 I5
1803 B14	7804-1 A5
1805 H11	7804-2 A3
1810 B6	7806 G5
2801 A9	7807 H5
2802 B2	7808 H5
2803 A9	F801 B3
2804 B3	F803 B12
2805 A6	F804 C7
2806 A8	F805 C12
2807 A8	F806 C12
2808 A4	F807 D13
2809 A8	F808 C4
2810 B11	F809 C12
2811 B6	F810 C4
2812 B6	F811 C4
2813 C5	F812 D4
2814 C7	F813 D4
2815 D11	F814 D4
2816 D12	F815 B6
2817 D3	F816 D5
2818 D5	F818 E2
2819 C5	F819 E5
2820 D6	F820 E6
2821 E7	F821 E6
2823 G9	F822 E2
2824 F11	F823 E2
2825 F7	F824 E2
2827 F7	F825 F4
2828 G12	F826 F4
2829 G8	F827 F3
2830 A5	F828 F9
2831 G12	F829 D12
2832 H6	F830 D12
2833 H7	F831 F10
2834 I6	F832 F10
2835 I5	F833 G8
2836 I3	F834 G13
2837 I4	F835 G13
2838 A9	F836 G13
2839 E7	F837 G13
2840 G10	F838 H13
2841 B5	F839 H13
2842 A3	F840 H2
2843 A3	F841 H2
2844 G5	F842 H13
2845 H6	F843 H13
2850 A9	F844 H4
3803 A8	F845 H3
3804 B11	F846 H4
3805 B11	F847 H3
3806 C12	F848 H13
3807 C11	F849 I13
3808 C11	F850 I13
3809 H3	F851 I14
3810 C11	F852 C13
3811 C12	F853 C13
3812 D12	F854 D12
3813 D3	F855 D12
3814 D12	F856 D12
3815 B5	F857 G6
3816 D11	
3817 D11	
3818 D7	
3819 D11	
3820 D11	
3821 E5	
3822 E6	
3823 B2	
3824 F4	
3825 F4	
3828 B2	
3829 F10	
3830 F11	
3831 F8	
3832 G10	
3833 B4	
3834 G9	
3835 F8	
3836 H5	
3837 F7	
3838 G9	
3839 H4	
3840 G12	
3841 G8	
3843 G7	
3844 G5	
3845 G6	
3846 G5	
3847 G12	
3848 H5	
3850 F3	
3852 I3	
3853 I4	
3858 A2	
3859 A5	
3860 A3	
3861 A6	
3862 A6	
3863 A4	
3864 A4	
3865 A5	
3866 B6	
3867 A3	
3868 A4	
3869 B2	
3870 E12	
3871 E5	
3872 E5	
4800 H4	
4801 H4	
4802 H4	
4803 H4	
7800 B11	

V.... DC voltages and waveforms measured in PLAY mode

to 5DTC CONTROL BOARD (to UNIV.LOADER-MOTOR BOARD)

#...for provision only

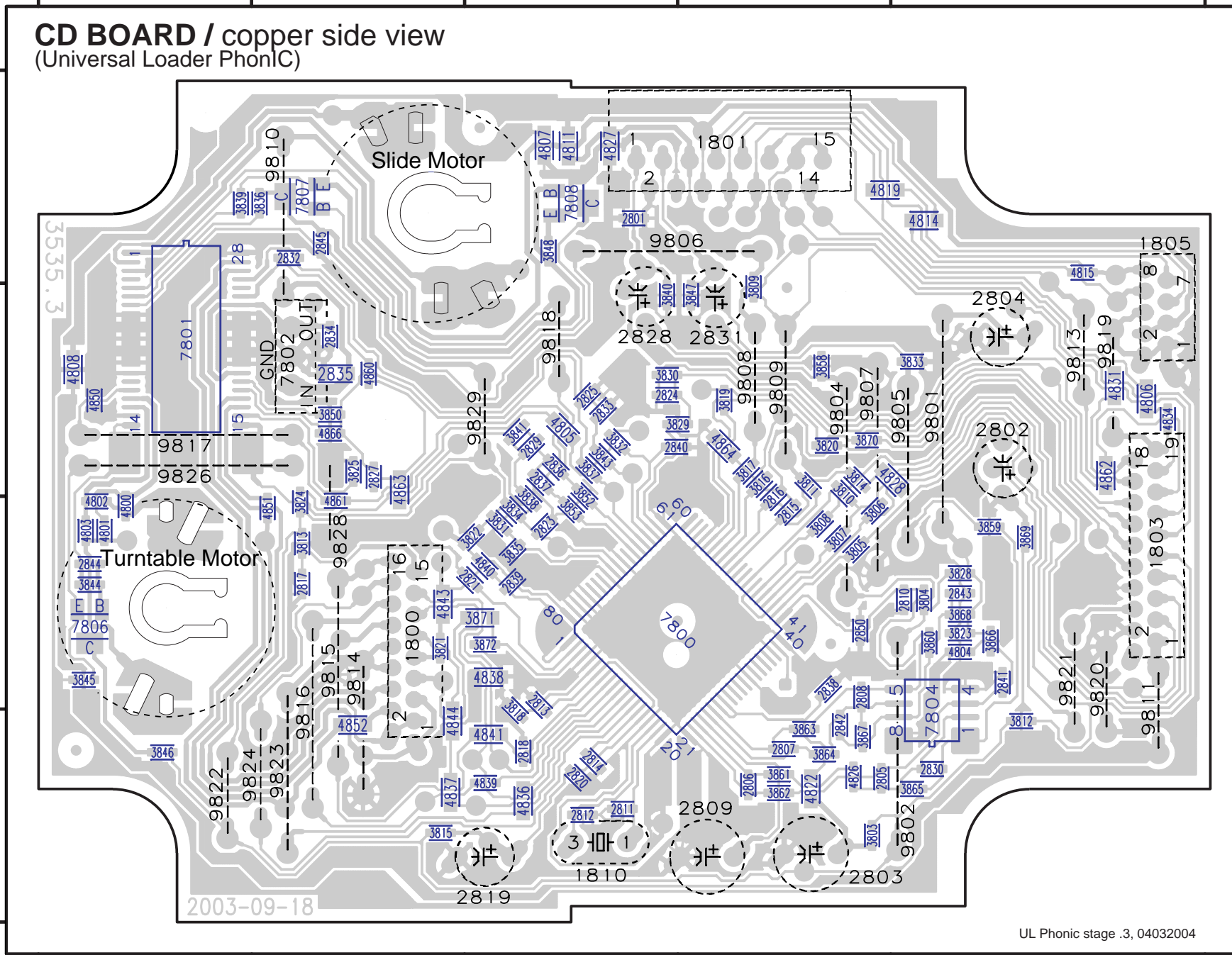
WIRED COMPONENTS

- 1800 C2
- 1801 A4
- 1803 C5
- 1805 B5
- 1810 D3
- 2802 B5
- 2803 D4
- 2804 B5
- 2809 D4
- 2819 D3
- 2828 B3
- 2831 B4
- 7802 B2
- 9801 B5
- 9802 D5
- 9804 B4
- 9805 B5
- 9806 A3
- 9807 B4
- 9808 B4
- 9809 B4
- 9810 A2
- 9811 C5
- 9813 B5
- 9814 D2
- 9815 C2
- 9816 D2
- 9817 B1
- 9818 B3
- 9819 B5
- 9820 C5
- 9821 C5
- 9822 D1
- 9823 D2
- 9824 D2
- 9826 B1
- 9828 C2
- 9829 B3

SURFACE MOUNTED COMPONENTS

- 2801 A3
- 28005 D4
- 28006 D4
- 28007 D4
- 28008 C4
- 28010 C5
- 28011 D3
- 28012 D3
- 28013 C3
- 28014 D3
- 28015 C4
- 28016 C4
- 28017 C2
- 28018 D3
- 28020 D3
- 28021 C2
- 28022 C3
- 28023 C5
- 28024 C2
- 28025 B2
- 28028 C3
- 28029 B3
- 28030 D5
- 28032 A2
- 28033 B3
- 28034 B2
- 28035 B2
- 28036 B3
- 28037 B3
- 28038 C4
- 28039 C3
- 28041 C5
- 28042 D4
- 28043 C5
- 28044 C1
- 28045 A2
- 28050 C4
- 38003 D4
- 38004 C5
- 38005 C4
- 38006 C4
- 38007 C4
- 38008 C4
- 38009 B4
- 38010 B4
- 3811 B4
- 3812 D5
- 3813 C2
- 3814 B4
- 3815 D2
- 3816 B4
- 3817 B4
- 3818 D3
- 3819 B4
- 3820 B4
- 3821 C2
- 3822 C3
- 3823 C5
- 3824 C2
- 3825 B2
- 3828 C5
- 3829 C5
- 3830 C5
- 3831 C3
- 3832 C3
- 3833 B3
- 3834 C3
- 3835 C3
- 3836 A2
- 3837 B3
- 3838 C3
- 3839 C3
- 3840 B3
- 3841 B3
- 3842 D1
- 3843 B4
- 3844 A3
- 3848 B2
- 3850 B2
- 3852 C5
- 3861 D4
- 3862 D4
- 3863 D4
- 3864 D4
- 3865 D5
- 3866 C5
- 3867 D4
- 3868 C5
- 3869 C5
- 3870 B4
- 3871 C3
- 3872 C3
- 4800 C1
- 4801 C1
- 4802 C1
- 4803 C1
- 4804 C5
- 4805 B3
- 4806 B5
- 4807 A3
- 4808 B1
- 4811 A3
- 4814 A5
- 4815 A5
- 4819 A4
- 4822 D4
- 4826 D4
- 4827 A3
- 4828 B5
- 4831 B5
- 4834 B5
- 4836 D3
- 4837 D2
- 4838 C3
- 4840 D3
- 4841 D3
- 4842 D3
- 4843 C2
- 4844 D2
- 4850 B1
- 4851 C2
- 4860 B2
- 4861 C2
- 4862 B5
- 4863 B2
- 4864 B4
- 4866 B2
- 7800 C3
- 7801 B1
- 7804 D5
- 7806 C1
- 7807 A2
- 7808 A3

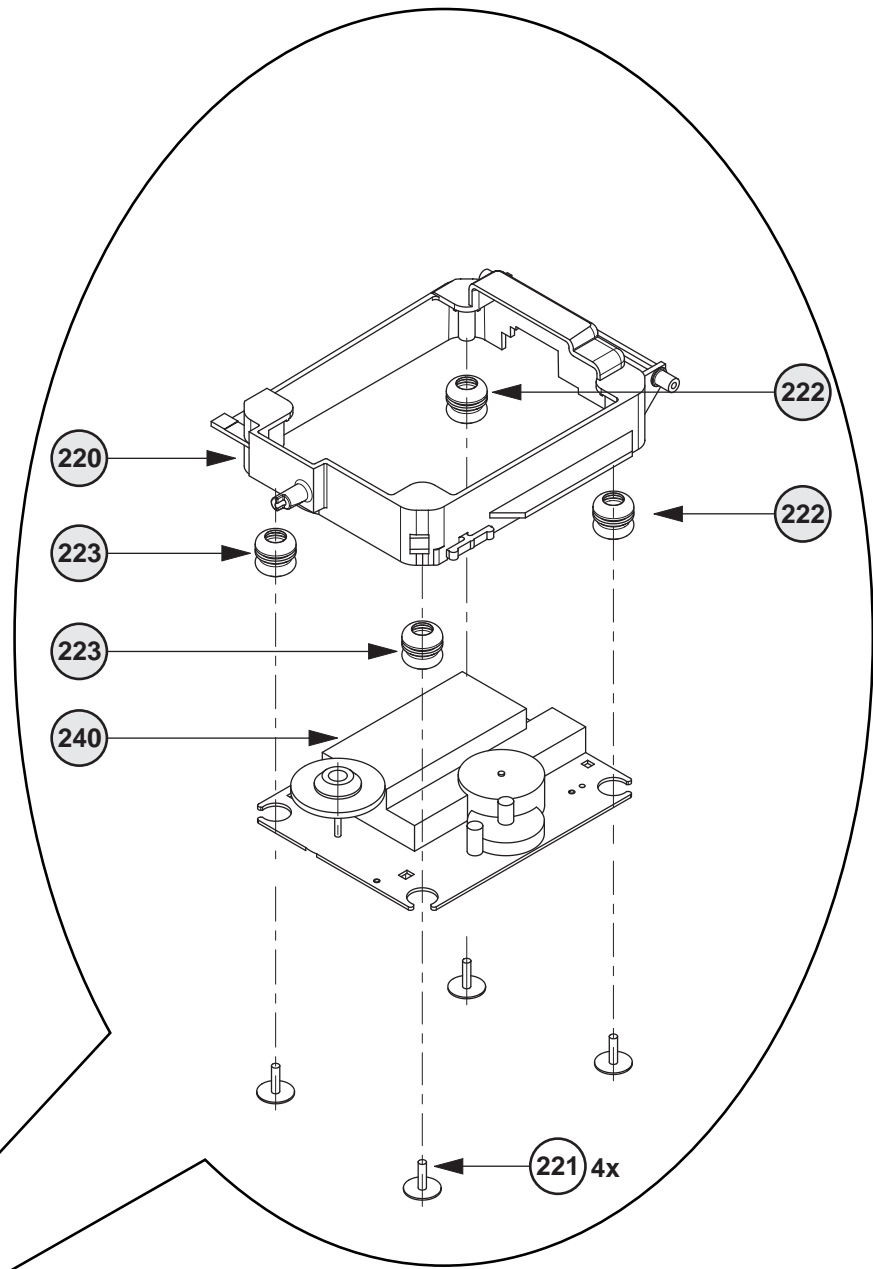
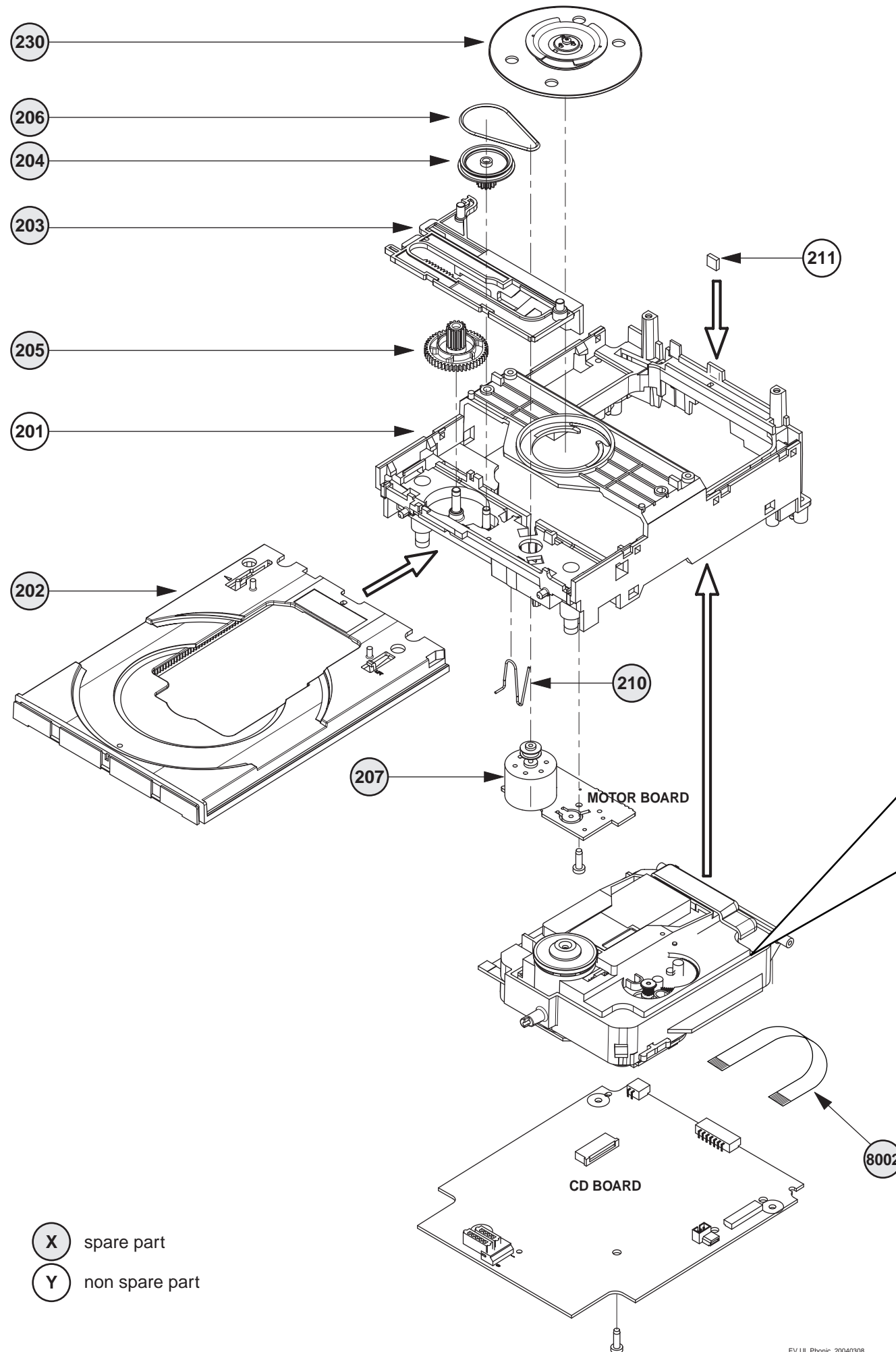
CD BOARD / copper side view
(Universal Loader Phon/C)



Exploded view *UNIVERSAL LOADER*

10-8

10-8



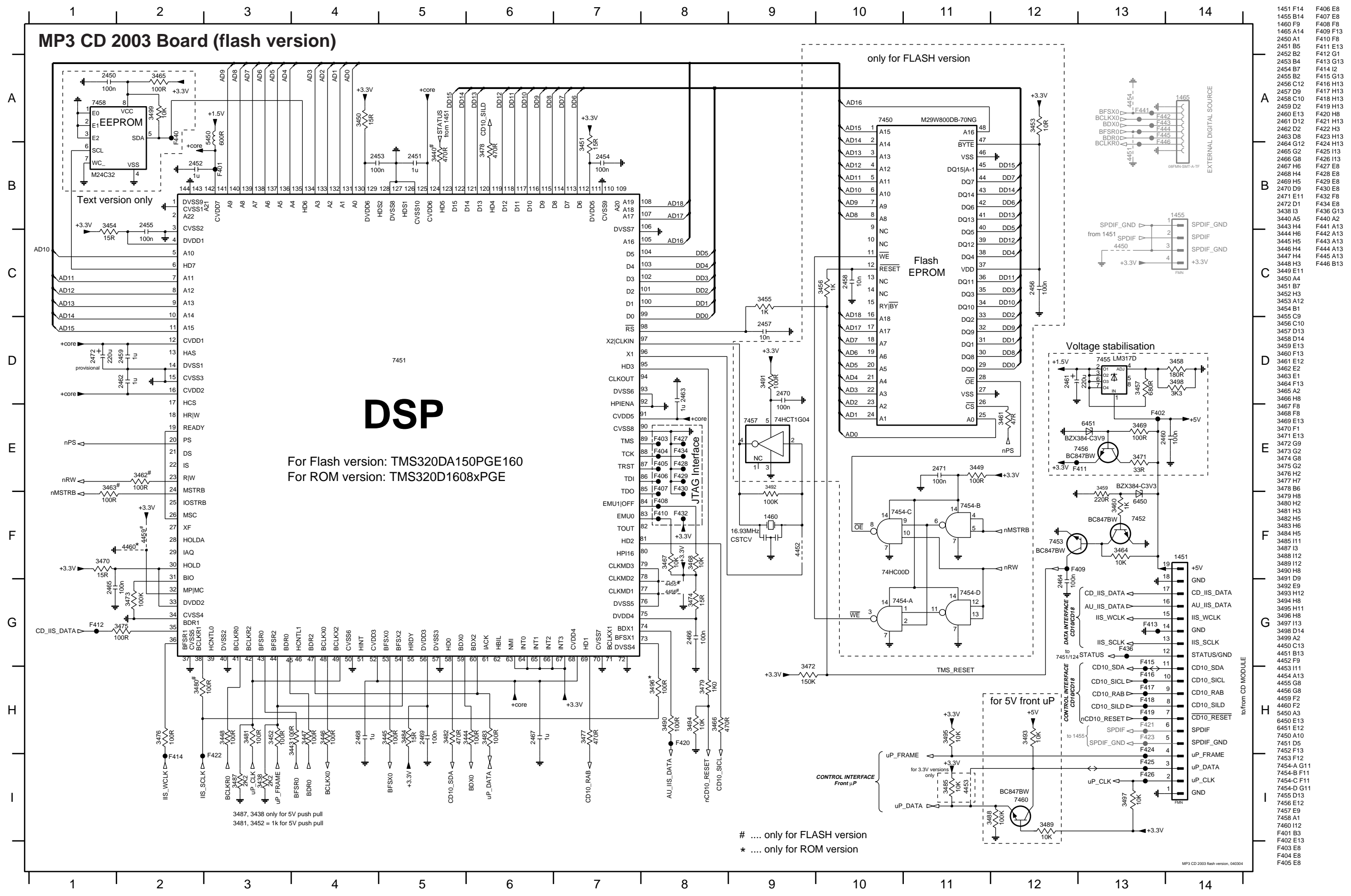
- (X) spare part
- (Y) non spare part

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 05380	CD DRIVE, MCD2
240	3103 309 05390	CD DRIVE DA12T3
8001	3103 308 93611	FLEXFOIL CABLE, 16P, 88mm BD
8002	3103 308 94021	FLEXFOIL CABLE, 8P, 268mm AD

