DVD Receiver

MX5800SA/21R/21S/22S/78

MX5900SA/37

Service
Service
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For repair information on the SD5.00SA DVD Module, refer to Service Manual "**DVD Module SD-5.00SA_CH - 12NC: 3122 785 13830**"

Service Manual

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CLASS 1
LASER PRODUCT

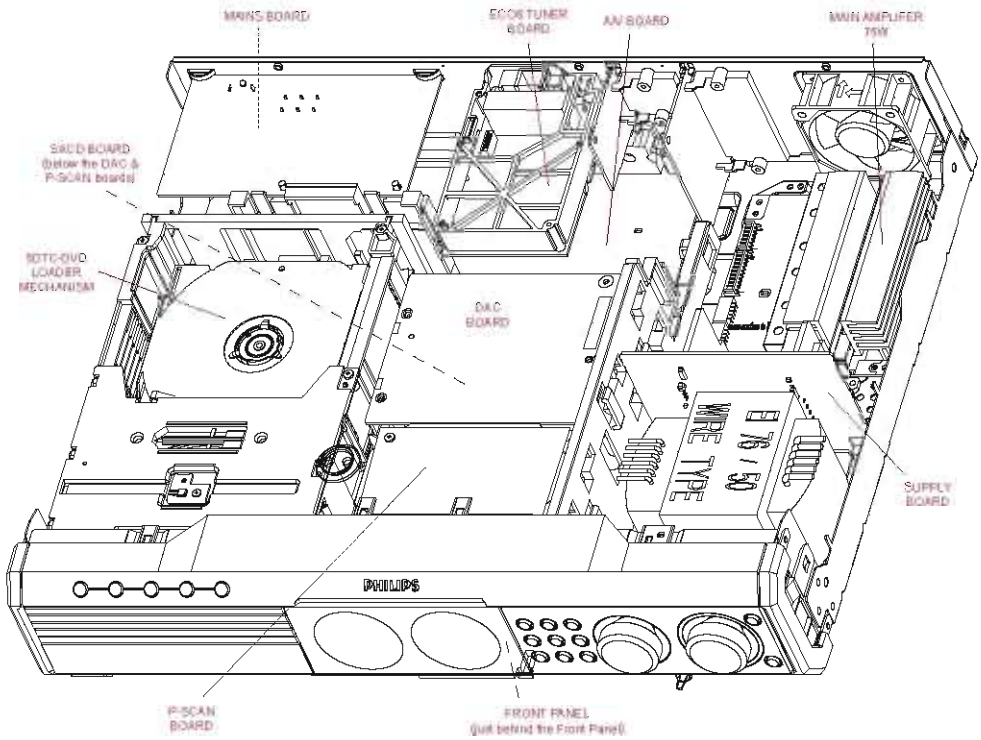
Published by KC 0333 Service Audio Printed in The Netherlands Subject to modification

GB 3139 785 30231

Version 1.1

PHILIPS

LOCATION OF PC BOARDS



VERSION VARIATIONS:

Type /Versions: / Features & Board in used:	MX5800SA						MX5800SA			
	/21R	/21S	/22S	/33S	/35S	/78			/37	
Karaoke	x	x	-	x		x			-	
RDS + News	-	-	x	-		-			-	
Progressive Scan	x	x	-	x		x			x	
Standby - Clock Display	x	x	x	x		x			x	
ECO Standby - No Display	x	x	x	x		x			x	
Voltage Selector	x	x	-	-		x			-	
Digital In / Out	x	x	x	x		x			x	
Aux Input	x	x	x	x		x			x	
TV Input	x	x	x	x		x			x	
Line Output	x	x	x	x		x			x	
SCART output	-	-	x	-		-			-	
Pr, Pb & Y Outputs	x	x	-	x		x			x	
CVBS Output	x	x	x	x		x			x	
S-Video Output	x	x	x	x		x			x	
Headphone Socket	x	x	x	x		x			x	
P-Scan board (Faroudja P-scan)	-	-	-	-		-			x	
Tuner board - ECO6 System non-Cenelec	x	x	-	x		x			x	
Tuner board - ECO6 System Cenelec	-	-	x	-		-			-	
75W 6-Ch (Single SW) with 1x Amplifier pcb	-	-	-	-		-			-	
75W 7-Ch (Twin SW) with 1x Amplifier pcb	x	x	x	x		x			x	

SPECIFICATIONS

GENERAL:

Mains voltage : 110-127V/220-240V Switchable for /21./78
120V for /37
220-230V for /22S/33S
Mains frequency : 50/60Hz
Power consumption : < 0,5W at ECO Standby
< 20W Standby (clock on, demo off)
Clock accuracy : < 4 seconds per day
Dimension centre unit : 435 x 100 x 360mm

TUNER:

FM

Tuning range : 87.5-108MHz
Grid : 50kHz for /21../22S/33S
100kHz for /21../37
IF frequency : 10.7MHz ± 25kHz
Aerial input : 75Ω coaxial
Sensitivity at 26dB S/N : < 7µV
Selectivity at 600kHz bandwidth : > 25dB
Image rejection : > 25dB
Distortion at RF=1mV, dev. 75kHz : < 3%
-3dB Limiting point : < 8µV
Crosstalk at RF=1mV, dev. 40kHz : > 18dB

MW

Tuning range : 531-1602kHz for /21../22S
530-1700kHz for /21../37
Grid : 9kHz for /21../22S
10kHz for /21../37
IF frequency : 450kHz ± 1kHz
Aerial input : Frame aerial
Sensitivity at 26dB S/N : < 4.0mV/M
Selectivity at 18kHz bandwidth : > 18dB
IF rejection : > 45dB
Image rejection : > 28dB
Distortion at RF=50mV, m=80% : < 5%

AMPLIFIER:

Stereo mode (DIN) : 2 x75W RMS / 2 x 60W FTC [1]
2 x 75W RMS [2]
Surround mode [3] : 75W RMS/channel
Frequency response ±3dB : 20Hz-20kHz
Hum (minimum volume) : 200nW
Residue noise (min, volume) : 40nW
Digital Sound Control : Stereo, 3D Sound, Multi modes [4]
Bass & Treble : -3 to +3 [4]
Input sensitivity
TV-in : 350mV ± 3dB
Aux-in : 880mV ± 2dB
Output sensitivity
Line out : 600mV ± 2dB at 47kΩ
Headphone (vol. max.) : 660mV ± 2dB at 32Ω

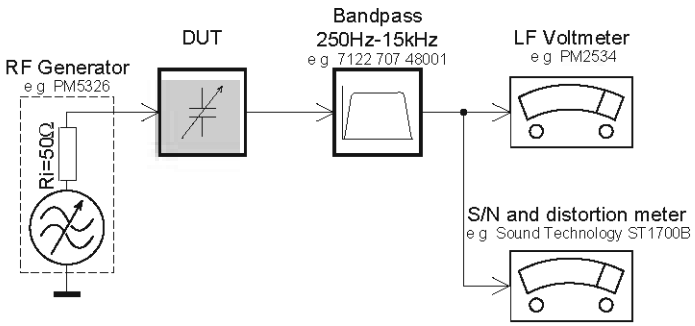
COMPACT DISC/VCD/DVD:

Video Decoding : MPEG-2 / MPEG-1
Video DAC : 10 Bits
Signal System : PAL / NTSC
Video Format : 4:3 / 16:9
MP3-CD bit rate [5] : 32-256 kbs,variable bitrates
MP3-CD sampling frequencies [5] : 16kHz, 32kHz, 44.1kHz
CBVS out [6]
CVBS level : 1.0 ± 0.1V_{p-p}
Luminance S/N ratio : > 45dB (unweighted)
YUV out [6]
Amplitude : 714mV ± 7mV
S/N ratio : > 50dB (unweighted)
S-Video out [6]
Y level : 1.0 ± 0.1V_{p-p}
Y S/N ratio : > 48dB (unweighted)
C level (burst) : 286mV_{p-p} +1/-4 dB
Digital Out : Coaxial acc IEC61937 / IEC60958
Digital In : Coaxial acc IEC60958

[1] with 4Ω, 120Hz - 12,5kHz & 10% THD for /37 only
[2] with 4Ω, 1kHz & 10% THD for all version other than /37
[3] with only channel(s) under meausrement loaded, all other channels are unloaded.
[4] Frequency response in each setting is software controlled.
[5] Recording format: ISO9660, UDF format is not supported.
[6] Output terminals terminated with 75Ω

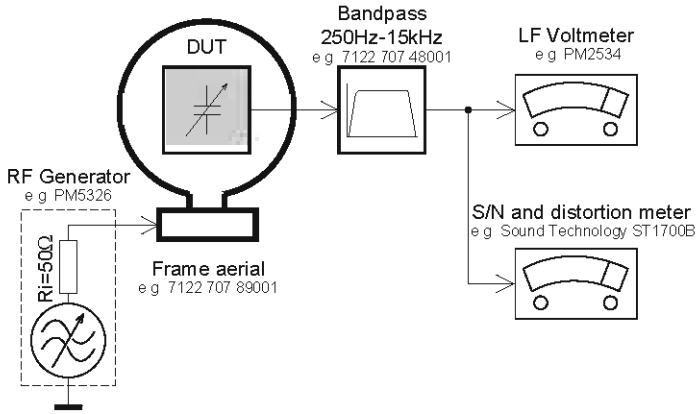
MEASUREMENT SETUP

Tuner FM



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

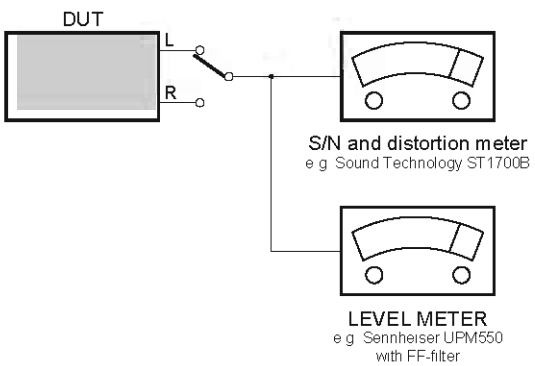
Tuner AM (MW,LW)



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).

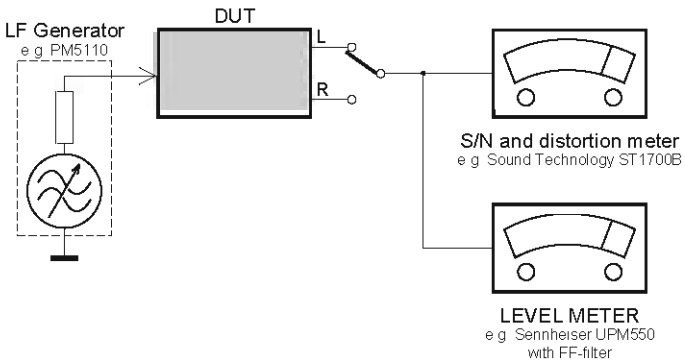
CD

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
Allen key set (1.5, 2, 2.5, 3, 4, 5, 6, 8mm)	5322 395 10754

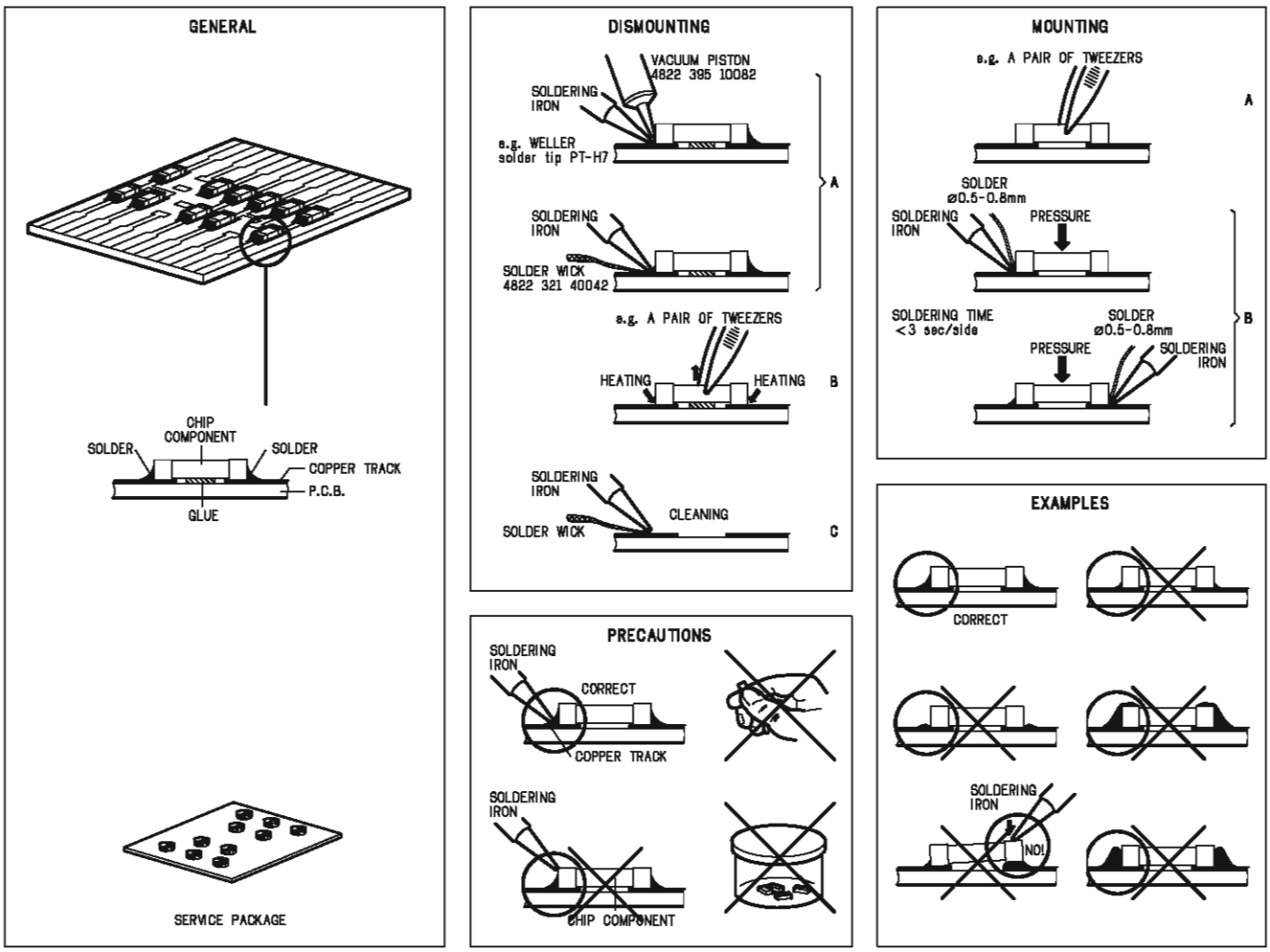
Compact Disc:

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
SBC444/444A	4822 397 30245
CD-RW Printed Audio Test Disc	7104 099 96611
Dolby Pro-logic Test Disc	4822 395 10216

ESD Equipment:

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

HANDLING CHIP COMPONENTS



ESD

(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.

(NL) WAARSCHUWING

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

(F) ATTENTION

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

(D) WARNUNG

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

(I) AVVERTIMENTO

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

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

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

(F)
Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utiliséés les piéces de rechange identiques à celles spécifiées.

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

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

"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."

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

(GB) Warning !

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

(S) Varning !

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

(SF) Varoitus !

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

(DK) Advarse !

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

DISMANTLING INSTRUCTIONS

Dismantling of the Front Panel assembly

1) Loosen the 9 screws to dismantle the Top Cover (pos 252)
   - 2 screws on each side
   - 5 screws on the Rear Panel (pos 251).

2) Loosen 5 screws A and 8 catches C1 to slide the Front Panel assembly (pos 101, 102, 103, etc) as per figure 1.

   Note: To remove the Source / Volume control pc board (pos 1105B) 2 nuts hidden below the control knob assembly (pos 133, 134 and 135) must first be removed..

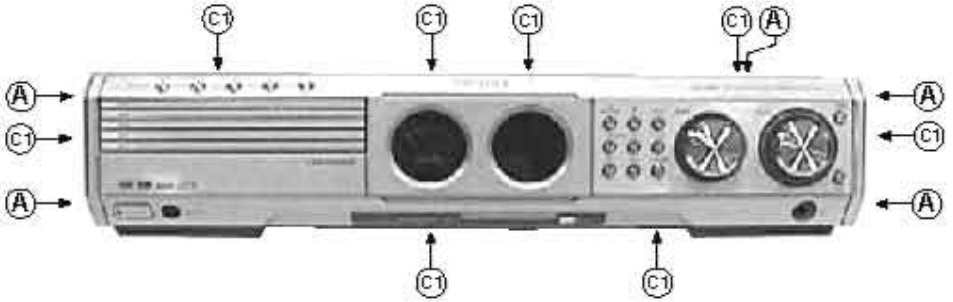


Figure 1

Hints for re-assembly of Top Cover

Due to appearance design the Top cover (pos 252) is sandwiched between the Front panel (pos 101) and the 2 side covers (pos 102 & 103), this make it necessary to remove the 2 side covers before re-assembly of Top cover.

1) To remove the side cover use a small screw driver with marking 16mm from the tip end.

2) Insert the screw driver into slot (as shown in figure 2) and push the tip outwards to release the side cover catch. The side cover can be pull outwards as soon as the top catch is released.

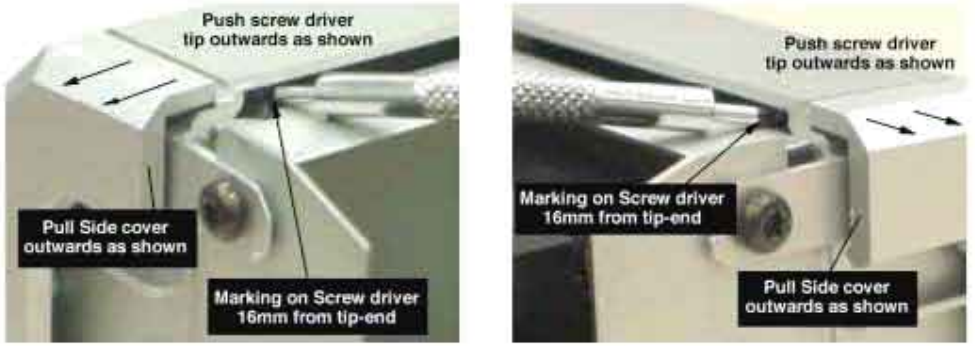


Figure 2

Dismantling the Tuner, Mains and AV boards

1) Loosen 3 screws D and 2 catches C2 on the Rear panel (pos 251) to remove the Tuner board assemby (pos 1101) as pe figure 3.

2) Loosen 1 screws E and 2 catches C3 to unslot the Mains board (pos 1102-A) out of the Rear panel as per figure 4.

3) Loosen bracket (pos 254) by turning a catch, sliding towards the outside and lifting it upwards as per figure 5.

4) Loosen 8 screws F (7 screws for non-Scart version) and 2 catches C5 to separate Rear Plate assembly (pos 251) from the Bottom plate assembly (pos 227) as per figure 3.

5) Uncatch C4 to remove the AV board (pos 1104) from the Bottom Plate assembly (pos 227) as per figure 5.

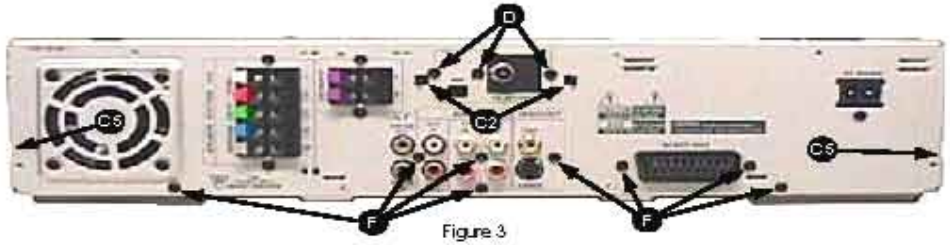


Figure 3

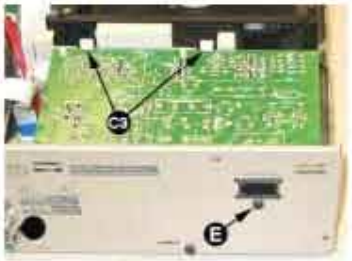


Figure 4

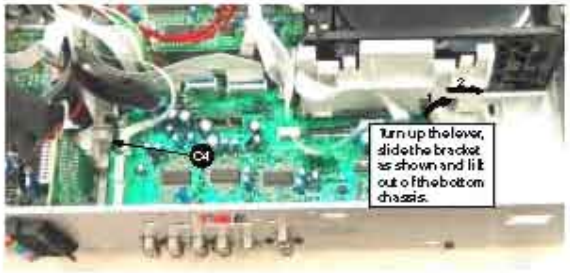


Figure 5

Dismantling the Supply & Power Amplifier boards

1) Loosen 2 screws B mounting the Supply board's (pos 1102-B) heatsink to the Bottom Plate (pos 227) as per figure 6.

   Note: During re-assembly care must be taken to ensure the Mains Transformer wires to the Supply board is routed properly below the board.

2) Loosen 4 screws C to dismantle the Power Amplifier board (pos 1102-D) from the Bottom Plate as per figure 6.

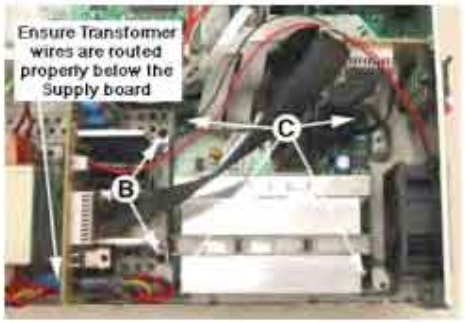


Figure 6

Dismantling the 5DTC Mechanism, SD-5.0SA_CH, DAC and P-Scan (only MX5900SA) boards

1) Loosen 1 screws E and 2 catches C3 to remove the Mains board as per figure 4.

2) Loosen bracket (pos 254) by turning a catch, sliding towards the outside and lifting it upwards as per figure 5.

3) Loosen 2 screws J and 2 catches C6 to remove the DAC board (pos 1103-B) as per figure 7.

4) Loosen 2 screws K and 2 catches C7 to remove the P-Scan board (pos 1107) as per figure 7 - applicable for MX5900SA only.

5) Loosen 2 screws H to remove the bracket (pos 260) as per figure 8.

6) Loosen 3 screws L to remove the SACD (SD-5.0SA_CH) board (pos 1103-C) as per figure 9.

7) Loosen 3 screws G, lift up the 5DTC Module's (pos 1103-A) rear and pull the module out towards the rear as per figure 8.

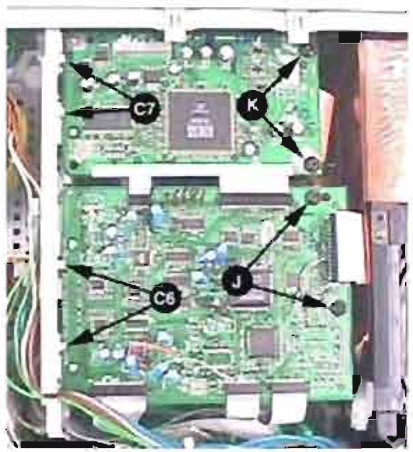


Figure 7

Figure 8

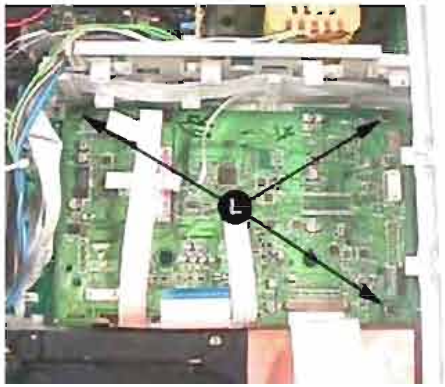
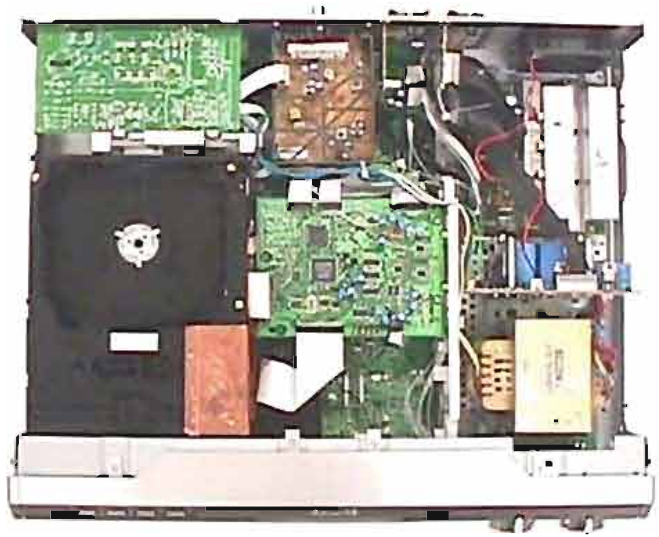


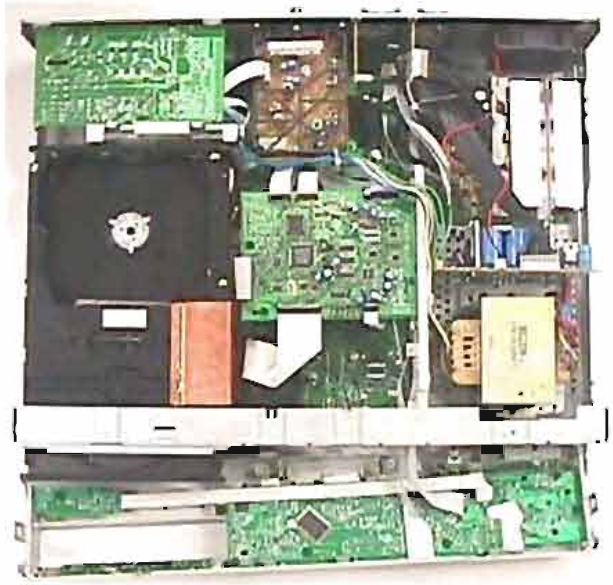
Figure 9

Service positions

Service position A (Top cover removed)



Service position B (Front Panel loosen)

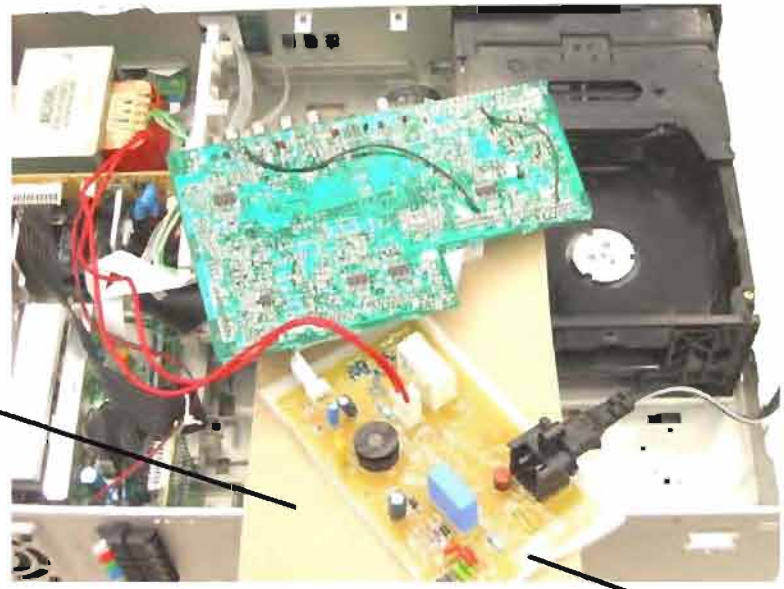


2-3

Service positions

Service position C (Supply and Amplifier boards loosen)

Service position D (Mains & AV boards loosen)



Caution:

1) In some of the service positions the Mains supply is exposed, therefore service technicians have to exercise care to prevent electric shock.

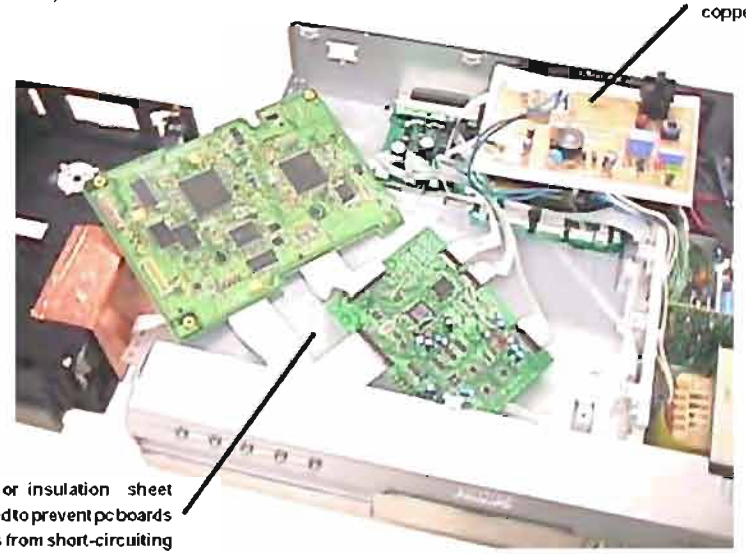
2) The copper pattern on the Mains board should be covered with non-conductive insulation during fault-finding on other parts of the set

3) Insulation sheet (eg. thick paper or cardboard) should be use during fault-finding to prevent short-circuiting of copper patterns to metallic surroundings

Note:

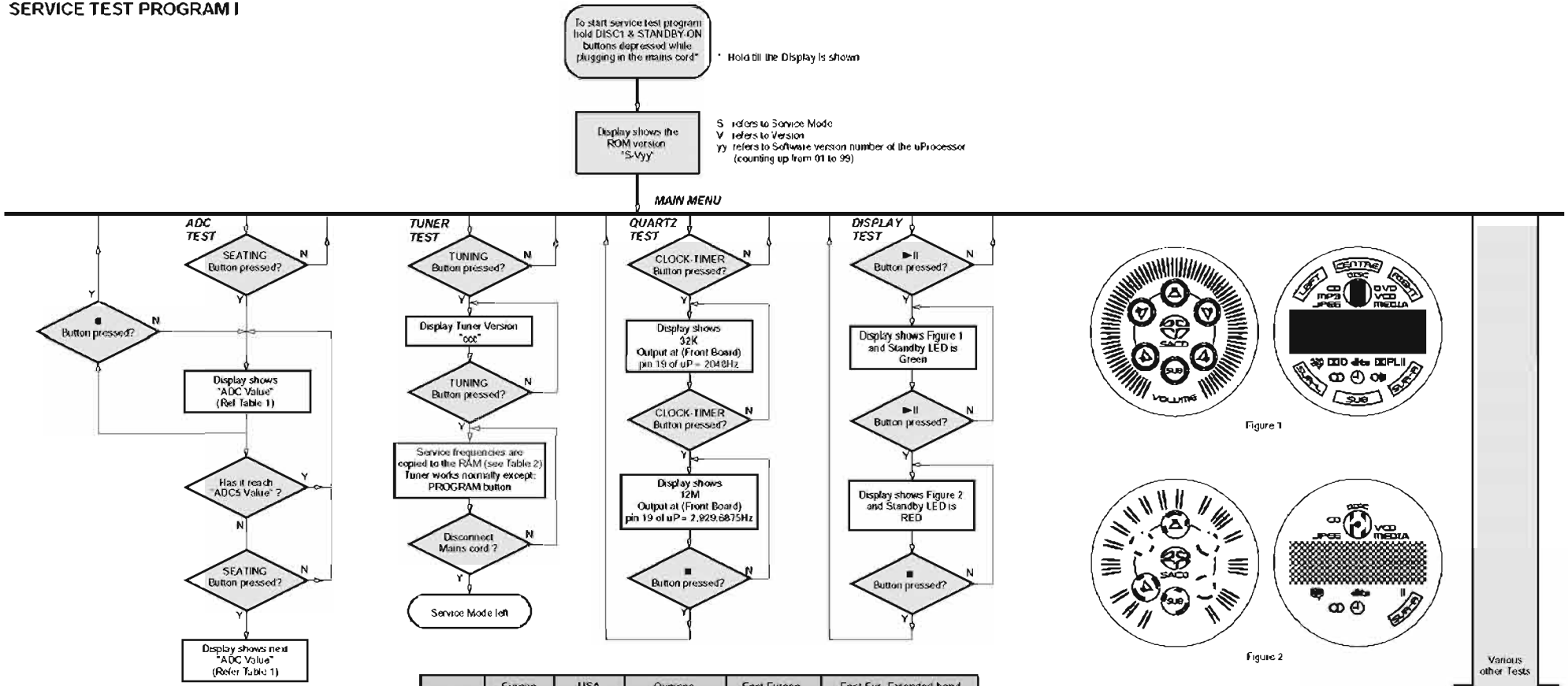
The ground connection between AV board stoko pin 1100 and Amplifier board stoko pin 1320 must be connect ed during Service pos C and D in order to have sound output at the Loudspeakers.

Service position E (5DTC Mechanism, SD-5.0SA_CH & DAC boards loosen)



3-1

SERVICE TEST PROGRAM I



Name	Input line to uProcessor IC	Remarks
ADC1	Key0	Return the value assign for each key button.
ADC2	Key1	Return the value assign for each key button.
ADC3	VU_IN	Varies according to the signal dc level
ADC4	MUX_DET	The set temperature is measured via this NTC line, if lower than 69 the set goes into Standby.
ADC5	Options	Return the value assign for the different possible options

Table 1

Note.
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

PRESET	Europe "EUR"	USA "USA"	Oversea "OSE"	East Europe "EAS"	East Eur. Extended-band "EAS"
1	87.5MHz	87.5MHz	87.5MHz	87.5MHz	65.81MHz
2	108MHz	108MHz	108MHz	108MHz	108MHz
3	531kHz	530kHz	530/531kHz*	531kHz	74MHz
4	1602kHz	1700kHz	1700/1602kHz*	1602kHz	87.5MHz
5	558kHz	560kHz	560/558kHz*	558kHz	531kHz
6	1494kHz	1500kHz	1500/1494kHz*	1494kHz	1602kHz
7	87.5MHz	98MHz	98/87.5MHz*	87.5MHz	558kHz
8	87.5MHz	87.5MHz	87.5MHz	87.5MHz	1494kHz
9	87.5MHz	87.5MHz	87.5MHz	87.5MHz	98MHz
10	87.5MHz	87.5MHz	87.5MHz	87.5MHz	70-01MHz
11	98MHz	87.5MHz	87.5/98MHz*	98MHz	65.81MHz

Table 2

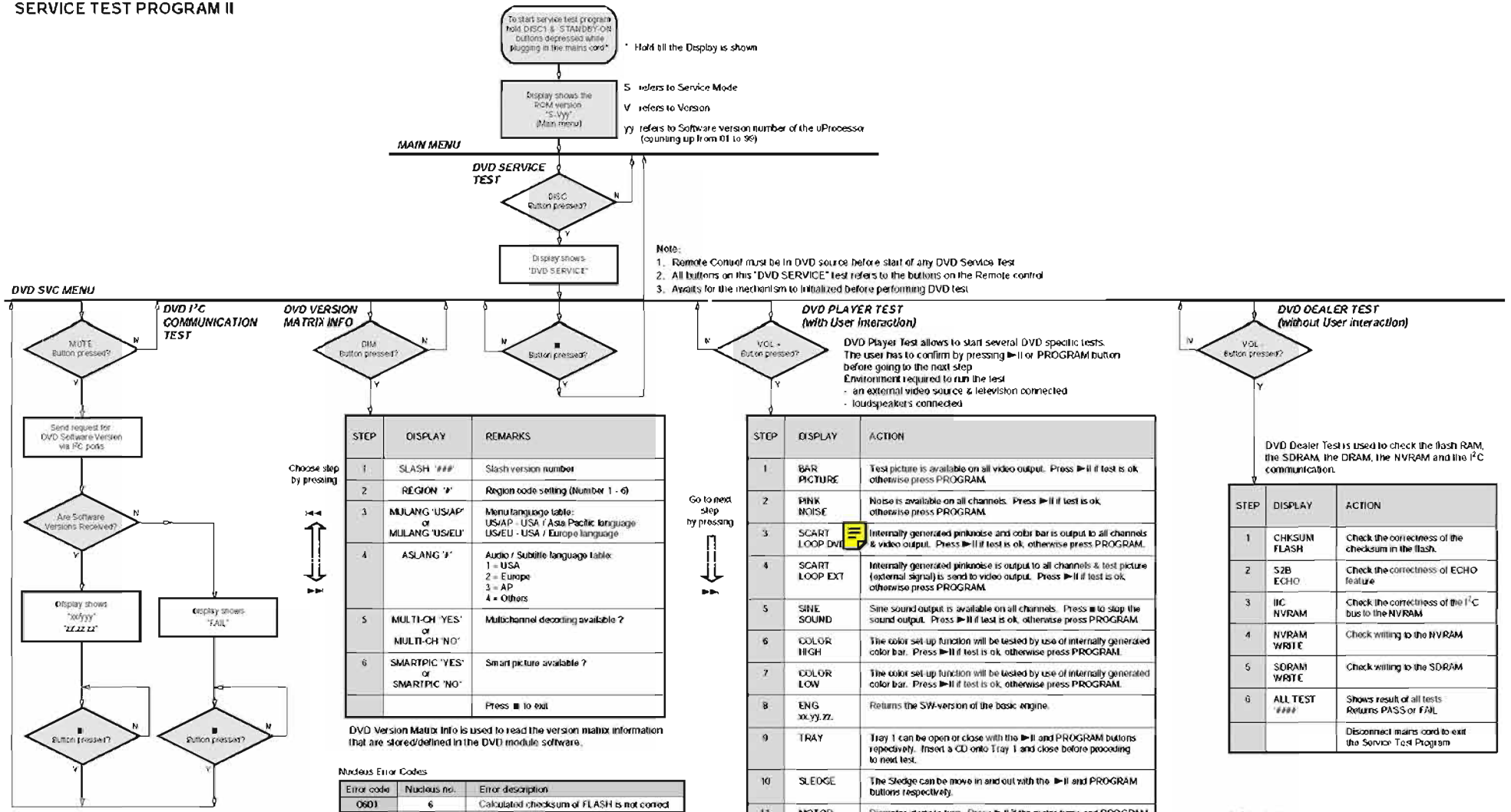
Note * Depending on the selected grid frequency (9 or 10kHz)
By holding the "DISC5" and "STANDBY-ON" buttons depressed while switching on the Mains supply, one of the undermentioned features will be activated:
- the tuning grid frequency is toggled between 9kHz and 10kHz for the Oversea (/21) version

Figure 1

Figure 2

TEST	Activated with	ACTION
EEPROM TEST	►►I ■ to Exit	Some 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	I◄◄	Load default data. Display shows "NEW" for 1 second *Caution!* ***All presets from the customer will be lost!!***
AUTO STANDBY TOGGLE	SUBW ↓ (Remote Control)	Pressing this button will toggle between the status "AUTO STANDBY ON" and "AUTO STANDBY OFF" The status will scroll once across the Display
ROTARY ENCODER TEST	SOURCE / VOLUME Knob	Display shows value for 2 seconds Values increases or decreases in steps of 1 until 0 (Min.) or 40 (Max.) is reached
LEAVE SERVICE TEST PROGRAM	Disconnect mains cord	

SERVICE TEST PROGRAM II



DVD I²C Communication Test is used to test the I²C communication port between the DVD module and the microprocessor of the set.

Where: xx Is the SDTC software version
yyy Is the Backend (DVD) application software version
zz.zz.zz Is the Basic Engine (Servo) software version

Choose step by pressing ◄◄ ►►

STEP	DISPLAY	REMARKS
1	SLASH '###'	Slash version number
2	REGION '#'	Region code setting (Number 1 - 6)
3	MULANG 'US/AP' or MULANG 'US/EU'	Menu language table: US/AP - USA / Asia Pacific language US/EU - USA / Europe language
4	ASLANG '#'	Audio / Subtitle language table: 1 = USA 2 = Europe 3 = AP 4 = Others
5	MULTI-CH 'YES' or MULTI-CH 'NO'	Multichannel decoding available ?
6	SMARTPIC 'YES' or SMARTPIC 'NO'	Smart picture available ?
		Press ■ to exit

DVD Version Matrix Info is used to read the version matrix information that are stored/defined in the DVD module software.

Nucleus Error Codes

Error code	Nucleus no.	Error description
0601	6	Calculated checksum of FLASH is not correct
1101	11	I²C bus busy before start
1102	11	NVRAM access time-out
1103	11	No NVRAM acknowledge
1104	11	NVRAM reply time-out
1201	12	I²C bus busy
1202	12	Error sending I²C command to Slave
1203	12	Slave controller not responding
1204	12	Slave response is not correct
1301	13	Parity error receiving data from Basic Engine
1302	13	Parity error sending data to Basic Engine
1303	13	No communication with Basic Engine
1304	13	Communication time-out with Basic Engine
1601	16	The SDRAM is faulty
5401	54	I²C bus busy
5402	54	Error sending I²C command to Scart Switch IC
5403	54	Scart Switch IC not responding
5403	54	Scart Switch IC response is not correct

Table 4

Go to next step by pressing ►►

DVD Player Test allows to start several DVD specific tests.
The user has to confirm by pressing ►II or PROGRAM button before going to the next step
Environment required to run the test
- an external video source & television connected
- loudspeakers connected

STEP	DISPLAY	ACTION
1	BAR PICTURE	Test picture is available on all video output. Press ►II if test is ok otherwise press PROGRAM.
2	PINK NOISE	Noise is available on all channels. Press ►II if test is ok otherwise press PROGRAM.
3	SCART LOOP DVD	Internally generated pinknoise and color bar is output to all channels & video output. Press ►II if test is ok, otherwise press PROGRAM.
4	SCART LOOP EXT	Internally generated pinknoise is output to all channels & test picture (external signal) is send to video output. Press ►II if test is ok otherwise press PROGRAM.
5	SINE SOUND	Sine sound output is available on all channels. Press ■ to stop the sound output. Press ►II if test is ok, otherwise press PROGRAM.
6	COLOR HIGH	The color set-up function will be tested by use of internally generated color bar. Press ►II if test is ok, otherwise press PROGRAM.
7	COLOR LOW	The color set-up function will be tested by use of internally generated color bar. Press ►II if test is ok, otherwise press PROGRAM.
8	ENG xx.yy.zz.	Returns the SW-version of the basic engine.
9	TRAY	Tray 1 can be open or close with the ►II and PROGRAM buttons respectively. Insert a CD onto Tray 1 and close before proceding to next test.
10	SLEDGE	The Sledge can be move in and out with the ►II and PROGRAM buttons respectively.
11	MOTOR	Dismotor starts to turn. Press ►II if the motor turns and PROGRAM button if the motor does not turn.
12	FOCUS	The DVD tries to focus. Press ►II if focus is successful and PROGRAM button if focus is not successful.
13	RADIAL	Radial test is started. Press ►II if test is successful and PROGRAM button if test is not successful.
14	GROOVES	The laser spot jumps to another position. Press ►II to jump to the next position or press PROGRAM to jump to previous position.
15	LO - wwxxyyzz	Reads out the info from the error log. Up to 16 errors (8 hex digits) can be stored in a buffer. Press ►II to view next error or press PROGRAM to view previous error. If there is no error the display will shows: "LO-00000000"
16	ERROR BITS xx	Shows all error bits (2-digit number). Press ►II to select next error bits or press PROGRAM to select previous error bits.
17	'aa-bbb' 'cccc'	Runs the dealer test infinitely. The information returned from the module will be displayed. aa = faulty module codes (see table 3); bbb = number of loops and cccc = Nucleus error codes (see table 4).
		Disconnect mains cord to exit Service Test

DVD Dealer Test is used to check the flash RAM, the SDRAM, the DRAM, the NVRAM and the I²C communication.

STEP	DISPLAY	ACTION
1	CHKSUM FLASH	Check the correctness of the checksum in the flash.
2	S2B ECHO	Check the correctness of ECHO feature
3	IIC NVRAM	Check the correctness of the I²C bus to the NVRAM
4	NVRAM WRITE	Check writing to the NVRAM
5	SDRAM WRITE	Check writing to the SDRAM
6	ALL TEST '####'	Shows result of all tests Returns PASS or FAIL
		Disconnect mains cord to exit the Service Test Program

Faulty Module Codes

Error code	Basic Engine Part	STi + Peripherals
00	OK	OK
01	OK	Faulty
10	Faulty	OK
11	Faulty	Faulty

Table 3

Reprogramming of DVD version matrix

Caution:
This information is confidential and may not be distributed. Only a qualified service person should reprogram the mono BE board.

After replacement/repair of the Mono BE board, the customer settings and also the region code may be lost. Reprogramming will put the set back in the state in which it has left the factory, i.e. with the default settings and the allowed region code.

Reprogramming will be done by way of the Remote Control.
Put the player in stop mode, Disc 1 with no disc loaded.

Do the following steps with the Remote Control:

1) Press ***<DISC MENU>*** followed by numerical keys ***<1> <5> <9>***
   The set display shows: ***- 0 - 0 - 0 - 0 -***

2) Press now successively the following numerical keys :

for MX5800SA/21R	:	***<3><2><3> <0><4><0> <0><8>***	***AP***
for MX5800SA/21S	:	***<4><2><3> <0><4><0> <0><8>***	***Australia, New Zealand***
for MX5800SA/22S	:	***<2><2><2> <0><4><2> <0><8>***	***Europe***
for MX5800SA/33S	:	***<3><2><3> <0><4><1> <0><8>***	***AP - Korea***
for MX5800SA/35S	:	***<6><2><3> <0><4><0> <0><8>***	***China***
for MX5800SA/78	:	***<3><2><3> <0><4><1> <0><8>***	***Latam***
for MX5900SA/37	:	***<1><1><1> <0><4><3> <0><8>***	***US***

3) Press ***<DISC MENU>*** again. The set display will show: ***DONE*** .
   Caution: The set needs about 3 seconds to reset to required setting.

4) Disconnect mains to ensure proper reset.

Procedure for check Software version

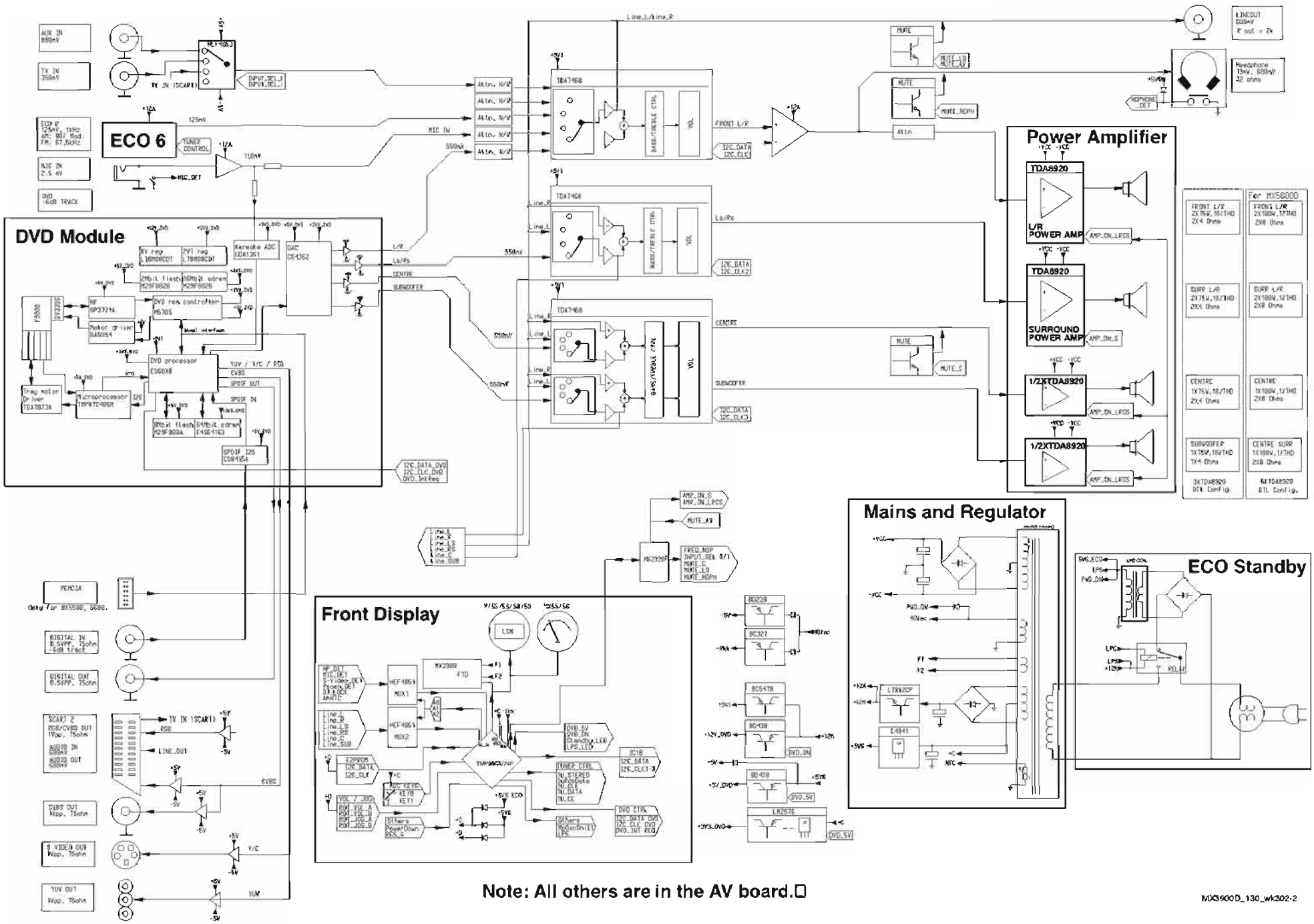
1) Select Disc with the Remote Control
2) Press <SYSTEM MENU>
3) Use the down key move all the way down (4x) to bottom of "Setup Menu".
4) Use the right key move to the sub-menu.
5) Use the down key move down (3x) to "Help text" and down one more time to see the software version.
6) The TV screen will shows:
   ..... 5.1.10 030807P22204208 7.10.0 7.2
   where 5.1.10 = Backend (DVD) software version
   030807 = date of Backend software
   22204208 = DVD version matrix
   7.10.0 = Basic Engine (Servo) software version
   7.2 = 5DTC software version
7) Press <OK> three times to exit.

Procedure to upgrade software

1) Power up the set and open tray Disc 1.
2) Place upgrade CD-ROM onto tray and close.
3) The set will display "DOWNLOAD" and the TV screen will go blank.
4) The TV screen turns on again and Tray Disc 1 will open.
5) Remove the upgrade CD-ROM and unplug the Mains supply.
6) The whole process should last less than 10 minutes.

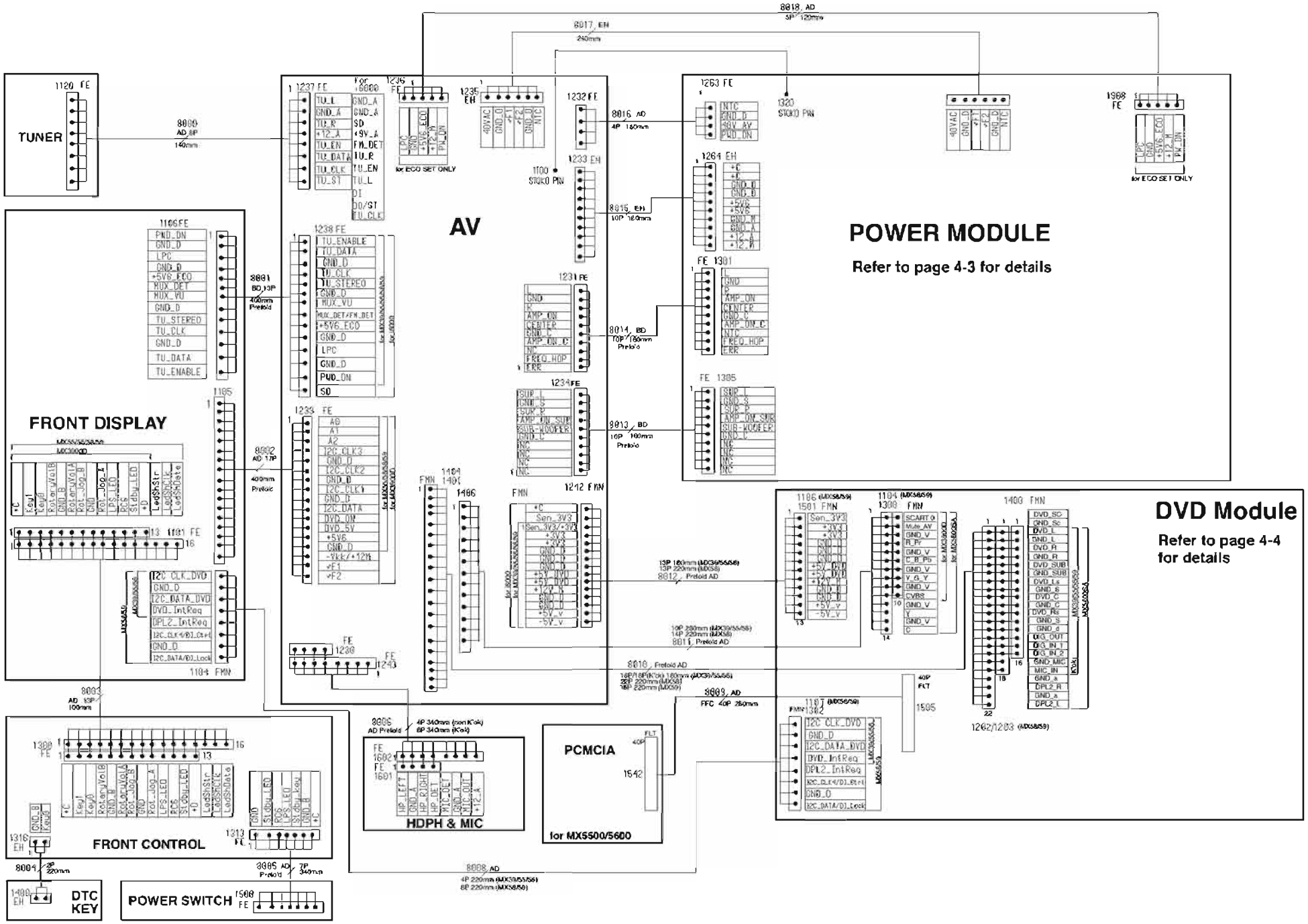
4-1

SET BLOCK DIAGRAM



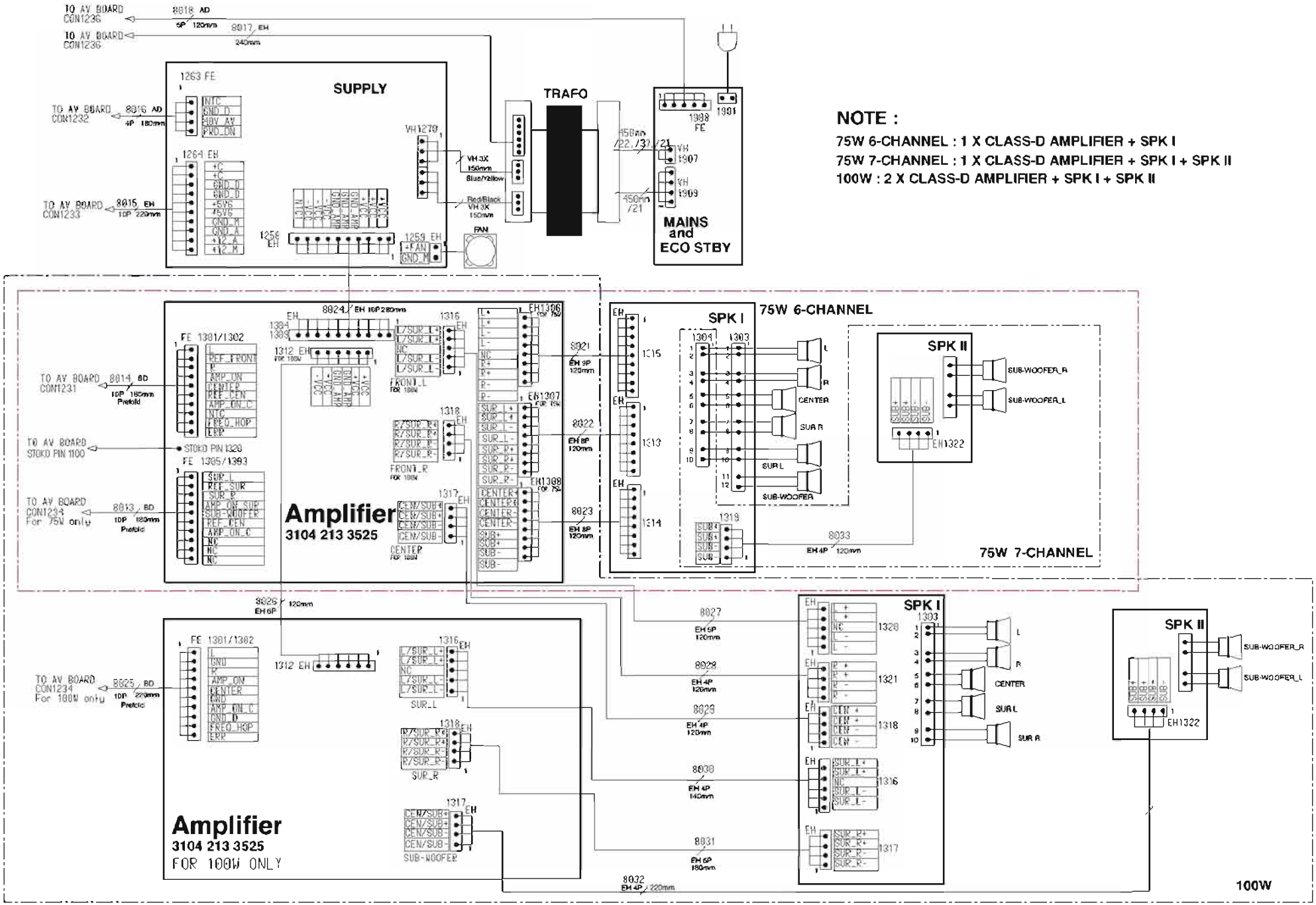
4-2

MAIN WIRING DIAGRAM



4-3

WIRING DIAGRAM - POWER MODULE DETAILS

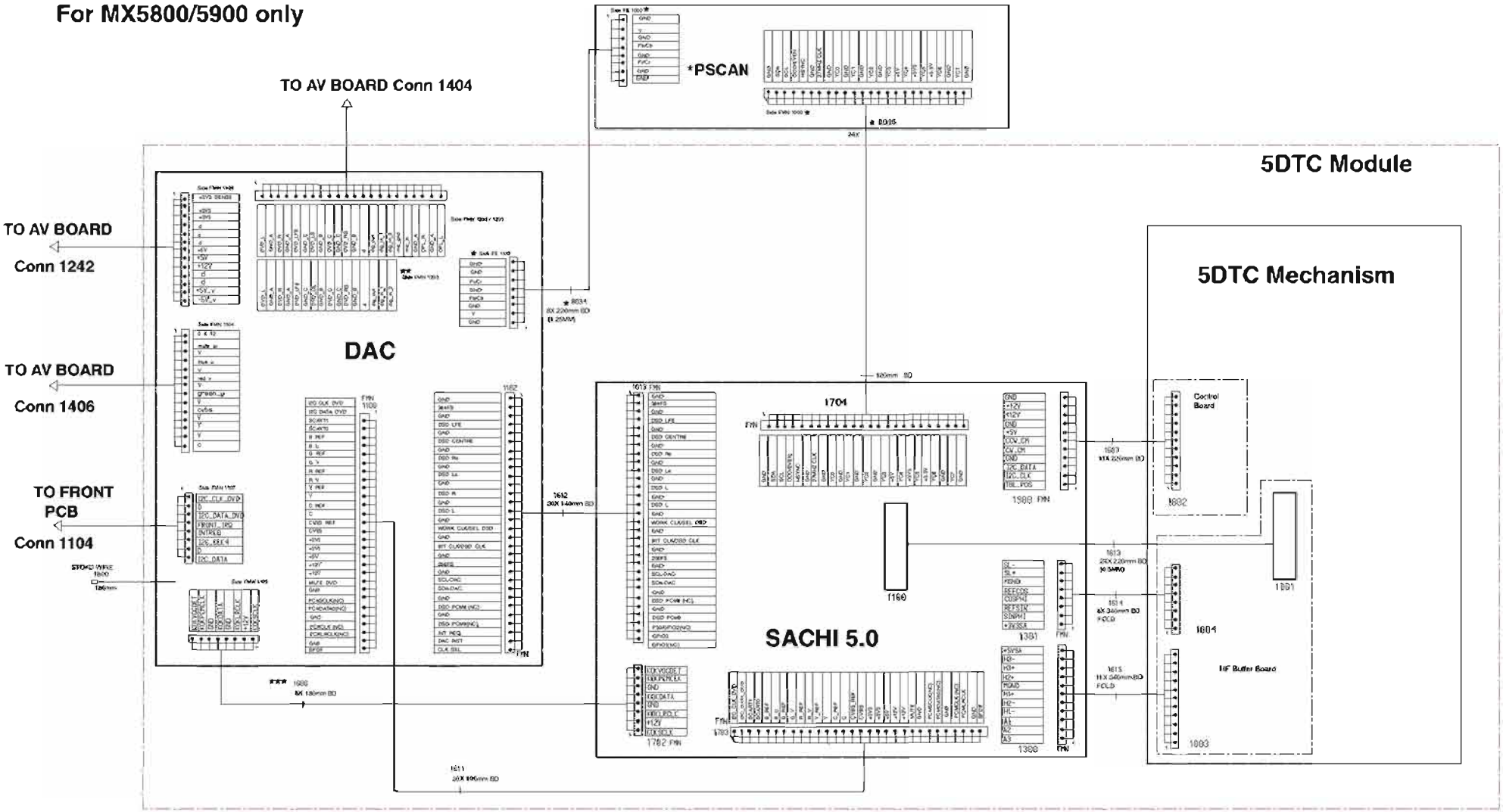


NOTE :

75W 6-CHANNEL : 1 X CLASS-D AMPLIFIER + SPK I
75W 7-CHANNEL : 1 X CLASS-D AMPLIFIER + SPK I + SPK II
100W : 2 X CLASS-D AMPLIFIER + SPK I + SPK II

4-4

WIRING DIAGRAM - DVD MODULE DETAILS & P-SCAN BOARD



NOTE : ALL WIRE ARE 1MM PITCH, UNLESS OTHERWISE STATED BY (XXX)

* : FOR SET WITH PROGRESSIVE SCAN ONLY

** : FOR SET WITHOUT DPLII

*** :FOR SET WITH KARAOKE

P-SCAN BOARD

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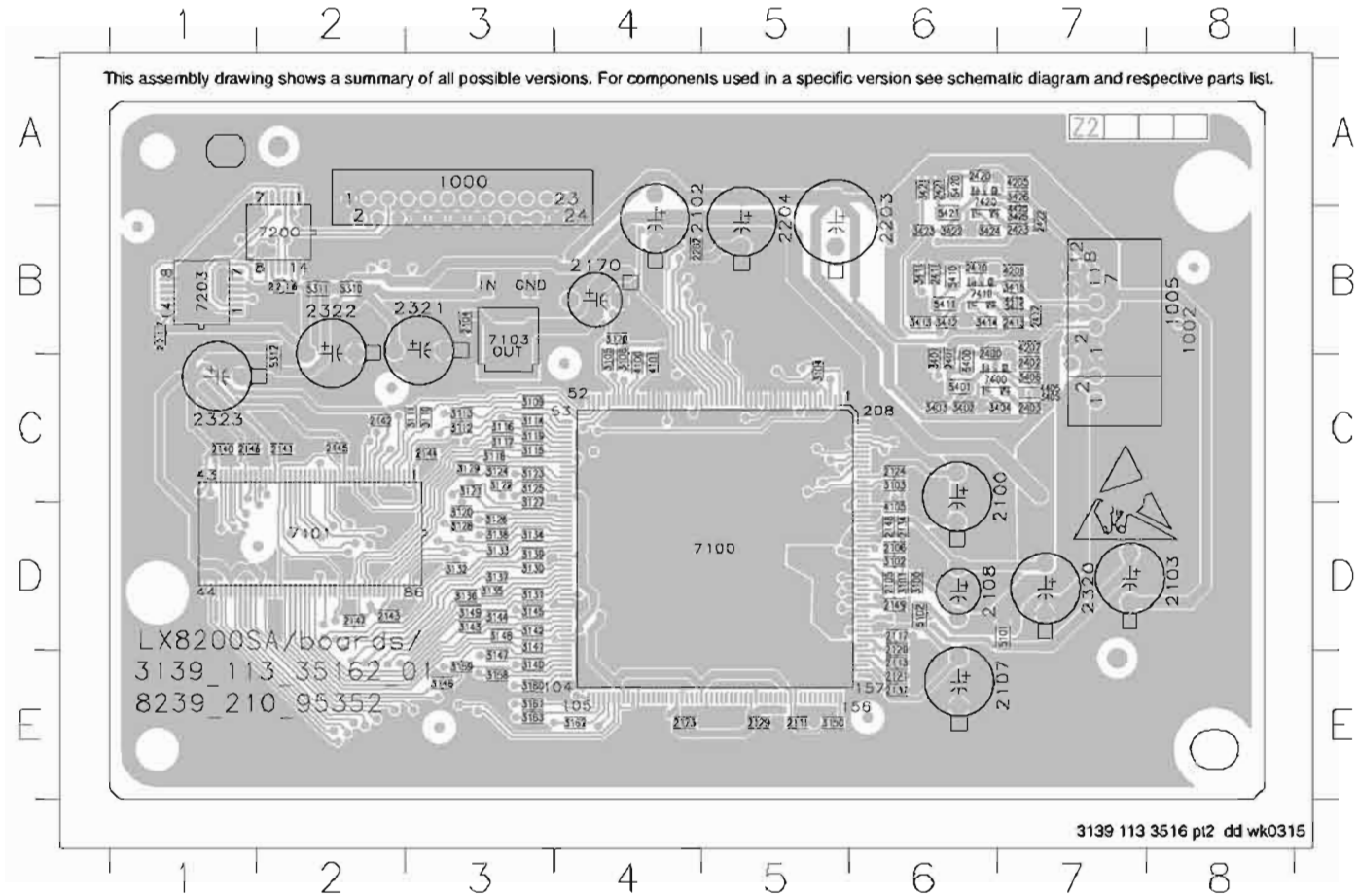
P-SCAN BOARD - TOP VIEW LAYOUT

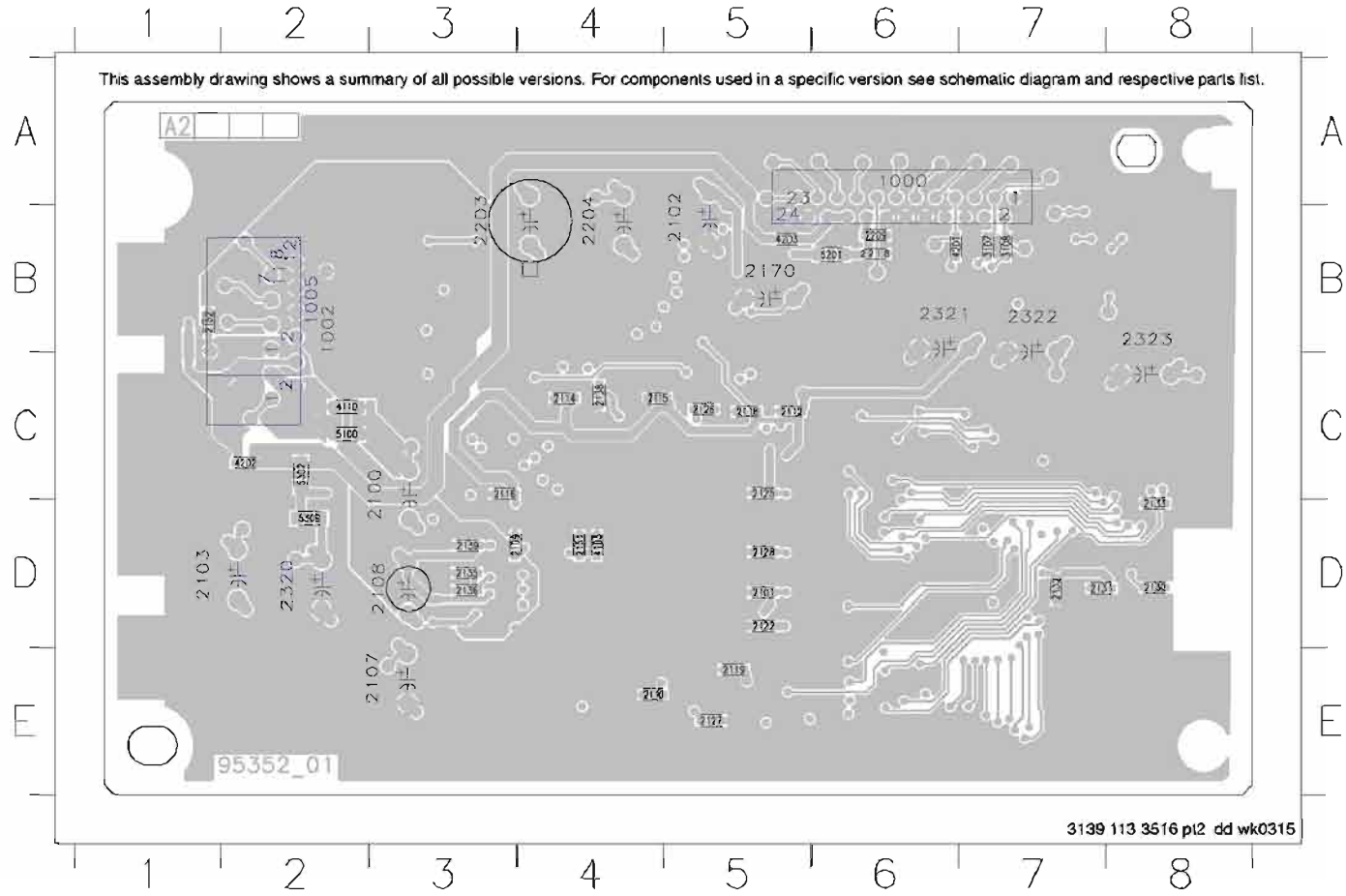
1000 A3	2129 E5	2217 B1	3101 D6	3121 C3	3139 D3	3170 B4	3426 A7	5411 B6
1002 B7	2134 D6	2320 D7	3102 D6	3122 C3	3140 E3	3401 C6	4100 C4	5420 A6
1005 B7	2137 E6	2321 B3	3103 C6	3123 C3	3141 D3	3402 C6	4101 C4	5421 B6
2100 C7	2140 C1	2322 B2	3104 C5	3124 C3	3142 D3	3403 C6	4105 D6	7100 D5
2102 B4	2141 C2	2323 B1	3105 C4	3125 C3	3143 D3	3404 C7	4205 A7	7101 D2
2103 D8	2142 C2	2400 B6	3106 C4	3126 D3	3144 D3	3405 C7	4206 B7	7103 B3
2104 B3	2143 D2	2401 C6	3109 C3	3127 D3	3145 D3	3406 C7	4207 B7	7200 B2
2105 D6	2144 C3	2402 C7	3110 C3	3128 D3	3146 E3	3411 B6	4405 C7	7203 B1
2106 D6	2145 C2	2403 C7	3111 C3	3129 C3	3147 E3	3412 B6	4415 B7	7400 C6
2107 E7	2146 C1	2410 B6	3112 C3	3130 D3	3148 D3	3413 B6	4425 B7	7410 B6
2108 D6	2147 D2	2411 B6	3113 C3	3131 D3	3149 D3	3414 B6	5101 D7	7420 A6
2111 E5	2148 D6	2412 B7	3114 C3	3132 D3	3150 E5	3415 B7	5102 D6	
2113 E6	2149 D6	2413 B7	3115 C3	3133 D3	3158 E3	3416 B7	5310 B2	
2117 D6	2170 B4	2420 A6	3116 C3	3134 D3	3159 E3	3421 A6	5311 B2	
2120 D6	2202 B4	2421 A6	3117 C3	3135 D3	3160 E3	3422 B6	5312 C2	
2121 E6	2203 B6	2422 B7	3118 C3	3136 D3	3161 E3	3423 B6	5400 C6	
2123 E4	2204 B5	2423 B7	3119 C3	3137 D3	3162 E4	3424 B6	5401 C6	
2124 C6	2216 B2	3100 D6	3120 D3	3138 D3	3163 E3	3425 B7	5410 B6	



5-3

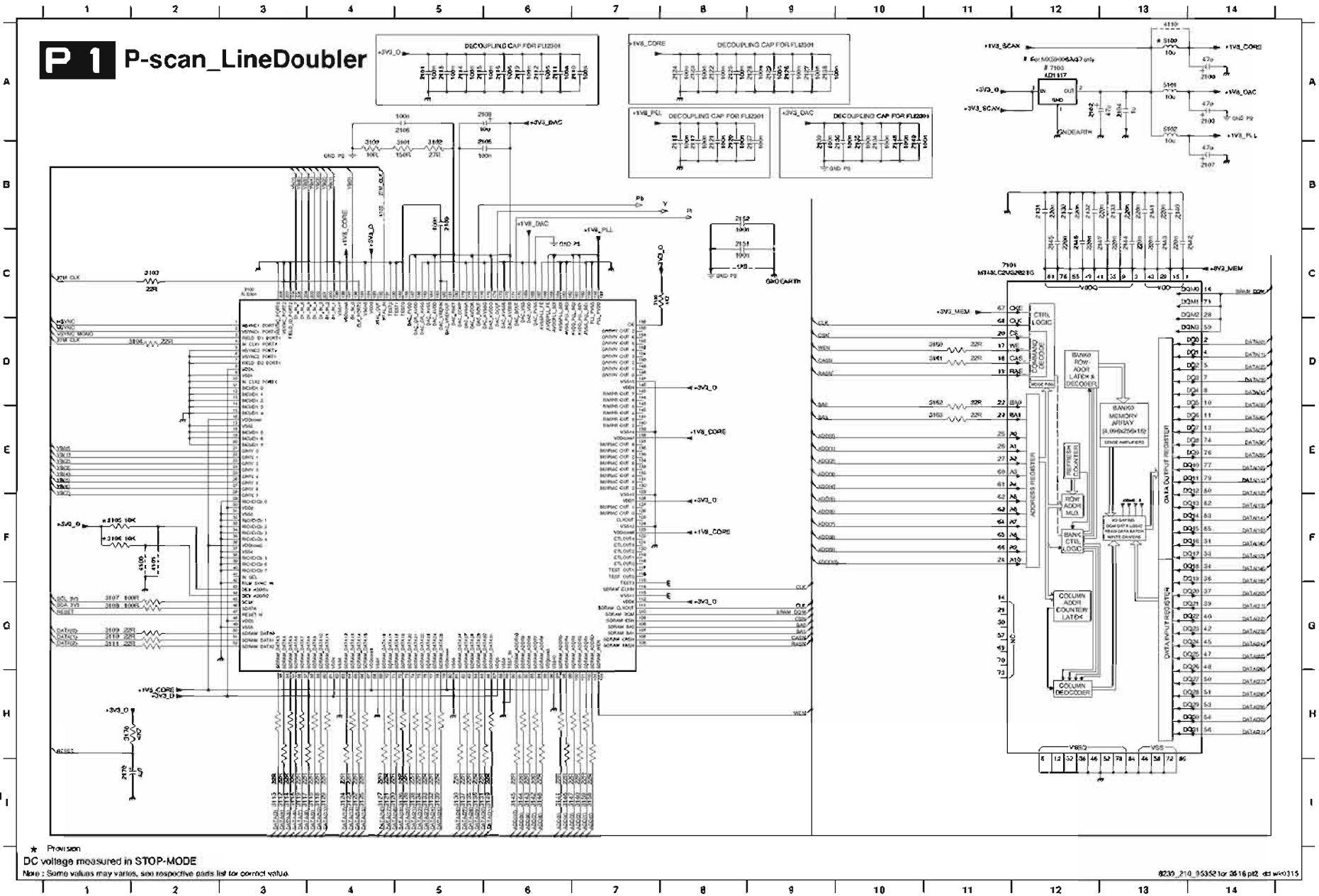
P-SCAN BOARD - BOTTOM VIEW LAYOUT

1000 A6	2103 D1	2114 C4	2125 C5	2132 D7	2151 D4	2218 B6	3108 B7	5100 C2
1002 B2	2107 E2	2115 C4	2126 C5	2133 D8	2152 B1	2320 D2	4103 D4	5201 B6
1005 B2	2108 D3	2116 C3	2127 E5	2135 D3	2170 B5	2321 B6	4110 C2	5302 C2
2100 C2	2109 D3	2118 C5	2128 D5	2136 D3	2203 B3	2322 B7	4201 B6	5309 D2
2101 D5	2110 E4	2119 E5	2130 D8	2138 C4	2204 B4	2323 B8	4202 C2	
2102 B5	2112 C5	2122 D5	2131 D7	2139 D3	2209 B6	3107 B7	4203 B5	



