Mini System

FW-V795/21M

Service
Service
Service

Service Manual

COMPACT disc DIGITAL VIDEO

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CLASS 1
LASER PRODUCT

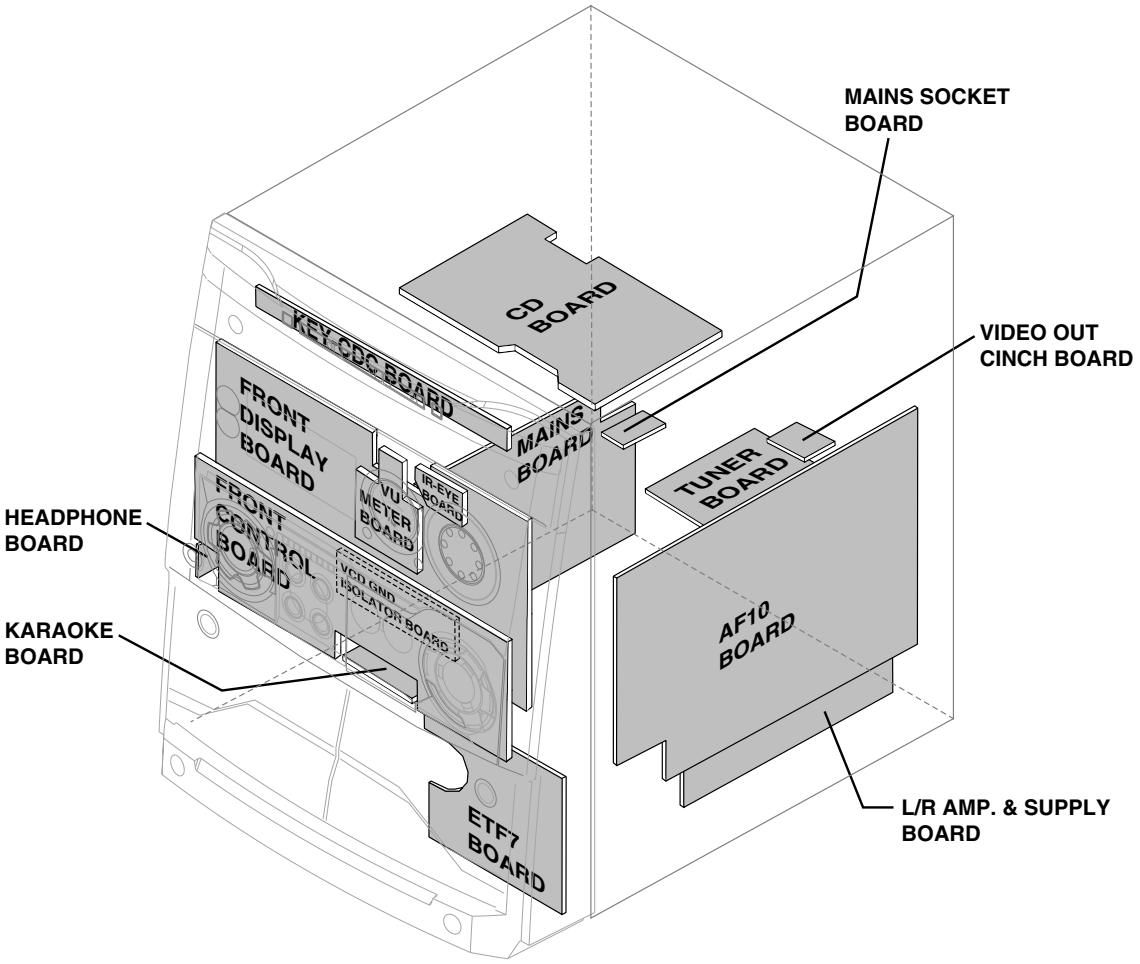
Published by BB 0219 Service Audio Printed in The Netherlands Subject to modification

GB 3139 785 30065

Version 1.0

PHILIPS

LOCATION OF PRINTED CIRCUIT BOARDS



VERSION VARIATIONS:

Type /Versions: / Features & Board in used:	FW-V795 /21M									
Aux in /CDR in	x									
Line Out										
Surround Out										
Subwoofer Out										
Digital Out										
Video Out	x									
Booster Out	x									
Matrix Surround										
CD Text										
Dolby B										
RDS										
News										
Dolby Pro Logic (DPL)										
Incredible Surround	x									
Karaoke Features	x									
Voltage Selector	x									
ECO Power Standby (Clock Display Off)	x									
ECO6 Tuner Board - Systems Non-Cenelec	x									
ECO6 Tuner Board - Systems Cenelec										
Center/Surround Channel										
Power Booster (PWB-V795/01)	x									

SPECIFICATIONS

GENERAL:

Mains voltage	: 110-127V / 220-240V Switchable
Mains frequency	: 50/60Hz
Power consumption	: < 1W at ECO Power Standby
	: 25W at Standby (DEMO mode off)
	: 175W at Active
Clock accuracy	: < 4 seconds per day
Dimension centre unit	: 265 x 310 x 390mm

TUNER:

FM

Tuning range	: 87.5-108MHz
Grid	: 50kHz
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 / 530-1700kHz
Grid	: 9kHz / 10kHz
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:

Output power (6Ω, 1kHz, 10% THD)
L & R : 2 x 120W RMS

Frequency response within -3dB	: 50Hz-20kHz
Incredible Surround	: ON/OFF
WOOX	: Level 1, 2, 3 & OFF
Digital Sound Control (DSC)	: Digital, Rock, Pop, Newage, Classic, Electric
Virtual Ambience Control (VAC)	: Hall, Concert, Cinema, Disco, Arcade, Cyber

Input sensitivity

Aux in	: 500mV ± 3dB at 1kHz
CDR in	: 1V ± 3dB at 1kHz
Microphone	: 3.5mV at 600Ω

Output sensitivity

Booster out (Classic Mode)	: 900mV at 22kΩ (Vol. Max.)
Headphone output at 32Ω	: 700mV ± 1dB (Vol. Max.)

CASSETTE RECORDER:

Number of track	: 2 x 2 stereo
Tape speed	: 4.76 cm/sec ± 2%
Wow and flutter	: < 0.4% DIN
Fast-wind/Rewind time C60	: 130 sec
Bias system	: 78kHz ± 10kHz
Rec/Pb frequency response within 8dB	: 80Hz - 10kHz
Signal to Noise Ratio (Type I)	: > 48dBA

VIDEO CD

Audio Performance:

Measurement done at output conn. of the CDC module.

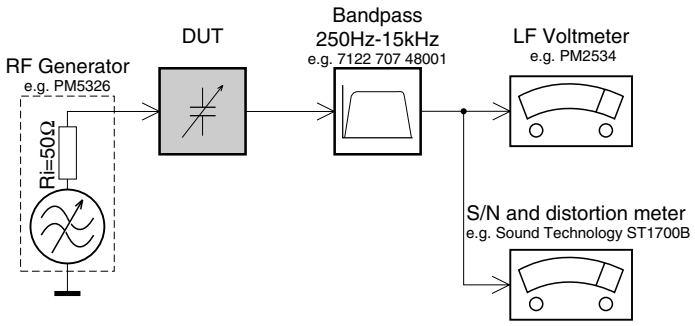
Frequency response within ± 3dB	: 20Hz - 20kHz
Output level (in Vrms)	: 500mV, Z_{out} = 100Ω
Signal/Noise ratio (A-weighted)	: > 80dBA
Distortion at 1kHz	: < 0.02%
Channel unbalance at 1kHz	: < 1dB
Channel separation at 1kHz	: > 60dB
De-emphasis	: 0 or 15/50 mS (Switched by subcode on the disc)
MP3-CD bit rate	: 32 - 256kbps
Sampling Frequencies	: 48kHz, 44.1kHz, 32kHz

Video Performance:

Video output level	: 1 ± 0.2V_{p-p}
Luminance non-linear distortion	: 0 ± 5%
Luminance S/N ratio	: > 50dB

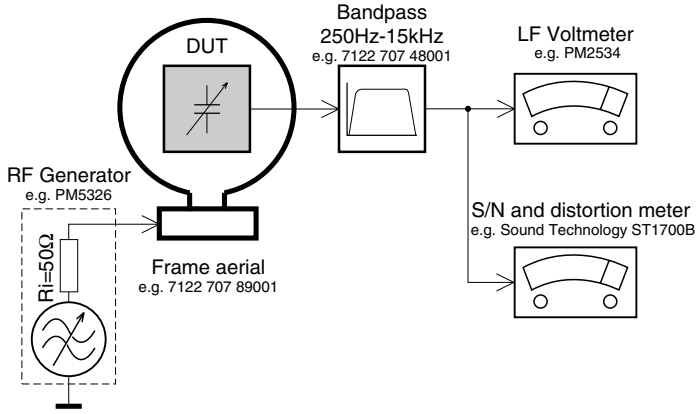
MEASUREMENT SETUP

Tuner FM



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

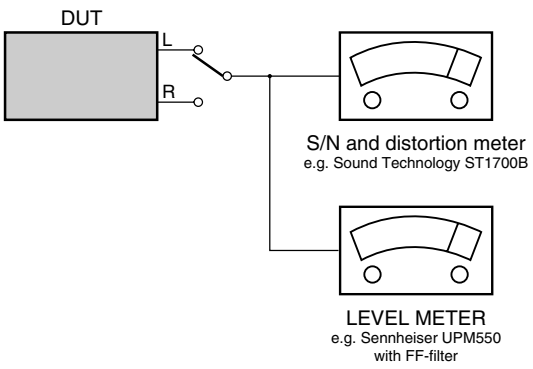
Tuner AM (MW,LW)



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).