MP3 BOARD FOR ORIENTATION ONLY

MP3 CD 2003 Board (flash version)



For Flash version: TMS320DA150PGE160
 For ROM version: TMS320D1608xPGE

DSP

.... only for FLASH version
 * only for ROM version

- 1451 F14
- 1455 B14
- 1460 F9
- 1465 A14
- 2450 A1
- 2451 B5
- 2452 B2
- 2453 B4
- 2454 B7
- 2455 B2
- 2457 D9
- 2458 C10
- 2459 D2
- 2460 E13
- 2461 D12
- 2462 D2
- 2463 D8
- 2464 G12
- 2465 G2
- 2466 G8
- 2467 H6
- 2468 H4
- 2469 H5
- 2470 D9
- 2471 E11
- 2472 D1
- 3438 I3
- 3440 A5
- 3443 H4
- 3444 H6
- 3445 H5
- 3446 H4
- 3447 H4
- 3448 H3
- 3449 E11
- 3450 A4
- 3451 B7
- 3452 H3
- 3453 A12
- 3454 B1
- 3455 C9
- 3456 C10
- 3457 D13
- 3458 D14
- 3459 C13
- 3460 F13
- 3461 E12
- 3462 E2
- 3463 E1
- 3464 F13
- 3465 A2
- 3466 H8
- 3467 F8
- 3468 F8
- 3469 E13
- 3470 F1
- 3471 E13
- 3472 C2
- 3473 C2
- 3474 G8
- 3475 G2
- 3476 H2
- 3477 H7
- 3478 B6
- 3479 H8
- 3480 H2
- 3481 H3
- 3482 H5
- 3483 H6
- 3484 H5
- 3485 H1
- 3487 I3
- 3488 I12
- 3489 I12
- 3490 H8
- 3491 D9
- 3492 E9
- 3493 H12
- 3494 H8
- 3495 H11
- 3496 H8
- 3497 I13
- 3498 D14
- 3499 A2
- 4450 C13
- 4451 B13
- 4452 F9
- 4453 I11
- 4454 A13
- 4455 G8
- 4456 G8
- 4459 F2
- 4460 F2
- 5450 A3
- 6450 E13
- 6451 I12
- 7450 I10
- 7451 D5
- 7452 F13
- 7453 F12
- 7454 A G11
- 7454 B F11
- 7454 C F11
- 7454 D G11
- 7455 D13
- 7456 E12
- 7457 E9
- 7458 A1
- 7460 I12
- F401 B3
- F402 E13
- F403 E8
- F404 E8
- F405 E8
- F406 E8
- F407 E8
- F408 F8
- F409 F13
- F410 F8
- F411 E13
- F412 G1
- F413 G13
- F414 I2
- F415 G13
- F416 H13
- F417 H13
- F418 H13
- F419 H13
- F420 H8
- F421 H13
- F422 H3
- F423 H3
- F424 H13
- F425 I13
- F426 H8
- F427 E8
- F428 E8
- F429 E8
- F430 E8
- F432 F8
- F434 E8
- F436 G12
- F440 A2
- F441 A13
- F442 A13
- F443 A13
- F444 A13
- F445 A13
- F446 B13

PERSONAL NOTES:

COMBI & REGULATOR BOARDS

Before production week 444

TABLE OF CONTENTS

Regulator Board

Brief Introduction of the Regulator Board.....	11-1
Component & Copper Side View	11-2
Circuit diagram.....	11-3

Combi Board

Component View seen from Copper Side	11-4
Copper Side View	11-5
Circuit diagram - Source Selector part	11-6
Circuit diagram - Amplifier part	11-7
Electrical parts list.....	11-8

Brief introduction of the Regulator Board

The regulator board provides the following:

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

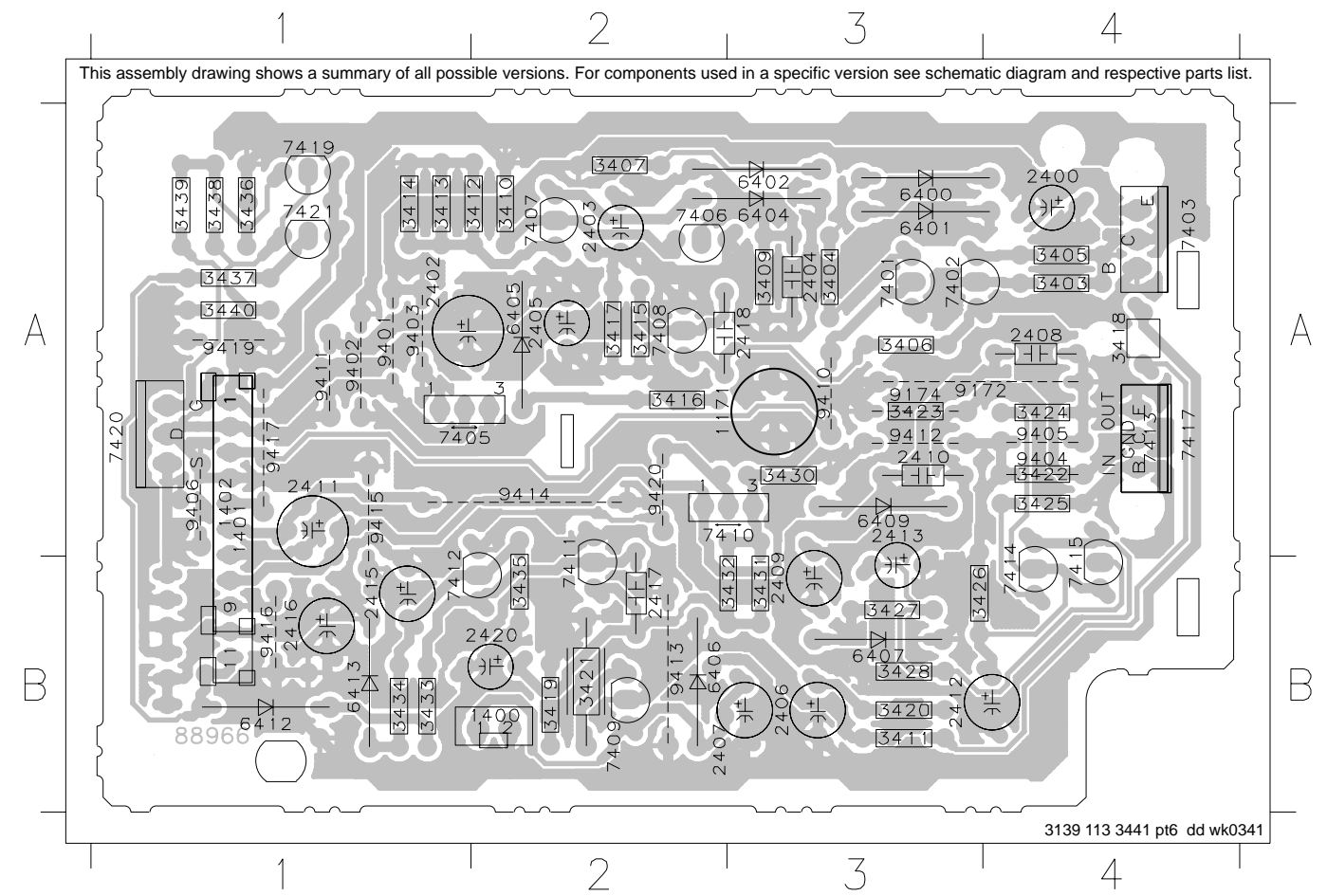
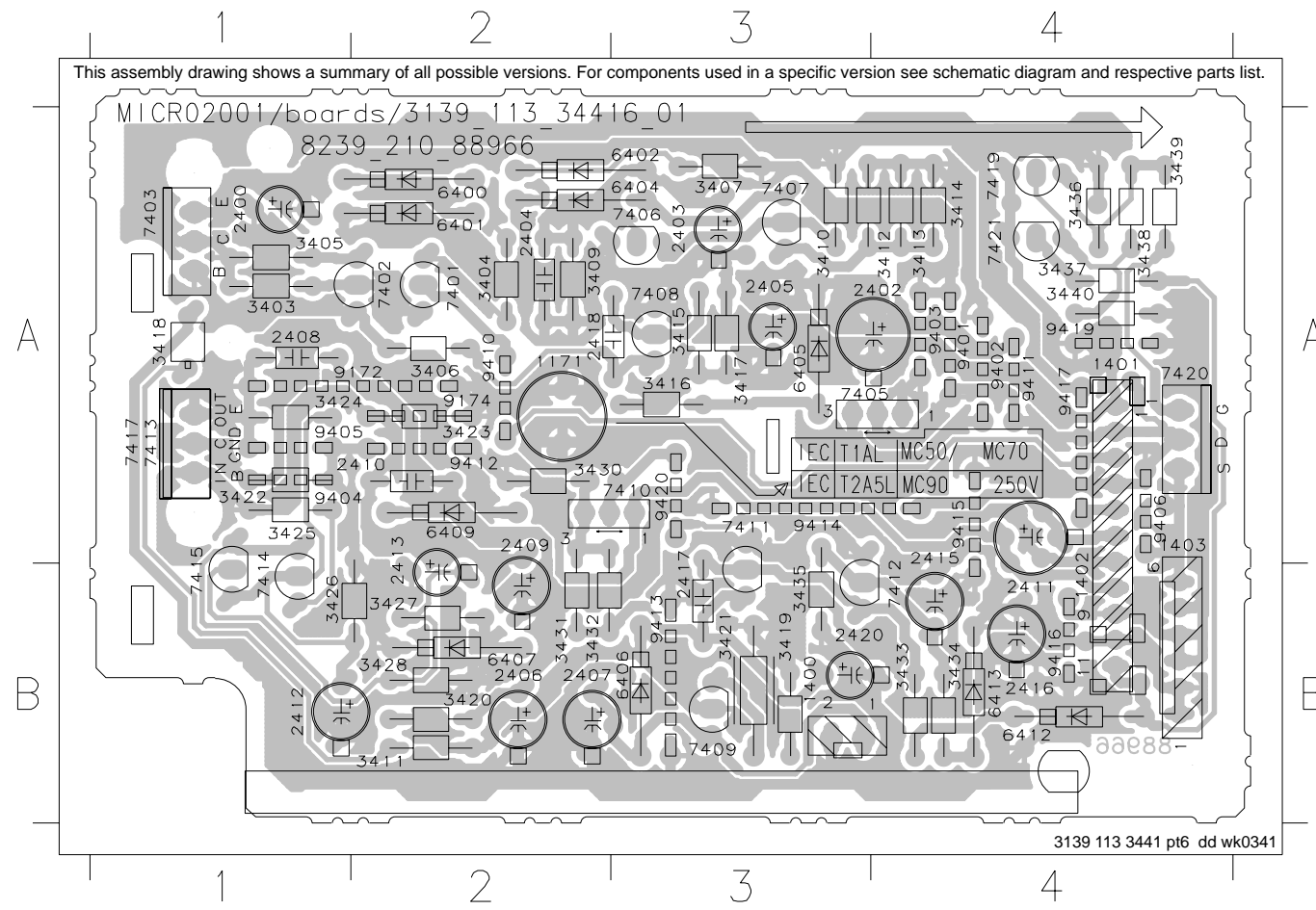
Technical Remarks

REGULATOR BOARD - COMPONENT SIDE VIEW

1171 A2	2408 A1	3404 A2	3417 A3	3430 A2	6401 A2	7405 A3	7419 A4	9411 A4
1400 B3	2409 A2	3405 A1	3418 A1	3431 B2	6402 A3	7406 A3	7420 A4	9412 A2
1401 A4	2410 A2	3406 A2	3419 B3	3432 B2	6404 A3	7407 A3	7421 A4	9413 B3
1402 B4	2411 B4	3407 A3	3420 B2	3433 B4	6405 A3	7408 A3	9172 A2	9414 A3
1403 A4	2412 B1	3409 A2	3421 B3	3434 B4	6406 B3	7409 B3	9174 A2	9415 A4
2400 A1	2413 A2	3410 A3	3422 A1	3435 B3	6407 B2	7410 A3	9401 A4	9416 B4
2402 A4	2415 A4	3411 B2	3423 A2	3436 A4	6409 A2	7411 A3	9402 A4	9417 A4
2403 A3	2416 B4	3412 A4	3424 A1	3437 A4	6412 B4	7412 B4	9403 A4	9419 A4
2404 A2	2417 B3	3413 A4	3425 A1	3438 A4	6413 B4	7413 A1	9404 A1	9420 A3
2405 A3	2418 A2	3414 A4	3426 B1	3439 A4	7401 A2	7414 B1	9405 A1	
2406 B2	2420 B3	3415 A3	3427 B2	3440 A4	7402 A2	7415 B1	9406 A4	
2407 B2	3403 A1	3416 A3	3428 B2	6400 A2	7403 A1	7417 A1	9410 A2	

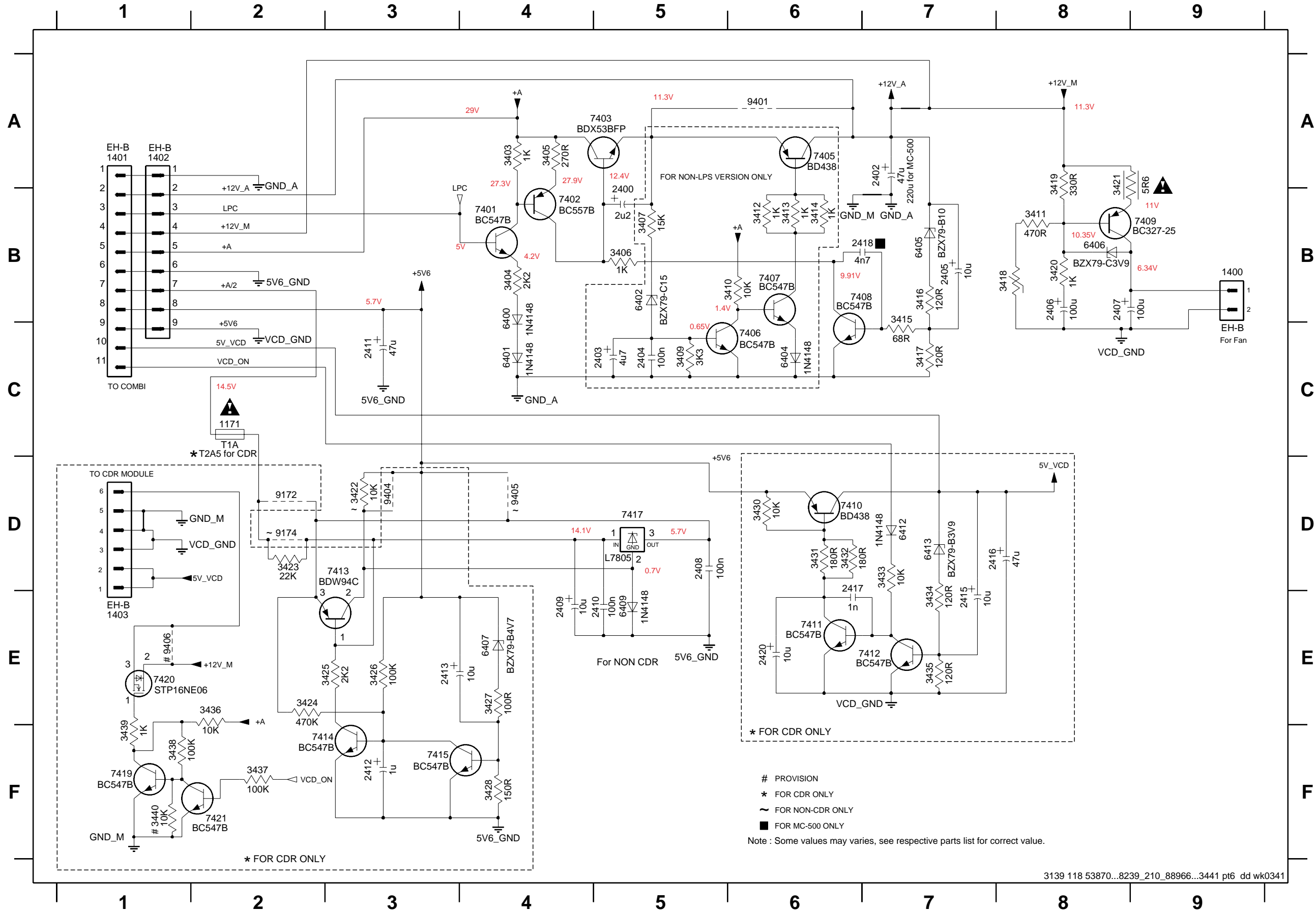
REGULATOR BOARD - COPPER SIDE VIEW

1171 A2	2409 B3	3405 A4	3418 A4	3431 B3	6402 A3	7406 A2	7420 A1	9412 A3
1400 B2	2410 A3	3406 A3	3419 B2	3432 B3	6404 A3	7407 A2	7421 A1	9413 B2
1401 A1	2411 A1	3407 A2	3420 B3	3433 B1	6405 A2	7408 A2	9172 A3	9414 A2
1402 A1	2412 B3	3409 A3	3421 B2	3434 B1	6406 B2	7409 B2	9174 A3	9415 A1
2400 A4	2413 A3	3410 A2	3422 A4	3435 B2	6407 B3	7410 A3	9401 A1	9416 B1
2402 A1	2415 B1	3411 B3	3423 A3	3436 A1	6409 A3	7411 B2	9402 A1	9417 A1
2403 A2	2416 B1	3412 A2	3424 A4	3437 A1	6412 B1	7412 B1	9403 A1	9419 A1
2404 A3	2417 B2	3413 A1	3425 A4	3438 A1	6413 B1	7413 A4	9404 A4	9420 A2
2405 A2	2418 A3	3414 A1	3426 B3	3439 A1	7401 A3	7414 B4	9405 A4	
2406 B3	2420 B2	3415 A2	3427 B3	3440 A1	7402 A3	7415 B4	9406 A1	
2407 B2	3403 A4	3416 A2	3428 B3	6400 A3	7403 A4	7417 A4	9410 A3	
2408 A4	3404 A3	3417 A2	3430 A3	6401 A3	7405 A1	7419 A1	9411 A1	



REGULATOR BOARD - CIRCUIT DIAGRAM

1171 C2	1403 E1	2404 C5	2408 D5	2412 F3	2417 D6	3404 B4	3409 C5	3413 B6	3417 C7	3421 A8	3425 E3	3430 D6	3434 E7	3438 F1	6401 C4	6406 B8	6413 D7	7405 A6	7409 B9	7413 D3	7419 F1	9174 D2	9406 E1
1400 B9	2400 B5	2405 B7	2409 E4	2413 E3	2418 B7	3405 A4	3410 B6	3414 B6	3418 B8	3422 D3	3426 E3	3431 D6	3435 E7	3439 F1	6402 B5	6407 E4	7401 B4	7406 C6	7410 D7	7414 F3	7420 E1	9401 A6	
1401 A1	2402 A7	2406 B8	2410 E5	2415 E7	2420 E6	3406 B5	3411 B8	3415 C7	3419 A8	3423 D2	3427 E4	3432 D6	3436 E2	3440 F1	6404 C6	6409 E5	7402 B4	7407 B6	7411 E6	7415 F3	7421 F2	9404 D3	
1402 A1	2403 C5	2407 B8	2411 C3	2416 D7	3403 A4	3407 B5	3412 B6	3416 B7	3420 B8	3424 E2	3428 F4	3433 D7	3437 F2	6400 B4	6405 B7	6412 D7	7403 A4	7408 B7	7412 E7	7417 D5	9172 D2	9405 D4	

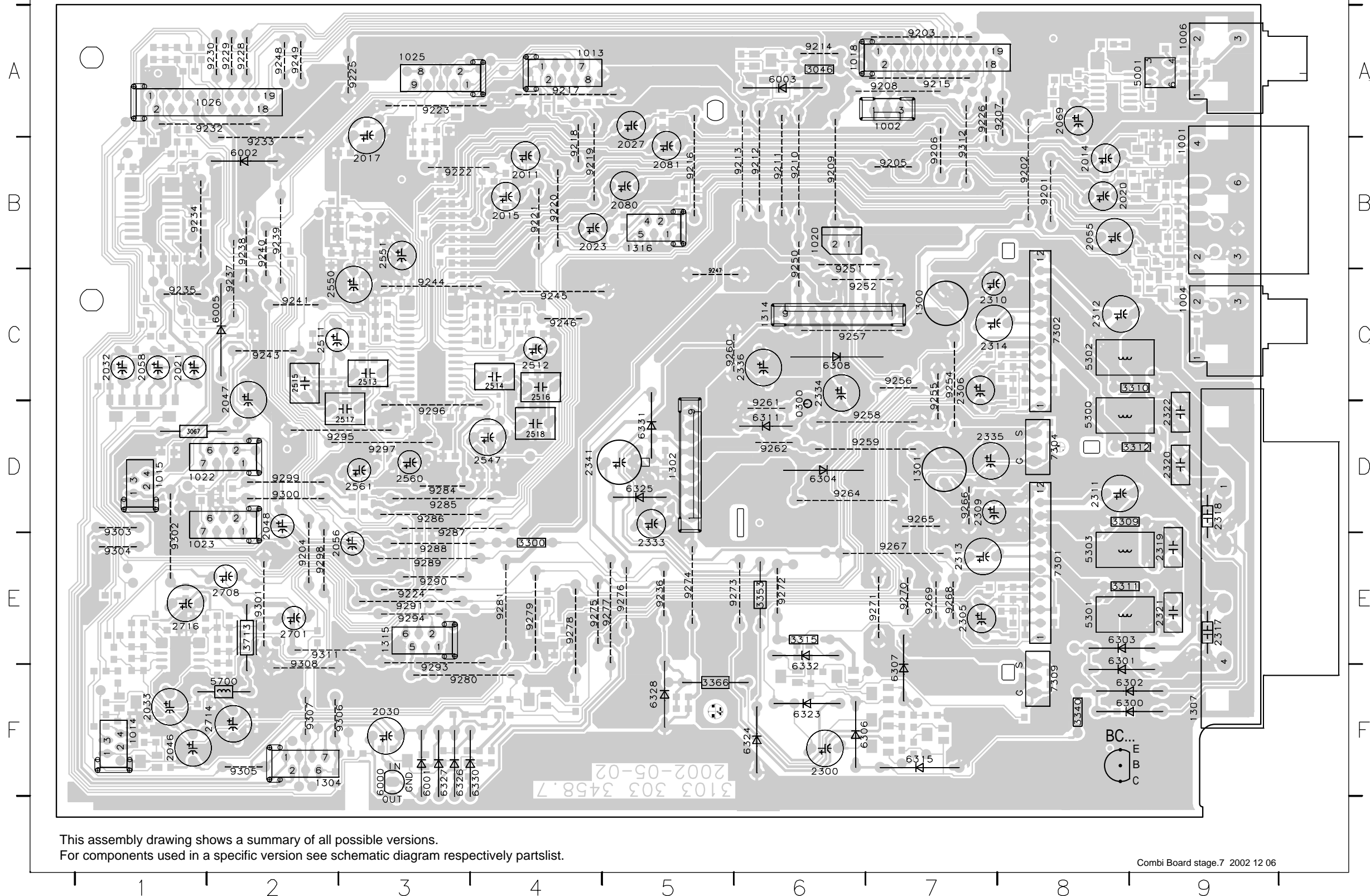


PROVISION
 * FOR CDR ONLY
 ~ FOR NON-CDR ONLY
 ■ FOR MC-500 ONLY
 Note : Some values may varies, see respective parts list for correct value.