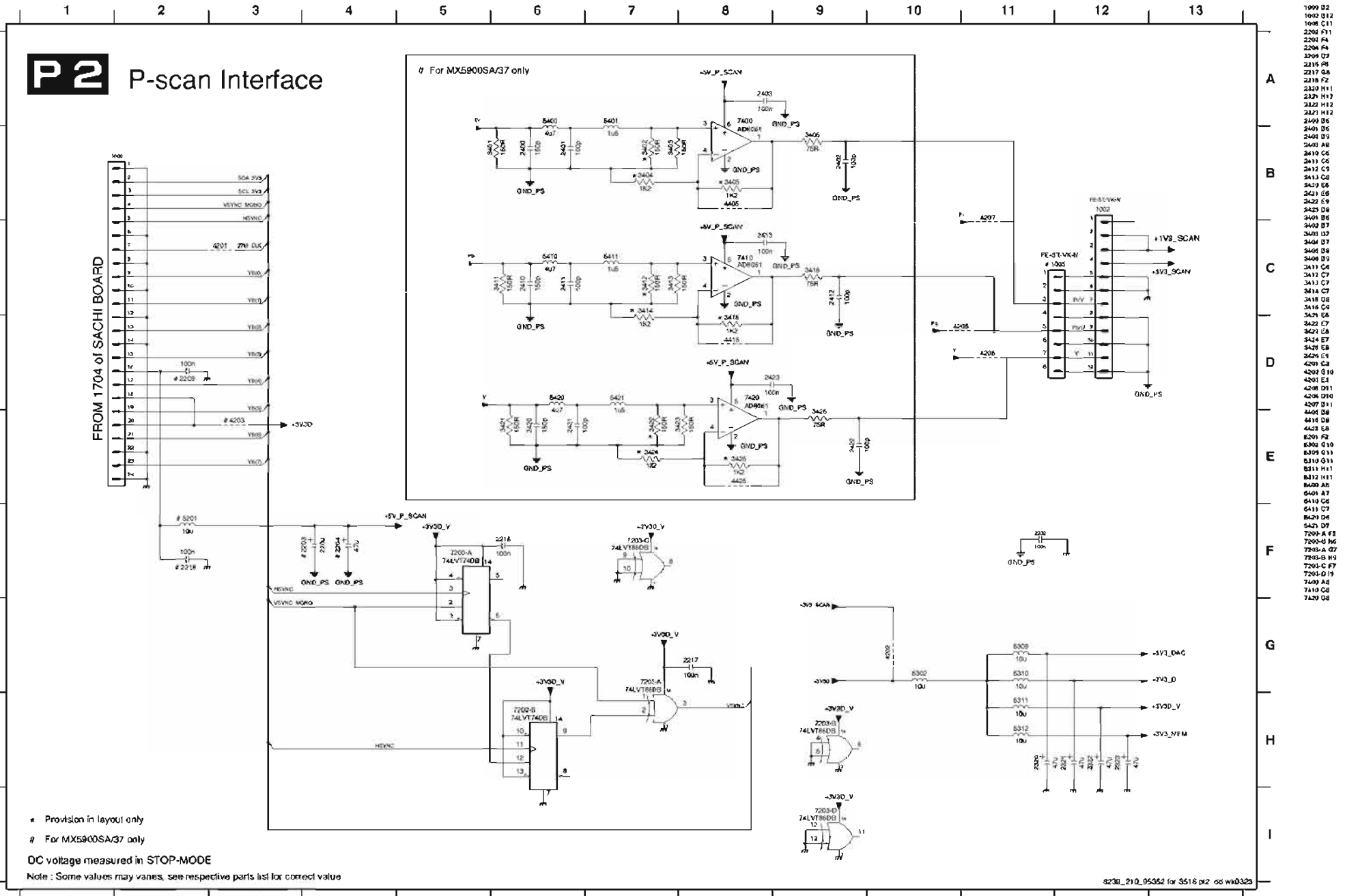
5-4

P-SCAN BOARD - CIRCUIT DIAGRAM (PART 1)



5-5

P-SCAN BOARD - CIRCUIT DIAGRAM (PART 2)



ELECTRICAL PARTS LIST - P-SCAN BOARD

MISCELLANEOUS

1000	2422 025 17716	Flex Socket 24P
1005	4822 265 11535	Flex Socket 8P

CAPACITORS

2100	4822 124 81286	47uF 20% 16V
2101	2238 586 59812	100nF +80/-20% 50V
2102	4822 124 81286	47uF 20% 16V
2103	4822 124 81286	47uF 20% 16V
2104	3198 017 41050	1uF 10V
2105	2238 586 59812	100nF +80/-20% 50V
2106	2238 586 59812	100nF +80/-20% 50V
2107	4822 124 81286	47uF 20% 16V
2108	4822 124 11947	10uF 20% 16V
2109	2238 586 59812	100nF +80/-20% 50V
2110	2238 586 59812	100nF +80/-20% 50V
2111	2238 586 59812	100nF +80/-20% 50V
2112	2238 586 59812	100nF +80/-20% 50V
2113	2238 586 59812	100nF +80/-20% 50V
2114	2238 586 59812	100nF +80/-20% 50V
2115	2238 586 59812	100nF +80/-20% 50V
2116	2238 586 59812	100nF +80/-20% 50V
2117	2238 586 59812	100nF +80/-20% 50V
2118	2238 586 59812	100nF +80/-20% 50V
2119	2238 586 59812	100nF +80/-20% 50V
2120	2238 586 59812	100nF +80/-20% 50V
2121	2238 586 59812	100nF +80/-20% 50V
2122	2238 586 59812	100nF +80/-20% 50V
2123	2238 586 59812	100nF +80/-20% 50V
2124	2238 586 59812	100nF +80/-20% 50V
2125	2238 586 59812	100nF +80/-20% 50V
2126	2238 586 59812	100nF +80/-20% 50V
2127	2238 586 59812	100nF +80/-20% 50V
2128	2238 586 59812	100nF +80/-20% 50V
2129	2238 586 59812	100nF +80/-20% 50V
2130	4822 126 13879	220nF +80/-20% 16V
2131	4822 126 13879	220nF +80/-20% 16V
2132	4822 126 13879	220nF +80/-20% 16V
2133	4822 126 13879	220nF +80/-20% 16V
2134	2238 586 59812	100nF +80/-20% 50V
2135	2238 586 59812	100nF +80/-20% 50V
2136	2238 586 59812	100nF +80/-20% 50V
2137	2238 586 59812	100nF +80/-20% 50V
2138	2238 586 59812	100nF +80/-20% 50V
2139	2238 586 59812	100nF +80/-20% 50V
2140	4822 126 13879	220nF +80/-20% 16V
2141	4822 126 13879	220nF +80/-20% 16V
2142	4822 126 13879	220nF +80/-20% 16V
2143	4822 126 13879	220nF +80/-20% 16V
2144	4822 126 13879	220nF +80/-20% 16V
2145	4822 126 13879	220nF +80/-20% 16V
2146	4822 126 13879	220nF +80/-20% 16V
2147	4822 126 13879	220nF +80/-20% 16V
2148	2238 586 59812	100nF +80/-20% 50V
2149	2238 586 59812	100nF +80/-20% 50V
2151	2238 586 59812	100nF +80/-20% 50V
2152	2238 586 59812	100nF +80/-20% 50V
2170	4822 124 12032	4,7uF 20% 50V
2202	2238 586 59812	100nF +80/-20% 50V
2203	4822 124 12245	220uF 20% 10V
2204	4822 124 81286	47uF 20% 16V
2209	2238 586 59812	100nF +80/-20% 50V
2216	2238 586 59812	100nF +80/-20% 50V
2217	2238 586 59812	100nF +80/-20% 50V
2218	2238 586 59812	100nF +80/-20% 50V
2320	4822 124 81286	47uF 20% 16V
2321	4822 124 81286	47uF 20% 16V
2322	4822 124 81286	47uF 20% 16V
2323	4822 124 81286	47uF 20% 16V
2400	4822 122 33753	150pF 5% 50V
2401	2020 552 94427	100pF 5% 50V
2402	2020 552 94427	100pF 5% 50V
2403	2238 586 59812	100nF +80/-20% 50V
2410	4822 122 33753	150pF 5% 50V
2411	2020 552 94427	100pF 5% 50V
2412	2020 552 94427	100pF 5% 50V
2413	2238 586 59812	100nF +80/-20% 50V
2420	4822 122 33753	150pF 5% 50V
2421	2020 552 94427	100pF 5% 50V
2422	2020 552 94427	100pF 5% 50V
2423	2238 586 59812	100nF +80/-20% 50V

RESISTORS

3100	4822 051 30109	10R 5% 0,062W
3101	4822 051 30151	150R 5% 0,062W
3102	2322 702 60279	27R 5% 0,062W
3103	4822 117 12139	22R 5% 0,062W
3104	4822 117 12139	22R 5% 0,062W
3107	4822 051 30101	100R 5% 0,062W
3108	4822 051 30101	100R 5% 0,062W
3109	4822 117 12139	22R 5% 0,062W
3110	4822 117 12139	22R 5% 0,062W
3111	4822 117 12139	22R 5% 0,062W
3112	4822 117 12139	22R 5% 0,062W
3113	4822 117 12139	22R 5% 0,062W
3114	4822 117 12139	22R 5% 0,062W
3115	4822 117 12139	22R 5% 0,062W
3116	4822 117 12139	22R 5% 0,062W
3117	4822 117 12139	22R 5% 0,062W
3118	4822 117 12139	22R 5% 0,062W
3119	4822 117 12139	22R 5% 0,062W
3120	4822 117 12139	22R 5% 0,062W
3121	4822 117 12139	22R 5% 0,062W
3122	4822 117 12139	22R 5% 0,062W
3123	4822 117 12139	22R 5% 0,062W
3124	4822 117 12139	22R 5% 0,062W
3125	4822 117 12139	22R 5% 0,062W
3126	4822 117 12139	22R 5% 0,062W
3127	4822 117 12139	22R 5% 0,062W
3128	4822 117 12139	22R 5% 0,062W
3129	4822 117 12139	22R 5% 0,062W
3130	4822 117 12139	22R 5% 0,062W
3131	4822 117 12139	22R 5% 0,062W
3132	4822 117 12139	22R 5% 0,062W
3133	4822 117 12139	22R 5% 0,062W
3134	4822 117 12139	22R 5% 0,062W
3135	4822 117 12139	22R 5% 0,062W
3136	4822 117 12139	22R 5% 0,062W
3137	4822 117 12139	22R 5% 0,062W
3138	4822 117 12139	22R 5% 0,062W
3139	4822 117 12139	22R 5% 0,062W
3140	4822 117 12139	22R 5% 0,062W
3141	4822 117 12139	22R 5% 0,062W
3142	4822 117 12139	22R 5% 0,062W
3143	4822 117 12139	22R 5% 0,062W
3144	4822 117 12139	22R 5% 0,062W
3145	4822 117 12139	22R 5% 0,062W
3146	4822 117 12139	22R 5% 0,062W
3147	4822 117 12139	22R 5% 0,062W
3148	4822 117 12139	22R 5% 0,062W
3149	4822 117 12139	22R 5% 0,062W
3150	4822 051 30472	4k7 5% 0,062W
3158	4822 117 12139	22R 5% 0,062W
3159	4822 117 12139	22R 5% 0,062W
3160	4822 117 12139	22R 5% 0,062W
3161	4822 117 12139	22R 5% 0,062W
3162	4822 117 12139	22R 5% 0,062W
3163	4822 117 12139	22R 5% 0,062W
3170	4822 051 30472	4k7 5% 0,062W
3401	4822 051 30151	150R 5% 0,062W
3403	4822 051 30151	150R 5% 0,062W
3406	4822 051 30759	75R 5% 0,062W
3411	4822 051 30151	150R 5% 0,062W
3413	4822 051 30151	150R 5% 0,062W
3416	4822 051 30759	75R 5% 0,062W
3421	4822 051 30151	150R 5% 0,062W
3423	4822 051 30151	150R 5% 0,062W
3426	4822 051 30759	75R 5% 0,062W
4100	4822 051 30008	0R Jumper 0603
4101	4822 051 30008	0R Jumper 0603
4103	4822 051 30008	0R Jumper 0603
4105	4822 051 30008	0R Jumper 0603
4110	4822 051 20008	0R Jumper 0805
4201	4822 051 30008	0R Jumper 0603
4203	4822 051 30008	0R Jumper 0603
4405	4822 051 30008	0R Jumper 0603
4415	4822 051 30008	0R Jumper 0603
4425	4822 051 30008	0R Jumper 0603

COILS & FILTERS

5101	4822 157 71593	Coil 10uH 10%
5102	4822 157 71593	Coil 10uH 10%
5201	4822 157 71593	Coil 10uH 10%
5302	4822 157 71593	Coil 10uH 10%
5309	4822 157 71593	Coil 10uH 10%
5310	4822 157 71593	Coil 10uH 10%
5311	4822 157 71593	Coil 10uH 10%
5312	4822 157 71593	Coil 10uH 10%
5400	4822 157 10977	Coil 4,7uH 10%
5401	3198 018 31580	Coil 1,5uH 10%
5410	4822 157 10977	Coil 4,7uH 10%
5411	3198 018 31580	Coil 1,5uH 10%
5420	4822 157 10977	Coil 4,7uH 10%
5421	3198 018 31580	Coil 1,5uH 10%

TRANSISTORS & INTEGRATED CIRCUITS

7100	9322 189 93671	FLI2301
7101	9322 166 71668	MT48LC2M32B2TG-6
7103	9322 167 69668	LD1117ADT18
7200	9352 092 60118	74LVT74DB
7203	9352 092 90118	74LVT86DB
7400	9322 167 49685	AD8061ART
7410	9322 167 49685	AD8061ART
7420	9322 167 49685	AD8061ART

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

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ELECTRICAL PARTS LIST - P-SCAN BOARD

FRONT BOARDS

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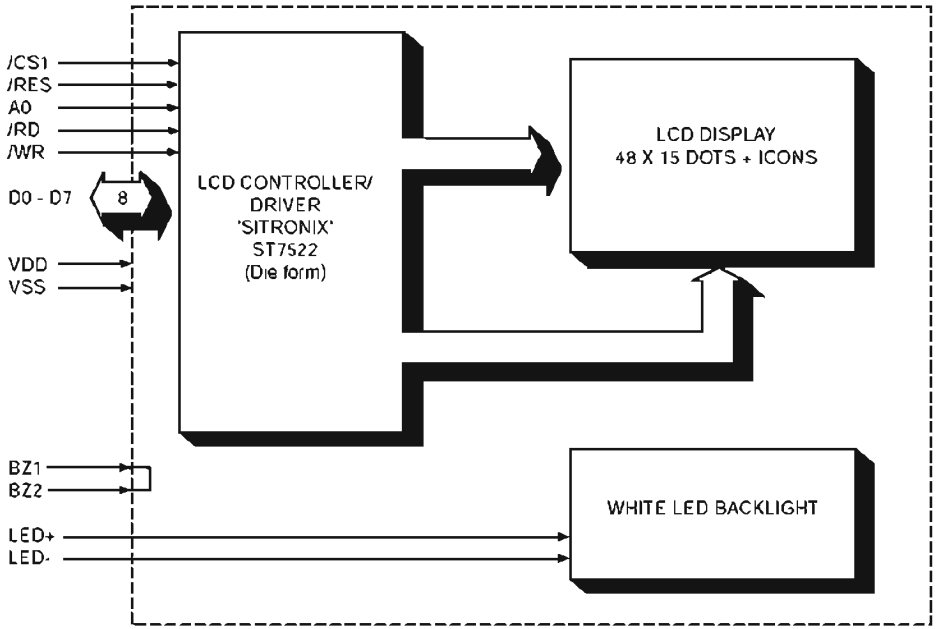
FUNCTION FTD DISPLAY PIN CONFIGURATION

BLOCK DIAGRAM

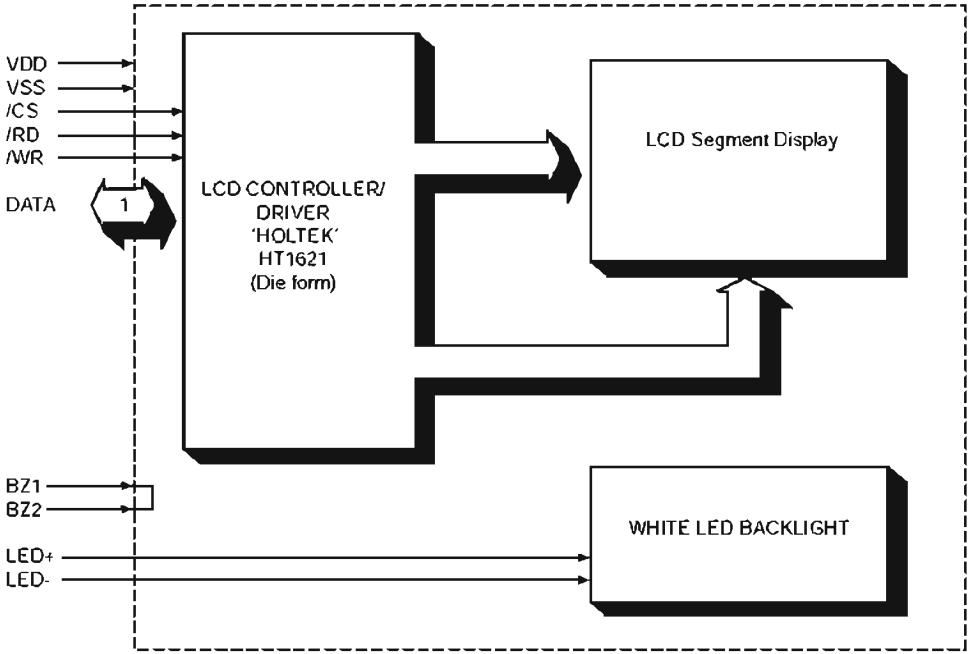


PIN CONFIGURATION

Pin No.	Symbol	Description
1	VDD	Power supply for logic circuit (+5V)
2	VSS	Ground (0V)
3	/CS1	Input, when /CS1 = 0, the chip select become active
4	/RES	Input low active, System reset
5	A0	Usually connected to the low-order bit of the MPU address bus and used to identify the data or a command. A0=1: D0 D7 are display data A0=0: D0 - D7 are display control data
6	/RD	For the connection of 80-series MPU: Input, Active low The /RD signal of the 80-series MPU is entered in this pin. When this signal is kept low, the ST7522 data bus is in the output status.
7	/WR	For the connection of 80-series MPU: Input, Active low The /WR signal of the 80-series MPU is entered in this pin. A signal on the data bus is fetched at the rising edge of /WR signal.
8	D0	Data input/output (LSB)
9	D1	Data input/output
10	D2	Data input/output
11	D3	Data input/output
12	D4	Data input/output
13	D5	Data input/output
14	D6	Data input/output
15	D7	Data input/output (MSB)
16	LED+	Anode of backlight
17	LED-	Cathode of backlight
18	BZ1	Bezel ground (connected together)
19	BZ2	Bezel ground (connected together)

VOLUME FTD DISPLAY PIN CONFIGURATION

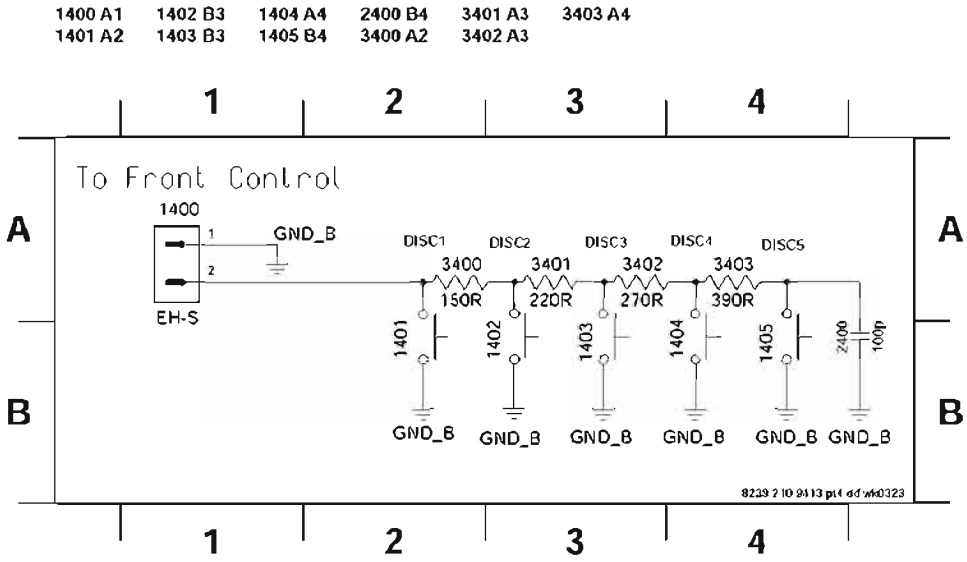
BLOCK DIAGRAM



PIN CONFIGURATION

Pin No.	Symbol	Description
1	VDD	Power supply for logic circuit (+5V)
2	VSS	Power supply negative, ground (0V)
3	/CS	Chip selection input with pull-high resistor. When the CS is logic high, the data and command read from or written to the HT1621 are disabled. The serial interface circuit is also reset. But if CS is at logic low level and is input to the CS pad, the data and command transmission between the host controller and the HT1621 are all enabled
4	/RD	READ clock input with pull-high resistor Data in the RAM of the HT1621 are clocked out on the falling edge of the RD signal. The clocked out data will appear on the DATA line. The host controller can use the next rising edge to latch the clocked out data.
5	/WR	WRITE clock input with pull-high resistor. Data on the DATA line are latched into the HT1621 on the rising edge of the WR signal.
6	DATA	Serial data input/output with pull-high resistor
7	LED+	Anode of backlight
8	LED-	Cathode of backlight
9	BZ1	Bezel ground (connected together)
10	BZ2	Bezel ground (connected together)

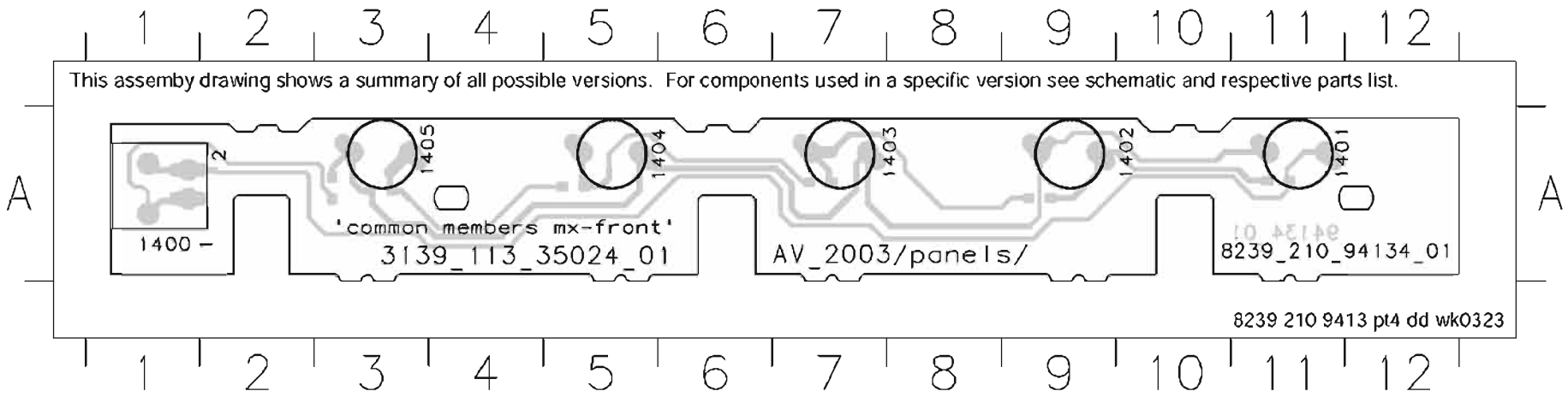
DTC KEY PART - CIRCUIT DIAGRAM



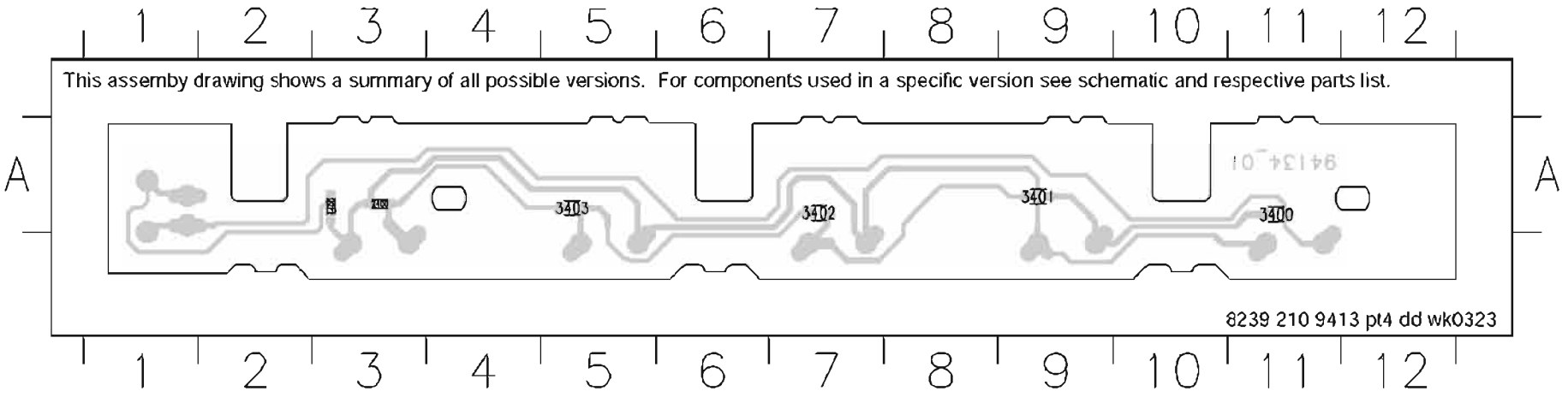
6-3

DTC KEY PART - COMPONENT & CHIP LAYOUTS

1400 A1 1401 A11 1402 A10 1403 A8 1404 A6 1405 A3

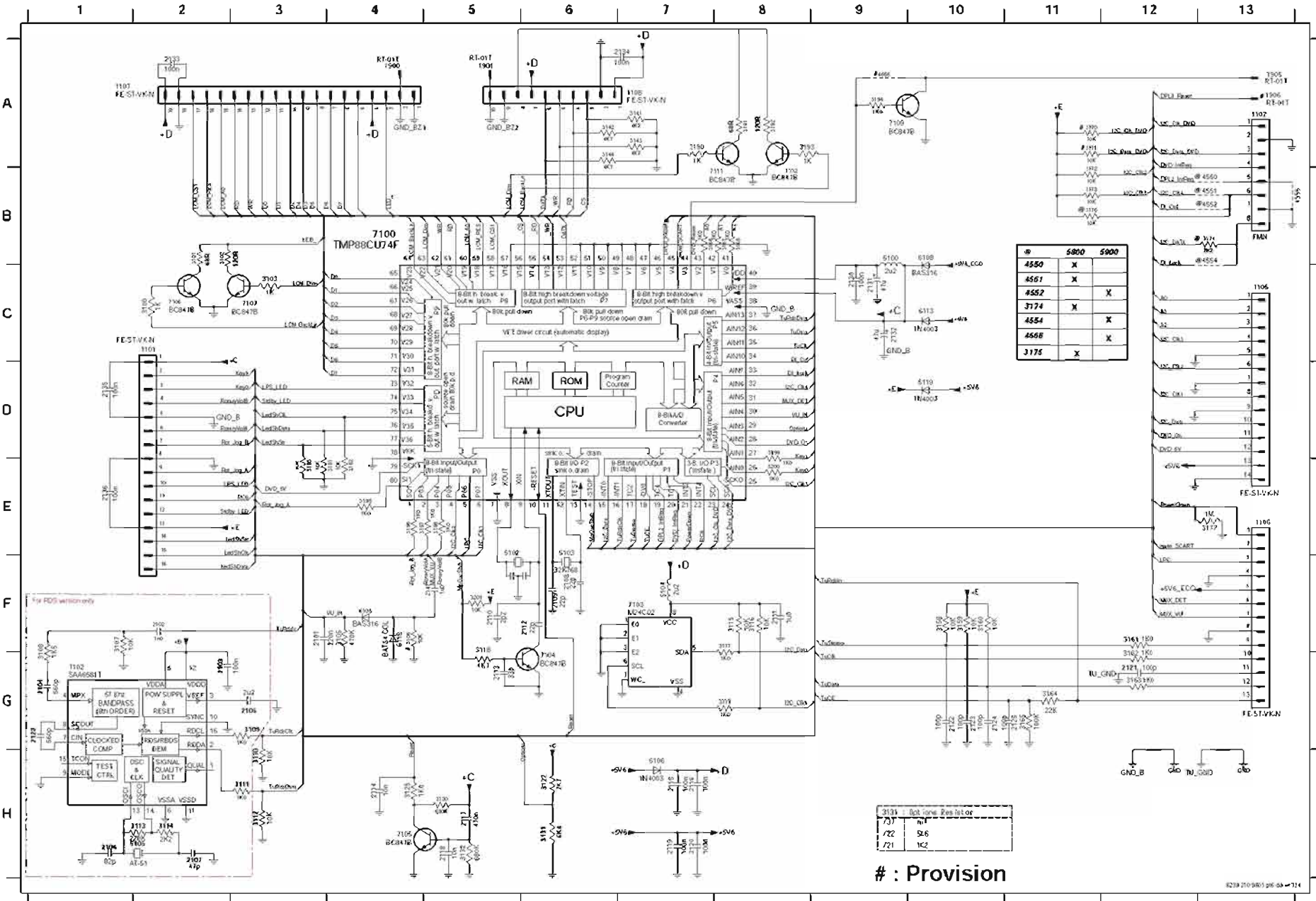


2400 A3 3400 A11 3401 A9 3402 A7 3403 A5 4400 A3



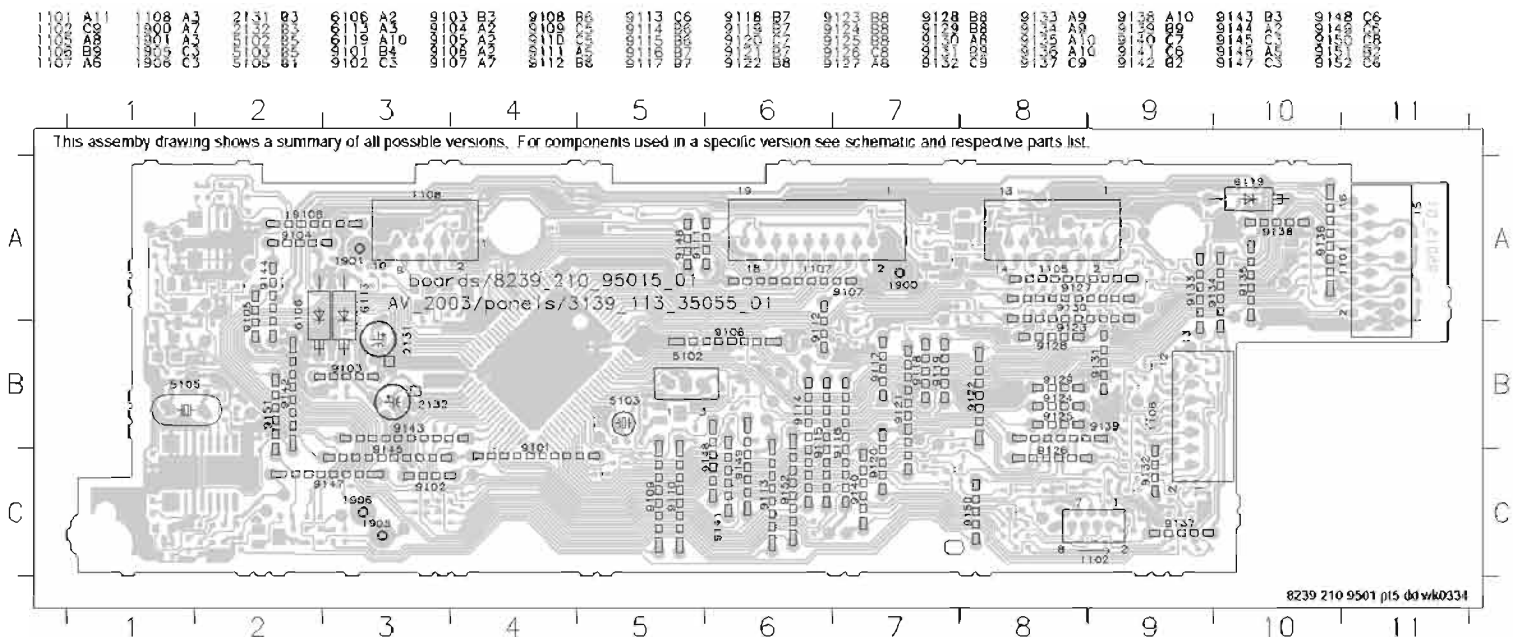
6-4

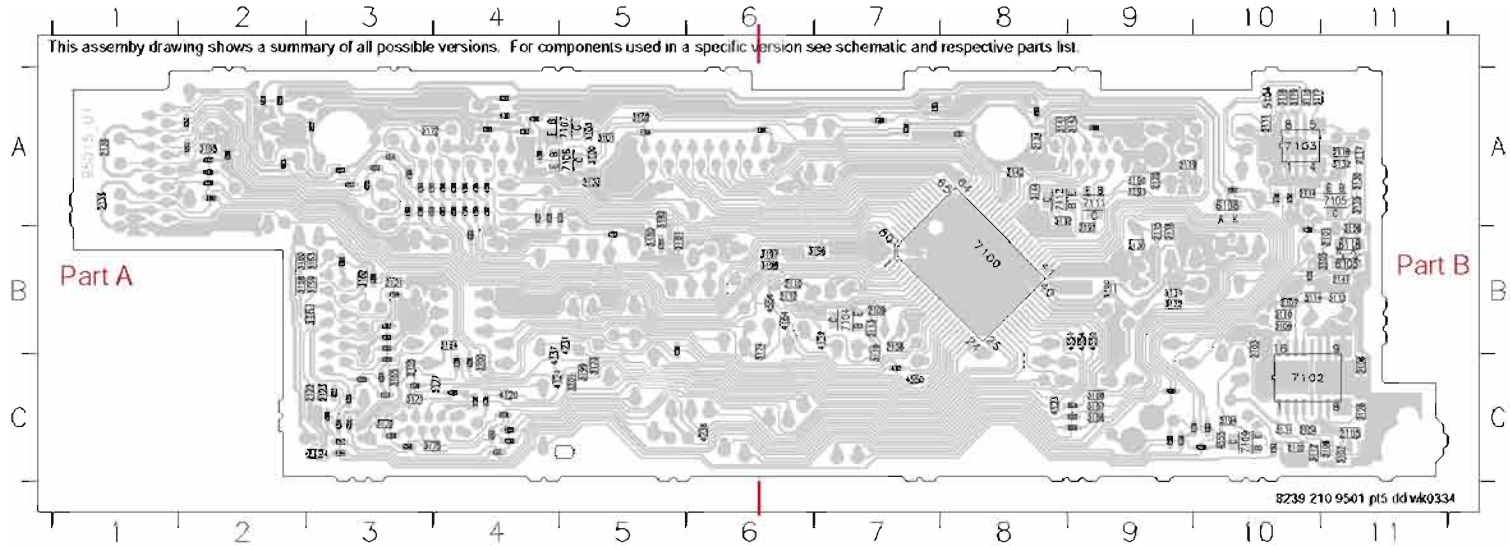
FRONT DISPLAY PART - CIRCUIT DIAGRAM



6-5

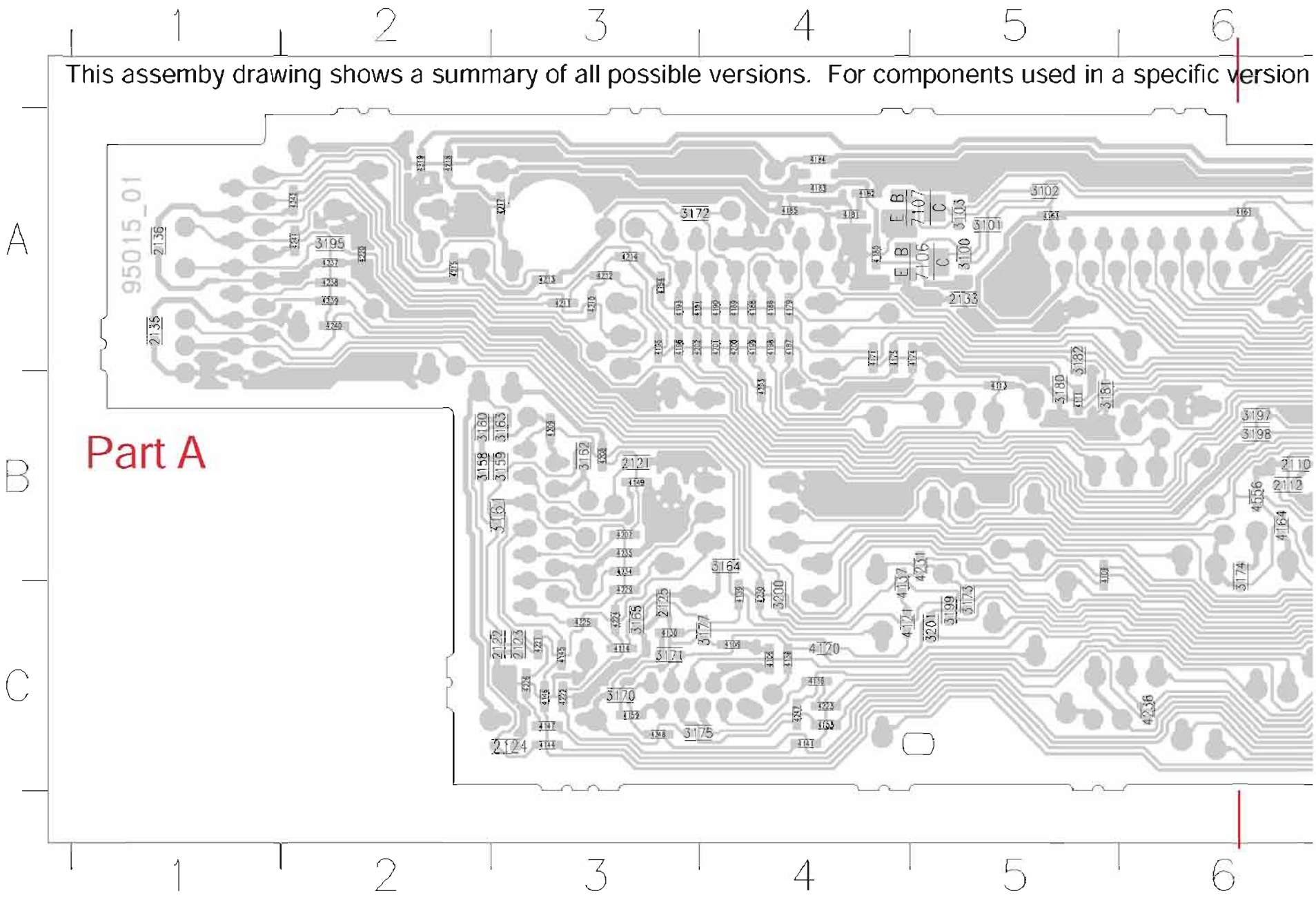
FRONT DISPLAY PART - COMPONENT & CHIPS LAYOUT





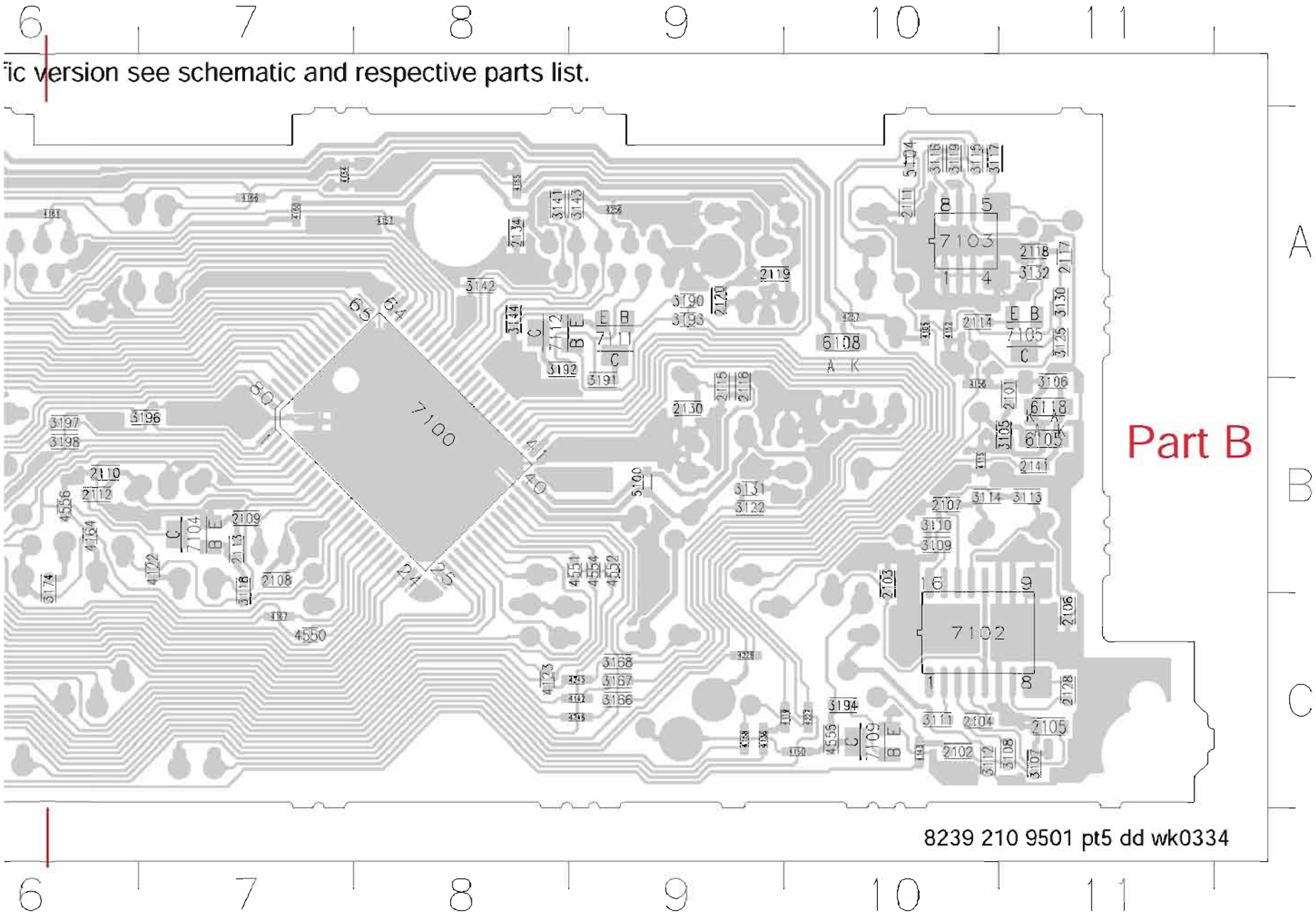
6-6

FRONT DISPLAY PART - CHIPS LAYOUT PART A



6-7

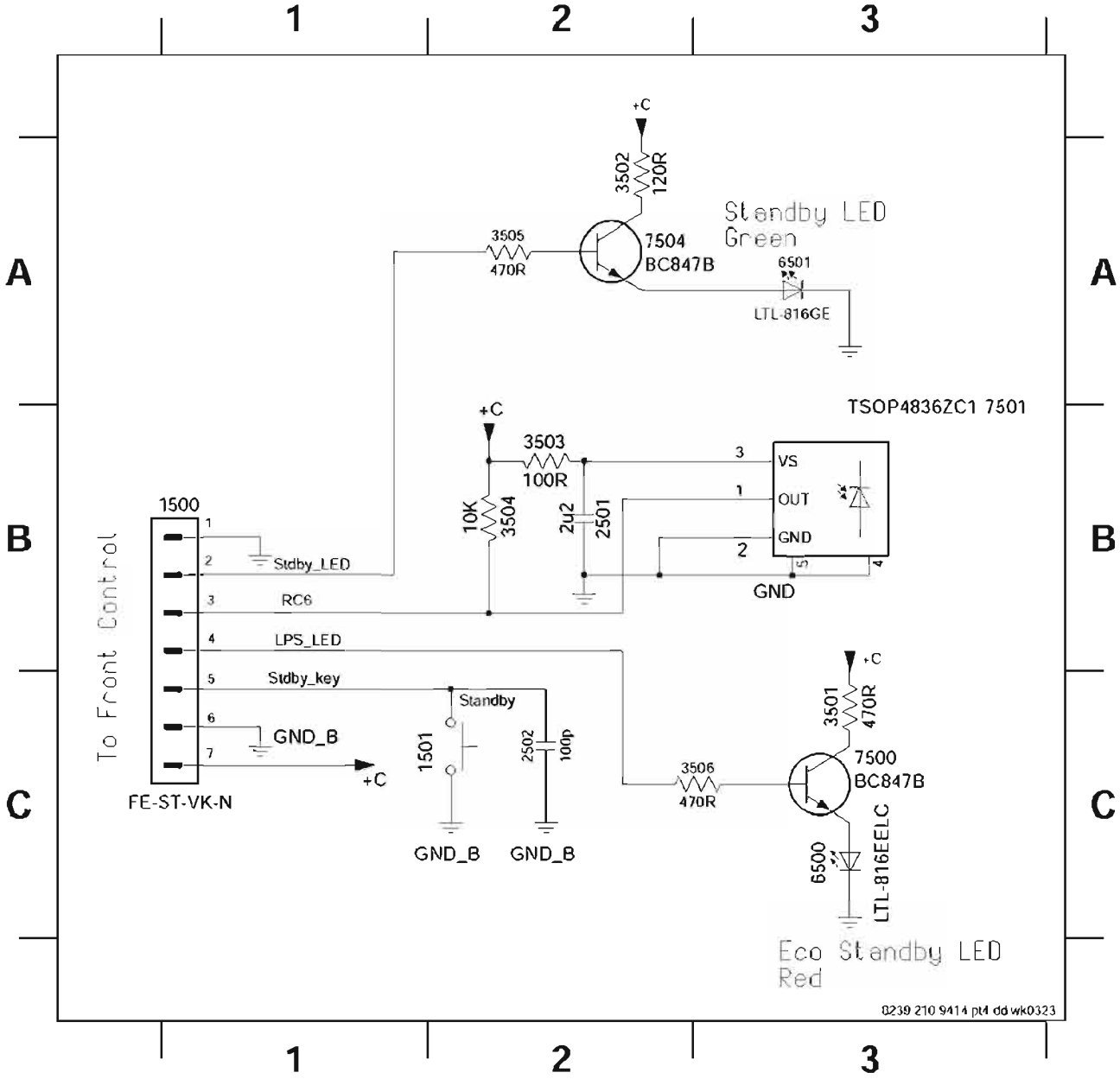
FRONT DISPLAY PART - CHIPS LAYOUT PART B



6-8

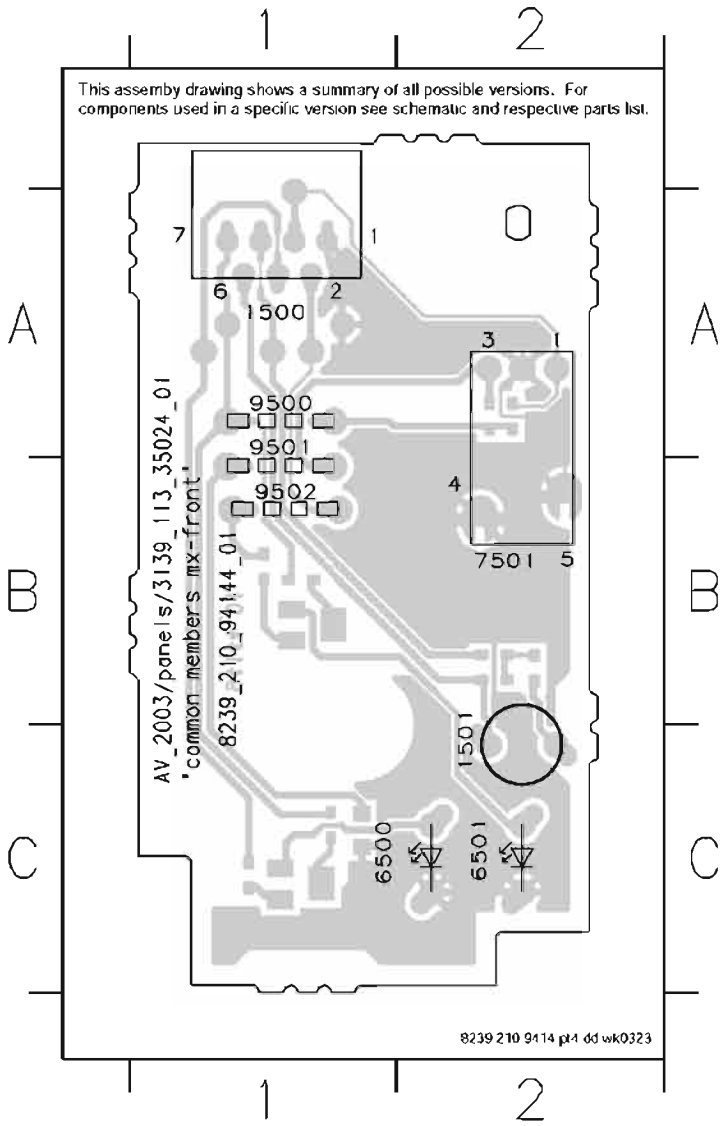
POWER SWITCH PART - CIRCUIT DIAGRAM

1500 B1	2502 C2	3503 B2	3506 C3	7500 C3	T500 B1	T503 B1
1501 C1	3501 C3	3504 B2	6500 C3	7501 B3	T501 B1	T504 C1
2501 B2	3502 A2	3505 A2	6501 A3	7504 A2	T502 B1	T505 C1



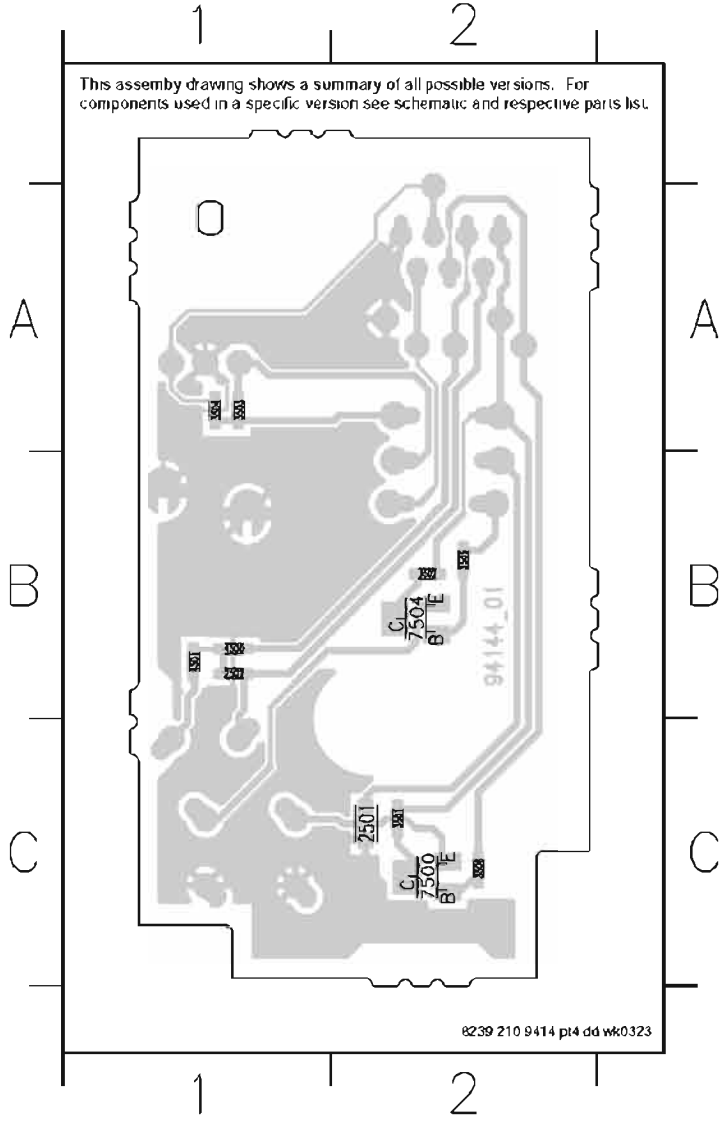
POWER SWITCH PART - COMPONENT & CHIPS LAYOUT

1500	A1	6500	C1	7501	B2	9501	A1
1501	C2	6501	C2	9500	A1	9502	B1



6-9

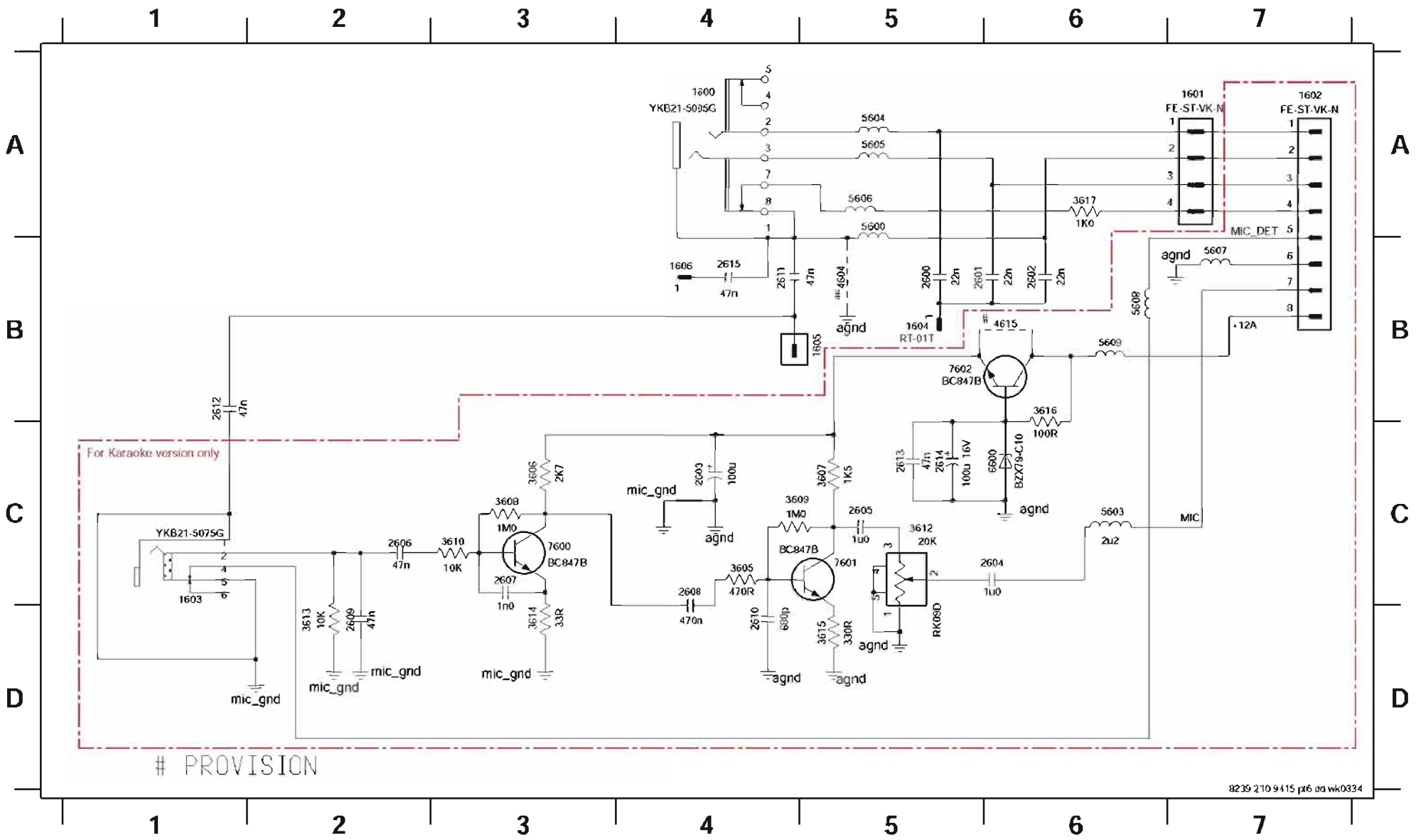
2501	C2	3502	B2	3505	B2	4501	B1
2502	B1	3503	A1	3506	C2	7500	C2
3501	C2	3504	A1	4500	B1	7504	B2



6-10

HDPH & MIC PART - CIRCUIT DIAGRAM

1600 A4	1603 C1	1606 B4	2602 B6	2605 C5	2608 C4	2611 B4	2614 C5	3606 C3	3609 C4	3613 D2	3616 B6	4615 B6	5604 A5	5607 B7	6600 C6	7602 B5
1601 A7	1604 B5	2600 B5	2603 C4	2606 C2	2609 D2	2612 B1	2615 B4	3607 C5	3610 C3	3614 D3	3617 A6	5600 A5	5605 A5	5608 B6	7600 C3	
1602 A7	1605 B5	2601 B5	2604 C6	2607 C3	2610 D4	2613 C5	3605 C4	3608 C3	3612 C5	3615 D5	4604 B5	5603 C6	5606 A5	5609 B6	7601 C5	



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

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

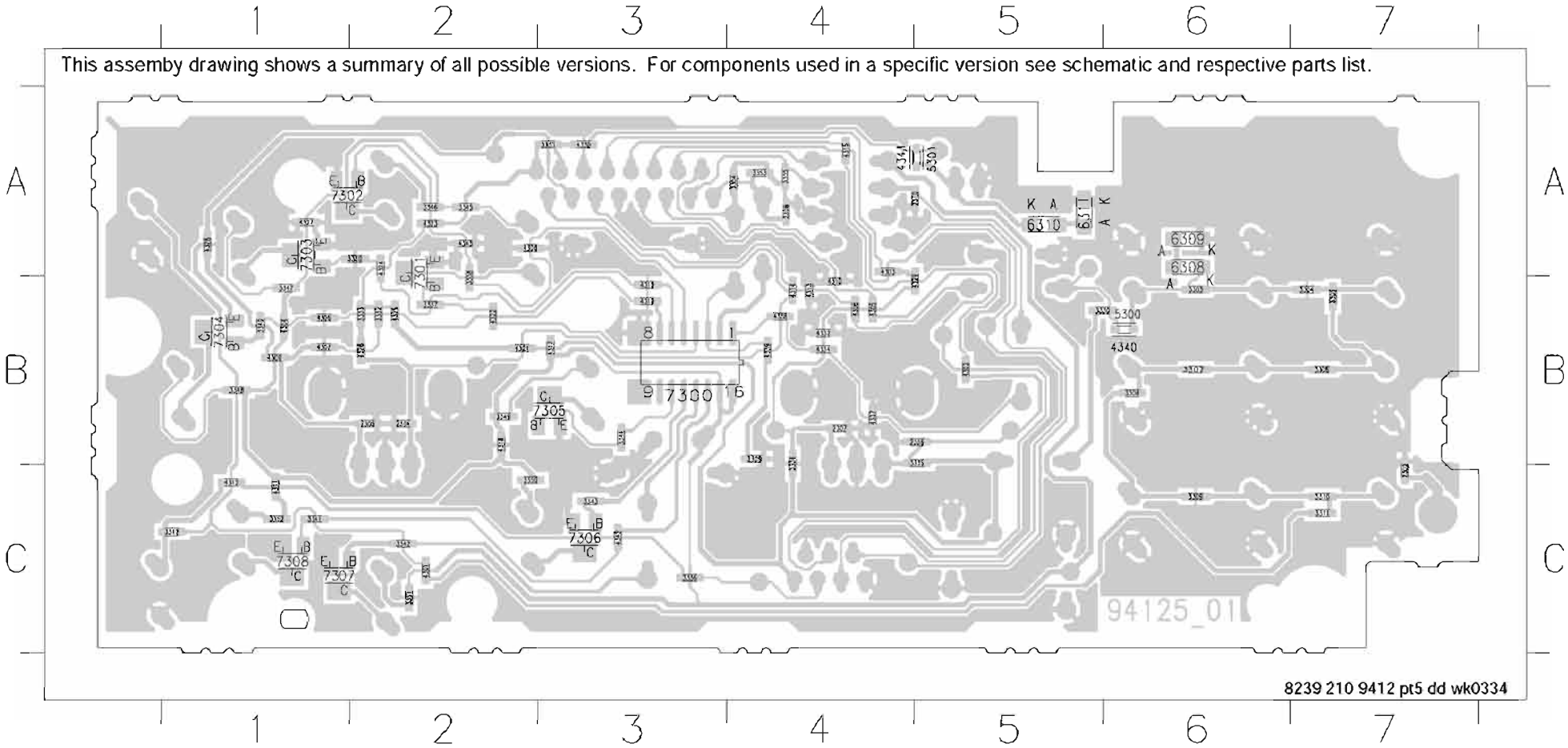
6-11

6-12

FRONT CONTROL PART - CHIPS LAYOUT

2302	C7	3304	B7	3330	B5	3339	A2	3348	B1	4302	B5	4311	C1	4320	A2	4329	B5	4342	C3	7301	A2
2304	B2	3305	B7	3331	A3	3340	B1	3349	B2	4303	A4	4312	C1	4321	B2	4330	A3	4343	A2	7302	A1
2305	B2	3306	B7	3332	B2	3341	C1	3350	C2	4304	B1	4313	B4	4322	B2	4332	B4	5300	B6	7303	A1
2306	B5	3307	B6	3333	B2	3342	C2	3351	C2	4305	B4	4314	B4	4323	A2	4334	B4	5301	A5	7304	B1
2307	B4	3308	B6	3334	B4	3343	C3	3352	C1	4306	B1	4315	A4	4324	A2	4337	B4	6308	A6	7305	B3
2308	A4	3309	C6	3335	B5	3344	B3	3353	A4	4307	B1	4316	B3	4325	B2	4338	B4	6309	A6	7306	C3
2309	B4	3310	C7	3336	C3	3345	A2	3354	A4	4308	B4	4317	B3	4326	B2	4339	B4	6310	A5	7307	C1
2310	A5	3311	C7	3337	B2	3346	A2	3355	A4	4309	B1	4318	B2	4327	A1	4340	B6	6311	A5	7308	C1
3303	B6	3312	C1	3338	B2	3347	B1	4301	C2	4310	B4	4319	B3	4328	A1	4341	A4	7300	B3		

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

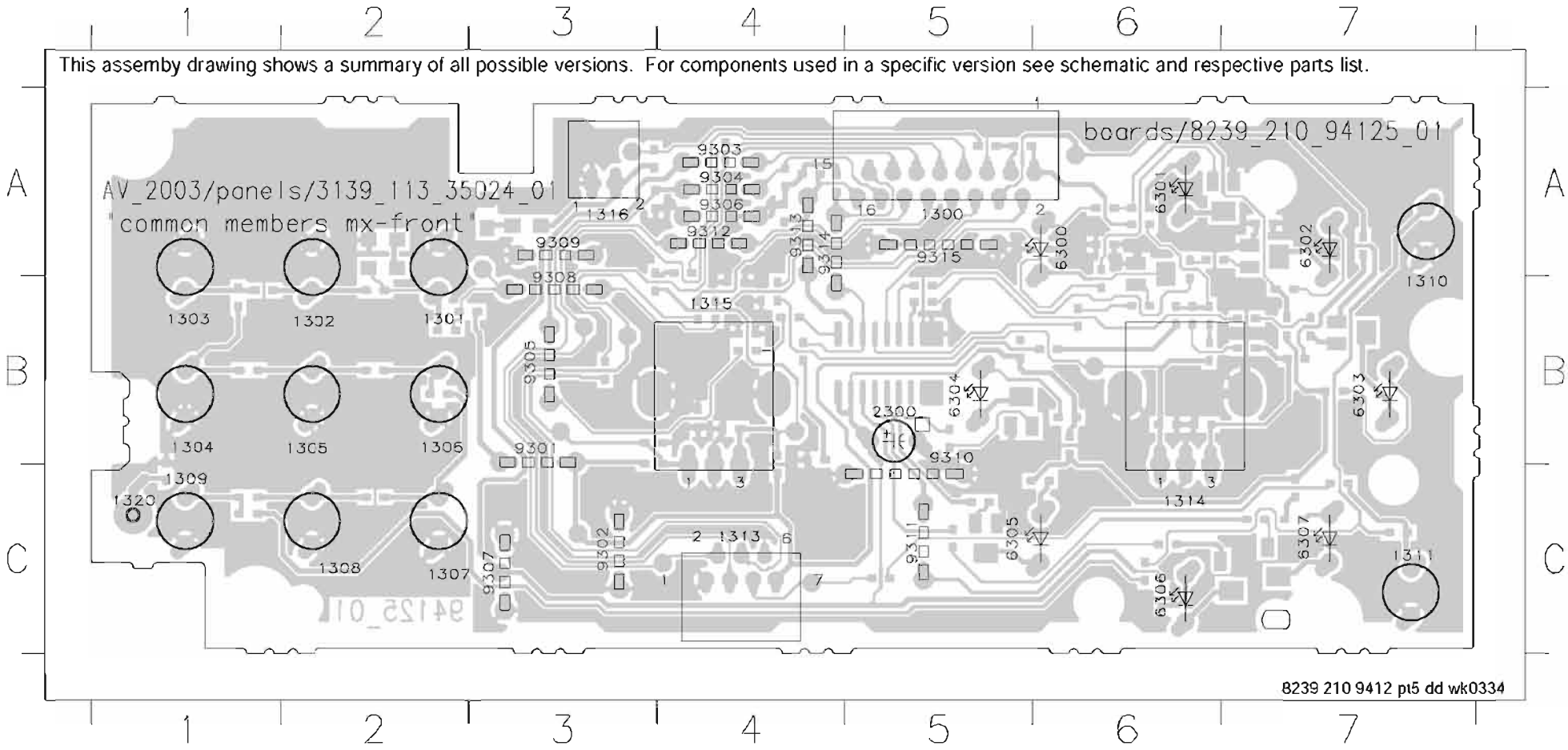


8239 210 9412 pt5 dd wk0334

6-13

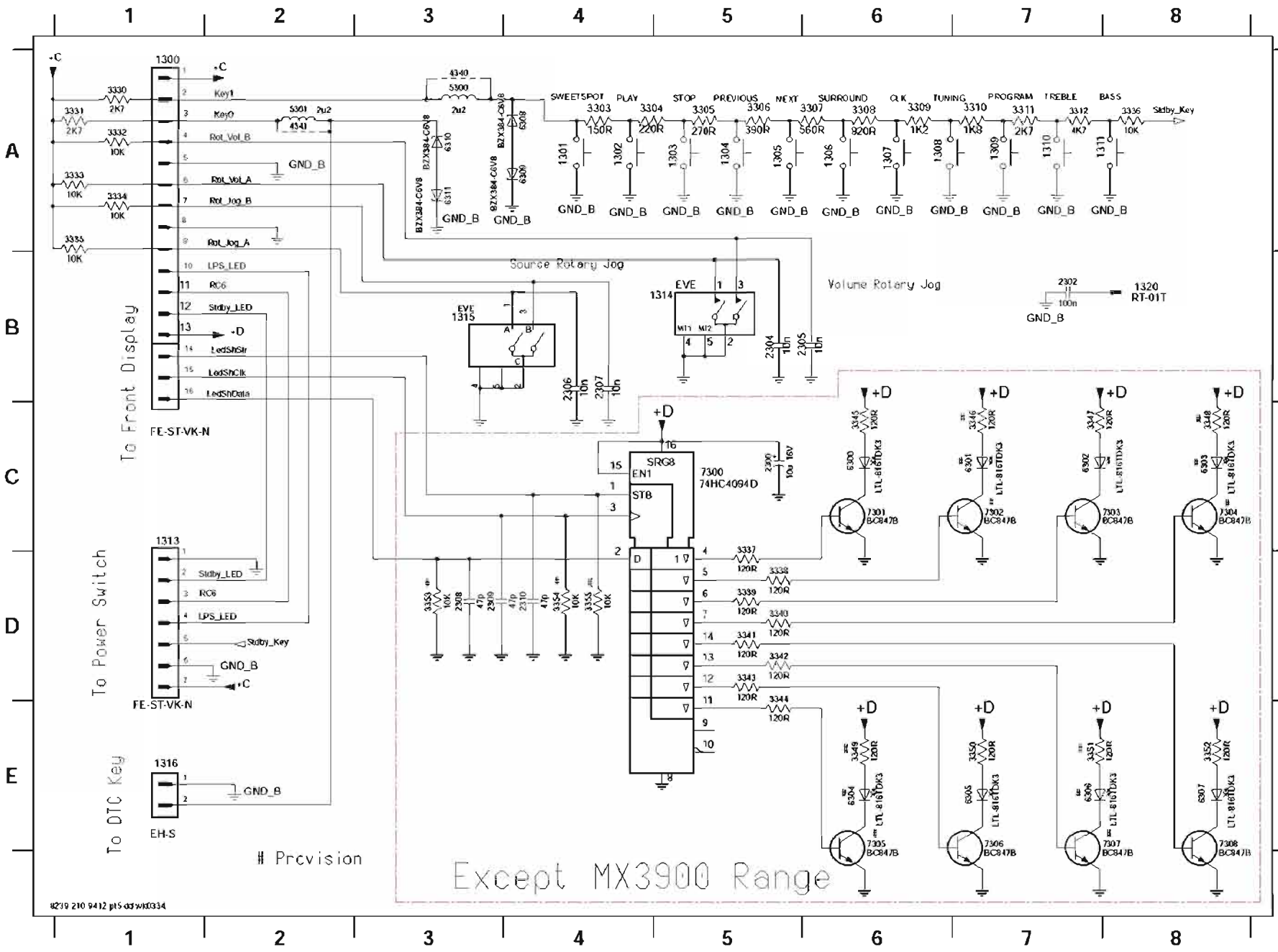
FRONT CONTROL PART - COMPONENT LAYOUT

1300 A5	1304 B1	1308 C2	1313 C4	1320 C1	6302 A7	6306 C6	9303 A4	9307 C3	9311 C5	9315 A5	
1301 B2	1305 B2	1309 C1	1314 C6	2300 B5	6303 B7	6307 C7	9304 A4	9308 B3	9312 A4		
1302 B2	1306 B2	1310 B7	1315 B4	6300 A6	6304 B5	9301 B3	9305 B3	9309 A3	9313 A4		
1303 B1	1307 C2	1311 C7	1316 A3	6301 A6	6305 C5	9302 C3	9306 A4	9310 B5	9314 A4		



6-14

FRONT CONTROL PART - CIRCUIT DIAGRAM



1300 A1
1301 A4
1302 A4
1303 A5
1304 A5
1305 A5
1306 A6
1307 A6
1308 A6
1309 A7
1310 A7
1311 A7
1313 C1
1314 B4
1315 B3
1316 E1
1320 B8
2300 C5
2302 B7
2304 B5
2305 B6
2306 B4
2307 B4
2308 D3
2309 D3
2310 D4
3300 A4
3304 A4
3305 A5
3306 A5
3307 A6
3308 A6
3309 A6
3310 A7
3311 A7
3312 A7
3330 A1
3331 A1
3332 A1
3333 A1
3334 A1
3335 A1
3336 A8
3337 D5
3338 D5
3339 D5
3340 D5
3341 D5
3342 D5
3343 D5
3344 E5
3345 C6
3346 C7
3347 C7
3348 C8
3349 E6
3350 E7
3351 E7
3352 E8
3353 D3
3354 D4
3355 D4
4340 A3
4341 A2
5300 A3
5301 A2
6300 C6
6301 C7
6302 C7
6303 C8
6304 E6
6305 E7
6306 E7
6307 E8
6308 A4
6309 A4
6310 A3
6311 A3
7300 C5
7301 C6
7302 C7
7303 C7
7304 C8
7305 E6
7306 E7
7307 E7
7308 E8

MISCELLANEOUS

1100	3139 119 00831	Function LCD Module MX5500D-01	
1101	2422 025 14546	Flex Socket 16P	
1102	2422 025 16833	Flex Socket 8P	
1105	2422 025 14544	Flex Socket 14P	
1106	4822 267 10756	Flex Socket 13P	
1107	4822 265 11545	Flex Socket 19P	
1108	4822 265 11208	Flex Socket 10P	
1200	3139 119 00861	Volume LCD Module MX5500SA-01	
1300	2422 025 14546	Flex Socket 16P	
1301	4822 276 13775	Tact Switch	
1302	4822 276 13775	Tact Switch	
1303	4822 276 13775	Tact Switch	
1304	4822 276 13775	Tact Switch	
1305	4822 276 13775	Tact Switch	
1306	4822 276 13775	Tact Switch	
1307	4822 276 13775	Tact Switch	
1308	4822 276 13775	Tact Switch	
1309	4822 276 13775	Tact Switch	
1310	4822 276 13775	Tact Switch	
1311	4822 276 13775	Tact Switch	
1313	4822 267 10956	Flex Socket 7P	
1314	2422 129 16975	Rotary Encoder 12P EVEMC2F25128 B	
1315	2422 129 16974	Rotary Encoder 12P EVEGC1F2512B B	
1401	4822 276 13775	Tact Switch	
1402	4822 276 13775	Tact Switch	
1403	4822 276 13775	Tact Switch	
1404	4822 276 13775	Tact Switch	
1405	4822 276 13775	Tact Switch	
1500	4822 267 10956	Flex Socket 7P	
1501	4822 276 13775	Tact Switch	
1600	2422 026 05192	Headphone Socket	
1601	4822 265 11183	Flex Socket 4P	non-kara
1602	4822 265 11535	Flex Socket 8P	kara
1603	2422 026 05372	Mic Socket	kara

CAPACITORS

2101	4822 126 13879	220nF +80/-20% 16V	
2102	3198 016 31020	1nF 25V	RDS
2103	2238 586 59812	100nF +80/-20% 50V	RDS
2104	4822 126 14249	560pF 10% 50V	RDS
2105	4822 126 14491	2,2uF 10V 0805	RDS
2106	4822 126 14226	82pF 5% 50V	RDS
2107	4822 126 11785	47pF 5% 50V	RDS
2108	4822 122 33761	22pF 5% 50V	
2109	4822 122 33761	22pF 5% 50V	
2110	4822 126 14223	2,2pF +/-0,25pF 50V	
2111	3198 017 41050	1uF 10V	
2112	4822 122 33761	22pF 5% 50V	
2113	2222 867 15339	33pF 5% 50V	
2114	5322 126 11583	10nF 10% 50V	
2115	2238 586 59812	100nF +80/-20% 50V	
2116	2238 586 59812	100nF +80/-20% 50V	
2117	3198 017 44740	470nF 10V	
2118	5322 126 11583	10nF 10% 50V	
2119	2238 586 59812	100nF +80/-20% 50V	
2120	2238 586 59812	100nF +80/-20% 50V	
2121	2020 552 94427	100pF 5% 50V	
2122	2020 552 94427	100pF 5% 50V	
2123	2020 552 94427	100pF 5% 50V	
2124	2020 552 94427	100pF 5% 50V	
2125	2020 552 94427	100pF 5% 50V	
2128	4822 126 14249	560pF 10% 50V	RDS
2130	2238 586 59812	100nF +80/-20% 50V	
2131	4822 124 80483	47uF 20% 6,3V	
2132	4822 124 80483	47uF 20% 6,3V	
2133	2238 586 59812	100nF +80/-20% 50V	
2134	2238 586 59812	100nF +80/-20% 50V	
2135	2238 586 59812	100nF +80/-20% 50V	
2136	2238 586 59812	100nF +80/-20% 50V	
2141	3198 017 41050	1uF 10V	
2300	4822 124 11947	10uF 20% 16V	
2302	2238 586 59812	100nF +80/-20% 50V	
2304	5322 126 11583	10nF 10% 50V	
2305	5322 126 11583	10nF 10% 50V	
2306	5322 126 11583	10nF 10% 50V	
2307	5322 126 11583	10nF 10% 50V	
2308	4822 126 11785	47pF 5% 50V	
2309	4822 126 11785	47pF 5% 50V	
2310	4822 126 11785	47pF 5% 50V	
2400	2020 552 94427	100pF 5% 50V	
2501	4822 126 14491	2,2uF 10V 0805	
2502	2020 552 94427	100pF 5% 50V	
2600	2238 916 15641	22nF 10% 25V	
2601	2238 916 15641	22nF 10% 25V	
2602	2238 916 15641	22nF 10% 25V	
2603	4822 124 41643	100uF 20% 16V	kara
2604	3198 017 44740	470nF 10V	kara
2605	3198 017 41050	1uF 10V	kara
2606	3198 017 34730	47nF 16V	kara
2607	3198 016 31020	1nF 25V	kara
2608	4822 126 13482	470nF +80/-20% 16V	kara
2609	3198 017 34730	47nF 16V	kara
2610	3198 016 36810	680pF 25V	kara
2611	3198 017 34730	47nF 16V	
2612	3198 017 34730	47nF 16V	
2615	3198 017 34730	47nF 16V	