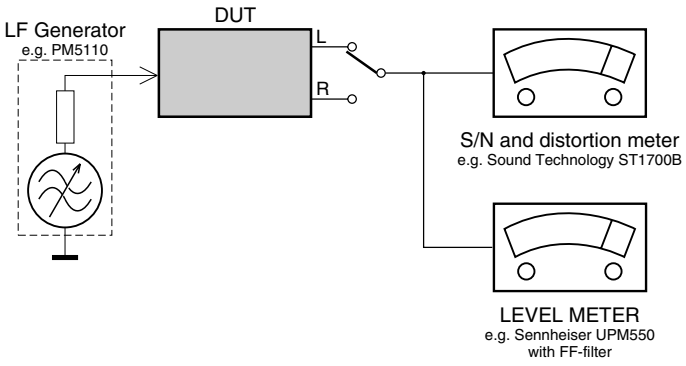
CD

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

Cassette:

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

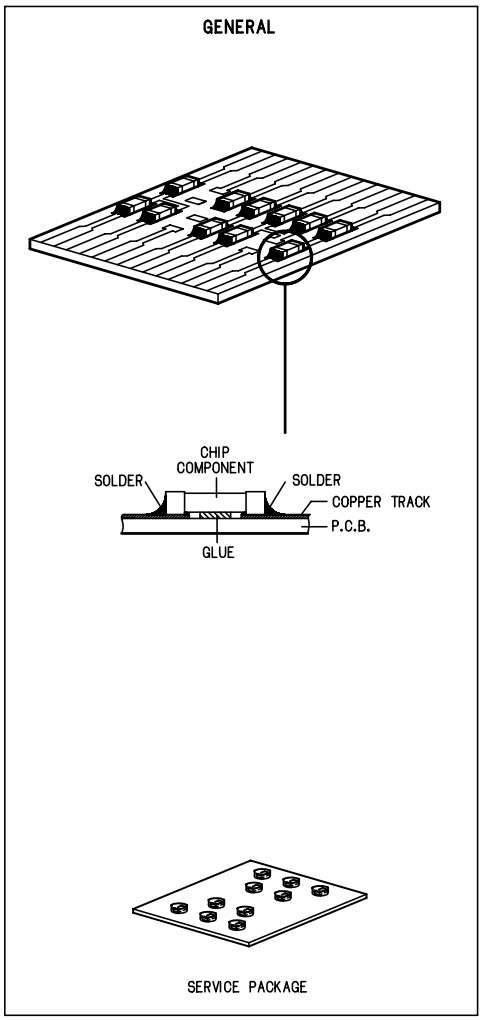
Compact Disc:

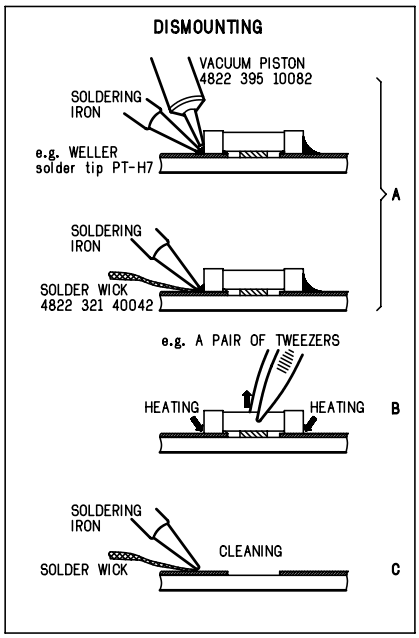
SBC426/426A Test disc 5 + 5A 4822 397 30096
SBC442 Audio Burn-in Test disc 1kHz 4822 397 30155
SBC429 Audio Signals disc 4822 397 30184
Dolby Pro-logic Test Disc 4822 395 10216

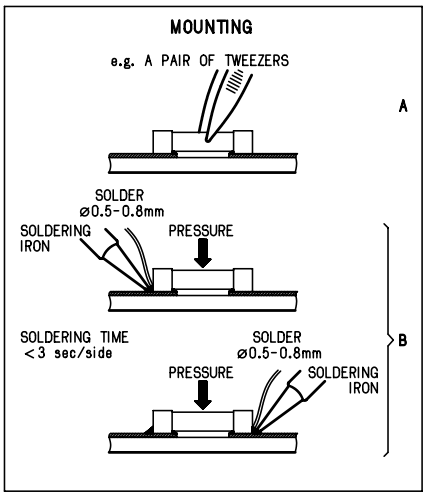
ESD Equipment:

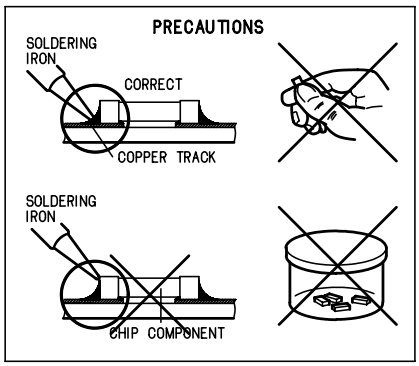
Anti-static table mat - large 1200x650x1.25mm ... 4822 466 10953
Anti-static table mat - small 600x650x1.25mm 4822 466 10958
Anti-static wristband 4822 395 10223
Connector box (1MΩ) 4822 320 11307
Extension cable
(to connect wristband to conn. box) 4822 320 11305
Connecting cable
(to connect table mat 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

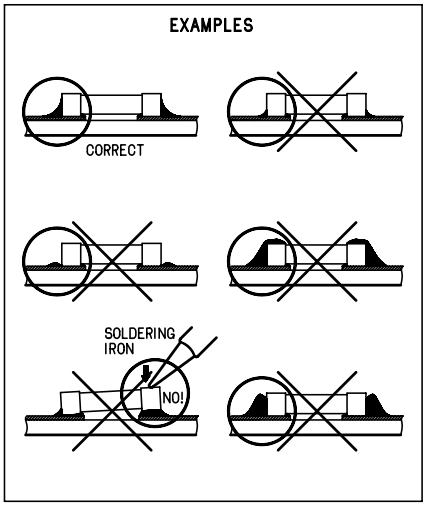
HANDLING CHIP COMPONENTS











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 !

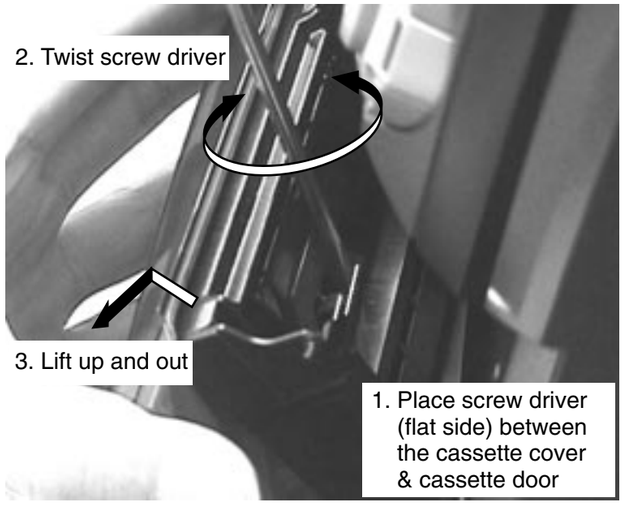
Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

DK Advarse !

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

DISMANTLING INSTRUCTIONS

Dismantling of the Cassette Cover

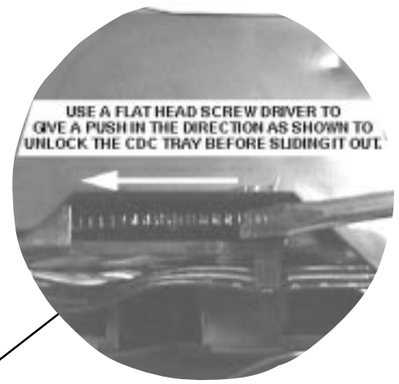


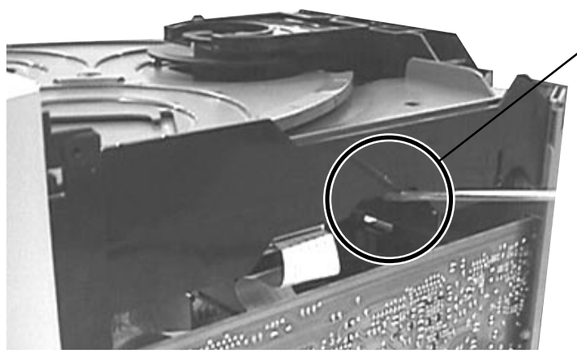
Remove Cassette Cover

Cassette Cover

Dismantling of the CDC Module and Front Panel Assembly

1) Loosen 4 screws to remove the Cover Top (pos 255) of the set.
2) Loosen 3 screws to remove the Panel Left (pos 253) and 3 screws to remove the Panel Right (pos 254) of the set.
3) Slide out the CDC Tray as shown in the diagram below with the help of a flat head screw driver.