COMBI BOARD

0300 D6	1022 D1	1315 E3	2030 F3	2080 B5	2314 C7	2336 C6	2547 D4	3067 D1	3713 E2	6003 A6	6311 D6	6332 F6	9206 B7	9216 B5	9226 A7	9238 B2	9249 A2	9260 C5	9271 E7	9281 E4	9294 E3	9304 E1
1001 B9	1023 E1	1316 B5	2032 C1	2081 B5	2317 E9	2341 D4	2550 C2	3300 E4	5001 A9	6005 C2	6315 F7	7301 E8	9207 A8	9217 A4	9228 A2	9239 B2	9250 B6	9261 D6	9272 E6	9284 D3	9295 D3	9305 F2
1002 A7	1025 A3	2011 B4	2033 F1	2300 F6	2318 D9	2511 C2	2551 B3	3309 D8	5300 D8	6300 F9	6323 F7	7302 C8	9208 A7	9218 B4	9229 A2	9240 B2	9251 C6	9262 D6	9273 E5	9285 D3	9296 D3	9306 F3
1004 C9	1026 A2	2014 B8	2046 F1	2305 E7	2319 E9	2512 C4	2560 D3	3310 C9	5301 E8	6301 E8	6324 F6	7304 D8	9209 B6	9219 B4	9230 A2	9241 C2	9252 C6	9264 D6	9274 E5	9286 D3	9297 D3	9307 F2
1006 A9	1300 C7	2015 B4	2047 C2	2306 C7	2320 D9	2513 C3	2561 D3	3311 E8	5302 E8	6302 F9	6325 D5	7308 F8	9210 B6	9220 B4	9232 A2	9243 C2	9254 C7	9265 D7	9275 E4	9287 E3	9298 E2	9308 E2
1013 A4	1301 D7	2017 B3	2048 D2	2309 D7	2321 E9	2514 C4	2701 E2	3312 D9	5303 E8	6303 E8	6326 F6	7301 B8	9211 B6	9221 B4	9233 B2	9244 C3	9255 C7	9266 D7	9276 E5	9288 E3	9299 D2	9311 E2
1014 F1	1302 D5	2020 B8	2055 B8	2310 C7	2322 D9	2515 C2	2708 E2	3315 E6	5700 F2	6304 D6	6327 F3	7302 B8	9212 B6	9222 B3	9234 B1	9245 C4	9256 C7	9267 E7	9277 E5	9289 E3	9300 D2	9312 B7
1015 D1	1304 F2	2021 C1	2056 E2	2311 D8	2333 E5	2516 C4	2714 F2	3340 F8	6000 F3	6306 F6	6328 F5	7303 A7	9213 B6	9223 A3	9235 C1	9246 C4	9257 C6	9268 E7	9278 E4	9290 E3	9301 E2	
1018 A6	1307 F9	2023 B4	2058 C1	2312 C8	2334 C6	2517 D3	2716 E1	3353 E6	6001 F3	6307 F7	6330 F4	7304 E2	9214 A6	9224 E3	9236 E5	9247 C5	9258 D7	9269 E7	9279 E4	9291 E3	9302 E1	
1020 B6	1314 C6	2027 B5	2069 A8	2313 E7	2335 D7	2518 D4	3046 A6	3366 F5	6002 B2	6308 C6	6331 D5	7305 B7	9215 A7	9225 A3	9237 C2	9248 A2	9259 D6	9270 E7	9280 F3	9293 F3	9303 D1	

Hole mounted components seen from copperside

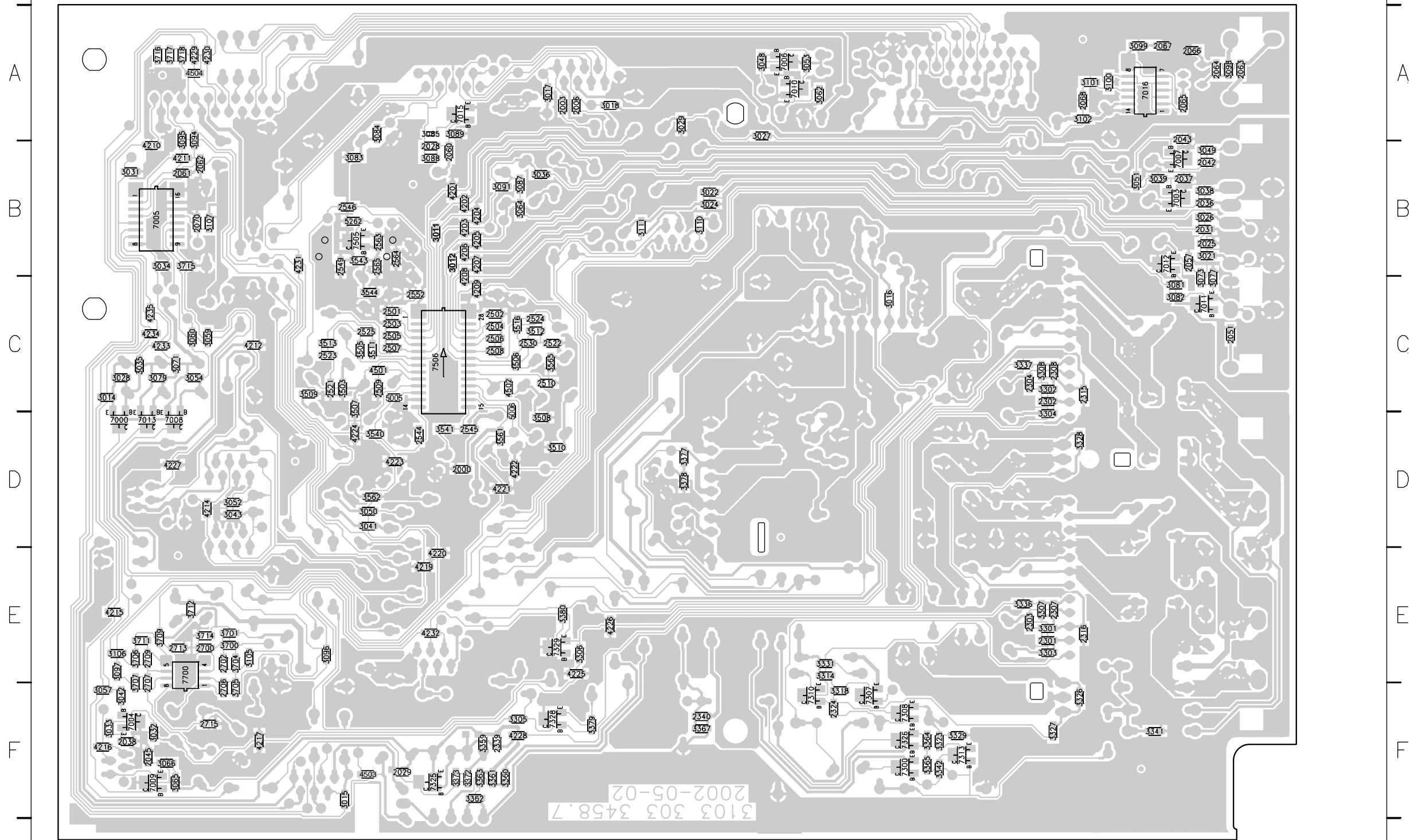


This assembly drawing shows a summary of all possible versions.
 For components used in a specific version see schematic diagram respectively partlist.

COMBI BOARD

2000 D3	2042 B9	2065 A9	2308 C8	2505 C3	2525 C3	2700 E1	3015 F2	3029 A5	3042 F1	3059 C1	3081 C9	3095 A1	3107 B1	3308 C8	3337 C7	3367 F5	3507 C3	3543 B3	3707 F1	4202 B3	4212 C2	4224 D3	4234 C1	7003 B9	7013 D1	7328 F4
2003 A4	2043 A9	2066 A9	2315 C8	2506 C4	2530 C4	2702 E2	3016 C6	3031 B1	3043 D2	3060 C1	3082 C9	3096 E2	3110 B5	3314 E6	3341 F8	3372 F3	3508 D4	3544 C3	3709 E1	4203 B3	4214 D1	4225 E4	4235 C1	7004 F1	7015 A3	7329 E4
2006 A4	2045 F1	2067 A9	2316 E8	2507 C3	2544 D3	2706 F2	3017 A4	3032 F1	3048 A6	3062 A6	3083 B3	3097 E1	3111 B5	3318 F6	3342 F7	3373 F3	3509 C2	3561 D4	3711 E1	4204 B3	4215 E1	4226 E4	4236 C3	7005 B1	7016 A8	7505 B3
2025 B9	2051 C9	2068 A8	2324 F6	2508 C4	2545 D3	2707 F1	3018 A4	3033 F1	3049 B9	3064 B4	3084 A3	3098 A9	3301 E8	3323 F7	3359 F3	3377 D5	3510 D4	3562 D3	3712 E1	4205 B3	4216 F1	4227 D1	4502 C4	7006 A6	7300 F7	7506 C3
2028 B3	2057 B9	2070 B1	2339 F4	2509 C3	2546 B2	2709 E1	3021 B9	3034 B1	3050 D3	3065 F1	3085 A3	3099 A8	3302 C8	3326 F8	3360 F4	3378 D5	3511 C3	3565 C4	3714 E1	4206 B3	4217 F2	4228 F4	4503 F3	7007 B9	7307 F6	7700 E1
2029 F3	2060 B3	2301 E8	2340 F5	2510 C4	2549 B2	2713 F1	3022 B5	3035 C1	3051 B8	3066 F1	3087 B4	3100 A8	3303 E8	3327 F8	3361 F3	3379 F4	3512 C4	3700 E2	3715 B1	4207 B3	4219 E3	4229 A1	4504 A1	7008 D1	7308 F7	
2031 B9	2061 B1	2302 C8	2501 C3	2521 C2	2552 C3	2715 F1	3024 B6	3036 B4	3052 D2	3071 C1	3088 B3	3101 A8	3304 D8	3328 D8	3362 F3	3380 E4	3513 C2	3701 E2	3716 A1	4208 C3	4220 E3	4230 A1	5005 C3	7009 F1	7310 F6	
2036 B9	2062 B1	2303 E8	2502 C4	2522 C4	2563 B3	3011 B3	3026 B9	3038 B9	3053 A6	3073 C9	3089 A3	3102 A8	3305 F4	3329 F7	3363 F3	3503 C2	3516 C4	3704 E2	3717 A1	4209 C3	4221 D4	4231 B2	5006 D4	7010 A6	7313 F7	
2037 B9	2063 A9	2304 C8	2503 C3	2523 C2	2564 B3	3012 B3	3027 A6	3039 B8	3054 C1	3077 C9	3091 B4	3105 E2	3306 E4	3331 E6	3364 F7	3505 C3	3540 D3	3705 F2	3718 A1	4210 B1	4222 D4	4232 E3	5262 B3	7011 C9	7325 F3	
2038 F1	2064 A9	2307 E8	2504 C4	2524 C4	2565 B3	3014 C1	3028 C1	3041 D3	3057 F1	3079 C1	3094 A1	3106 E1	3307 E8	3336 E7	3365 F7	3506 C4	3541 D3	3706 E1	4201 B3	4211 B1	4223 D3	4233 C3	7000 D1	7012 B9	7326 F7	

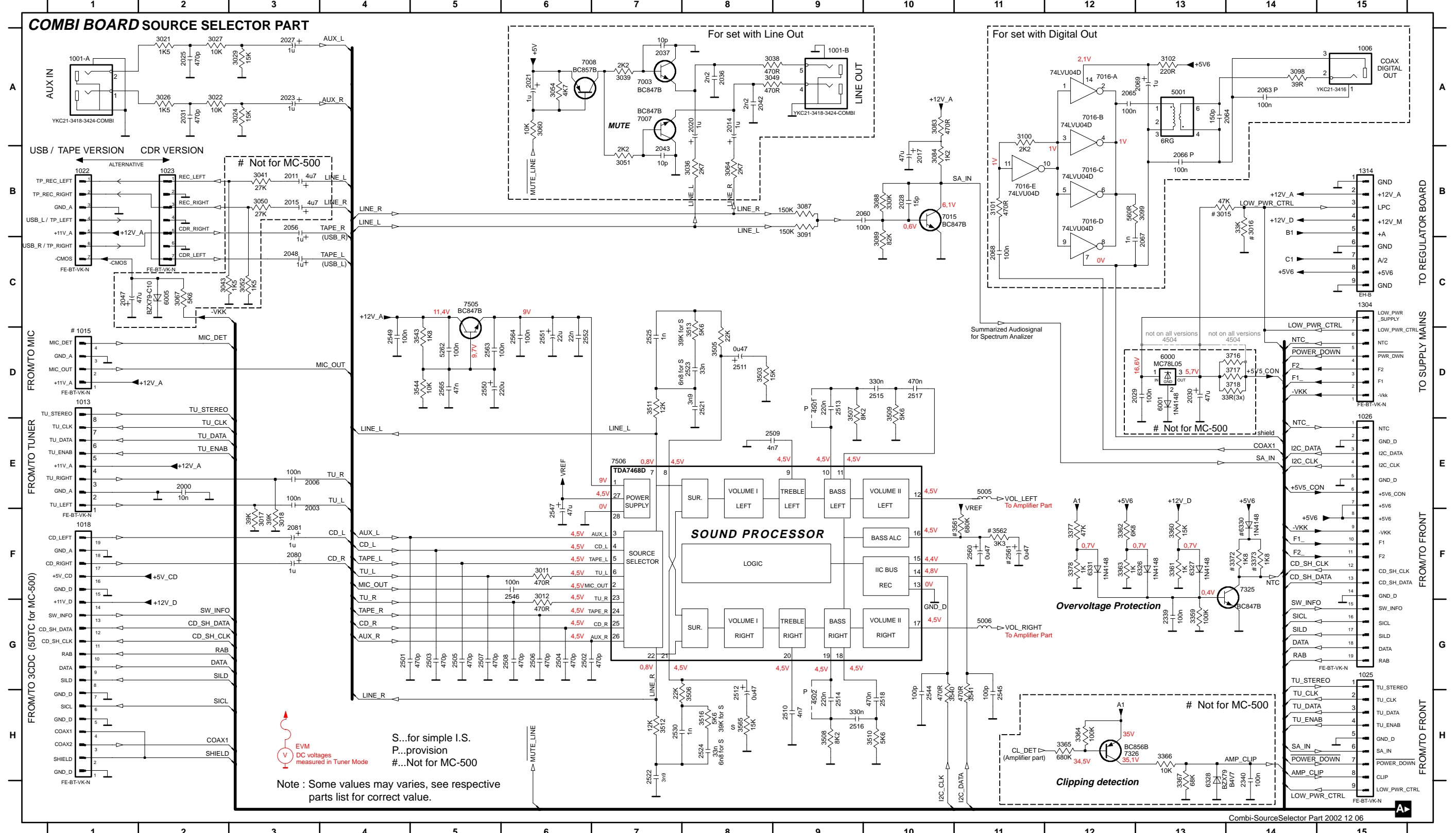
Copperside view



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

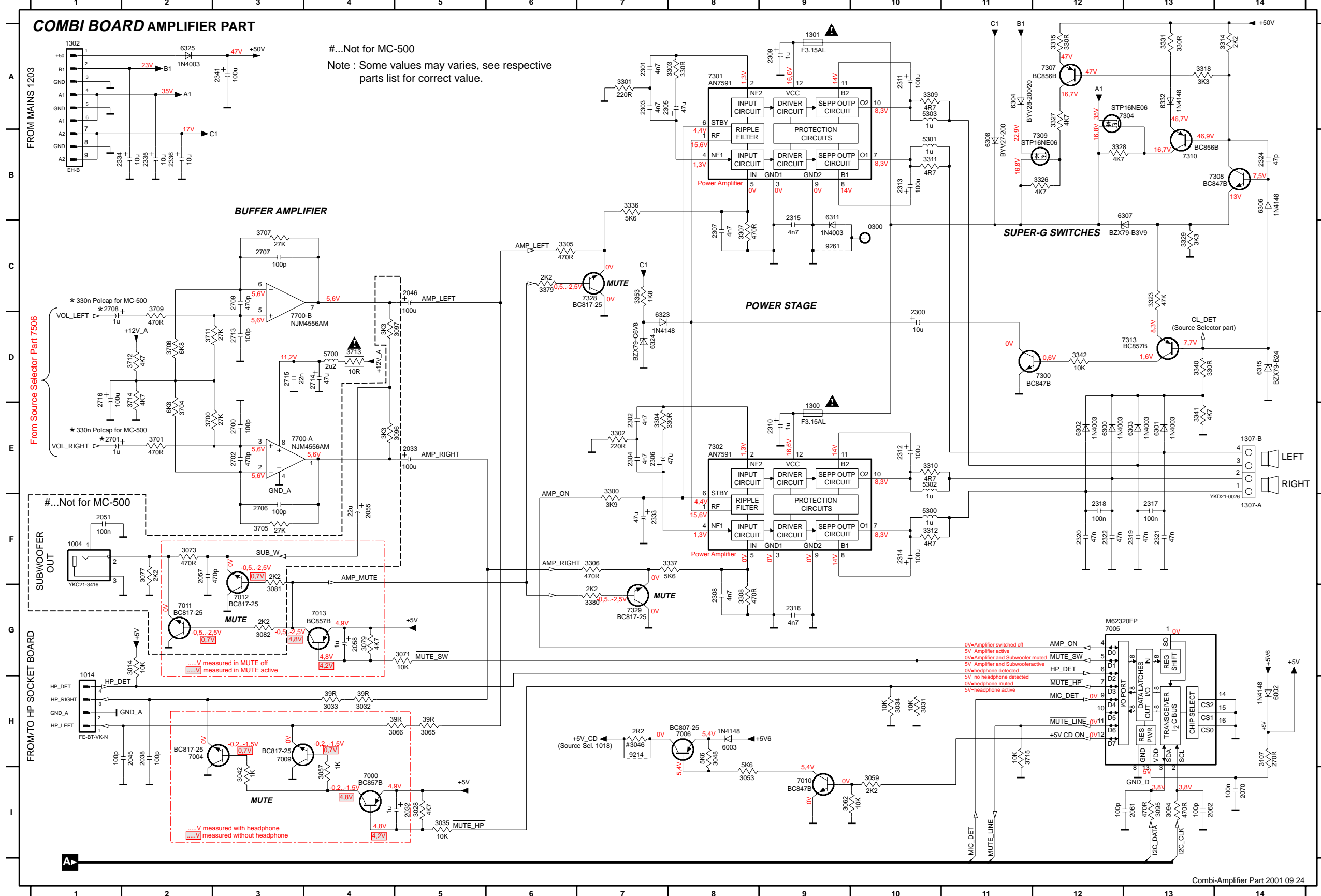
COMBI CIRCUIT - SOURCE SELECTOR PART

1001-A A1	1025 G15	2015 B3	2031 A2	2064 A13	2502 G6	2512 H8	2524 H8	2552 D6	3021 A2	3043 A2	3084 B9	3102 A13	3503 D8	3516 H8	3718 E14	6326 G13	7016-D B12
1001-B A9	1026 E15	2017 B9	2036 A8	2065 A12	2503 G5	2513 D9	2525 D7	2560 D11	3022 A3	3049 A8	3085 B10	3110 A3	3505 D8	3540 H10	4501 D9	6327 G13	7016-E B11
1002 A15	1304 C15	2020 A8	2037 A7	2066 B13	2504 G6	2514 H9	2530 H7	2561 D11	3024 A3	3050 B3	3087 B9	3111 A3	3506 H8	3541 H11	4502 H9	6331 G12	7016-F A11
1006 A15	1314 B15	2021 A6	2042 A8	2067 C13	2505 G5	2515 D10	2544 H10	2563 D5	3026 A2	3051 B7	3088 B10	3359 G13	3507 D9	3543 D5	4503 D13	7003 A7	7325 G14
1013 D1	1316 A4	2023 A3	2043 B7	2068 C11	2506 G6	2516 H9	2545 H11	2564 D6	3027 A3	3052 B3	3089 C10	3360 F13	3508 H9	3544 D5	4504 D14	7007 A7	7505 C5
1015 D1	2000 E2	2025 A2	2047 C1	2069 A13	2507 G5	2517 D10	2546 F6	2565 D5	3029 A3	3054 A6	3091 C9	3361 G13	3509 D10	3561 D10	5001 A13	7008 A6	7506 E7
1018 F1	2003 E3	2027 A3	2048 C3	2080 F3	2508 G6	2518 H10	2547 E6	2565 D5	3036 B8	3060 A6	3098 A14	3362 F13	3510 H10	3562 D11	5262 D5	7015 B10	
1020 H13	2006 E3	2028 B10	2056 B3	2081 F3	2509 E8	2521 D8	2549 D4	2564 D6	3038 A8	3064 B8	3099 B13	3363 G12	3511 D7	3565 H8	6000 D13	7016-A A12	
1022 B1	2011 B3	2029 D13	2060 B9	2339 G13	2510 H9	2522 H7	2550 D5	3017 E3	3039 A7	3067 C2	3100 A11	3377 G12	3512 H7	3716 D14	6001 D13	7016-B A12	
1023 B2	2014 A8	2030 D13	2063 A14	2501 G4	2511 D8	2523 D8	2551 D6	3018 E3	3041 B3	3083 B9	3101 B11	3378 G12	3513 D8	3717 E14	6005 C2	7016-C B12	