RESISTORS

3100	4822 051 30102	1k 5% 0,062W	
3101	4822 051 30689	68R 5% 0,062W	
3102	4822 051 30121	120R 5% 0,062W	
3103	4822 051 30102	1k 5% 0,062W	
3105	4822 051 30474	470k 5% 0,062W	
3107	4822 051 30103	10k 5% 0,062W	RDS
3108	4822 051 30152	1k5 5% 0,062W	RDS
3109	4822 051 30102	1k 5% 0,062W	RDS
3110	4822 051 30103	10k 5% 0,062W	non-RDS
3111	4822 051 30102	1k 5% 0,062W	RDS
3112	4822 051 30103	10k 5% 0,062W	non-RDS
3113	4822 117 12891	220k 1% ERJ3E	RDS
3114	4822 051 30222	2k2 5% 0,062W	RDS
3115	4822 051 30103	10k 5% 0,062W	
3116	4822 051 30103	10k 5% 0,062W	
3117	4822 051 30102	1k 5% 0,062W	
3118	4822 051 30472	4k7 5% 0,062W	
3119	4822 051 30102	1k 5% 0,062W	
3122	4822 051 30272	2k7 5% 0,062W	
3125	4822 051 30102	1k 5% 0,062W	
3130	4822 051 30684	680k 5% 0,062W	
3131	4822 051 30273	27k 5% 0,062W	/22S
3131	4822 051 30122	1k2 5% 0,062W	/21R/21S
3132	4822 051 30684	680k 5% 0,062W	
3141	4822 051 30103	10k 5% 0,062W	
3142	4822 051 30103	10k 5% 0,062W	
3143	4822 051 30103	10k 5% 0,062W	
3144	4822 051 30103	10k 5% 0,062W	
3158	4822 051 30103	10k 5% 0,062W	
3159	4822 051 30103	10k 5% 0,062W	
3160	4822 051 30103	10k 5% 0,062W	
3161	4822 051 30102	1k 5% 0,062W	
3162	4822 051 30102	1k 5% 0,062W	
3163	4822 051 30102	1k 5% 0,062W	
3164	4822 051 30223	22k 5% 0,062W	
3165	4822 117 13632	100k 1% 0,062W	
3166	4822 051 30102	1k 5% 0,062W	
3167	4822 051 30102	1k 5% 0,062W	
3168	4822 051 30102	1k 5% 0,062W	
3172	4822 051 30103	10k 5% 0,062W	
3173	4822 051 30103	10k 5% 0,062W	
3174	4822 051 30222	2k2 5% 0,062W	MX5600SA
3175	4822 051 30103	10k 5% 0,062W	MX5600SA
3177	4822 051 30105	1M 5% 0,062W	
3180	4822 051 30103	10k 5% 0,062W	
3181	4822 051 30103	10k 5% 0,062W	
3182	4822 051 30103	10k 5% 0,062W	
3190	4822 051 30102	1k 5% 0,062W	
3191	4822 051 30689	68R 5% 0,062W	
3192	4822 051 30121	120R 5% 0,062W	
3193	4822 051 30102	1k 5% 0,062W	
3194	4822 051 30102	1k 5% 0,062W	
3195	4822 051 30102	1k 5% 0,062W	
3196	4822 051 30102	1k 5% 0,062W	
3197	4822 051 30102	1k 5% 0,062W	
3198	4822 051 30102	1k 5% 0,062W	
3199	4822 051 30102	1k 5% 0,062W	
3200	4822 051 30102	1k 5% 0,062W	
3201	4822 051 30103	10k 5% 0,062W	
3303	4822 051 30151	150R 5% 0,062W	
3304	4822 051 30221	220R 5% 0,062W	
3305	4822 051 30271	270R 5% 0,062W	
3306	4822 051 30391	390R 5% 0,062W	
3307	4822 051 30561	560R 5% 0,062W	
3308	4822 117 12868	820R 5% 0,62W	
3309	4822 117 11817	1k2 1% 1/16W	
3310	4822 117 12803	1k8 1% 0,063W	
3311	4822 051 30272	2k7 5% 0,062W	
3312	4822 051 30472	4k7 5% 0,062W	
3330	4822 051 30272	2k7 5% 0,062W	
3331	4822 051 30272	2k7 5% 0,062W	
3332	4822 051 30103	10k 5% 0,062W	
3333	4822 051 30103	10k 5% 0,062W	
3334	4822 051 30103	10k 5% 0,062W	
3335	4822 051 30103	10k 5% 0,062W	
3336	4822 051 30103	10k 5% 0,062W	
3337	4822 051 30102	1k 5% 0,062W	
3339	4822 051 30102	1k 5% 0,062W	
3341	4822 051 30102	1k 5% 0,062W	
3343	4822 051 30102	1k 5% 0,062W	
3345	4822 051 30471	470R 5% 0,062W	
3347	4822 051 30471	470R 5% 0,062W	
3350	4822 051 30471	470R 5% 0,062W	
3352	4822 051 30471	470R 5% 0,062W	
3400	4822 051 30151	150R 5% 0,062W	
3401	4822 051 30221	220R 5% 0,062W	
3402	4822 051 30271	270R 5% 0,062W	
3403	4822 051 30391	390R 5% 0,062W	
3501	4822 051 30471	470R 5% 0,062W	
3502	4822 051 30121	120R 5% 0,062W	
3503	4822 051 30101	100R 5% 0,062W	
3504	4822 051 30103	10k 5% 0,062W	
3505	4822 051 30471	470R 5% 0,062W	
3506	4822 051 30471	470R 5% 0,062W	
3605	4822 051 30471	470R 5% 0,062W	kara
3606	4822 051 30272	2k7 5% 0,062W	kara
3607	4822 051 30681	680R 5% 0,062W	kara
3608	4822 051 30105	1M 5% 0,062W	kara
3609	4822 051 30105	1M 5% 0,062W	kara
3610	4822 051 30103	10k 5% 0,062W	kara
3612	2120 386 90291	Potm Rotary 20K	kara
3613	4822 051 30103	10k 5% 0,062W	kara
3614	4822 051 30339	33R 5% 0,062W	kara
3615	4822 051 30331	330R 5% 0,062W	kara
3617	4822 051 30102	1k 5% 0,062W	
4105	4822 051 30008	0R Jumper 0603	
4106	4822 051 30008	0R Jumper 0603	
4108	4822 051 30008	0R Jumper 0603	
4109	4822 051 30008	0R Jumper 0603	
4111	4822 051 30008	0R Jumper 0603	
4113	4822 051 30008	0R Jumper 0603	
4114	4822 051 30008	0R Jumper 0603	
4115	4822 051 30008	0R Jumper 0603	
4116	4822 051 30008	0R Jumper 0603	

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ELECTRICAL PARTS LIST - FRONT BOARDS

RESISTORS

4119	4822 051 30008	0R Jumper 0603		4198	4822 051 30008	0R Jumper 0603		
4120	4822 051 30008	0R Jumper 0603		4199	4822 051 30008	0R Jumper 0603		
4121	4822 051 30008	0R Jumper 0603		4200	4822 051 30008	0R Jumper 0603		
4122	4822 051 30008	0R Jumper 0603		4201	4822 051 30008	0R Jumper 0603		
4123	4822 051 30008	0R Jumper 0603		4202	4822 051 30008	0R Jumper 0603		
4130	4822 051 30008	0R Jumper 0603		4203	4822 051 30008	0R Jumper 0603		
4136	4822 051 30008	0R Jumper 0603		4207	4822 051 30008	0R Jumper 0603		
4137	4822 051 30008	0R Jumper 0603		4208	4822 051 30008	0R Jumper 0603		
4138	4822 051 30008	0R Jumper 0603		4209	4822 051 30008	0R Jumper 0603		
4139	4822 051 30008	0R Jumper 0603		4210	4822 051 30008	0R Jumper 0603		
4141	4822 051 30008	0R Jumper 0603		4211	4822 051 30008	0R Jumper 0603		
4142	4822 051 30008	0R Jumper 0603		4212	4822 051 30008	0R Jumper 0603		
4143	4822 051 30008	0R Jumper 0603		4213	4822 051 30008	0R Jumper 0603		
4144	4822 051 30008	0R Jumper 0603		4214	4822 051 30008	0R Jumper 0603		
4145	4822 051 30008	0R Jumper 0603		4215	4822 051 30008	0R Jumper 0603		
4146	4822 051 30008	0R Jumper 0603		4216	4822 051 30008	0R Jumper 0603		
4147	4822 051 30008	0R Jumper 0603		4217	4822 051 30008	0R Jumper 0603		
4149	4822 051 30008	0R Jumper 0603		4218	4822 051 30008	0R Jumper 0603		
4150	4822 051 30008	0R Jumper 0603		4219	4822 051 30008	0R Jumper 0603		
4152	4822 051 30008	0R Jumper 0603		4220	4822 051 30008	0R Jumper 0603		
4153	4822 051 30008	0R Jumper 0603		4221	4822 051 30008	0R Jumper 0603		
4154	4822 051 30008	0R Jumper 0603		4222	4822 051 30008	0R Jumper 0603		
4156	4822 051 30008	0R Jumper 0603		4223	4822 051 30008	0R Jumper 0603		
4157	4822 051 30008	0R Jumper 0603		4224	4822 051 30008	0R Jumper 0603		
4158	4822 051 30008	0R Jumper 0603		4225	4822 051 30008	0R Jumper 0603		
4159	4822 051 30008	0R Jumper 0603		4226	4822 051 30008	0R Jumper 0603		
4160	4822 051 30008	0R Jumper 0603		4227	4822 051 30008	0R Jumper 0603		
4161	4822 051 30008	0R Jumper 0603		4228	4822 051 30008	0R Jumper 0603		
4163	4822 051 30008	0R Jumper 0603		4229	4822 051 30008	0R Jumper 0603		
4164	4822 051 30008	0R Jumper 0603		4230	4822 051 30008	0R Jumper 0603		
4165	4822 051 30008	0R Jumper 0603		4231	4822 051 30008	0R Jumper 0603		
4166	4822 051 30008	0R Jumper 0603		4234	4822 051 30008	0R Jumper 0603		
4167	4822 051 30008	0R Jumper 0603		4235	4822 051 30008	0R Jumper 0603		
4171	4822 051 30008	0R Jumper 0603		4236	4822 051 30008	0R Jumper 0603		
4174	4822 051 30008	0R Jumper 0603		4237	4822 051 30008	0R Jumper 0603		
4175	4822 051 30008	0R Jumper 0603		4238	4822 051 30008	0R Jumper 0603		
4179	4822 051 30008	0R Jumper 0603		4239	4822 051 30008	0R Jumper 0603		
4180	4822 051 30008	0R Jumper 0603		4240	4822 051 30008	0R Jumper 0603		
4181	4822 051 30008	0R Jumper 0603		4241	4822 051 30008	0R Jumper 0603		
4182	4822 051 30008	0R Jumper 0603		4242	4822 051 30008	0R Jumper 0603		
4183	4822 051 30008	0R Jumper 0603		4245	4822 051 30008	0R Jumper 0603		
4184	4822 051 30008	0R Jumper 0603		4246	4822 051 30008	0R Jumper 0603		
4185	4822 051 30008	0R Jumper 0603		4247	4822 051 30008	0R Jumper 0603		
4186	4822 051 30008	0R Jumper 0603		4248	4822 051 30008	0R Jumper 0603		
4187	4822 051 30008	0R Jumper 0603		4256	4822 051 30008	0R Jumper 0603		
4188	4822 051 30008	0R Jumper 0603		4257	4822 051 30008	0R Jumper 0603		
4189	4822 051 30008	0R Jumper 0603		4301	4822 051 30008	0R Jumper 0603		
4190	4822 051 30008	0R Jumper 0603		4302	4822 051 30008	0R Jumper 0603	/22S	
4191	4822 051 30008	0R Jumper 0603		4303	4822 051 30008	0R Jumper 0603	/22S	
4193	4822 051 30008	0R Jumper 0603		4304	4822 051 30008	0R Jumper 0603		
4194	4822 051 30008	0R Jumper 0603		4305	4822 051 30008	0R Jumper 0603	/22S	
4195	4822 051 30008	0R Jumper 0603		4306	4822 051 30008	0R Jumper 0603		
4196	4822 051 30008	0R Jumper 0603		4307	4822 051 30008	0R Jumper 0603		

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ELECTRICAL PARTS LIST - FRONT BOARDS

4309	4822 051 30008	0R Jumper 0603		
4310	4822 051 30008	0R Jumper 0603		
4311	4822 051 30008	0R Jumper 0603		
4312	4822 051 30008	0R Jumper 0603		
4313	4822 051 30008	0R Jumper 0603	/22S	
4314	4822 051 30008	0R Jumper 0603		
4315	4822 051 30008	0R Jumper 0603		
4316	4822 051 30008	0R Jumper 0603		
4317	4822 051 30008	0R Jumper 0603		
4318	4822 051 30008	0R Jumper 0603		
4319	4822 051 30008	0R Jumper 0603		
4320	4822 051 30008	0R Jumper 0603	/22S	
4321	4822 051 30008	0R Jumper 0603		
4322	4822 051 30008	0R Jumper 0603	/22S	
4323	4822 051 30008	0R Jumper 0603		
4324	4822 051 30008	0R Jumper 0603		
4325	4822 051 30008	0R Jumper 0603		
4326	4822 051 30008	0R Jumper 0603		
4327	4822 051 30008	0R Jumper 0603		
4328	4822 051 30008	0R Jumper 0603		
4329	4822 051 30008	0R Jumper 0603		
4330	4822 051 30008	0R Jumper 0603		
4332	4822 051 30008	0R Jumper 0603		
4334	4822 051 30008	0R Jumper 0603		
4337	4822 051 30008	0R Jumper 0603		
4338	4822 051 30008	0R Jumper 0603		
4339	4822 051 30008	0R Jumper 0603		
4342	4822 051 30008	0R Jumper 0603		
4343	4822 051 30008	0R Jumper 0603		
4400	4822 051 30008	0R Jumper 0603		
4500	4822 051 30008	0R Jumper 0603		
4501	4822 051 30008	0R Jumper 0603		
4514	4822 051 30008	0R Jumper 0603		
4550	4822 051 30008	0R Jumper 0603	MX5800SA	
4551	4822 051 30008	0R Jumper 0603	MX5800SA	
4552	4822 051 30008	0R Jumper 0603	MX5800SA	
4554	4822 051 30008	0R Jumper 0603	MX5800SA	
4556	4822 051 30008	0R Jumper 0603	MX5800SA	
4600	4822 051 30008	0R Jumper 0603		
4601	4822 051 30008	0R Jumper 0603		
4602	4822 051 30008	0R Jumper 0603		
4603	4822 051 30008	0R Jumper 0603		
4604	4822 051 30008	0R Jumper 0603		
4605	4822 051 30008	0R Jumper 0603		

COILS

5100	3198 018 52280	Coil 2,2uH 10%	
5102	5322 242 73686	Ceram Resonator 12MHz	
5103	4822 242 70938	X'tal Resonator 32,768kHz	
5104	3198 018 52280	Coil 2,2uH 10%	
5105	4822 242 11033	X'tal Resonator 4,332MHz	RDS
5300	3198 018 52280	Coil 2,2uH 10%	
5301	3198 018 52280	Coil 2,2uH 10%	
5600	2422 549 44608	Fixed Ind 100MHz 1k	
5603	4822 157 10586	Coil 2,2uH 10%	kara
5604	2422 549 44608	Fixed Ind 100MHz 1k	
5605	2422 549 44608	Fixed Ind 100MHz 1k	
5606	2422 549 44608	Fixed Ind 100MHz 1k	

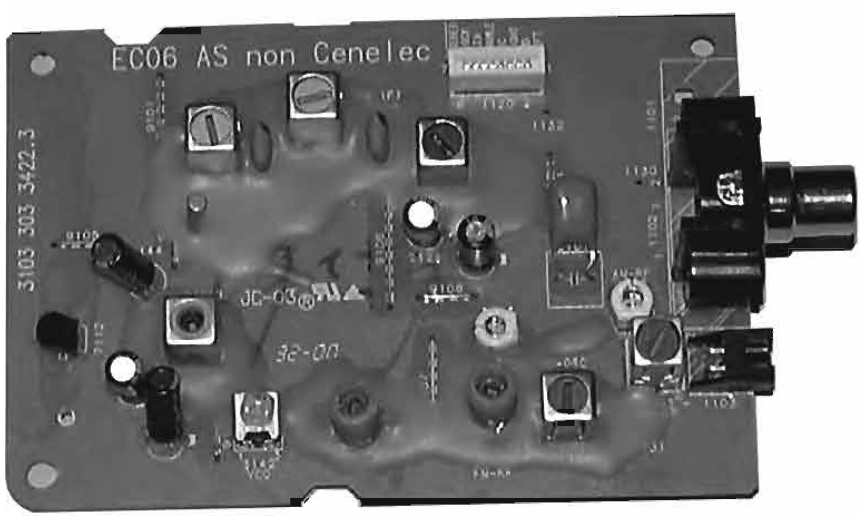
DIODES

6105	4822 130 80622	BAT54	
6106	4822 130 31878	1N4003G	
6108	4822 130 11397	BAS316	
6113	4822 130 31878	1N4003G	
6116	4822 130 80622	BAT54	
6119	4822 130 31878	1N4003G	
6300	9322 190 55676	LTL-816TDK3	
6302	9322 190 55676	LTL-816TDK3	
6305	9322 190 55676	LTL-816TDK3	
6307	9322 190 55676	LTL-816TDK3	
6308	4822 130 11416	BZX384-C6V8	
6309	4822 130 11416	BZX384-C6V8	
6310	4822 130 11416	BZX384-C6V8	
6311	4822 130 11416	BZX384-C6V8	
6500	9322 179 76676	LTL-816EELC	
6501	9322 183 96676	LTL-816GE	

TRANSISTORS & INTEGRATED CIRCUITS

7100	9965 000 23286	TMP88CU74F	
7102	9352 686 05118	SAA6581T	RDS
7103	9322 145 26668	M24C02-WMN6	
7104	5322 130 60159	BC847B	
7105	5322 130 60159	BC847B	
7106	5322 130 60159	BC847B	
7107	5322 130 60159	BC847B	
7109	5322 130 60159	BC847B	
7111	5322 130 60159	BC847B	
7112	5322 130 60159	BC847B	
7300	4822 209 15449	74HC4094D	
7301	5322 130 60159	BC847B	
7303	5322 130 60159	BC847B	
7306	5322 130 60159	BC847B	
7308	5322 130 60159	BC847B	
7500	5322 130 60159	BC847B	
7501	9322 185 95667	IR RECEIVER TSOP4836	
7504	5322 130 60159	BC847B	
7600	5322 130 60159	BC847B	kara
7601	5322 130 60159	BC847B	kara

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



ECO6 Tuner Board

version: ***SYSTEMS non-CENELEC***

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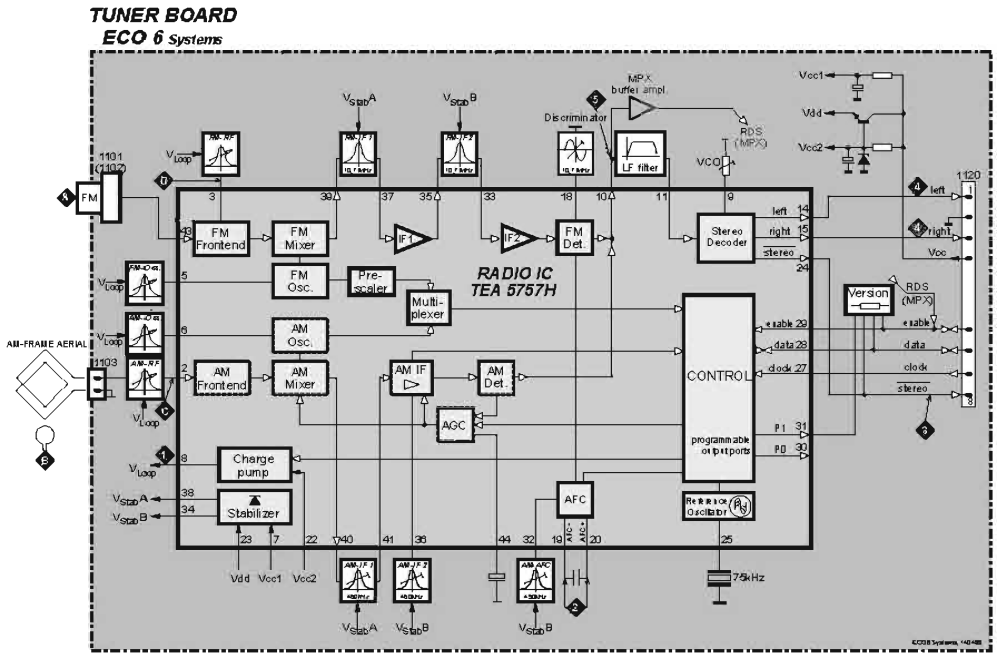
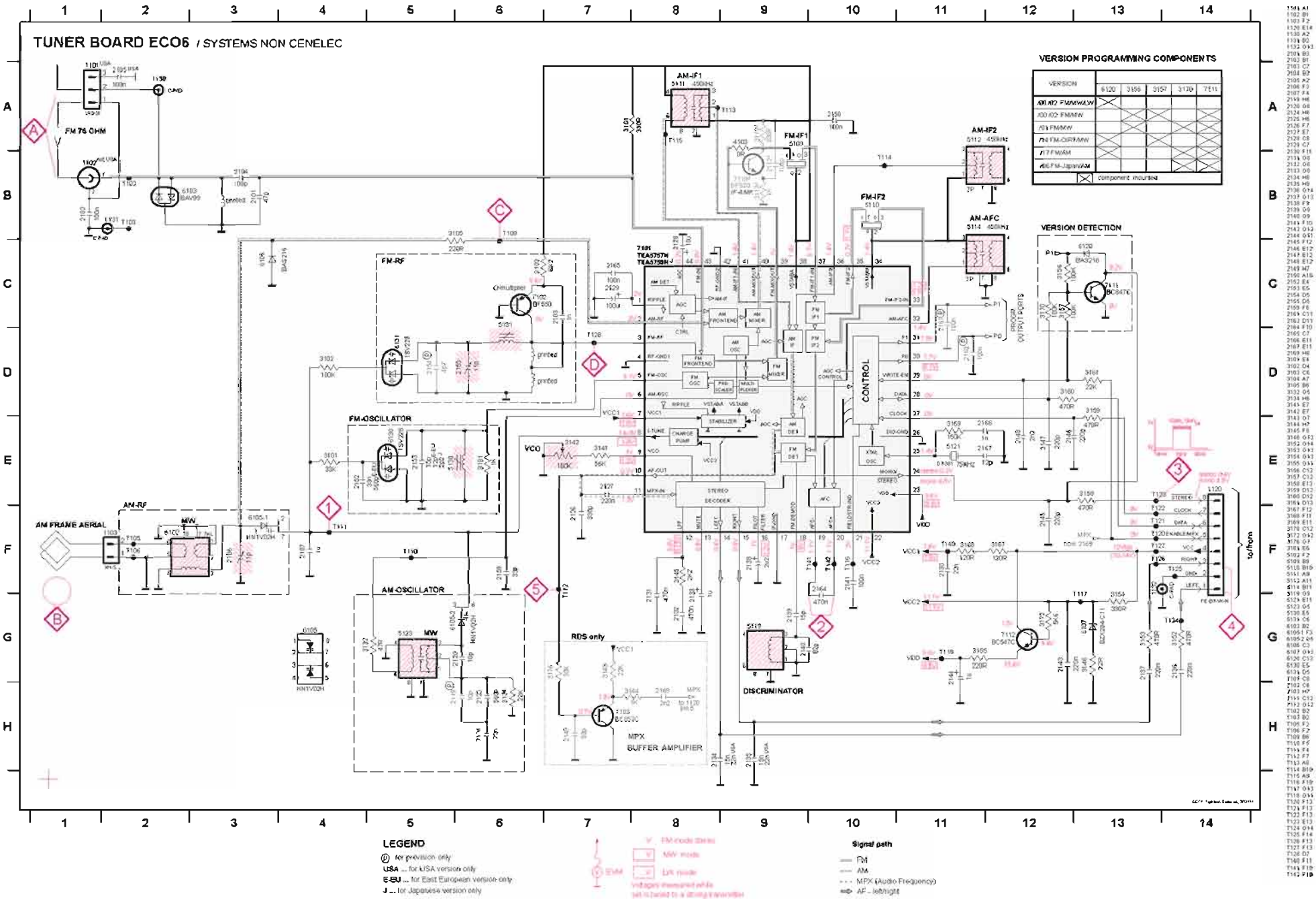
7A-1

BLOCK DIAGRAM

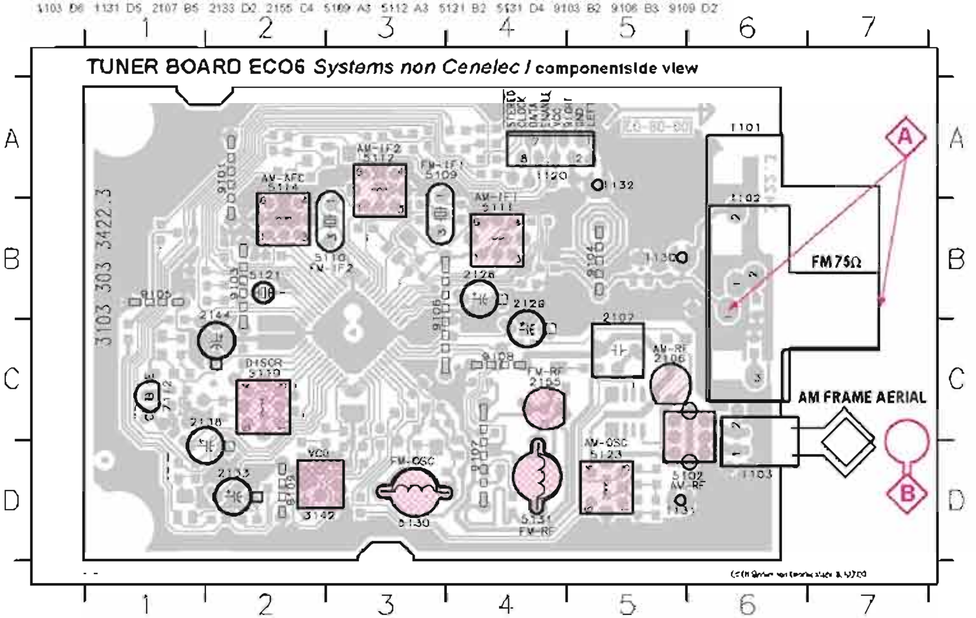


7A-2


TUNER BOARD ECO6 / SYSTEMS NON CENELEC
VERSION PROGRAMMING COMPONENTS
VERSION
6120
3156
3157
3120
7511
component mounted
VERSION DETECTION
FM 75 OHM
AM FRAME AERIAL
AM-RF
FM-RF
FM-OSCILLATOR
AM-OSCILLATOR
AM-IF1
FM-IF1
AM-IF2
FM-IF2
AM-AFC
CONTROL
VCO
STEREO DECODER
DISCRIMINATOR
RDS only
MPX BUFFER AMPLIFIER
to/from
LEGEND
Signal path
FM
AM
MPX (Audio Frequency)
AF - left/right

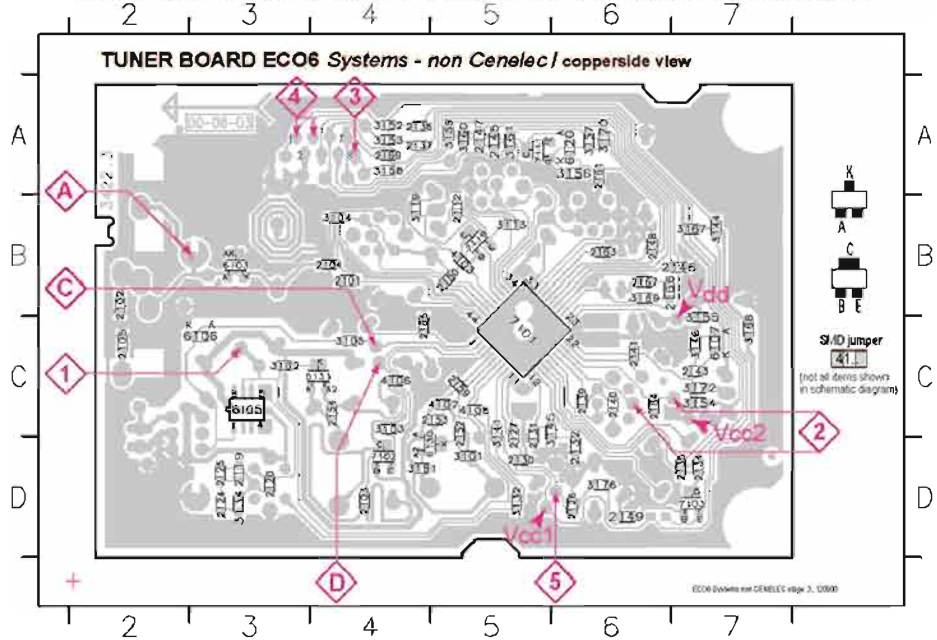
1101	A6	1120	A4	1132	A5	2128	C4	2138	C2	3142	D2	5110	B3	5114	A2	5123	D5	7112	C1	9104	B5	9107	D4
1102	B6	1130	B5	2106	C5	2129	B4	2144	B2	5102	D6	5111	B4	5119	C2	5130	D3	9101	A2	9105	B1	9108	C4
1103	D6	1131	D5	2107	B5	2133	D2	2155	C4	5109	A3	5112	A3	5121	B2	5131	D4	9103	B2	9106	B3	9109	D2

TUNER BOARD ECO6 *Systems non Cenelec /* componentside view



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	D2	2143	C7	2150	B5	2163	B6	3101	D5	3119	B5	3145	C6	3156	A6	3167	B7	3181	D4	6105	C3	7101	C5		
2112	B5	2127	C5	2136	A4	2145	A5	2152	C5	2164	C6	3102	C3	3132	D5	3146	C7	3157	A6	3168	C7	4103	B5	6106	C3	7102	D4		

TUNER BOARD ECO6 *Systems - non Cenelec /* copperside view



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

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

Waverange	Input frequency	Input	Tuned to	Adjust	Output	Scope/Voltmeter
VARICAP ALIGNMENT						
FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz)			108MHz	5130	1	8V ±0.2V
			87.5MHz (65.81MHz)	check		4.3V ±0.5V (1.2V ±0.5V)
MW FM/AM-version, 10kHz grid 530 - 1700kHz			1700kHz	5123		8V ±0.2V
			530kHz	check		1.1V ±0.4V
FM/MW-version, 9kHz grid 531 - 1602kHz			1602kHz	5123		6.9V ±0.2V
			531kHz	check		1.1V ±0.4V
LW 153 - 279kHz			279kHz	5122		8V ±0.2V
			153kHz	check		1.1V ±0.4V
MW FM/MW/LW-version, 9kHz grid 531 - 1602kHz			1602kHz	5123		8V ±0.2V
			531kHz	check		1.1V ±0.4V
FM IF						
FM	10.7MHz, 45mV continuous wave	D	IC 7101 21; shortcircuit to block AFC; 2141	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	C Δf=±10kHz V_{RF} = 0.5mV (as low as possible)	IC 7101 36; 220Ω; 100nF	5111	5	f_0 symmetric
	connect pin 6 of IC 7101 (AM Osc.) with 3.3kΩ to Vcc		IC 7101 40; 220Ω; 100nF; see remark 2)	5112		
AM AFC MW		C continuous wave V_{RF} = 2mV		5114	2	0 ± 2 mV DC
AM RF [3]						
MW [4] FM/MW/LW- and FM/MW-version (9kHz grid) 531 - 1602kHz	1494kHz	B	1494kHz	2106	5	f_0 symmetric
	558kHz		558kHz	5102		
LW	198kHz		198kHz	5103		
MW FM/AM-version, 10kHz grid 530 - 1700kHz	1500kHz	Δf = ±30kHz V_{RF} as low as possible	1500kHz	2106		
	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

Electrical Partslist *ECO6* SYSTEMS NON-CENELEC

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 13892	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 32854	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

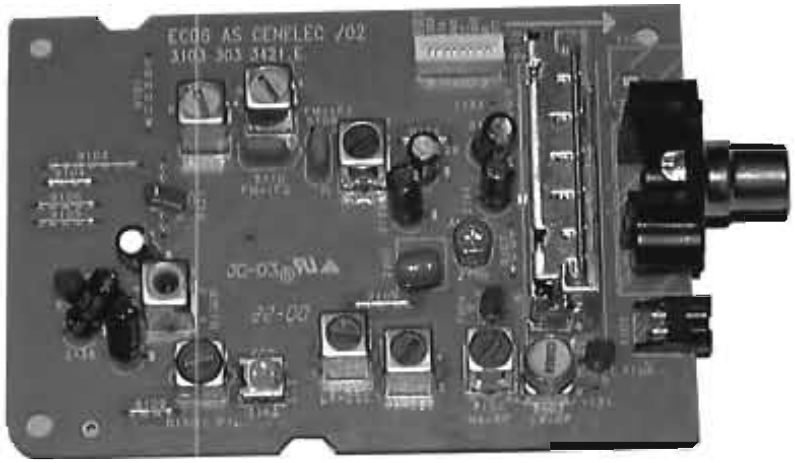
TRANSISTORS

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

INTEGRATED CIRCUITS

7101 ©	9351 740 80557	TEA5757H/V1, RADIO IC

7A-4



ECO6 Tuner Board

version: ***SYSTEMS CENELEC***

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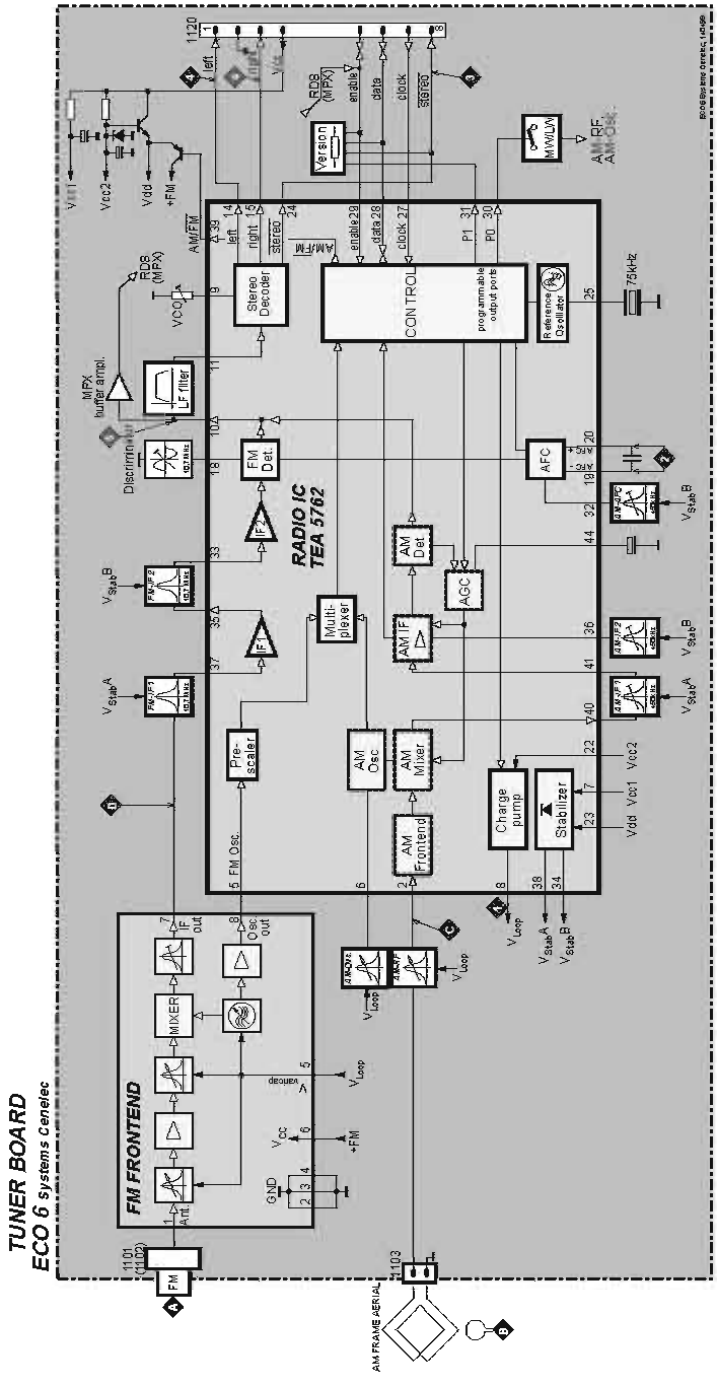
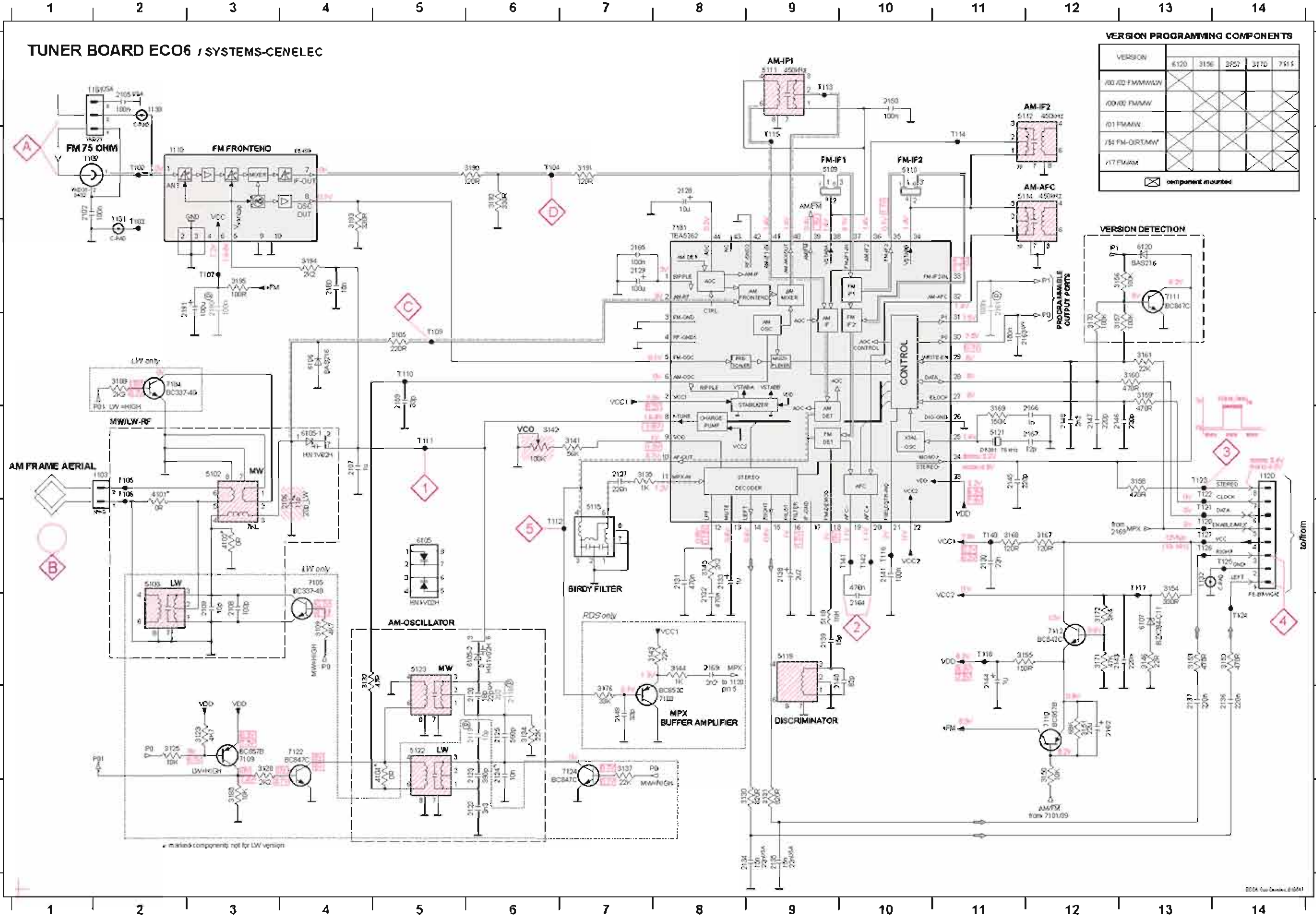
7B-1

BLOCK DIAGRAM



TUNER BOARD ECO6 / SYSTEMS-CENELEC



LEGEND

* only assembled in FM/AM-version

for provision only

USA ... for USA version only

LW ... for LW version only

SMD jumper

V FM mode stereo

V MW mode

V LW mode

voltages measured while set is tuned to a strong transmitter

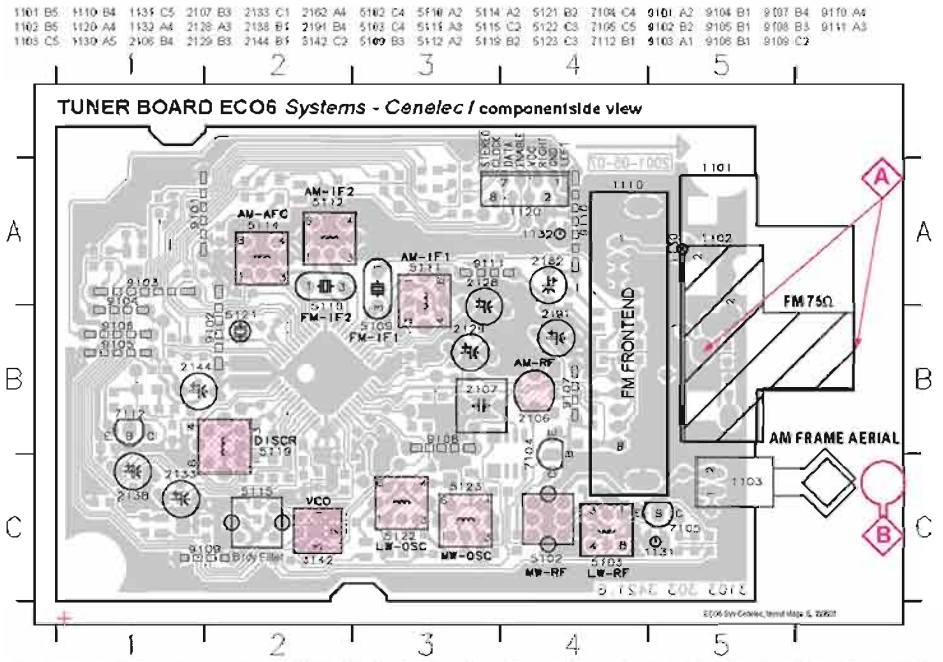
Signal path

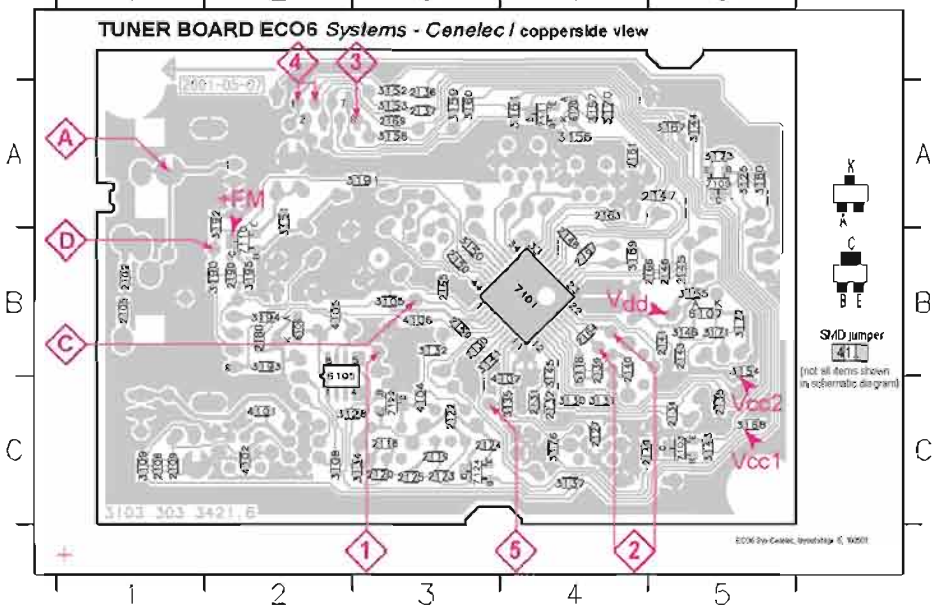
— FM

— AM

MPX (Audio Frequency)

AF - left/right





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

7B-3

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	◇1	8V ±1.2V
			87.5MHz	check		1.6V ±0.5V
MW 531 - 1602kHz (9kHz grid)			1602kHz	5123		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	IC 7101 21 shortcircuit to block AFC 2141	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 Δf = ±10kHz V_{RF} = 0.5mV (as low as possible)	IC 7101 36 100nF 220R	5111	◇5	max. symmetric
			IC 7101 46 100nF 220R see remark 2)	5112		
AM AFC MW		◇C continuous wave V_{RF} = 2mV		5114	◇2	0mV ±2mV
AM RF 3)						
MW	1494kHz	◇B Δf = ±30kHz V_{RF} as low as possible	1494kHz	2106	◇5	max. symmetric
	558kHz		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

7B-4

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 22852	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
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	

POWER MODULE PWR207

(75W Single / Twin Subwoofer)

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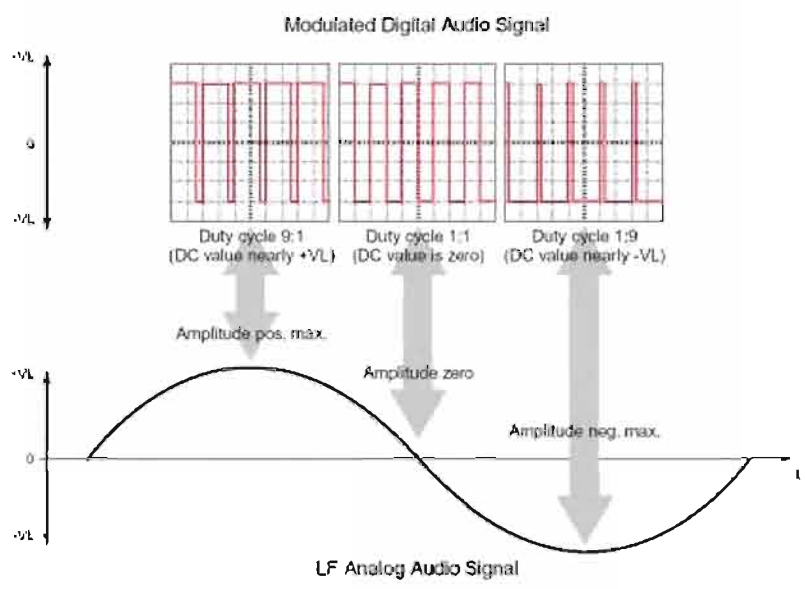
6-channel class-D amplifier

Basic operation of a class-D amplifier

Basically, the output stage of a class-D amplifier outputs a continuous square wave swinging between positive and negative power supplies with a fixed frequency ("clock" frequency) far beyond the audible range. The duty cycle of this square wave is modulated with the audio signal. The output is followed by a low-pass filter which eliminates the clock frequency and allows only the audio signal going to the speaker. See simplified drawing below.



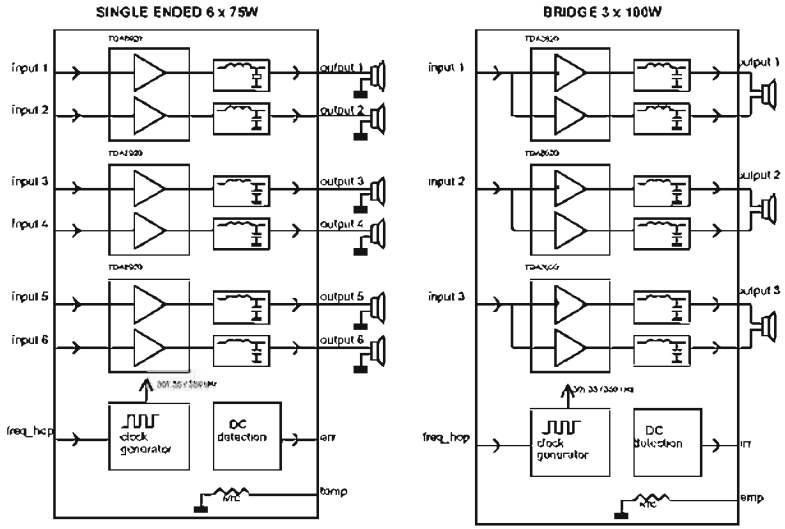
Compared to a conventional power amplifier the benefits of the Class-D amplifier are:

- higher effiency
- lower power dissipation
- smaller heatsink required
- smaller mains transformer required

The main disadvantage of this concept is:

- The amplifier is operating with a high-frequency square wave at high amplitude and currents. This requires special precautions to prevent excessive electromagnetic radiation (EMC).

Block diagram and operation



• clock oscillator

The clock frequency is generated around IC7600. Using 2 extra transistors (7602 and 7608) and 2 ceramic resonators it can be operated at 2 frequencies: 602.7kHz and 700kHz. The frequency is selected by the signal "FREQ_HOP" coming from connector 1301 pin 9.
When FREQ_HOP is low, the output of 7600-1 will be high. This switches transistor 7602 on, and connects resonator 1600 (602.7kHz) to inverter 7600-3. Similarly, when FREQ_HOP is high, resonator 1601 is connected to 7600-3.
The output frequency is divided by two by IC7607, resulting in 301.35kHz or 350kHz.
The purpose of a selectable clock frequency is related to the disturbance of the tuner which is built-in together with this amplifier. In MW, the software of the set microprocessor will select the other clock frequency in case the amplifier clock interferes with the tuned station.

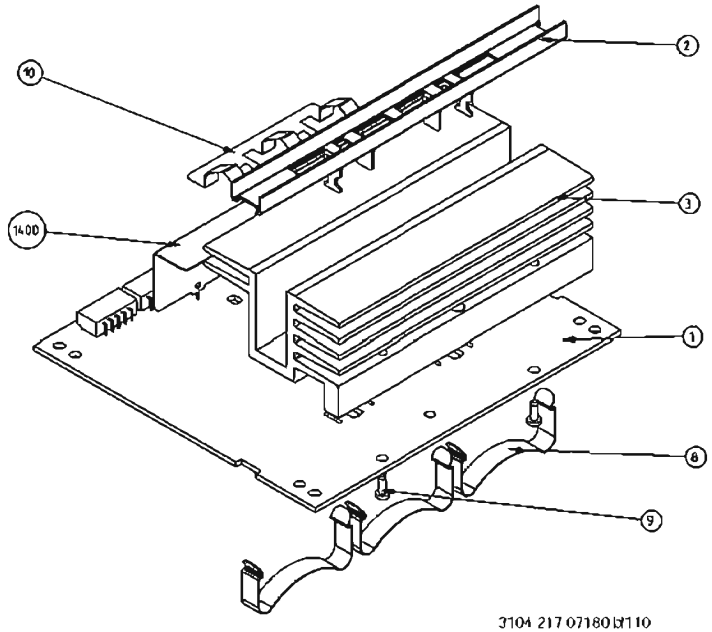
• Class-D amplifier TDA8920 and low-pass filter

The TDA8920 is a two channel audio power amplifier using class-D technology. The audio input signal is converted into a digital Pulse Width Modulated (PWM) signal via an analog input stage and PWM modulator. It is then fed to the power stage which outputs a high power PWM signal which switches between the main supply lines.
The TDA8920 is followed by a 2nd-order low-pass filter. It has a cut-off frequency around 50kHz and converts the PWM signal into analog audio signal across the loudspeaker.
The TDA8920 has a temperature protection and a current limiter built-in.
Furthermore, the IC can be put in active, mute and standby mode.
- Active mode (amplifier fully operational) with output signal.
- Mute mode, the amplifiers are operational, but the audio is muted.
- Standby mode, with a very low supply current, the output stage is switched off.

• DC-detection

The DC-detection circuit monitors all 6 outputs for DC. Whenever one or more outputs contain DC for more than 1 second, the circuit will be activated. A positive voltage will activate transistor 7710 and pin 10 of connector 1301 will be pulled down. In case of a negative voltage, transistor 7716 will be activated, which in turn activates 7710. The set microprocessor will take further action.

MECHANICAL EXPLODED VIEW



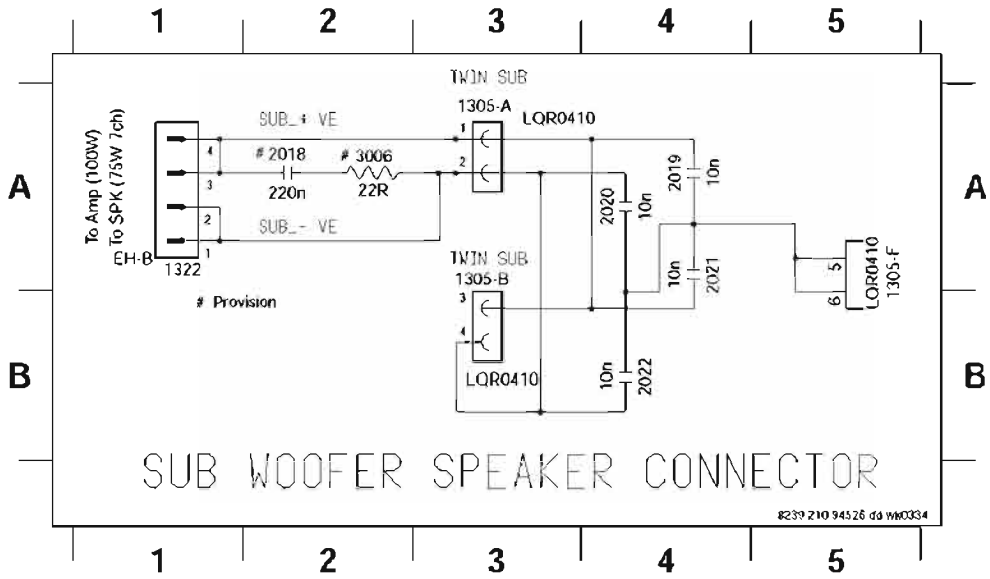
3104 217 07180.bt110

MECHANICAL PARTS LIST & SCREWS

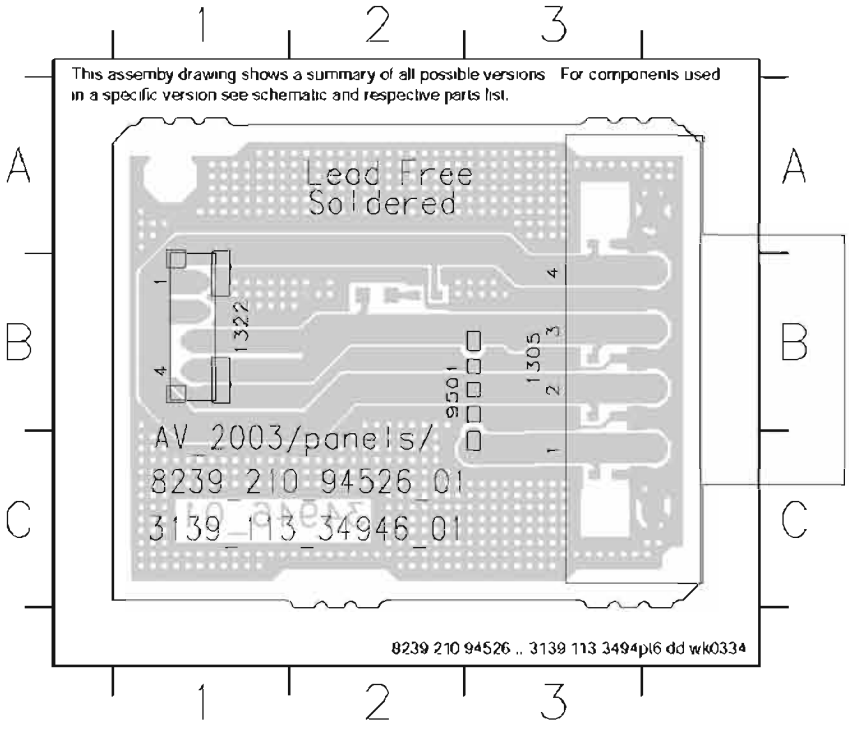
8	3104 211 29861	SPRING 6 CHANNEL
9	-	D2.3 x 8
10	3104 211 29881	EARTH SPRING

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

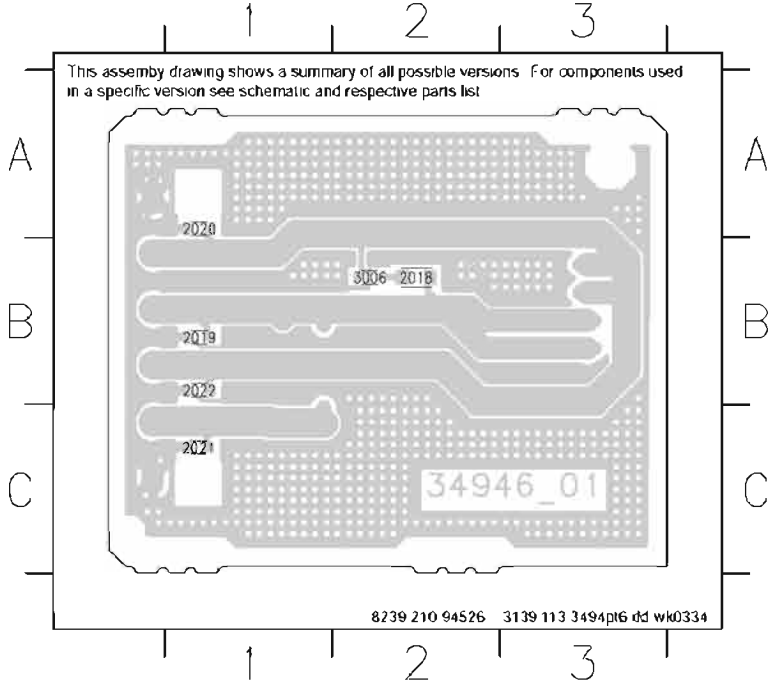
SW-OUT (SPK II) BOARD - CIRCUIT & LAYOUT DIAGRAMS (For Twin Subwoofer versions only)



1305-A A3
1305-B A3
1305-F A5
1322 A1
2018 A2
2019 A4
2020 A4
2021 A4
2022 B4
3006 A2



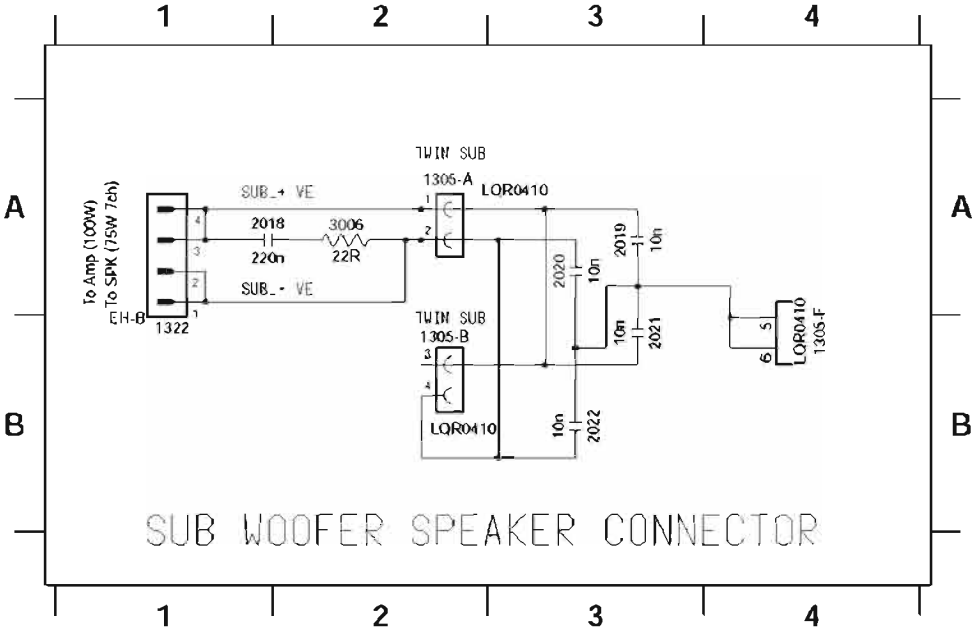
1305 B3
1322 B1
9501 B2



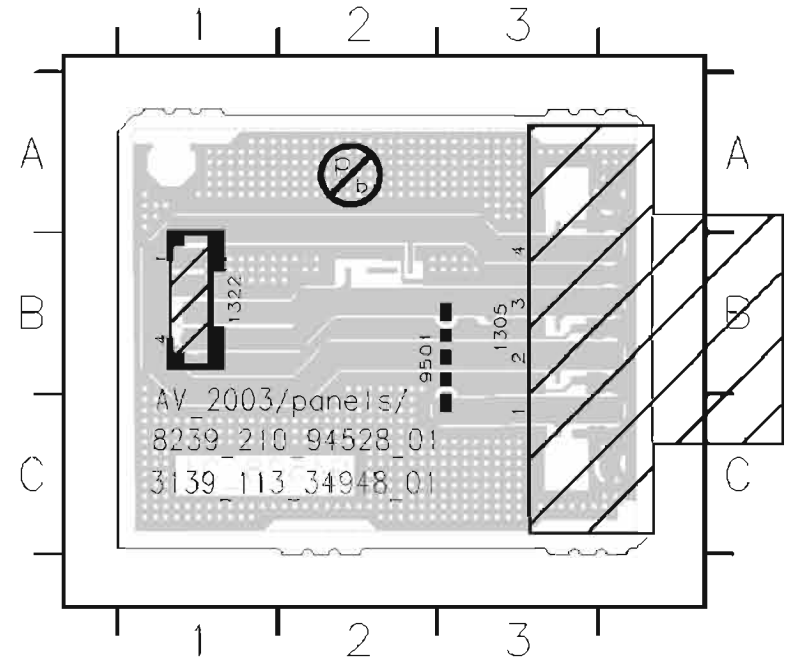
2018 B2
2019 B1
2020 A1
2021 C1
2022 B1
3006 B2

8-3a

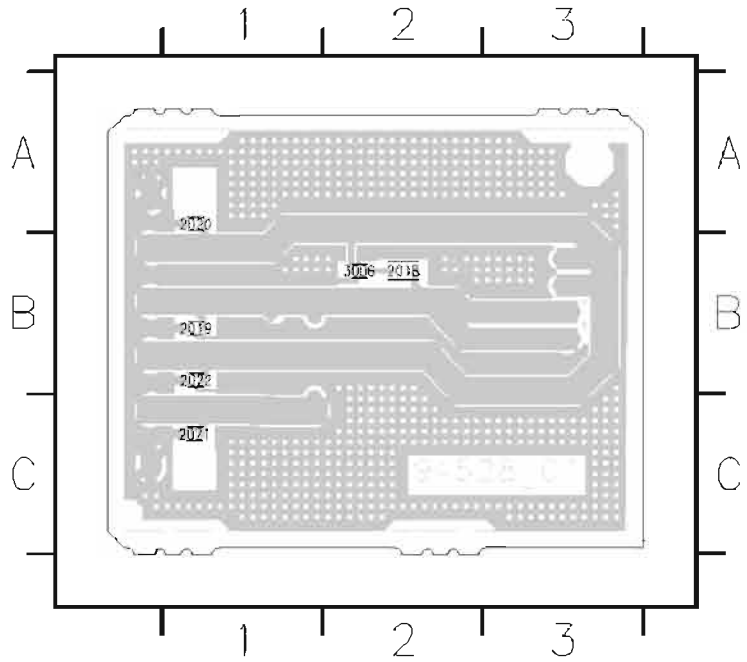
SW-OUT (SPK II) BOARD - CIRCUIT & LAYOUT DIAGRAMS - pcb layout 34948
(For Twin Subwoofer versions only)



1305-A A2
1305-B B2
1305-F B4
1322 B1
2018 A1
2019 A3
2020 A3
2021 B3
2022 B3
3006 A2



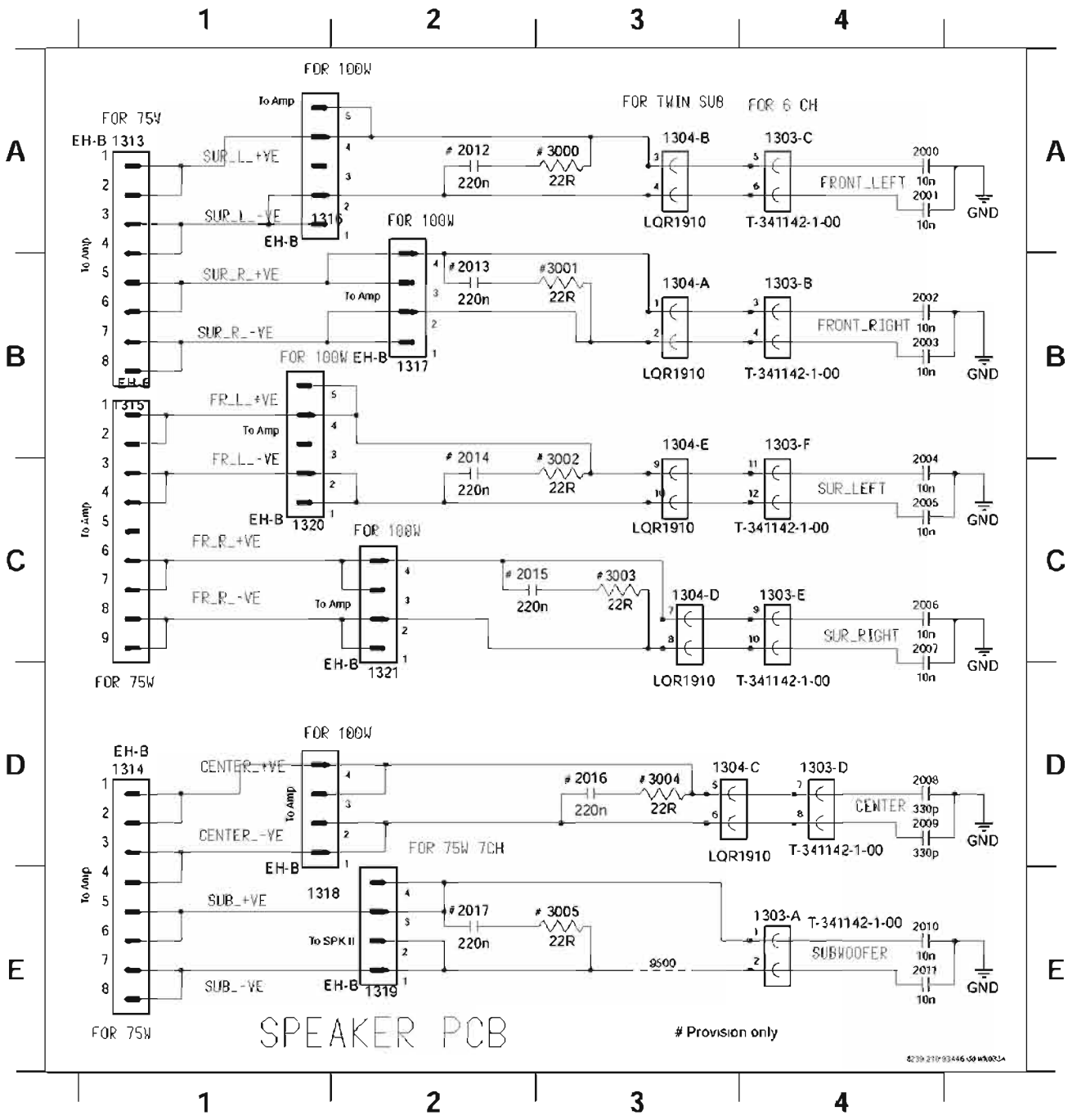
1305 B3
1322 B1
9501 B2



2018 B2
2019 B1
2020 A1
2021 C1
2022 B1
3006 B2

8-4

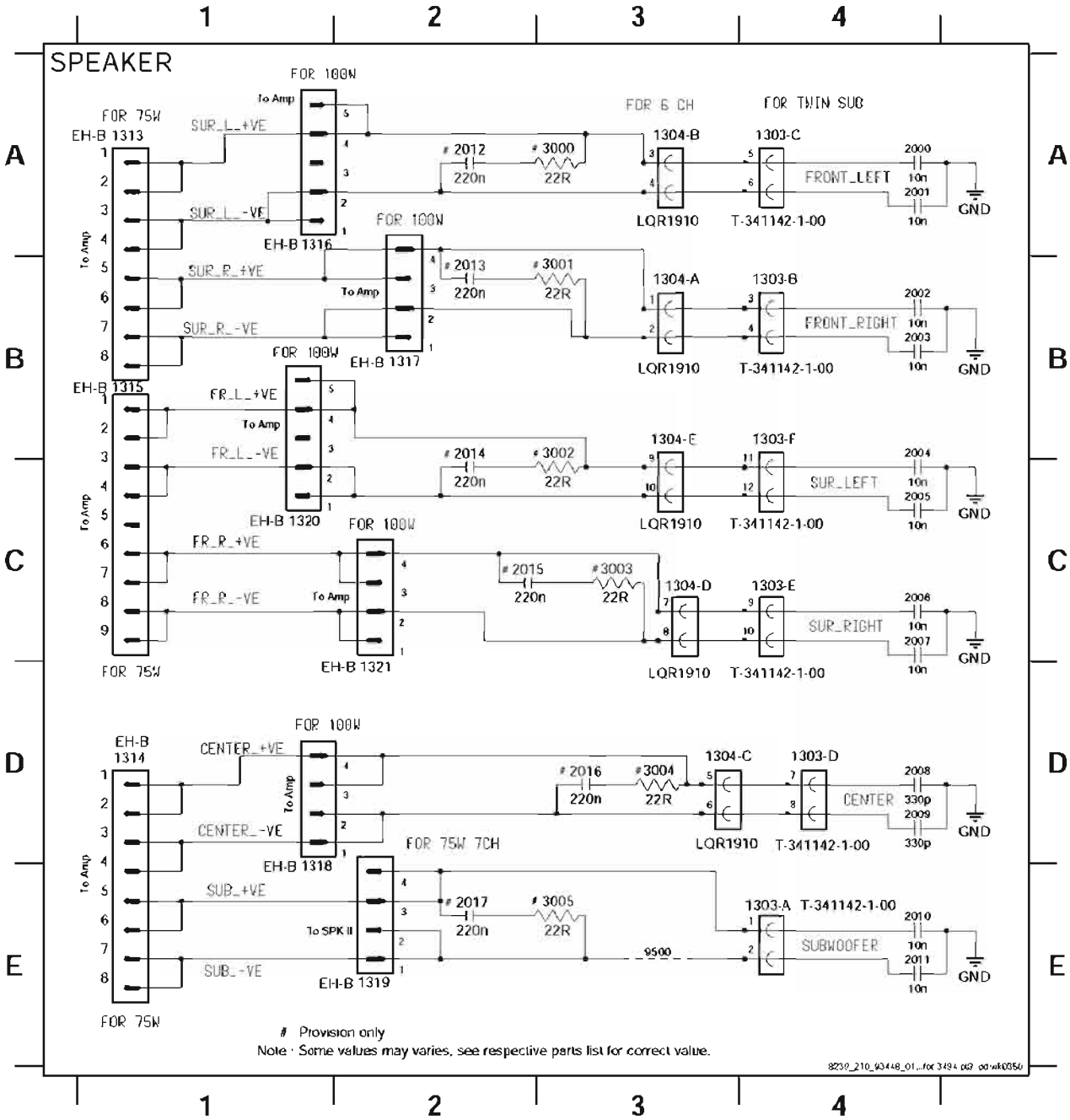
SPEAKER (SPK I) BOARD - CIRCUIT DIAGRAM



1303-A E4
1303-B B4
1303-C A4
1303-D D4
1303-E C4
1303-F B4
1304-A B3
1304-B A3
1304-C D3
1304-D C3
1304-E B3
1313 A1
1314 D1
1315 B1
1316 A2
1317 B2
1318 E2
1319 E2
1320 C1
1321 D2
2000 A4
2001 A4
2002 B4
2003 B4
2004 C4
2005 C4
2006 C4
2007 C4
2008 D4
2009 D4
2010 E4
2011 E4
2012 A2
2013 B2
2014 C2
2015 C2
2016 D3
2017 E2
3000 A3
3001 B3
3002 C3
3003 C3
3004 D3
3005 E3
9500 E3

8-4a

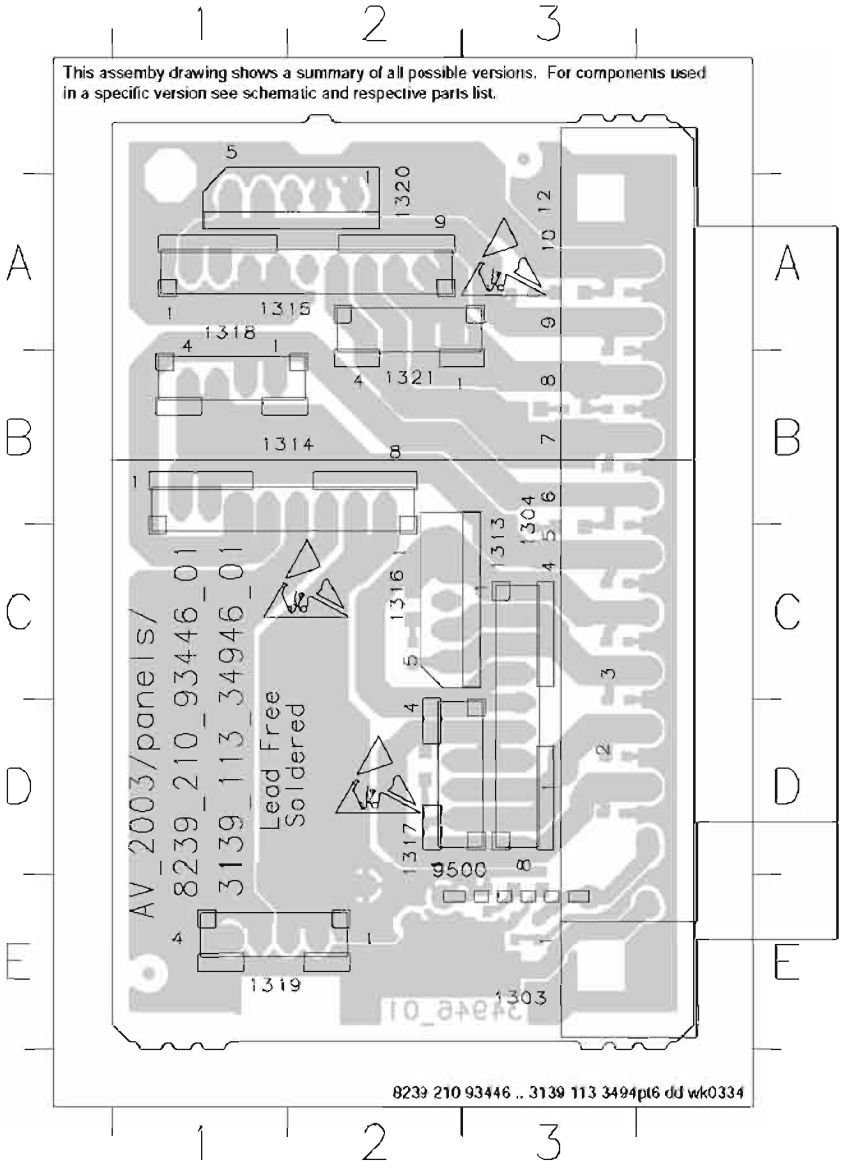
SPEAKER (SPK I) BOARD - CIRCUIT DIAGRAM (For pcb layout ....34948)