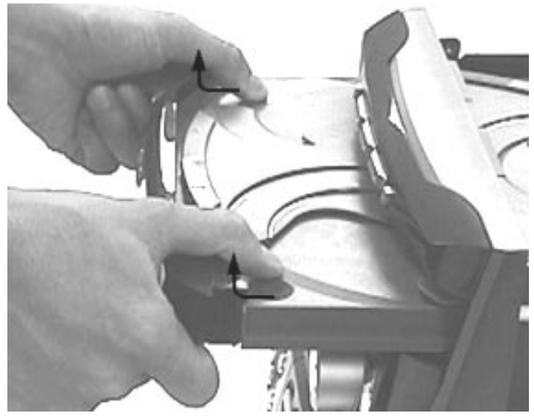




Sliding out the CDC Tray

Dismantling of the CDC Module and Front Panel Assembly

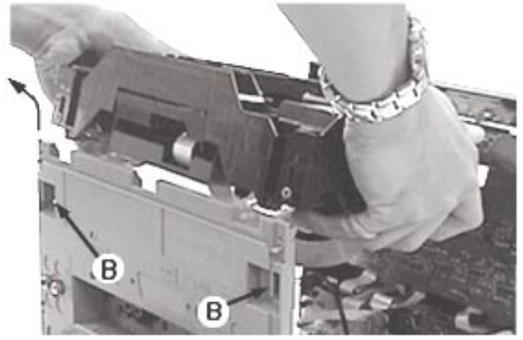
4) Remove the Cover Tray VCD (pos 106) as indicated.



Remove Cover Tray VCD

5) Loosen 2 screws A and 2 screws B to remove the CDC Module (pos 1105) as indicated.
6) Remove 2 screws (pos 226) at the bottom to separate the Front Panel Assembly from the Plate Bottom (pos 265).

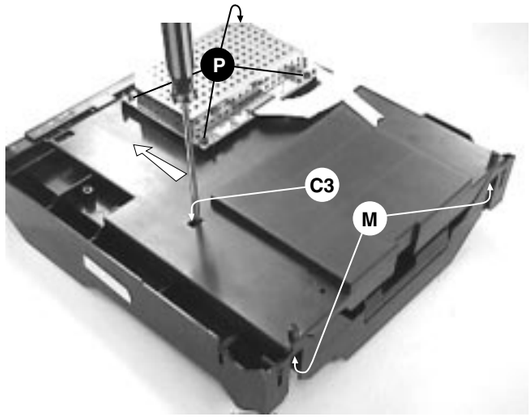
Front View CDC



Remove CDC Module

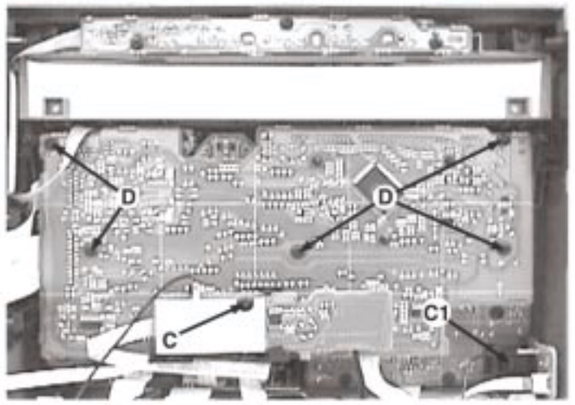
Separating the MPEG and the CDC Module

1) Remove 4 screws P to remove the MPEG shield & MPEG Board.
2) Remove 2 screws M and uncatch C3 with a flat screw-driver in the direction as shown to loosen the Plate Insulator.

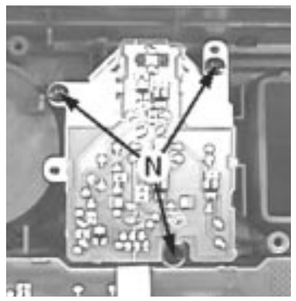


Dismantling of the Front Display Board and Front Control Board

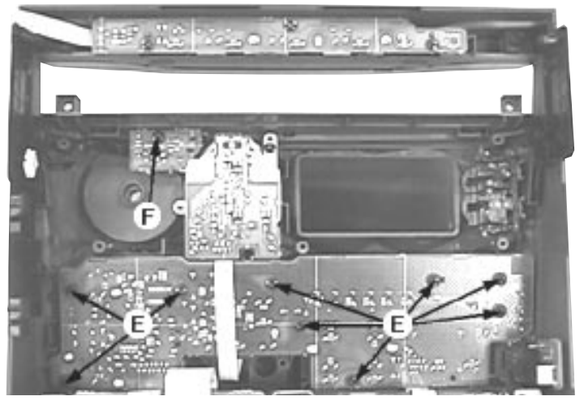
1) Remove 1 screw C as indicated to loosen the VCD GND Isolator Board (pos V1109).
2) Remove 1 screw C1 as indicated to loosen the Headphone Board (pos 1101-B).
3) Remove 5 screws D as indicated to loosen the Front Display Board (pos 1101-A).
4) Remove 9 screws E as indicated to loosen the Front Control Board (pos 1107-A).
5) Remove 1 screw F as indicated to loosen the IR-Eye Board (pos 1107-D).
6) Remove 3 screws N as indicated to loosen the VU Meter Board (pos 1107-C).