COMBI CIRCUIT - AMPLIFIER PART

0300 C10	1307-A F14	2045 H2	2061 I13	2303 A7	2309 A9	2315 B9	2321 F13	2336 B2	2706 F3	2715 D4	3033 H4	3053 I8	3071 G4	3094 I13	3107 H14	3305 C6	3311 B10
1004 F1	1307-B E14	2046 C5	2062 I13	2304 E7	2310 E9	2316 G9	2322 F12	2340 C14	2707 C3	2716 D1	3034 H10	3057 H4	3073 F2	3095 I13	3300 F7	3306 F7	3312 F10
1014 G1	1315 B1	2051 F1	2070 I14	2305 A7	2311 A10	2317 F13	2324 B14	2341 A3	2708 D1	3014 G2	3035 I5	3059 I10	3077 F2	3096 E4	3301 A7	3307 C8	3314 A14
1300 E9	2032 I5	2055 F4	2300 D9	2306 E7	2312 E10	2318 F12	2333 F7	2700 E3	2709 C3	3028 I5	3042 H3	3062 I9	3079 G4	3097 D4	3302 E7	3308 G8	3315 A12
1301 A9	2033 E5	2057 F2	2301 A7	2307 C8	2313 B10	2319 F13	2334 B1	2701 E1	2713 D3	3031 H10	3046 I7	3065 H5	3081 G3	3105 C2	3303 A8	3309 A10	3318 A13
1302 A1	2038 H2	2058 G4	2302 E7	2308 G8	2314 F10	2320 F12	2335 B2	2702 E3	2714 E3	3032 H4	3048 I8	3066 H5	3082 G3	3106 C2	3304 E7	3310 E10	3323 C13



#...Not for MC-500
 Note : Some values may varies, see respective parts list for correct value.

From Source Selector Part 7506

#...Not for MC-500

FROM/TO HP SOCKET BOARD

3326 B12	3327 A12	3328 B12	3329 C13	3331 A13	3336 B7	3337 F8	3340 D13	3341 E13	3342 D11	3353 C7	3364 C12	3365 D12	3366 C13	3367 C14	3379 C6	3380 G7	3700 E2	3701 E2	3704 E2	3705 F3	3706 D2	3707 C3	3709 D2	3711 D2	3712 D2	3713 D4	3714 D2	3715 H11	5300 F10	5301 B10	5302 E10	5303 A10	5700 D3	6002 H14	6003 I8	6300 E12	6301 E13	6302 E12	6303 E13	6304 A11	6306 B14	6307 B13	6308 B11	6311 B9	6315 D14	6323 D7	6324 D7	6325 A2	6328 C13	6332 A13	7000 H4	7004 H2	7005 G12	7006 I8	7009 H3	7010 I9	7011 G2	7012 G3	7013 G4	7300 D9	7301 A8	7302 E8	7304 A13	7307 A12	7308 B14	7309 B12	7310 B13	7313 D12	7326 C12	7328 C6	7329 G7	7700-A E3	7700-B D3	9214 I7	9261 C9
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MECHANICAL PARTS LIST

0202 4822 492 11735 SPRING TRANS

ELECTRICAL PARTS LIST - REGULATOR BOARD**MISCELLANEOUS**1171 4822 071 51002 Δ Fuse RAD LT 1A 250V**CAPACITORS**

2402 2022 020 00625 220uF 20% 16V
 2405 4822 124 11947 10uF 20% 16V
 2406 4822 124 41643 100uF 20% 16V
 2407 4822 124 41643 100uF 20% 16V
 2408 2020 561 90365 100nF +80/-20% 50V
 2409 4822 124 40248 10uF 20% 63V
 2410 2020 561 90365 100nF +80/-20% 50V
 2411 4822 124 12233 47uF 20% 25V
 2418 4822 126 11714 4,7nF 20%

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
 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
 3422 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 34174 BZX79-C4V7
 6409 4822 130 30621 1N4148

TRANSISTORS & INTEGRATED CIRCUITS

7401 4822 130 40959 BC547B
 7402 4822 130 44568 BC557B
 7403 9322 139 23687 TRA POW BDX53BFP
 7408 4822 130 40959 BC547B
 7409 4822 130 41246 BC327-25
 7417 4822 209 31841 IC L7805CP

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

ELECTRICAL PARTS LIST - COMBI BOARD**MISCELLANEOUS**

1001 4822 265 20553 Socket Cinch 2P - Aux in 2316 4822 126 13193 4,7nF 10% 63V
 1013 4822 265 11515 Flex Connector 8P 2317 2020 561 90365 100nF +80/-20% 50V
 1014 4822 267 10733 Flex Connector 4P 2318 2020 561 90365 100nF +80/-20% 50V
 1018 4822 265 10981 Flex Connector 15P 2319 4822 121 43526 47nF 5% 250V
 1022 4822 267 10953 Flex Connector 7P 2320 4822 121 43526 47nF 5% 250V
 1025 2422 025 14518 Flex Connector 9P 2321 4822 121 43526 47nF 5% 250V
 1026 4822 265 11553 Flex Connector 19P 2322 4822 121 43526 47nF 5% 250V
 1300 4822 252 11225 Δ Fuse RAD LF 3,15A 250V 2324 4822 126 11785 47pF 5% 50V
 1301 4822 252 11225 Δ Fuse RAD LF 3,15A 250V 2333 4822 124 40433 47uF 20% 25V
 1304 4822 267 10953 Flex Connector 7P 2334 4822 124 12255 10uF 20% 50V
 1307 4822 267 31176 Speaker Terminal 4P 2335 4822 124 12255 10uF 20% 50V
 2336 4822 124 12255 10uF 20% 50V

CAPACITORS

2000 5322 126 11583 10nF 10% 50V 2339 2238 586 59812 100nF +80/-20% 50V
 2003 2238 586 59812 100nF +80/-20% 50V 2341 4822 124 40255 100uF 20% 63V
 2006 2238 586 59812 100nF +80/-20% 50V 2341 2020 012 93664 100uF 20% 50V
 2011 2022 020 00734 1uF 20% 50V 2501 4822 126 13881 470pF 5% 50V
 2015 2022 020 00734 1uF 20% 50V 2502 4822 126 13881 470pF 5% 50V
 2023 2022 020 00734 1uF 20% 50V 2503 4822 126 13881 470pF 5% 50V
 2025 4822 126 13881 470pF 5% 50V 2504 4822 126 13881 470pF 5% 50V
 2027 2022 020 00734 1uF 20% 50V 2505 4822 126 13881 470pF 5% 50V
 2031 4822 126 13881 470pF 5% 50V 2506 4822 126 13881 470pF 5% 50V
 2032 4822 124 22651 1uF 20% 50V 2507 4822 126 13881 470pF 5% 50V
 2033 4822 124 23052 100uF 20% 16V 2508 4822 126 13881 470pF 5% 50V
 2038 2020 552 94427 100pF 5% 50V 2509 4822 126 13193 4,7nF 10% 63V
 2045 2020 552 94427 100pF 5% 50V 2510 4822 126 13193 4,7nF 10% 63V
 2046 4822 124 23052 100uF 20% 16V 2511 5322 124 41948 470nF 20% 50V
 2047 4822 124 81286 47uF 20% 16V 2512 5322 124 41948 470nF 20% 50V
 2048 2022 020 00734 1uF 20% 50V 2513 4822 121 42408 220nF 5% 63V
 2056 2022 020 00734 1uF 20% 50V 2514 4822 121 42408 220nF 5% 63V
 2058 4822 124 22651 1uF 20% 50V 2515 4822 121 51252 470nF 5% 63V
 2061 2020 552 94427 100pF 5% 50V 2516 4822 121 51252 470nF 5% 63V
 2062 2020 552 94427 100pF 5% 50V 2517 4822 121 51252 470nF 5% 63V
 2070 2238 586 59812 100nF +80/-20% 50V 2518 4822 121 51252 470nF 5% 63V
 2080 2022 020 00734 1uF 20% 50V 2521 5322 126 11579 3,3nF 10% 63V
 2081 2022 020 00734 1uF 20% 50V 2522 5322 126 11579 3,3nF 10% 63V
 2300 4822 124 12255 10uF 20% 50V 2523 4822 126 14549 33nF 16V
 2301 4822 126 13193 4,7nF 10% 63V 2524 4822 126 14549 33nF 16V
 2302 4822 126 13193 4,7nF 10% 63V 2525 3198 016 31020 1nF 25V
 2303 4822 126 13193 4,7nF 10% 63V 2530 3198 016 31020 1nF 25V
 2304 4822 126 13193 4,7nF 10% 63V 2544 2020 552 94427 100pF 5% 50V
 2305 3198 028 44790 47uF 20% 35V 2545 2020 552 94427 100pF 5% 50V
 2306 3198 028 44790 47uF 20% 35V 2546 4822 126 14585 100nF 10% 50V
 2307 4822 126 13193 4,7nF 10% 63V 2547 4822 124 81286 47uF 20% 16V
 2308 4822 126 13193 4,7nF 10% 63V 2549 2238 586 59812 100nF +80/-20% 50V
 2309 4822 124 22651 1uF 20% 50V 2550 4822 124 40433 47uF 20% 25V
 2310 4822 124 22651 1uF 20% 50V 2551 4822 124 81151 22uF 50V
 2311 4822 124 40207 100uF 20% 25V 2552 2238 916 15641 22nF 10% 25V
 2312 4822 124 40207 100uF 20% 25V 2560 5322 124 41948 470nF 20% 50V
 2313 4822 124 40207 100uF 20% 25V 2563 2238 586 59812 100nF +80/-20% 50V
 2314 4822 124 40207 100uF 20% 25V 2700 2020 552 94427 100pF 5% 50V
 2315 4822 126 13193 4,7nF 10% 63V 2701 5322 121 42661 330nF 5% 63V
 2702 4822 126 13881 470pF 5% 50V

ELECTRICAL PARTS LIST - COMBI BOARD**CAPACITORS**

2706	2020 552 94427	100pF 5% 50V
2707	2020 552 94427	100pF 5% 50V
2708	5322 121 42661	330nF 5% 63V
2709	4822 126 13881	470pF 5% 50V
2713	2020 552 94427	100pF 5% 50V
2714	4822 124 81286	47uF 20% 16V
2715	3198 017 42230	22nF 50V
2716	4822 124 23052	100uF 20% 16V

RESISTORS

3011	4822 051 20471	470R 5% 0,1W
3012	4822 051 20471	470R 5% 0,1W
3014	4822 051 30103	10k 5% 0,062W
3015	4822 117 12925	47k 1% 0,063W
3016	4822 051 30333	33k 5% 0,062W
3017	4822 051 30393	39k 5% 0,062W
3018	4822 051 30393	39k 5% 0,062W
3021	4822 051 30152	1k5 5% 0,062W
3022	4822 051 30103	10k 5% 0,062W
3024	4822 051 30153	15k 5% 0,062W
3026	4822 051 30152	1k5 5% 0,062W
3027	4822 051 30103	10k 5% 0,062W
3028	4822 051 30472	4k7 5% 0,062W
3029	4822 051 30153	15k 5% 0,062W
3031	4822 051 30103	10k 5% 0,062W
3032	2120 108 91909	RST SM 0603 ERJ3G 39R 5%
3033	2120 108 91909	RST SM 0603 ERJ3G 39R 5%
3034	4822 051 30103	10k 5% 0,062W
3035	4822 051 30103	10k 5% 0,062W
3041	4822 051 30273	27k 5% 0,062W
3042	4822 051 30102	1k 5% 0,062W
3043	4822 051 30152	1k5 5% 0,062W
3046	4822 116 80176	1R 5% 0,5W
3048	4822 051 30562	5k6 5% 0,063W
3050	4822 051 30273	27k 5% 0,062W
3052	4822 051 30152	1k5 5% 0,062W
3053	4822 051 30102	1k 5% 0,062W
3057	4822 051 30102	1k 5% 0,062W
3059	4822 051 30222	2k2 5% 0,062W
3062	4822 051 30103	10k 5% 0,062W
3065	2120 108 91909	RST SM 0603 ERJ3G 39R 5%
3066	2120 108 91909	RST SM 0603 ERJ3G 39R 5%
3067	4822 116 52289	5k6 5% 0,5W
3071	4822 051 30103	10k 5% 0,062W
3079	4822 051 30472	4k7 5% 0,062W
3094	4822 051 30471	470R 5% 0,062W
3095	4822 051 30471	470R 5% 0,062W
3107	4822 051 30271	270R 5% 0,062W
3300	4822 116 52276	3k9 5% 0,5W
3301	4822 051 30221	220R 5% 0,062W
3302	4822 051 30221	220R 5% 0,062W
3303	4822 051 30331	330R 5% 0,062W

3304	4822 051 30331	330R 5% 0,062W
3305	4822 051 30471	470R 5% 0,062W
3306	4822 051 30471	470R 5% 0,062W
3307	4822 051 30471	470R 5% 0,062W
3308	4822 051 30471	470R 5% 0,062W
3309	4822 050 24708	4R7 1% 0,6W
3310	4822 050 24708	4R7 1% 0,6W
3311	4822 050 24708	4R7 1% 0,6W
3312	4822 050 24708	4R7 1% 0,6W
3314	4822 051 30222	2k2 5% 0,062W
3315	4822 116 52219	330R 5% 0,5W
3318	4822 051 30332	3k3 5% 0,062W
3323	4822 117 12925	47k 1% 0,063W
3326	4822 051 30472	4k7 5% 0,062W
3327	4822 051 30472	4k7 5% 0,062W
3328	4822 051 30472	4k7 5% 0,062W
3329	4822 051 30332	3k3 5% 0,062W
3331	4822 051 30331	330R 5% 0,062W
3336	4822 051 30562	5k6 5% 0,063W
3337	4822 051 30562	5k6 5% 0,063W
3340	4822 116 52219	330R 5% 0,5W
3341	4822 051 30472	4k7 5% 0,062W
3342	4822 051 30103	10k 5% 0,062W
3353	4822 116 52249	1k8 5% 0,5W
3359	4822 117 13632	100k 1% 0,62W
3360	4822 051 30153	15k 5% 0,062W
3361	4822 051 30102	1k 5% 0,062W
3362	4822 051 30682	6k8 5% 0,062W
3363	4822 051 30102	1k 5% 0,062W
3372	4822 117 12903	1k8 1% 0,063W
3373	4822 117 12903	1k8 1% 0,063W
3377	4822 117 12925	47k 1% 0,063W
3378	4822 051 30102	1k 5% 0,062W
3379	4822 051 30222	2k2 5% 0,062W
3380	4822 051 30222	2k2 5% 0,062W
3503	4822 051 30153	15k 5% 0,062W
3505	4822 051 30102	1k 5% 0,062W
3506	4822 051 30102	1k 5% 0,062W
3507	5322 117 13056	8k2 1% 0,063W
3508	5322 117 13056	8k2 1% 0,063W
3509	4822 051 30562	5k6 5% 0,063W
3510	4822 051 30562	5k6 5% 0,063W
3511	4822 051 30123	12k 5% 0,062W
3512	4822 051 30123	12k 5% 0,062W
3513	4822 051 30562	5k6 5% 0,063W
3516	4822 051 30562	5k6 5% 0,063W
3540	4822 051 30471	470R 5% 0,062W
3541	4822 051 30471	470R 5% 0,062W
3543	4822 117 12903	1k8 1% 0,063W
3544	4822 051 30103	10k 5% 0,062W
3565	4822 051 30153	15k 5% 0,062W
3700	4822 051 30273	27k 5% 0,062W

ELECTRICAL PARTS LIST - COMBI BOARD

3701	4822 051 30471	470R 5% 0,062W
3704	4822 051 30682	6k8 5% 0,062W
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
3715	4822 051 30103	10k 5% 0,062W
4201	4822 051 30008	0R Jumper 0603
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
4214	4822 051 30008	0R Jumper 0603
4215	4822 051 30008	0R Jumper 0603
4216	4822 051 30008	0R Jumper 0603
4217	4822 051 30008	0R Jumper 0603
4219	4822 051 30008	0R Jumper 0603
4220	4822 051 30008	0R Jumper 0603
4221	4822 051 30008	0R Jumper 0603
4222	4822 051 30008	0R Jumper 0603
4223	4822 051 30008	0R Jumper 0603
4224	4822 051 30008	0R Jumper 0603
4225	4822 051 30008	0R Jumper 0603
4226	4822 051 30008	0R Jumper 0603
4227	4822 051 30008	0R Jumper 0603
4228	4822 051 30008	0R Jumper 0603
4229	4822 051 30008	0R Jumper 0603
4230	4822 051 30008	0R Jumper 0603
4231	4822 051 30008	0R Jumper 0603
4232	4822 051 30008	0R Jumper 0603
4233	4822 051 30008	0R Jumper 0603
4234	4822 051 30008	0R Jumper 0603
4235	4822 051 30008	0R Jumper 0603
4503	4822 051 30008	0R Jumper 0603
4504	4822 051 30008	0R Jumper 0603

COILS & FILTERS

5005	2422 549 44608	INDFXD 0603 EMI 100MHz 1k
5006	2422 549 44608	INDFXD 0603 EMI 100MHz 1k
5262	2238 586 59812	100nF +80/-20% 50V
5300	2422 536 00614	Coil 18,5T 0.5-2UEW 5,6D B

5301	2422 536 00614	Coil 18,5T 0.5-2UEW 5,6D B
5302	2422 536 00614	Coil 18,5T 0.5-2UEW 5,6D B
5303	2422 536 00614	Coil 18,5T 0.5-2UEW 5,6D B
5700	4822 157 62552	Coil 2,2uH 5%

DIODES

6002	4822 130 30621	1N4148
6005	4822 130 61219	BZX79-C10
6301	4822 130 31878	1N4003G
6302	4822 130 31878	1N4003G
6303	4822 130 31878	1N4003G
6304	9322 163 82682	DIO REC BYV98-200
6306	4822 130 30621	1N4148
6307	3198 010 53980	DIO REG 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
6330	4822 130 30621	1N4148
6331	4822 130 30621	1N4148
6332	4822 130 30621	1N4148

TRANSISTORS & INTEGRATED CIRCUITS

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

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

COMBI & REGULATOR BOARDS

From production week 444 onwards

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Brief introduction of the Regulator Board

The regulator board provides the following:

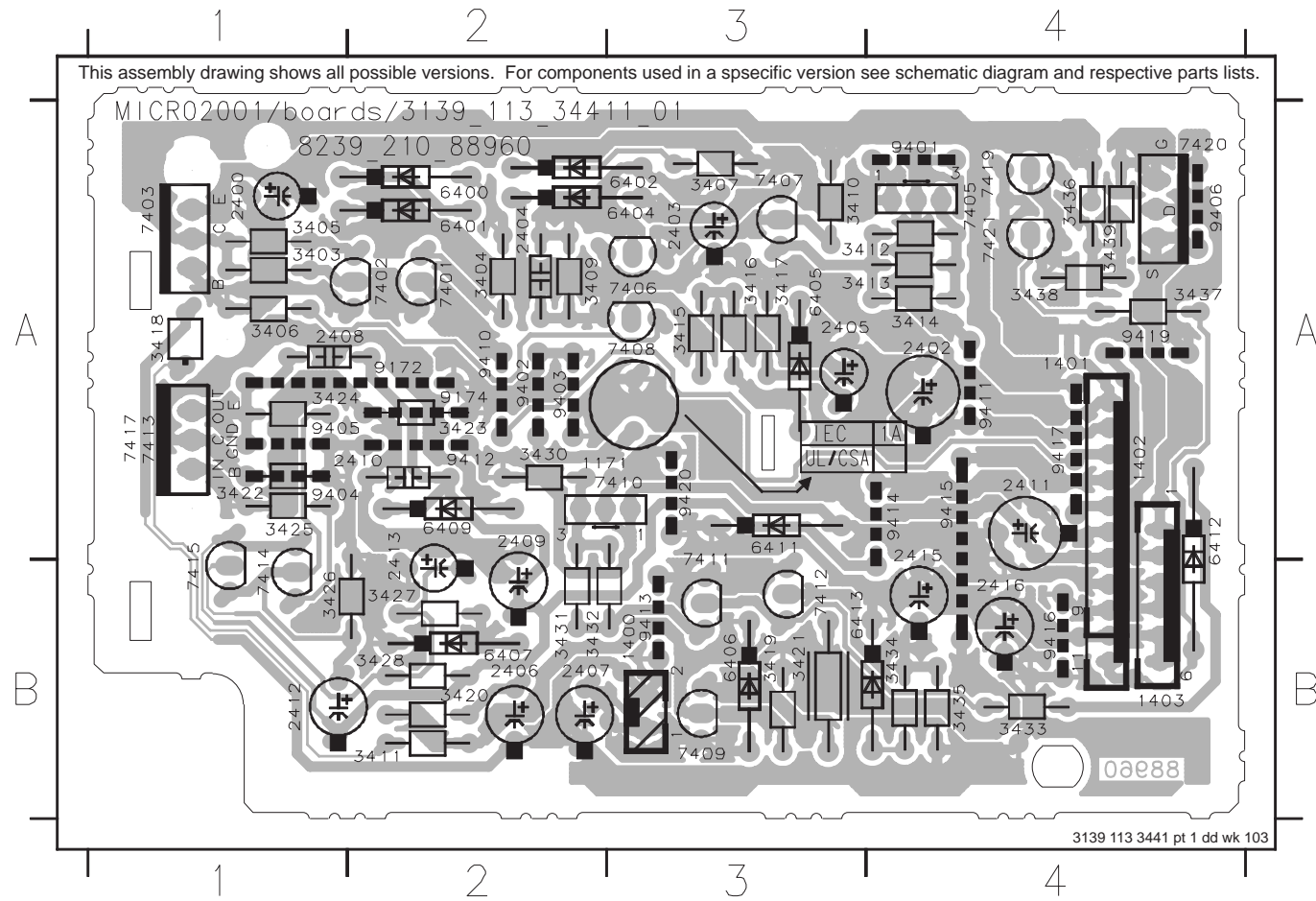
- a) 12V supply: +12V_A and +12V_M derived from the +A supply
- b) 5,6V and 5V supply: +5V6 and 5V_VCD derived from the +A/2 supply

Brief introduction of the Combi Board

1. Source selection & Sound control
Audio Processor IC 7550 (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 7550. Muting is done via Transistors 7500, 7501 and 7508.
3. Pre-amplifier
IC7510 (NJM4556AM) provides pre-amplification of the output signals from the Audio Processor IC 7550. Muting of audio signals to Power Amplifier IC 7200 during Headphone application and Source switching is done via transistors 7514, 7515, 7540 and 7541
4. Headphone and Sub-woofer outputs
The headphone and Sub-woofer output is taken from the pre-amplifier out. Muting of these outputs are done via transistors 7511, 7512, 7522 and 7523.
5. Power Amplifier
IC 7200 (AN7125) is used as Power amplifier. It function as Class G amplifier together with transistor 7204 (BDW94C) which switches the supply between supply source +A and +A/2.
6. Protection Circuit
Transistors 7201, 7202 and 7203 provides protection against:
 - short-circuit of speaker terminals
 - short-circuit of speaker terminals to ground
7. Digital out buffer
IC 7525 (74VUD40) act as buffer to boost the digital output level
8. I/O Expander
I/O Expander IC 7526 (M62320FP) converts the I2C bus (I2C_CLK and I2C_DATA lines) into additional control lines.
9. +5V6_CON supply
IC 7529 (MC78L05) provides the necessary supply to power μ Processor IC 7102 (TMP88CU74F) during ECO Power mode.

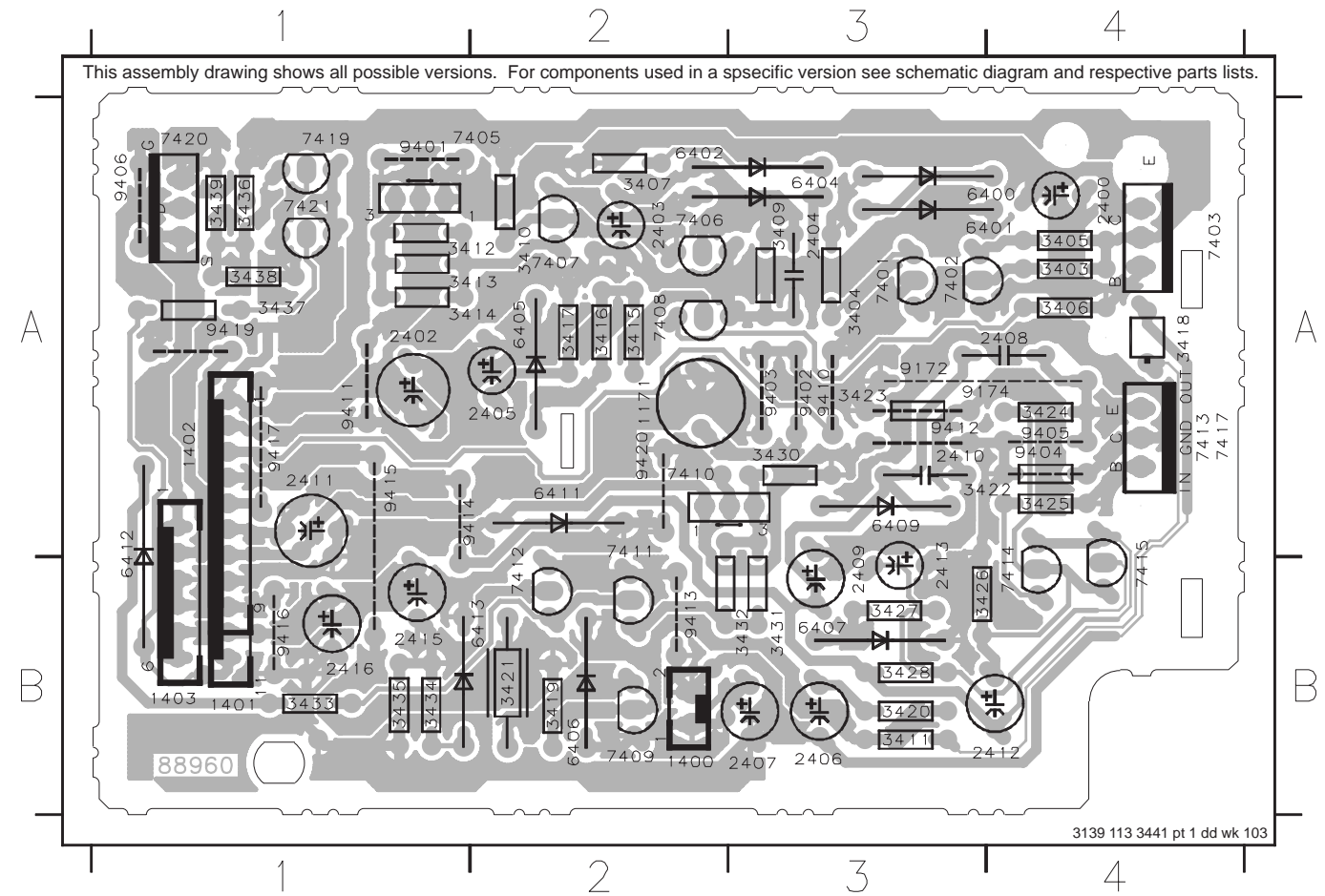
COMPONENT SIDE VIEW - REGULATOR BOARD

1171 A2	2408 A1	3407 A3	3420 B2	3433 B4	6406 B3	7408 A3	9172 A2	9414 A4
1400 B3	2409 A2	3409 A2	3421 B3	3434 B4	6407 B2	7409 B3	9174 A2	9415 A4
1401 A4	2410 A2	3410 A3	3422 A1	3435 B4	6409 A2	7410 A3	9401 A4	9416 B4
1402 A4	2411 A4	3411 B2	3423 A2	3436 A4	6411 A3	7411 A3	9402 A2	9417 A4
1403 B4	2412 B1	3412 A3	3424 A1	3437 A4	6412 A4	7412 B3	9403 A2	9419 A4
2400 A1	2413 A2	3413 A3	3425 A1	3438 A4	6413 B3	7413 A1	9404 A1	9420 A3
2402 A4	2415 A4	3414 A4	3426 B1	3439 A4	7401 A2	7414 B1	9405 A1	
2403 A3	2416 B4	3415 A3	3427 B2	6400 A2	7402 A2	7415 B1	9406 A4	
2404 A2	3403 A1	3416 A3	3428 B2	6401 A2	7403 A1	7417 A1	9410 A2	
2405 A3	3404 A2	3417 A3	3430 A2	6402 A3	7405 A4	7419 A4	9411 A4	
2406 B2	3405 A1	3418 A1	3431 B2	6404 A3	7406 A3	7420 A4	9412 A2	
2407 B2	3406 A1	3419 B3	3432 B2	6405 A3	7407 A3	7421 A4	9413 B3	



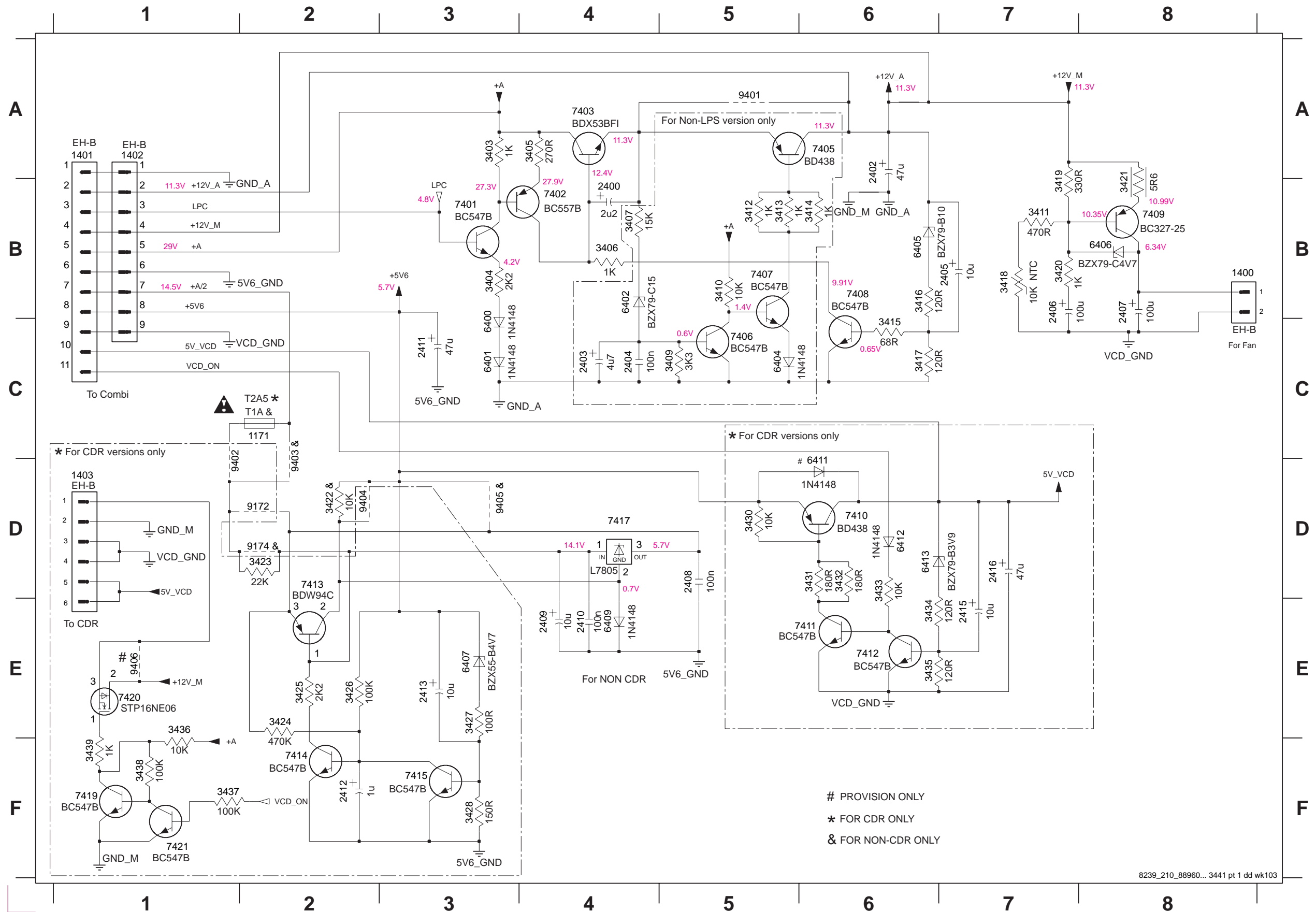
COPPER SIDE VIEW - REGULATOR BOARD

1171 A2	2408 A4	3407 A2	3420 B3	3433 B1	6406 B2	7408 A2	9172 A3	9414 A1
1400 B2	2409 B3	3409 A3	3421 B2	3434 B1	6407 B3	7409 B2	9174 A3	9415 A1
1401 B1	2410 A3	3410 A2	3422 A4	3435 B1	6409 A3	7410 A2	9401 A1	9416 B1
1402 A1	2411 A1	3411 B3	3423 A3	3436 A1	6411 A2	7411 A2	9402 A3	9417 A1
1403 B1	2412 B4	3412 A2	3424 A4	3437 A1	6412 A1	7412 B2	9403 A3	9419 A1
2400 A4	2413 B3	3413 A2	3425 A4	3438 A1	6413 B2	7413 A4	9404 A4	9420 A2
2402 A1	2415 B1	3414 A2	3426 B3	3439 A1	7401 A3	7414 B4	9405 A4	
2403 A2	2416 B1	3415 A2	3427 B3	6400 A4	7402 A3	7415 B4	9406 A1	
2404 A3	3403 A4	3416 A2	3428 B3	6401 A4	7403 A4	7417 A4	9410 A3	
2405 A2	3404 A3	3417 A2	3430 A3	6402 A2	7405 A2	7419 A1	9411 A1	
2406 B3	3405 A4	3418 A4	3431 B3	6404 A3	7406 A2	7420 A1	9412 A3	
2407 B3	3406 A4	3419 B2	3432 B3	6405 A2	7407 A2	7421 A1	9413 B2	



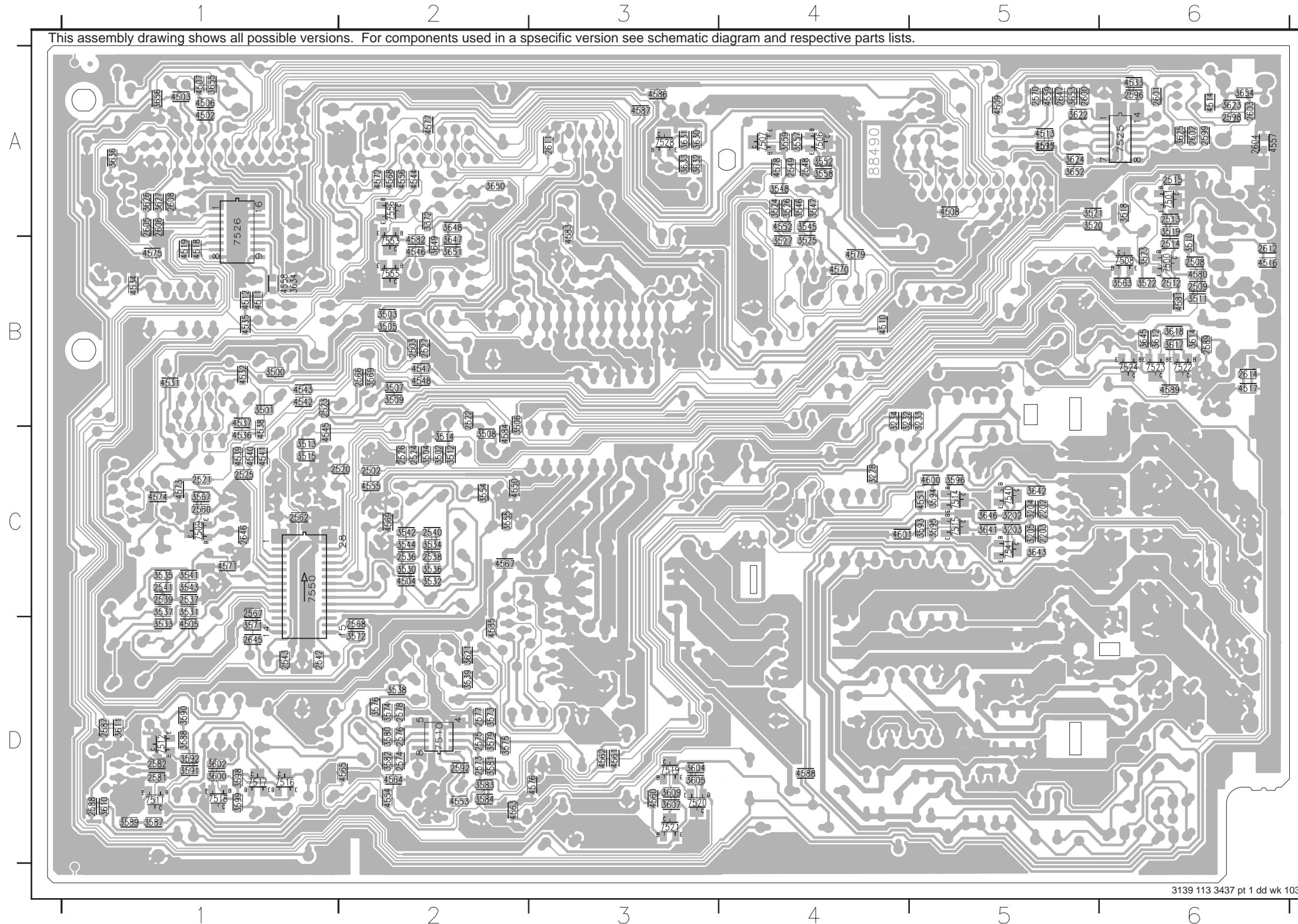
CIRCUIT DIAGRAM - REGULATOR BOARD

1171 C2	1403 D1	2404 C4	2408 D5	2412 F2	3403 A3	3407 B4	3412 B5	3416 B6	3420 B7	3424 E2	3428 F3	3433 D6	3437 F1	6401 C3	6406 B8	6412 D6	7403 A4	7408 B6	7412 E6	7417 D4	9172 D2	9403 D2
1400 B8	2400 B4	2405 B7	2409 E4	2413 E3	3404 B3	3409 C5	3413 B5	3417 C6	3421 B8	3425 E2	3430 D5	3434 E6	3438 F1	6402 B4	6407 E3	6413 D6	7405 A6	7409 B8	7413 D2	7419 F1	9174 D2	9404 D2
1401 A1	2402 A6	2406 B7	2410 E4	2415 E7	3405 A4	3410 B5	3414 B6	3418 B7	3422 D2	3426 E2	3431 D6	3435 E6	3439 F1	6404 C5	6409 E4	7401 B3	7406 C5	7410 D6	7414 F2	7420 E1	9401 A5	9405 D3
1402 A1	2403 C4	2407 B8	2411 C3	2416 D7	3406 B4	3411 B7	3415 C6	3419 B7	3423 D2	3427 E3	3432 D6	3436 E1	6400 C3	6405 B6	6411 D6	7402 B4	7407 B5	7411 E6	7415 F3	7421 F1	9402 D1	9406 E1