1303-A E4
1303-B B4
1303-C A4
1303-D D4
1303-E C4
1303-F B4
1304-A B3
1304-B A3
1304-C D3
1304-D C3
1304-E B3
1313 A1
1314 D1
1315 B1
1316 A2
1317 B2
1318 E2
1319 E2
1320 C1
1321 C2
2000 A4
2001 A4
2002 B4
2003 B4
2004 B4
2005 C4
2006 C4
2007 C4
2008 D4
2009 D4
2010 E4
2011 E4
2012 A2
2013 B2
2014 B2
2015 C2
2016 D3
2017 E2
3000 A3
3001 B3
3002 B3
3003 C3
3004 D3
3005 E3
9500 E3

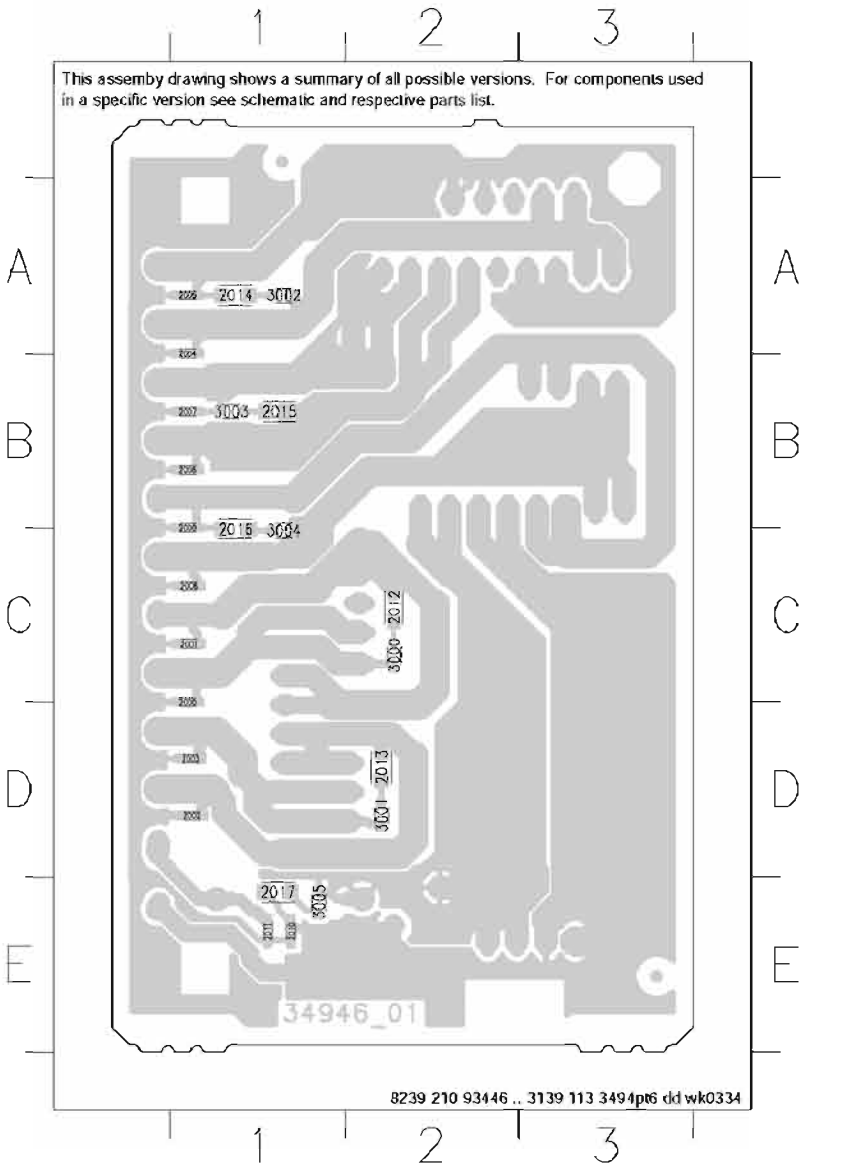
SPEAKER (SPK I) BOARD - COMPONENT & CHIP LAYOUTS

1303 E3	1314 B1	1317 D2	1320 A2
1304 B3	1315 A1	1318 A1	1321 B2
1313 C3	1316 C2	1319 E1	9500 D2

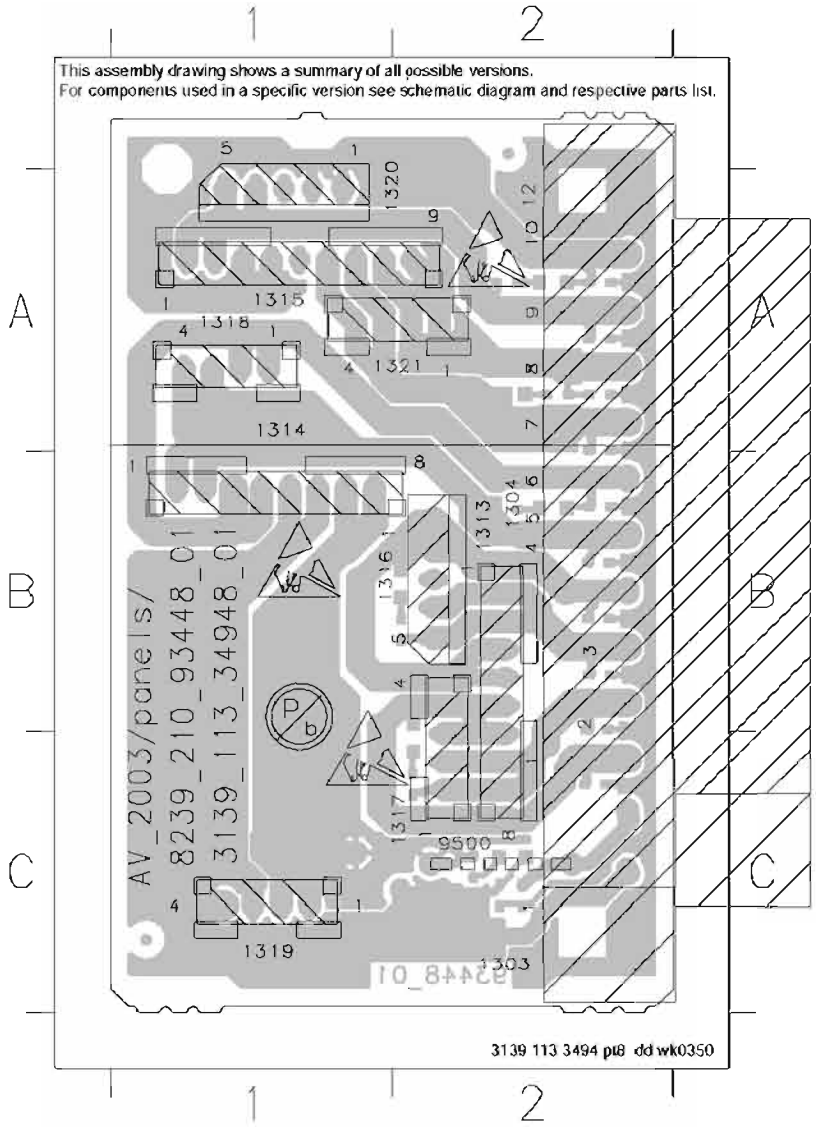


8-5

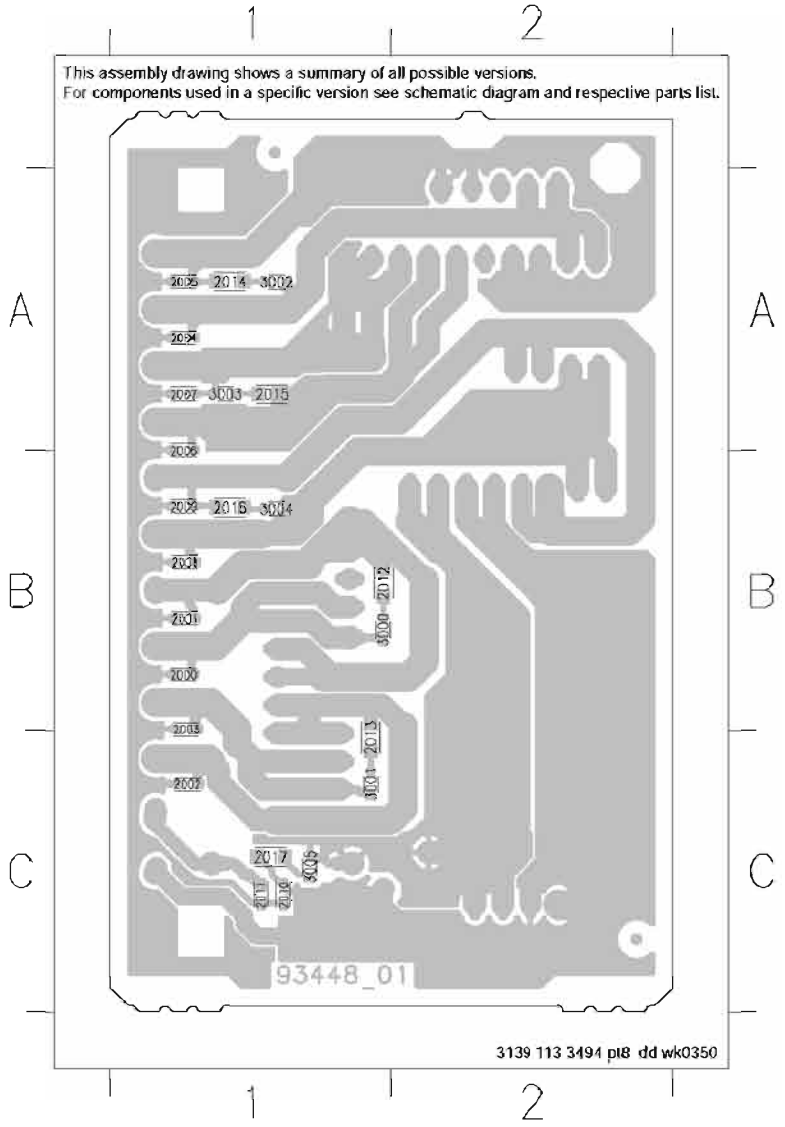
2000 C1	2006 B1	2012 C2	3000 C2
2001 C1	2007 B1	2013 D2	3001 D2
2002 D1	2008 C1	2014 A1	3002 A1
2003 D1	2009 C1	2015 B1	3003 B1
2004 A1	2010 C1	2016 C1	3004 C1
2005 A1	2011 E1	2017 E1	3005 E1



SPEAKER (SPK I) BOARD - COMPONENT & CHIP LAYOUTS (For pcb layout ....34948)



1303 C2
1304 B2
1313 B2
1314 A1
1315 A1
1316 B1
1317 C2
1318 A1
1319 C1
1320 A1
1321 A2
9500 C2

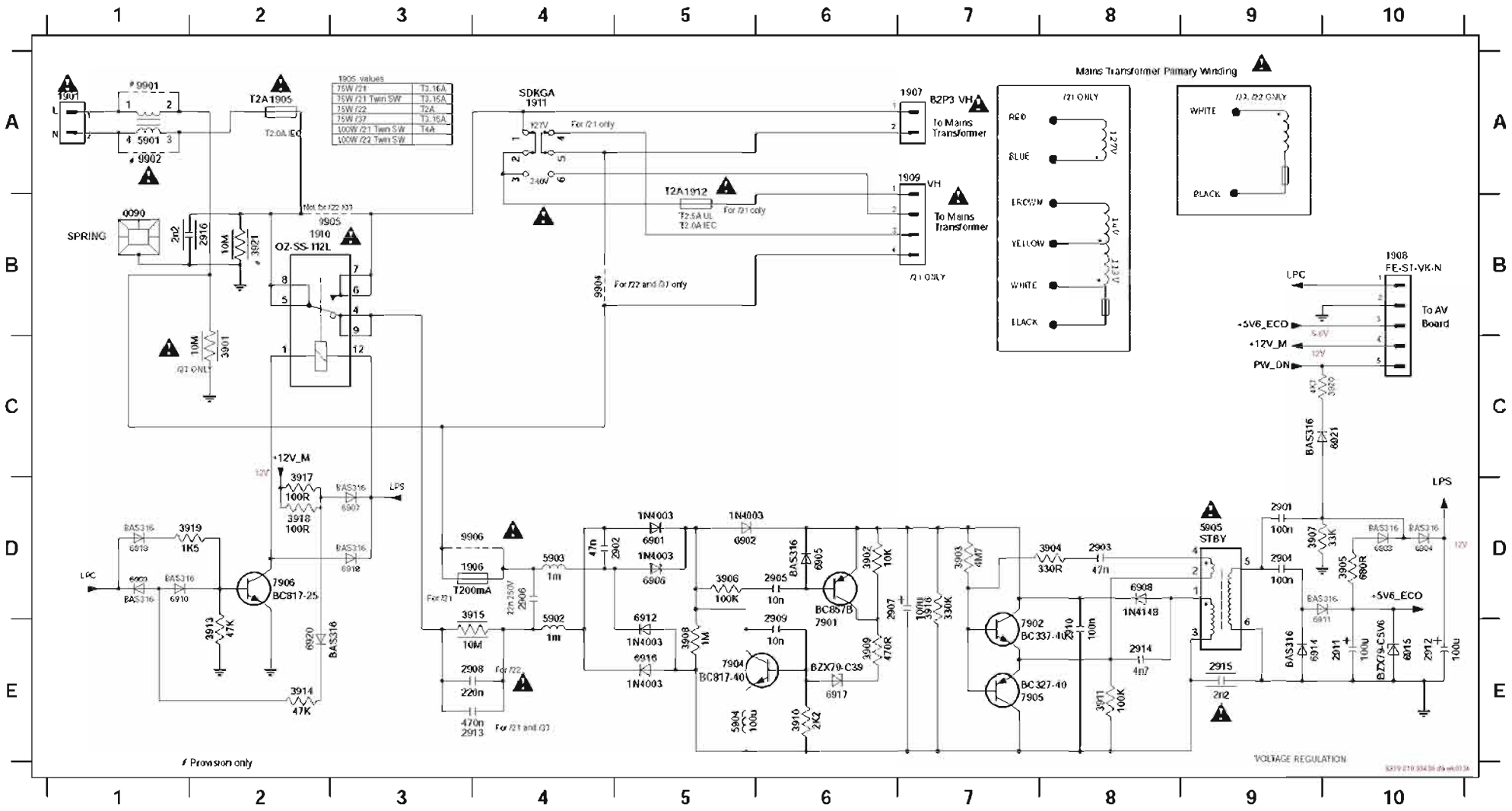


2000 B1
2001 B1
2002 C1
2003 B1
2004 A1
2005 A1
2006 A1
2007 A1
2008 B1
2009 B1
2010 C1
2011 C1
2012 B1
2013 C1
2014 A1
2015 A1
2016 B1
2017 C1
3000 B1
3001 C1
3002 A1
3003 A1
3004 B1
3005 C1

8-6

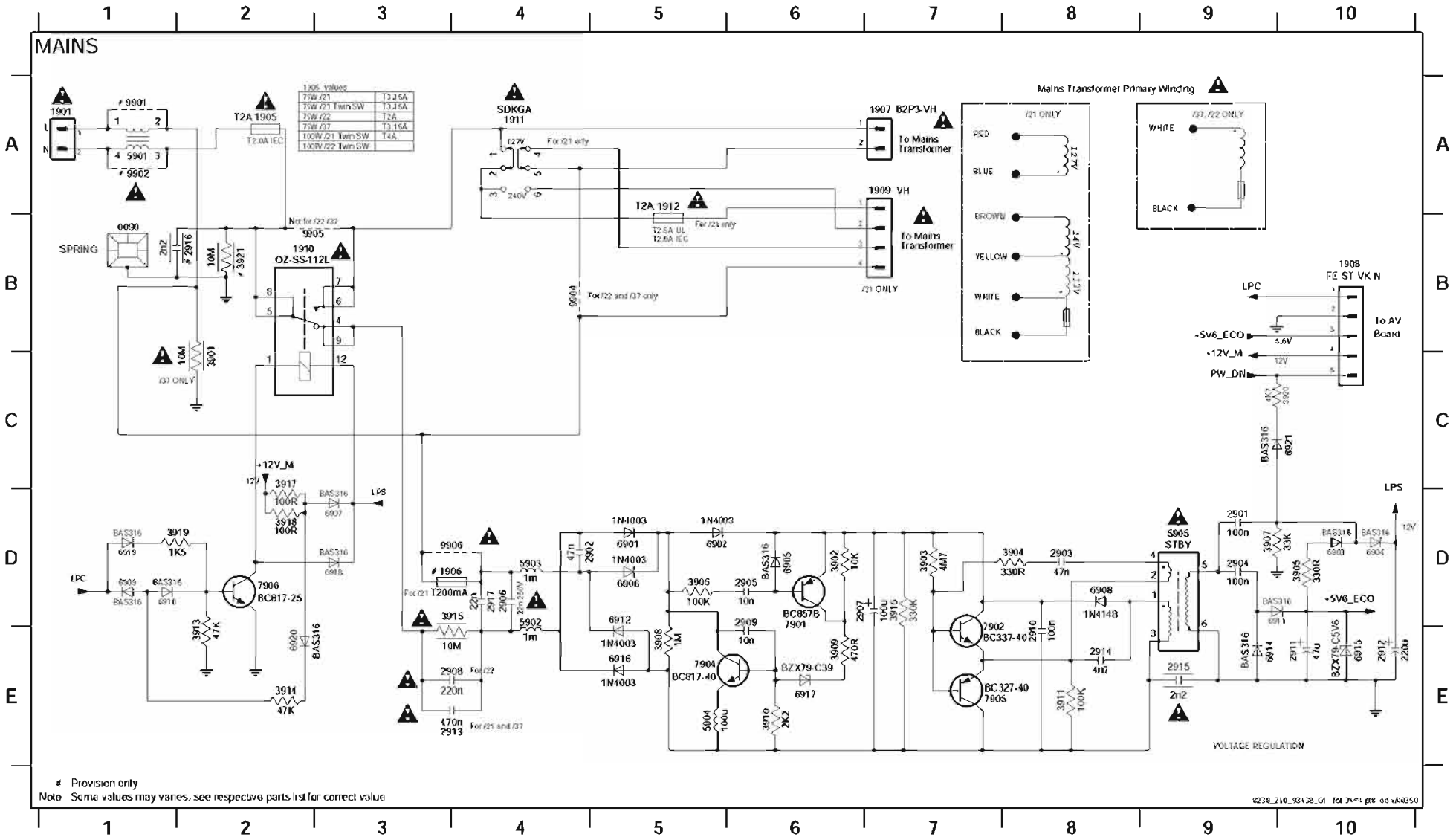
MAINS & ECO STBY BOARD - CIRCUIT DIAGRAM

0090 B1	1907 A7	1911 A4	2903 D8	2907 D6	2911 E10	2915 E9	3903 D7	3907 D8	3911 E8	3916 D7	3920 C10	5903 D4	6902 D5	6906 D5	6910 D1	6915 E10	6919 D1	7902 E7	9901 A1	9906 D3
1901 A1	1908 B10	1912 B5	2904 D9	2908 E3	2912 E10	2916 B2	3904 D8	3908 E5	3913 E2	3917 D2	3921 B2	5904 E5	6903 D10	6907 D3	6911 D9	6916 E5	6920 E2	7904 E5	9902 A1	
1905 A2	1909 A7	2901 D9	2905 D6	2909 E6	2913 E3	3901 C2	3905 D10	3909 E6	3914 E2	3918 D2	5901 A1	5905 D9	6904 D10	6908 D8	6912 E5	6917 E6	6921 C10	7905 E7	9904 B4	
1906 D3	1910 B2	2902 D4	2906 D4	2910 E8	2914 E8	3902 D6	3906 D5	3910 E6	3915 D4	3919 D2	5902 E4	6901 D5	6905 D6	6909 D1	6914 E9	6918 D3	7901 D5	7906 D2	9905 B2	

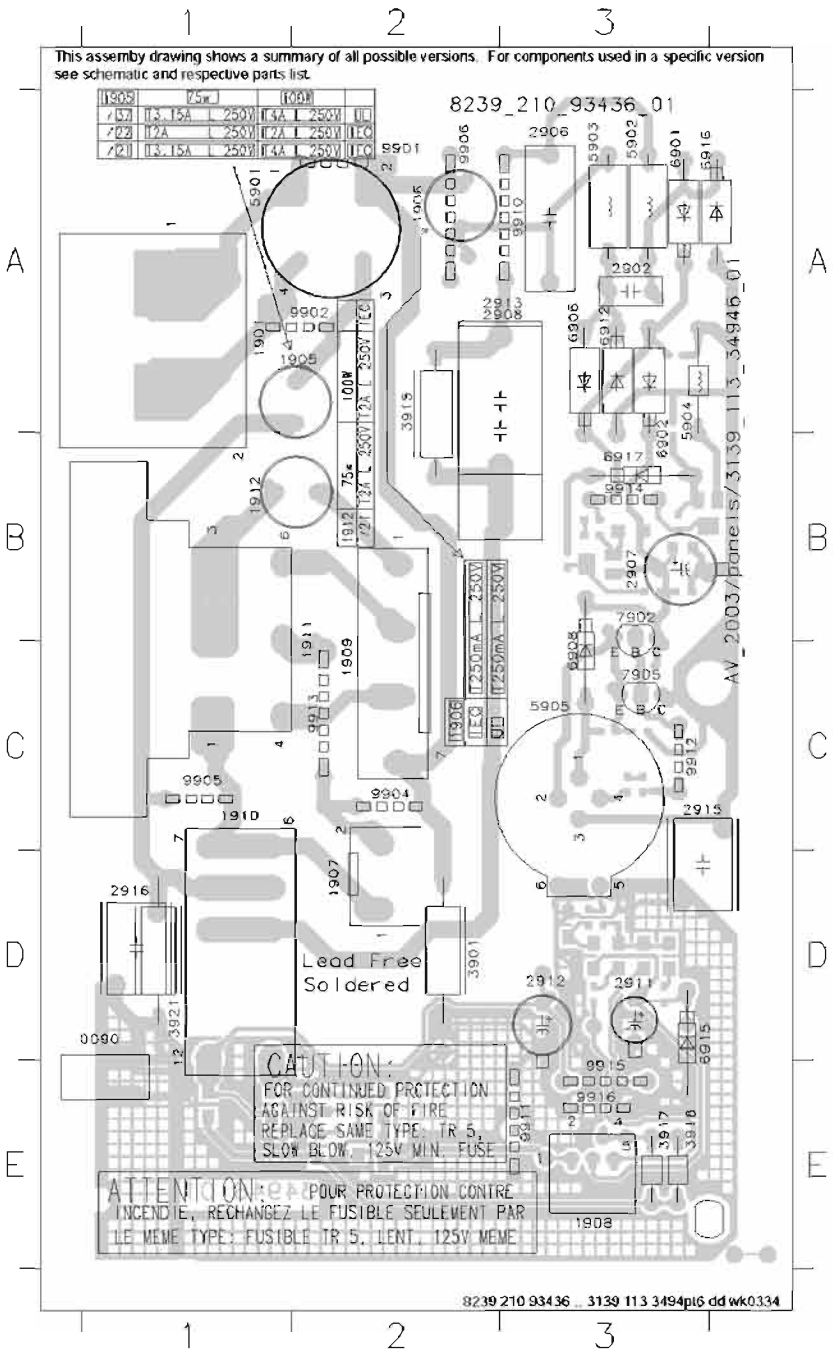


MAINS & ECO STBY BOARD - CIRCUIT DIAGRAM (For pcb layout ....34948)

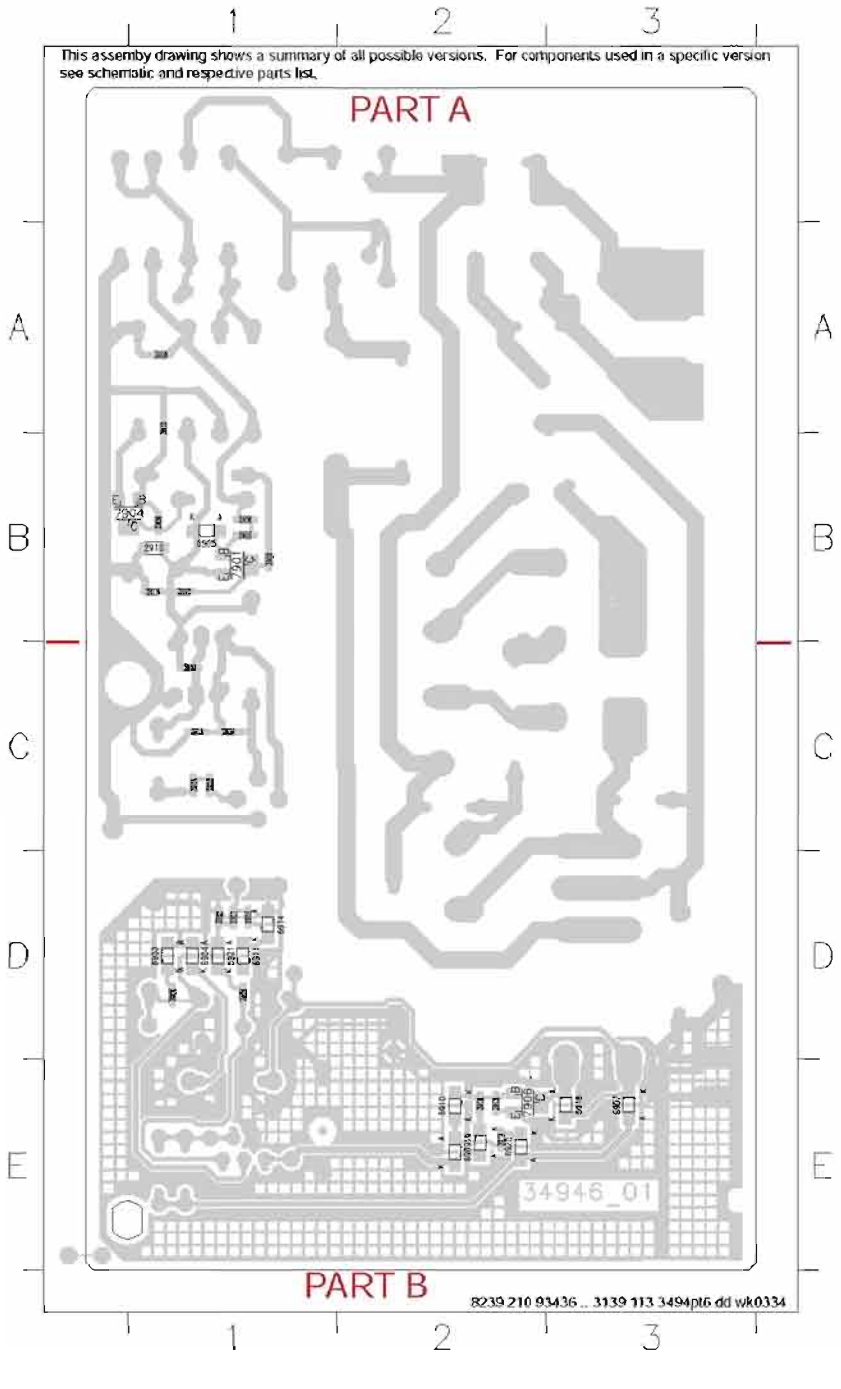
0090 B1	1907 A7	1911 A4	2903 D8	2907 D6	2911 E10	2915 E9	3902 D6	3906 D5	3910 E6	3915 D4	3918 D2	5902 D4	6901 D5	6905 D6	6909 D1	6914 E9	6918 D3	7901 D6	7906 D2	9905 B2
1901 A1	1908 B10	1912 A5	2904 D9	2908 E3	2912 E10	2916 B2	3903 D7	3907 D9	3911 E9	3916 D7	3920 C10	5903 D4	6902 D5	6906 D5	6910 D1	6915 E10	6919 D1	7902 E7	9901 A1	9906 D2
1905 A2	1909 A7	2901 D9	2905 D6	2909 D6	2913 E3	2917 D4	3904 D8	3908 E5	3913 E2	3917 C2	3921 B2	5904 E5	6903 D10	6907 D3	6911 D9	6916 E5	6920 E2	7904 E5	9902 A1	
1906 D3	1910 B2	2902 D4	2906 D4	2910 E8	2914 E8	3901 C2	3905 D10	3909 E6	3914 E2	3918 D2	5901 A1	5905 D9	6904 D10	6908 D8	6912 D5	6917 E6	6921 C10	7905 E7	9904 B4	



MAINS & ECO STBY BOARD - COMPONENT & CHIP LAYOUTS

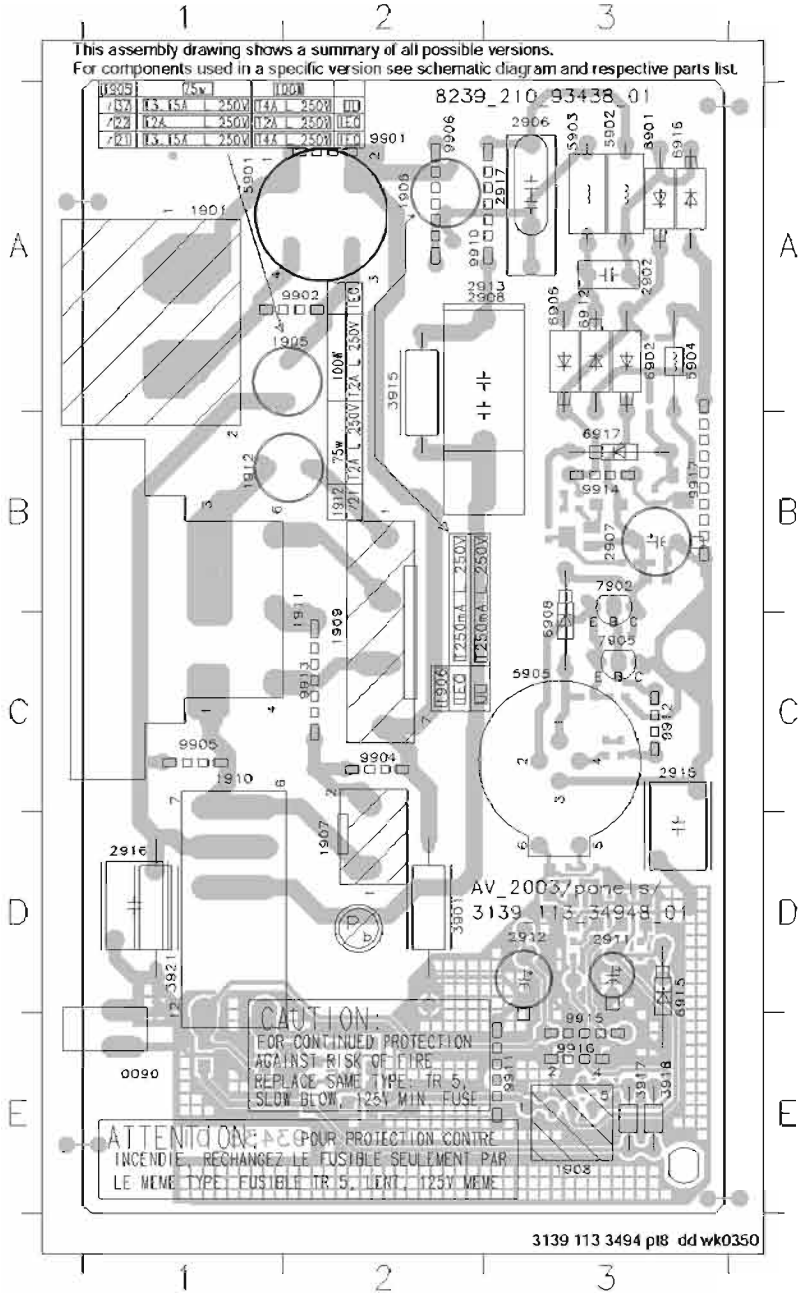


8-7

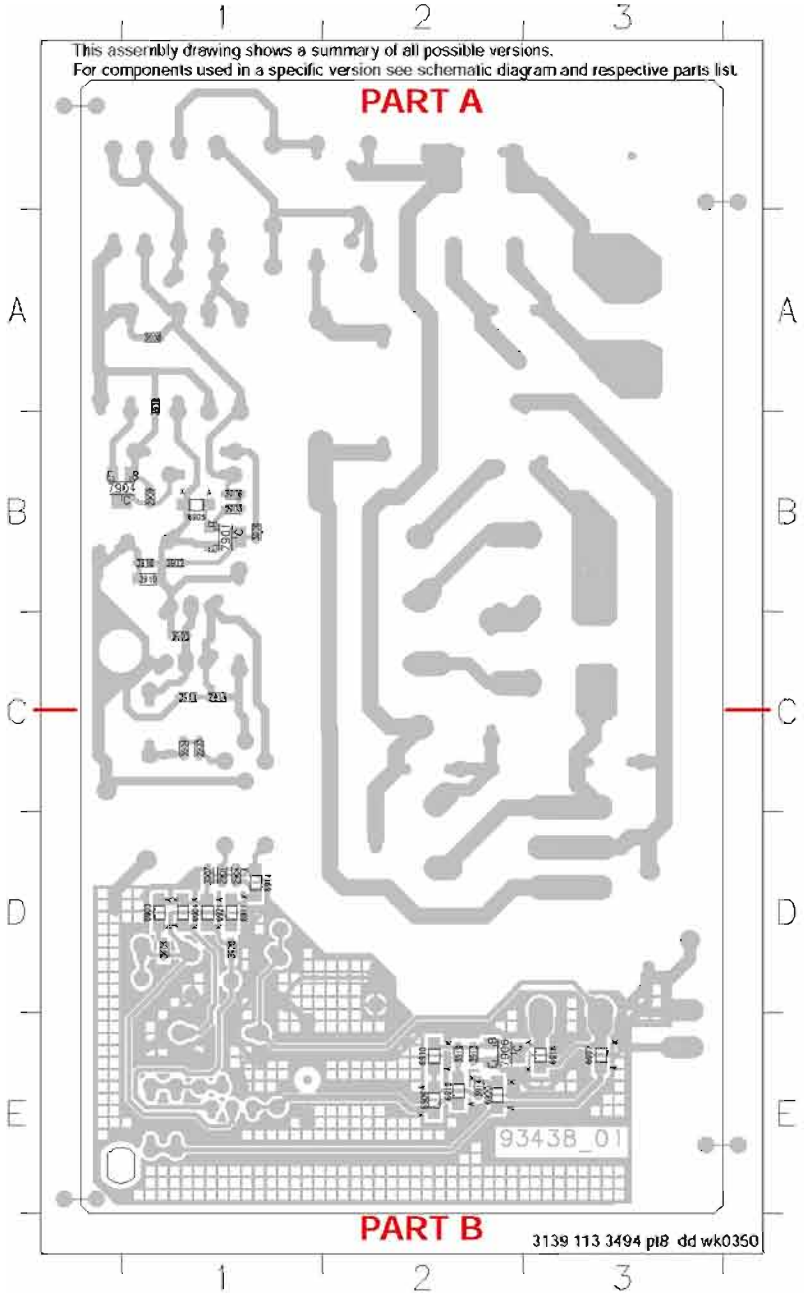


8-7a

MAINS & ECO STBY BOARD - COMPONENT & CHIP LAYOUTS (For pcb layout ....34948)



0090 E1
1901 A1
1905 A2
1906 A2
1907 D2
1908 E3
1909 C2
1910 C1
1911 B2
1912 B1
2902 A3
2906 A3
2907 B3
2908 A3
2911 D3
2912 D3
2913 A3
2915 C3
2916 D1
2917 A3
3901 D2
3915 A2
3917 E3
3918 E3
3921 D1
5901 A1
5902 A3
5903 A3
5904 A3
5905 C3
6901 A3
6902 A3
6906 A3
6908 C3
6912 A3
6915 D3
6916 A3
6917 B3
7902 B3
7905 C3
9901 A2
9902 A2
9904 C2
9905 C1
9906 A2
9910 A2
9911 E3
9912 C3
9913 C2
9914 B3
9915 E3
9916 E3
9917 B3

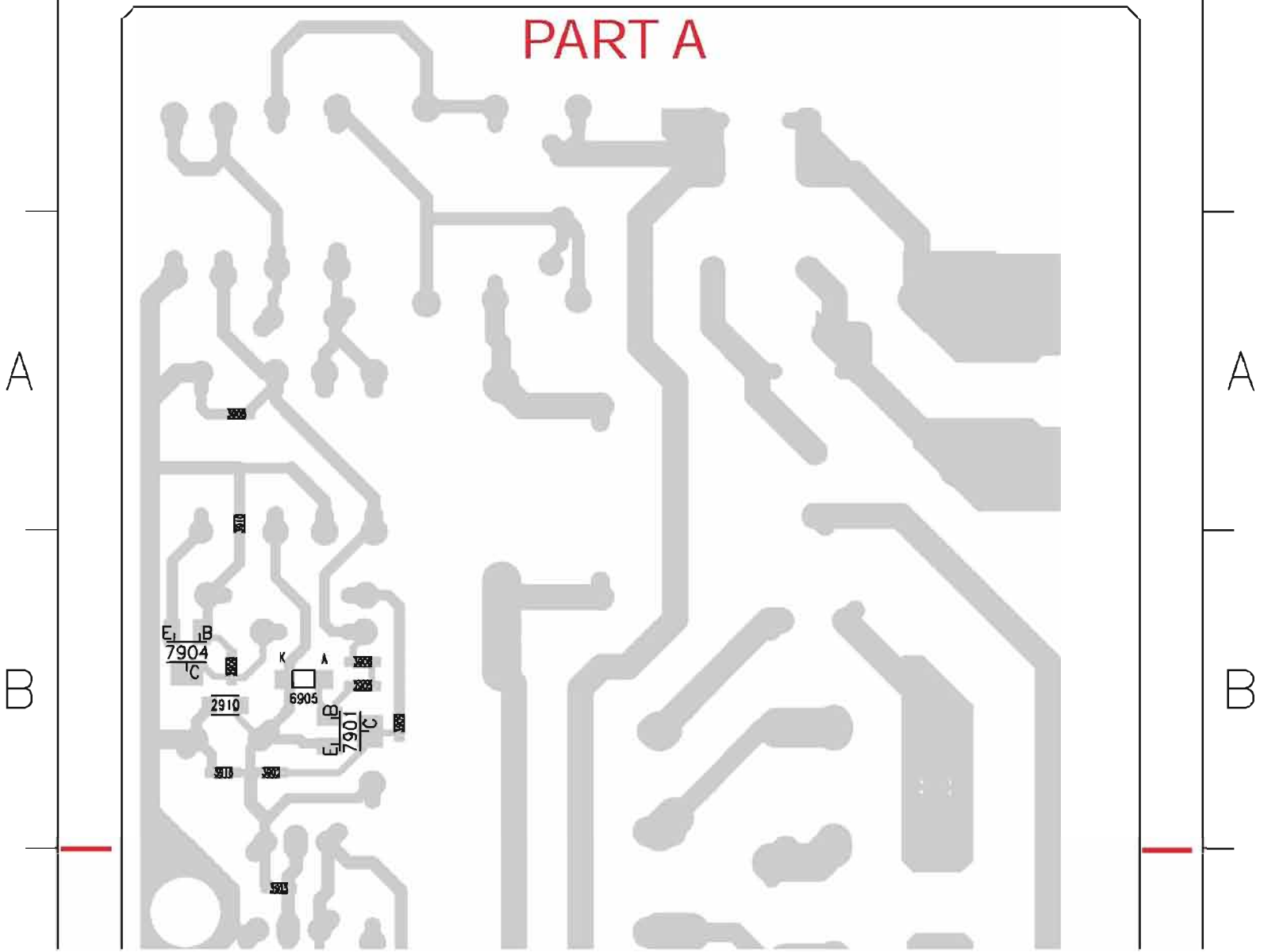


2901 D1
2903 C1
2904 D1
2905 B1
2909 B1
2910 B1
2914 C1
3902 B1
3903 C1
3904 C1
3905 D1
3906 B1
3907 D1
3908 A1
3909 B1
3910 A1
3911 C1
3913 E2
3914 E2
3916 B1
3919 E2
3920 D1
6903 D1
6904 D1
6905 B1
6907 E3
6909 E2
6910 E2
6911 D1
6914 D1
6918 E3
6919 E2
6920 E2
6921 D1
7901 B1
7904 B1
7906 E2

8-8

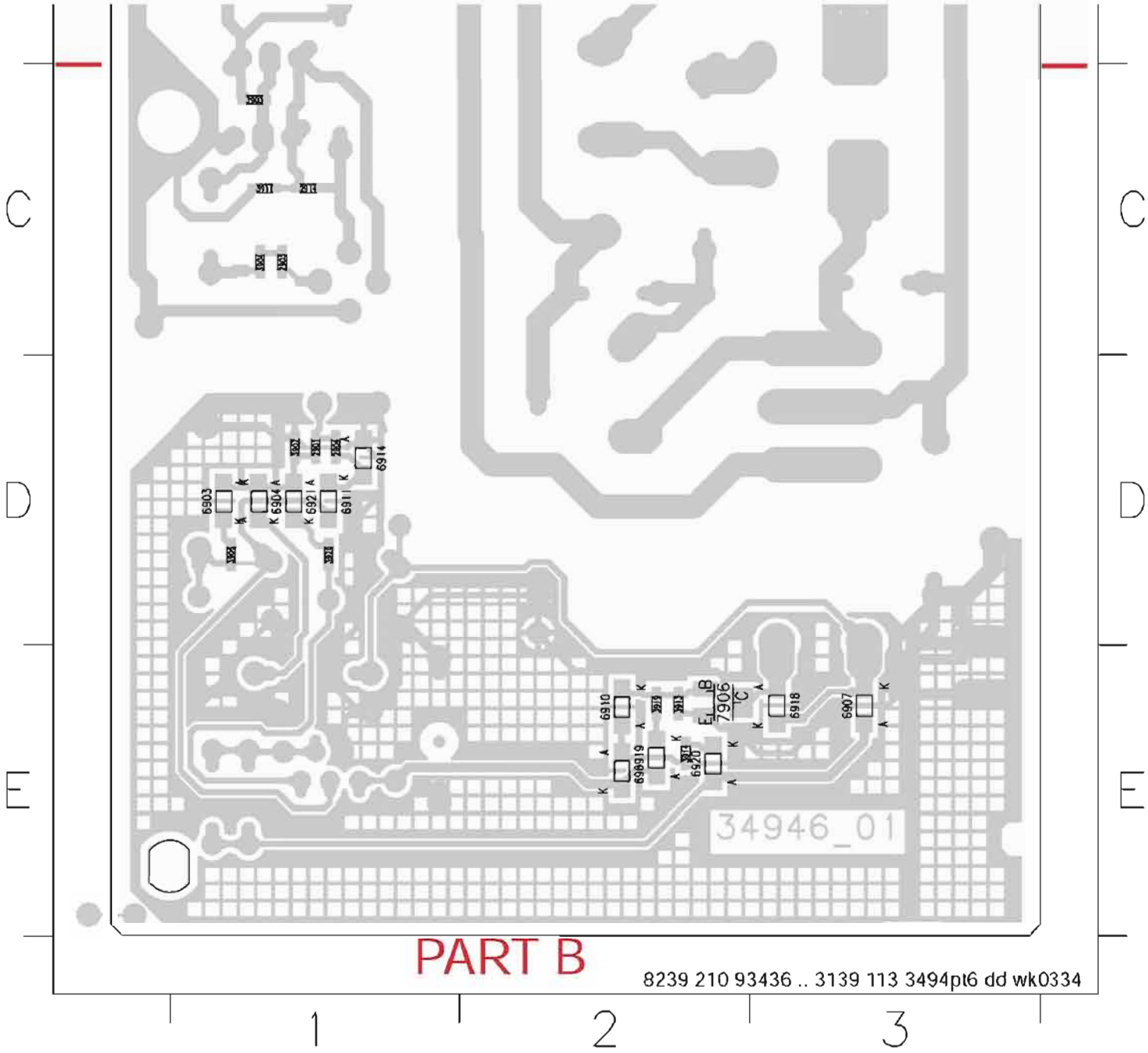
MAINS & ECO STBY BOARD - CHIP LAYOUT PART A

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



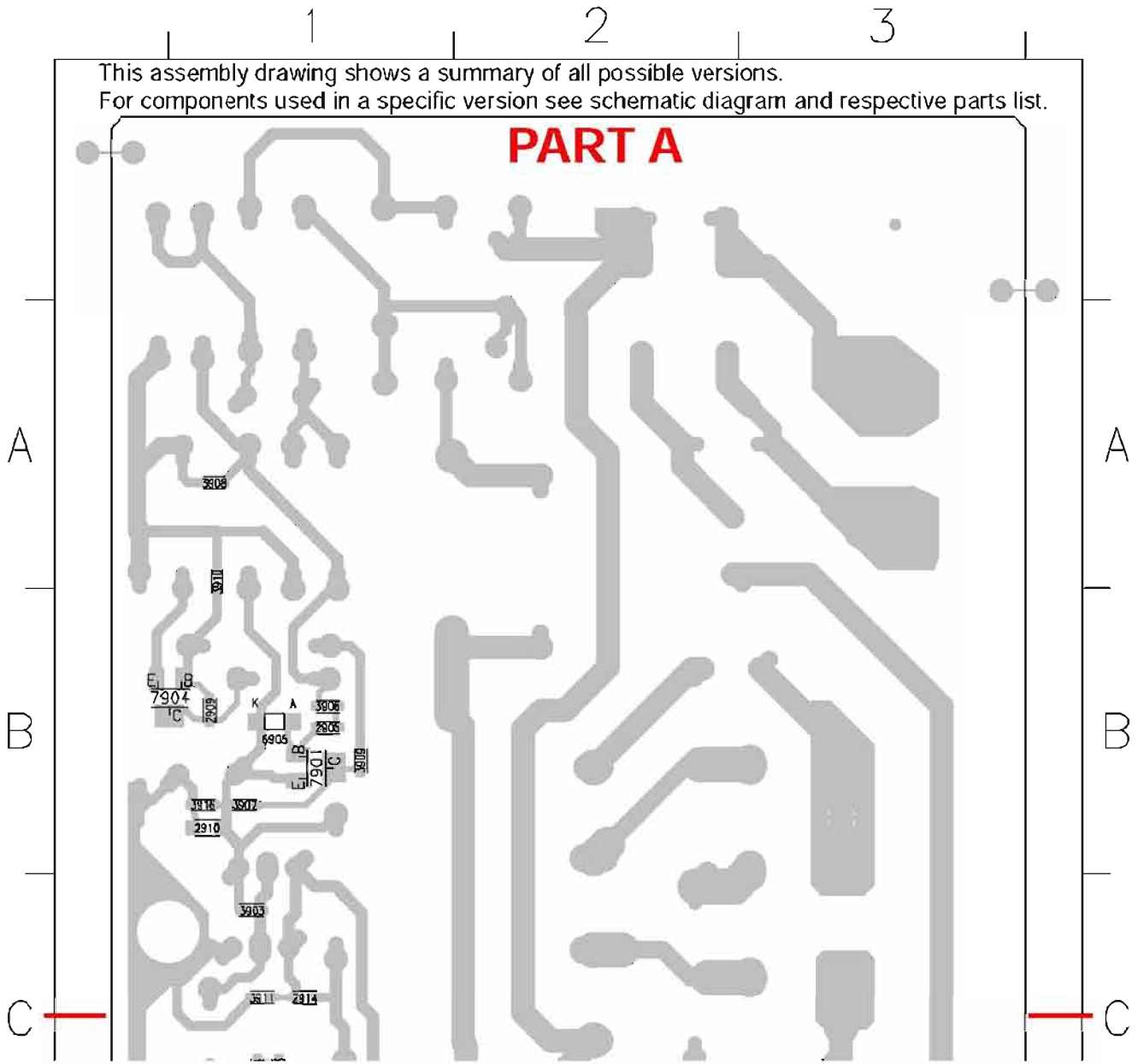
2901	D1
2903	C1
2904	D1
2905	B1
2909	B1
2910	B1
2914	C1
3902	B1
3903	C1
3904	C1
3905	D1
3906	B1
3907	D1
3908	A1
3909	B1
3910	A1
3911	C1
3913	E2
3914	E2
3916	B1
3919	E2
3920	D1
6903	D1
6904	D1
6905	B1
6907	E3
6909	E2
6910	E2
6911	D1
6914	D1
6918	E3
6919	E2
6920	E2
6921	D1
7901	B1
7904	B1
7906	E2

MAINS & ECO STBY BOARD - CHIP LAYOUT PART B



8-8a

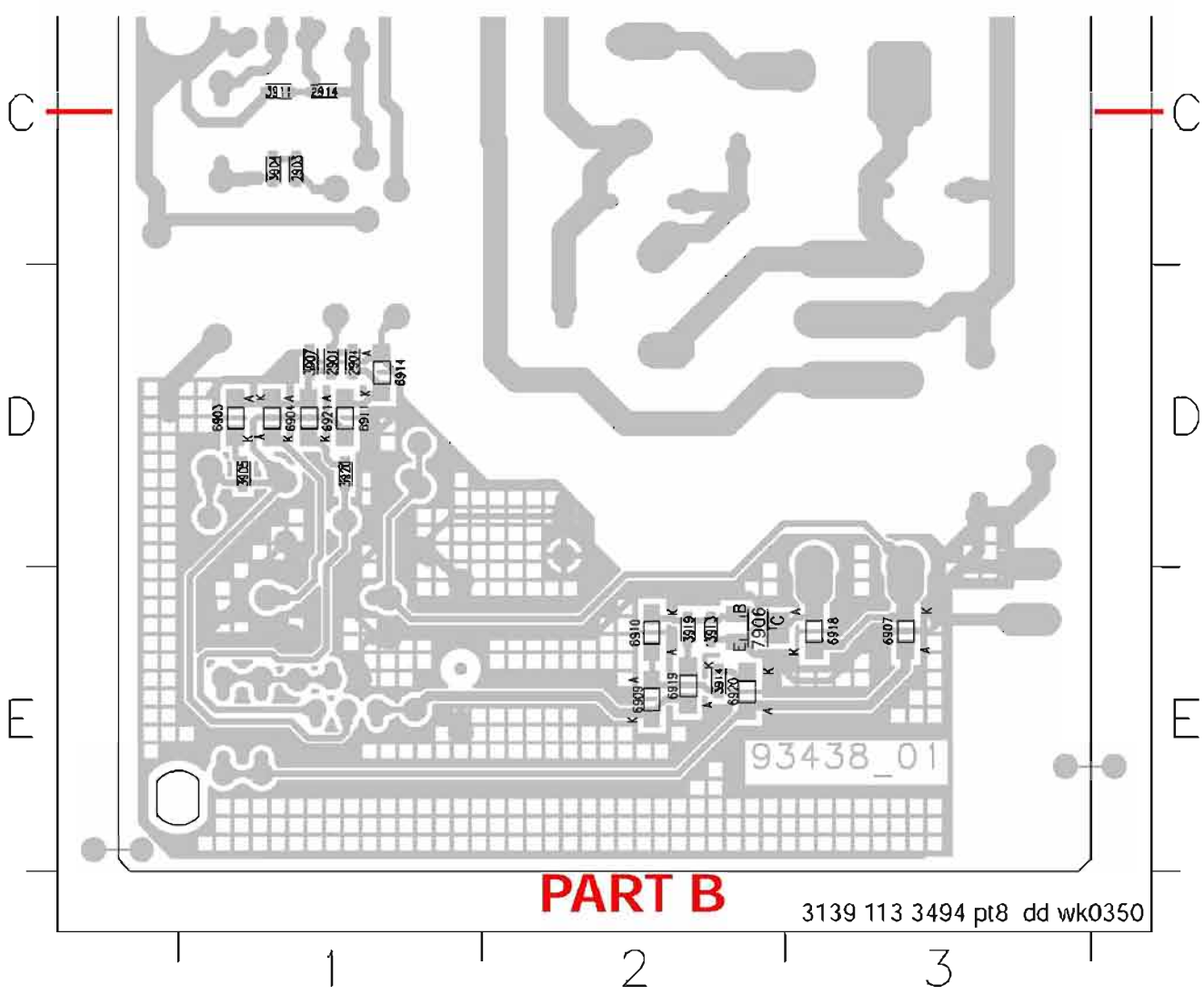
MAINS & ECO STBY BOARD - CHIP LAYOUT PART A (For pcb layout ....34948)



2901	D1
2903	C1
2904	D1
2905	B1
2909	B1
2910	B1
2914	C1
3902	B1
3903	C1
3904	C1
3905	D1
3906	B1
3907	D1
3908	A1
3909	B1
3910	A1
3911	C1
3913	E2
3914	E2
3916	B1
3919	E2
3920	D1
6903	D1
6904	D1
6905	B1
6907	E3
6909	E2
6910	E2
6911	D1
6914	D1
6918	E3
6919	E2
6920	E2
6921	D1
7901	B1
7904	B1
7906	E2

8-9a

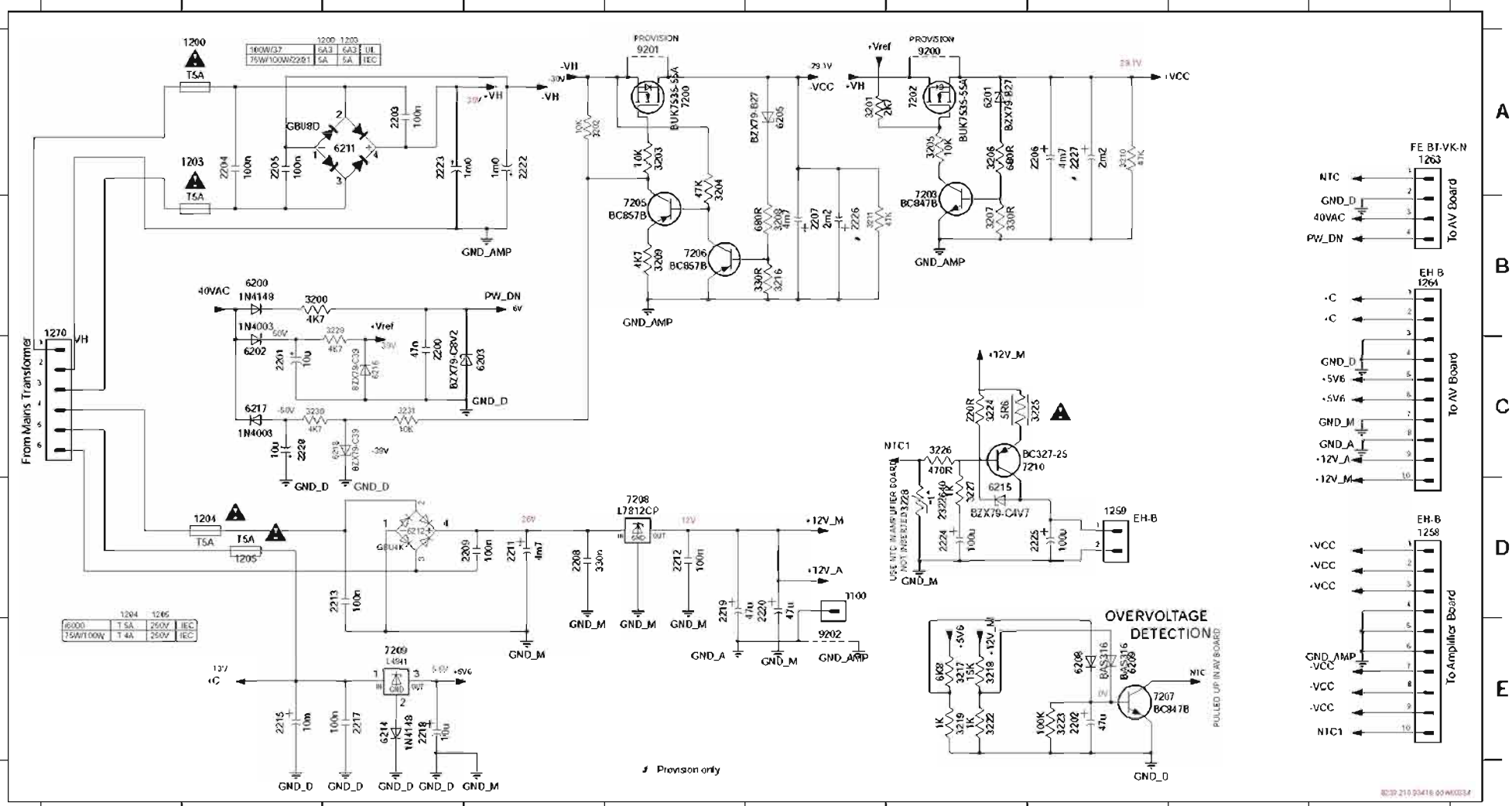
MAINS & ECO STBY BOARD - CHIP LAYOUT PART B (For pcb layout ....34948)



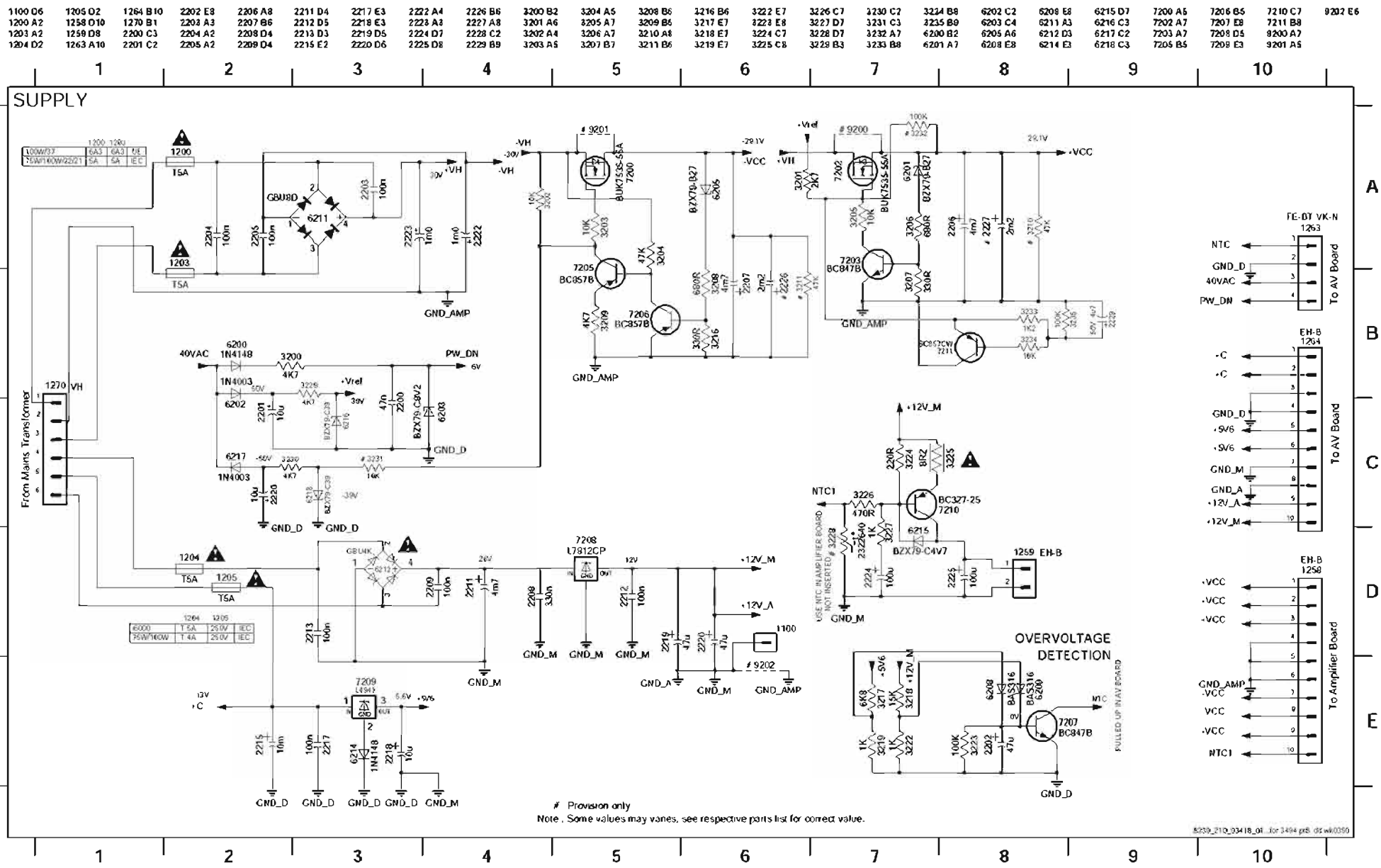
8-10

SUPPLY BOARD - CIRCUIT DIAGRAM

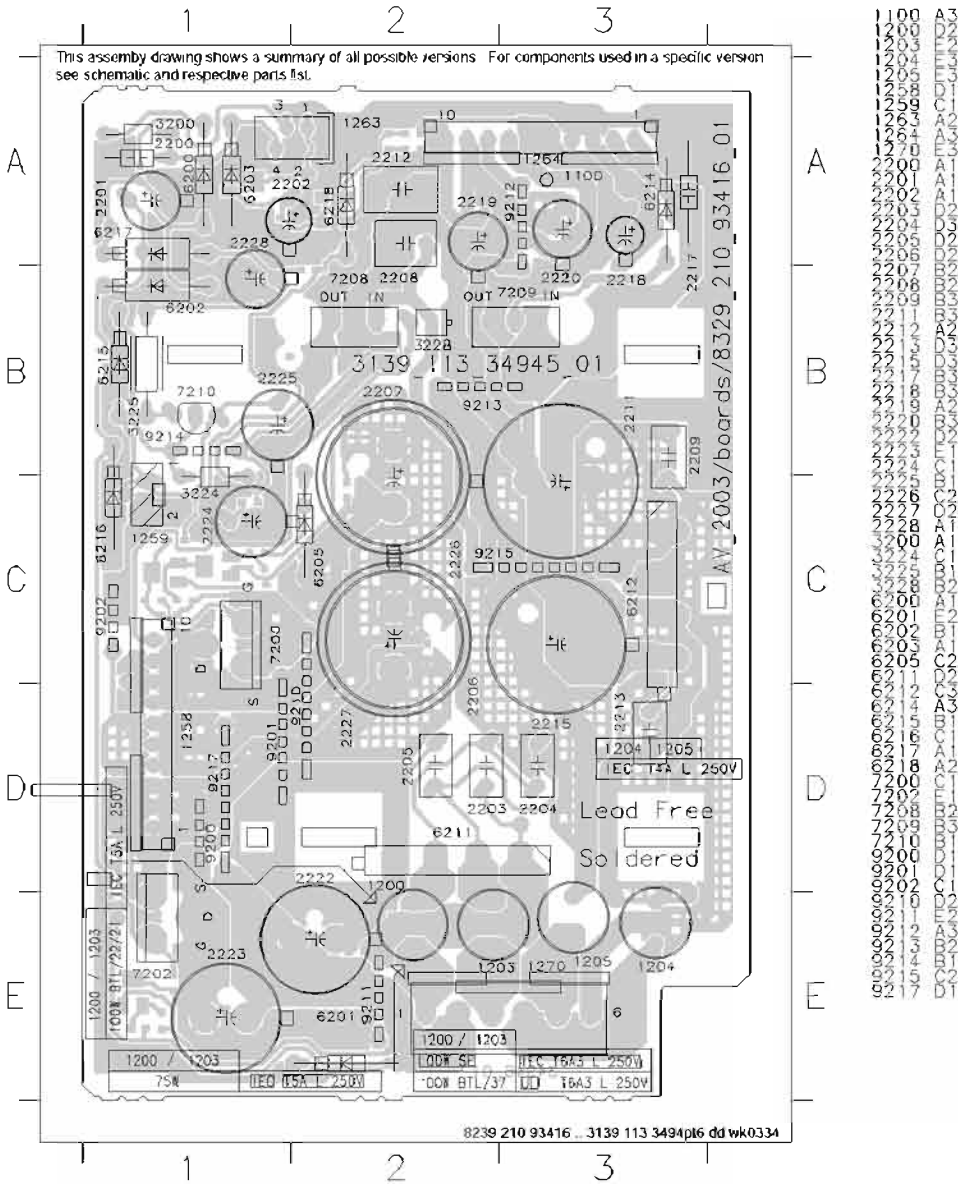
1100 D6	1205 D2	1264 B10	2202 E8	2206 A8	2211 D4	2217 E3	2222 A4	2226 B6	3201 A6	3205 A7	3208 B5	3217 E7	3223 E8	3227 D7	3231 C3	6203 C4	6211 A3	6216 C3	7202 A7	7207 E8	9200 A7
1200 A2	1258 D10	1270 C1	2203 A3	2207 B6	2212 D5	2218 E3	2223 A3	2227 A8	3202 A4	3206 A7	3210 A8	3218 E7	3224 C7	3228 D7	6200 B2	6205 A6	6212 D3	6217 C2	7203 B7	7208 D5	9201 A6
1203 A2	1259 D8	2200 C3	2204 A2	2208 D4	2213 D3	2219 D5	2224 D7	2228 C2	3203 A5	3207 B7	3211 B6	3219 E7	3225 C8	3229 B3	6201 A7	6208 E8	6214 E3	6218 C3	7205 B5	7209 E3	9202 E6
1204 D2	1263 A10	2201 C2	2205 A2	2209 D4	2215 E2	2220 D6	2225 D8	3200 B2	3204 A5	3208 B6	3216 B6	3222 E7	3226 C7	3230 C2	6202 C2	6209 E8	6215 D7	7200 A5	7206 B5	7210 C7	



SUPPLY BOARD - CIRCUIT DIAGRAM (For pcb layout .... 34948)

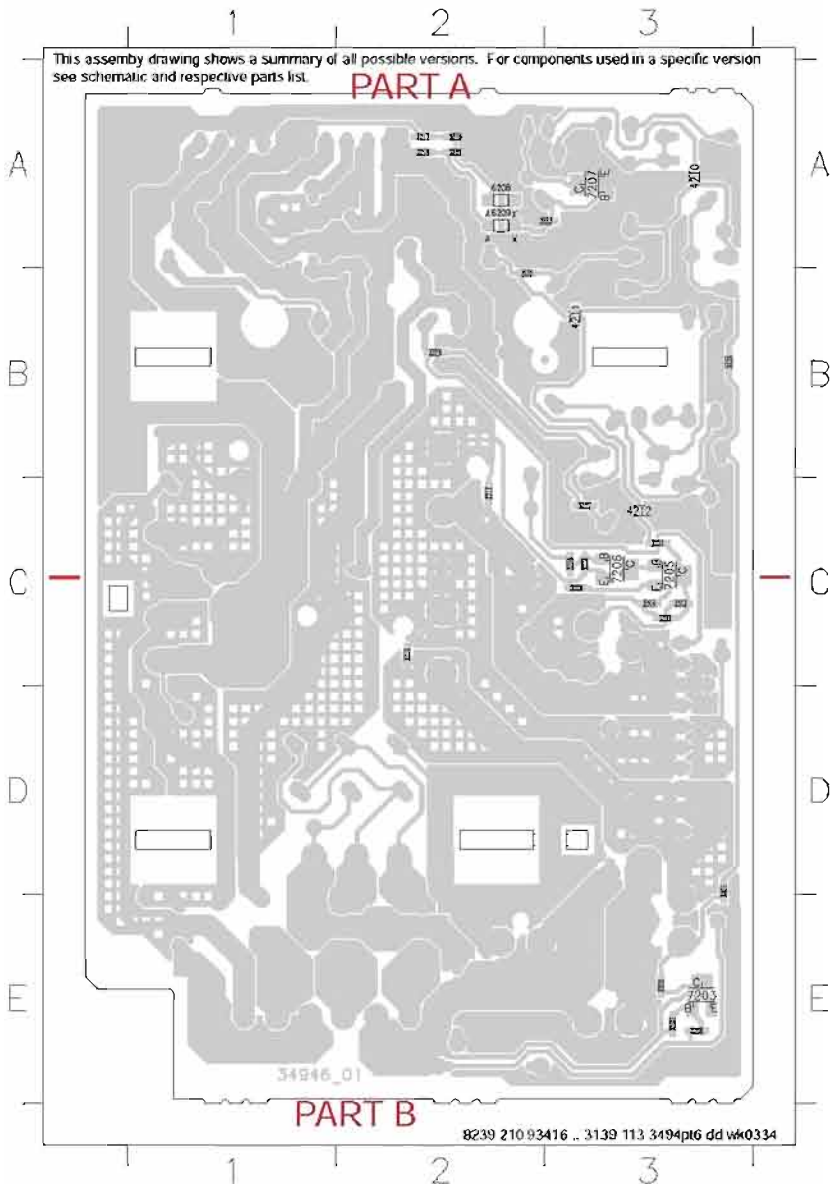


SUPPLY BOARD - COMPONENT LAYOUT



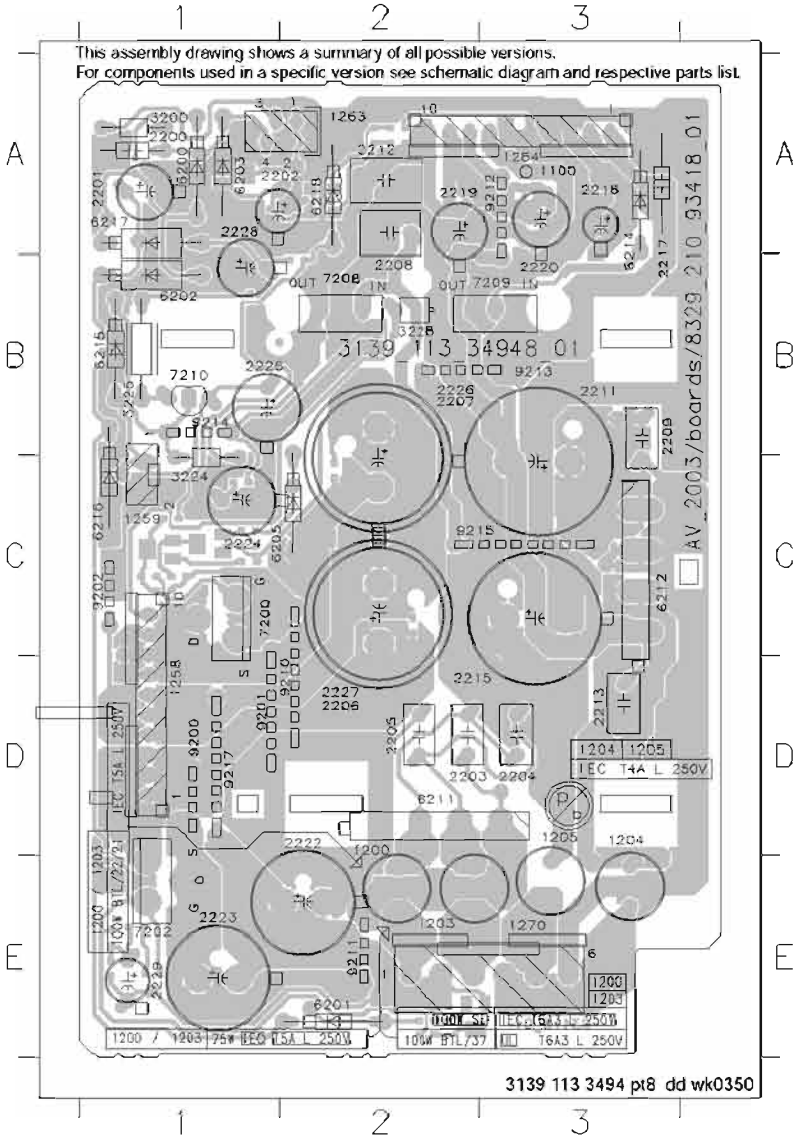
1100 A3
1200 D2
1203 E3
1204 E3
1205 E3
1258 D1
1259 C1
1263 A2
1264 A2
1270 E3
2200 A1
2201 A1
2202 A1
2203 D2
2204 D3
2205 D2
2206 D2
2207 B2
2208 B2
2209 B3
2211 B3
2212 A2
2215 D3
2216 D3
2217 B3
2218 B3
2219 A2
2220 B3
2222 D2
2223 E1
2224 C1
2225 B1
2226 C2
2227 D2
2228 A1
3200 A1
3224 C1
6200 A1
6201 E2
6202 B1
6203 A1
6205 C2
6211 D2
6212 C3
6214 A3
6215 B1
6216 C1
6217 A1
6218 A2
7200 C1
7202 E1
7208 B2
7209 B3
7210 B1
9200 D1
9201 D1
9202 C1
9210 D2
9211 E2
9212 A3
9213 B2
9214 B1
9215 C2
9217 D1

SUPPLY BOARD - CHIP LAYOUT



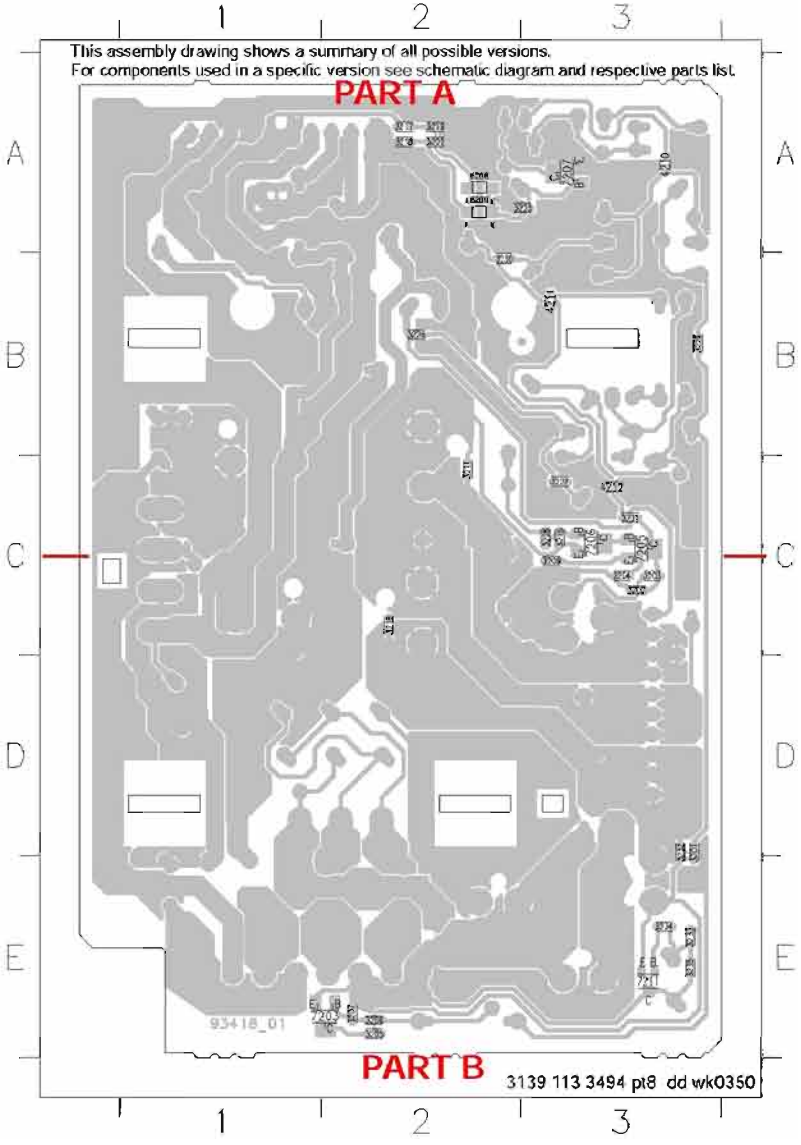
3201 D3
3202 C3
3203 C3
3204 C3
3205 C3
3206 C3
3207 C3
3208 C3
3209 C3
3210 C3
3211 C3
3216 C3
3217 A3
3218 A3
3219 A2
3220 A2
3221 A3
3222 A3
3223 A3
3224 A3
3225 A3
3226 A3
3227 A3
3228 A3
3229 A3
3230 A3
3231 A3
4210 C3
4211 C3
4212 C3
6208 A3
6209 A3
7203 C3
7205 C3
7206 C3
7207 A3

SUPPLY BOARD - COMPONENT LAYOUT (For pcb layout ....34948)



1100 A3
1200 D2
1203 E2
1204 D3
1205 D3
1258 D1
1259 C1
1263 A2
1264 A3
1270 E3
2200 A1
2201 A1
2202 A1
2203 D2
2204 D3
2205 D2
2206 D2
2207 B2
2208 B2
2209 B3
2211 B3
2212 A2
2213 D3
2215 D2
2217 B3
2218 A3
2219 A2
2220 B3
2222 D2
2223 E1
2224 C1
2225 B1
2226 B2
2227 D2
2228 A1
2229 E1
3200 A1
3224 C1
3225 B1
3228 B2
6200 A1
6201 E2
6202 B1
6203 A1
6205 C1
6211 D2
6212 C3
6214 A3
6215 B1
6216 C1
6217 A1
6218 A2
7200 C1
7202 E1
7208 B2
7209 B3
7210 B1
9200 D1
9201 D1
9202 C1
9210 D2
9211 E2
9212 A3
9213 B3
9214 B1
9215 C2
9217 D1