Remove VCD GND Isolator Board, Headphone Board and Front Display Board



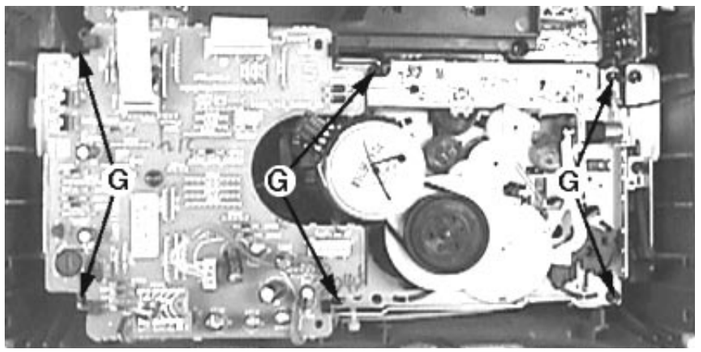
Remove VU Meter Board



Remove Front Control Board and IR-Eye Board

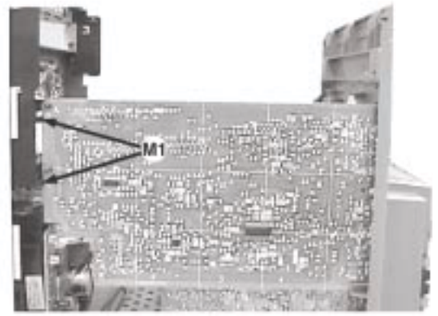
Dismantling of the ETF Tape Module

1) Remove 6 screws G as indicated to loosen the ETF Tape Module (pos 1104).

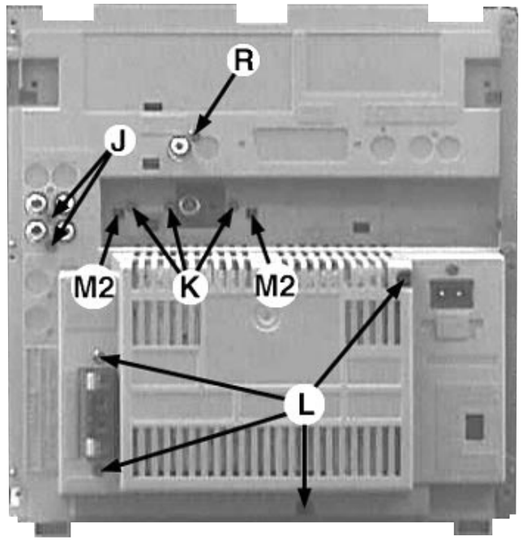


Dismantling of the Rear Portion

1) Remove 2 screws J and uncatch M1 as indicated to loosen the AF Board (pos 1102-A).
2) Remove 1 screw R as indicated to loosen the Video Out Cinch Board (pos V1102-B).
3) Remove 3 screws K and uncatch M2 as indicated to loosen the Tuner Board (pos 1103).
4) Remove 4 screws L as indicated to loosen the Panel Rear (pos 256).



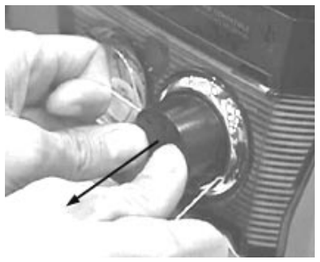
Remove AF Board



Repair Hints

1) The Knob Volume Gloss Black (pos 117) can be remove by inserting a strong string into the slot and pull it out in the direction as indicated. See picture 1.

Picture 1



2) The Knob Jog Rotary (pos 140) can be remove by inserting a strong string into the slot and pull it out in the direction as indicated. See picture 2.

Picture 2

2-3

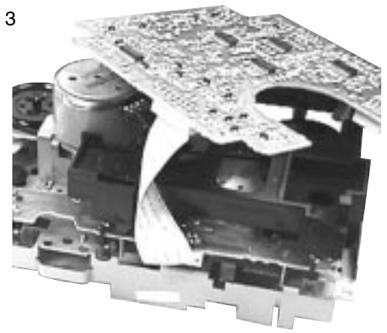
Repair Hints

3) During repair it is possible to disconnect the Tuner Board (pos 1103) and CDC & MPEG Module (pos 1105) unless the fault is suspected to be in that area. This will not affect the performance of the rest of the set.

4) Due to the short flex cable wires in the ETF Module, the pc board should be disconnected and reconnected on the reverse side of the tape mechanism to keep it electrically connected during repair. See picture 3.