CHIP LAYOUT - COMBI BOARD

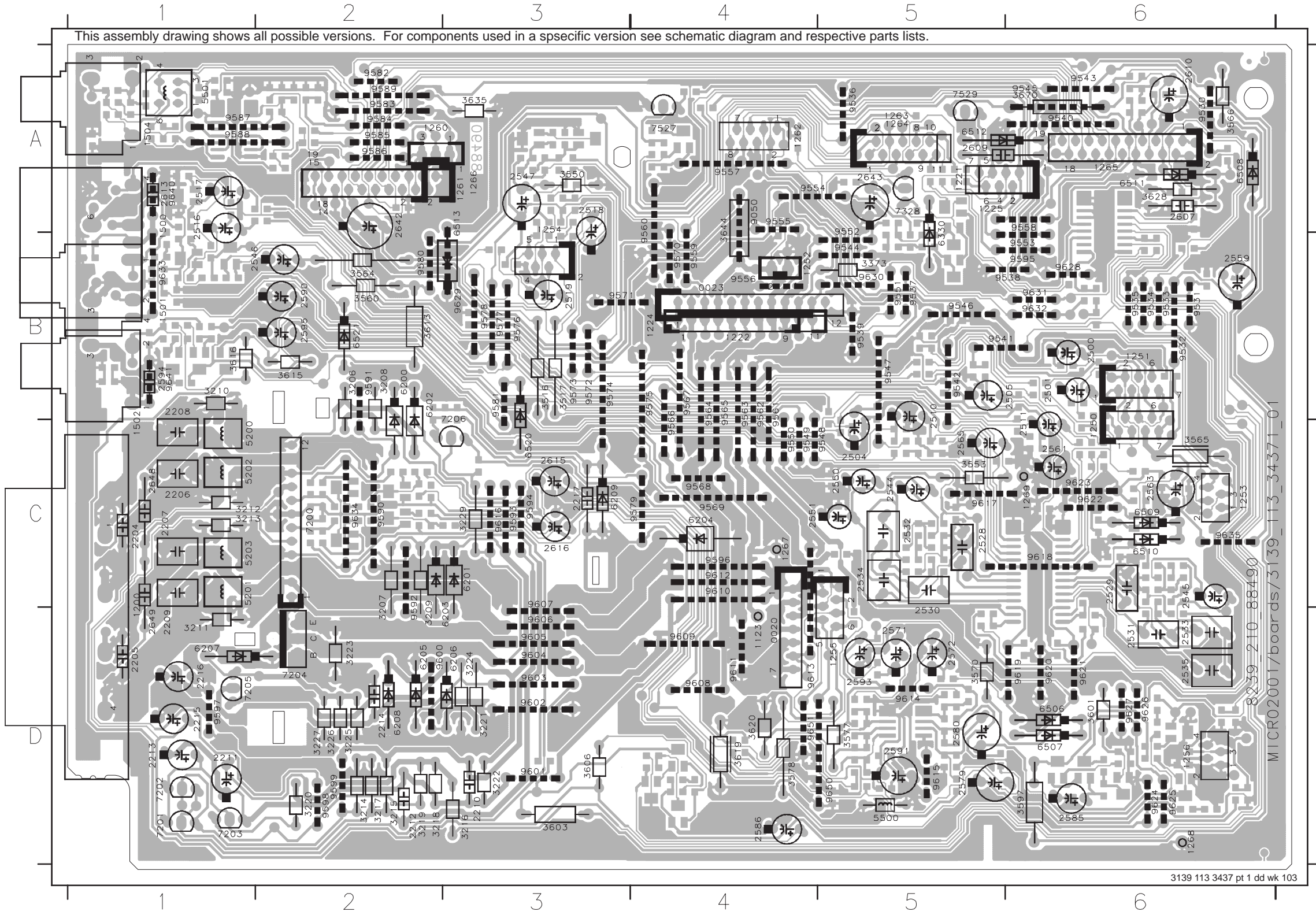
This assembly drawing shows all possible versions. For components used in a specific version see schematic diagram and respective parts lists.



2202	C5	3505	B2	3610	D1	4558	B1
2203	C5	3506	B2	3611	D1	4559	A5
2502	C2	3507	B2	3612	B6	4560	D3
2503	B2	3508	C2	3614	B6	4561	D3
2508	B6	3509	B2	3617	B6	4562	D3
2509	B6	3510	B6	3618	B6	4563	D2
2512	B6	3511	B6	3621	D2	4564	D2
2513	A6	3512	C2	3622	A5	4565	D2
2514	B6	3513	C1	3623	A6	4567	C2
2515	A6	3514	C2	3624	A5	4568	A2
2520	C2	3515	C1	3625	A6	4569	C2
2521	C1	3518	A6	3626	A1	4570	B4
2522	B2	3519	A6	3627	A1	4571	C1
2523	B1	3520	A5	3630	A3	4572	A2
2524	C2	3521	A5	3631	A3	4573	C1
2525	C1	3522	B6	3632	A3	4574	C1
2526	C2	3523	B6	3633	A3	4575	B1
2527	B2	3524	A4	3634	B1	4576	D3
2536	C2	3525	B4	3636	A1	4577	A2
2537	C1	3526	A4	3641	C5	4578	A4
2538	C2	3527	B4	3642	C5	4579	B4
2539	C1	3530	C2	3643	C5	4580	B6
2540	C2	3531	C1	3645	B6	4581	B6
2541	C1	3532	C2	3646	C5	4582	B2
2542	D1	3533	D1	3647	B2	4583	A3
2543	D1	3534	C2	3648	A2	4584	C2
2548	A4	3535	C1	3649	B2	4585	D2
2549	A4	3536	C2	3650	A2	4586	A3
2560	C1	3537	C1	3651	B2	4587	A3
2562	C1	3538	D2	3652	A5	4588	D4
2566	B2	3539	D2	3653	A5	4589	B6
2567	C1	3541	C1	3654	A6	4600	C5
2568	D2	3542	C2	3655	A1	4601	C4
2570	A5	3543	C1	3656	A1	7500	B6
2573	D2	3544	C2	4502	A1	7501	A6
2574	D2	3545	A4	4503	A1	7506	A4
2575	D2	3546	A4	4504	C2	7507	A4
2576	D2	3547	A4	4505	D1	7508	B6
2577	D2	3548	A4	4506	A1	7509	C1
2578	D2	3552	A4	4507	A1	7510	D2
2581	D1	3554	C2	4508	A5	7511	D1
2582	D1	3555	C2	4509	A5	7512	D1
2587	D1	3557	A4	4510	B4	7514	C5
2588	D1	3558	A4	4511	B1	7515	C5
2589	B6	3559	A4	4512	B1	7516	D1
2592	D2	3563	B6	4513	A5	7517	D1
2596	A6	3567	C1	4514	A6	7518	D1
2597	A5	3569	B2	4515	A5	7519	D3
2598	A6	3571	D1	4516	B6	7520	D3
2599	A6	3572	D2	4517	B6	7521	D3
2600	A5	3573	D2	4518	B1	7522	B6
2601	A6	3574	D2	4519	B1	7523	B6
2602	A6	3575	D2	4531	B1	7524	B6
2603	A6	3576	D2	4532	B1	7525	A6
2604	A6	3579	D2	4533	A6	7526	A1
2605	A1	3580	D2	4534	B1	7528	A3
2606	A1	3581	D2	4535	B1	7540	C5
2608	A1	3582	D2	4536	C1	7541	C5
2611	A3	3583	D2	4537	B1	7550	C1
2612	B6	3584	D2	4538	C1	7553	B2
2614	B6	3587	D1	4539	C1	7555	B2
2645	D1	3588	D1	4540	C1	7556	A2
2646	C1	3589	D1	4541	C1		
2647	A5	3590	D1	4542	B1		
3202	C5	3591	D1	4543	B1		
3203	C5	3592	D1	4544	A2		
3204	C5	3593	C5	4545	C1		
3205	C5	3594	C5	4546	B2		
3228	C4	3595	C5	4547	B2		
3232	B4	3596	C5	4548	B2		
3233	B5	3598	D1	4550	C2		
3234	B4	3599	D1	4551	C5		
3372	A2	3600	D1	4552	A4		
3500	B1	3602	D1	4553	D2		
3501	B1	3604	D3	4554	D2		
3502	C2	3605	D3	4555	C2		
3503	B2	3607	D3	4556	A2		
3504	C2	3609	D3	4557	A6		

COMPONENT LAYOUT - COMBI BOARD

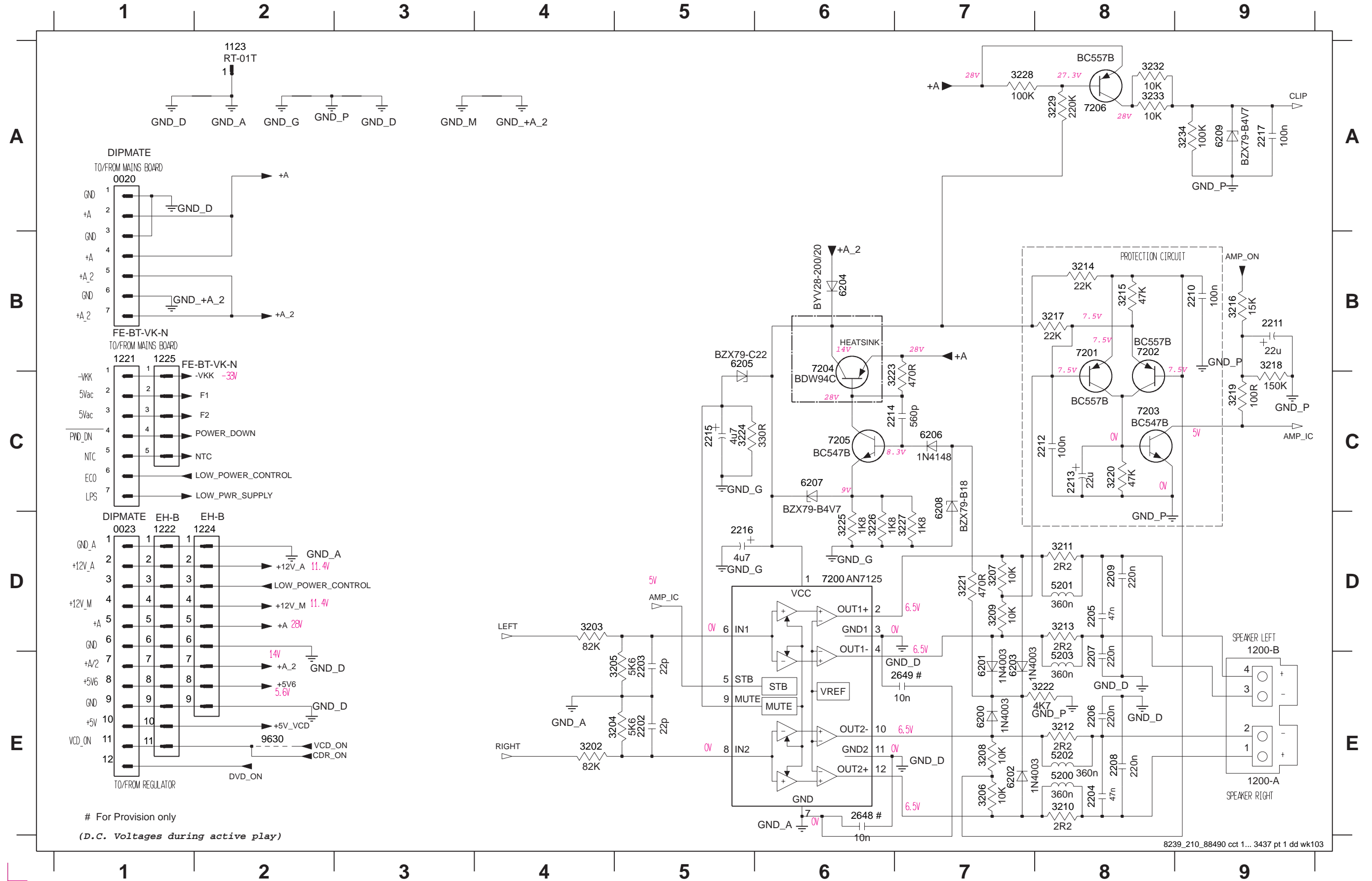
This assembly drawing shows all possible versions. For components used in a specific version see schematic diagram and respective parts lists.



0020	D4	2591	D5	6330	B5	9586	A2
0023	B4	2593	D5	6506	D6	9587	A1
1123	D4	2594	B1	6507	D6	9588	A1
1200	C1	2595	B2	6508	A6	9589	A2
1221	A5	2607	A6	6509	C6	9590	C2
1222	B4	2609	A5	6510	C6	9591	B2
1224	B4	2610	A6	6511	A6	9592	D2
1225	A5	2613	A1	6512	A5	9593	C3
1250	C6	2615	C3	6513	A3	9594	C3
1251	B6	2616	C3	6520	C3	9595	B6
1252	B4	2642	A2	6521	B2	9596	C4
1253	C6	2643	A5	7200	C2	9597	D1
1254	A3	2648	C1	7201	D1	9598	D2
1255	D5	2649	D1	7202	D1	9599	D2
1256	D6	3206	B2	7203	D1	9600	D2
1260	A2	3207	D2	7204	D2	9601	D3
1261	A3	3208	B2	7205	D1	9602	D3
1262	A4	3209	D2	7206	B3	9603	D3
1263	A5	3210	B1	7328	A5	9604	D3
1264	A5	3211	D1	7527	A4	9605	D3
1265	A6	3212	C1	7529	A5	9606	D3
1266	A3	3213	C1	9050	A4	9607	C3
1267	C4	3214	D2	9530	A6	9608	D4
1268	D6	3215	D2	9531	B6	9609	D4
1269	C6	3216	D3	9532	B6	9610	C4
1500	A1	3217	D2	9533	B6	9611	D4
1501	B1	3218	D2	9534	B6	9612	C4
1502	C1	3219	D2	9535	B6	9613	D4
1504	A1	3220	D2	9536	A5	9614	D5
2204	C1	3221	D3	9537	B5	9615	D5
2205	D1	3222	D3	9538	B6	9616	C3
2206	C1	3223	D2	9539	B5	9617	C5
2207	C1	3224	D3	9540	A6	9618	C6
2208	B1	3225	D2	9541	B5	9619	D6
2209	D1	3226	D2	9542	B5	9620	D6
2210	D3	3227	D2	9543	A6	9621	C6
2211	D1	3229	C3	9544	B5	9622	C6
2212	D2	3573	B5	9545	A6	9623	C6
2213	D1	3516	B3	9546	B5	9624	D6
2214	D2	3517	B3	9547	B5	9625	D6
2215	D1	3550	A3	9548	C5	9626	D6
2216	D1	3553	C5	9549	C4	9627	D6
2217	C3	3560	B2	9550	C4	9628	B6
2500	B6	3564	B2	9551	B5	9629	B3
2501	B6	3565	C6	9552	A5	9630	B5
2504	C5	3566	A6	9553	B6	9631	B6
2505	B6	3570	D5	9554	A4	9632	B6
2510	B5	3577	D5	9555	A4	9633	B1
2511	C6	3578	D4	9556	B4	9634	C2
2516	A1	3597	D6	9557	A4	9635	C6
2517	A1	3601	D6	9558	A6	9640	A1
2518	A3	3603	D3	9559	B4	9641	B1
2519	B3	3606	D3	9560	A4	9650	D5
2528	C5	3613	B2	9561	B4	9651	D4
2529	C6	3615	B2	9562	B4		
2530	D5	3616	B1	9563	B4		
2531	D6	3619	D4	9564	B4		
2532	C5	3620	D4	9565	B4		
2533	D6	3628	A6	9566	C4		
2534	C5	3635	A3	9567	B4		
2535	D6	3644	A4	9568	C4		
2544	C5	3670	A6	9569	C4		
2545	C6	5200	C1	9570	B4		
2546	B1	5201	C1	9571	B3		
2547	A3	5202	C1	9572	B3		
2550	C5	5203	C1	9573	B3		
2551	C4	5500	D5	9574	B3		
2559	B6	5501	A1	9575	B4		
2561	C6	6200	B2	9576	B3		
2563	C6	6201	C3	9577	B3		
2565	C5	6202	B2	9578	B3		
2571	D5	6203	D5	9579	C4		
2572	D5	6204	C4	9580	B2		
2579	D5	6205	D2	9581	B3		
2580	D5	6206	D3	9582	A2		
2585	D6	6207	D1	9583	A2		
2586	D4	6208	D2	9584	A2		
2590	B2	6209	C3	9585	A2		

COMBICIRCUIT - POWER AMPLIFIER PART

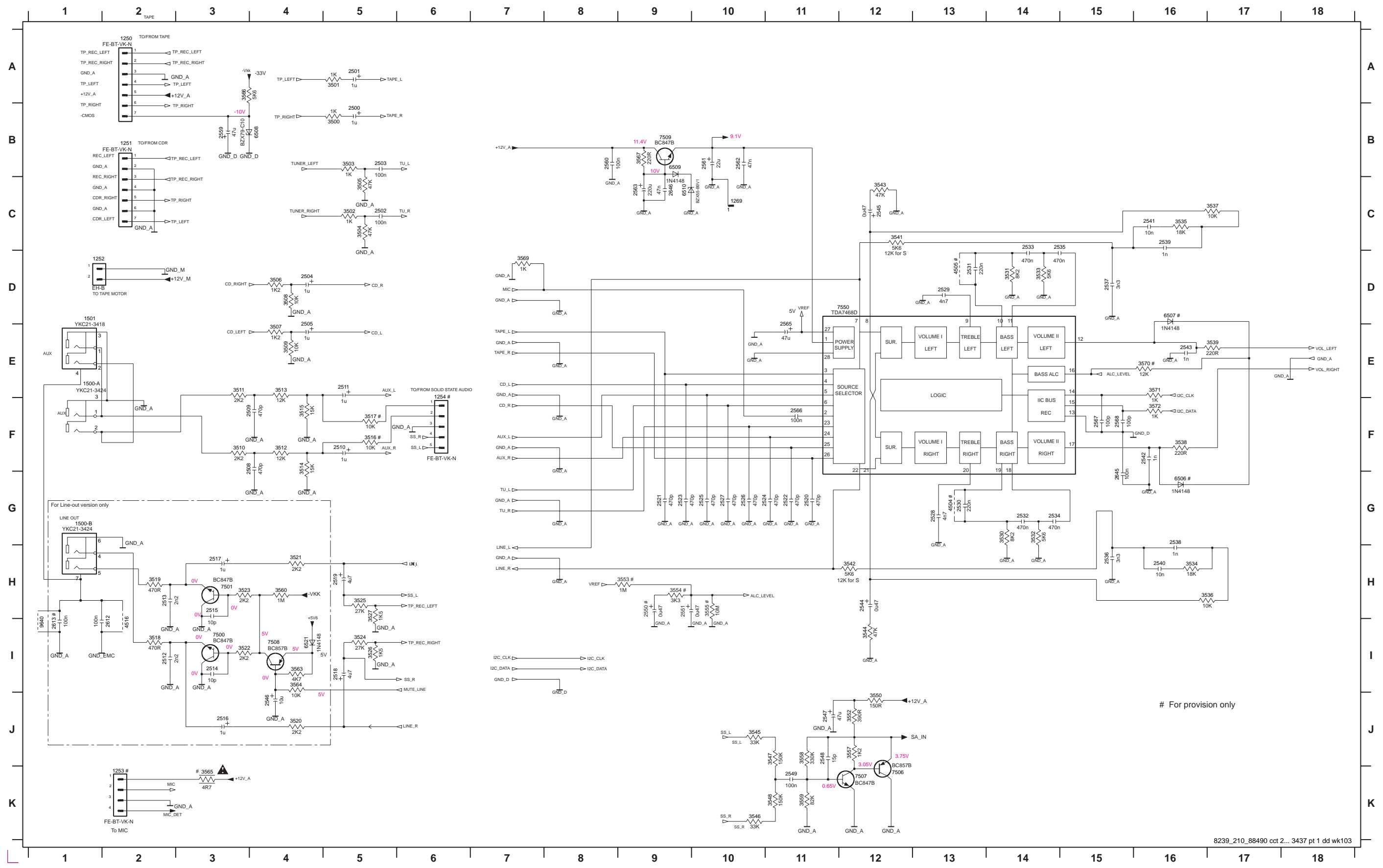
0020 A1	1221 B1	2203 E5	2208 E8	2213 C8	2648 E6	3205 E5	3210 E8	3215 B8	3220 C8	3225 D6	3232 A8	5202 E8	6203 E7	6208 C7	7203 C8
0023 D1	1222 D1	2204 E8	2209 D8	2214 C6	2649 E7	3206 E7	3211 D8	3216 B9	3221 D7	3226 D6	3233 A8	5203 E8	6204 B6	6209 A9	7204 C6
1123 A2	1224 D1	2205 D8	2210 B9	2215 C5	3202 E4	3207 D7	3212 E8	3217 B8	3222 E8	3227 D7	3234 A9	6200 E7	6205 B5	7200 D6	7205 C6
1200-A E9	1225 B1	2206 E8	2211 B9	2216 D5	3203 D4	3208 E7	3213 D8	3218 B9	3223 C7	3228 A7	5200 E8	6201 E7	6206 C7	7201 B8	7206 A8
1200-B E9	2202 E5	2207 E8	2212 C8	2217 A9	3204 E4	3209 D7	3214 B8	3219 C9	3224 C5	3229 A8	5201 D8	6202 E7	6207 C6	7202 B8	9630 E2



For Provision only
 (D.C. Voltages during active play)