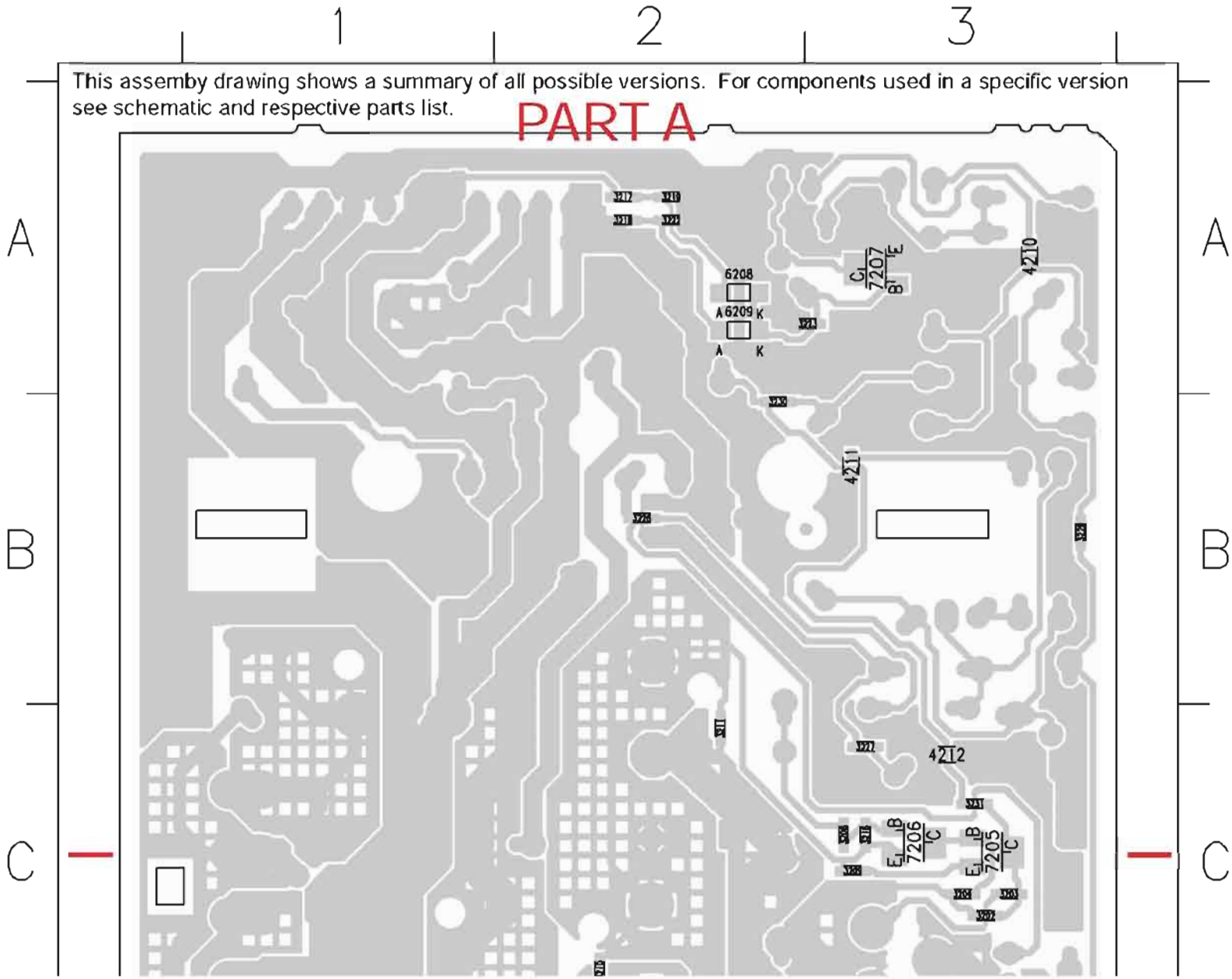
SUPPLY BOARD - CHIP LAYOUT (For pcb layout ....34948)



3201 D3
3202 C3
3203 C3
3204 C3
3205 E2
3206 E2
3207 E2
3208 C3
3209 C3
3210 C2
3211 C2
3216 C3
3217 A2
3218 A2
3219 A2
3222 A2
3223 A3
3226 B2
3227 C3
3229 B3
3230 B2
3231 C3
3232 D3
3233 E3
3234 E3
3235 E3
4210 A3
4211 B3
4212 C3
6208 A2
6209 A2
7203 E2
7205 C3
7206 C3
7207 A3
7211 E3

8-12

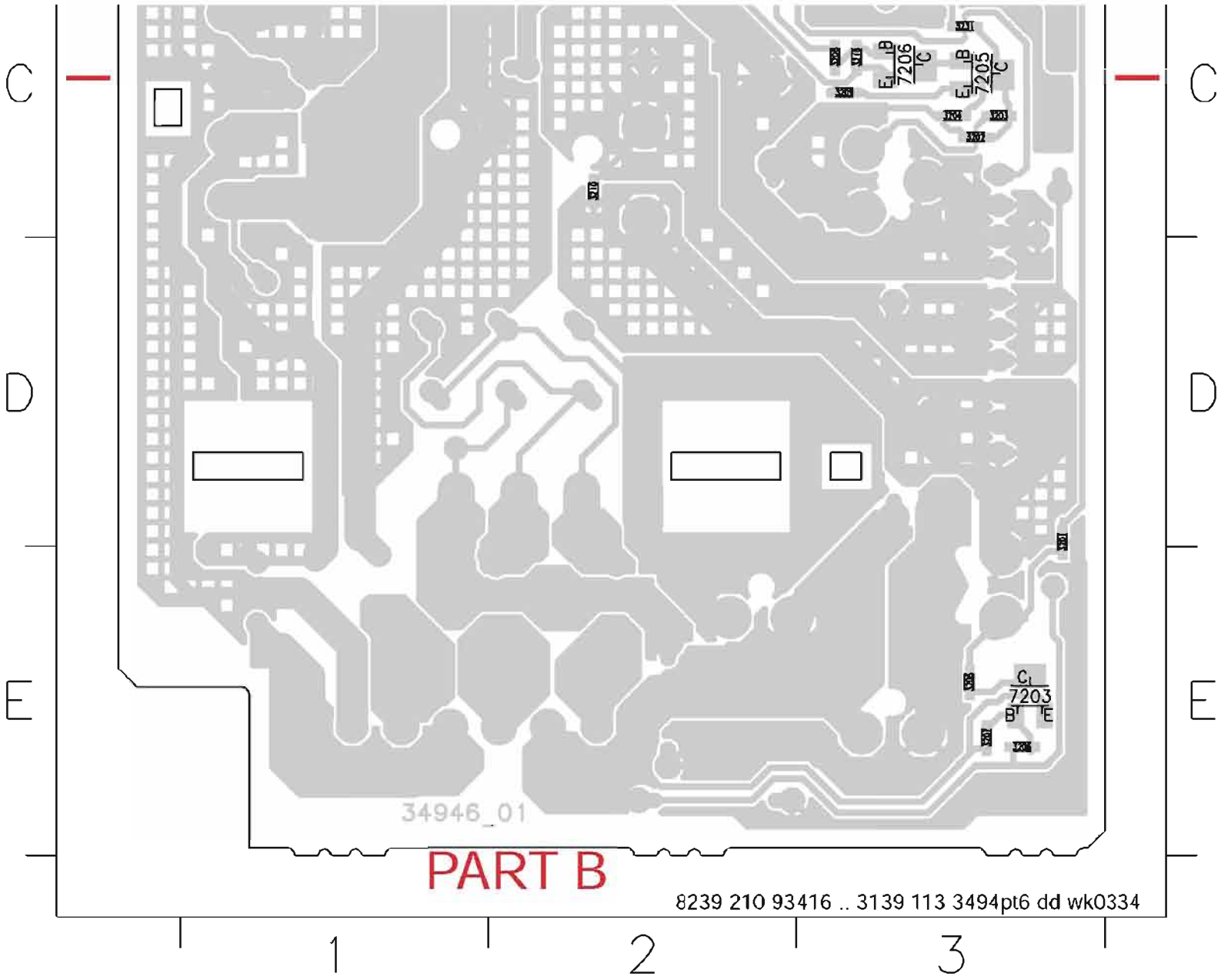
SUPPLY BOARD - CHIP LAYOUT PART A



3201	D3
3202	C3
3203	C3
3204	C3
3205	E3
3206	E3
3207	E3
3208	C3
3209	C3
3210	C2
3211	C2
3216	C3
3217	A2
3218	A2
3219	A2
3222	A2
3223	A3
3226	B2
3227	C3
3229	B3
3230	B2
3231	C3
4210	A3
4211	B3
4212	C3
6208	A2
6209	A2
7203	E3
7205	C3
7206	C3
7207	A3

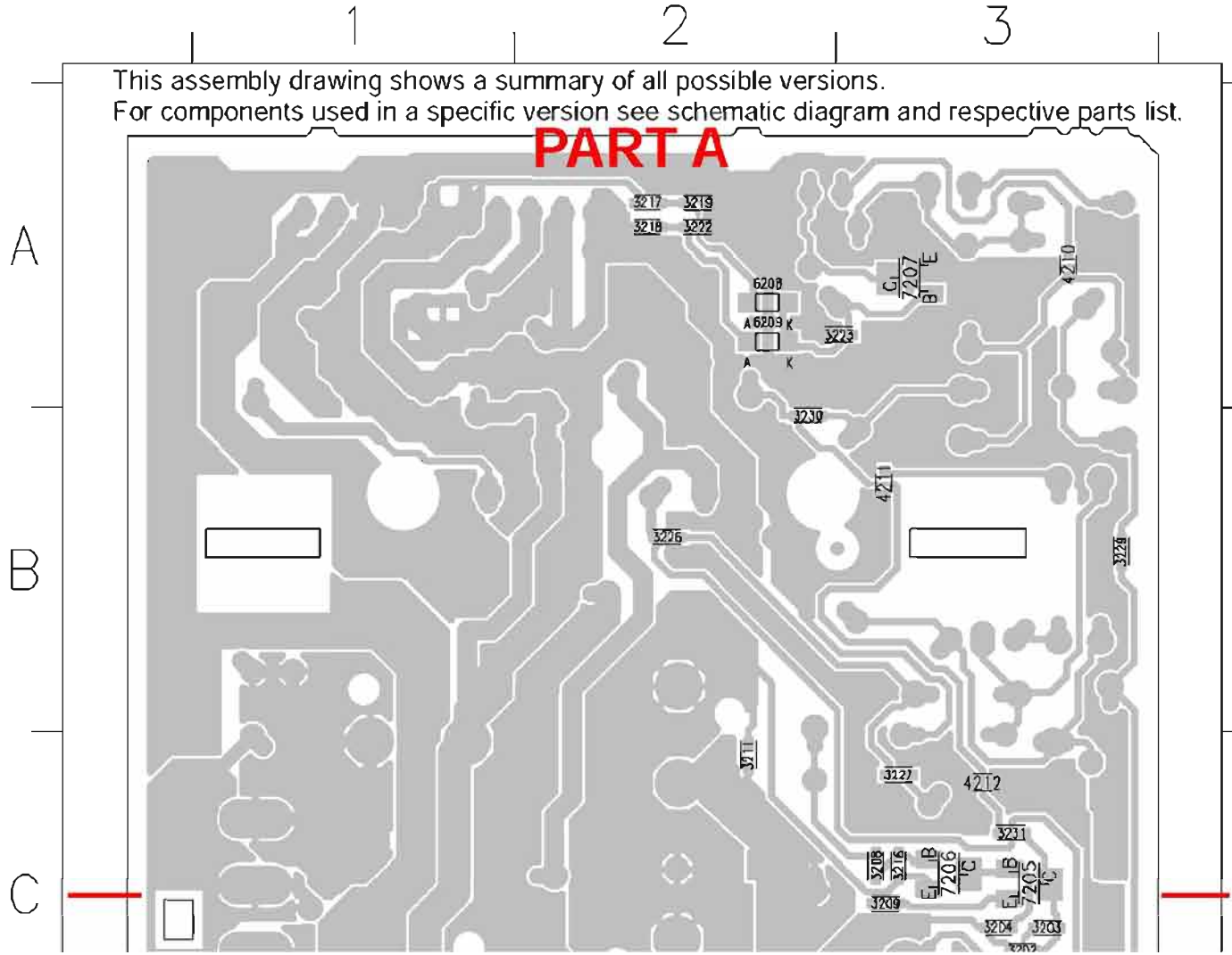
8-13

SUPPLY BOARD - CHIP LAYOUT PART B



8-12a

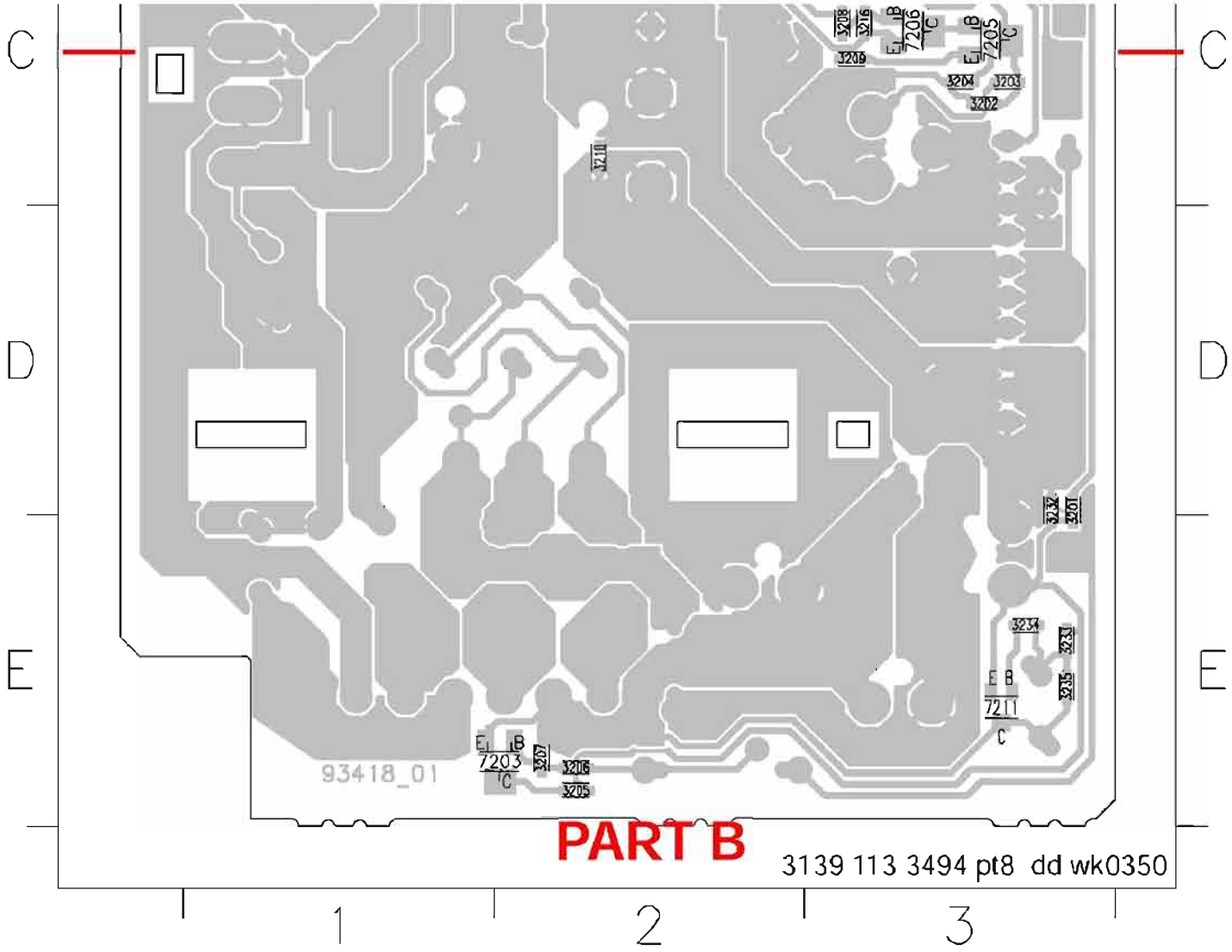
SUPPLY BOARD - CHIP LAYOUT PART A (For pcb layout ....34948)



3201	D3
3202	C3
3203	C3
3204	C3
3205	E2
3206	E2
3207	E2
3208	C3
3209	C3
3210	C2
3211	C2
3216	C3
3217	A2
3218	A2
3219	A2
3222	A2
3223	A3
3226	B2
3227	C3
3229	B3
3230	B2
3231	C3
3232	D3
3233	E3
3234	E3
3235	E3
4210	A3
4211	B3
4212	C3
6208	A2
6209	A2
7203	E2

8-13a

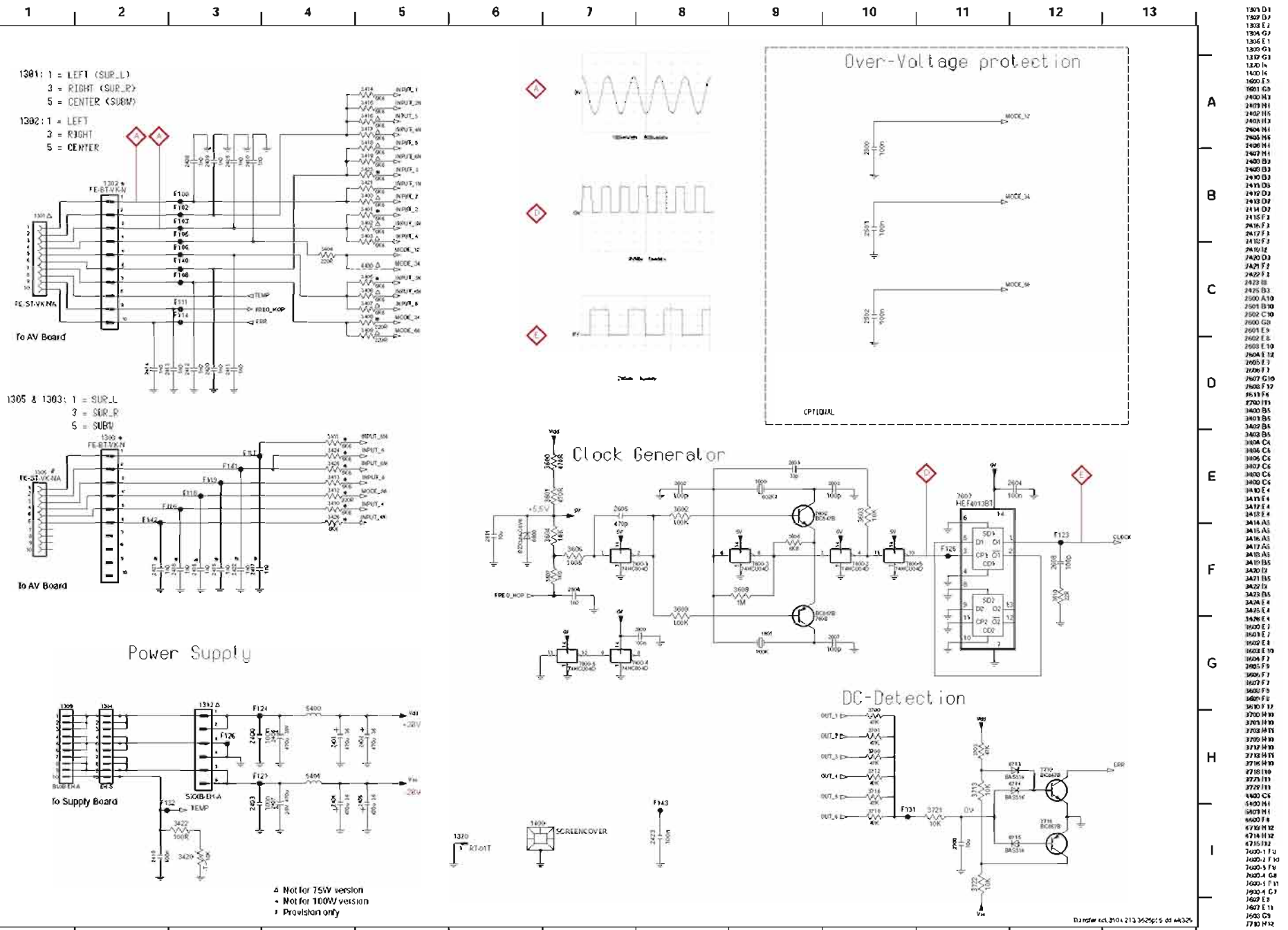
SUPPLY BOARD - CHIP LAYOUT PART B (For pcb layout ....34948)



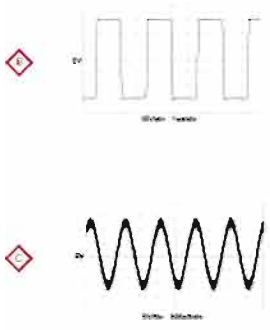
6208 A2
6209 A2
7203 E2
7205 C3
7206 C3
7207 A3
7211 E3

8-14

AMPLIFIER BOARD - CLOCK GENERATOR & CONNECTION CIRCUIT



AMPLIFIER BOARD - AMPLIFIER CIRCUIT



8-15

Amplifier 1

Amplifier 2

Amplifier 3

LEFT

LEFT(SUR_L)

RIGHT

CENTER

RIGHT(SUR_R)

SUBW

SUR_L

CENTER(SUBW)

SUR_R

INP. STAGE

PWM MOD

CTRL & HAND-SHAKE

DRIVER HIGH

DRIVER LOW

MANAGER

TEMP SENSOR CURRENT PROT

MUTE

OSC

MODE

STABI

VSSP1

VDDP2

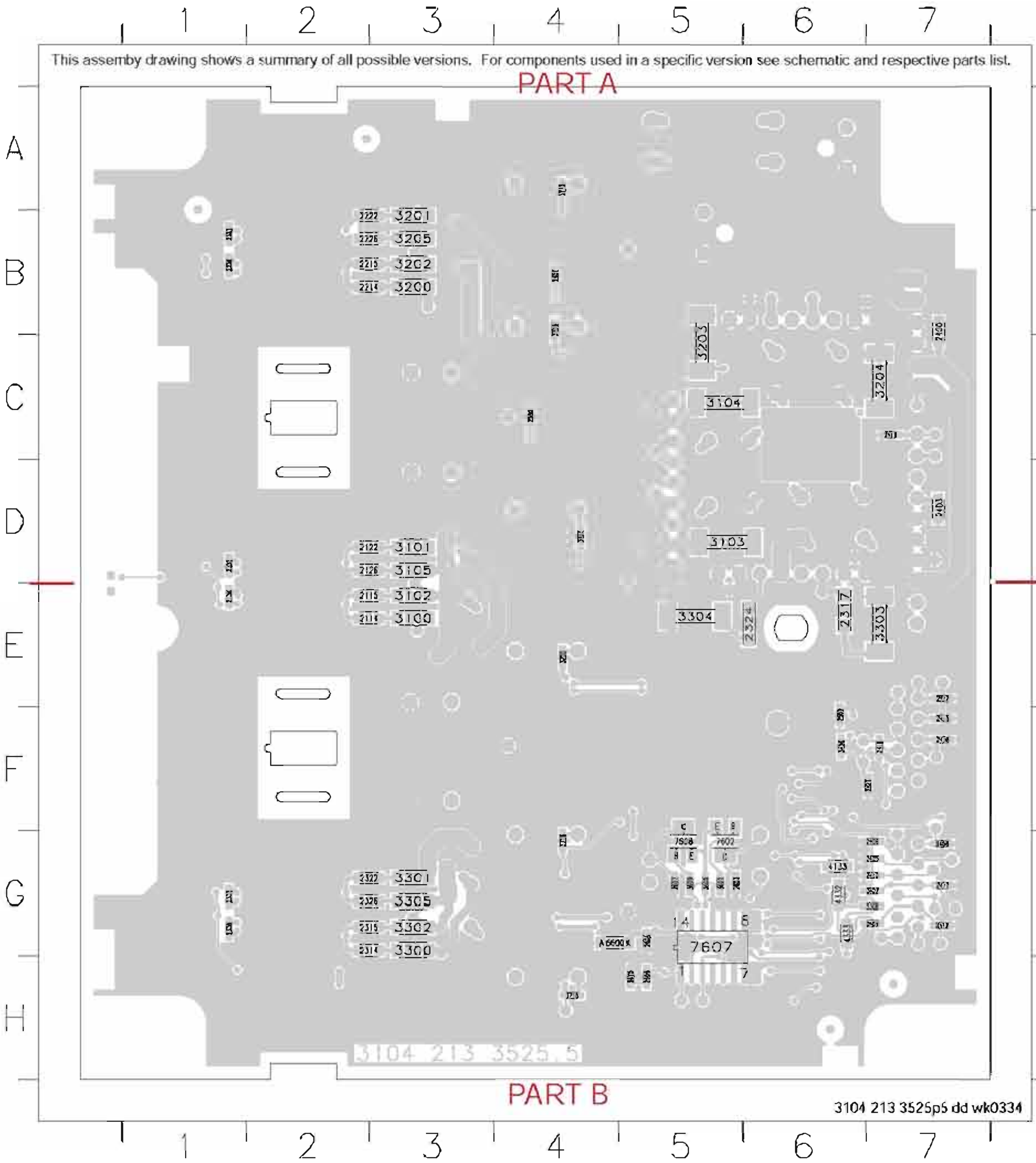
Δ Not for 75W version

◆ Not for 100W version

* Provision only

8-16

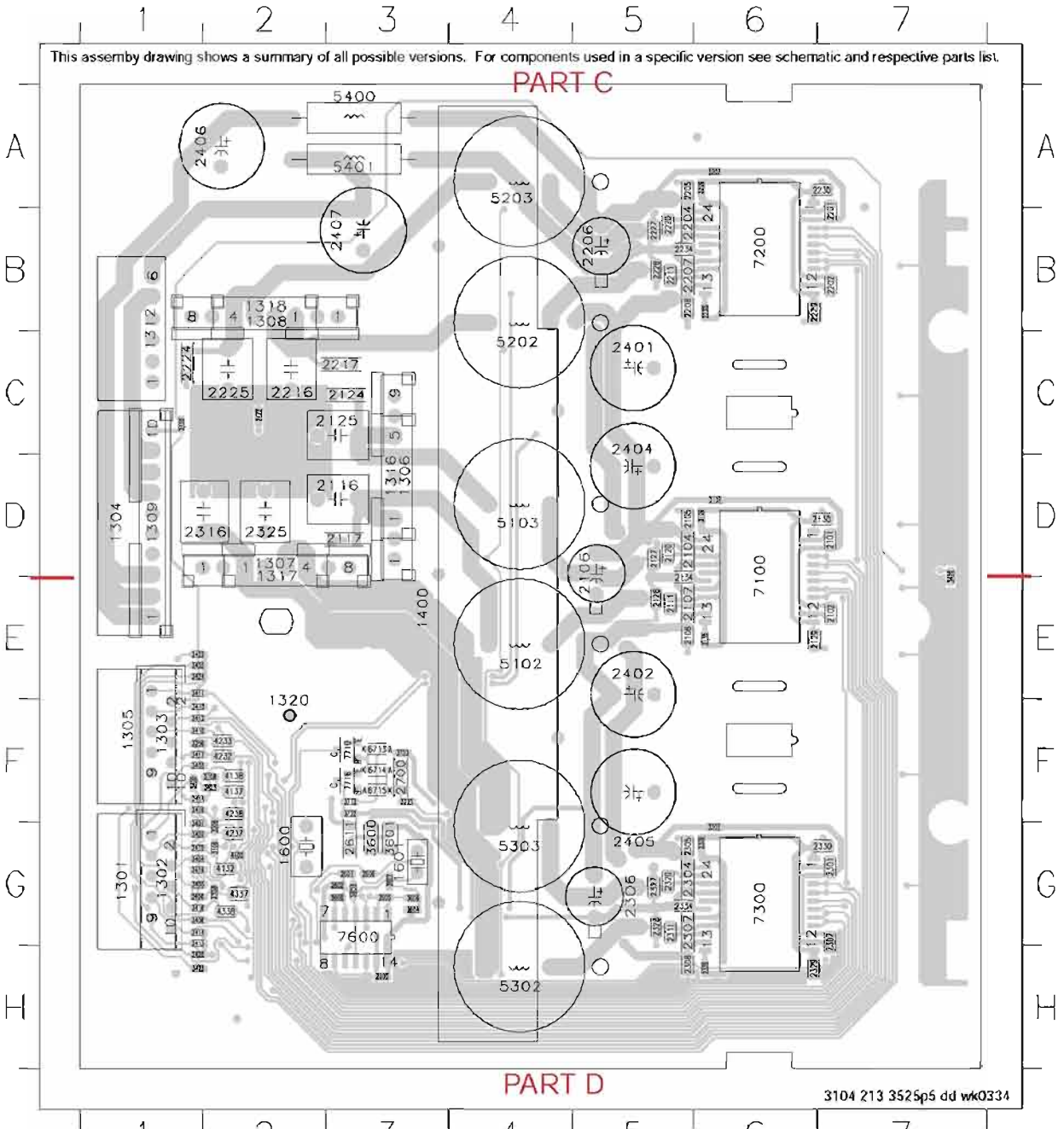
AMPLIFIER BOARD - BOTTOM VIEW



2114	E2	4332	C6
2115	E2	4333	C6
2122	D2	6600	G4
2126	D2	7602	G5
2131	D1	7607	G5
2136	E1	7608	G5
2214	B2	F100	F7
2215	B2	F102	G7
2222	B2	F103	G7
2226	B2	F104	E5
2231	B1	F105	G7
2236	B1	F106	G7
2314	G2	F108	G7
2315	G2	F109	D5
2317	E6	F111	G7
2322	G2	F112	C5
2324	E6	F114	G7
2326	G2	F116	F7
2331	G1	F117	E7
2336	G1	F118	F6
2400	B7	F119	E7
2403	D7	F120	B6
2408	G7	F121	B6
2409	G7	F122	B6
2410	G7	F123	H5
2411	G7	F124	C7
2412	G7	F125	H5
2415	F7	F126	D7
2416	F7	F127	C7
2417	E7	F128	D6
2418	F7	F129	E6
2419	C7	F130	D6
2421	F7	F131	H4
2425	G7	F132	C7
2500	C4	F133	B7
2501	B4	F134	C5
2502	F6	F135	E5
2603	G5	F139	D5
2604	G5	F140	G7
2607	G5	F141	E7
2608	H5	F142	F6
3100	E3	F143	C6
3101	D3		
3102	E3		
3103	D5		
3104	C5		
3105	D3		
3200	B3		
3201	B3		
3202	B3		
3203	C5		
3204	C7		
3205	B3		
3300	G3		
3301	G3		
3302	G3		
3303	E7		
3304	E5		
3305	G3		
3306	G7		
3407	G7		
3409	G7		
3426	F6		
3602	G5		
3605	G5		
3609	G5		
3610	H5		
3700	E4		
3701	D4		
3709	B4		
3712	A4		
3716	H4		
3718	G4		
4133	G6		

8-17

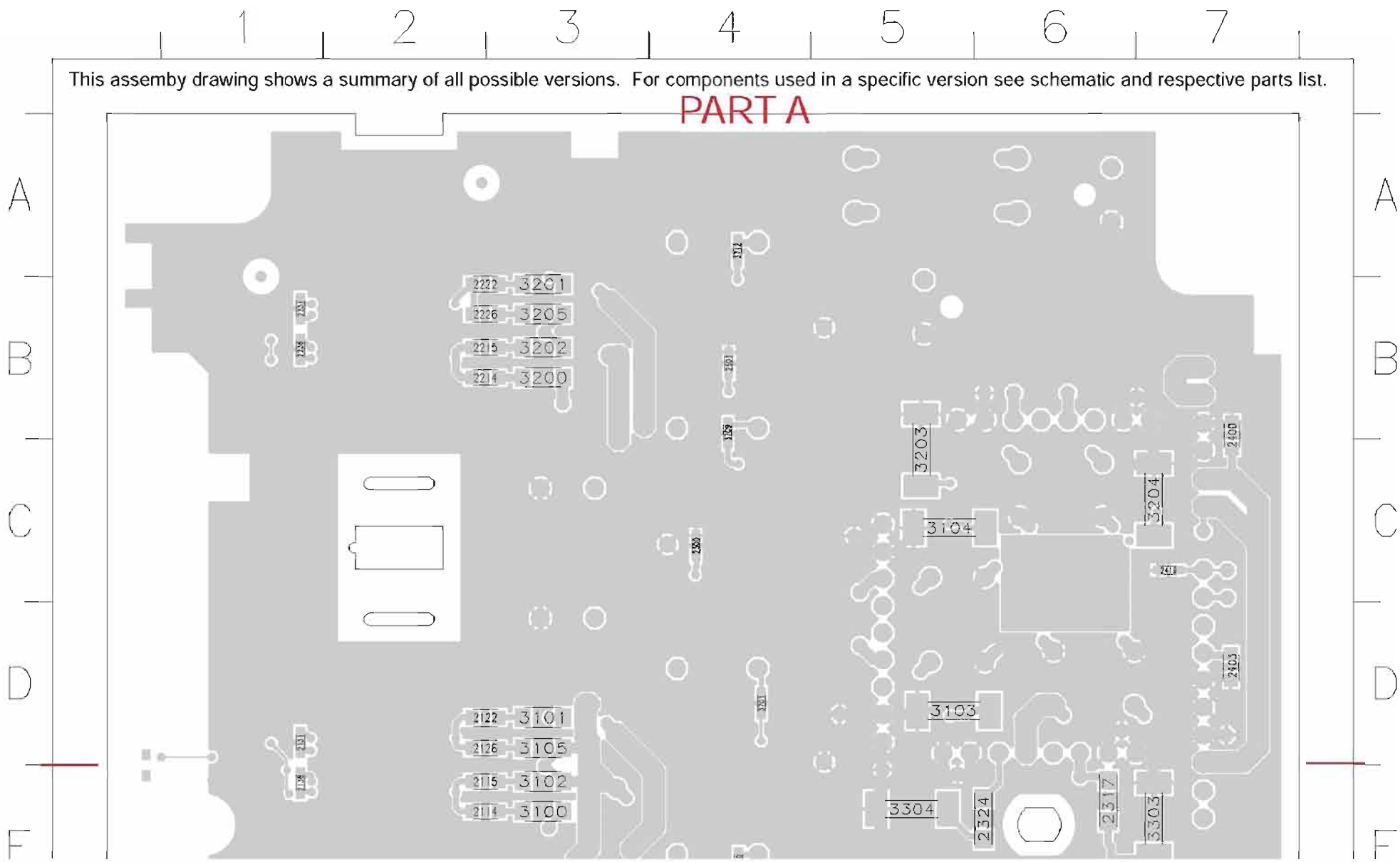
AMPLIFIER BOARD - TOP VIEW



1301	G1	2404	D5	5202	B4
1302	G1	2405	F5	5203	A4
1303	F1	2406	A2	5302	H4
1304	D1	2407	B3	5303	G4
1305	F1	2413	G1	5400	A3
1306	D3	2414	G1	5401	A3
1307	D2	2420	H1	6713	F3
1308	B2	2422	E1	6714	F3
1309	D1	2423	C2	6715	F3
1312	B1	2600	G3	7100	D6
1316	D3	2601	G3	7200	B6
1317	D2	2602	G3	7300	G6
1318	B2	2605	G3	7600	G3
1320	F2	2606	G3	7710	F3
1400	D4	2611	G3	7716	F3
1600	G2	2700	F3		
1601	G3	3106	G2		
2101	D7	3107	D6		
2102	E7	3108	F2		
2104	D5	3109	D6		
2105	D5	3206	F1		
2106	D5	3207	A6		
2107	E5	3208	G2		
2108	E5	3209	A6		
2111	E5	3307	G6		
2116	D3	3308	G2		
2117	D3	3309	G6		
2120	D5	3400	F1		
2124	C3	3401	G1		
2125	C3	3402	G1		
2127	D5	3403	F1		
2128	E5	3404	G1		
2129	E6	3405	G1		
2130	D7	3406	G1		
2134	E5	3408	G1		
2135	E6	3410	F1		
2201	B7	3411	F1		
2202	B7	3412	F1		
2204	B5	3413	F1		
2205	A5	3414	F1		
2206	B5	3415	G1		
2207	B5	3416	F1		
2208	B5	3417	F1		
2211	B5	3418	G1		
2216	C2	3419	G1		
2217	C3	3420	D7		
2220	B5	3421	F2		
2224	C1	3422	C1		
2225	C2	3423	H1		
2227	B5	3424	F1		
2228	B5	3425	F1		
2229	B6	3600	G3		
2230	A7	3601	G3		
2234	B5	3603	G3		
2235	B6	3604	G3		
2301	G7	3606	G3		
2302	G7	3607	G3		
2304	G5	3608	G3		
2305	G5	3703	F3		
2306	G5	3713	F3		
2307	G5	3721	F3		
2308	H5	3722	F3		
2311	G5	4132	G2		
2316	D2	4137	G2		
2320	G5	4138	G2		
2325	D2	4232	F2		
2327	G5	4233	F2		
2328	G5	4237	G2		
2329	H6	4238	F2		
2330	G7	4337	G2		
2334	G5	4338	G2		
2335	H6	4400	G2		
2401	E5	5102	E4		
2402	E5	5103	D4		

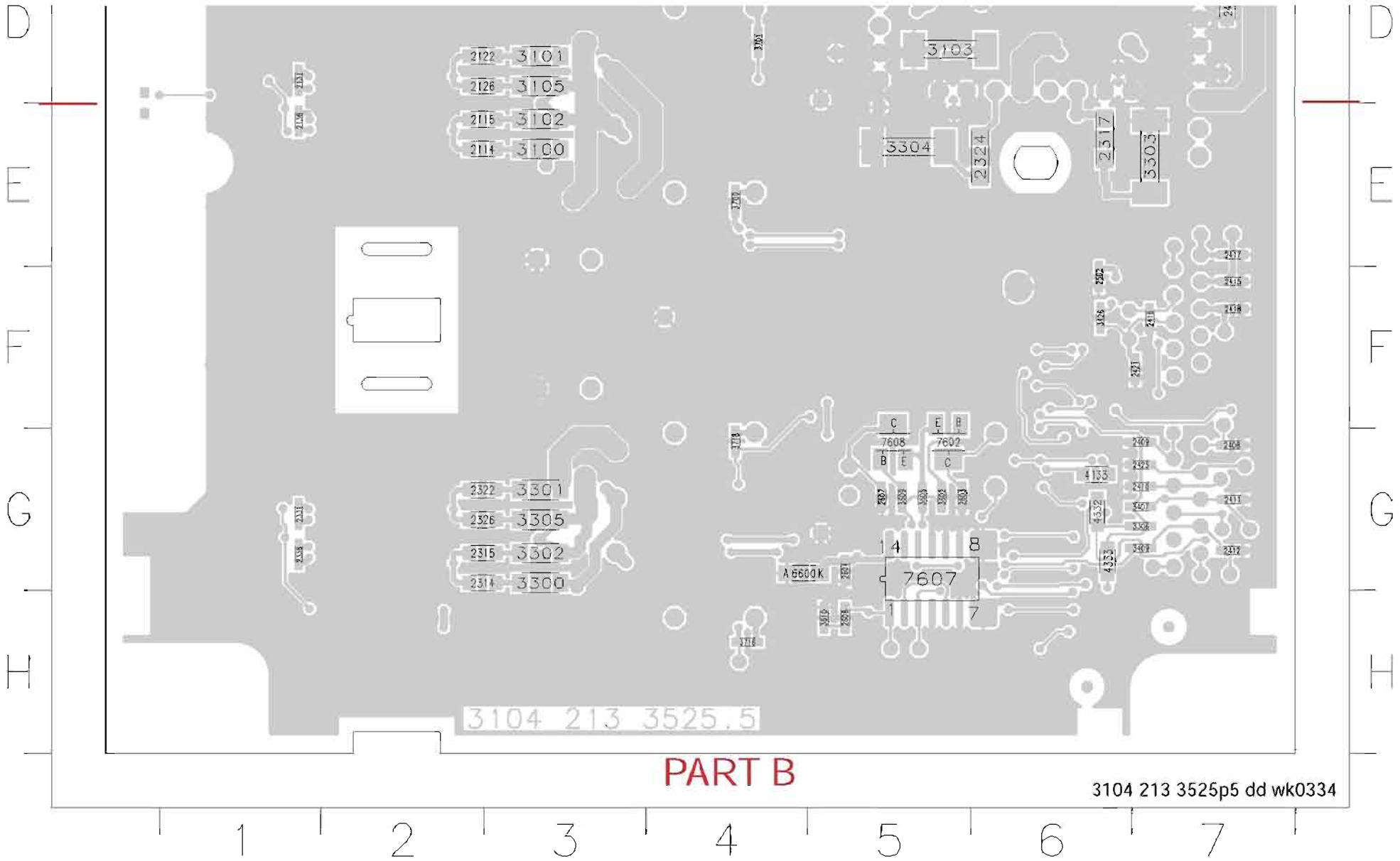
8 18

AMPLIFIER BOARD - BOTTOM VIEW PART A



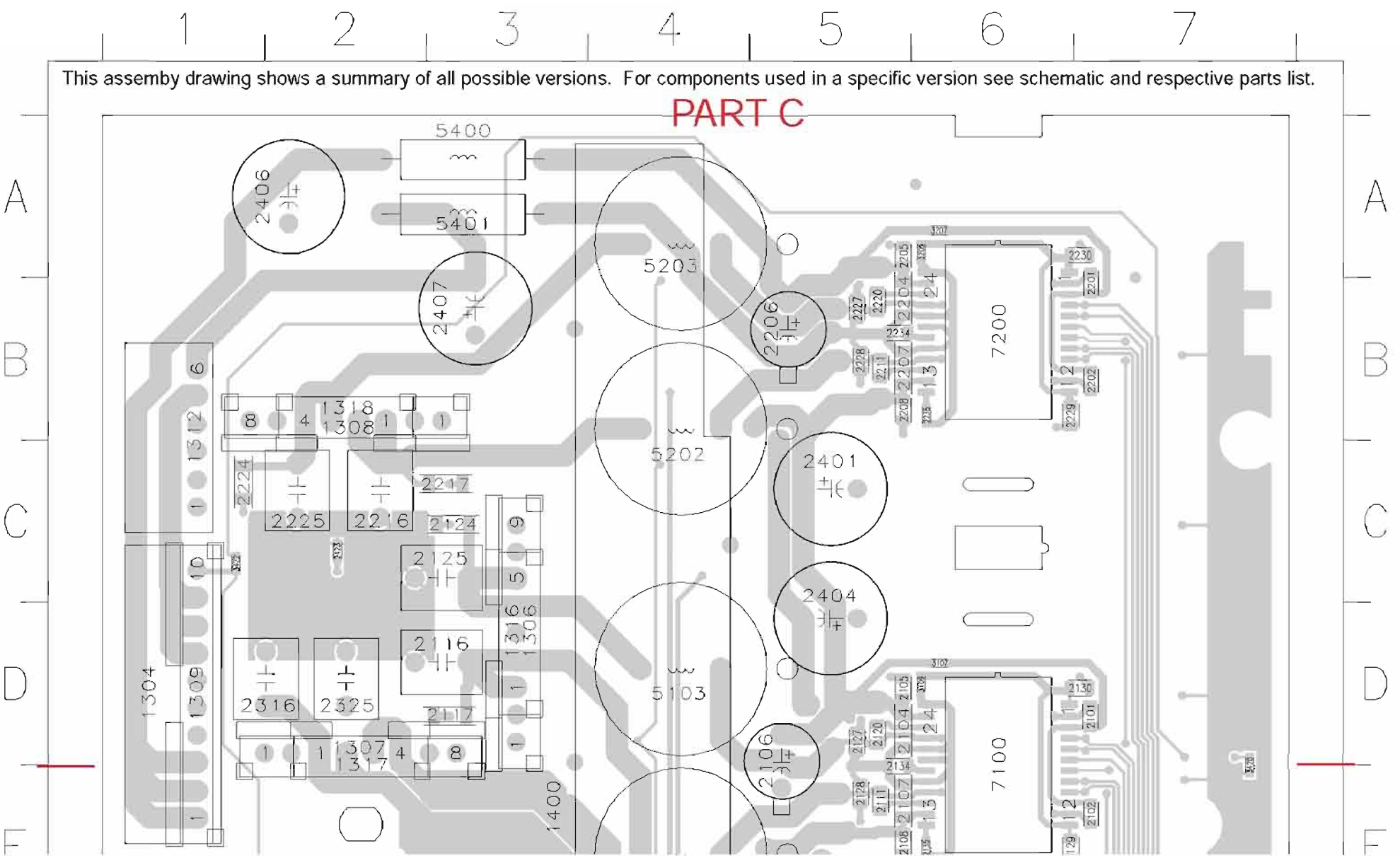
8-19

AMPLIFIER BOARD - BOTTOM VIEW PART B



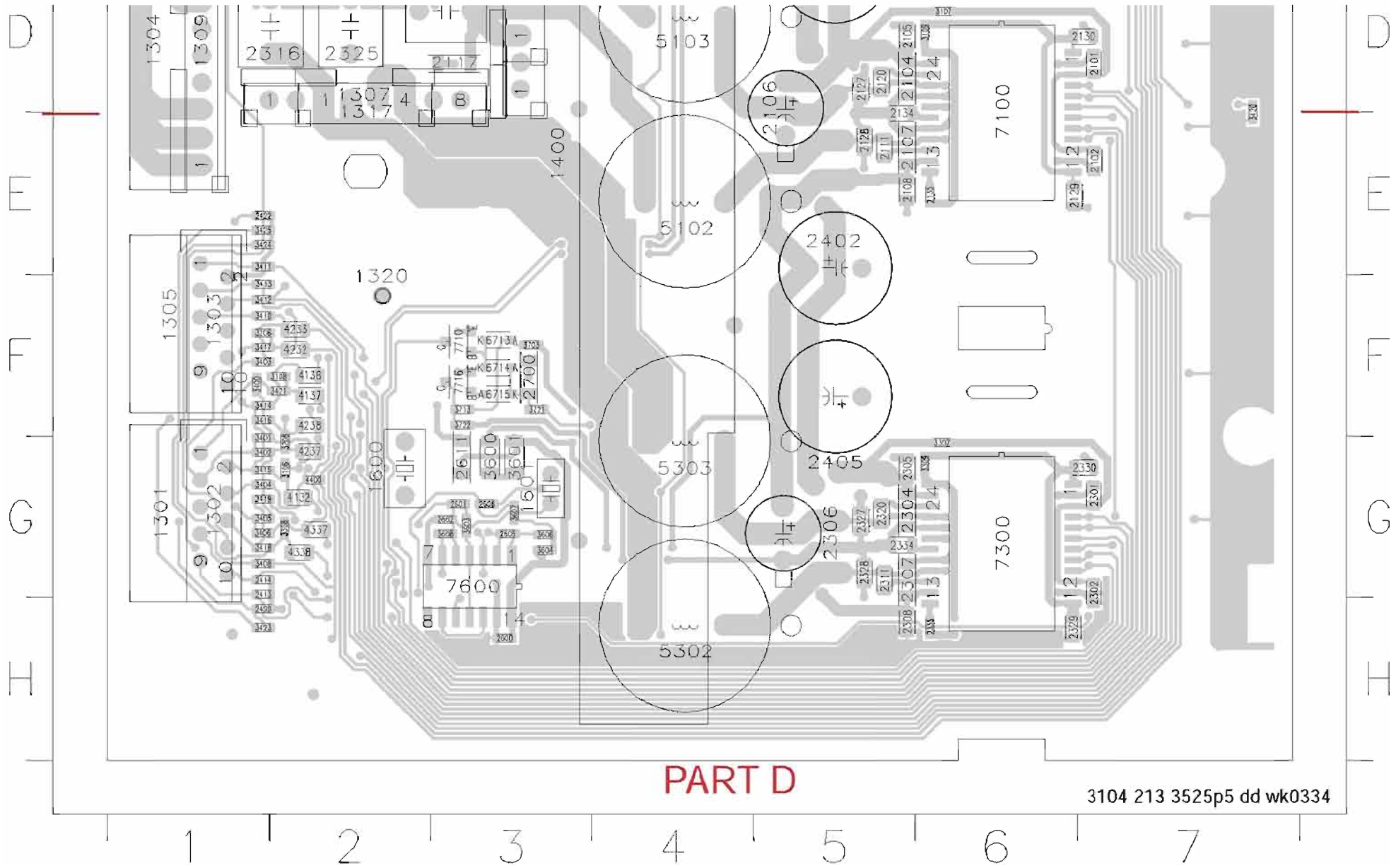
8-20

AMPLIFIER BOARD - TOP VIEW PART C



8-21

AMPLIFIER BOARD - TOP VIEW PART D



ELECTRICAL PARTS LIST - MAINS & ECO STBY, SUPPLY, SPEAKER (SPK I) & SW-OUT (SPK II) BOARDS

MISCELLANEOUS

	4822 492 11735	Spring, Transistor	
1200	4822 071 55002 ⚠	Fuse T5A 250V	
1203	4822 071 55002 ⚠	Fuse T5A 250V	
1204	9965 000 07786 ⚠	Fuse T4A 250V	
1205	9965 000 07786 ⚠	Fuse T4A 250V	
1263	4822 267 10733	Flex Socket 4P Vert.	
1270	2422 025 14044	Connector 6P	
1304	2422 015 19887	Speaker Socket 10P	
1305	2422 015 19886	Speaker Socket 4P	
1901	4822 265 31015 ⚠	Mains Socket 2A5 250V	except /37
1901	2422 030 00328 ⚠	Mains Socket 7A 125V	/37
1905	4822 071 53152 ⚠	Fuse T3,15A 250V	/21R/21S
1905	9965 000 07788 ⚠	Fuse T2A 250V	/22S
1905	4822 252 51121 ⚠	Fuse T3,15A 250V	/37
1907	4822 265 20723	Connector 2P	
1908	4822 267 10958	Flex Socket 5P Hor.	
1909	4822 267 10728	Connector 4P	/21R/21S
1910	2422 132 07519 ⚠	RELAY 1P 12V 16A OZ-SS L	
1911	9965 000 07789 ⚠	Voltage Selector	/21R/21S
1912	9965 000 07788 ⚠	Fuse T2A 250V	/21R/21S

CAPACITORS

2000	5322 126 11583	10nF 10% 50V	
2001	5322 126 11583	10nF 10% 50V	
2002	5322 126 11583	10nF 10% 50V	
2003	5322 126 11583	10nF 10% 50V	
2004	5322 126 11583	10nF 10% 50V	
2005	5322 126 11583	10nF 10% 50V	
2006	5322 126 11583	10nF 10% 50V	
2007	5322 126 11583	10nF 10% 50V	
2008	5322 126 11583	10nF 10% 50V	
2009	5322 126 11583	10nF 10% 50V	
2010	5322 126 11583	10nF 10% 50V	
2011	5322 126 11583	10nF 10% 50V	
2019	5322 126 11583	10nF 10% 50V	
2020	5322 126 11583	10nF 10% 50V	
2021	5322 126 11583	10nF 10% 50V	
2022	5322 126 11583	10nF 10% 50V	
2200	4822 126 12785	47nF 50V	
2201	5322 124 40641	10uF 20% 100V	
2202	4822 124 80231	47uF 20% 16V	
2203	5322 121 42578	100nF 5% 250V	
2204	5322 121 42578	100nF 5% 250V	
2205	5322 121 42578	100nF 5% 250V	
2206	4822 124 80563	4700uF 20% 35V	
2207	4822 124 80563	4700uF 20% 35V	
2208	5322 121 42661	330nF 5% 63V	
2209	5322 121 42578	100nF 5% 250V	
2211	4822 124 80563	4700uF 20% 35V	
2212	5322 121 42386	100nF 5% 63V	
2213	5322 121 42578	100nF 5% 250V	
2215	2020 012 93745	10nF 20% 16V	
2217	2020 561 90365	100nF +80/-20% 50V	
2218	4822 124 11947	10uF 20% 16V	
2219	4822 124 81286	47uF 20% 16V	
2220	4822 124 81286	47uF 20% 16V	
2222	4822 124 12056	1000uF 20% 35V	
2223	4822 124 12056	1000uF 20% 35V	
2224	4822 124 41643	100uF 20% 16V	
2225	4822 124 41643	100uF 20% 16V	
2228	5322 124 40641	10uF 20% 100V	
2901	2238 586 59812	100nF +80/-20% 50V	
2902	4822 121 43526	47nF 5% 250V	
2903	3198 017 34730	47nF 16V	
2904	2238 586 59812	100nF +80/-20% 50V	
2905	5322 126 11583	10nF 10% 50V	
2906	2222 336 19106	22nF 20% 275V	
2907	4822 124 40255	100uF 20% 63V	
2908	4822 121 10512	220nF 20% 275V	/22S
2909	5322 126 11583	10nF 10% 50V	
2910	2238 586 59812	100nF +80/-20% 50V	
2911	4822 124 41584	100uF 20% 10V	
2912	4822 124 40207	100uF 20% 25V	
2913	2222 338 22474	470nF 20% 275V	/21R/21S/37
2914	4822 126 13193	4,7nF 10% 63V	
2915	2020 554 90173 ⚠	2,2nF 20% 250V	
2916	2020 554 90173 ⚠	2,2nF 20% 250V	

RESISTORS

3200	4822 116 52283	4k7 5% 0,5W	
3201	4822 051 30272	2k7 5% 0,062W	
3202	4822 051 30103	10k 5% 0,062W	
3203	4822 051 30103	10k 5% 0,062W	
3204	4822 117 12925	47k 1% 0,063W	
3205	4822 051 30103	10k 5% 0,062W	
3206	4822 051 30681	680R 5% 0,062W	
3207	4822 051 30331	330R 5% 0,062W	
3208	4822 051 30681	680R 5% 0,062W	
3209	4822 051 30472	4k7 5% 0,062W	
3216	4822 051 30331	330R 5% 0,062W	
3217	4822 051 30682	6k8 5% 0,062W	
3218	4822 051 30153	15k 5% 0,062W	
3219	4822 051 30102	1k 5% 0,062W	
3222	4822 051 30102	1k 5% 0,062W	
3223	4822 117 13632	100k 1% 0,62W	
3224	4822 116 83872	220R 5% 0,5W	
3225	4822 052 10828	8R2 5% 0,33W	
3226	4822 051 30471	470R 5% 0,062W	
3227	4822 051 30102	1k 5% 0,062W	
3229	4822 051 30472	4k7 5% 0,062W	
3230	4822 051 30472	4k7 5% 0,062W	
3901	4822 053 21106 ⚠	10M 5% 0,5W	/37
3902	4822 051 30103	10k 5% 0,062W	
3903	4822 051 30475	4M7 5% 0,062W	

8-22

ELECTRICAL PARTS LIST - MAINS & ECO STBY, SUPPLY, SPEAKER (SPK I) & SW-OUT (SPK II) BOARDS

3904	4822 051 30331	330R 5% 0,062W
3905	4822 051 30331	330R 5% 0,062W
3906	4822 117 13632	100k 1% 0,62W
3907	4822 051 30333	33k 5% 0,062W
3908	4822 051 30105	1M 5% 0,062W
3909	4822 051 30471	470R 5% 0,062W
3910	4822 051 30222	2k2 5% 0,062W
3911	4822 117 13632	100k 1% 0,62W
3913	4822 117 12925	47k 1% 0,063W
3914	4822 117 12925	47k 1% 0,063W
3915	4822 053 21106	10M 5% 0,5W
3916	4822 051 30334	330k 5% 0,062W
3917	4822 116 52175	100R 5% 0,5W
3918	4822 116 52175	100R 5% 0,5W
3919	4822 051 30152	1k5 5% 0,062W
3920	4822 051 30472	4k7 5% 0,062W
4210	4822 051 30008	0R Jumper 0603
4211	4822 051 30008	0R Jumper 0603
4212	4822 051 30008	0R Jumper 0603

COILS & FILTERS

5901	4822 157 11832 ⚠	Mains Filter 400uH 3A
5902	4822 157 53473	Coil 1000uH 10%
5903	4822 157 53473	Coil 1000uH 10%
5904	4822 157 11228	Coil 100uH 5%
5905	2422 549 45157	Standby Transformer

DIODES

6200	4822 130 30621	1N4148
6201	3198 010 52790	BZX79 B27
6202	4822 130 31878	1N4003G
6203	4822 130 34382	BZX79 B8V2
6205	3198 010 52790	BZX79-B27
6208	4822 130 11397	BAS316
6209	4822 130 11397	BAS316
6211	4822 130 11139	GBU8D
6212	3198 010 10640	GBU4K
6214	4822 130 30621	1N4148
6215	4822 130 34174	BZX79 B4V7
6216	4822 130 34145	BZX79-B39
6217	4822 130 31878	1N4003G
6218	4822 130 34145	BZX79-B39
6901	4822 130 31878	1N4003G
6902	4822 130 31878	1N4003G
6903	4822 130 11397	BAS316
6904	4822 130 11397	BAS316
6905	4822 130 11397	BAS316
6906	4822 130 31878	1N4003G
6907	4822 130 11397	BAS316
6908	4822 130 30621	1N4148
6909	4822 130 11397	BAS316
6910	4822 130 11397	BAS316
6911	4822 130 11397	BAS316
6912	4822 130 31870	1N4003G
6914	4822 130 11397	BAS316
6915	4822 130 34173	BZX79-C5V6
6916	4822 130 31878	1N4003G
6917	4822 130 34145	BZX79 B39
6918	4822 130 11397	BAS316
6919	4822 130 11397	BAS316
6920	4822 130 11397	BAS316
6921	4822 130 11397	BAS316

TRANSISTORS & INTEGRATED CIRCUITS

7200	9340 561 95127	BUK7535-55A
7202	9340 561 95127	BUK7535-55A
7203	5322 130 60159	BC847B
7205	4822 130 60373	BC857B
7206	4822 130 60373	BC857B
7207	5322 130 60159	BC847B
7208	4822 209 33575	L7812CP
7209	4822 209 12335	L4941
7210	4822 130 41246	BC327 25
7901	4822 130 60373	BC857B
7902	4822 130 40855	BC337-40
7904	4822 130 42615	BC817-40
7905	4822 130 41327	BC327-40
7906	4822 130 42804	BC817-25

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

ELECTRICAL PARTS LIST - AMPLIFIER BOARD

MISCELLANEOUS

8	3104 211 29861	Spring, IC
10	3104 211 02881	Earth Spring
1302	4822 267 10729	Flex Conn. 10P
1303	4822 267 10729	Flex Conn 10P
1600	2422 540 98514	Ceram Resonator 602.7kHz
1601	2422 540 98568	Ceram Resonator 700kHz

CAPACITORS

2101	2222 580 15649	100nF 10% 50V
2102	2222 580 15649	100nF 10% 50V
2104	2222 601 55649	100nF 10% 100V
2105	2222 580 15649	100nF 10% 50V
2106	2020 021 91431	22uF 20% 100V
2107	2222 601 55649	100nF 10% 100V
2108	2222 580 15649	100nF 10% 50V
2111	4822 126 13188	15nF 5% 63V
2114	2238 600 15619	560pF 10% 100V
2115	2238 600 15619	560pF 10% 100V
2116	4822 121 51252	470nF 5% 63V
2117	2222 601 55649	100nF 10% 100V
2120	4822 126 13188	15nF 5% 63V
2122	2238 600 15619	560pF 10% 100V
2124	2222 601 55649	100nF 10% 100V
2125	4822 121 51252	470nF 5% 63V
2126	2238 600 15619	560pF 10% 100V
2127	2222 580 15649	100nF 10% 50V
2128	2222 580 15649	100nF 10% 50V
2129	2222 580 15649	100nF 10% 50V
2130	2222 580 15649	100nF 10% 50V
2131	4822 126 14241	330pF 50V
2134	2238 780 55654	220nF 10% 16V
2135	4822 126 13956	68pF 5% 63V
2136	4822 126 14241	330pF 50V
2201	2222 580 15649	100nF 10% 50V
2202	2222 580 15649	100nF 10% 50V
2204	2222 601 55649	100nF 10% 100V
2205	2222 580 15649	100nF 10% 50V
2206	2020 021 91431	22uF 20% 100V
2207	2222 601 55649	100nF 10% 100V
2208	2222 580 15649	100nF 10% 50V
2211	4822 126 13188	15nF 5% 63V
2214	2238 600 15619	560pF 10% 100V
2215	2238 600 15619	560pF 10% 100V
2216	4822 121 51252	470nF 5% 63V
2217	2222 601 55649	100nF 10% 100V
2220	4822 126 13188	15nF 5% 63V
2222	2238 600 15619	560pF 10% 100V
2224	2222 601 55649	100nF 10% 100V
2225	4822 121 51252	470nF 5% 63V
2226	2238 600 15619	560pF 10% 100V
2227	2222 580 15649	100nF 10% 50V
2228	2222 580 15649	100nF 10% 50V
2229	2222 580 15649	100nF 10% 50V
2230	2222 580 15649	100nF 10% 50V
2231	4822 126 14241	330pF 50V
2234	2238 780 55654	220nF 10% 16V
2235	4822 126 13956	68pF 5% 63V
2236	4822 126 14241	330pF 50V
2301	2222 580 15649	100nF 10% 50V
2302	2222 580 15649	100nF 10% 50V
2304	2222 601 55649	100nF 10% 100V
2305	2222 580 15649	100nF 10% 50V
2306	2020 021 91431	22uF 20% 100V
2307	2222 601 55649	100nF 10% 100V
2308	2222 580 15649	100nF 10% 50V
2311	4822 126 13188	15nF 5% 63V
2314	2238 600 15619	560pF 10% 100V
2315	2238 600 15619	560pF 10% 100V
2316	4822 121 51252	470nF 5% 63V
2317	2222 601 55649	100nF 10% 100V
2320	4822 126 13188	15nF 5% 63V
2322	2238 600 15619	560pF 10% 100V
2324	2222 601 55649	100nF 10% 100V
2325	4822 121 51252	470nF 5% 63V
2326	2238 600 15619	560pF 10% 100V
2327	2222 580 15649	100nF 10% 50V
2328	2222 580 15649	100nF 10% 50V
2329	2222 580 15649	100nF 10% 50V
2330	2222 580 15649	100nF 10% 50V
2331	4822 126 14241	330pF 50V
2334	2238 780 55654	220nF 10% 16V
2335	4822 126 13956	68pF 5% 63V
2336	4822 126 14241	330pF 50V
2400	2222 580 15649	100nF 10% 50V
2401	4822 124 80062	470uF 20% 35V
2402	4822 124 80062	470uF 20% 35V
2403	2222 580 15649	100nF 10% 50V
2404	4822 124 80062	470uF 20% 35V
2405	4822 124 80062	470uF 20% 35V
2406	4822 123 14026	470uF 20% 35V
2407	4822 123 14026	470uF 20% 35V
2408	5322 126 11578	1nF 10% 50V
2409	5322 126 11578	1nF 10% 50V
2410	5322 126 11578	1nF 10% 50V
2411	5322 126 11578	1nF 10% 50V
2412	5322 126 11578	1nF 10% 50V
2413	5322 126 11578	1nF 10% 50V
2414	5322 126 11578	1nF 10% 50V
2415	5322 126 11578	1nF 10% 50V
2416	5322 126 11578	1nF 10% 50V
2417	5322 126 11578	1nF 10% 50V
2418	5322 126 11578	1nF 10% 50V
2419	2238 586 59812	100nF 50V
2420	5322 126 11578	1nF 10% 50V
2421	5322 126 11578	1nF 10% 50V
2422	5322 126 11578	1nF 10% 50V
2423	2238 586 59812	100nF 50V
2425	5322 126 11578	1nF 10% 50V
2501	2238 586 59812	100nF 50V
2502	2238 586 59812	100nF 50V
2600	2238 586 59812	100nF 50V
2602	2020 552 94427	100pF 5% 50V
2603	2020 552 94427	100pF 5% 50V
2604	2238 586 59812	100nF 50V
2605	4822 126 13881	470pF 5% 50V
2606	5322 126 11578	1nF 10% 50V
2607	2020 552 94427	100pF 5% 50V
2608	2020 552 94427	100pF 5% 50V
2611	2020 552 96507	10uF +80/-20% 10V
2700	2020 552 96507	10uF +80/-20% 10V

RESISTORS

3100	4822 051 10568	5R6 5% 0,25W
3101	4822 051 10568	5R6 5% 0,25W
3102	4822 051 10568	5R6 5% 0,25W
3103	2322 762 60229	22R 5% PRC221
3104	2322 762 60229	22R 5% PRC221
3105	4822 051 10568	5R6 5% 0,25W
3107	4822 051 30109	10R 5% 0,062W
3109	4822 051 30109	10R 5% 0,062W
3200	4822 051 10568	5R6 5% 0,25W
3201	4822 051 10568	5R6 5% 0,25W
3202	4822 051 10568	5R6 5% 0,25W
3203	2322 762 60229	22R 5% PRC221
3204	2322 762 60229	22R 5% PRC221
3205	4822 051 10568	5R6 5% 0,25W
3207	4822 051 30109	10R 5% 0,062W
3209	4822 051 30109	10R 5% 0,062W
3300	4822 051 10568	5R6 5% 0,25W
3301	4822 051 10568	5R6 5% 0,25W
3302	4822 051 10568	5R6 5% 0,25W
3303	2322 762 60229	22R 5% PRC221
3304	2322 762 60229	22R 5% PRC221
3305	4822 051 10568	5R6 5% 0,25W
3307	4822 051 30109	10R 5% 0,062W
3309	4822 051 30109	10R 5% 0,062W
3401	4822 051 30562	5k6 5% 0,063W
3404	4822 051 30221	220R 5% 0,062W
3405	4822 051 30562	5k6 5% 0,063W
3408	4822 051 30221	220R 5% 0,062W
3410	4822 051 30562	5k6 5% 0,063W
3411	4822 051 30562	5k6 5% 0,063W
3412	4822 051 30221	220R 5% 0,062W
3413	4822 051 30562	5k6 5% 0,063W
3414	4822 051 30562	5k6 5% 0,063W
3415	4822 051 30562	5k6 5% 0,063W
3420	2322 615 23103	NTC 10k 5% 0,125W
3421	4822 051 30562	5k6 5% 0,063W
3422	4822 051 30101	100R 5% 0,062W
3423	4822 051 30562	5k6 5% 0,063W
3424	4822 051 30562	5k6 5% 0,063W
3425	4822 051 30562	5k6 5% 0,063W
3426	4822 051 30562	5k6 5% 0,063W
3600	4822 051 10821	820R 2% 0,25W
3601	4822 051 10821	820R 2% 0,25W
3602	4822 117 13632	100k 1% 0,062W
3604	4822 051 30103	10k 5% 0,062W
3605	4822 051 30682	6k8 5% 0,062W
3606	4822 117 13632	100k 1% 0,062W
3607	4822 051 30102	1k 5% 0,062W
3608	4822 051 30105	1M 5% 0,062W
3609	4822 117 13632	100k 1% 0,062W
3610	4822 117 12139	22R 5% 0,062W
3700	4822 117 12925	47k 1% 0,063W
3701	4822 117 12925	47k 1% 0,063W
3703	4822 117 12925	47k 1% 0,063W
3709	4822 117 12925	47k 1% 0,063W
3712	4822 117 12925	47k 1% 0,063W
3713	4822 051 30103	10k 5% 0,062W
3716	4822 117 12925	47k 1% 0,063W
3718	4822 117 12925	47k 1% 0,063W
3721	4822 051 30103	10k 5% 0,062W
3722	4822 051 30103	10k 5% 0,062W
4132	4822 126 14583	470nF 10% 16V
4133	4822 126 14583	470nF 10% 16V
4137	4822 126 14583	470nF 10% 16V
4138	4822 126 14583	470nF 10% 16V
4232	4822 126 14583	470nF 10% 16V
4233	4822 126 14583	470nF 10% 16V
4237	4822 126 14583	470nF 10% 16V
4238	4822 126 14583	470nF 10% 16V
4332	4822 126 14583	470nF 10% 16V
4333	4822 126 14583	470nF 10% 16V
4337	4822 126 14583	470nF 10% 16V
4338	4822 126 14583	470nF 10% 16V

COILS & FILTERS

5102	2422 536 00496	IND. FXD. 22uH 10%
5103	2422 536 00496	IND. FXD. 22uH 10%
5202	2422 536 00496	IND. FXD. 22uH 10%
5203	2422 536 00496	IND. FXD. 22uH 10%
5302	2422 536 00496	IND. FXD. 22uH 10%
5303	2422 536 00496	IND. FXD. 22uH 10%
5400	4822 157 11411	FXD. IND. BEAD 100MHZ 80R
5401	4822 157 11411	FXD. IND. BEAD 100MHZ 80R

DIODES

6600	3198 020 55680	BZX384-C5V6

8-23

ELECTRICAL PARTS LIST - AMPLIFIER BOARD

8-24

ELECTRICAL PARTS LIST - AMPLIFIER BOARD

DIODES

6713	4822 130 11397	BAS316
6714	4822 130 11397	BAS316
6715	4822 130 11397	BAS316

TRANSISTORS & INTEGRATED CIRCUITS

7100	9352 705 74518	TDA8920TH/N1R
7200	9352 705 74518	TDA8920TH/N1R
7300	9352 705 74518	TDA8920TH/N1R
7600	5322 209 11517	PC74HCU04T
7602	5322 130 60159	BC847B
7607	5322 209 14477	HEF4013BT
7608	4822 130 60373	BC857B
7710	5322 130 60159	BC847B
7716	4822 130 60373	BC857B

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

AV BOARD

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9-1

BRIEF INTRODUCTION OF THE AV BOARD

The AV Board consists of the following features :

a. IC 7130 (TDA7468D)

IC 7130 provides the source selection (TUNER, TV/AV Digital in, DVD/CD & AUX) and basic sound processing - bass, treble, volume & mute controls for the Front L/R loudspeakers.

Note: Although provided for, the AUX source (pin 3 and 26) are never selected & instead and additional IC 7422 (HEF4052BT) is used to include a TV in from the Scart connector socket.

Sound features are controlled by the microprocessor IC on the Front Board via I²C Bus.

Undesirable noise during source switching are muted off via the software of the microprocessor IC on the Front Board.

b. IC 7422 (HEF4052BT)

This IC allows the addition of another TV source via the SCART connector socket. The output MUX_L/MUX_R will go to pin 4 and 25 of IC 7130.

c. Line out mute

Line out mute is done via the transistors 7100, 7132, 7133 and 7150 during Power up/down, Source and sound switching (MUTE-LO, active low) and Disc & Digital in modes (MUTE_AV, active high).

d. Headphone amplifier / pre-amplifier

IC 7230 (NJM4556AM) is used as headphone amplifer and pre-amplification for the Front L/R signal to the Amplifier board. The transistors matrix 7200, 7231, 7232, 7233 and 7250 allows the heaphone out to be muted when inserting the headphone

e. IC 7304 and 7330 (TDA7468D)

IC 7304 and 7330 provides creation of matrix sound (via Line-L/R from IC 7130) during non-DVD source and sound processing bass, treble, volume & mute controls for the Center/Subwoofer and Surround L/R loudspeakers respectively.

Sound features are controlled by the microprocessor IC on the Front Board via I²C Bus.

Undesirable noise during source switching are muted off via the software of the microprocessor IC on the Front Board.

f IC 7352 (74HC4051D)

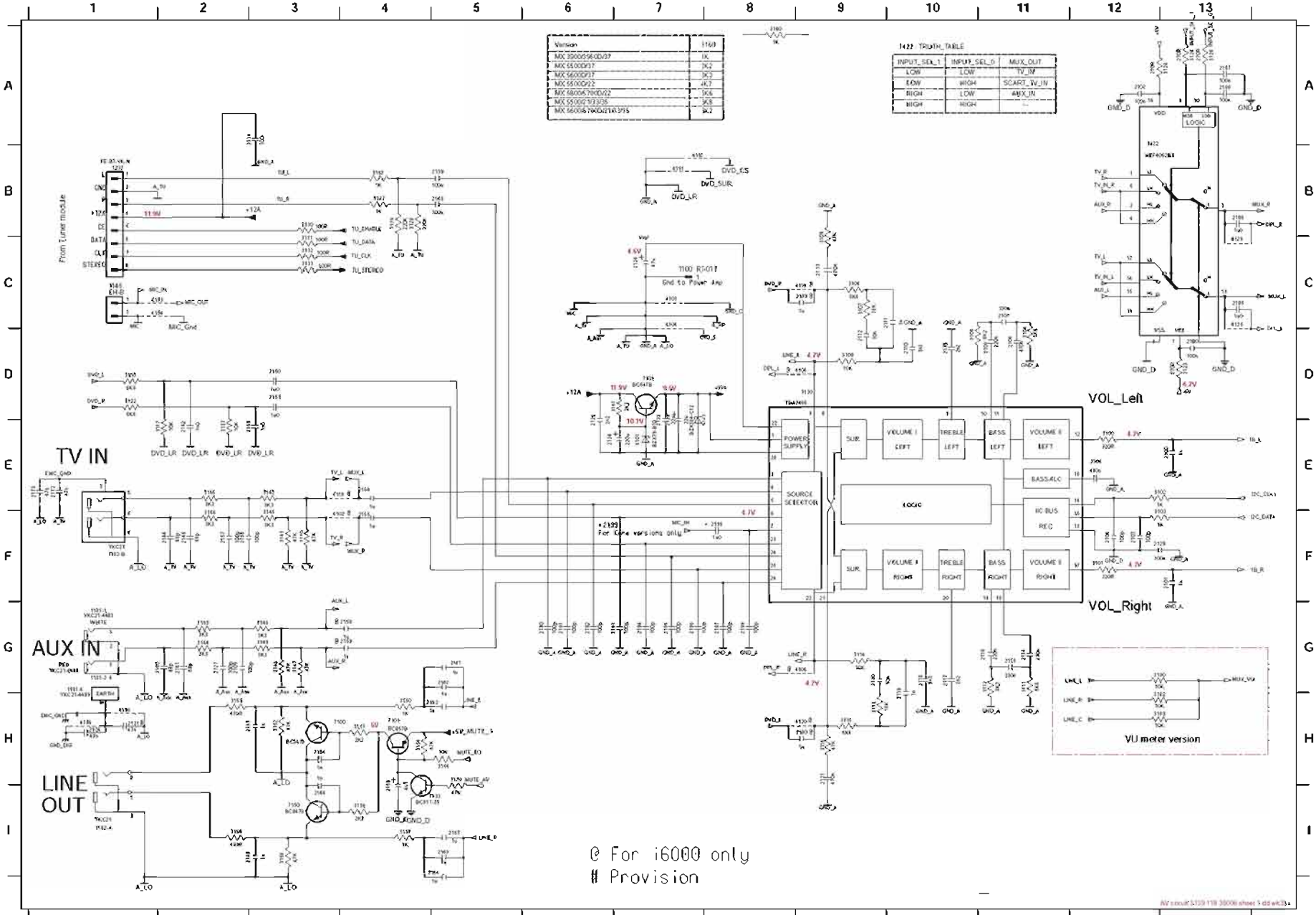
This multiplexer output (MUX_DET) informs the microprocess IC on the Front Board on the type of connection & condition the set is in

g. IC 7402 (M62320FP)

The IC serves as I²C Expander to provide for additional control lines required.

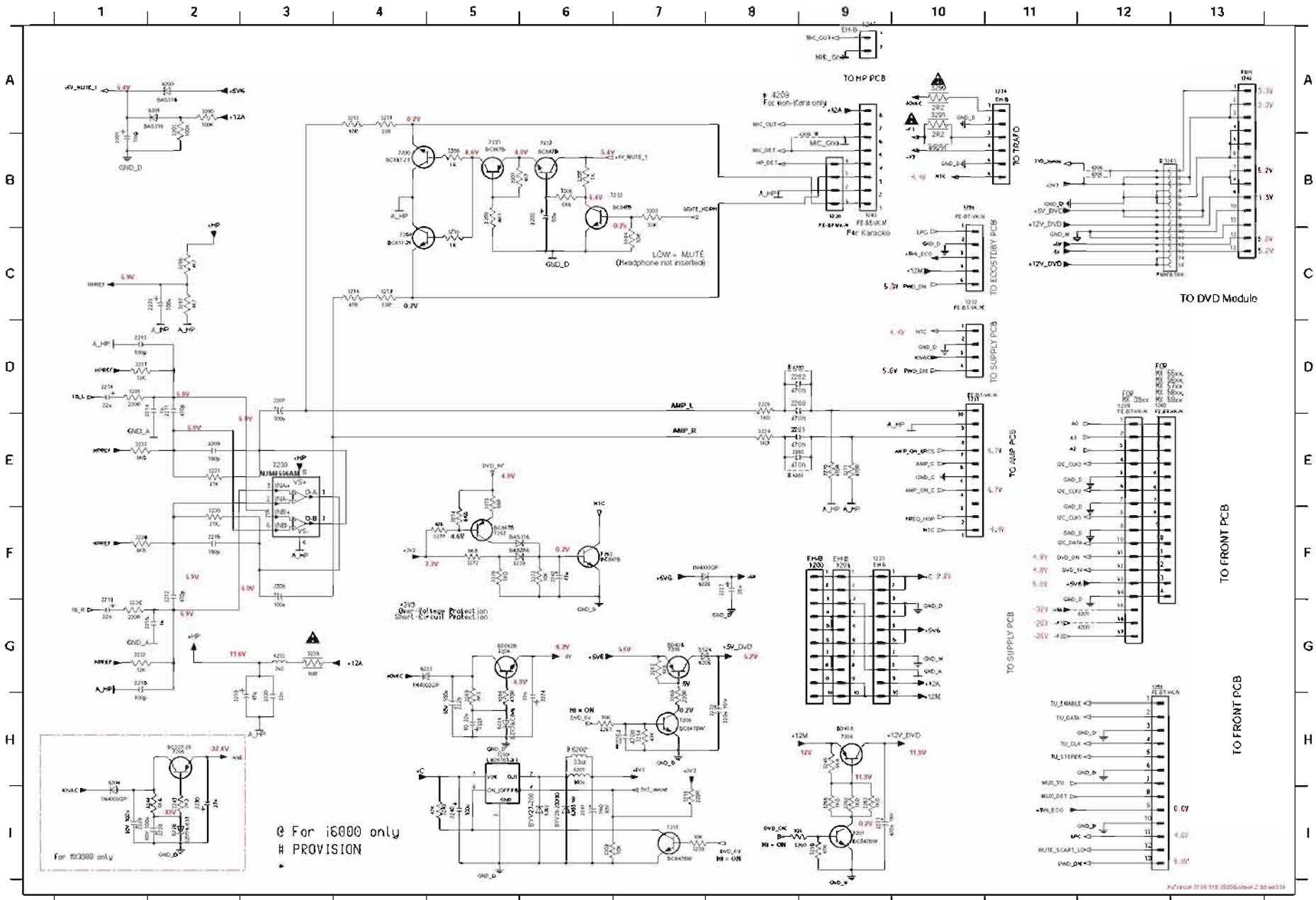
9-2

INPUT, SOURCE SELECT & VOLUME CONTROL L/R CIRCUIT

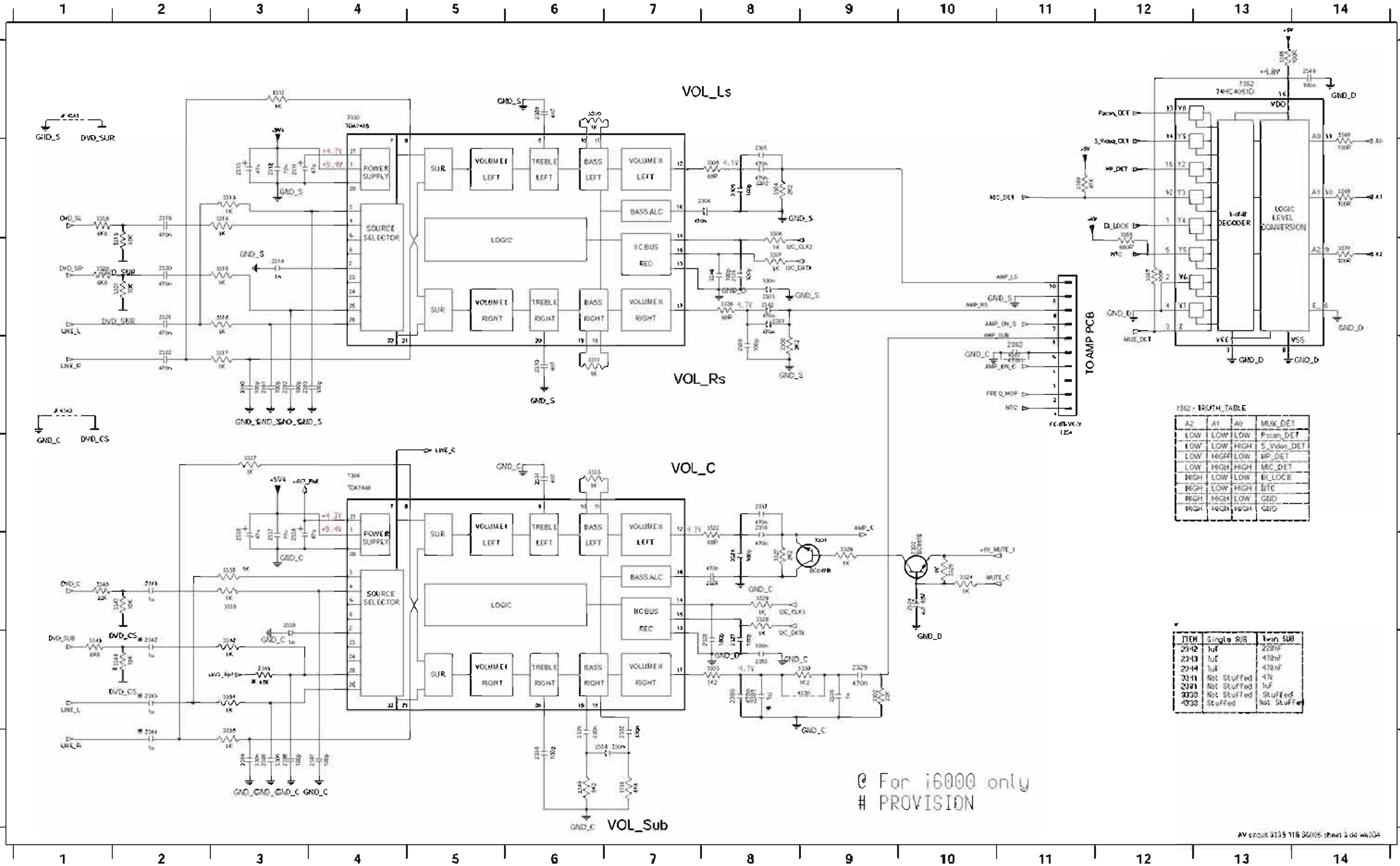


9-3

PRE-AMPLIFIER, SUPPLY & INTERCONNECTION CIRCUIT



VOLUME CONTROL SURR., CENTER & SW AND CONTROL MULTIPLEXER CIRCUIT



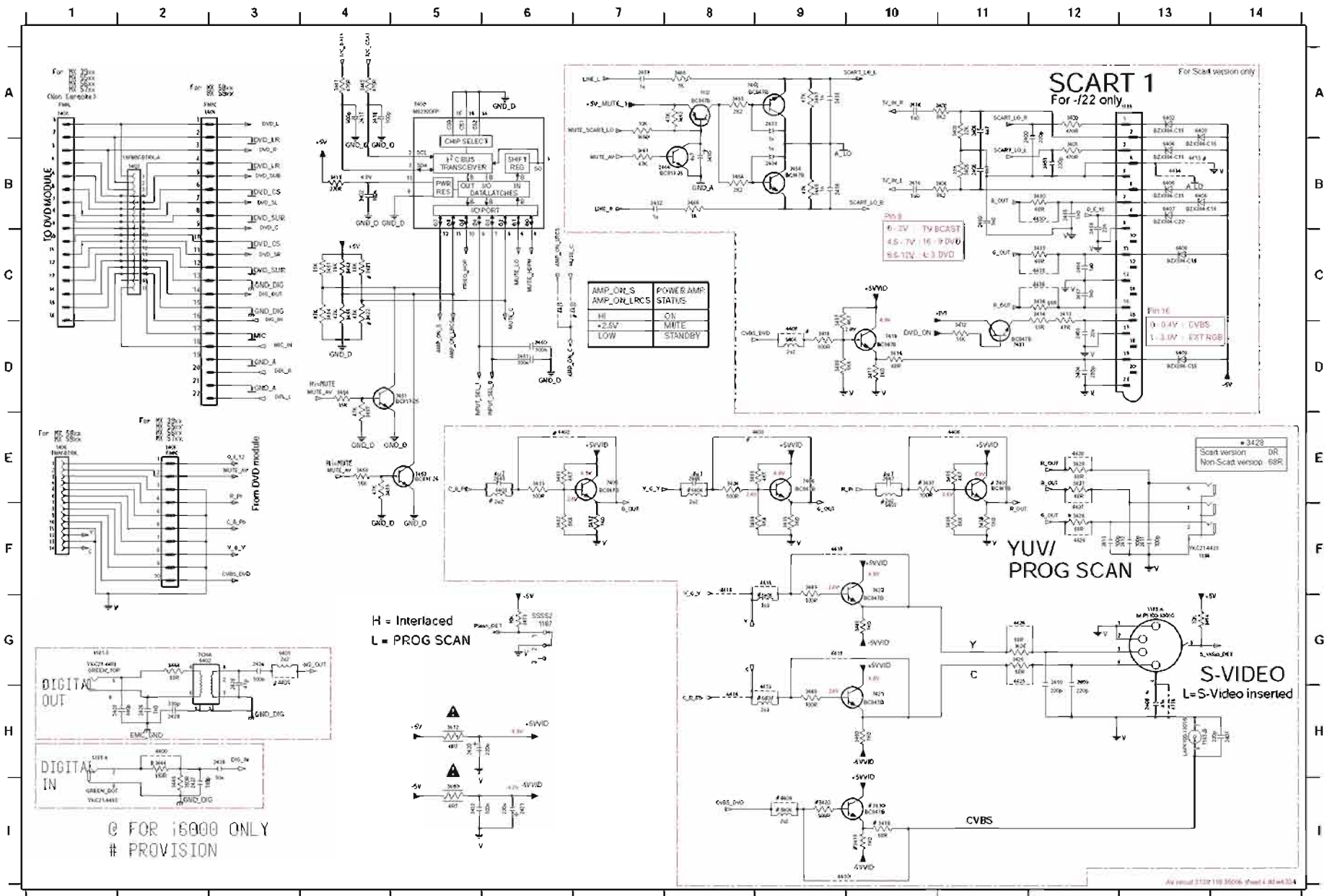
7362 - TRUTH_TABLE

A2	A1	A0	MUX_DET
LOW	LOW	LOW	Pscan_DET
LOW	LOW	HIGH	S_Video_DET
LOW	HIGH	LOW	HP_DET
LOW	HIGH	HIGH	MIC_DET
HIGH	LOW	LOW	DI_LOCK
HIGH	LOW	HIGH	NTC
HIGH	HIGH	LOW	GND
HIGH	HIGH	HIGH	GND

ITEM	Single SUB	Twin SUB
2342	1uF	220nF
2343	1uF	470nF
2344	1uF	470nF
3341	Not Stuffed	47k
2381	Not Stuffed	1uF
3330	Not Stuffed	Stuffed
4330	Stuffed	Not Stuffed

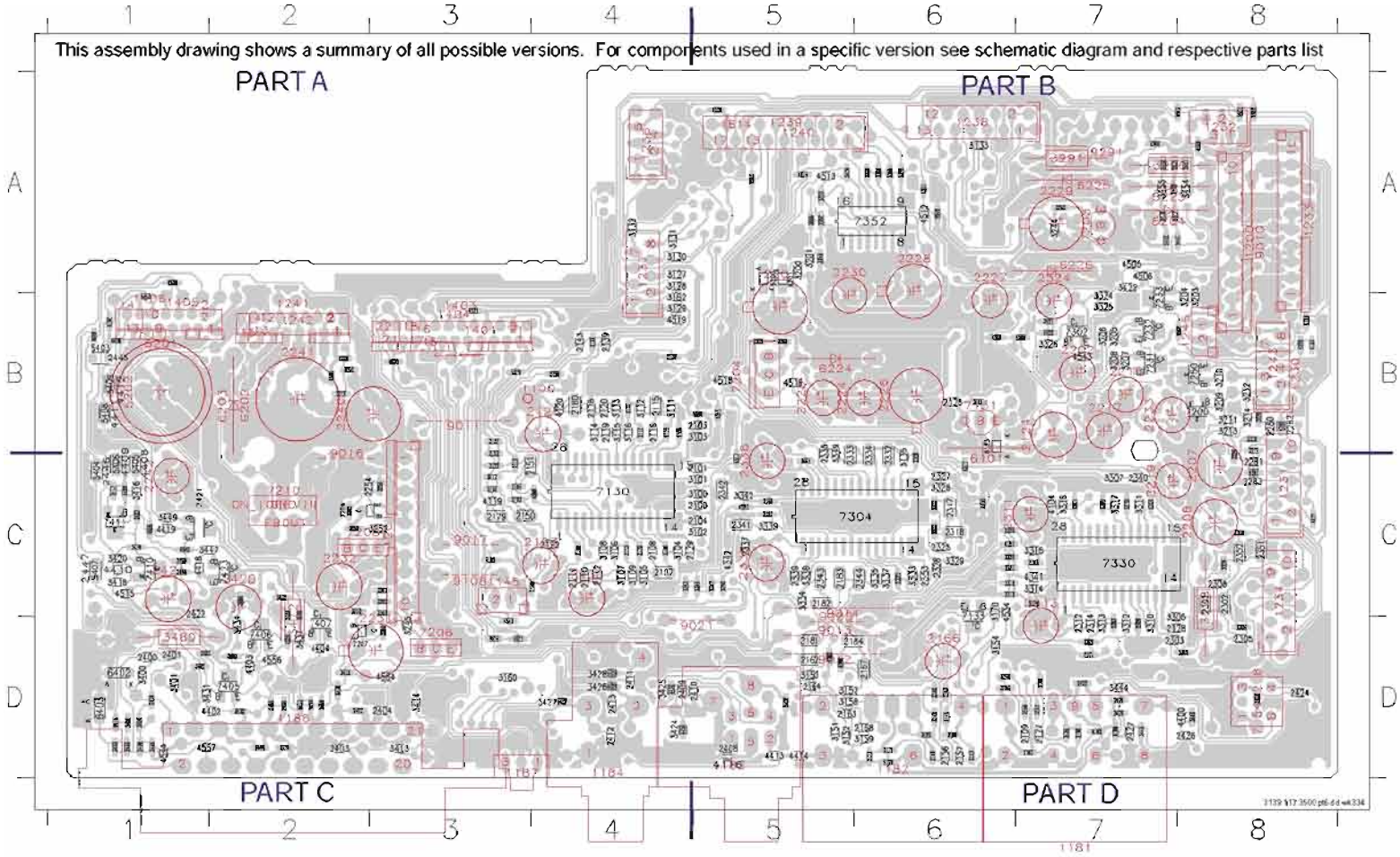
9-5

DIGITAL I/O, S-VIDEO, SCART, & I²C EXPANDER CIRCUITS



9-6

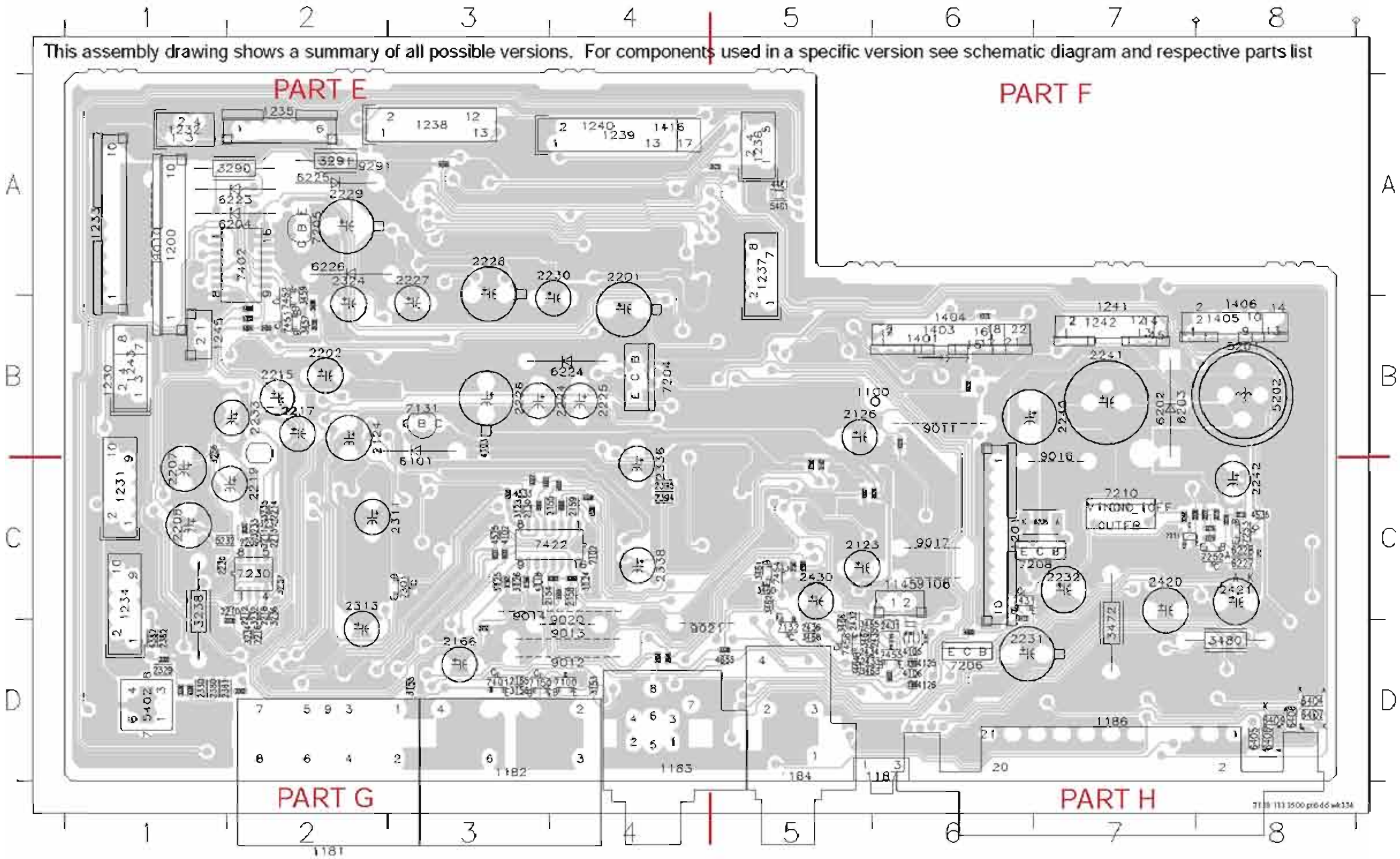
BOTTOM VIEW - SMD & COMPONENT



TOP VIEW - CHIP & COMPONENT

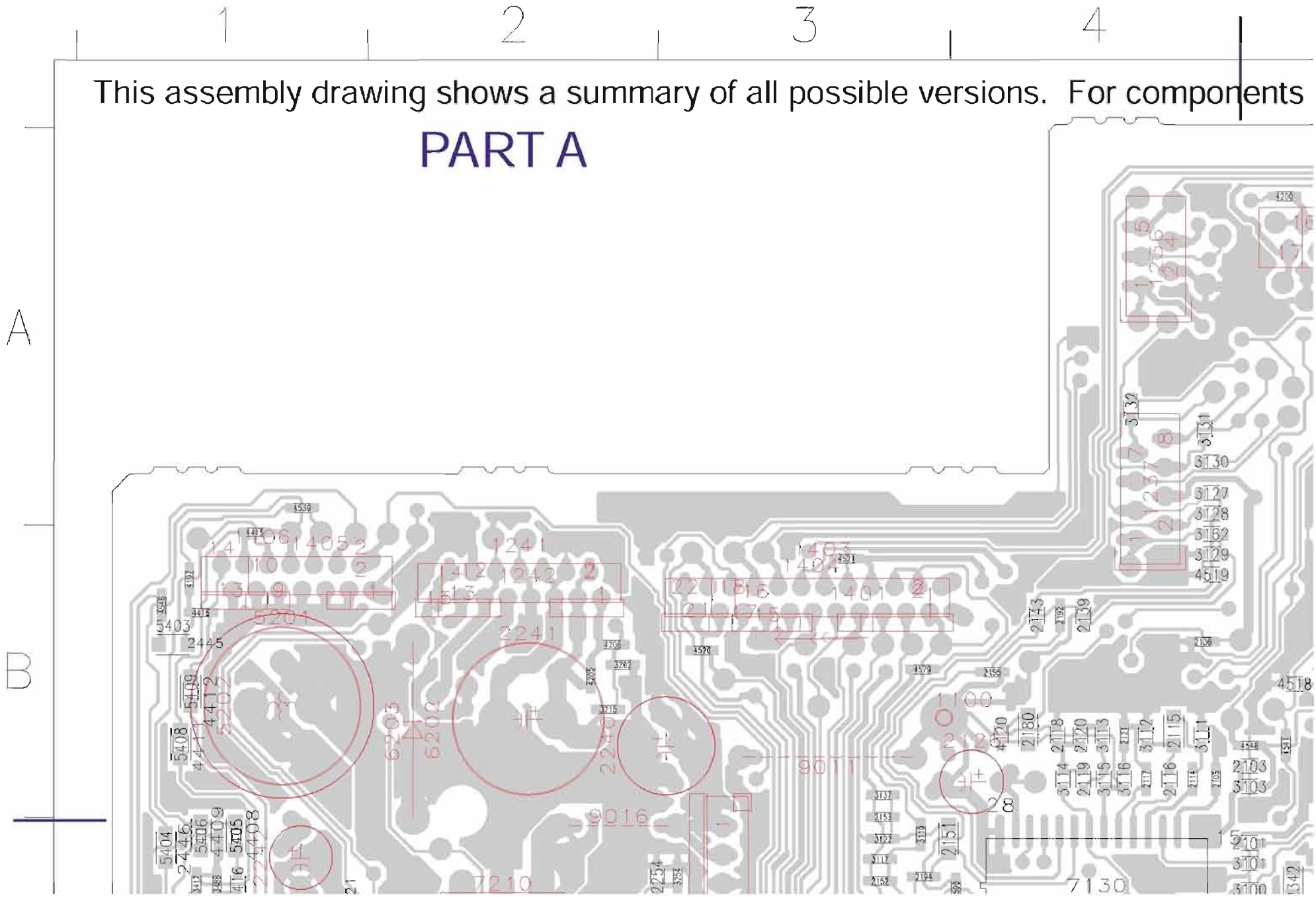
1100	B6	1238	A3	2154	C3	2208	C1	2228	A3	2381	D1	3125	C3	3239	C7	3457	B2	4105	D6	4533	C3	4570	B6	6225	A2	7206	D6	9011	B6
1145	C6	1239	A4	2155	C4	2209	C2	2229	A2	2382	D1	3126	C3	3240	C7	3458	B2	4106	D6	4535	C8	4572	B6	6226	A2	7208	C7	9012	D4
1182	D3	1240	A4	2158	C4	2210	C3	2230	A4	2394	C4	3153	D4	3256	B1	3459	B2	4116	C3	4537	C5	4573	B6	6227	C8	7210	C7	9013	D4
1183	D4	1241	B7	2159	C4	2211	C3	2231	D6	2395	C4	3155	D3	3257	C2	3460	C5	4125	D6	4538	D5	4575	C6	6228	C8	7211	C7	9014	C4
1184	D5	1242	B7	2165	D3	2212	C2	2232	C7	2420	C7	3156	D3	3272	C8	3461	C5	4126	D6	4545	D4	4653	D5	6404	D8	7230	C2	9016	B7
1186	D7	1243	B1	2166	D3	2213	C2	2233	B2	2421	C8	3180	D6	3273	C8	3462	C5	4330	D1	4550	C3	5201	B8	6405	D8	7252	C8	9017	C6
1187	D6	1245	B1	2185	D6	2214	C2	2240	B7	2430	C5	3182	D6	3274	C8	3463	D5	4382	D1	4551	C3	5202	B8	6406	D8	7253	C5	9020	D4
1200	A1	1401	B6	2186	D6	2215	B2	2241	B7	2431	D6	3183	D6	3275	C8	3464	D5	4401	A5	4552	C4	5232	C1	6407	D8	7301	C3	9021	D4
1201	C6	1403	B6	2187	C3	2216	D2	2242	C8	2432	D5	3230	D2	3276	C8	3465	D5	4522	D6	4553	C4	5401	A5	6408	D8	7402	A2	9108	C6
1230	B1	1404	B6	2188	C3	2217	B2	2311	C3	2433	D5	3231	C2	3277	C8	3466	D5	4523	B2	4554	D4	5402	D1	6409	D8	7422	C4	9291	A2
1231	C1	1405	B8	2190	C5	2218	C2	2313	C2	2434	D5	3232	C2	3290	A2	3467	D5	4524	B2	4555	A3	6101	C3	7100	D4	7431	C6		
1232	A1	1406	B8	2191	C5	2219	C2	2324	A2	2435	D6	3233	C2	3291	A2	3468	D5	4525	C3	4558	C4	6202	B7	7101	D3	7451	B2		
1233	A1	2102	C4	2196	C5	2220	C1	2329	D1	2436	D5	3234	D2	3302	D1	3472	D7	4527	C3	4559	C4	6203	B7	7131	B3	7452	B2		
1234	C1	2123	C5	2197	C5	2224	B4	2330	D1	2450	B2	3235	C2	3303	D2	3473	A5	4529	C4	4560	D6	6204	A2	7132	D5	7454	C5		
1235	A2	2124	B2	2201	A4	2225	B4	2336	C4	2451	D3	3236	C2	3330	D1	3480	D8	4530	C3	4562	C4	6205	C7	7150	D3	7455	D5		
1236	A5	2126	B5	2202	B2	2226	B3	2338	C4	3123	C3	3237	C2	3412	C6	4102	C3	4531	C3	4563	C4	6223	A2	7204	B4	7456	D5		
1237	A5	2130	C3	2207	C1	2227	A3	2380	D1	3124	C4	3238	C1	3456	B2	4103	B3	4532	C3	4566	B2	6224	B4	7205	A2	9010	A1		

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



9-8

BOTTOM VIEW - PART A



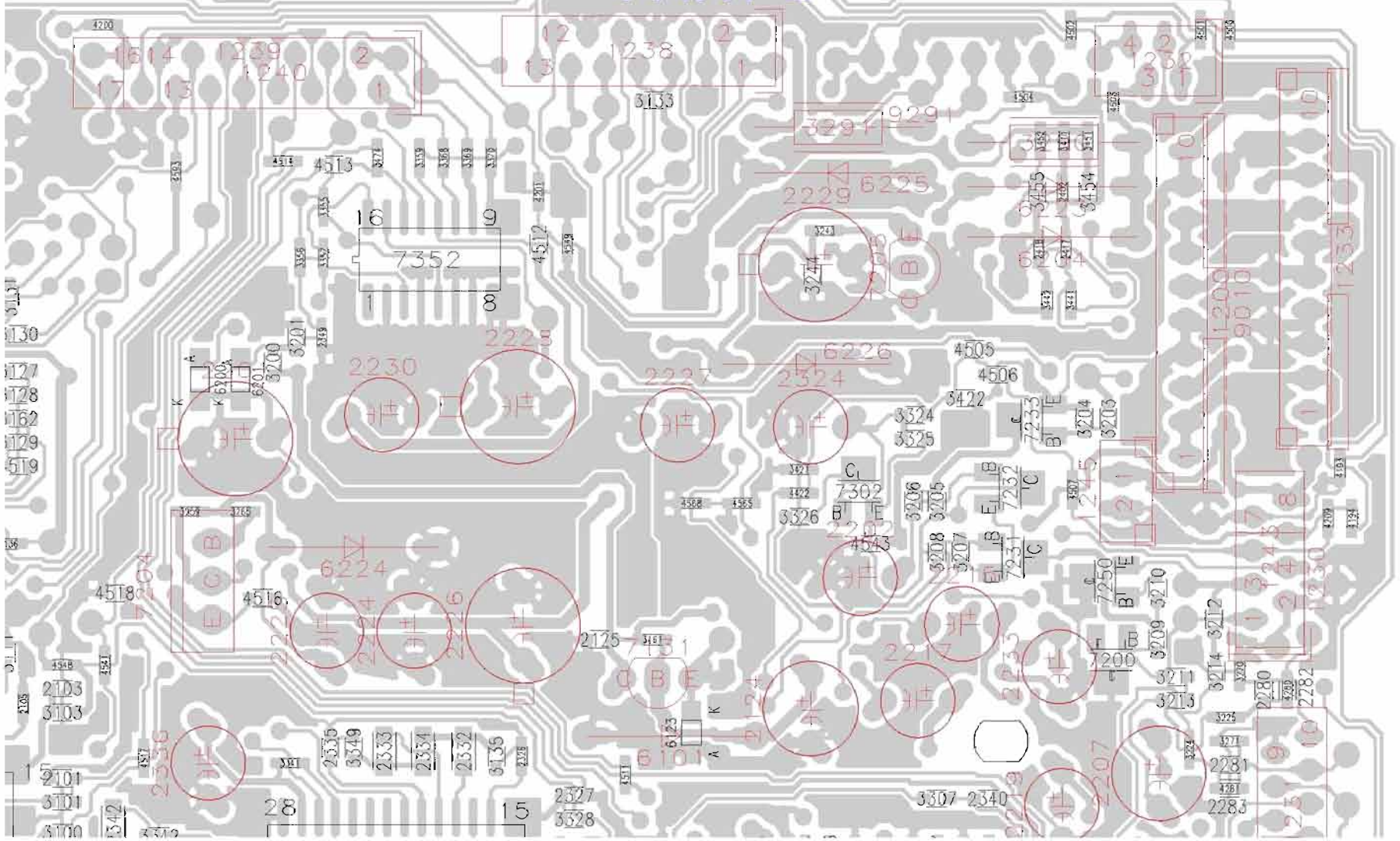
9-9

BOTTOM VIEW - PART B

5 6 7 8

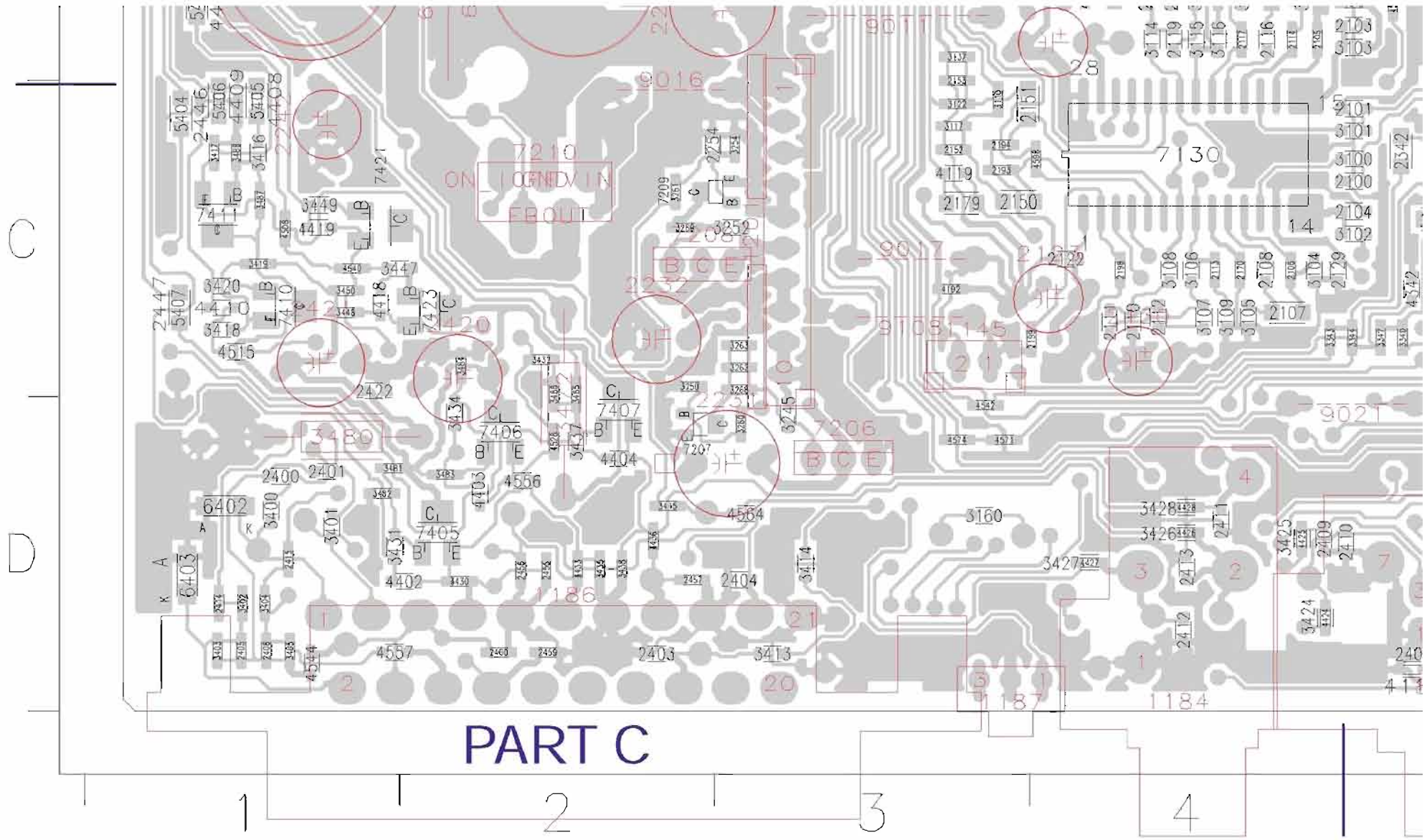
ponents used in a specific version see schematic diagram and respective parts list

PART B



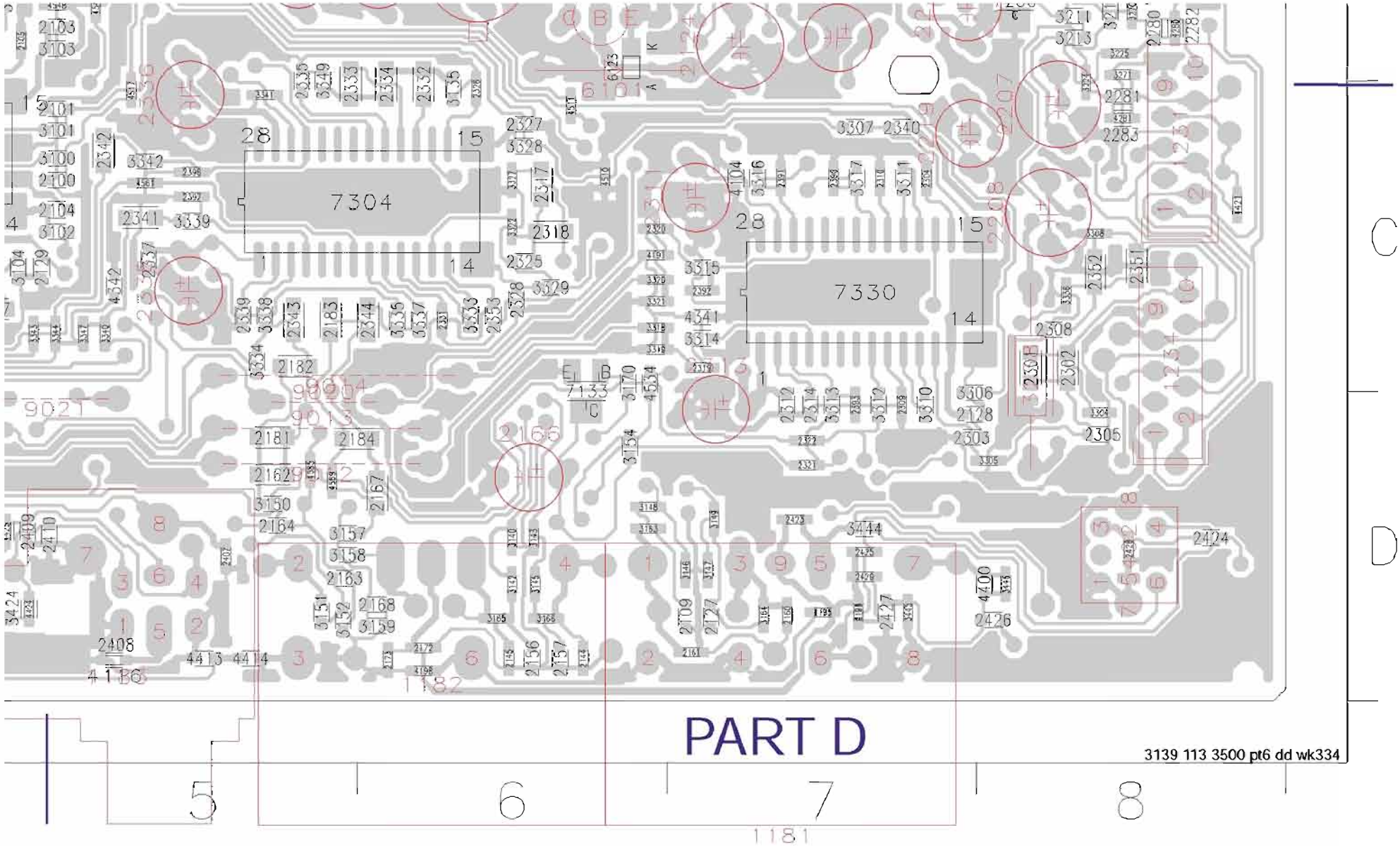
9-10

BOTTOM VIEW - PART C



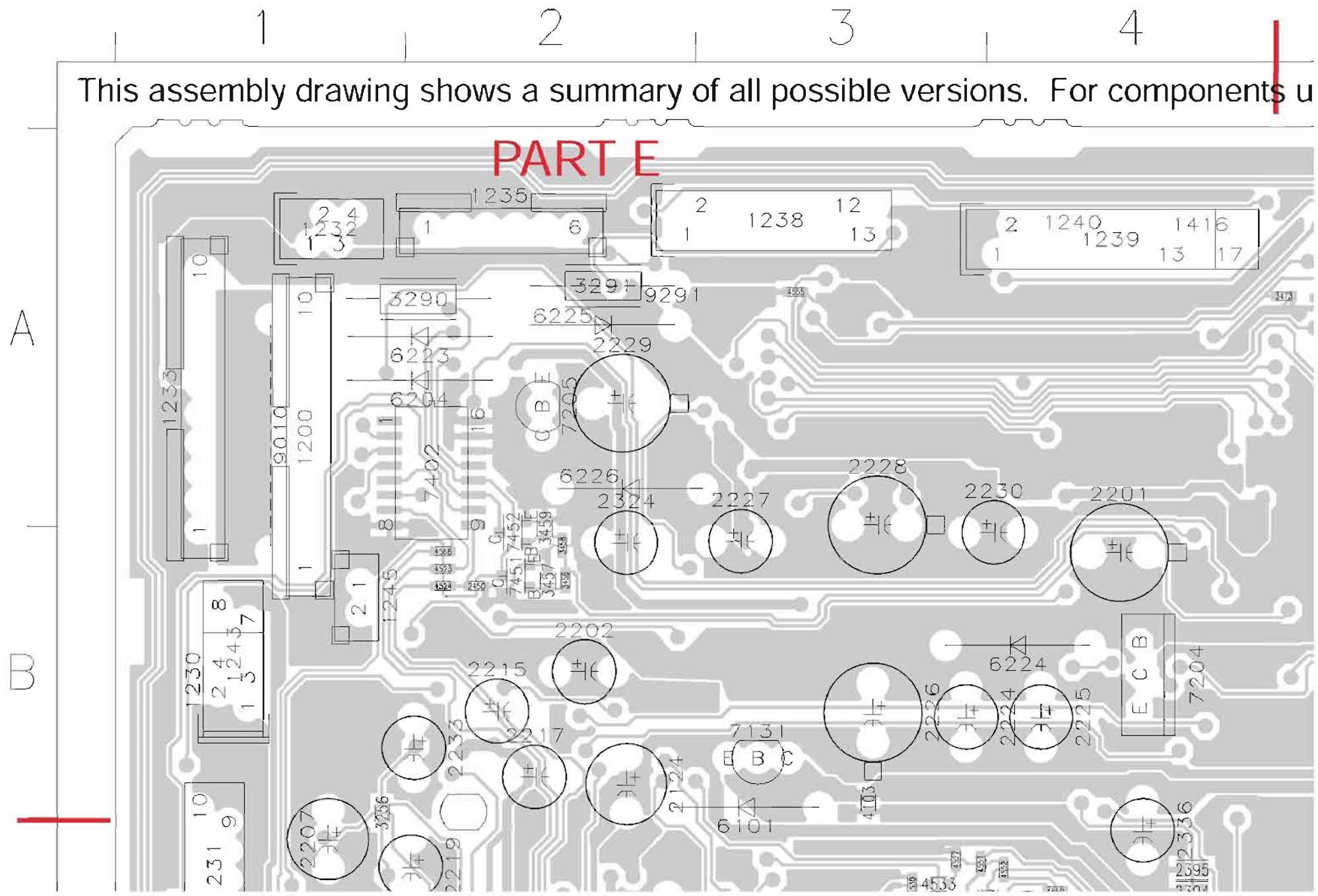
9-11

BOTTOM VIEW - PART D



9-12

BOTTOM VIEW - PART E



9-13

BOTTOM VIEW - PART F

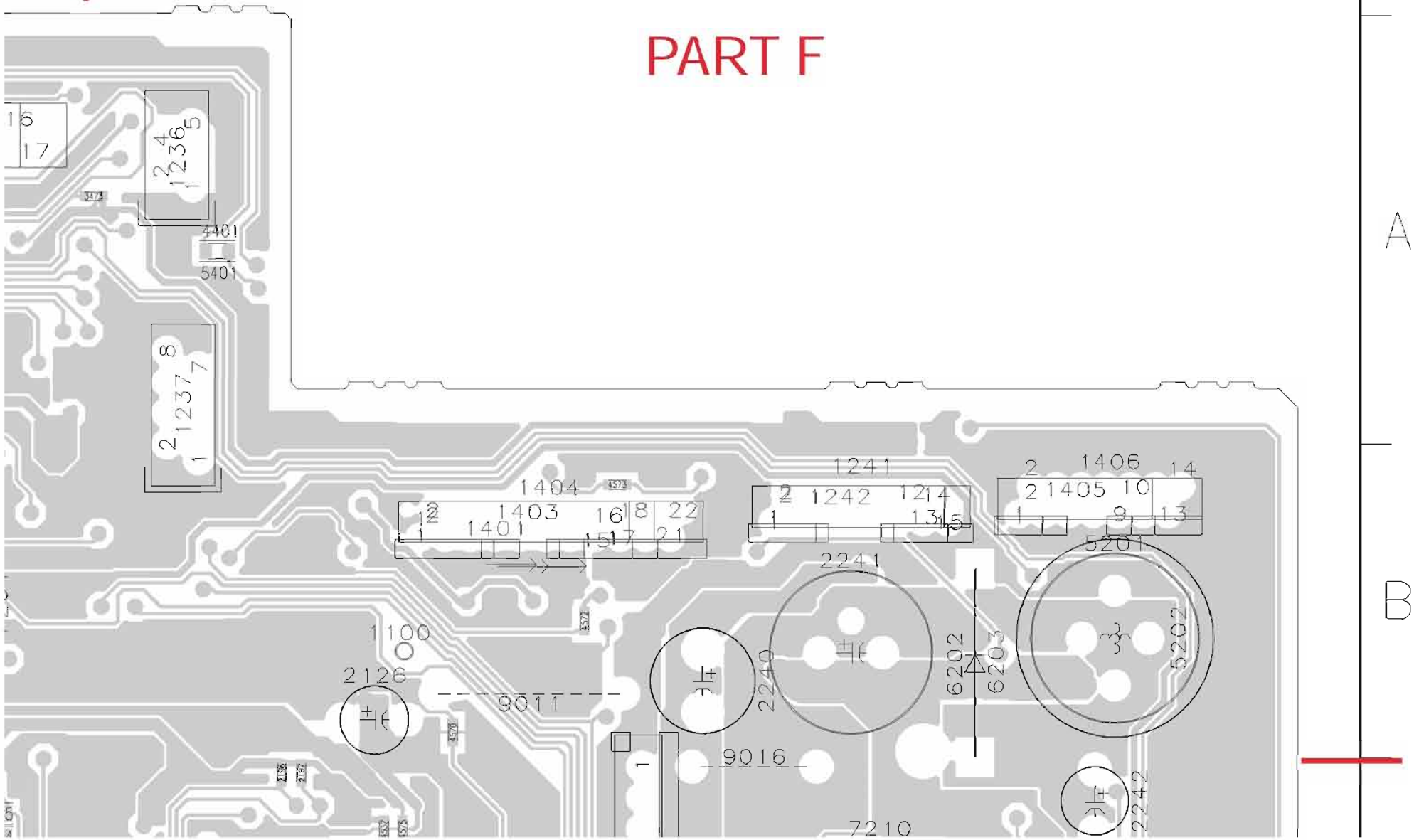
5 6 7 8

A

B

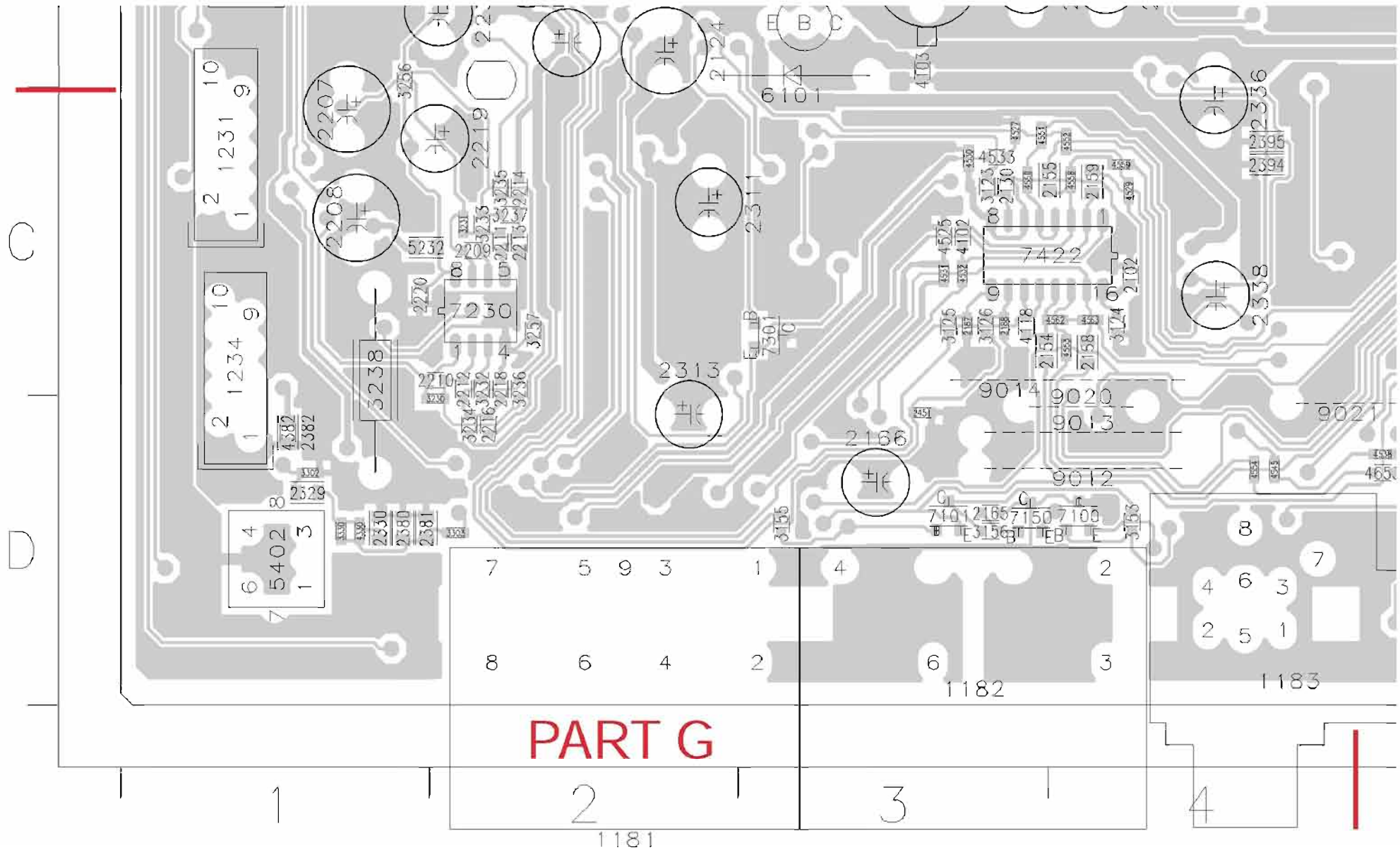
onents used in a specific version see schematic diagram and respective parts list

PART F



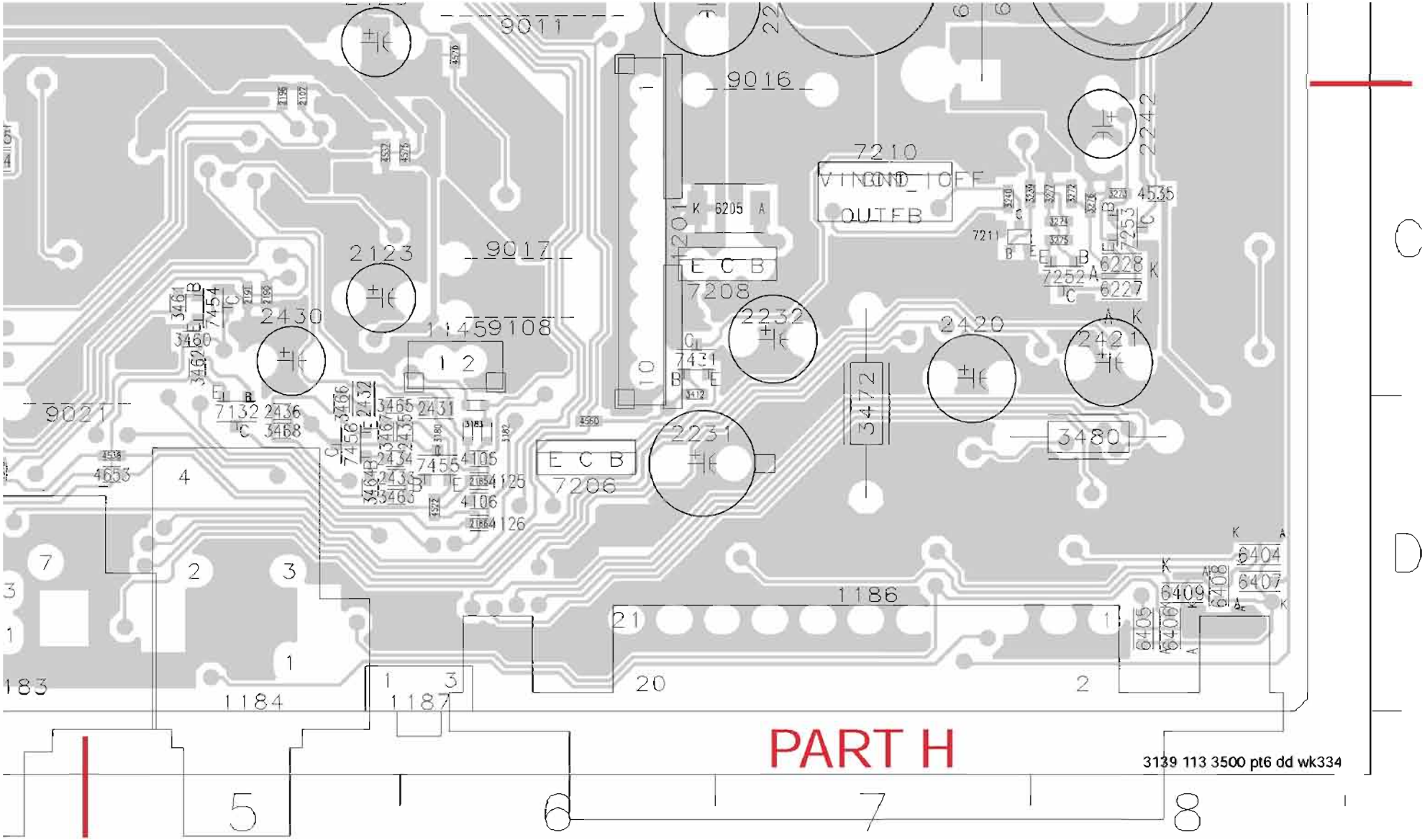
9-14

BOTTOM VIEW - PART G



9-15

BOTTOM VIEW - PART H



MISCELLANEOUS

1181	2422 026 05399	Socket Aux-in/Digital-In/Out	
1182	4822 265 11151	Socket TV-in/Line-out	
1183	2422 033 00468	Socket CVBS/S Video	
1184	2422 026 05342	Socket Pr/Pb/Y	non-Scart
1186	2422 025 12352	Scart Connector	Scart
1187	2422 127 00476	P-Scan Switch	except 22S
1230	4822 267 10733	Flex Socket 4P	non Kara
1231	4822 267 10729	Flex Socket 10P	
1232	4822 267 10733	Flex Socket 4P	
1234	4822 267 10729	Flex Socket 10P	
1236	4822 267 10954	Flex Socket 5P	
1237	4822 265 11515	Flex Socket 8P	
1238	4822 267 10738	Flex Socket 13P	
1240	4822 267 51255	Flex Socket 14P	
1242	2422 025 16591	Flex Socket 13P	
1243	4822 265 11515	Flex Socket 8P	Kara
1404	4822 265 11154	Flex Socket 22P	
1406	2422 025 17984	Flex Socket 14P	

CAPACITORS

2100	3198 016 31020	1nF 25V	
2101	3198 016 31020	1nF 25V	
2102	2238 586 59812	100nF +80/-20% 50V	
2103	2020 552 94427	100pF 5% 50V	
2104	2020 552 94427	100pF 5% 50V	
2105	3198 017 44740	470nF 10V	
2106	3198 017 44740	470nF 10V	
2107	2020 552 96327	330nF 10% 16V	
2108	4822 126 13879	220nF +80/-20% 16V	
2109	2020 552 94427	100pF 5% 50V	
2110	5322 126 11579	3,3nF 10% 63V	
2111	3198 016 31020	1nF 25V	
2112	5322 126 11583	10nF 10% 50V	
2113	3198 017 44740	470nF 10V	
2114	3198 017 44740	470nF 10V	
2115	2020 552 96327	330nF 10% 16V	
2116	4822 126 13879	220nF +80/-20% 16V	
2117	4822 126 14238	2,2nF 50V	
2118	5322 126 11579	3,3nF 10% 63V	
2119	3198 016 31020	1nF 25V	
2120	5322 126 11583	10nF 10% 50V	
2121	3198 017 44740	470nF 10V	
2122	2238 916 15641	22nF 10% 25V	
2123	4822 124 81151	22uF 50V	
2124	4822 124 40196	220uF 20% 16V	
2125	4822 126 14238	2,2nF 50V	
2126	4822 124 40433	47uF 20% 25V	
2127	2020 552 94427	100pF 5% 50V	
2128	2020 552 94427	100pF 5% 50V	
2129	2238 586 59812	100nF +80/-20% 50V	
2130	2238 586 59812	100nF +80/-20% 50V	
2136	2238 586 59812	100nF +80/-20% 50V	
2139	2238 586 59812	100nF +80/-20% 50V	
2143	2238 586 59812	100nF +80/-20% 50V	
2144	4822 126 13956	68pF 5% 63V	
2145	4822 126 13956	68pF 5% 63V	
2150	4822 126 14043	1uF +80/-20% 16V	
2151	4822 126 14043	1uF +80/-20% 16V	
2152	3198 016 31020	1nF 25V	
2153	3198 016 31020	1nF 25V	
2154	4822 126 14043	1uF +80/-20% 16V	
2155	4822 126 14043	1uF +80/-20% 16V	
2156	2020 552 94427	100pF 5% 50V	
2157	2020 552 94427	100pF 5% 50V	
2160	4822 126 13956	68pF 5% 63V	
2161	4822 126 13956	68pF 5% 63V	
2162	4822 126 14043	1uF +80/-20% 16V	
2163	3198 016 31020	1nF 25V	
2164	3198 016 31020	1nF 25V	
2165	3198 016 31020	1nF 25V	
2166	4822 124 40769	4,7uF 20% 100V	
2167	4822 126 14043	1uF +80/-20% 16V	
2168	3198 016 31020	1nF 25V	
2170	4822 126 14238	2,2nF 50V	
2172	3198 017 34730	47nF 16V	
2173	3198 017 34730	47nF 16V	
2174	3198 017 34730	47nF 16V	
2181	4822 126 14472	1uF 10% 10V	
2182	4822 126 14472	1uF 10% 10V	
2183	4822 126 14472	1uF 10% 10V	
2184	4822 126 14472	1uF 10% 10V	
2185	4822 126 14043	1uF +80/-20% 16V	
2186	4822 126 14043	1uF +80/-20% 16V	
2187	2238 586 59812	100nF +80/-20% 50V	
2188	2238 586 59812	100nF +80/-20% 50V	
2190	2020 552 94427	100pF 5% 50V	
2191	2020 552 94427	100pF 5% 50V	
2192	2020 552 94427	100pF 5% 50V	
2193	2020 552 94427	100pF 5% 50V	
2194	2020 552 94427	100pF 5% 50V	
2195	2020 552 94427	100pF 5% 50V	
2196	2020 552 94427	100pF 5% 50V	
2197	2020 552 94427	100pF 5% 50V	
2198	2020 552 94427	100pF 5% 50V	
2199	3198 017 41050	1uF 10V	Kara
2201	4822 124 40184	1000uF 20% 10V	
2202	4822 124 40248	10uF 20% 63V	
2207	4822 124 40255	100uF 20% 63V	
2208	4822 124 40255	100uF 20% 63V	
2209	4822 126 14508	180pF 5% 50V	
2210	4822 126 14508	180pF 5% 50V	
2211	4822 126 13881	470pF 5% 50V	
2212	4822 126 13881	470pF 5% 50V	
2213	2020 552 94427	100pF 5% 50V	
2214	3198 016 31020	1nF 25V	
2215	4822 124 81151	22uF 50V	
2216	3198 016 31020	1nF 25V	
2217	4822 124 81151	22uF 50V	
2218	2020 552 94427	100pF 5% 50V	
2219	4822 124 40433	47uF 20% 25V	
2220	2238 916 15641	22nF 10% 25V	
2224	4822 124 81151	22uF 50V	
2225	4822 124 81151	22uF 50V	
2226	4822 124 40255	100uF 20% 63V	
2227	4822 124 81151	22uF 50V	
2231	4822 124 80791	470uF 20% 16V	
2232	4822 124 40196	220uF 20% 16V	
2233	4822 124 41584	100uF 20% 10V	
2240	2020 012 93583	100uF 20% 25V	
2241	3198 026 51020	1000uF 20% 50V	
2242	4822 124 40433	47uF 20% 25V	
2254	3198 017 44740	470nF 10V	
2280	3198 017 44740	470nF 10V	
2281	3198 017 44740	470nF 10V	
2282	3198 017 44740	470nF 10V	
2283	3198 017 44740	470nF 10V	
2301	3198 017 44740	470nF 10V	
2302	3198 017 44740	470nF 10V	
2303	2238 586 59812	100nF +80/-20% 50V	
2304	3198 017 44740	470nF 10V	
2305	2020 552 94427	100pF 5% 50V	
2308	2020 552 94427	100pF 5% 50V	
2309	4822 126 13193	4,7nF 10% 63V	
2310	4822 126 13193	4,7nF 10% 63V	
2311	4822 124 40433	47uF 20% 25V	
2312	2238 916 15641	22nF 10% 25V	
2313	4822 124 40433	47uF 20% 25V	
2314	3198 016 31020	1nF 25V	
2318	3198 017 44740	470nF 10V	
2319	3198 017 44740	470nF 10V	
2320	3198 017 44740	470nF 10V	
2321	3198 017 44740	470nF 10V	
2322	3198 017 44740	470nF 10V	
2324	4822 124 12032	4,7uF 20% 50V	
2325	2020 552 94427	100pF 5% 50V	
2326	3198 017 44740	470nF 10V	
2327	2020 552 94427	100pF 5% 50V	
2328	2020 552 94427	100pF 5% 50V	
2329	2020 552 96684	470nF 10% 25V	
2330	4822 126 14472	1uF 10% X7R 0805 10V	
2331	4822 126 13193	4,7nF 10% 63V	
2332	2020 552 96684	470nF 10% 25V	
2333	2222 780 15656	330nF 10% 16V	
2334	2222 780 15656	330nF 10% 16V	
2335	2020 552 94427	100pF 5% 50V	
2336	4822 124 40433	47uF 20% 25V	
2337	2238 916 15641	22nF 10% 25V	
2338	4822 124 40433	47uF 20% 25V	
2339	3198 016 31020	1nF 25V	
2340	2020 552 94427	100pF 5% 50V	
2341	4822 126 14043	1uF +80/-20% 16V	
2342	2238 586 59812	100nF +80/-20% 50V	
2343	2020 552 96684	470nF 10% 25V	
2344	2020 552 96684	470nF 10% 25V	
2349	2238 586 59812	100nF +80/-20% 50V	
2351	2020 552 96684	470nF 10% 25V	
2352	3198 017 44740	470nF 10V	
2353	2238 586 59812	100nF +80/-20% 50V	
2381	4822 126 14472	1uF 10% 10V	
2390	2020 552 94427	100pF 5% 50V	
2391	2020 552 94427	100pF 5% 50V	
2392	2020 552 94427	100pF 5% 50V	
2393	2020 552 94427	100pF 5% 50V	
2394	2020 552 94427	100pF 5% 50V	
2395	2020 552 94427	100pF 5% 50V	
2396	2020 552 94427	100pF 5% 50V	
2397	2020 552 94427	100pF 5% 50V	
2400	4822 126 13883	220pF 5% 50V	Scart
2401	4822 126 13883	220pF 5% 50V	Scart
2402	2238 586 59812	100nF +80/-20% 50V	
2403	3198 017 42230	22nF 50V	Scart
2404	4822 126 13883	220pF 5% 50V	Scart
2405	4822 126 13193	4,7nF 10% 63V	Scart
2406	4822 126 13193	4,7nF 10% 63V	Scart
2407	4822 126 13883	220pF 5% 50V	
2409	4822 126 13883	220pF 5% 50V	
2410	4822 126 13883	220pF 5% 50V	
2411	2020 552 94427	100pF 5% 50V	
2412	2020 552 94427	100pF 5% 50V	
2413	2020 552 94427	100pF 5% 50V	
2414	3198 017 41050	1uF 10V	Scart
2415	3198 017 41050	1uF 10V	Scart
2417	2020 552 94427	100pF 5% 50V	
2418	2020 552 94427	100pF 5% 50V	
2420	4822 124 40196	220uF 20% 16V	
2421	4822 124 40196	220uF 20% 16V	
2422	2238 586 59812	100nF +80/-20% 50V	
2423	4822 126 14249	560pF 10% 50V	
2424	2238 586 59812	100nF +80/-20% 50V	
2425	3198 016 31020	1nF 25V	
2426	5322 126 11583	10nF 10% 50V	
2427	4822 126 14508	180pF 5% 50V	
2428	4822 126 11785	47pF 5% 50V	
2429	4822 126 14241	330pF 50V	
2430	4822 124 40769	4,7uF 20% 100V	Scart
2431	4822 126 14043	1uF +80/-20% 16V	Scart
2432	4822 126 14043	1uF +80/-20% 16V	Scart
2433	3198 016 31020	1nF 25V	Scart

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ELECTRICAL PARTS LIST - AV BOARD

CAPACITORS

2434	3198 016 31020	1nF 25V	Scart
2435	3198 016 31020	1nF 25V	Scart
2436	3198 016 31020	1nF 25V	Scart
2450	2238 586 59812	100nF +80/-20% 50V	
2451	2238 586 59812	100nF +80/-20% 50V	
2455	4822 126 13909	680pF 50V	Scart
2456	4822 126 13909	680pF 50V	Scart
2457	4822 126 13909	680pF 50V	Scart
2459	2238 916 15641	22nF 25V	Scart

RESISTORS

3100	4822 051 30221	220R 5% 0,062W	
3101	4822 051 30221	220R 5% 0,062W	
3102	4822 051 30102	1k 5% 0,062W	
3103	4822 051 30102	1k 5% 0,062W	
3104	4822 051 30562	5k6 5% 0,063W	
3105	4822 117 12902	8k2 1% 0,063W	
3106	4822 051 30562	5k6 5% 0,063W	
3107	4822 051 30183	18k 5% 0,062W	
3108	4822 051 30103	10k 5% 0,062W	
3109	4822 117 12925	47k 1% 0,063W	
3110	4822 051 30222	2k2 5% 0,062W	
3111	4822 051 30562	5k6 5% 0,063W	
3112	4822 117 12902	8k2 1% 0,063W	
3113	4822 051 30183	18k 5% 0,062W	
3114	4822 051 30103	10k 5% 0,062W	
3115	4822 051 30562	5k6 5% 0,063W	
3116	4822 117 12925	47k 1% 0,063W	
3117	4822 051 30222	2k2 5% 0,062W	
3122	4822 051 30222	2k2 5% 0,062W	
3123	4822 051 30271	270R 5% 0,062W	
3124	4822 051 30271	270R 5% 0,062W	
3125	4822 051 30271	270R 5% 0,062W	
3126	4822 051 30271	270R 5% 0,062W	
3127	4822 051 30102	1k 5% 0,062W	
3128	4822 117 12891	220k 1% ERJ3E	
3129	4822 117 12891	220k 1% ERJ3E	
3130	4822 051 30101	100R 5% 0,062W	
3131	4822 051 30101	100R 5% 0,062W	
3132	4822 051 30101	100R 5% 0,062W	
3133	4822 051 30101	100R 5% 0,062W	
3135	4822 051 30332	3k3 5% 0,062W	
3137	4822 051 30222	2k2 5% 0,062W	
3140	4822 117 12925	47k 1% 0,063W	
3142	4822 051 30332	3k3 5% 0,062W	
3143	4822 117 12925	47k 1% 0,063W	
3145	4822 051 30332	3k3 5% 0,062W	
3146	4822 117 12925	47k 1% 0,063W	
3147	4822 117 12925	47k 1% 0,063W	
3148	4822 051 30332	3k3 5% 0,062W	
3149	4822 051 30332	3k3 5% 0,062W	
3150	4822 051 30102	1k 5% 0,062W	
3151	4822 051 30471	470R 5% 0,062W	
3152	4822 117 12925	47k 1% 0,063W	
3153	4822 051 30222	2k2 5% 0,062W	
3154	4822 117 12925	47k 1% 0,063W	
3155	4822 051 30103	10k 5% 0,062W	
3156	4822 051 30222	2k2 5% 0,062W	
3157	4822 051 30102	1k 5% 0,062W	
3158	4822 051 30471	470R 5% 0,062W	
3159	4822 117 12925	47k 1% 0,063W	
3160	4822 051 30222	2k2 5% 0,062W	/37
3160	4822 051 30562	5k6 5% 0,063W	/22S
3160	4822 051 30472	4k7 5% 0,062W	/21R/21S/33S
3161	4822 051 30222	2k2 5% 0,062W	
3162	4822 051 30102	1k 5% 0,062W	
3163	4822 051 30332	3k3 5% 0,062W	
3164	4822 051 30332	3k3 5% 0,062W	
3165	4822 051 30332	3k3 5% 0,062W	not for /22S
3166	4822 051 30332	3k3 5% 0,062W	not for /22S
3170	4822 117 12925	47k 1% 0,063W	
3180	4822 051 30103	10k 5% 0,062W	
3182	4822 051 30103	10k 5% 0,062W	
3183	4822 051 30103	10k 5% 0,062W	
3200	4822 117 13632	100k 1% 0,62W	
3201	4822 117 13632	100k 1% 0,62W	
3202	4822 051 30103	10k 5% 0,062W	
3203	4822 051 30103	10k 5% 0,062W	
3204	4822 051 30103	10k 5% 0,062W	
3205	4822 051 30102	1k 5% 0,062W	
3206	4822 051 30562	5k6 5% 0,063W	
3207	4822 051 30472	4k7 5% 0,062W	
3208	4822 051 30472	4k7 5% 0,062W	
3209	4822 051 30102	1k 5% 0,062W	
3210	4822 051 30102	1k 5% 0,062W	
3211	4822 051 30339	33R 5% 0,062W	
3212	4822 051 30339	33R 5% 0,062W	
3213	4822 051 30479	47R 5% 0,062W	
3214	4822 051 30479	47R 5% 0,062W	
3215	4822 051 30181	180R 5% 0,062W	
3224	4822 051 30102	1k 5% 0,062W	
3225	4822 051 30102	1k 5% 0,062W	
3230	4822 051 30273	27k 5% 0,062W	
3231	4822 051 30273	27k 5% 0,062W	
3232	4822 051 30123	12k 5% 0,062W	
3233	4822 051 30682	6k8 5% 0,062W	
3234	4822 051 30221	220R 5% 0,062W	
3235	4822 051 30221	220R 5% 0,062W	
3236	4822 051 30682	6k8 5% 0,062W	
3237	4822 051 30123	12k 5% 0,062W	
3238	4822 052 10109	10R 5% 0,33W	
3239	4822 051 30103	10k 5% 0,062W	
3240	4822 117 12925	47k 1% 0,063W	
3245	4822 051 30562	5k6 5% 0,063W	

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ELECTRICAL PARTS LIST - AV BOARD

3250	4822 117 12925	47k 1% 0,063W	
3252	4822 051 30562	5k6 5% 0,063W	
3254	4822 117 12925	47k 1% 0,063W	
3256	4822 051 30472	4k7 5% 0,062W	
3257	4822 051 30472	4k7 5% 0,062W	
3259	4822 117 12902	8k2 1% 0,063W	
3260	4822 051 30103	10k 5% 0,062W	
3261	4822 051 30103	10k 5% 0,062W	
3262	4822 051 30102	1k 5% 0,062W	
3263	4822 051 30102	1k 5% 0,062W	
3265	4822 051 30471	470R 5% 0,062W	
3268	4822 051 30102	1k 5% 0,062W	
3269	4822 051 30221	220R 5% 0,062W	
3270	4822 051 30471	470R 5% 0,062W	
3271	4822 051 30471	470R 5% 0,062W	
3272	4822 051 30682	6k8 5% 0,062W	
3273	4822 051 30103	10k 5% 0,062W	
3274	4822 051 30682	6k8 5% 0,062W	
3275	4822 051 30689	68R 5% 0,063W	
3276	4822 051 30102	1k 5% 0,062W	
3277	4822 117 12925	47k 1% 0,063W	
3290	4822 052 10228	2R2 5% 0,33W	
3303	4822 051 30102	1k 5% 0,062W	
3304	4822 051 30222	2k2 5% 0,062W	
3305	4822 051 30689	68R 5% 0,063W	
3306	4822 051 30102	1k 5% 0,062W	
3307	4822 051 30102	1k 5% 0,062W	
3308	4822 051 30222	2k2 5% 0,062W	
3310	4822 051 30102	1k 5% 0,062W	
3311	4822 051 30102	1k 5% 0,062W	
3312	4822 051 30102	1k 5% 0,062W	
3313	4822 051 30102	1k 5% 0,062W	
3314	4822 051 30102	1k 5% 0,062W	
3315	4822 051 30102	1k 5% 0,062W	
3316	4822 051 30102	1k 5% 0,062W	
3317	4822 051 30102	1k 5% 0,062W	
3318	4822 051 30123	12k 5% 0,062W	
3319	4822 051 30103	10k 5% 0,062W	
3320	4822 051 30123	12k 5% 0,062W	
3321	4822 051 30103	10k 5% 0,062W	
3322	4822 051 30689	68R 5% 0,063W	
3324	4822 051 30102	1k 5% 0,062W	
3325	4822 051 30102	1k 5% 0,062W	
3326	4822 051 30102	1k 5% 0,062W	
3327	4822 051 30222	2k2 5% 0,062W	
3328	4822 051 30102	1k 5% 0,062W	
3329	4822 051 30102	1k 5% 0,062W	
3330	4822 051 30102	1k 5% 0,062W	
3333	4822 051 30102	1k 5% 0,062W	
3334	4822 051 30183	18k 5% 0,062W	
3335	4822 051 30183	18k 5% 0,062W	
3336	4822 051 30689	68R 5% 0,063W	
3337	4822 051 30183	18k 5% 0,062W	
3338	4822 051 30183	18k 5% 0,062W	
3339	4822 051 30102	1k 5% 0,062W	
3340	4822 051 30123	12k 5% 0,062W	
3341	4822 117 12925	47k 1% 0,063W	
3342	4822 051 30102	1k 5% 0,062W	
3343	4822 051 30682	6k8 5% 0,062W	
3347	4822 051 30392	3k9 5% 0,062W	
3349	4822 051 30562	5k6 5% 0,063W	
3355	4822 051 30681	680R 5% 0,062W	
3356	4822 051 30101	100R 5% 0,062W	
3357	4822 117 13632	100k 1% 0,62W	
3359	4822 117 12925	47k 1% 0,063W	
3368	4822 051 30101	100R 5% 0,062W	
3369	4822 051 30101	100R 5% 0,062W	
3370	4822 051 30101	100R 5% 0,062W	
3400	4822 051 30471	470R 5% 0,062W	Scart
3401	4822 051 30471	470R 5% 0,062W	Scart
3402	4822 117 12902	8k2 1% 0,063W	Scart
3403	4822 051 30223	22k 5% 0,062W	Scart
3404	4822 117 12902	8k2 1% 0,063W	Scart
3405	4822 051 30223	22k 5% 0,062W	Scart
3411	4822 051 30271	270R 5% 0,062W	
3412	4822 051 30153	15k 5% 0,063W	Scart
3413	4822 051 30479	47R 5% 0,063W	Scart
3414	4822 051 30339	33R 5% 0,063W	Scart
3415	4822 051 30689	68R 5% 0,063W	Scart
3416	4822 051 30101	100R 5% 0,062W	Scart
3417	4822 117 11817	1k2 1% 1/16W	Scart
3418	4822 051 30689	68R 5% 0,063W	Scart
3419	4822 117 11817	1k2 1% 1/16W	Scart
3420	4822 051 30101	100R 5% 0,062W	Scart
3426	4822 051 30689	68R 5% 0,063W	non-Scart
3427	4822 051 30689	68R 5% 0,063W	non-Scart
3428	4822 051 30689	68R 5% 0,063W	non-Scart
3430	4822 051 30689	68R 5% 0,063W	Scart
3431	4822 051 30101	100R 5% 0,062W	
3433	4822 051 30689	68R 5% 0,063W	Scart
3434	4822 051 30101	100R 5% 0,062W	
3436	4822 051 30689	68R 5% 0,063W	Scart
3437	4822 051 30101	100R 5% 0,062W	
3438	4822 051 30222	2k2 5% 0,062W	Scart
3441	4822 051 30471	470R 5% 0,062W	
3442	4822 051 30471	470R 5% 0,062W	
3444	4822 051 30339	33R 5% 0,062W	
3451	4822 051 30153	15k 5% 0,062W	
3452	4822 051 30153	15k 5% 0,062W	
3454	4822 117 12925	47k 1% 0,063W	
3455	4822 117 12925	47k 1% 0,063W	
3456	4822 051 30153	15k 5% 0,062W	
3457	4822 117 12925	47k 1% 0,063W	
3458	4822 051 30153	15k 5% 0,062W	

RESISTORS

3459	4822 117 12925	47k 1% 0,063W	
3460	4822 051 30103	10k 5% 0,062W	Scart
3461	4822 117 12925	47k 1% 0,063W	Scart
3462	4822 117 12925	47k 1% 0,063W	Scart
3463	4822 051 30222	2k2 5% 0,062W	Scart
3464	4822 051 30222	2k2 5% 0,062W	Scart
3465	4822 051 30102	1k 5% 0,062W	Scart
3466	4822 051 30102	1k 5% 0,062W	Scart
3467	4822 117 12925	47k 1% 0,063W	Scart
3468	4822 117 12925	47k 1% 0,063W	Scart
3472	4822 052 10478	4R7 5% 0,33W	
3473	4822 051 30103	10k 5% 0,062W	
3474	4822 051 30103	10k 5% 0,062W	
3480	4822 052 10478	4R7 5% 0,33W	
3481	4822 051 30472	4k7 5% 0,062W	
3482	4822 051 30562	5k6 5% 0,062W	
3483	4822 051 30472	4k7 5% 0,062W	
3484	4822 051 30562	5k6 5% 0,062W	
3485	4822 051 30472	4k7 5% 0,062W	
3486	4822 051 30562	5k6 5% 0,062W	
3487	4822 051 30472	4k7 5% 0,062W	Scart
3488	4822 051 30562	5k6 5% 0,062W	Scart
4103	4822 051 30008	0R Jumper 0603	
4104	4822 051 30008	0R Jumper 0603	
4193	4822 051 30008	0R Jumper 0603	
4194	4822 051 30008	0R Jumper 0603	
4196	4822 051 30008	0R Jumper 0603	
4197	4822 051 30008	0R Jumper 0603	
4198	4822 051 30008	0R Jumper 0603	
4200	4822 051 30008	0R Jumper 0603	
4201	4822 051 30008	0R Jumper 0603	
4205	4822 051 30008	0R Jumper 0603	
4209	4822 051 30008	0R Jumper 0603	non Kara
4330	4822 051 30008	0R Jumper 0603	
4341	4822 051 30008	0R Jumper 0603	
4342	4822 051 30008	0R Jumper 0603	
4382	4822 051 30008	0R Jumper 0603	
4400	4822 051 30008	0R Jumper 0603	
4410	4822 051 30008	0R Jumper 0603	Non-Scart
4414	4822 051 30008	0R Jumper 0603	Scart
4418	4822 051 30008	0R Jumper 0603	
4419	4822 051 30008	0R Jumper 0603	
4421	4822 051 30008	0R Jumper 0603	
4424	4822 051 30008	0R Jumper 0603	
4425	4822 051 30008	0R Jumper 0603	
4500	4822 051 30008	0R Jumper 0603	
4501	4822 051 30008	0R Jumper 0603	
4502	4822 051 30008	0R Jumper 0603	
4503	4822 051 30008	0R Jumper 0603	
4504	4822 051 30008	0R Jumper 0603	
4505	4822 051 30008	0R Jumper 0603	
4506	4822 051 30008	0R Jumper 0603	
4507	4822 051 30008	0R Jumper 0603	
4508	4822 051 30008	0R Jumper 0603	
4510	4822 051 30008	0R Jumper 0603	
4511	4822 051 30008	0R Jumper 0603	
4512	4822 051 30008	0R Jumper 0603	
4513	4822 051 30008	0R Jumper 0603	
4514	4822 051 30008	0R Jumper 0603	
4515	4822 051 30008	0R Jumper 0603	
4516	4822 051 30008	0R Jumper 0603	
4517	4822 051 30008	0R Jumper 0603	
4518	4822 051 30008	0R Jumper 0603	
4519	4822 051 30008	0R Jumper 0603	
4520	4822 051 30008	0R Jumper 0603	
4521	4822 051 30008	0R Jumper 0603	
4522	4822 051 30008	0R Jumper 0603	
4523	4822 051 30008	0R Jumper 0603	
4524	4822 051 30008	0R Jumper 0603	
4525	4822 051 30008	0R Jumper 0603	
4527	4822 051 30008	0R Jumper 0603	
4528	4822 051 30008	0R Jumper 0603	
4529	4822 051 30008	0R Jumper 0603	
4530	4822 051 30008	0R Jumper 0603	
4531	4822 051 30008	0R Jumper 0603	
4532	4822 051 30008	0R Jumper 0603	
4533	4822 051 30008	0R Jumper 0603	
4534	4822 051 30008	0R Jumper 0603	
4535	4822 051 30008	0R Jumper 0603	
4537	4822 051 30008	0R Jumper 0603	
4538	4822 051 30008	0R Jumper 0603	
4539	4822 051 30008	0R Jumper 0603	
4540	4822 051 30008	0R Jumper 0603	
4541	4822 051 30008	0R Jumper 0603	
4542	4822 051 30008	0R Jumper 0603	
4543	4822 051 30008	0R Jumper 0603	
4544	4822 051 30008	0R Jumper 0603	
4545	4822 051 30008	0R Jumper 0603	
4546	4822 051 30008	0R Jumper 0603	
4548	4822 051 30008	0R Jumper 0603	
4549	4822 051 30008	0R Jumper 0603	
4550	4822 051 30008	0R Jumper 0603	
4551	4822 051 30008	0R Jumper 0603	
4552	4822 051 30008	0R Jumper 0603	
4553	4822 051 30008	0R Jumper 0603	
4554	4822 051 30008	0R Jumper 0603	
4555	4822 051 30008	0R Jumper 0603	
4556	4822 051 30008	0R Jumper 0603	
4557	4822 051 30008	0R Jumper 0603	
4558	4822 051 30008	0R Jumper 0603	
4559	4822 051 30008	0R Jumper 0603	
4560	4822 051 30008	0R Jumper 0603	
4561	4822 051 30008	0R Jumper 0603	
4562	4822 051 30008	0R Jumper 0603	
4563	4822 051 30008	0R Jumper 0603	
4564	4822 051 30008	0R Jumper 0603	
4565	4822 051 30008	0R Jumper 0603	
4566	4822 051 30008	0R Jumper 0603	
4568	4822 051 30008	0R Jumper 0603	
4569	4822 051 30008	0R Jumper 0603	
4570	4822 051 30008	0R Jumper 0603	
4571	4822 051 30008	0R Jumper 0603	
4572	4822 051 30008	0R Jumper 0603	
4573	4822 051 30008	0R Jumper 0603	
4574	4822 051 30008	0R Jumper 0603	
4575	4822 051 30008	0R Jumper 0603	
4579	4822 051 30008	0R Jumper 0603	
4585	4822 051 30008	0R Jumper 0603	
4593	4822 051 30008	0R Jumper 0603	
4598	4822 051 30008	0R Jumper 0603	
4653	4822 051 30008	0R Jumper 0603	

COILS & FILTERS

5201	2422 536 00540	Fixed Ind. 100uH 15%	
5232	4822 157 10586	2,2uH 10%	
5401	4822 157 10586	2,2uH 10%	
5402	4822 157 70601	Inductor 100nH	
5403	4822 157 10586	2,2uH 10%	
5404	4822 157 10586	2,2uH 10%	
5405	4822 157 10586	2,2uH 10%	Scart
5406	4822 157 10586	2,2uH 10%	
5407	4822 157 10586	2,2uH 10%	
5408	4822 157 10586	2,2uH 10%	
5409	4822 157 10586	2,2uH 10%	

DIODES

6101	4822 130 61219	BZX79-B10	
6123	4822 130 34197	BZX79-B12	
6200	4822 130 11397	BAS316	
6201	4822 130 11397	BAS316	
6202	4822 130 10871	SBYV27-200	
6205	9322 128 70685	SS14	
6223	4822 130 31878	1N4003G	
6224	4822 130 34173	BZX79-C5V6	
6225	4822 130 31878	1N4003G	
6227	4822 130 11397	BAS316	
6228	4822 130 11397	BAS316	

TRANSISTORS & INTEGRATED CIRCUITS

7100	5322 130 60159	BC847B	
7101	4822 130 60373	BC857B	
7130	9322 150 74668	TDA7468D	
7131	4822 130 40959	BC547B	
7132	4822 130 60373	BC857B	Scart
7133	4822 130 42804	BC817-25	
7150	5322 130 60159	BC847B	
7200	4822 130 42804	BC817-25	
7204	4822 130 63166	BD242B	
7206	4822 130 40995	BD438	
7207	3198 010 42310	BC847BW	
7208	4822 130 40995	BD438	
7209	3198 010 42310	BC847BW	
7210	9322 188 75682	LM2576T-3.3	
7211	3198 010 42310	BC847BW	
7230	4822 209 31370	NJM4556MB	
7231	4822 130 60373	BC857B	
7232	5322 130 60159	BC847B	
7233	5322 130 60159	BC847B	
7250	4822 130 42804	BC817-25	
7252	4822 130 60373	BC857B	
7253	5322 130 60159	BC847B	
7301	5322 130 60159	BC847B	
7302	4822 130 60373	BC857B	
7304	9322 150 74668	TDA7468D	
7330	9322 150 74668	TDA7468D	
7352	9337 146 20653	74HC4051D	
7402	4822 209 17345	M62320FP	
7405	5322 130 60159	BC847B	
7406	5322 130 60159	BC847B	
7407	5322 130 60159	BC847B	
7410	5322 130 60159	BC847B	Scart
7411	5322 130 60159	BC847B	Scart
7422	5322 209 11102	HEF4052BT	
7431	5322 130 60159	BC847B	Scart
7451	4822 130 42804	BC817-25	
7452	4822 130 42804	BC817-25	
7454	4822 130 42804	BC817-25	Scart
7455	5322 130 60159	BC847B	Scart
7456	5322 130 60159	BC847B	Scart

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

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ELECTRICAL PARTS LIST - AV BOARD

5DTC MODULE

(DVD-SACD Version)

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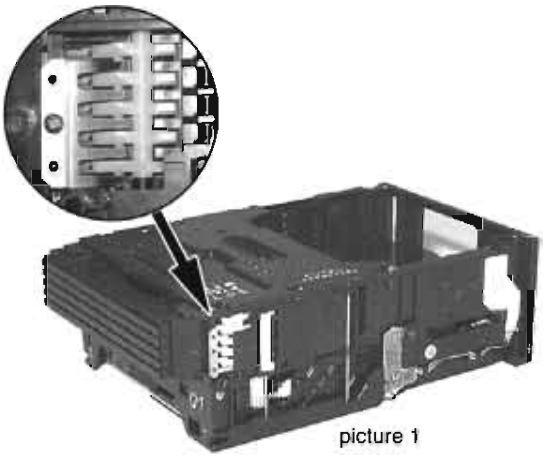
For DAC PCB assembly information see chapters 11 in this service documentation.