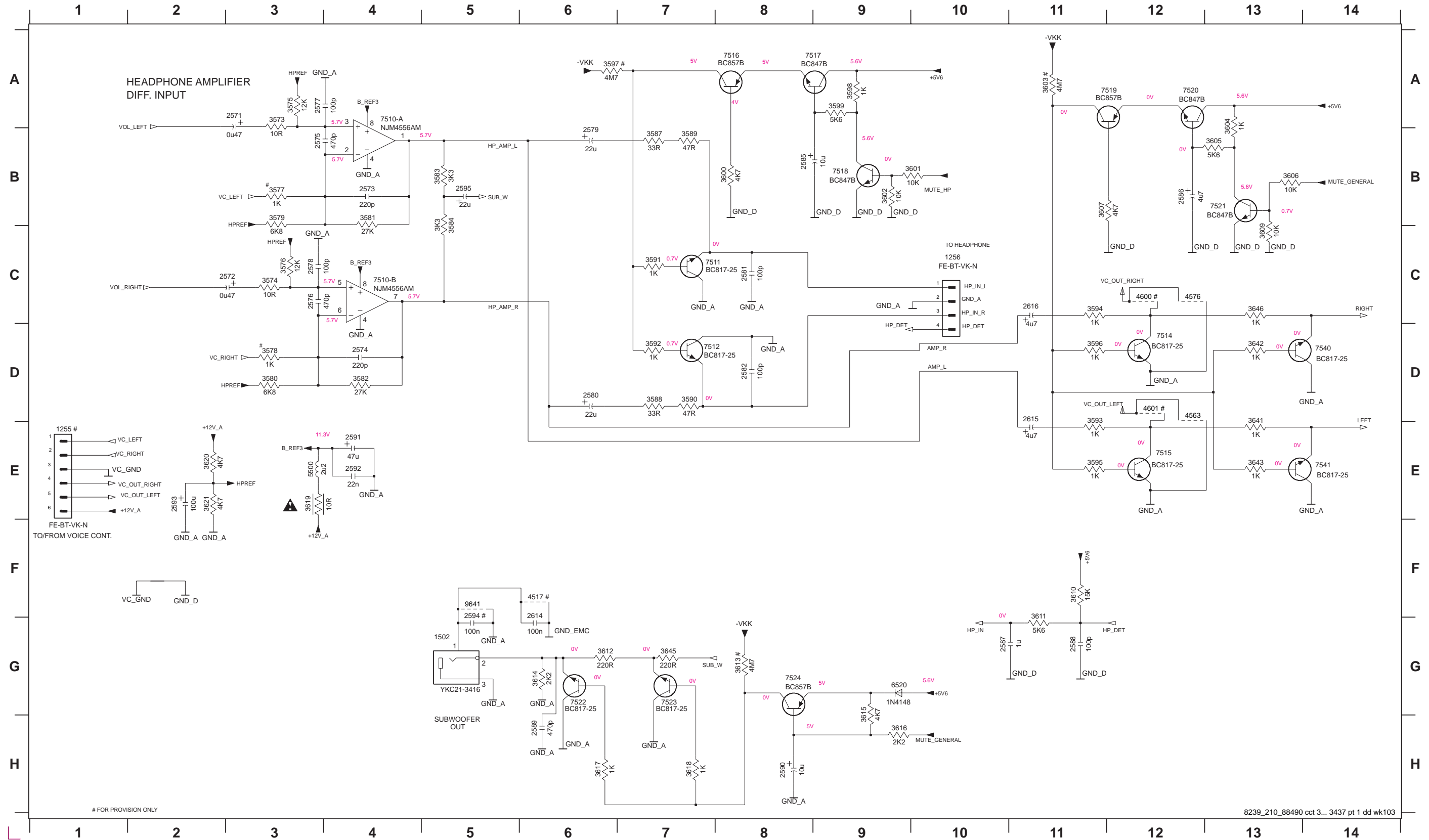
COMBI CIRCUIT - SOURCE SELECT & SOUND CONTROL PART

1250 A2	1269 C10	2501 A5	2508 F4	2513 H2	2518 I5	2523 G9	2528 G13	2533 C14	2538 G16	2543 E16	2548 J11	2560 B8	2566 F11	2645 G15	3503 B5	3508 D4	3513 E4	3518 I2	3523 H3	3530 G14	3535 C16	3541 C12	3546 K10	3553 H9	3559 K11	3566 A3	3572 F16	6507 D16	7500 I3	7509 B9
1251 B2	1500-A E1	2502 C5	2509 F4	2514 I3	2519 H5	2524 G11	2529 D13	2534 G14	2539 C16	2544 H12	2549 K11	2561 B10	2567 F15	2646 C9	3504 C5	3509 E4	3514 F4	3519 H2	3524 I5	3531 D14	3536 H17	3542 H12	3547 J11	3554 H9	3560 H4	3567 B9	4504 G13	6508 B4	7501 H3	7550 D12
1252 D1	1500-B G1	2503 B5	2510 F5	2515 H3	2520 G11	2525 G10	2530 G13	2535 C14	2540 H16	2545 C12	2550 H9	2562 B10	2568 F15	3500 B5	3505 C5	3510 F3	3515 F4	3520 J4	3525 H5	3532 G14	3537 C17	3543 C12	3548 K11	3555 H10	3563 I4	3568 D7	4505 D13	6509 B9	7506 K12	9640 I1
1253 K2	1501 D1	2504 D4	2511 E5	2516 J3	2521 G9	2526 G10	2531 D13	2536 H15	2541 C16	2546 J4	2551 H9	2563 C9	2612 I2	3501 A5	3506 D4	3511 E3	3516 F5	3521 H4	3526 I5	3533 D14	3538 F16	3544 H12	3550 J12	3557 J12	3564 I4	3570 E16	4516 I2	6510 C9	7507 K12	
1254 F6	2500 B5	2505 E4	2512 I2	2517 H3	2522 G11	2527 G10	2532 G14	2537 D15	2542 F16	2547 J11	2559 B3	2565 E11	2613 I1	3502 C5	3507 E4	3512 F4	3517 F5	3522 I3	3527 H5	3534 H16	3539 E17	3545 J10	3552 J12	3558 J11	3565 K3	3571 E16	6506 G16	6521 I4	7508 I4	



COMBI CIRCUIT - HEADPHONE AMPLIFIER & SUB-WOOFER OUT PART

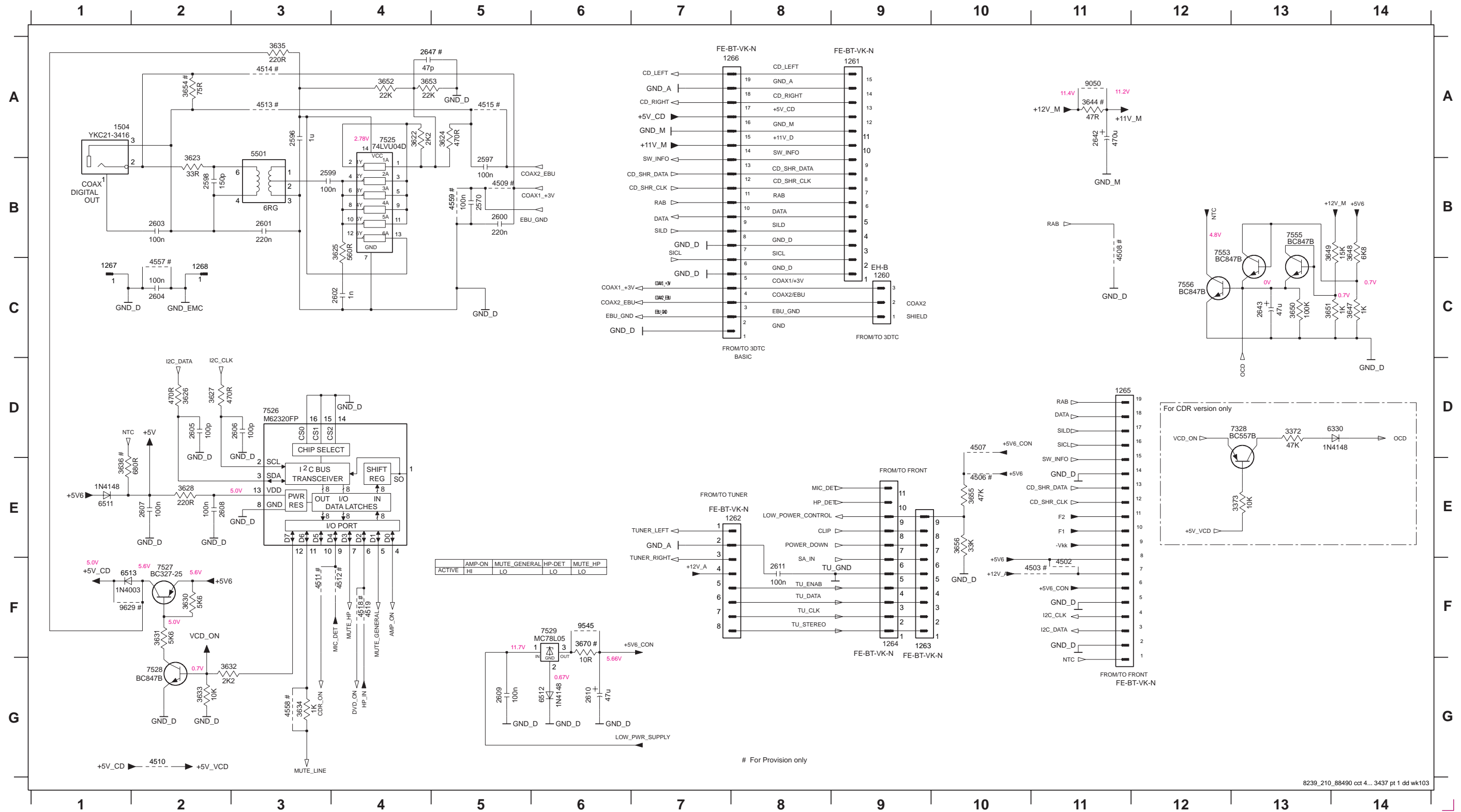
1255 E1	2573 B4	2578 C3	2585 B8	2590 H8	2595 B5	3574 C3	3579 B3	3584 B5	3591 C7	3596 D11	3601 B10	3606 B13	3612 G6	3617 H6	3641 E13	4517 F6	5500 E3	7512 D7	7518 B9	7523 G7
1256 C10	2574 D4	2579 B6	2586 B12	2591 E4	2614 G6	3575 A3	3580 D3	3587 B7	3592 D7	3597 A6	3602 B9	3607 B11	3613 G8	3618 H7	3642 D13	4563 D12	6520 G9	7514 D12	7519 A12	7524 G8
1502 G5	2575 B3	2580 D6	2587 G10	2592 E4	2615 D11	3576 C3	3581 B4	3588 D7	3593 E11	3598 A9	3603 A11	3609 C13	3614 G6	3619 E3	3643 E13	4576 C12	7510-A A4	7515 E12	7520 A12	7540 D14
2571 A3	2576 C3	2581 C8	2588 G11	2593 E2	2616 C11	3577 B3	3582 D4	3589 B7	3594 C11	3599 A9	3604 A13	3610 F11	3615 G9	3620 E2	3645 G7	4600 C12	7510-B C4	7516 A8	7521 B13	7541 E14
2572 C3	2577 A3	2582 D8	2589 H6	2594 G5	3573 A3	3578 D3	3583 B5	3590 D7	3595 E11	3600 B8	3605 B13	3611 G11	3616 H9	3621 E2	3646 C13	4601 D12	7511 C7	7517 A9	7522 G6	9641 F5



FOR PROVISION ONLY

COMBI CIRCUIT - CONNECTOR & DIGITAL OUT PART

- 1260 C9, 1261 A9, 1262 E7, 1263 F9, 1264 F9, 1265 D11, 1266 A8, 1267 C1, 1268 C2, 1504 A1, 2570 B5, 2596 A3, 2597 B5, 2598 B2, 2599 B3, 2600 B5, 2601 B3, 2602 C4, 2603 B2, 2604 C2, 2605 D2, 2606 D3, 2607 E2, 2608 E2, 2609 G5, 2610 G6, 2611 F8, 2642 A11, 2643 C13, 2647 A4, 3372 D13, 3373 E13, 3622 A4, 3623 B2, 3624 A5, 3625 B4, 3626 D2, 3627 D2, 3628 E2, 3630 F2, 3631 F2, 3632 G2, 3633 G2, 3634 G3, 3635 A3, 3636 E1, 3647 C14, 3648 B14, 3649 B13, 3650 C13, 3651 C13, 3652 A4, 3653 A4, 3654 A2, 3655 E10, 3656 E10, 3670 F6, 4502 F11, 4503 F11, 4506 E10, 4507 D10, 4508 B11, 4509 B5, 4510 G2, 4511 F3, 4512 F4, 4513 A3, 4514 A3, 4515 A5, 4518 F4, 4519 F4, 4557 C2, 4558 G3, 4559 B5, 5501 A3, 6330 D14, 6511 E1, 6512 G6, 6513 F1, 7328 D13, 7525 A4, 7526 D3, 7527 F2, 7528 G2, 7529 F6, 7553 B12, 7555 B13, 9545 F6, 9629 F1



ELECTRICAL PARTS LIST - REGULATOR BOARD**MISCELLANEOUS**

32	3139 111 01430	Spring Clip I/C
1171	4822 071 51002 Δ	Fuse T1A 250V

CAPACITORS

2400	4822 124 22652	2,2μF 20% 50V
2402	4822 124 40433	47μF 20% 25V
2405	4822 124 11947	10μF 20% 16V
2406	4822 124 41643	100μF 20% 16V
2407	4822 124 41643	100μF 20% 16V
2408	4822 126 12882	100nF +80/-20% 50V
2409	4822 124 40248	10μF 20% 63V
2410	4822 126 12882	100nF +80/-20% 50V
2411	4822 124 12233	47μF 20% 25V

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
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	10k 5% NTC DC 0,5W
3419	4822 116 52219	330R 5% 0,5W
3420	4822 050 11002	1k 1% 0,4W
3421	4822 052 10568	5R6 5% 0,33W
3422	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 34174	BZX79-B4V7
6409	4822 130 30621	1N4148

TRANSISTORS & INTEGRATED CIRCUITS

7401	4822 130 40959	BC547B
7402	4822 130 44568	BC557B
7403	9322 139 23687	BDX53BFP
7408	4822 130 40959	BC547B
7409	4822 130 41246	BC327-25
7417	4822 209 31841	L7805CP

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

ELECTRICAL PARTS LIST - COMBI BOARD**MISCELLANEOUS**

33	3139 111 01430	Spring Clip I/C
1200	4822 267 31176	Loudspeaker Socket
1221	4822 267 10953	Flex Socket 7pin Vert.
1250	4822 267 10953	Flex Socket 7pin Vert.
1256	4822 267 10733	Flex Socket 4pin Vert.
1262	4822 265 11515	Flex Socket 8pin Vert.
1263	2422 025 14518	Flex Socket 9pin Vert.
1265	4822 265 11553	Flex Socket 19pin Vert.
1266	4822 265 11553	Flex Socket 19pin Vert.
1501	4822 265 20553	Aux-in Socket
1502	4822 267 31729	Sub-woofer Socket
1504	4822 267 31729	Digital Out Socket

CAPACITORS

2202	4822 122 33761	22pF 5% 50V
2203	4822 122 33761	22pF 5% 50V
2204	4822 126 12785	47nF +80/-20% 50V
2205	4822 126 12785	47nF +80/-20% 50V
2206	4822 121 42408	220nF 5% 63V
2207	4822 121 42408	220nF 5% 63V
2208	4822 121 42408	220nF 5% 63V
2209	4822 121 42408	220nF 5% 63V
2210	4822 126 12882	100nF +80/-20% 50V
2211	4822 124 81151	22μF 20% 50V
2212	4822 126 12882	100nF +80/-20% 50V
2213	4822 124 81151	22μF 20% 50V
2214	4822 122 10459	560pF 10% 50V
2215	4822 124 40769	4,7μF 20% 100V
2216	4822 124 40769	4,7μF 20% 100V
2217	4822 126 12882	100nF +80/-20% 50V
2500	4822 124 21913	1μF 20% 63V
2501	4822 124 21913	1μF 20% 63V
2502	4822 126 14305	100nF 10% 16V
2503	4822 126 14305	100nF 10% 16V
2504	4822 124 21913	1μF 20% 63V
2505	4822 124 21913	1μF 20% 63V
2508	4822 126 13881	470pF 5% 50V
2509	4822 126 13881	470pF 5% 50V
2510	4822 124 21913	1μF 20% 63V
2511	4822 124 21913	1μF 20% 63V
2518	4822 124 40769	4,7μF 20% 100V
2519	4822 124 40769	4,7μF 20% 100V
2520	4822 126 13881	470pF 5% 50V
2521	4822 126 13881	470pF 5% 50V
2522	4822 126 13881	470pF 5% 50V
2523	4822 126 13881	470pF 5% 50V
2524	4822 126 13881	470pF 5% 50V
2525	4822 126 13881	470pF 5% 50V
2526	4822 126 13881	470pF 5% 50V
2527	4822 126 13881	470pF 5% 50V
2528	5322 122 32261	4,7nF 10% 100V
2529	5322 122 32261	4,7nF 10% 100V

2530	4822 121 42408	220nF 5% 63V
2531	4822 121 42408	220nF 5% 63V
2532	4822 121 51252	470nF 5% 63V
2533	4822 121 51252	470nF 5% 63V
2534	4822 121 51252	470nF 5% 63V
2535	4822 121 51252	470nF 5% 63V
2536	5322 126 11579	3,3nF 10% 63V
2537	5322 126 11579	3,3nF 10% 63V
2538	3198 016 31020	1nF 5% 25V
2539	3198 016 31020	1nF 5% 25V
2540	5322 126 11583	10nF 10% 50V
2541	5322 126 11583	10nF 10% 50V
2542	3198 016 31020	1nF 5% 25V
2543	3198 016 31020	1nF 5% 25V
2544	5322 124 41948	470nF 20% 50V
2545	5322 124 41948	470nF 20% 50V
2547	4822 124 81286	47μF 20% 16V
2548	4822 122 33752	15pF 5% 50V
2549	4822 126 14305	100nF 10% 16V
2551	5322 124 41948	470nF 20% 50V
2559	4822 124 81286	47μF 20% 16V
2560	4822 126 14305	100nF 10% 16V
2561	4822 124 81151	22μF 20% 50V
2562	3198 017 34730	47nF 10% 16V
2563	4822 124 40196	220μF 20% 16V
2565	4822 124 80231	47μF 20% 16V
2566	4822 126 14305	100nF 10% 16V
2567	4822 122 31765	100pF 2% 63V
2568	4822 122 31765	100pF 2% 63V
2570	4822 126 14305	100nF 10% 16V
2571	5322 124 41948	470nF 20% 50V
2572	5322 124 41948	470nF 20% 50V
2573	4822 126 13883	220pF 5% 50V
2574	4822 126 13883	220pF 5% 50V
2575	4822 126 13881	470pF 5% 50V
2576	4822 126 13881	470pF 5% 50V
2577	4822 122 31765	100pF 2% 63V
2578	4822 122 31765	100pF 2% 63V
2579	4822 124 81151	22μF 20% 50V
2580	4822 124 81151	22μF 20% 50V
2581	4822 122 31765	100pF 2% 63V
2582	4822 122 31765	100pF 2% 63V
2585	4822 124 40769	4,7μF 20% 100V
2586	4822 124 40769	4,7μF 20% 100V
2587	3198 017 41050	1μF +80/-20% 10V
2588	4822 122 31765	100pF 2% 63V
2589	4822 126 13881	470pF 5% 50V
2590	4822 124 22833	10μF 20% 50V
2591	4822 124 81286	47μF 20% 16V
2592	4822 126 14494	22nF 10% 25V
2593	4822 124 40207	100μF 20% 25V
2595	4822 124 41796	22μF 20% 16V

ELECTRICAL PARTS LIST - COMBI BOARD

CAPACITORS

2596	3198 017 41050	1µF +80/-20% 10V
2597	4822 126 14305	100nF 10% 16V
2598	4822 122 33753	150pF 5% 50V
2599	4822 126 14305	100nF 10% 16V
2600	4822 126 13879	220nF +80/-20% 16V
2601	4822 126 13879	220nF +80/-20% 16V
2602	3198 016 31020	1nF 5% 25V
2603	4822 126 14305	100nF 10% 16V
2604	4822 126 14305	100nF 10% 16V
2605	4822 122 31765	100pF 2% 63V
2606	4822 122 31765	100pF 2% 63V
2607	4822 126 12882	100nF +80/-20% 50V
2608	4822 126 14305	100nF 10% 16V
2609	4822 126 12882	100nF +80/-20% 50V
2610	4822 124 81286	47µF 20% 16V
2611	4822 126 14305	100nF 10% 16V
2614	4822 126 14305	100nF 10% 16V
2615	4822 124 40769	4,7µF 20% 100V
2616	4822 124 40769	4,7µF 20% 100V
2642	4822 124 80791	470µF 20% 16V
2643	4822 124 81286	47µF 20% 16V
2645	4822 126 14305	100nF 10% 16V
2646	3198 017 34730	47nF 10% 16V