For repair information on the SD5.00SA DVD Module, refer to Service Manual "**DVD Module SD-5.00SA_CH - 12NC: 3122 785 13830**"

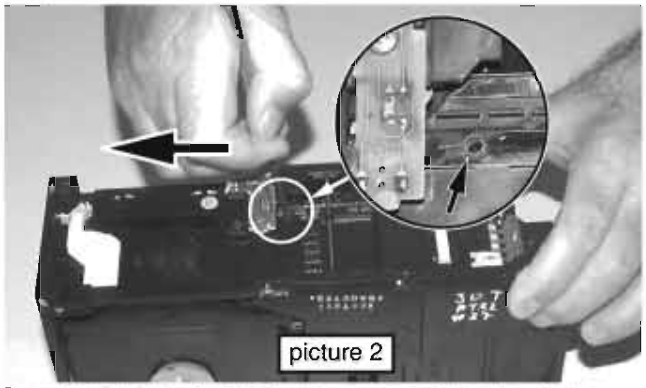
Emergency opening of the trays

The trays of the 5DTC are mechanically locked.



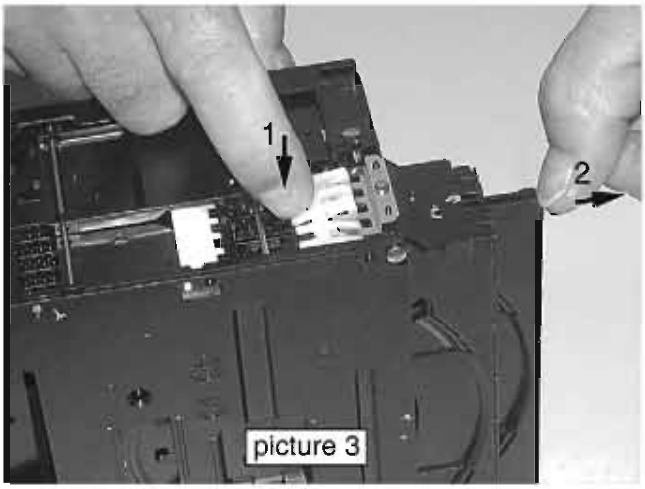
picture 1

To open tray 1, 2 and 3 move lever (pos 29) backwards (e.g. with a screwdriver - see picture 2) to its endposition.



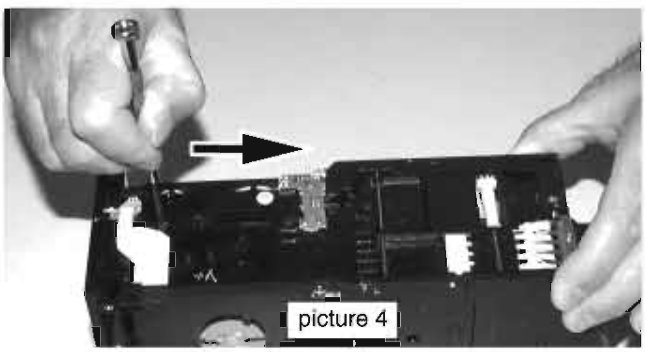
picture 2

Release the locking mechanism and pull out the tray (see picture 3).



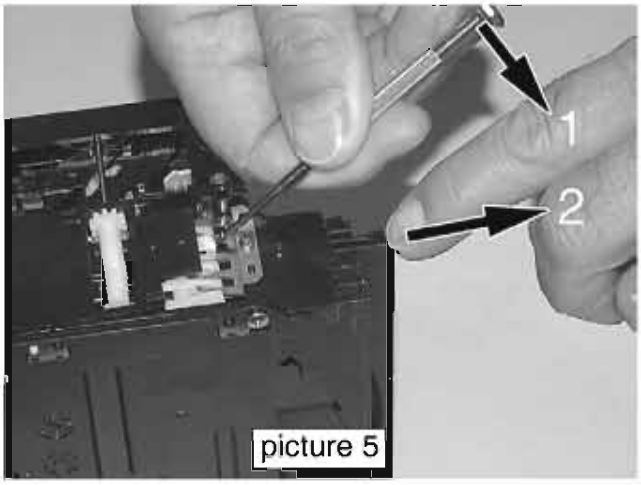
picture 3

To open tray 4 and 5 move lever (pos 29) forward to its endposition (see picture 4).



picture 4

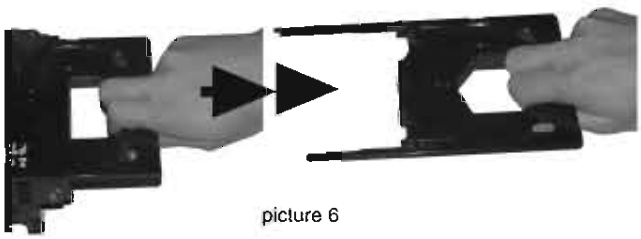
Release snap as shown in picture 5 and pull tray out.



picture 5

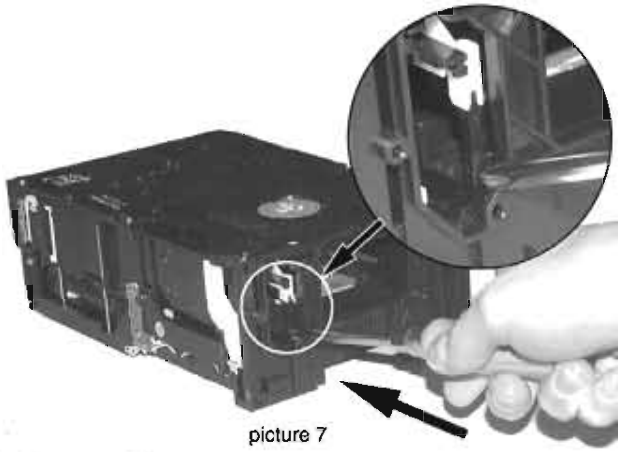
To remove a CD from Play Position perform following steps:

1. Open tray 1 as described before.
2. Tear the tray out with speed (see picture 6). The tray can be inserted aftewards without any alignment.



picture 6

3. Move lever (pos 29) forward to its endposition (see picture 4).
4. Push lever (pos 31) forward (see picture 7).

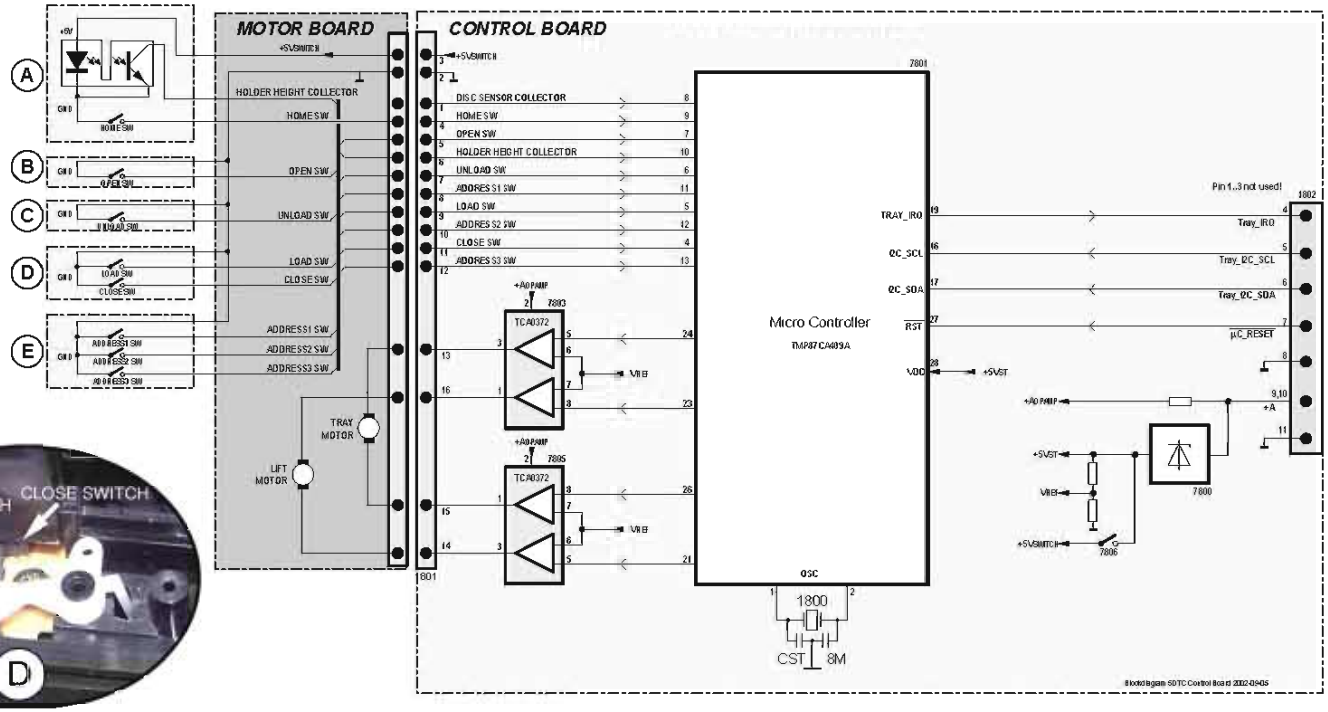


picture 7

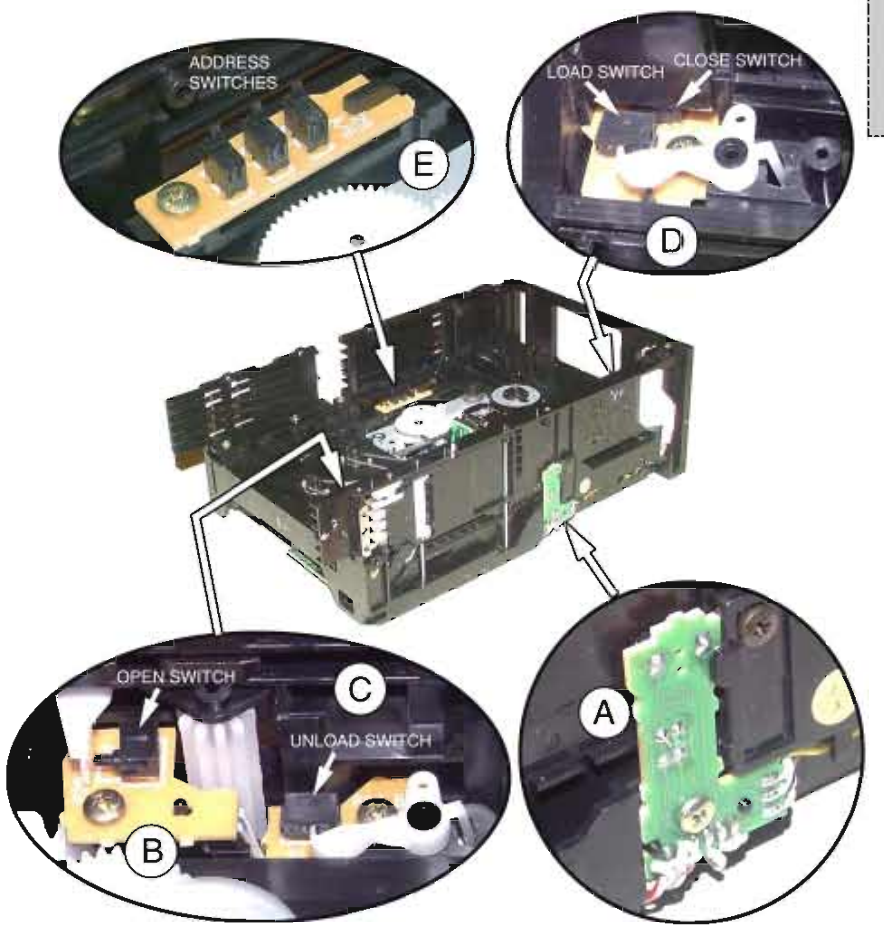
5. Remove CD.

10-3

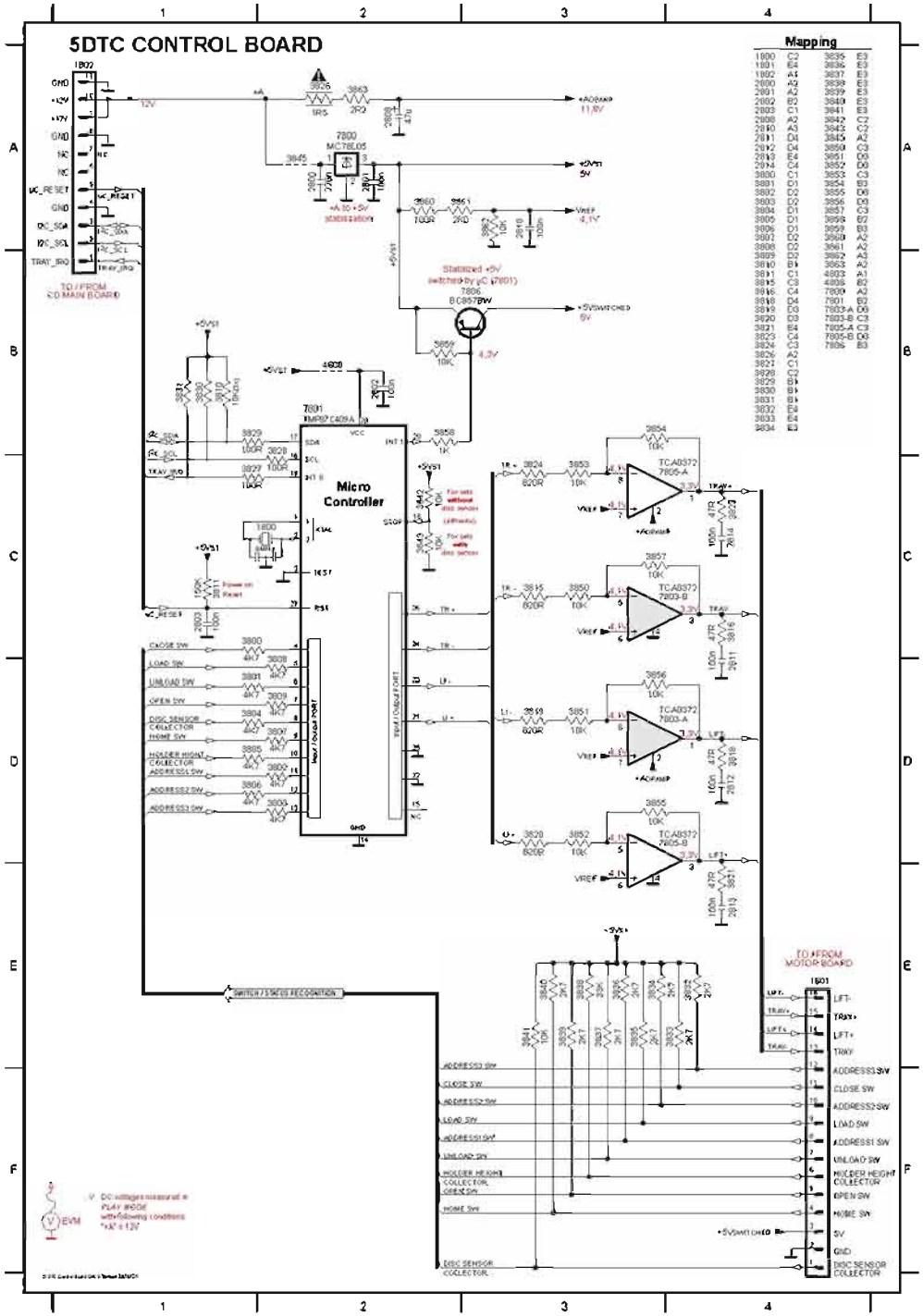
Blockdiagram



Location of switches



10-4

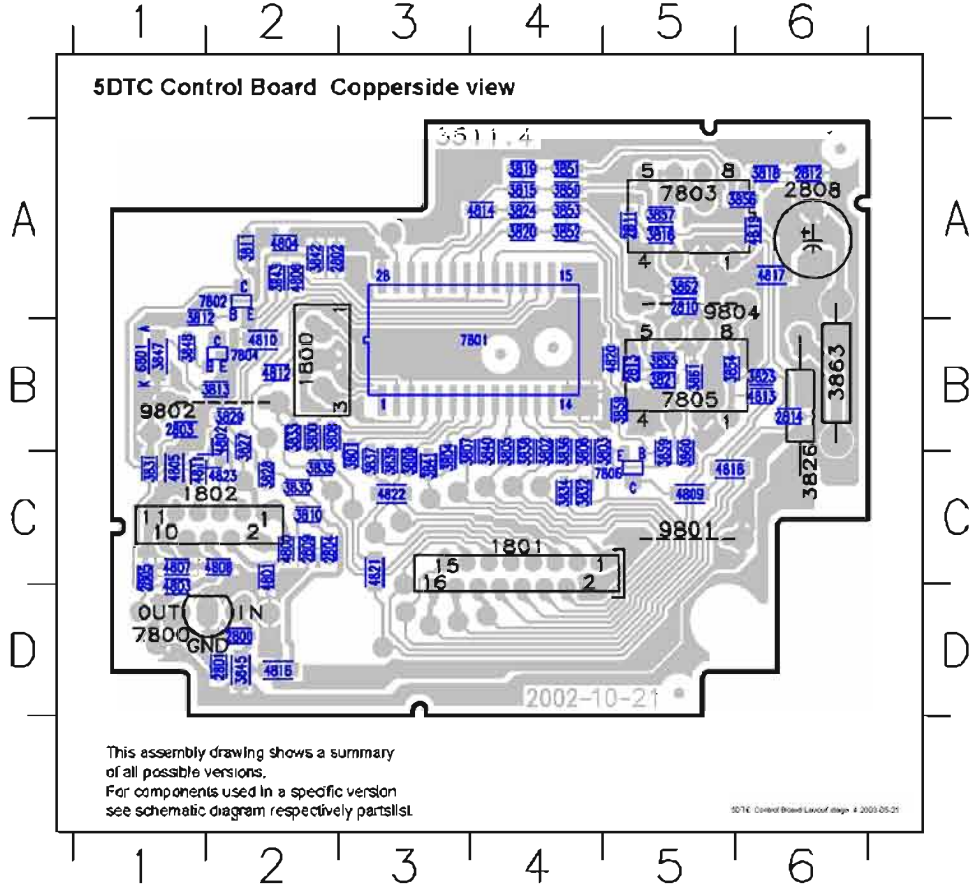


MAPPING FOR CIRCUIT DIAGRAM

1800	C2	2810	A3	3804	D3	3811	C1	3824	C3	3833	E4	3841	E3	3854	B3	3862	A3	7806-B	D3
1801	E4	2811	D4	3805	D1	3815	C3	3826	A2	3834	E3	3842	C2	3855	D3	3863	A2	7806	B3
1802	A1	2812	D4	3806	D1	3816	C4	3827	C1	3835	E3	3843	C2	3856	D3	4808	B2		
2800	A2	2813	E4	3807	D2	3818	D4	3828	C2	3836	E3	3845	A2	3857	C3	7800	A2		
2801	A2	2814	C4	3808	D1	3819	D3	3829	B1	3837	E3	3850	C3	3858	B2	7801	B2		
2802	B2	3800	C1	3808	B2	3820	D3	3830	B1	3838	E3	3851	D3	3859	B3	7803-A	D3		
2803	C1	3802	D2	3809	B2	3821	E4	3831	B1	3839	E3	3852	D3	3860	A2	7805-B	C3		
2808	A2	3803	D2	3810	B1	3823	C4	3832	E4	3840	E3	3853	C3	3861	A2	7805-A	C3		

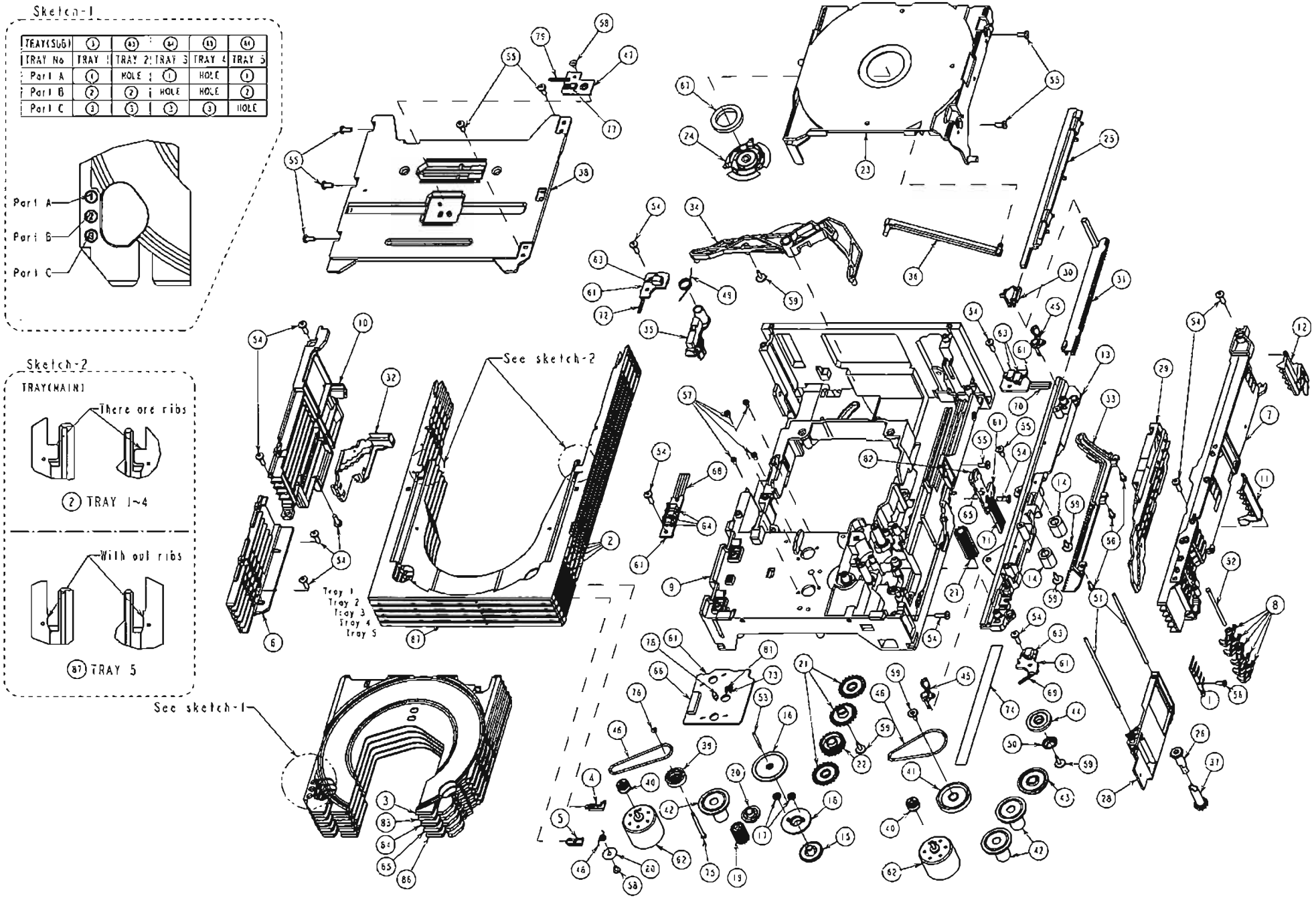
MAPPING FOR COMPONENT LAYOUT

1800	B2	2810	A5	3806	C4	3819	A4	3832	C4	3843	A2	3857	A5	4804	A2	4816	D2	7802	A2
1801	E4	2811	A5	3807	C3	3820	A4	3833	B2	3845	D2	3858	B6	4805	C1	4817	A6	7803	A5
1802	C2	2812	A6	3808	B2	3821	B5	3834	C4	3847	B1	3859	C5	4806	A2	4818	C5	7804	B2
2800	D2	2813	B5	3809	C3	3823	B6	3835	C2	3848	B1	3860	C5	4807	C1	4819	A5	7806	C5
2801	D2	2814	B6	3810	C2	3824	A4	3836	C4	3850	A4	3861	B5	4808	C2	4820	B5	9801	C5
2802	A2	3800	B2	3811	A2	3826	B6	3837	C3	3851	A4	3862	A5	4809	C5	4821	C3	9802	B2
2803	B1	3801	C3	3812	A1	3827	B2	3838	C4	3852	A4	3863	B6	4810	B2	4822	C3	9804	A5
2804	C2	3802	C4	3813	B2	3828	C2	3839	C3	3853	A4	4800	C2	4811	C1	4823	B1		
2805	C1	3803	C4	3815	A4	3829	B2	3840	C4	3854	B5	4801	C2	4812	B2	6801	B1		
2808	A6	3804	C3	3816	A5	3830	C2	3841	C3	3855	B5	4802	C2	4813	B6	7800	D2		
2809	E2	3805	C4	3818	A6	3831	C1	3842	A2	3856	A6	4803	D1	4814	A4	7801	B4		

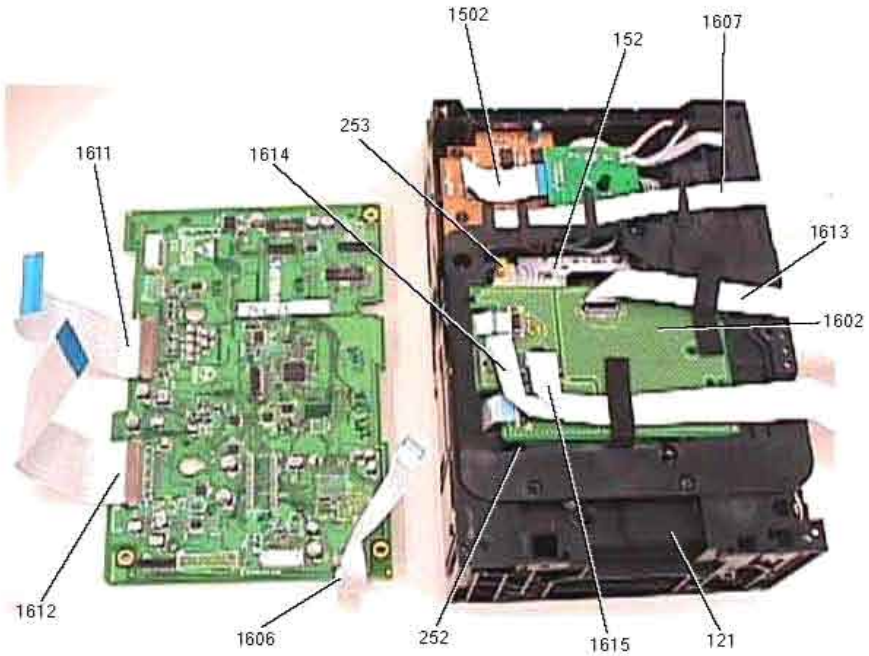


10-5

Exploded view 5DTC mechanic - for orientation only



DVD MODULE COMPONENTS



DVD MODULE PARTS LIST

121	3139 119 00301	5DTC Mechanism w/o Electronics	
152	9305 022 60114	VAM6001/14	
252	3139 114 78401	Suspension, Short Tip Blue	
253	3139 244 02681	Suspension, Long Tip Yel	
1502	3103 308 93110	Flex Cable 16P 6cm AD	
1602	3139 248 81861	HF Buffer Board	
1606	3139 110 35501	Flex Cable 8P 18cm	Kara
1607	3139 111 02321	Flex Cable 11P 22cm BD	
1611	3139 110 36071	Flex Cable 30P 10cm BD	
1612	3139 241 00241	Flex Cable 30P 14cm BD	
1613	3139 111 02311	Flex Cable 24P 22cm BD	
1614	3139 111 02291	Flex Cable 08P 34cm BD	
1615	3139 111 02301	Flex Cable 11P 34cm BD	

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

HF BUFFER BOARD Breakdown

1000	2422 025 17529	Flex Socket 24P
1001	2422 025 17529	Flex Socket 24P
1002	2422 025 17273	Flex Socket 11P
1003	2422 025 17876	Flex Socket 11P
1004	2422 025 17877	Flex Socket 8P
1005	2422 025 17272	Flex Socket 8P F

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

ELECTRICAL PARTS LIST - CONTROL BOARD

MISCELLANEOUS

1800	2422 540 98518	Ceram Resonator 8MHz
1801	2422 025 17065	Flex Socket 16P
1802	2422 025 16565	Flex Socket 11P

CAPACITORS

2800	4822 126 13879	220nF +80/-20% 16V
2801	2238 586 59812	100nF +80/-20% 50V
2802	2238 586 59812	100nF +80/-20% 50V
2803	2238 586 59812	100nF +80/-20% 50V
2808	4822 124 40433	47uF 20% 25V
2810	2238 586 59812	100nF +80/-20% 50V
2811	2238 586 59812	100nF +80/-20% 50V
2812	2238 586 59812	100nF +80/-20% 50V
2813	2238 586 59812	100nF +80/-20% 50V
2814	2238 586 59812	100nF +80/-20% 50V

RESISTORS

3800	4822 051 30472	4k7 5% 0,062W
3801	4822 051 30472	4k7 5% 0,062W
3802	4822 051 30472	4k7 5% 0,062W
3803	4822 051 30472	4k7 5% 0,062W
3804	4822 051 30472	4k7 5% 0,062W
3805	4822 051 30472	4k7 5% 0,062W
3806	4822 051 30472	4k7 5% 0,062W
3807	4822 051 30472	4k7 5% 0,062W
3808	4822 051 30472	4k7 5% 0,062W
3809	4822 051 30472	4k7 5% 0,062W
3810	4822 051 30103	10k 5% 0,062W
3811	4822 051 30154	150k 5% 0,062W
3815	5322 117 13057	820R 1% 0,063W
3816	4822 051 30479	47R 5% 0,062W
3818	4822 051 30479	47R 5% 0,062W
3819	5322 117 13057	820R 1% 0,063W
3820	5322 117 13057	820R 1% 0,063W
3821	4822 051 30479	47R 5% 0,062W
3823	4822 051 30479	47R 5% 0,062W
3824	5322 117 13057	820R 1% 0,063W
3826	4822 117 12148 ⚠	1R5 5% 330mW
3827	4822 051 30101	100R 5% 0,062W
3828	4822 051 30101	100R 5% 0,062W
3829	4822 051 30101	100R 5% 0,062W
3830	4822 051 30103	10k 5% 0,062W
3831	4822 051 30103	10k 5% 0,062W
3832	4822 051 30272	2k7 5% 0,062W
3833	4822 051 30272	2k7 5% 0,062W
3834	4822 051 30272	2k7 5% 0,062W
3835	4822 051 30272	2k7 5% 0,062W
3836	4822 051 30272	2k7 5% 0,062W
3837	4822 051 30272	2k7 5% 0,062W
3838	4822 051 30333	33k 5% 0,062W
3839	4822 051 30272	2k7 5% 0,062W
3840	4822 051 30272	2k7 5% 0,062W
3841	4822 051 30103	10k 5% 0,062W
3842	4822 051 30103	10k 5% 0,062W
3845	4822 051 20008	0R Jumper0805
3849	4822 051 30008	0R Jumper0603
3850	4822 117 12706	10k 1% 0,063W
3851	4822 117 12706	10k 1% 0,063W
3852	4822 117 12706	10k 1% 0,063W
3853	4822 117 12706	10k 1% 0,063W
3854	4822 117 12706	10k 1% 0,063W
3855	4822 117 12706	10k 1% 0,063W
3856	4822 117 12706	10k 1% 0,063W
3857	4822 117 12706	10k 1% 0,063W
3858	4822 051 30102	1k 5% 0,062W
3859	4822 051 30103	10k 5% 0,062W
3860	5322 117 13017	100R 1% 0,063W
3861	2322 704 62002	2k 1% 0,062W
3862	4822 117 12706	10k 1% 0,063W
3863	4822 053 10228	2R2 5% 1W
4801	4822 051 30008	0R Jumper0603
4804	4822 051 30008	0R Jumper0603
4805	4822 051 20008	0R Jumper0805
4806	4822 051 30008	0R Jumper0603
4807	4822 051 30008	0R Jumper0603
4808	4822 051 30008	0R Jumper0603
4809	4822 051 20008	0R Jumper0805
4810	4822 051 20008	0R Jumper0805
4812	4822 051 30008	0R Jumper0603
4813	4822 051 30008	0R Jumper0603
4814	4822 051 30008	0R Jumper0603
4816	4822 051 20008	0R Jumper0805
4817	4822 051 20008	0R Jumper0805
4818	4822 051 20008	0R Jumper0805
4819	4822 051 30008	0R Jumper0603
4820	4822 051 30008	0R Jumper0603
4821	4822 051 20008	0R Jumper0805
4822	4822 051 20008	0R Jumper0805
4823	4822 051 30008	0R Jumper0603

TRANSISTORS & INTEGRATED CIRCUITS

7800	4822 209 72042	L78L06ACZ
7801	3103 307 01641	SW 5DTC Mask 1
7803	4822 209 62059	TCA0372DP1
7805	4822 209 62059	TCA0372DP1
7806	3198 010 42320	BC857BW

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

DAC BOARD

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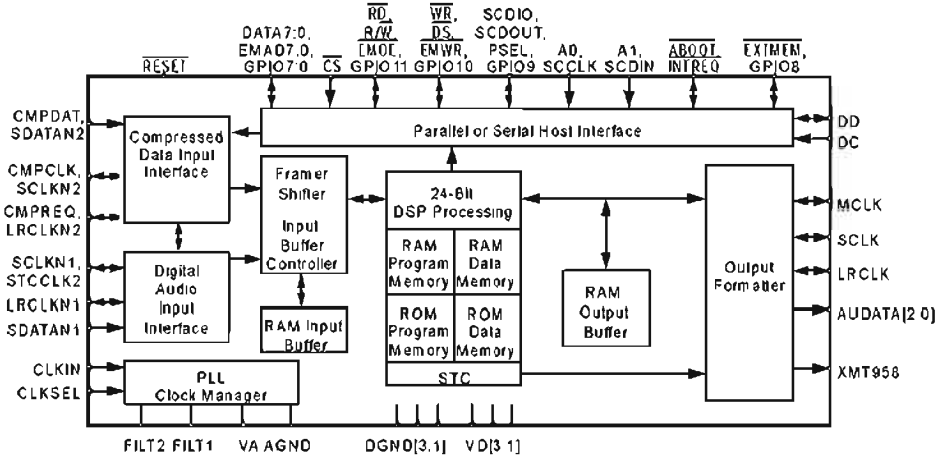
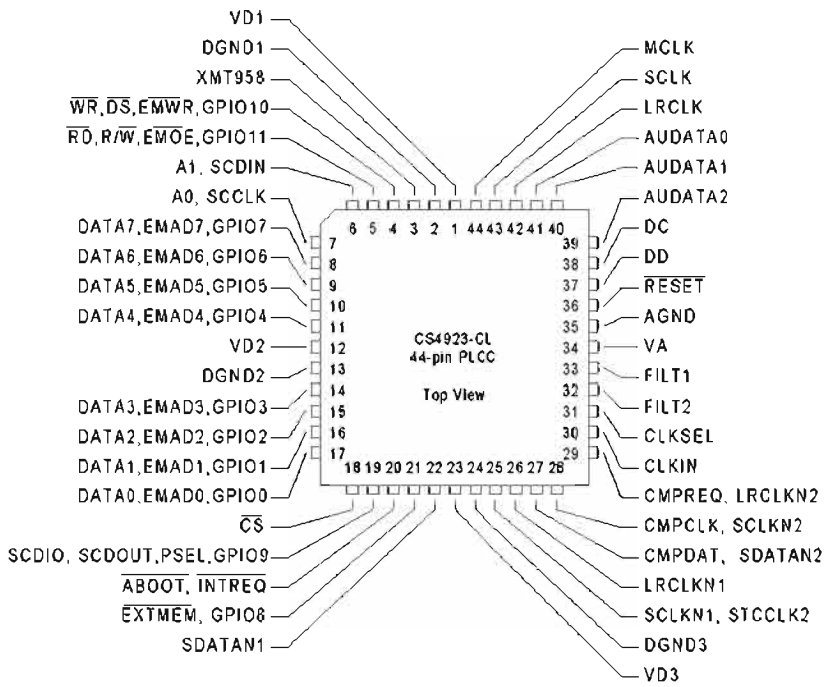
CS492705-CL INTERNAL BLOCK DIAGRAM

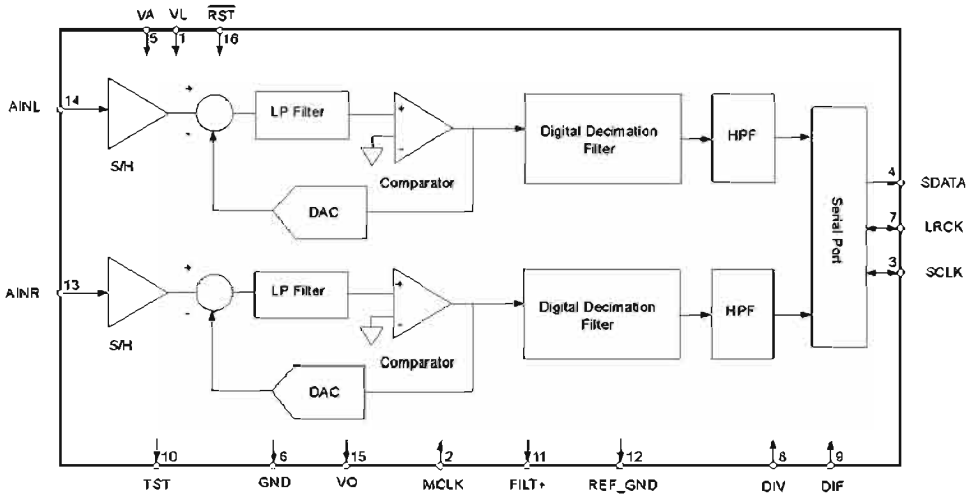
BLOCK DIAGRAM



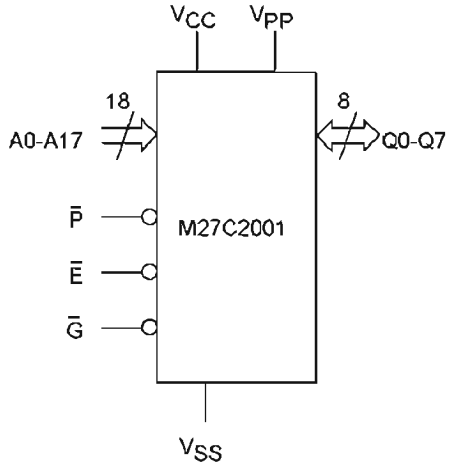
PIN CONFIGURATION

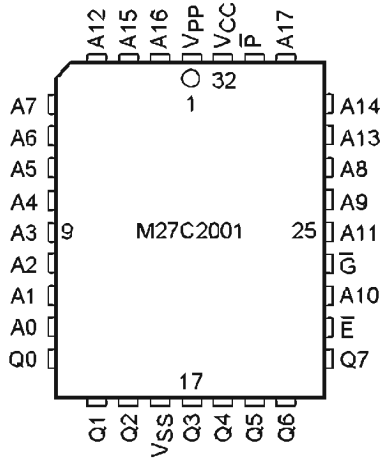


CS5333-KZ INTERNAL BLOCK DIAGRAM



M27C2001-70C1 INTERNAL BLOCK DIAGRAM





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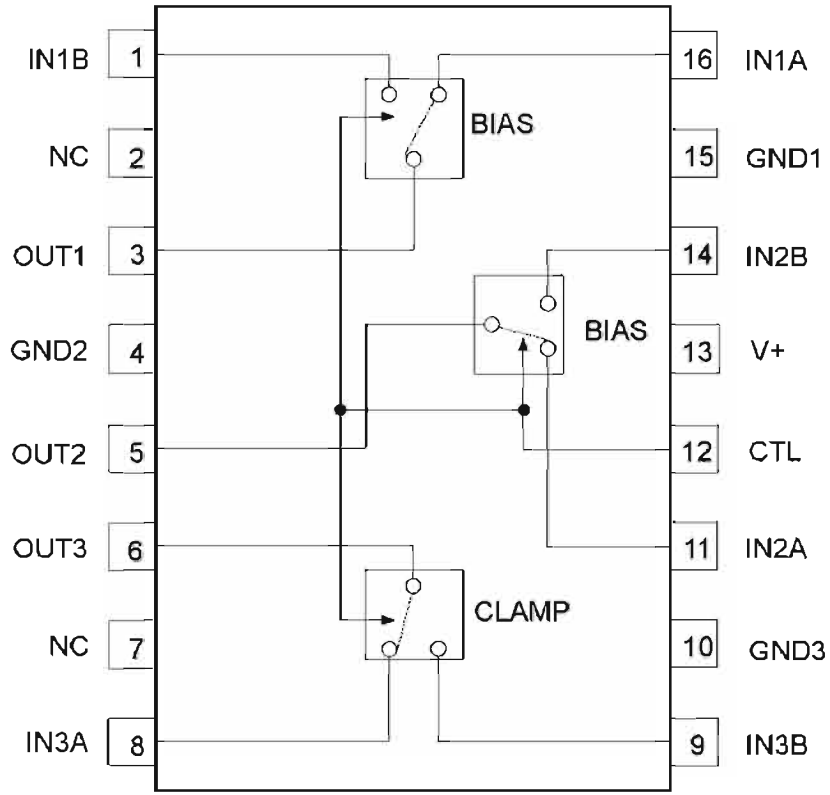
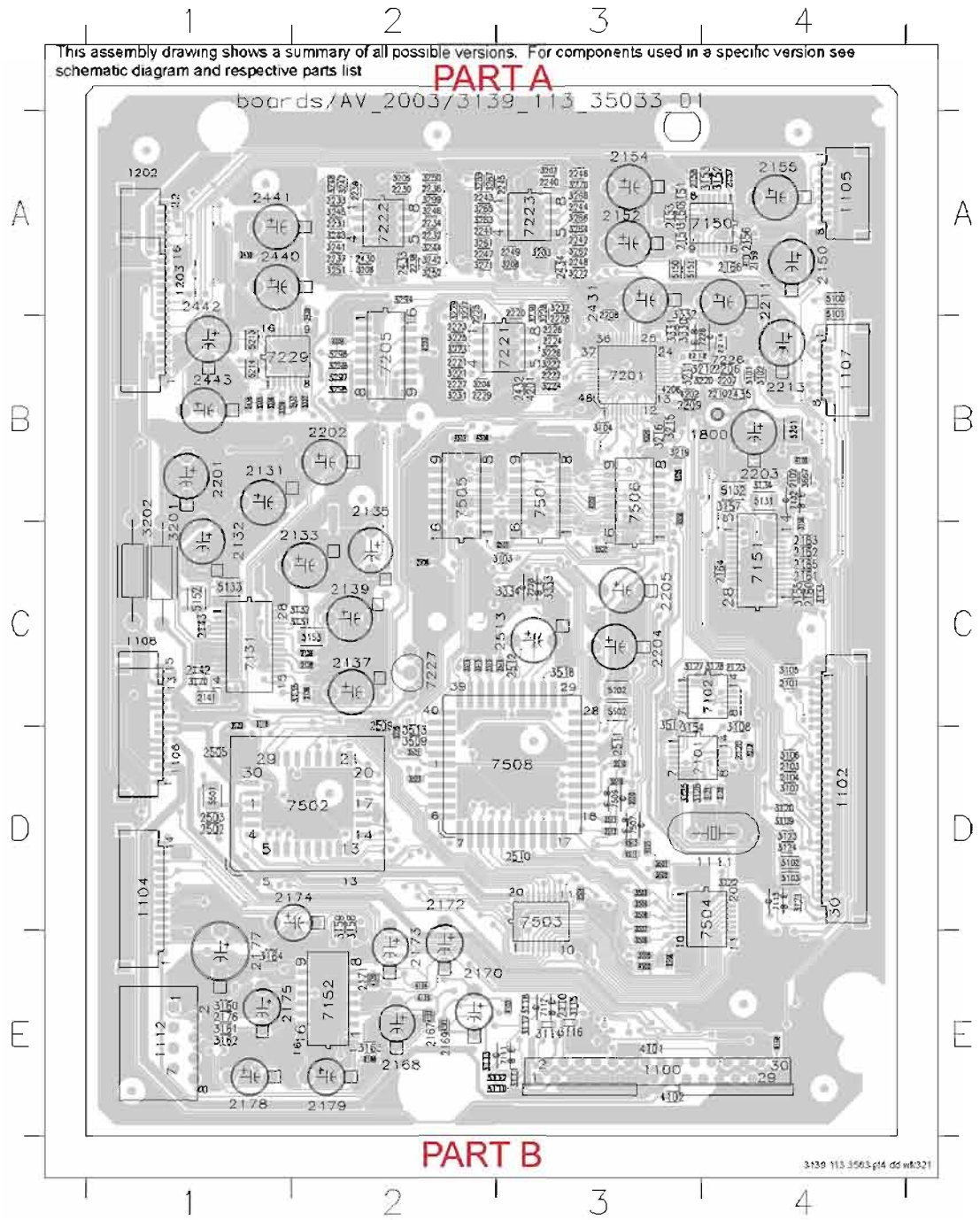


11-3

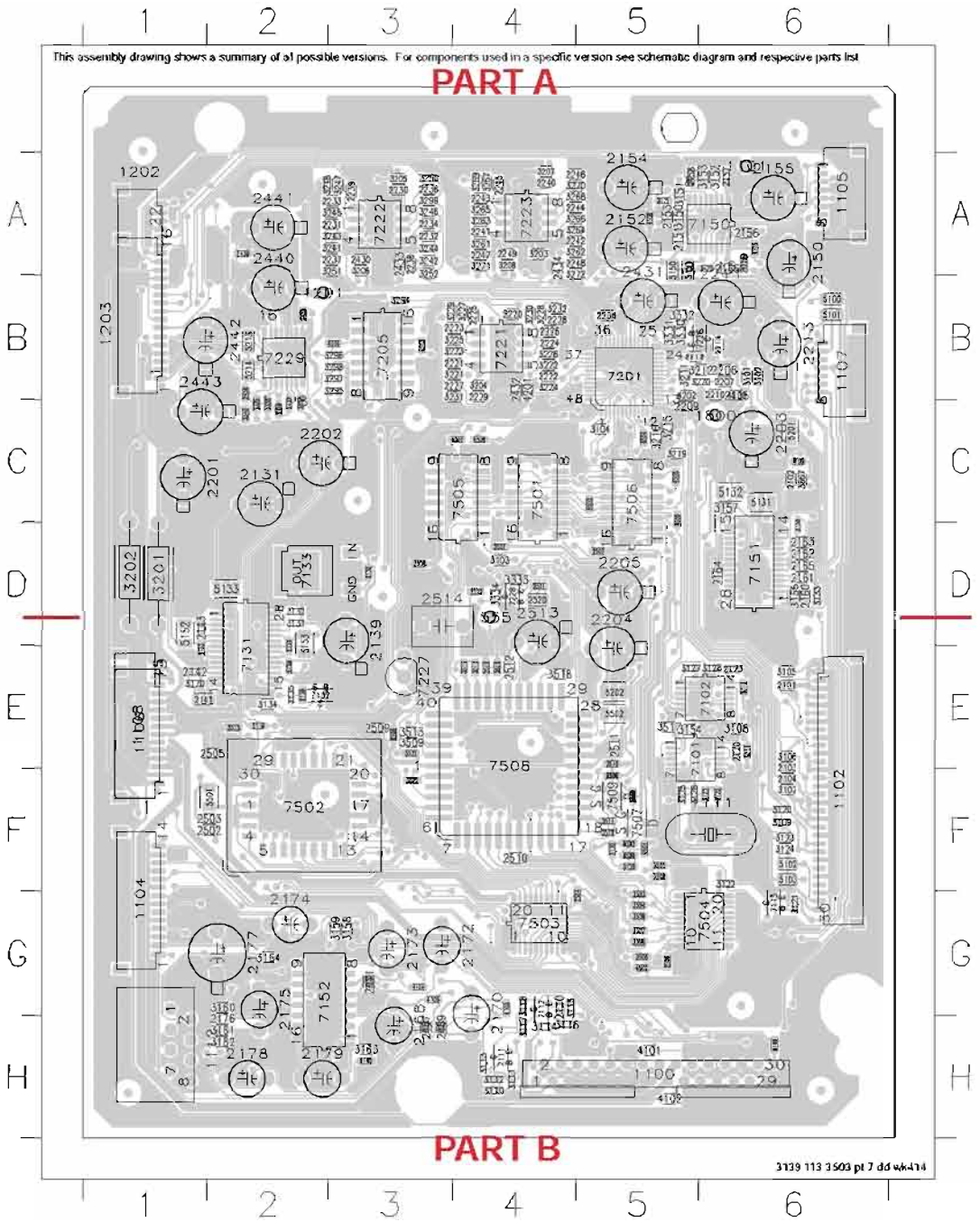
TOP VIEW - COMPONENT & CHIP LAYOUTS



1100	E3	2221	B2	3124	D4	3298	B2	5212	D4
1102	D4	2222	B3	3125	D3	3299	A2	5213	B1
1104	D1	2223	B2	3126	D3	3350	B3	5214	B1
1105	A4	2224	B3	3127	C3	3351	B3	5220	D2
1106	D1	2225	A2	3128	C4	3352	A3	5501	D1
1107	B4	2226	B3	3131	C2	3353	C3	5502	C3
1108	C1	2227	B2	3133	C3	3354	C3	7101	D4
1111	D4	2228	B3	3133	C4	3355	B1	7102	C4
1112	E1	2230	B2	3134	B4	3356	B1	7111	E3
1202	A1	2231	C2	3135	C2	3357	B2	7112	E3
1203	A1	2232	A2	3150	A4	3359	B1	7113	D4
1800	B4	2233	A2	3151	A4	3501	D3	7131	C1
2101	C4	2233	A2	3152	A4	3502	D3	7132	B4
2102	B4	2234	A2	3153	A4	3503	D3	7150	A4
2103	D4	2235	A2	3154	D3	3504	D3	7151	C4
2104	D4	2236	A2	3155	C4	3505	E3	7152	E2
2110	E3	2237	A2	3156	C4	3506	E3	7201	B3
2120	D4	2238	A2	3157	B4	3507	D3	7205	B2
2121	D4	2239	A2	3158	D2	3508	D3	7221	A2
2122	D4	2240	A3	3159	D2	3509	D2	7222	A2
2123	C4	2241	A2	3160	E1	3510	D3	7223	A3
2124	B1	2242	A3	3161	E1	3511	D3	7226	B4
2131	C1	2243	A2	3162	E1	3512	D3	7227	C2
2132	C2	2244	A3	3163	E2	3513	D2	7228	C3
2133	C2	2245	A3	3164	E1	3514	C2	7229	B2
2134	C2	2246	A3	3165	E1	3515	C2	7501	B3
2135	B2	2247	A2	3170	C1	3516	C3	7502	D2
2136	C2	2248	A3	3201	C1	3517	C3	7503	D3
2137	C2	2249	A3	3202	B1	3518	C3	7504	E4
2138	C2	2430	A2	3203	A3	3519	D3	7505	B2
2139	C2	2431	A3	3204	B2	3520	D3	7506	B3
2141	C1	2432	B3	3205	A2	3521	D2	7507	D3
2142	C1	2433	A2	3206	A2	3522	D2	7508	D2
2143	C1	2434	A3	3207	A3	3523	D2	7599	D3
2150	A4	2435	B4	3208	A3	3524	C1		
2151	A3	2436	B1	3211	B3	3667	B4		
2152	A3	2437	B2	3212	B4	4101	E3		
2153	A3	2438	A2	3215	B3	4102	E3		
2154	A4	2439	A1	3216	B3	4103	E3		
2155	A4	2440	A1	3217	B3	4104	E2		
2156	A4	2441	A1	3220	B4	4105	E2		
2157	A4	2442	A1	3221	B2	4109	B4		
2158	A3	2443	B1	3222	B3	4110	E2		
2159	A4	2501	C3	3223	B3	4111	A4		
2160	C4	2502	D1	3224	B3	4112	E2		
2161	C4	2503	D1	3225	B2	4116	E2		
2162	C4	2504	D3	3226	B3	4119	E4		
2163	C4	2505	D1	3227	A2	4120	E2		
2164	C4	2506	E3	3228	A3	4121	E2		
2165	C4	2507	C3	3229	A3	4122	E3		
2166	A4	2508	C2	3230	A3	4201	B3		
2167	E2	2509	C2	3231	B2	4202	B3		
2168	E2	2510	D3	3232	A3	4203	B2		
2169	E2	2511	D3	3241	A2	4204	B2		
2170	E2	2512	C3	3242	A2	4206	B3		
2171	E2	2513	C3	3243	A2	4501	D3		
2172	D2	2515	C2	3244	A2	4502	E3		
2173	E2	3101	B4	3245	A2	4503	B3		
2174	D2	3102	B4	3246	A2	4504	B3		
2175	E1	3103	C3	3247	A2	4505	B3		
2176	E1	3104	B3	3248	A2	4506	B3		
2177	E1	3105	C4	3250	A2	4507	B2		
2178	E1	3106	D4	3251	A2	4508	B2		
2179	E2	3107	D4	3252	A2	4511	D3		
2180	E2	3108	D4	3261	A2	4512	D3		
2201	B1	3109	D4	3262	A3	5100	A4		
2202	B2	3110	E3	3263	A2	5101	A4		
2203	B4	3111	E3	3264	A3	5102	D4		
2204	C3	3112	E3	3265	A2	5103	D4		
2205	B4	3113	E3	3266	A3	5131	B4		
2207	B4	3115	E3	3267	A2	5132	B4		
2208	A3	3116	E3	3268	A3	5133	C1		
2209	B3	3117	E3	3269	A2	5140	E4		
2210	B4	3118	E3	3270	A3	5150	A3		
2211	A4	3119	C1	3271	A2	5151	A3		
2212	B3	3120	D4	3272	A3	5152	C1		
2213	B4	3121	D4	3294	A2	5153	C2		
2214	B4	3122	D4	3295	B2	5201	B4		
2220	A3	3123	D4	3296	B2	5202	C3		
				3297	B2	5211	D4		

11-3a

TOP VIEW - COMPONENT & CHIP LAYOUTS (For pcb layout ....35037)



1100	H5	2220	B4	3119	E2	3268	A5	5100	B6
1101	A6	2221	B4	3120	E6	3269	A4	5101	B6
1102	F6	2222	B4	3121	E6	3270	A5	5102	F6
1104	G1	2223	B4	3122	E6	3271	A4	5103	F6
1105	A6	2224	B4	3123	E6	3272	A5	5131	C6
1106	E1	2225	B4	3124	E6	3294	B5	5132	C6
1107	B6	2226	B4	3125	E5	3295	B5	5133	D2
1108	E1	2227	B4	3126	E5	3296	B5	5140	H6
1111	F6	2228	B4	3127	E5	3297	B5	5150	A6
1112	H2	2229	B4	3128	E6	3298	B5	5151	A5
1201	B2	2230	A3	3129	E5	3299	A3	5152	C1
1202	A1	2231	A3	3130	E5	3300	B5	5153	D2
1203	B1	2232	A3	3131	D2	3331	B5	5201	C6
1205	D4	2233	A3	3132	D2	3332	B5	5202	C6
1206	C6	2234	A3	3133	D2	3333	B5	5211	E6
2101	E6	2236	A3	3134	E2	3334	C4	5212	E6
2102	C6	2237	A3	3135	E2	3335	C5	5213	B2
2103	E6	2238	A3	3150	A5	3336	C5	5214	B2
2104	E6	2239	A3	3151	A5	3337	C5	5220	C6
2105	C4	2240	A4	3152	A6	3339	C5	7101	E5
2120	E6	2241	A4	3153	A6	3340	C5	7102	E6
2121	E6	2242	A5	3154	E5	3501	C5	7111	H4
2122	E6	2243	A4	3155	D6	3502	C5	7112	G4
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2130	D6	2245	A4	3157	C6	3504	C5	7151	E2
2131	C2	2246	A5	3158	C6	3505	C5	7201	B3
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2134	D2	2248	A5	3160	G2	3507	C5	7221	B4
2136	E2	2249	A4	3161	H2	3508	C5	7222	A3
2138	E2	2430	A3	3162	H2	3509	C5	7223	A4
2139	D6	2431	A5	3163	H3	3510	C5	7501	A6
2141	E1	2432	B4	3164	H3	3511	C5	7502	C6
2142	E1	2433	A3	3170	E1	3512	C5	7503	B5
2143	D1	2434	A4	3171	A5	3513	C5	7504	B3
2150	A6	2435	B6	3172	A6	3514	C4	7505	B3
2151	A5	2436	B2	3201	D1	3515	C4	7506	B3
2152	A5	2437	B5	3202	D1	3516	C4	7507	F5
2153	A5	2438	B5	3203	A4	3517	C4	7508	F4
2154	A5	2439	A2	3204	B4	3518	C4	7509	F5
2155	A6	2440	A2	3205	A3	3519	C4		
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2157	A6	2442	B2	3207	A4	3521	C4		
2158	A5	2443	B5	3208	A4	3522	C4		
2159	A6	2501	D4	3211	B5	3523	C4		
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2162	D6	2504	G5	3216	C5	3667	C6		
2163	D6	2505	E2	3219	C5	4101	C4		
2164	D6	2506	D5	3220	B6	4102	C4		
2165	D6	2507	D5	3221	B4	4103	C4		
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2177	G2	3101	B6	3241	A3	4121	C4		
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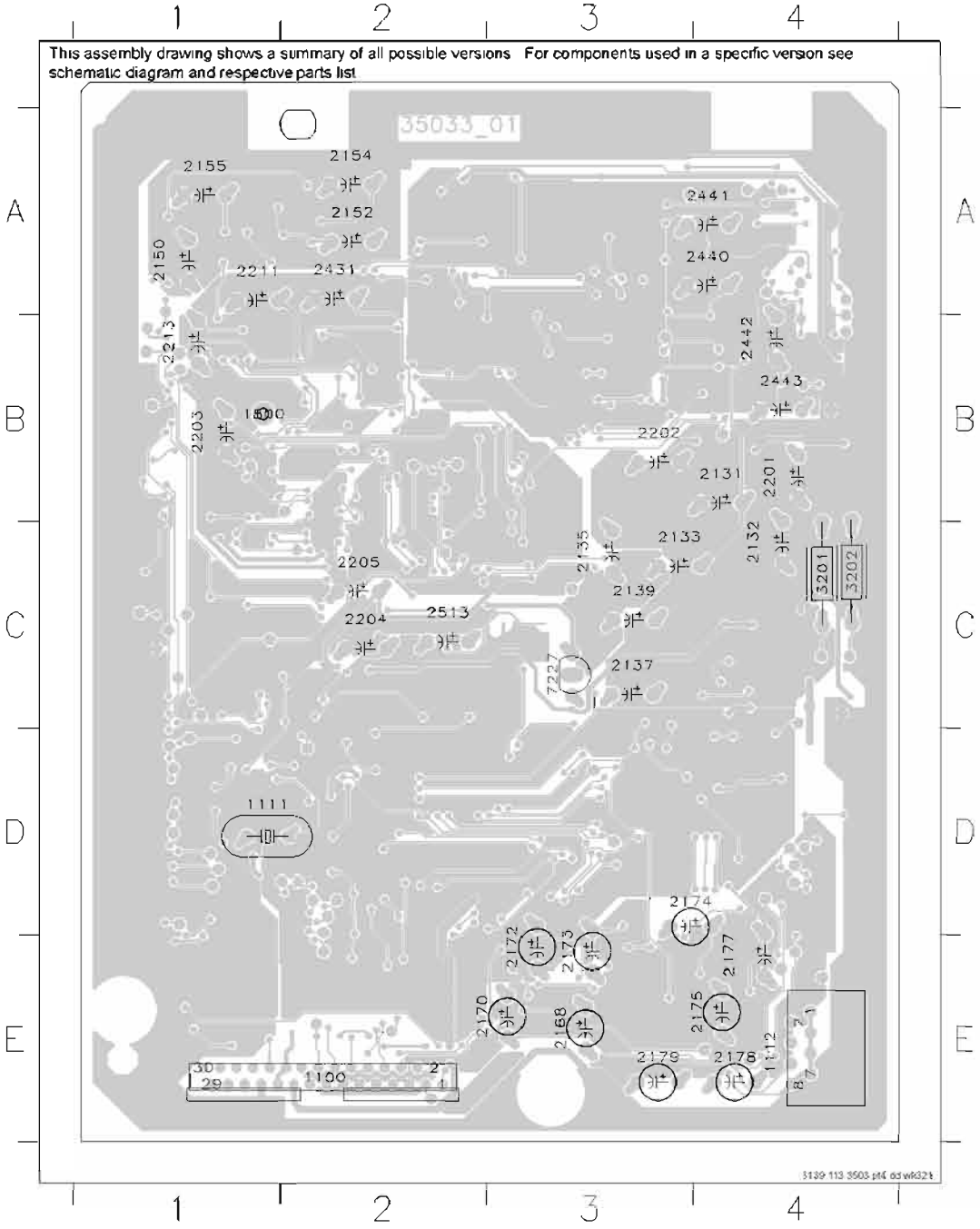
2179	H2	3103	D4	3243	A3	4201	A4		
2180	H5	3104	C5	3244	A3	4202	A4		
2201	C2	3105	E6	3245	A3	4203	A4		
2202	C6	3106	E6	3246	A3	4204	A4		
2203	C6	3107	E6	3247	A3	4206	A4		
2204	D5	3108	E6	3248	A2	4209	A4		
2205	D5	3109	F6	3250	A3	4501	C4		
2206	B6	3110	H4	3251	A3	4502	C4		
2207	B6	3111	H4	3252	A3	4503	C4		
2208	B6	3112	H4	3261	A4	4504	C4		
2209	C6	3113	H4	3262	A5	4505	C4		
2210	B6	3114	H4	3263	A4	4506	C4		
2211	A6	3115	G4	3264	A5	4507	C4		
2212	B5	3116	H4	3265	A4	4508	C4		
2213	B6	3117	H4	3266	A5	4511	C4		
2214	B6	3118	G4	3267	A4	4512	C4		

11-4

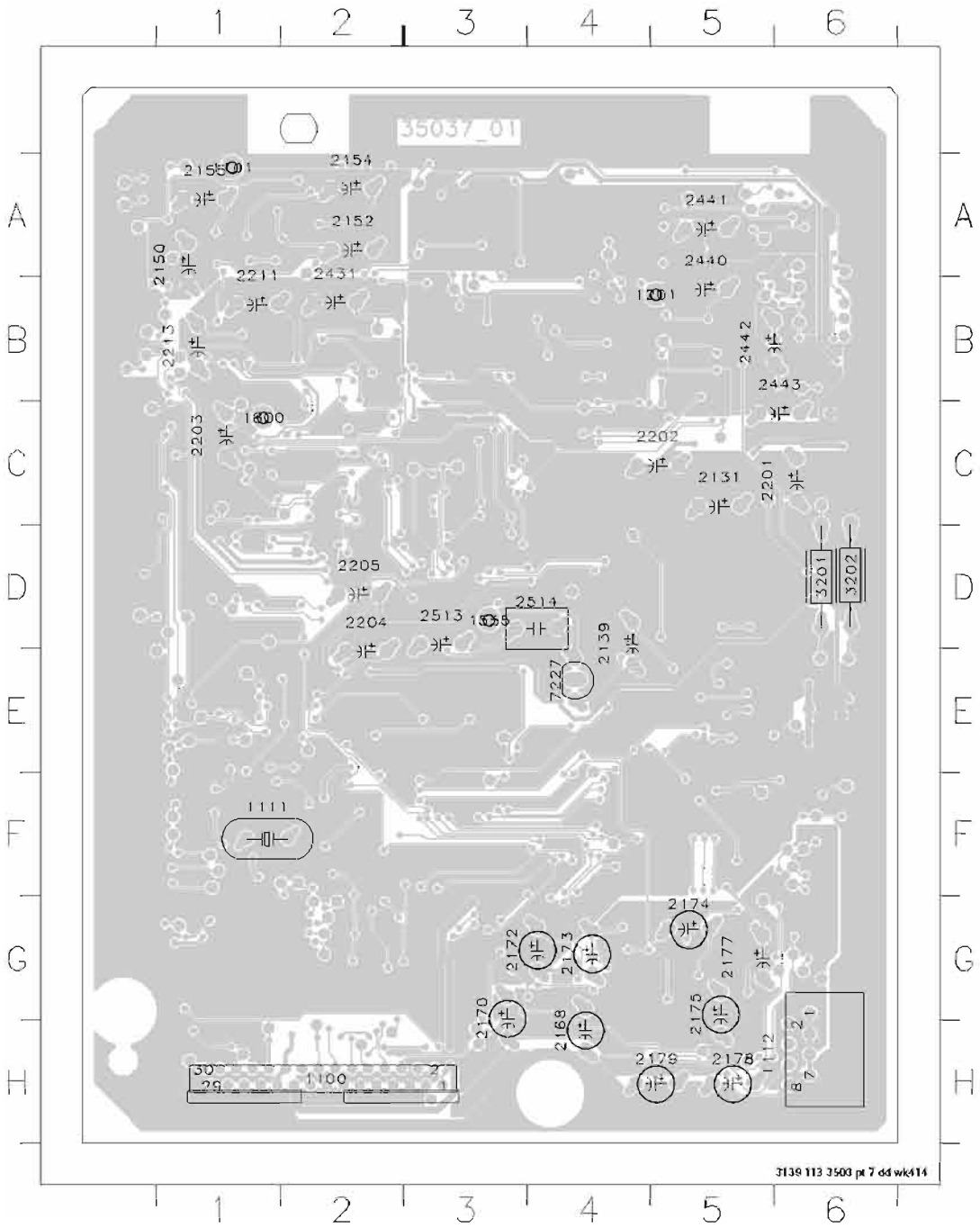
BOTTOM VIEW - COMPONENT LAYOUT



1100 E2
1111 D1
1112 E4
1800 B1
2131 B4
2132 C4
2133 C3
2135 C3
2137 C3
2139 C3
2150 A1
2152 A2
2154 A2
2155 A1
2168 E3
2170 E2
2172 E5
2173 E3
2174 D3
2175 E4
2177 E4
2178 E4
2179 E3
2201 B4
2202 B3
2203 B1
2204 C2
2205 C2
2211 A1
2213 B1
2431 A2
2440 A4
2441 A4
2442 B4
2443 B4
2513 C2
3201 C4
3202 C4
7227 C3

11-4a

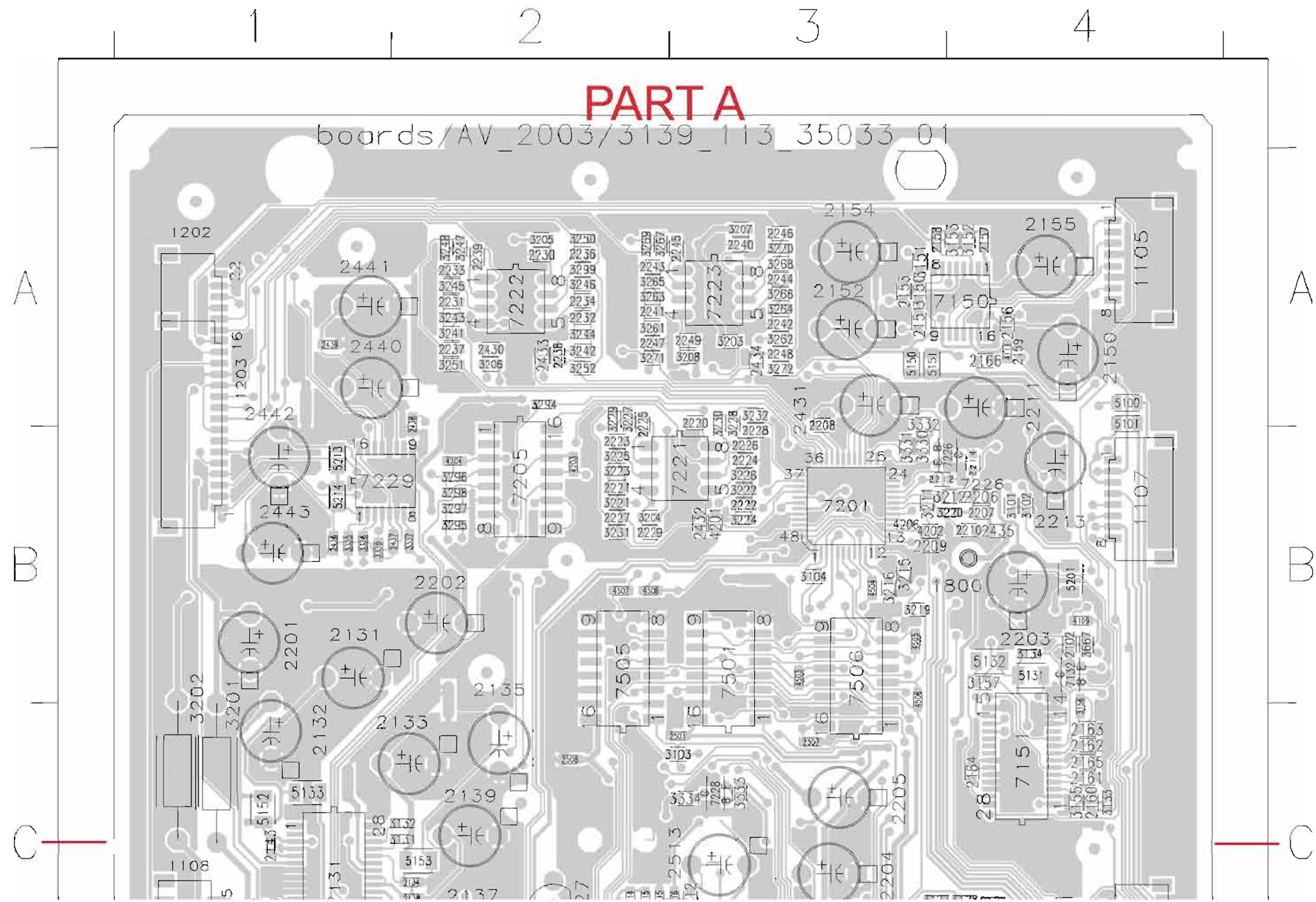
BOTTOM VIEW - COMPONENT LAYOUT (For pcb layout ....35037)



1100	H2
1101	A1
1111	F1
1112	H5
1201	B5
1555	D3
1800	C1
2131	C5
2139	D4
2150	A1
2152	A2
2154	A2
2155	A1
2168	H4
2170	G3
2172	G3
2173	G4
2174	G5
2175	G5
2177	G5
2178	H5
2179	H5
2201	C5
2202	C5
2203	C1
2204	D2
2205	D2
2211	A1
2213	B1
2431	A2
2440	A5
2441	A5
2442	B5
2443	B6
2513	D3
2514	D4
3201	D6
3202	D6
7227	E4

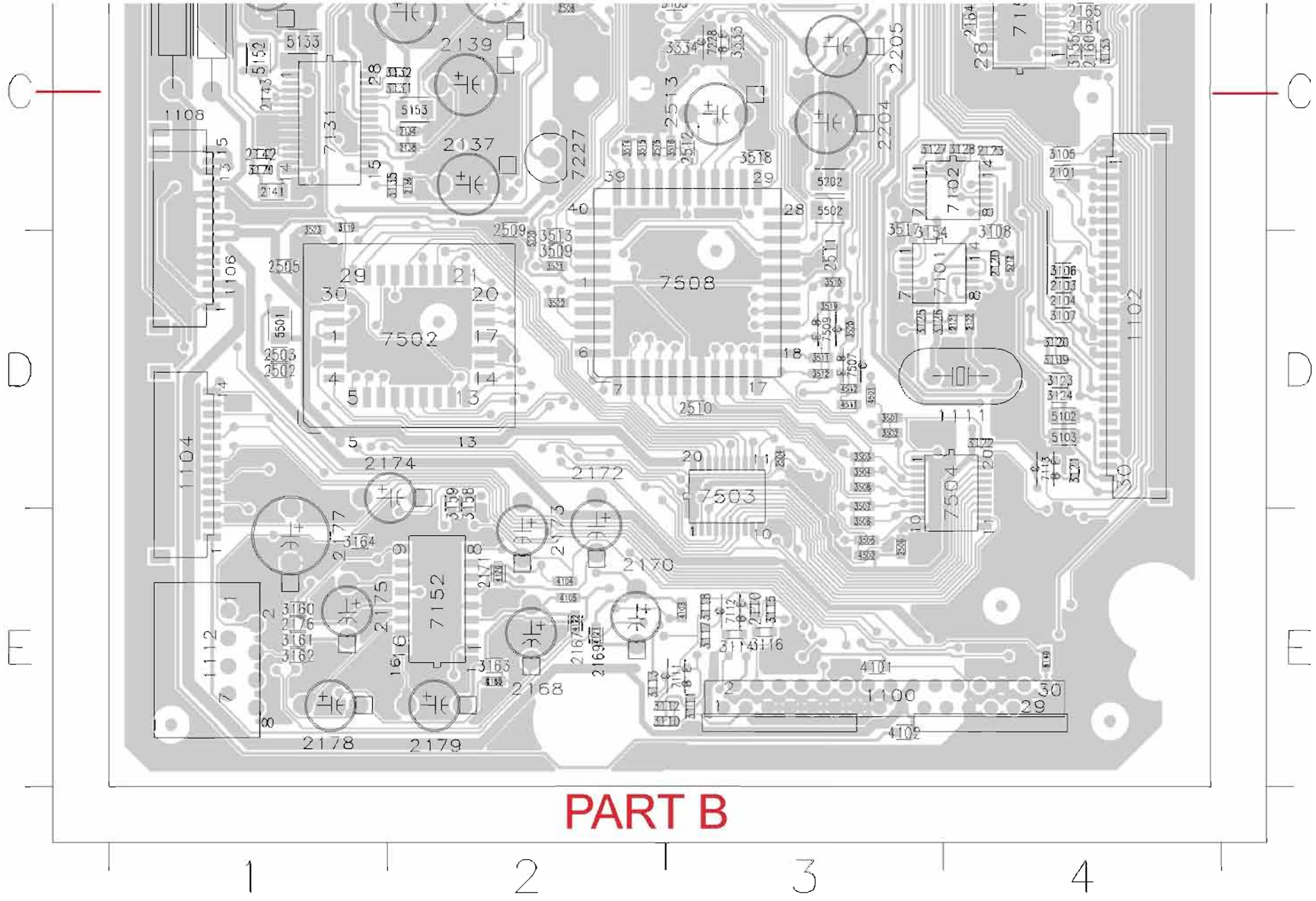
11-5

TOP VIEW - PART A



11-6

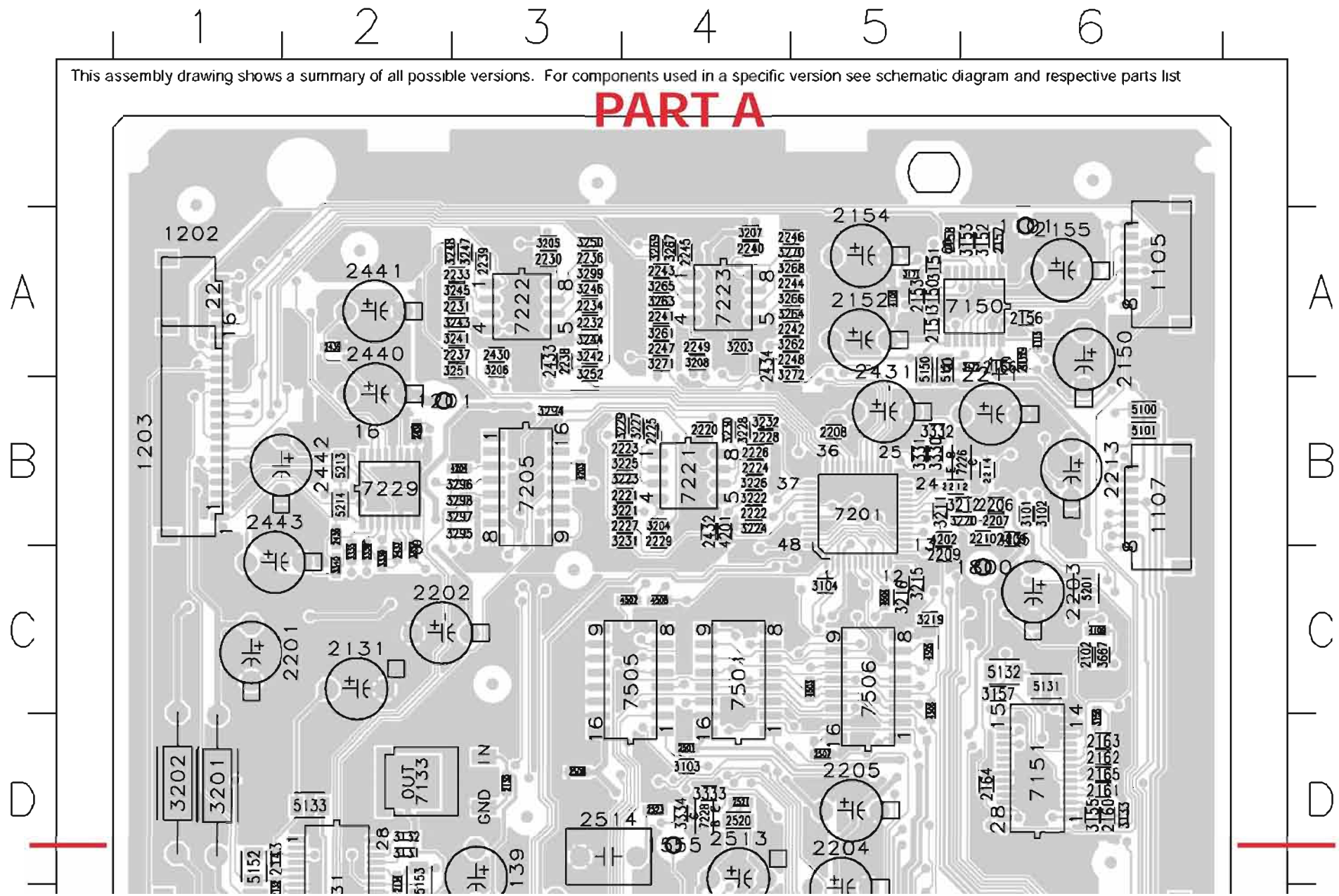
TOP VIEW - PART B



11-5a

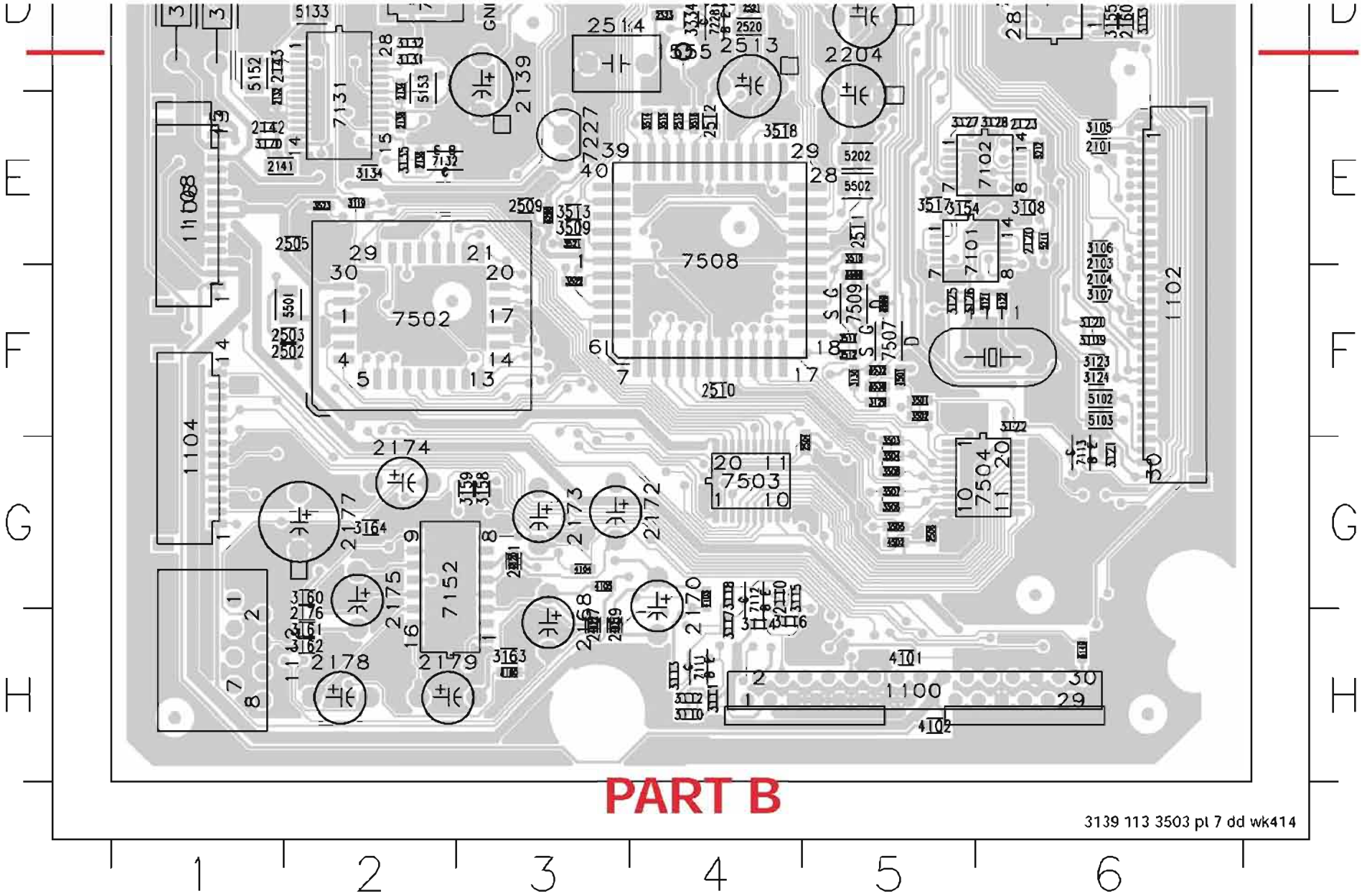
TOP VIEW - PART A (For pcb layout ....35037)

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



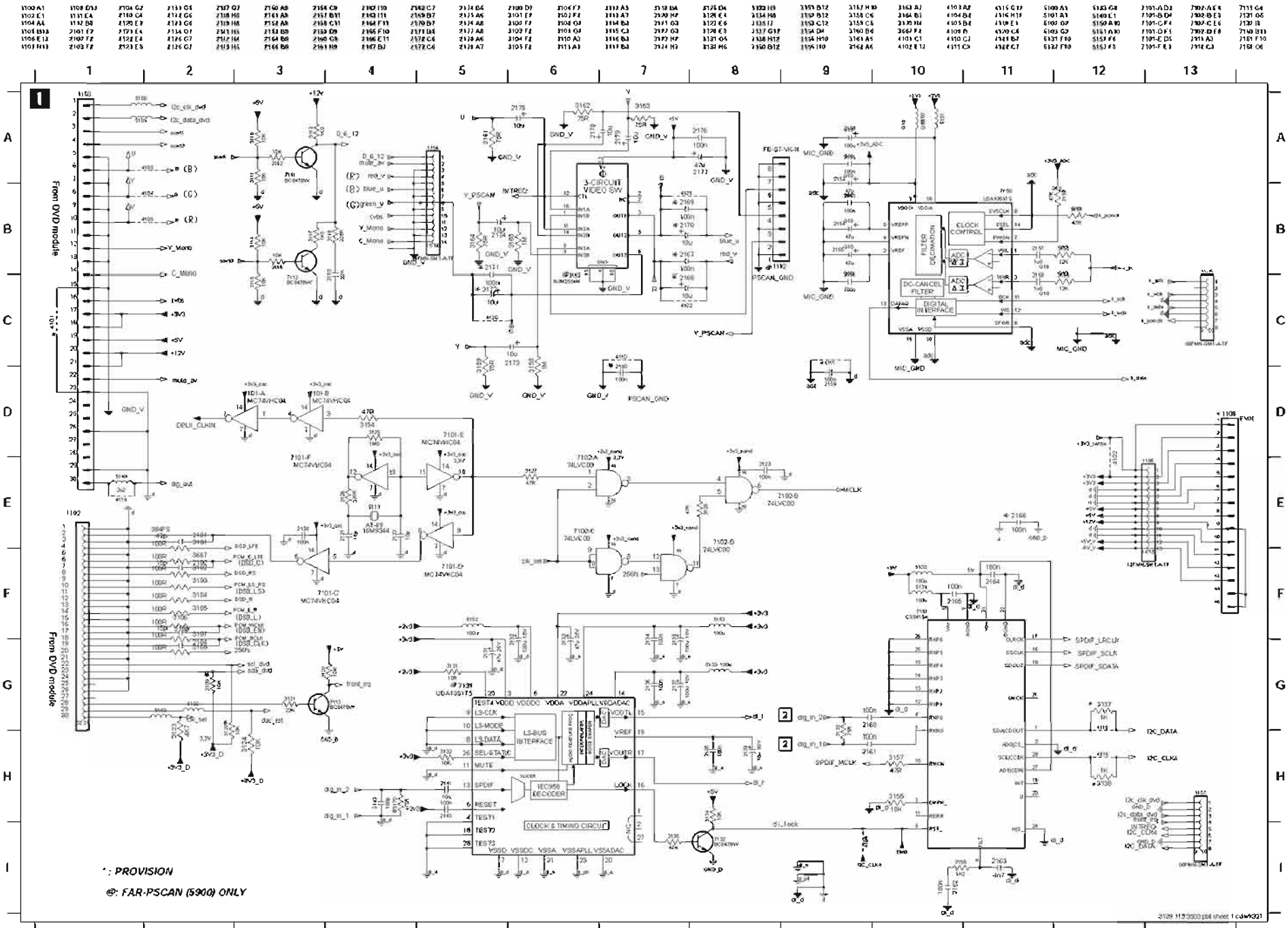
11-6a

TOP VIEW - PART B (For pcb layout ....35037)

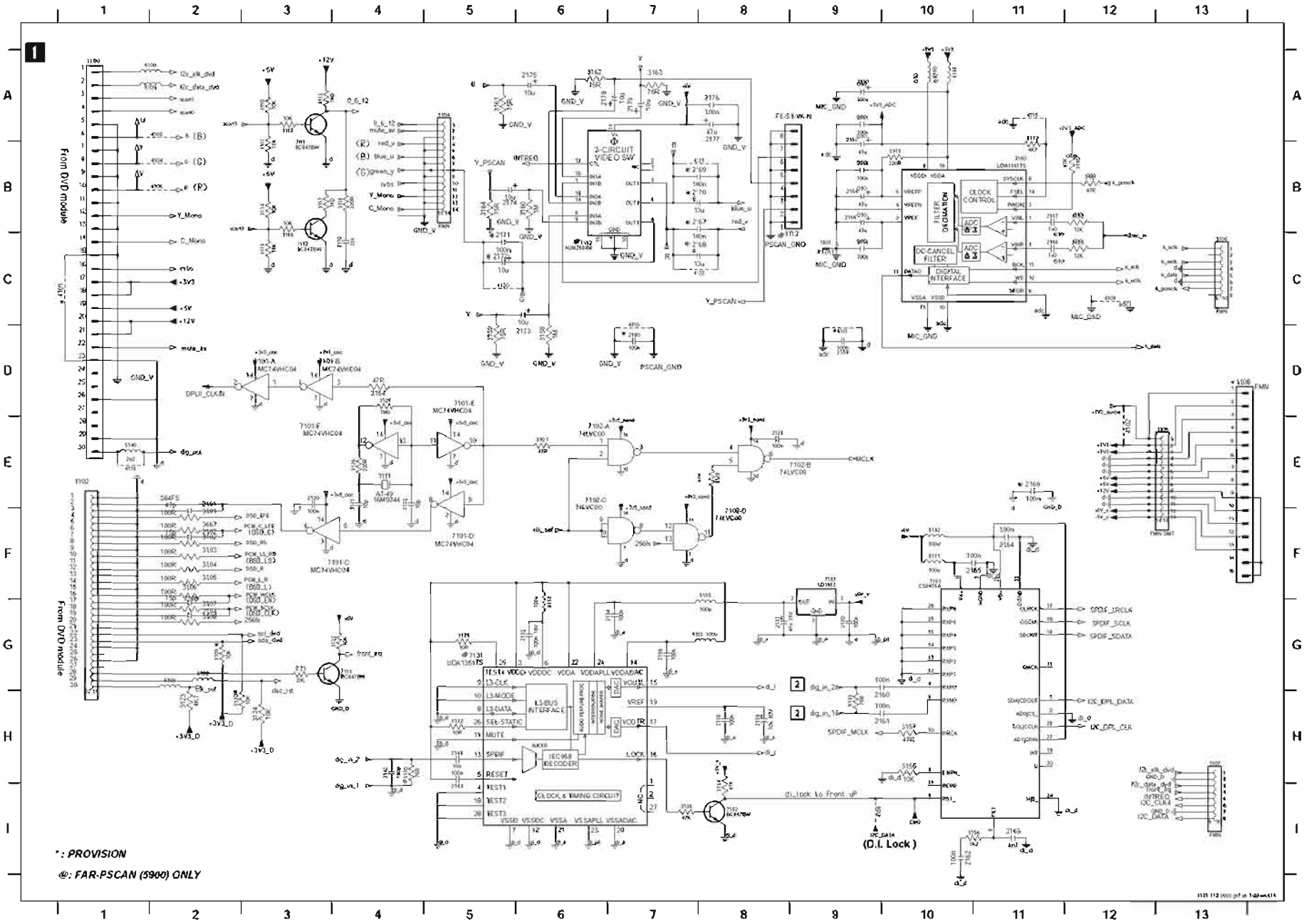


11-7

CIRCUIT DIAGRAM 1

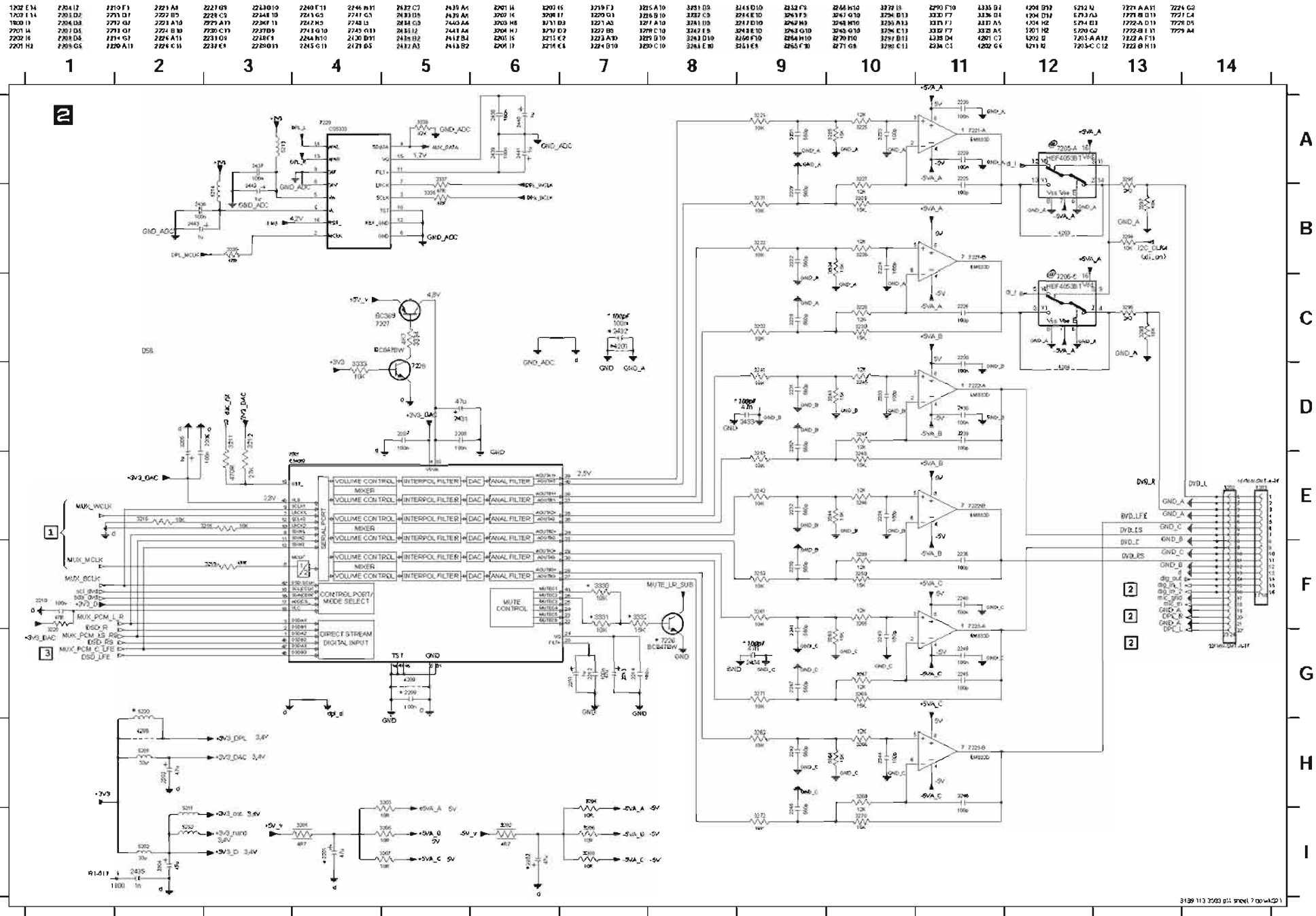


CIRCUIT DIAGRAM 1 (For pcb layout .... 35037)



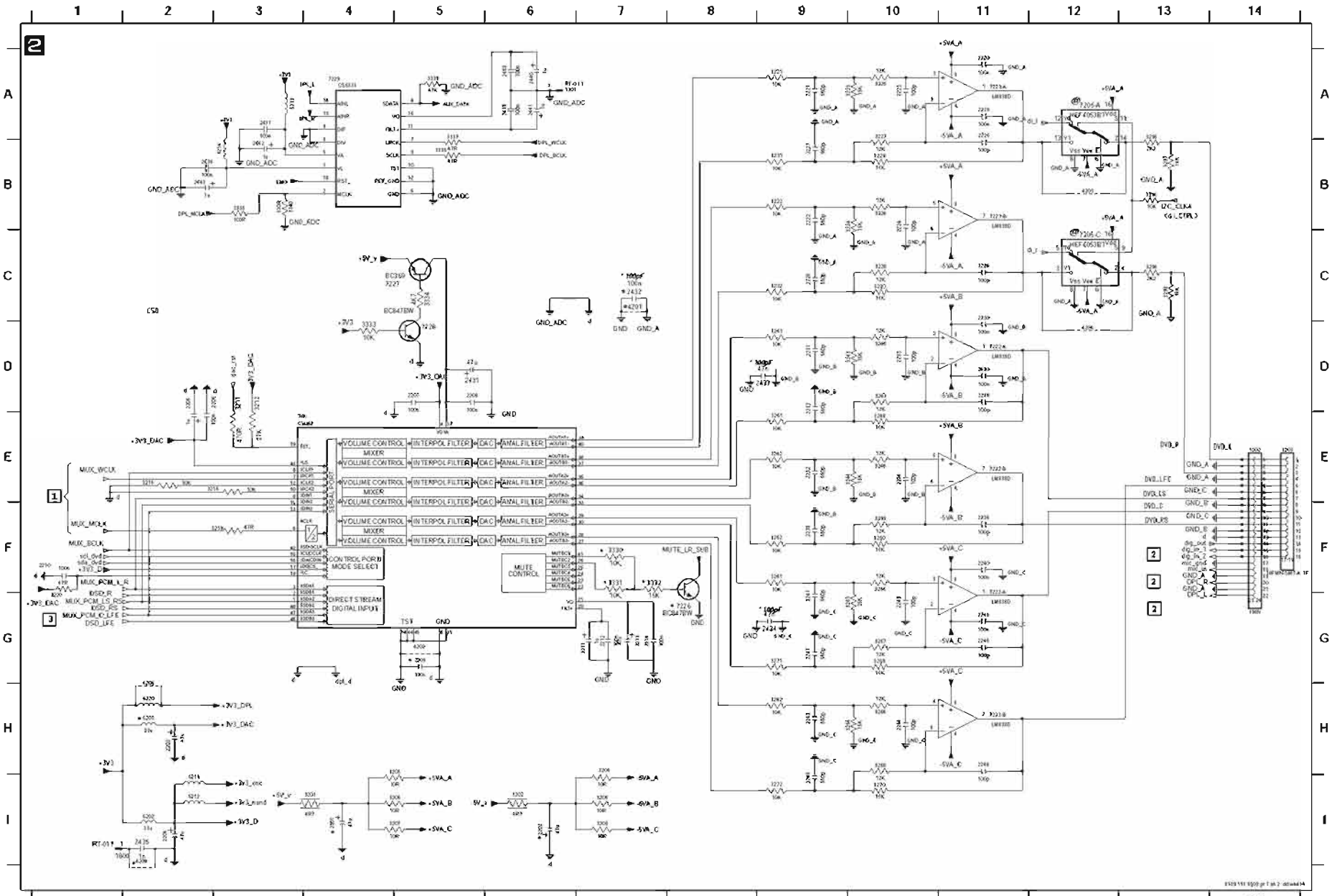
11-8

CIRCUIT DIAGRAM 2



11-8a

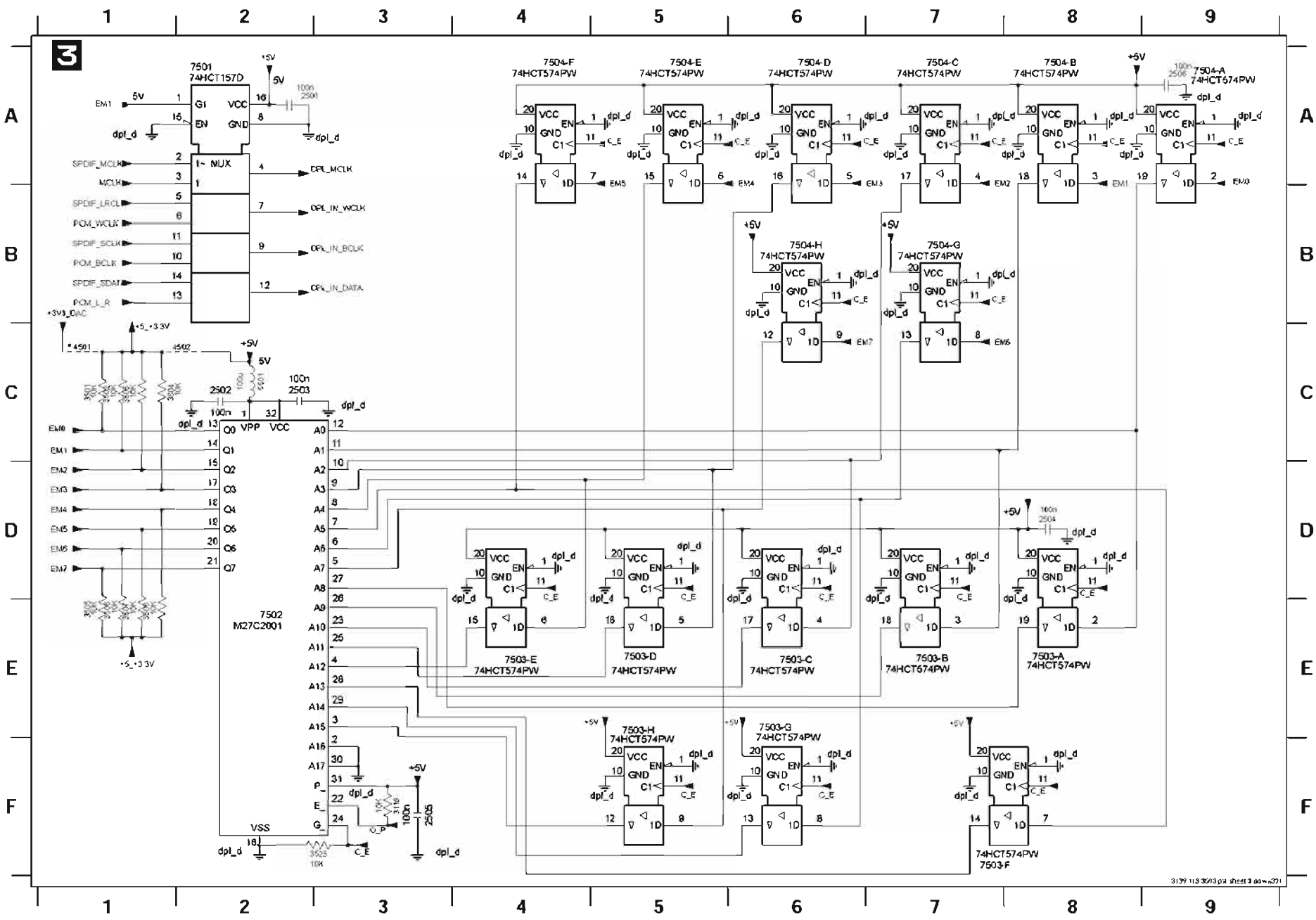
CIRCUIT DIAGRAM 2 (For pcb layout .... 35037)



11-9

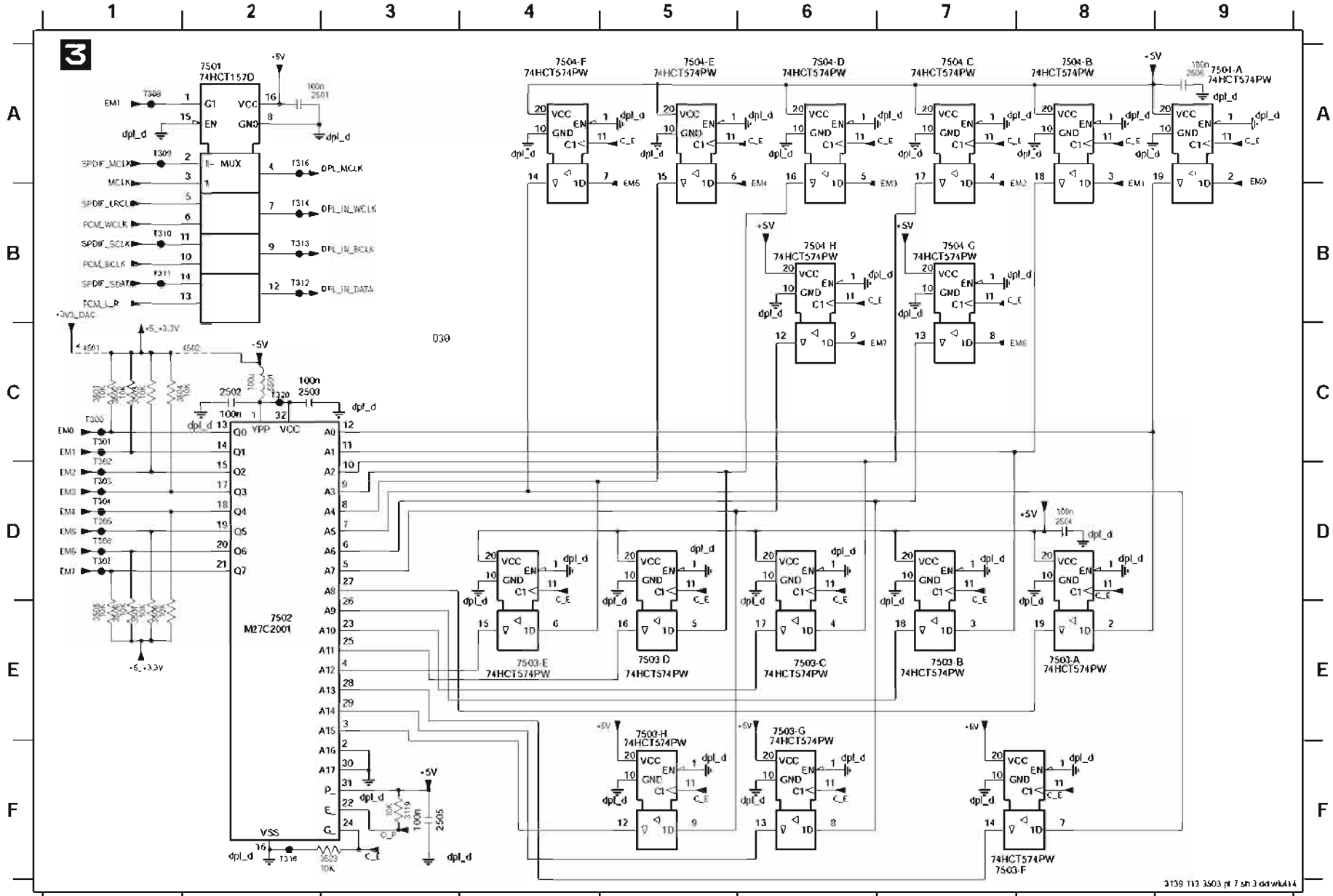
CIRCUIT DIAGRAM 3

2501 A2 2503 C2 2505 F3 3119 F3 3502 C1 3504 C1 3506 E1 3508 E1 4501 C1 5501 C2 7502 E2 7503-B E7 7503-D E5 7503-F F8 7503-H E6 7504-B A8 7504-D A6 7504-F A4 7504-H B6
2502 C2 2504 D8 2506 A9 3501 C1 3503 C1 3505 E1 3507 E1 3523 F3 4502 C2 7501 A2 7503-A E8 7503-C E6 7503-E E4 7503-G E6 7504-A A9 7504-C A7 7504-E A5 7504-G B7



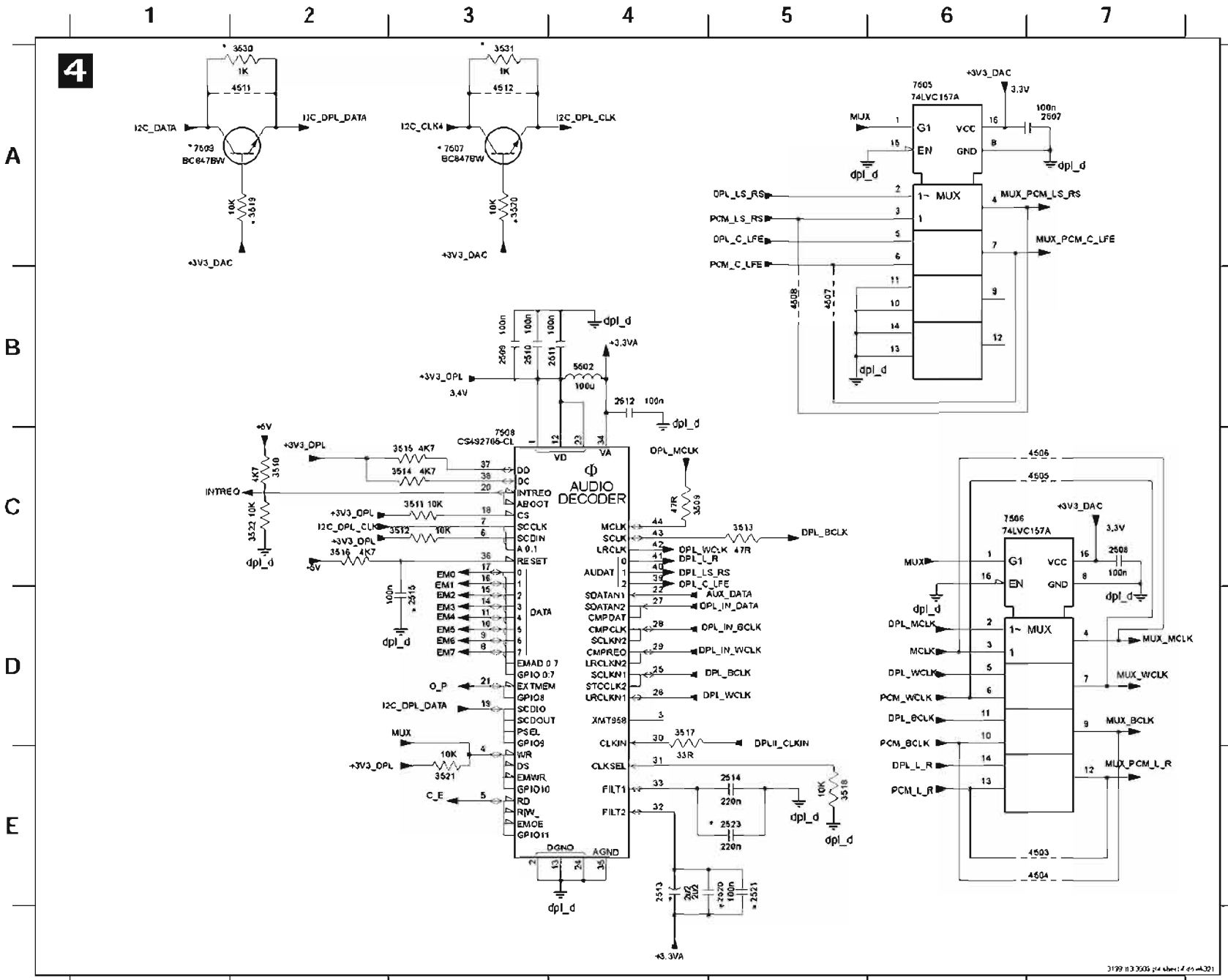
CIRCUIT DIAGRAM 3 (For pcb layout .... 35037)

2501 A2	2504 D8	3119 F3	3503 C1	3506 E1	3523 F3	6501 C2	7503-A E8	7503-D E6	7503-G E6	7504-B A8	7504-E A5	7504-H B6	T302 D1	T305 D1	T308 A1	T311 B1	T314 B2	T320 C2
2502 C2	2505 F3	3501 C1	3504 C1	3507 E1	4501 C1	7501 A2	7502-B E7	7502-E E4	7503-H E5	7504-C A7	7504-F A4	T300 C1	T303 D1	T306 D1	T309 A1	T312 B2	T315 A2	
2503 C2	2506 A8	3502 C1	3505 E1	3508 E1	4502 C2	7502 E2	7503-C E6	7503-F F8	7504-A A9	7504-D A6	7504-G B7	T301 C1	T304 D1	T307 D1	T310 B1	T313 B2	T316 F2	



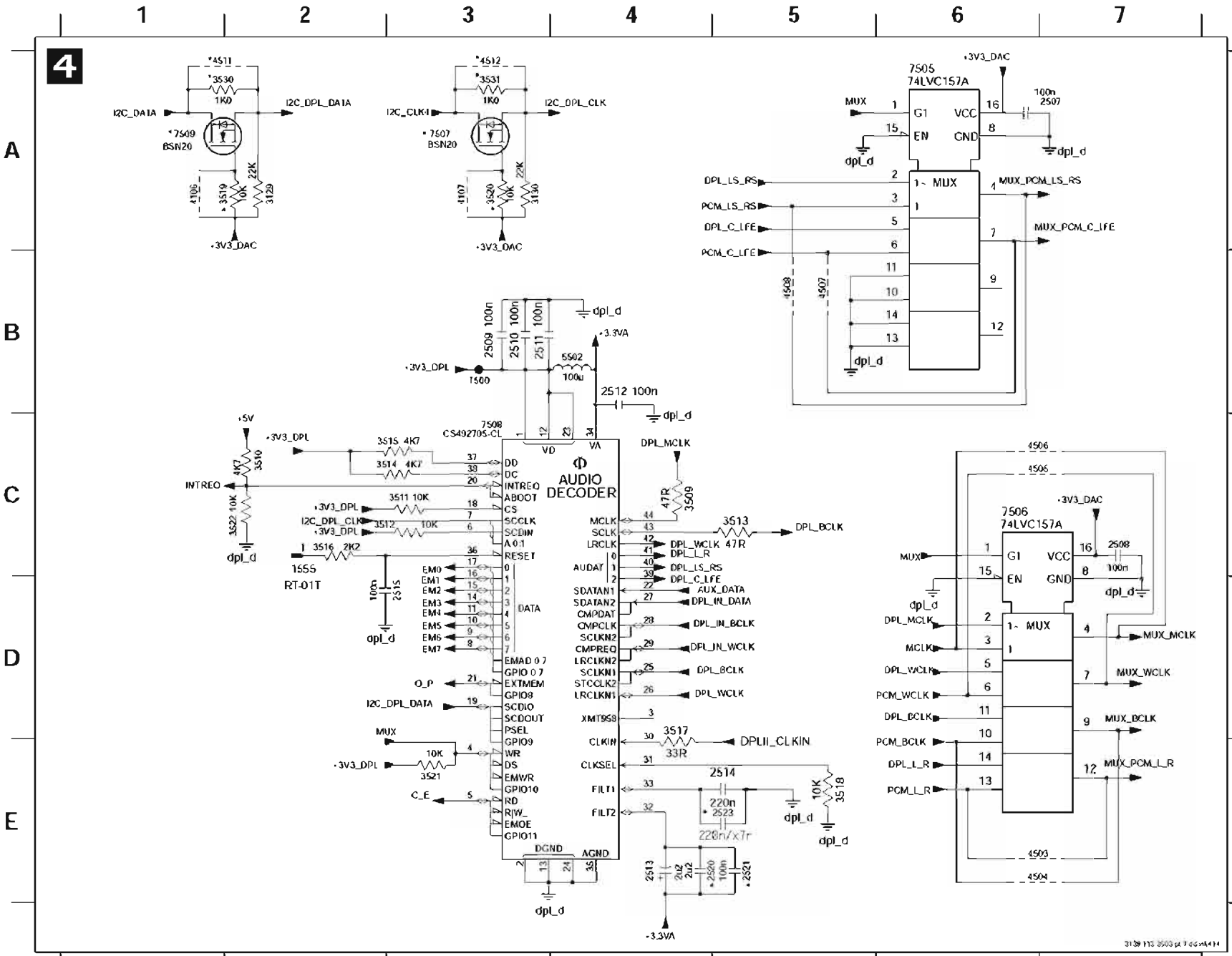
11-10

CIRCUIT DIAGRAM 4



2507 A7
2508 C7
2509 B3
2510 B3
2511 B4
2512 B4
2513 E4
2514 E5
2515 D3
2520 E5
2521 E5
2523 E5
3509 C4
3510 C2
3511 C3
3512 C3
3513 C5
3514 C3
3515 C3
3516 C2
3517 D4
3518 E5
3519 A2
3520 A3
3521 E3
3522 C2
3530 A2
3531 A3
4503 E7
4504 E7
4505 C7
4506 C7
4507 B5
4508 B5
4511 A2
4512 A3
5502 B4
7505 A6
7506 C6
7507 A3
7508 C3
7509 A1

CIRCUIT DIAGRAM 4 (For pcb layout .... 35037)



1555 C2
2507 A7
2508 C7
2509 B3
2510 B3
2511 B3
2512 B4
2513 E4
2514 E5
2515 D3
2520 E4
2521 E5
2523 E5
3129 A2
3130 A3
3509 C4
3510 C2
3511 C3
3512 C2
3513 C5
3514 C2
3515 C3
3516 C2
3517 D4
3518 E5
3519 A1
3520 A3
3521 E3
3522 C2
3530 A1
3531 A3
4106 A1
4107 A3
4503 E6
4504 E6
4505 C6
4506 C6
4507 B5
4508 B5
4511 A1
4512 A3
5502 B4
7505 A6
7506 C6
7507 A3
7508 C3
7509 A1
T500 B3

ELECTRICAL PARTS LIST - DAC BOARD

MISCELLANEOUS

1100	2422 025 17433	Flex Socket 30P
1102	2422 025 17276	Flex Socket 30P
1104	4822 265 11511	Flex Socket 14P
1106	2422 025 17116	Flex Socket 13P
1107	2422 025 17033	Flex Socket 8P
1111	2422 543 01146	X'tal Resonator 16,9344MHz
1202	2422 025 16767	Flex Socket 22P

CAPACITORS

2101	4822 126 11785	47pF 5% 50V
2102	4822 122 33752	15pF 5% 50V
2103	4822 122 33752	15pF 5% 50V
2104	4822 122 33752	15pF 5% 50V
2110	3198 017 42230	22nF 50V
2120	2238 586 59812	100nF +80/-20% 50V
2121	4822 122 33741	10pF 10% 50V
2122	4822 122 33741	10pF 10% 50V
2123	2238 586 59812	100nF +80/-20% 50V
2160	2238 586 59812	100nF +80/-20% 50V
2161	2238 586 59812	100nF +80/-20% 50V
2162	2238 586 59812	100nF +80/-20% 50V
2163	4822 126 13193	4,7nF 10% 63V
2164	2238 586 59812	100nF +80/-20% 50V
2165	2238 586 59812	100nF +80/-20% 50V
2168	4822 124 40248	10uF 20% 63V
2170	4822 124 40248	10uF 20% 63V
2172	4822 124 40248	10uF 20% 63V
2201	4822 124 40433	47uF 20% 25V
2202	4822 124 40433	47uF 20% 25V
2203	4822 124 40433	47uF 20% 25V
2204	4822 124 40433	47uF 20% 25V
2205	4822 124 21913	1uF 20% 63V
2206	2238 586 59812	100nF +80/-20% 50V
2207	2238 586 59812	100nF +80/-20% 50V
2208	2238 586 59812	100nF +80/-20% 50V
2209	2238 586 59812	100nF +80/-20% 50V
2210	2238 586 59812	100nF +80/-20% 50V
2211	4822 124 21913	1uF 20% 63V
2212	2238 586 59812	100nF +80/-20% 50V
2213	4822 124 40433	47uF 20% 25V
2214	2238 586 59812	100nF +80/-20% 50V
2220	2238 586 59812	100nF +80/-20% 50V
2221	4822 126 14249	560pF 10% 50V
2222	4822 126 14249	560pF 10% 50V
2223	2020 552 94427	100pF 5% 50V
2224	2020 552 94427	100pF 5% 50V
2225	2020 552 94427	100pF 5% 50V
2226	2020 552 94427	100pF 5% 50V
2227	4822 126 14249	560pF 10% 50V
2228	4822 126 14249	560pF 10% 50V
2229	2238 586 59812	100nF +80/-20% 50V
2230	2238 586 59812	100nF +80/-20% 50V
2231	4822 126 14249	560pF 10% 50V
2232	4822 126 14249	560pF 10% 50V
2233	2020 552 94427	100pF 5% 50V
2234	2020 552 94427	100pF 5% 50V
2236	2020 552 94427	100pF 5% 50V
2237	4822 126 14249	560pF 10% 50V
2238	4822 126 14249	560pF 10% 50V
2239	2020 552 94427	100pF 5% 50V
2240	2238 586 59812	100nF +80/-20% 50V
2241	4822 126 14249	560pF 10% 50V
2242	4822 126 14249	560pF 10% 50V
2243	2020 552 94427	100pF 5% 50V
2244	2020 552 94427	100pF 5% 50V
2245	2020 552 94427	100pF 5% 50V
2246	2020 552 94427	100pF 5% 50V
2247	4822 126 14249	560pF 10% 50V
2248	4822 126 14249	560pF 10% 50V
2249	2238 586 59812	100nF +80/-20% 50V
2430	2238 586 59812	100nF +80/-20% 50V
2431	4822 124 40433	47uF 20% 25V
2433	3198 017 34730	47nF 16V
2434	3198 017 34730	47nF 16V
2435	3198 016 31020	1nF 25V
2436	2238 586 59812	100nF +80/-20% 50V
2437	2238 586 59812	100nF +80/-20% 50V
2438	2238 586 59812	100nF +80/-20% 50V
2439	2238 586 59812	100nF +80/-20% 50V
2440	4822 124 21913	1uF 20% 63V
2441	4822 124 21913	1uF 20% 63V
2442	4822 124 21913	1uF 20% 63V
2443	4822 124 21913	1uF 20% 63V
2501	2238 586 59812	100nF +80/-20% 50V
2502	2238 586 59812	100nF +80/-20% 50V
2503	2238 586 59812	100nF +80/-20% 50V
2504	2238 586 59812	100nF +80/-20% 50V
2505	2238 586 59812	100nF +80/-20% 50V
2506	2238 586 59812	100nF +80/-20% 50V
2507	2238 586 59812	100nF +80/-20% 50V
2508	2238 586 59812	100nF +80/-20% 50V
2509	2238 586 59812	100nF +80/-20% 50V
2510	2238 586 59812	100nF +80/-20% 50V
2511	2238 586 59812	100nF +80/-20% 50V
2512	2238 586 59812	100nF +80/-20% 50V
2513	4822 124 22652	2,2uF 20% 50V
2514	4822 124 40746	0,22uF 20% 63V
2515	2238 586 59812	100nF +80/-20% 50V

RESISTORS

3101	4822 051 30101	100R 5% 0,062W
3102	4822 051 30101	100R 5% 0,062W
3103	4822 051 30101	100R 5% 0,062W
3104	4822 051 30101	100R 5% 0,062W
3105	4822 051 30101	100R 5% 0,062W
3106	4822 051 30101	100R 5% 0,062W
3107	4822 051 30101	100R 5% 0,062W
3108	4822 051 30101	100R 5% 0,062W
3109	4822 051 30103	10k 5% 0,062W
3110	4822 051 30103	10k 5% 0,062W
3111	4822 051 30183	18k 5% 0,062W
3112	4822 051 30103	10k 5% 0,062W
3113	4822 051 30102	1k 5% 0,062W
3114	4822 051 30103	10k 5% 0,062W
3115	4822 051 30183	18k 5% 0,062W
3116	4822 051 30103	10k 5% 0,062W
3117	4822 051 30102	1k 5% 0,062W
3118	4822 051 30221	220R 5% 0,062W
3119	4822 051 30103	10k 5% 0,062W
3120	4822 051 30103	10k 5% 0,062W
3121	4822 051 30223	22k 5% 0,062W
3122	4822 051 30103	10k 5% 0,062W
3123	4822 051 30472	4k7 5% 0,062W
3124	4822 051 30103	10k 5% 0,062W
3125	4822 051 30105	1M 5% 0,062W
3126	4822 051 30221	220R 5% 0,062W
3127	4822 051 30479	47R 5% 0,062W
3128	4822 051 30479	47R 5% 0,062W
3132	4822 051 30109	10R 5% 0,062W
3133	4822 051 30759	75R 5% 0,062W
3134	4822 051 30103	10k 5% 0,062W
3154	4822 051 30479	47R 5% 0,062W
3155	4822 051 30103	10k 5% 0,062W
3156	4822 117 11817	1k2 1% 1/16W
3157	4822 051 30479	47R 5% 0,062W
3201	4822 052 10478	4R7 5% 0,33W
3202	4822 052 10478	4R7 5% 0,33W
3203	4822 051 30109	10R 5% 0,062W
3204	4822 051 30109	10R 5% 0,062W
3205	4822 051 30109	10R 5% 0,062W
3206	4822 051 30109	10R 5% 0,062W
3207	4822 051 30109	10R 5% 0,062W
3208	4822 051 30109	10R 5% 0,062W
3211	4822 051 30471	470R 5% 0,062W
3212	4822 051 30273	27k 5% 0,062W
3215	4822 051 30103	10k 5% 0,062W
3216	4822 051 30103	10k 5% 0,062W
3219	4822 051 30479	47R 5% 0,062W
3220	4822 051 30479	47R 5% 0,062W
3221	4822 051 30103	10k 5% 0,062W
3222	4822 051 30103	10k 5% 0,062W
3223	4822 051 30153	15k 5% 0,062W
3224	4822 051 30153	15k 5% 0,062W
3225	4822 051 30123	12k 5% 0,062W
3226	4822 051 30123	12k 5% 0,062W
3227	4822 051 30123	12k 5% 0,062W
3228	4822 051 30123	12k 5% 0,062W
3229	4822 051 30153	15k 5% 0,062W
3230	4822 051 30153	15k 5% 0,062W
3231	4822 051 30103	10k 5% 0,062W
3232	4822 051 30103	10k 5% 0,062W
3241	4822 051 30103	10k 5% 0,062W
3242	4822 051 30103	10k 5% 0,062W
3243	4822 051 30153	15k 5% 0,062W
3244	4822 051 30153	15k 5% 0,062W
3245	4822 051 30123	12k 5% 0,062W
3246	4822 051 30123	12k 5% 0,062W
3247	4822 051 30123	12k 5% 0,062W
3248	4822 051 30153	15k 5% 0,062W
3250	4822 051 30153	15k 5% 0,062W
3251	4822 051 30103	10k 5% 0,062W
3252	4822 051 30103	10k 5% 0,062W
3261	4822 051 30103	10k 5% 0,062W
3262	4822 051 30103	10k 5% 0,062W
3263	4822 051 30153	15k 5% 0,062W
3264	4822 051 30153	15k 5% 0,062W
3265	4822 051 30123	12k 5% 0,062W
3266	4822 051 30123	12k 5% 0,062W
3267	4822 051 30123	12k 5% 0,062W
3268	4822 051 30123	12k 5% 0,062W
3269	4822 051 30153	15k 5% 0,062W
3270	4822 051 30153	15k 5% 0,062W
3271	4822 051 30103	10k 5% 0,062W
3272	4822 051 30103	10k 5% 0,062W
3295	4822 051 30222	2k2 5% 0,062W
3296	4822 051 30222	2k2 5% 0,062W
3297	4822 051 30183	18k 5% 0,062W
3298	4822 051 30183	18k 5% 0,062W
3299	4822 051 30123	12k 5% 0,062W
3333	4822 051 30103	10k 5% 0,062W
3334	4822 051 30472	4k7 5% 0,062W
3335	4822 051 30479	47R 5% 0,062W
3336	4822 051 30479	47R 5% 0,062W
3337	4822 051 30479	47R 5% 0,062W
3501	4822 051 30103	10k 5% 0,062W
3502	4822 051 30103	10k 5% 0,062W
3503	4822 051 30103	10k 5% 0,062W
3504	4822 051 30103	10k 5% 0,062W
3506	4822 051 30103	10k 5% 0,062W
3506	4822 051 30103	10k 5% 0,062W
3507	4822 051 30103	10k 5% 0,062W
3508	4822 051 30103	10k 5% 0,062W
3509	4822 051 30479	47R 5% 0,062W
3510	4822 051 30472	4k7 5% 0,062W
3511	4822 051 30103	10k 5% 0,062W
3512	4822 051 30103	10k 5% 0,062W
3513	4822 051 30479	47R 5% 0,062W
3514	4822 051 30472	4k7 5% 0,062W

11-11

ELECTRICAL PARTS LIST - DAC BOARD

11-12

ELECTRICAL PARTS LIST - DAC BOARD

RESISTORS

3515	4822 051 30472	4k7 5% 0,062W
3516	4822 051 30472	4k7 5% 0,062W
3517	4822 051 30339	33R 5% 0,062W
3518	4822 051 30103	10k 5% 0,062W
3519	4822 051 30103	10k 5% 0,062W
3520	4822 051 30103	10k 5% 0,062W
3521	4822 051 30103	10k 5% 0,062W
3523	4822 051 30103	10k 5% 0,062W
3667	4822 051 30101	100R 5% 0,062W
4102	4822 051 30008	0R Jumper 0603
4103	4822 051 30008	0R Jumper 0603
4104	4822 051 30008	0R Jumper 0603
4105	4822 051 30008	0R Jumper 0603
4201	4822 051 30008	0R Jumper 0603
4203	4822 051 30008	0R Jumper 0603
4204	4822 051 30008	0R Jumper 0603
4502	4822 051 30008	0R Jumper 0603

COILS & FILTERS

5100	4822 157 71206	Fixed Ind 100MHz 600R
5101	4822 157 71206	Fixed Ind 100MHz 600R
5102	4822 157 71206	Fixed Ind 100MHz 600R
5103	4822 157 71206	Fixed Ind 100MHz 600R
5131	3198 018 61010	Coil 100uH 5%
5132	3198 018 61010	Coil 100uH 5%
5201	3198 018 63390	Coil 33uH 5%
5202	3198 018 63390	Coil 33uH 5%
5211	2422 549 43062	Fixed Ind 100MHz 600R
5212	2422 549 43062	Fixed Ind 100MHz 600R
5213	4822 157 11716	Fixed Ind 100MHz 30R
5214	4822 157 11716	Fixed Ind 100MHz 30R
5501	3198 018 61010	Coil 100uH 5%
5502	3198 018 61010	Coil 100uH 5%

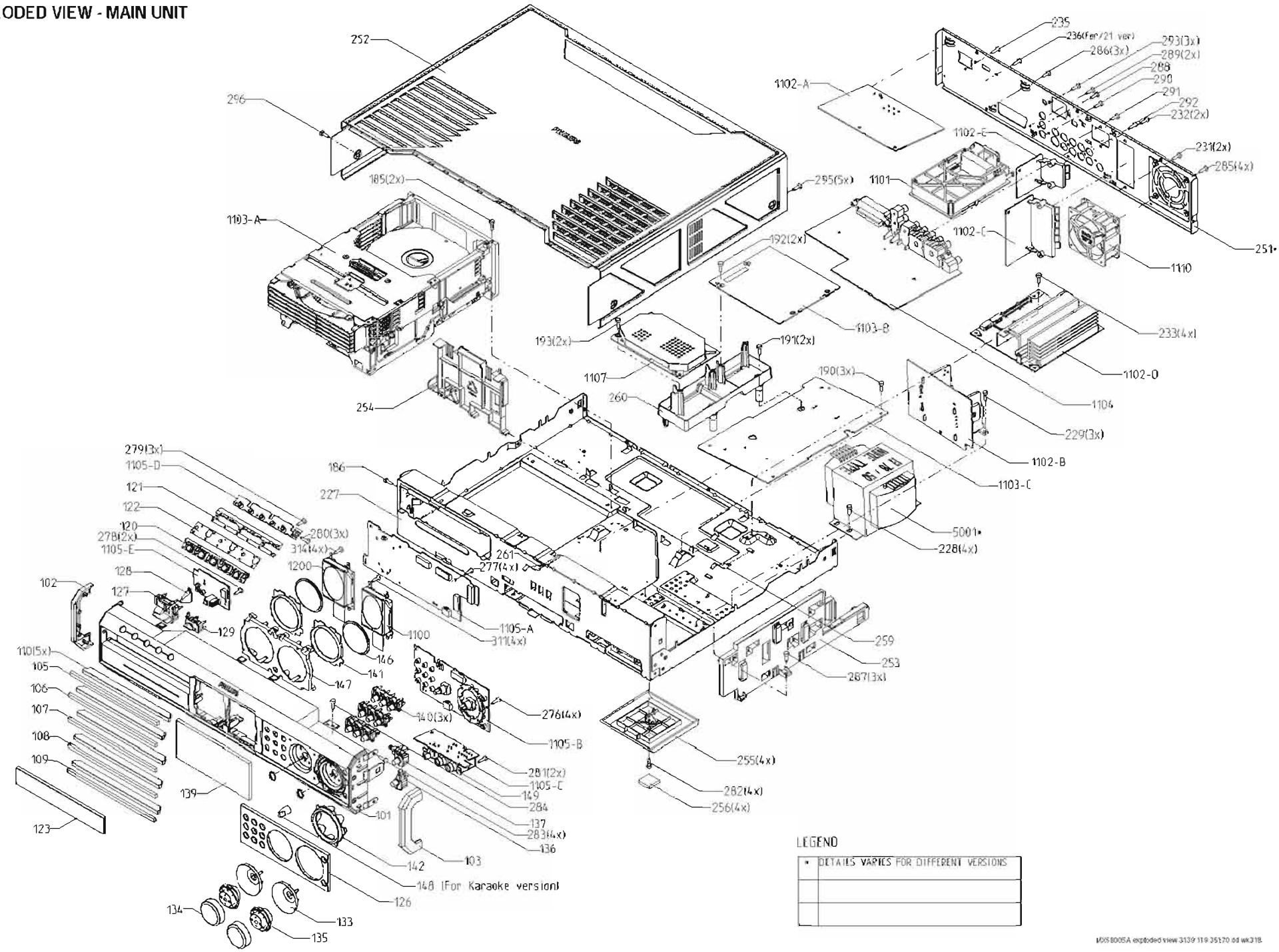
TRANSISTORS & INTEGRATED CIRCUITS

7101	9322 181 11668	MC74VHC04DT
7102	9352 499 80118	74LVC00APW
7111	3198 010 42310	BC847BW
7112	3198 010 42310	BC847BW
7113	3198 010 42310	BC847BW
7151	9322 185 10668	CS8415A-CZ
7201	9322 177 92671	CS4362-KQ
7221	4822 209 30095	LM833D
7222	4822 209 30095	LM833D
7223	4822 209 30095	LM833D
7227	5322 130 44593	BC369
7228	3198 010 42310	BC847BW
7229	9322 190 52668	CS5333-KZ
7501	9337 137 50653	74HCT157D
7502	9322 148 90682	M27C2001-70C1
7503	9351 885 10118	74HCT574PW
7504	9351 885 10118	74HCT574PW
7505	4822 209 17455	74LVC157AD
7506	4822 209 17455	74LVC157AD
7507	3198 010 42310	BC847BW
7508	9322 191 57668	CS492705-CL
7509	3198 010 42310	BC847BW

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

12-1

EXPLODED VIEW - MAIN UNIT



LEGEND

*	DETAILS VARIES FOR DIFFERENT VERSIONS

MECHANICAL & ACCESSORIES PARTS LIST - MAIN UNIT

101	3139 257 50051	Cabinet Front	/21R/21S/78
101	3139 257 50041	Cabinet Front	/22S
101	3139 257 50811	Cabinet Front	/37
102	3139 118 18801	Cover Cab Side Left	
103	3139 118 18811	Cover Cab Side Right	
105	3139 257 50061	Panel Tray Disc1	
106	3139 257 50071	Panel Tray Disc2	
107	3139 257 50081	Panel Tray Disc3	
108	3139 257 50091	Panel Tray Disc4	
109	3139 257 50101	Panel Tray Disc5	
110	3139 114 78491	Cover Tray SDTC MX58/59	
120	3139 118 19441	Button Set CD Open/Close	
122	3139 113 27511	Cutsheet Shield CD Open/Close	
123	3139 257 50111	Panel Left MX5800	/21R/21S/22S
123	3139 257 51701	Panel Left MX5800	/78
123	3139 257 50961	Panel Left MX5900	/37
126	3139 257 50131	Panel Control MX5800	
127	3139 118 18871	Button Set Power ECO	
128	3139 114 77041	Lightguide Power ECO Standby	
133	3139 118 18941	Ring Ornamental	
134	3139 118 18931	Cap Knob Rotary Chrome	
135	3139 118 18921	Knob Source/Vol Rotary	
136	3139 118 19461	Button Set Bass Chrome	
137	3139 118 19471	Button Set Treble Chrome	
139	3139 257 50121	Panel Display MX5800	
140	3139 118 19451	Button Set Source Control	
141	3139 118 19481	Ring Ornamental Display	
142	3139 114 77551	Lightguide Volume	
146	3139 257 51531	Window Display	/21R/21S/22S/78
146	3139 114 77531	Window Display	/37
148	3139 257 50141	Karaoke Knob	/21R/21S/78
256	3139 113 27220	Foot Rubber	
259	3139 111 01470	Spring Grounding	
261	3139 111 61931	Ground Spring SACD	
296	3139 110 40691	Screw Cap Hd Soc Hex Mac M5x6	
345	3139 119 00621	Satellite LS Box package	
345	3139 119 00671	Satellite LS Box package	/37
346	3139 119 00631	Subwoofer Box Stand	
346	3139 119 00661	Subwoofer Box Stand	/37
351	4822 303 50063	FM Antenna	
352	4822 303 50082	AM Loop Antenna	
353	3139 228 61701	Remote Control RC1924100/01	
356	2422 070 98151 ⚠	Mains Cord Eur 2A5 1.5M Blk	
356	2422 070 98246 ⚠	Mains Cord UL 7A 1.5M Blk	/37
357	3139 128 73010 ⚠	AC Adaptor	/21S/78
358	4822 263 21206	Cinch Cable 1.7M Yel	not for/22S
361	2422 076 00374	Cinch Cable 1.5M RGB	not for/22S
362	3103 308 92610	Cinch Cable 1.5M Audio	not for/22S
363	2422 076 00528	Scart Cable 21P 1.5M	/22S
370	3139 115 22291	Instruction For Use Book	/21R/21S
370	3139 115 22311	Instruction For Use Book 1	/37
370	3139 115 22131	Instruction For Use Book 1	/22S
371	3139 115 22561	Instruction For Use Book 2	/22S
1100	3139 119 00831	Function LCD Module MX5500D-01	
1110	2822 031 01494	Fan 12Vdc 0.8W 3100rpm	
1200	3139 119 00861	Volume LCD Module MX5800SA-01	
5001	3139 118 32641 ⚠	Mains Transfo 6x75W	/21R/21S/78
5001	3139 118 32651 ⚠	Mains Transformer 6x75W	/22S
5001	3139 118 32651 ⚠	Mains Transformer 6x75W	/37
8000	3139 110 35031	Flex Cable 8P 14cm AD	
8001	3139 111 02001	Flex Cable 13P 40cm BD	
8002	3139 111 02461	Flex Cable 14P 40cm AD	
8003	3139 111 02211	Flex Cable 16P 10cm AD	
8005	3139 111 02051	Flex Cable 7P 34cm AD	
8006	4822 320 12751	Flex Cable 4P 40cm AD	Non-Kara
8006	3139 110 34431	Flex Cable 8P 340cm AD	Kara
8008	3139 111 02441	Flex Cable 08P 22cm AD	
8010	3139 111 02431	Flex Cable 22P 22cm AD	
8010	3139 111 02421	Flex Cable 16P 22cm AD	/37
8011	3139 111 02471	Flex Cable 14P 22cm AD	
8012	3139 111 02411	Flex Cable 13P 22cm AD	
8013	3139 111 02571	Flex Cable 10P 18cm BD	
8014	3139 111 02571	Flex Cable 10P 18cm BD	
8016	3139 110 36140	Flex Cable 04P 18cm AD	
8018	3139 111 02231	Flex Cable 05P 12cm AD	
8034	3139 111 02391	Flex Cable 08P 22cm BD	
8035	3139 111 02381	Flex Cable 24P 12cm BD	

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

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MECHANICAL PARTS LIST - LOUDSPEAKERS BREAKDOWN

Breakdown of Satellite LS Package

9965 000 18409	Front Speaker Box Left	MX5800SA
9965 000 19917	Front Speaker Box Left	MX5900SA
9965 000 18410	Front Speaker Box Right	MX5800SA
9965 000 19918	Front Speaker Box Right	MX5900SA
9965 000 18417	Center Speaker Box	MX5800SA
9965 000 19924	Center Speaker Box	MX5900SA
9965 000 18414	Surr. Speaker Box Left	MX5800SA
9965 000 19919	Surr. Speaker Box Left	MX5900SA
9965 000 18415	Surr. Speaker Box Right	MX5800SA
9965 000 19923	Surr. Speaker Box Right	MX5900SA
9965 000 18416	Front/Surround Spk Front Grille Assy	
9965 000 18066	Center Spk Grille Assy	
9965 000 17046	Philips Logo	
9965 000 18067	Base Plate Front/Surround Speaker	
9965 000 18068	Mounting Bracket + Screw Pack	

Breakdown of Subwoofer Box

Refer to Exploded view on page 12-3

9965 000 18406	2-Pins Terminal
9965 000 18407	Locking Top
9965 000 18413	2-Spring
9965 000 18418	4" Woofer Speaker 8R 100W
9965 000 18411	4-Pins Terminal (White & Purple)
9965 000 18412	4-Pins Terminal (Red & Purple)
9965 000 24208	Supporter with insert nuts

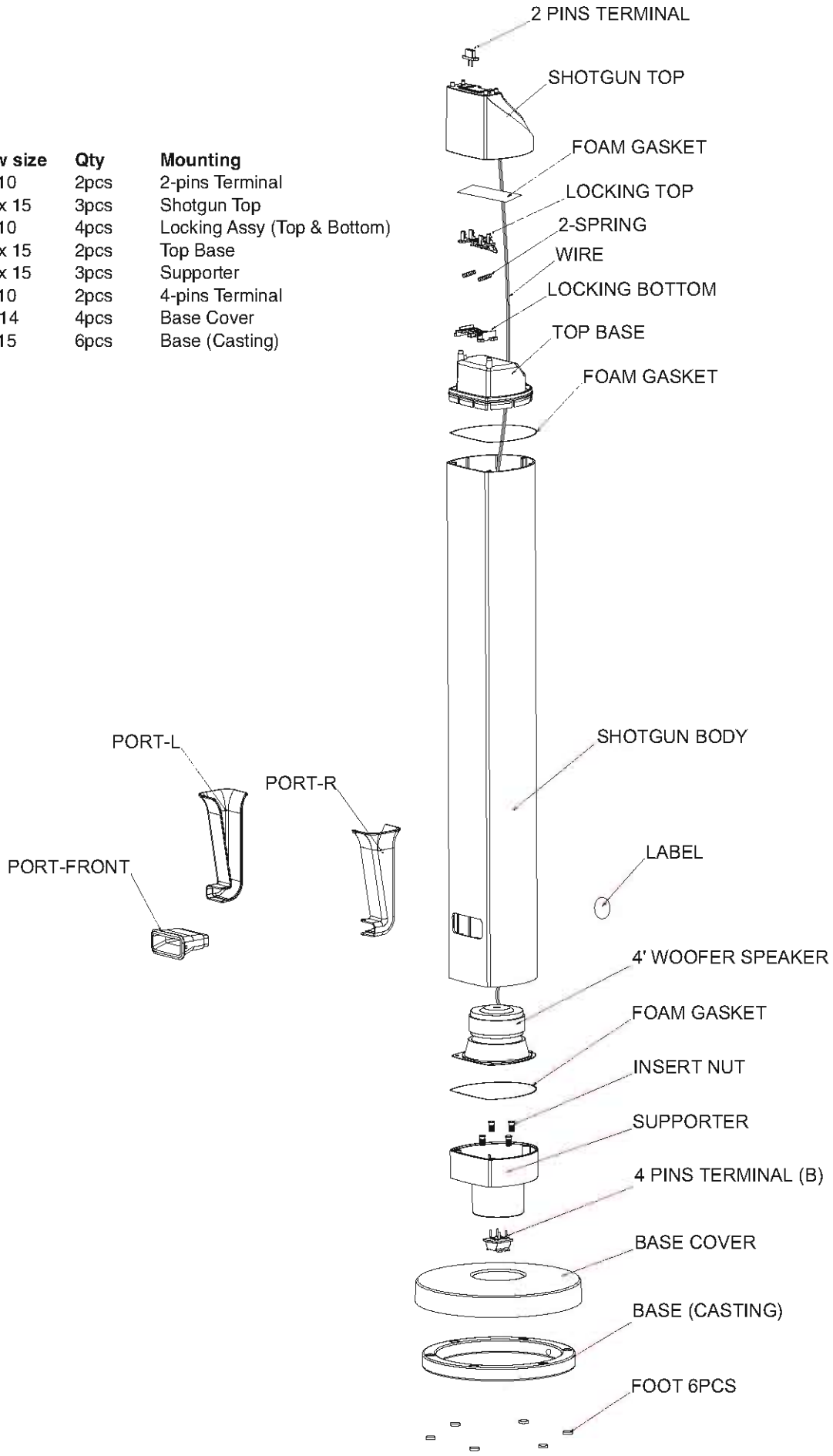
Note: Only the parts mentioned in this list are normal service spare parts.

SCREW LISTS - MAIN UNIT

185	M3 x 6
186	D3 x 10
190	M3 x 6
191	M3 x 6
192	D3 x 10
193	D3 x 10
228	M3 x 6
229	M3 x 6
231	D3 x 10
232	D3 x 10
233	M3 x 6
235	D3 x 10
236	D3 x 10
276	D3 x 10
277	D3 x 10
278	D3 x 10
279	D2 x 8
280	D2 x 8
281	D2 x 8
282	M3 x 6
283	M3 x 6
284	M3 x 6
285	D3 x 10
286	M3 x 6
287	M3 x 6
288	D3 x 10
289	D3 x 10
290	D3 x 10
291	D3 x 10
292	D3 x 10
293	D3 x 10
295	M3 x 6
296	M5 x 6 Hex W/Head
311	D2 x 8
314	D2 x 8

EXPLODED VIEW - STAND SUBWOOFER

Screw size	Qty	Mounting
D3 x 10	2pcs	2-pins Terminal
D3.5 x 15	3pcs	Shotgun Top
D3 x 10	4pcs	Locking Assy (Top & Bottom)
D3.5 x 15	2pcs	Top Base
D3.5 x 15	3pcs	Supporter
D3 x 10	2pcs	4-pins Terminal
M5 x 14	4pcs	Base Cover
D3 x 15	6pcs	Base (Casting)



DOCUMENT HISTORY

Version 1.0

* Initial release

Version 1.1

* Add MX5800SA/78 into the Service Manual and some correction
  Pages modified: Pg Front, 1-1, 1-2 and 3-3 and 12-2
  Pages corrected: Pg 6-16, 8-2, 12-3 (added)

* Add new pcb layout & schematics released
  Power Module: Pg 8-3a to 8-13a
  DAC Board: Pg 11-3a to 11-10a