RESISTORS

3202	4822 117 12864	82k 5% 0,6W
3203	4822 117 12864	82k 5% 0,6W
3204	4822 051 30562	5k6 5% 0,063W
3205	4822 051 30562	5k6 5% 0,063W
3206	4822 050 21003	10k 1% 0,6W
3207	4822 050 21003	10k 1% 0,6W
3208	4822 050 21003	10k 1% 0,6W
3209	4822 050 21003	10k 1% 0,6W
3210	4822 116 81154	2R2 5% 0,5W
3211	4822 116 81154	2R2 5% 0,5W
3212	4822 116 81154	2R2 5% 0,5W
3213	4822 116 81154	2R2 5% 0,5W
3214	4822 116 52257	22k 5% 0,5W
3215	4822 116 83884	47k 5% 0,5W
3216	4822 116 52244	15k 5% 0,5W
3217	4822 116 52257	22k 5% 0,5W
3218	4822 116 52245	150k 5% 0,5W
3219	4822 116 52175	100R 5% 0,5W
3220	4822 116 83884	47k 5% 0,5W
3221	4822 116 83883	470R 5% 0,5W
3222	4822 116 52283	4k7 5% 0,5W
3223	4822 116 83883	470R 5% 0,5W
3224	4822 116 52219	330R 5% 0,5W
3225	4822 116 52249	1k8 5% 0,5W
3226	4822 116 52249	1k8 5% 0,5W
3227	4822 116 52249	1k8 5% 0,5W
3228	4822 117 13632	100k 1% 0,62W

3229	4822 116 83874	220k 5% 0,5W
3232	4822 051 30103	10k 5% 0,062W
3233	4822 051 30103	10k 5% 0,062W
3234	4822 117 13632	100k 1% 0,62W
3500	4822 051 30102	1k 5% 0,062W
3501	4822 051 30102	1k 5% 0,062W
3502	4822 051 30102	1k 5% 0,062W
3503	4822 051 30102	1k 5% 0,062W
3504	4822 117 12925	47k 1% 0,063W
3505	4822 117 12925	47k 1% 0,063W
3506	4822 117 11817	1k2 1% 1/16W
3507	4822 117 11817	1k2 1% 1/16W
3508	4822 051 30103	10k 5% 0,062W
3509	4822 051 30103	10k 5% 0,062W
3510	4822 051 30222	2k2 5% 0,062W
3511	4822 051 30222	2k2 5% 0,062W
3512	4822 051 30123	12k 5% 0,062W
3513	4822 051 30123	12k 5% 0,062W
3514	4822 051 30153	15k 5% 0,062W
3515	4822 051 30153	15k 5% 0,062W
3524	4822 051 30273	27k 5% 0,062W
3525	4822 051 30273	27k 5% 0,062W
3526	4822 051 30152	1k5 5% 0,062W
3527	4822 051 30152	1k5 5% 0,062W
3530	4822 117 12902	8k2 1% 0,063W
3531	4822 117 12902	8k2 1% 0,063W
3532	4822 051 30562	5k6 5% 0,063W
3533	4822 051 30562	5k6 5% 0,063W
3534	4822 051 30183	18k 5% 0,062W
3535	4822 051 30183	18k 5% 0,062W
3536	4822 051 30103	10k 5% 0,062W
3537	4822 051 30103	10k 5% 0,062W
3538	4822 051 30221	220R 5% 0,062W
3539	4822 051 30221	220R 5% 0,062W
3541	4822 051 30562	5k6 5% 0,063W
3542	4822 051 30562	5k6 5% 0,063W
3543	4822 117 12925	47k 1% 0,063W
3544	4822 117 12925	47k 1% 0,063W
3545	4822 051 30333	33k 5% 0,062W
3546	4822 051 30333	33k 5% 0,062W
3547	4822 051 30154	150k 5% 0,062W
3548	4822 051 30154	150k 5% 0,062W
3550	4822 116 83868	150R 5% 0,5W
3552	4822 051 30391	390R 5% 0,062W
3557	4822 117 11817	1k2 1% 1/16W
3558	4822 051 30334	330k 5% 0,062W
3559	4822 117 12864	82k 5% 0,6W
3566	4822 116 52289	5k6 5% 0,5W
3567	4822 051 30221	220R 5% 0,062W
3569	4822 051 30102	1k 5% 0,062W
3571	4822 051 30102	1k 5% 0,062W
3572	4822 051 30102	1k 5% 0,062W

ELECTRICAL PARTS LIST - COMBI BOARD

3573	4822 051 30109	10R 5% 0,062W
3574	4822 051 30109	10R 5% 0,062W
3575	4822 051 30123	12k 5% 0,062W
3576	4822 051 30123	12k 5% 0,062W
3579	4822 051 30682	6k8 5% 0,062W
3580	4822 051 30682	6k8 5% 0,062W
3581	4822 051 30273	27k 5% 0,062W
3582	4822 051 30273	27k 5% 0,062W
3583	4822 051 30332	3k3 5% 0,062W
3584	4822 051 30332	3k3 5% 0,062W
3587	4822 051 30339	33R 5% 0,062W
3588	4822 051 30339	33R 5% 0,062W
3589	4822 051 30479	47R 5% 0,062W
3590	4822 051 30479	47R 5% 0,062W
3591	4822 051 30102	1k 5% 0,062W
3592	4822 051 30102	1k 5% 0,062W
3593	4822 051 30102	1k 5% 0,062W
3594	4822 051 30102	1k 5% 0,062W
3595	4822 051 30102	1k 5% 0,062W
3596	4822 051 30102	1k 5% 0,062W
3598	4822 051 30102	1k 5% 0,062W
3599	4822 051 30562	5k6 5% 0,063W
3600	4822 051 30472	4k7 5% 0,062W
3601	4822 050 21003	10k 1% 0,6W
3602	4822 051 30103	10k 5% 0,062W
3604	4822 051 30102	1k 5% 0,062W
3605	4822 051 30562	5k6 5% 0,063W
3606	4822 050 21003	10k 1% 0,6W
3607	4822 051 30472	4k7 5% 0,062W
3609	4822 051 30103	10k 5% 0,062W
3610	4822 051 30153	15k 5% 0,062W
3611	4822 051 30562	5k6 5% 0,063W
3612	4822 051 30221	220R 5% 0,062W
3614	4822 051 30222	2k2 5% 0,062W
3615	4822 116 52283	4k7 5% 0,5W
3616	4822 116 52256	2k2 5% 0,5W
3617	4822 051 30102	1k 5% 0,062W
3618	4822 051 30102	1k 5% 0,062W
3619	4822 052 10109 Δ	10R 5% 0,33W
3620	4822 116 52283	4k7 5% 0,5W
3621	4822 051 30472	4k7 5% 0,062W
3622	4822 051 30222	2k2 5% 0,062W
3623	4822 051 30339	33R 5% 0,062W
3624	4822 051 30471	470R 5% 0,062W
3625	4822 051 30561	560R 5% 0,062W
3626	4822 051 30471	470R 5% 0,062W
3627	4822 051 30471	470R 5% 0,062W
3628	4822 116 83872	220R 5% 0,5W
3630	4822 051 30562	5k6 5% 0,063W
3631	4822 051 30562	5k6 5% 0,063W
3632	4822 051 30222	2k2 5% 0,062W
3633	4822 051 30103	10k 5% 0,062W

3634	4822 051 30102	1k 5% 0,062W
3635	4822 116 83872	220R 5% 0,5W
3641	4822 051 30102	1k 5% 0,062W
3642	4822 051 30102	1k 5% 0,062W
3643	4822 051 30102	1k 5% 0,062W
3645	4822 051 30221	220R 5% 0,062W
3646	4822 051 30102	1k 5% 0,062W
3647	4822 051 30102	1k 5% 0,062W
3648	4822 051 30682	6k8 5% 0,062W
3649	4822 051 30153	15k 5% 0,062W
3650	4822 117 13632	100k 1% 0,62W
3651	4822 051 30102	1k 5% 0,062W
3652	4822 051 30223	22k 5% 0,062W
3653	4822 051 30223	22k 5% 0,062W
3655	4822 117 12925	47k 1% 0,063W
3656	4822 051 30333	33k 5% 0,062W
4502	4822 051 20008	OR Jumper 0805
4507	4822 051 20008	OR Jumper 0805
4510	4822 051 20008	OR Jumper 0805
4519	4822 051 20008	OR Jumper 0805
4531	4822 051 20008	OR Jumper 0805
4532	4822 051 20008	OR Jumper 0805
4533	4822 051 20008	OR Jumper 0805
4534	4822 051 20008	OR Jumper 0805
4536	4822 051 20008	OR Jumper 0805
4537	4822 051 20008	OR Jumper 0805
4538	4822 051 20008	OR Jumper 0805
4539	4822 051 20008	OR Jumper 0805
4540	4822 051 20008	OR Jumper 0805
4541	4822 051 20008	OR Jumper 0805
4542	4822 051 20008	OR Jumper 0805
4543	4822 051 20008	OR Jumper 0805
4545	4822 051 20008	OR Jumper 0805
4546	4822 051 20008	OR Jumper 0805
4547	4822 051 20008	OR Jumper 0805
4548	4822 051 20008	OR Jumper 0805
4550	4822 051 20008	OR Jumper 0805
4551	4822 051 20008	OR Jumper 0805
4552	4822 051 20008	OR Jumper 0805
4553	4822 051 20008	OR Jumper 0805
4554	4822 051 20008	OR Jumper 0805
4555	4822 051 20008	OR Jumper 0805
4560	4822 051 20008	OR Jumper 0805
4561	4822 051 20008	OR Jumper 0805
4562	4822 051 20008	OR Jumper 0805
4563	4822 051 20008	OR Jumper 0805
4564	4822 051 20008	OR Jumper 0805
4565	4822 051 20008	OR Jumper 0805
4567	4822 051 20008	OR Jumper 0805
4568	4822 051 20008	OR Jumper 0805
4569	4822 051 20008	OR Jumper 0805
4570	4822 051 20008	OR Jumper 0805

ELECTRICAL PARTS LIST - COMBI BOARD**RESISTORS**

4571	4822 051 20008	OR Jumper 0805	7205	4822 130 40959	BC547B
4572	4822 051 20008	OR Jumper 0805	7206	4822 130 44568	BC557B
4573	4822 051 20008	OR Jumper 0805	7506	4822 130 60373	BC857B
4575	4822 051 20008	OR Jumper 0805	7507	4822 130 60511	BC847B
4576	4822 051 20008	OR Jumper 0805	7509	4822 130 60511	BC847B
4577	4822 051 20008	OR Jumper 0805	7510	4822 209 31378	NJM4556MB
4578	4822 051 20008	OR Jumper 0805	7511	4822 130 42804	BC817-25
4579	4822 051 20008	OR Jumper 0805	7512	4822 130 42804	BC817-25
4580	4822 051 20008	OR Jumper 0805	7514	4822 130 42804	BC817-25
4581	4822 051 20008	OR Jumper 0805	7515	4822 130 42804	BC817-25
4582	4822 051 20008	OR Jumper 0805	7516	4822 130 60373	BC857B
4583	4822 051 20008	OR Jumper 0805	7517	4822 130 60511	BC847B
4584	4822 051 20008	OR Jumper 0805	7518	4822 130 60511	BC847B
4585	4822 051 20008	OR Jumper 0805	7519	4822 130 60373	BC857B
4586	4822 051 20008	OR Jumper 0805	7520	4822 130 60511	BC847B
4587	4822 051 20008	OR Jumper 0805	7521	4822 130 60511	BC847B
4588	4822 051 20008	OR Jumper 0805	7522	4822 130 42804	BC817-25
4589	4822 051 20008	OR Jumper 0805	7523	4822 130 42804	BC817-25

COILS & FILTERS

5200	4822 157 11837	Coil 8,5 Turn 0,36μH 10%	7524	4822 130 60373	BC857B
5201	4822 157 11837	Coil 8,5 Turn 0,36μH 10%	7525	4822 209 17235	74LVU04D
5202	4822 157 11837	Coil 8,5 Turn 0,36μH 10%	7526	4822 209 17345	M62320FP
5203	4822 157 11837	Coil 8,5 Turn 0,36μH 10%	7527	4822 130 41246	BC327-25
5500	4822 157 62552	Coil 2,2μH 5%	7528	4822 130 60511	BC847B
5501	2422 536 00019	Transformer 6RG	7529	4822 209 72042	MC78L05ACP
			7540	4822 130 42804	BC817-25
			7541	4822 130 42804	BC817-25
			7550	9322 150 74668	TDA7468D
			7553	4822 130 60511	BC847B
			7555	4822 130 60511	BC847B
			7556	4822 130 60511	BC847B

DIODES

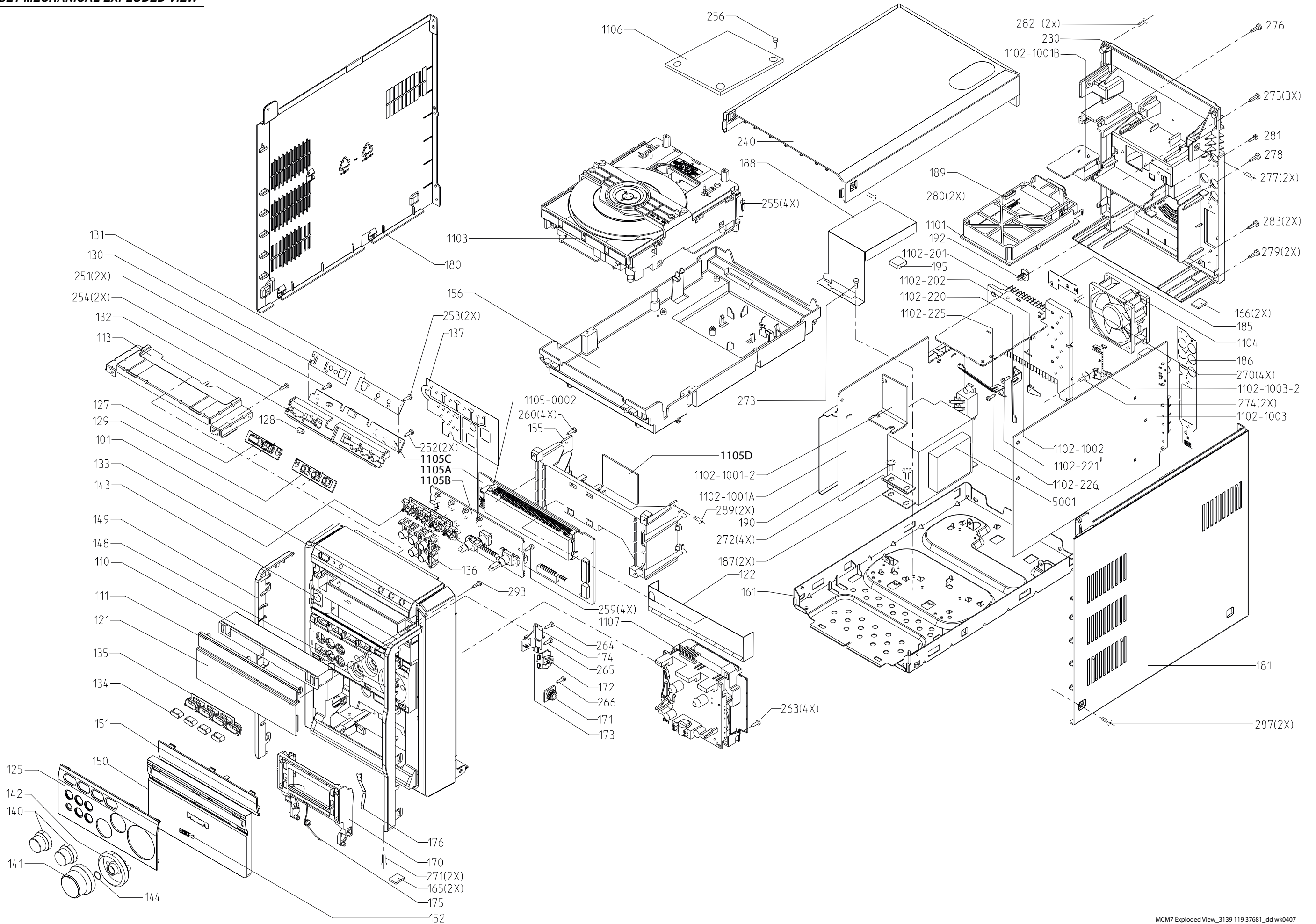
6200	4822 130 31878	1N4003G
6201	4822 130 31878	1N4003G
6202	4822 130 31878	1N4003G
6203	4822 130 31878	1N4003G
6204	9340 550 66112	BYV28-200/24
6205	4822 130 34441	BZX79-B22
6206	4822 130 30621	1N4148
6207	4822 130 34174	BZX79-B4V7
6208	4822 130 31024	BZX79-B18
6209	4822 130 34174	BZX79-B4V7
6508	4822 130 61219	BZX79-B10
6509	4822 130 30621	1N4148
6510	4822 130 30862	BZX79-B9V1
6511	4822 130 30621	1N4148
6512	4822 130 30621	1N4148
6513	4822 130 31878	1N4003G
6520	4822 130 30621	1N4148

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

TRANSISTORS & INTEGRATED CIRCUITS

7200	9322 133 18682	AN7125P
7201	4822 130 44568	BC557B
7202	4822 130 44568	BC557B
7203	4822 130 40959	BC547B
7204	4822 130 10847	BDW94C

SET MECHANICAL EXPLODED VIEW



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

0101	9940 000 00326	Cabinet Front /22/25	0325	9940 000 00344	L/R Loudspeaker Box	251	D2 x 8
0110	3139 254 00441	Cover CD Technical UL Loader	0331	2422 076 00546	Cable FM Aerial /22/25	252	D2 x 8
0111	9940 000 00327	Cover CD	0332	2422 549 45067	Antenna AM Loop	253	D2 x 8
0121	9940 000 00328	Window Display /22/25	0333	3139 238 06511	Remote Control	254	D2 x 8
0125	9940 000 00329	Panel Control	0336	2422 070 98151	△ Mains Cord /22	255	D3 x 20
0127	9940 000 00331	Button Set Power Chrome	0336	9965 000 07586	△ Mains Cord /25	256	D3 x 8
0128	3139 114 79981	Lightguide Power Standby	1104	2822 031 01494	Fan 12VDC 0.8W 3100RPM	259	M3 x 12
0129	9940 000 00332	Button Set RDS/News	1106	3103 308 67611	PBAS 8 MP3CD03 TXT 5V	260	D3 x 10
0132	3139 114 79921	Bracket Button RDS	5001	9940 000 04097	△ Mains Transformer /22/25	263	D3 x 12
0133	3139 254 00071	Button Set Source	8001	3139 110 35900	FFC Foil 07P/220/07P AD	264	D3 x 12
0134	9940 000 00333	Cap Source Chrome	8003	3139 111 03871	FFC Foil 15P/280/15P BD Fold	265	M3 x 12
0135	3139 114 79971	Lightguide Source	8004	3103 308 93622	CWAS FFC 98 19P BD	266	M3 x 12
0136	9940 000 00334	Button Set Function	8005	3139 110 35240	FFC Foil 08P/280/08PAD Fold	270	D3 x 35
0140	3139 254 00051	Knob Bass/Treble Chrome	8006	3139 110 35080	FFC Foil 09P/180/09P AD	271	M3 x 6
0141	3139 254 00061	Knob Volume Chrome	8007	3139 111 03881	FFC Foil 19P/180/19PAD Fold	272	M3 x 10
0142	3139 254 00001	Lightguide Volume	8009	3139 110 34840	FFC Foil 08P/100/08P AD	273	M3 x 6
0143	3139 114 79991	Lightguide IR	8010	3140 110 20881	FFC Foil 15P/120/15P AD	274	M3 x 10
0144	4822 492 51374	Ring	8011	3139 110 35090	FFC Foil 04P/340/04P BD	275	D3 x 10
0148	9940 000 00335	Frame Right	8012	3139 110 34480	FFC Foil 07P/140/07P AD	276	D3 x 10
0149	9940 000 00336	Frame Left	8013	4822 320 12752	FFC Foil 07P/180/07P AD	277	D3 x 10
0150	9940 000 00337	Cover Cassette	Note :	Only the parts mentioned in this list are normal	278	D3 x 10	
0151	9940 000 00338	Panel Cassette		service spare parts.	279	M3 x 10	
0152	4822 459 10887	Badge Philips Assy			280	M3 x 10	
0155	3139 114 79941	Bracket Combi			281	D3 x 16	
0156	3139 114 79901	Bracket Module Mounting			282	D3 x 12	
0165	3139 113 27140	Foot Rubber 4mm			283	D3 x 10	
0166	3139 113 27140	Foot Rubber 4mm			287	M3 x 10	
0170	3139 114 73930	Door Cassette ETF SD Left			289	D3 x 10	
0171	4822 529 10322	Damper Assembly			293	D2 x 8	
0172	3139 114 68640	Push Catch Left					
0173	4822 492 11344	Spring Compression					
0174	4822 402 11245	Bracket Left					
0175	3139 111 01390	Spring Torsion Left					
0176	4822 492 42787	Spring Cassette					
0180	9940 000 00339	Panel Left /22/25					
0181	9940 000 00341	Panel Right /22/25					
0192	3139 114 71010	Stopper Heatsink					
0230	9940 000 00342	Panel Rear /22/25					
0240	9940 000 00343	Cover Top /22/25					

REVISION LIST

Version 1.0 (3141 785 30060)

- Initial Release MCM5/22/25/37

Version 1.1 (3141 785 30061)

- Change Combi board assembly from production week 444 onwards.
- Page 12-1 to 12-12 : Combi board ass'y (for production week 444 onwards) are added
- Page 13-1 to 13-2 : Mechanical & Accessories parts list is adapted.

Version 1.2 (3141 785 30062)

- Page 13-2 : Mechanical & Accessories parts list is adapted.