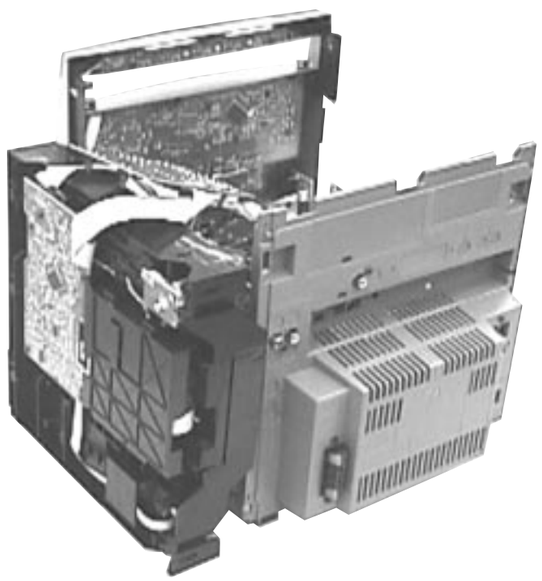
Note: The flex cables are very fragile, care should be taken not to damage them during repair. After repair, be very sure that the flex cables are inserted properly into the flex sockets before encasing, otherwise faults may occurs.

Picture 3

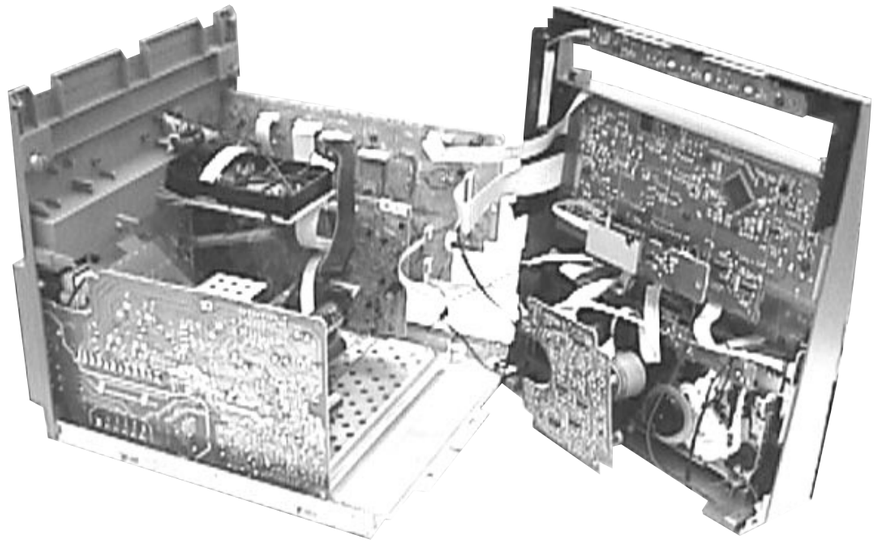


Service position A

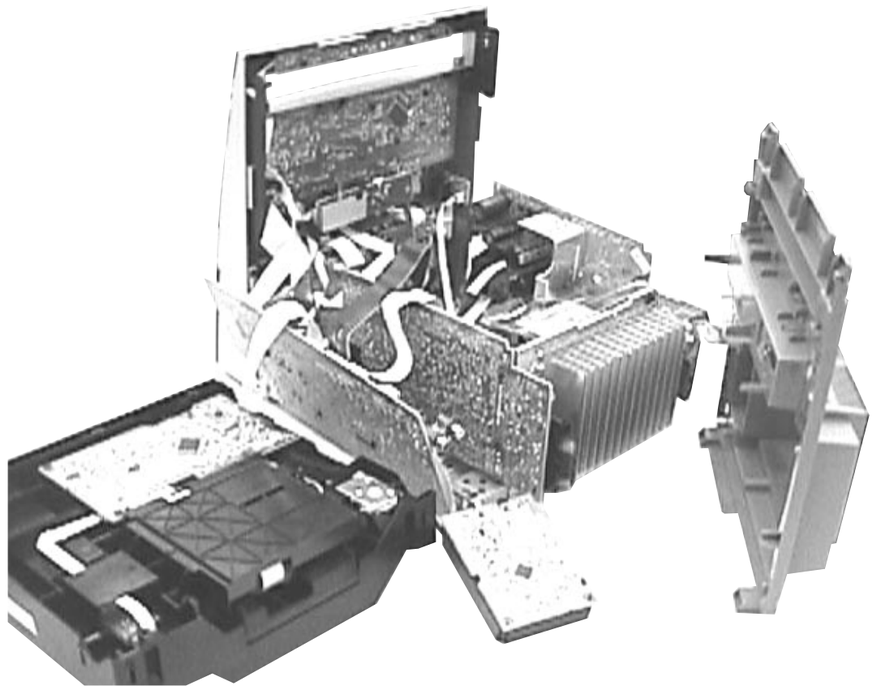
Service position B



Service position C

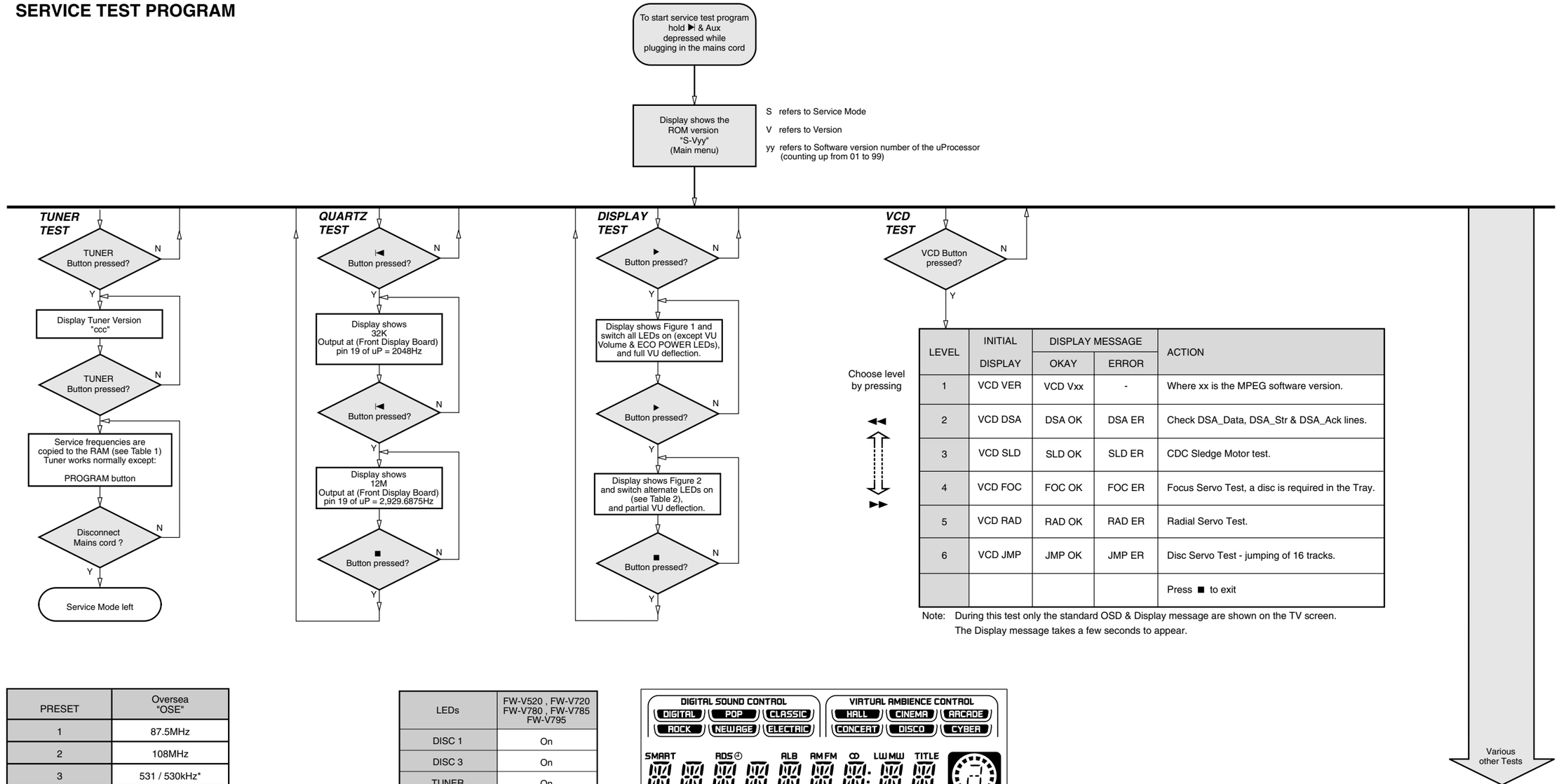


Service position D



3-1

SERVICE TEST PROGRAM



LEVEL	INITIAL DISPLAY	DISPLAY MESSAGE OKAY	DISPLAY MESSAGE ERROR	ACTION
1	VCD VER	VCD Vxx	-	Where xx is the MPEG software version.
2	VCD DSA	DSA OK	DSA ER	Check DSA_Data, DSA_Str & DSA_Ack lines.
3	VCD SLD	SLD OK	SLD ER	CDC Sledge Motor test.
4	VCD FOC	FOC OK	FOC ER	Focus Servo Test, a disc is required in the Tray.
5	VCD RAD	RAD OK	RAD ER	Radial Servo Test.
6	VCD JMP	JMP OK	JMP ER	Disc Servo Test - jumping of 16 tracks.
				Press ■ to exit

Note: During this test only the standard OSD & Display message are shown on the TV screen.
The Display message takes a few seconds to appear.

Various other Tests

TEST	Activated with	ACTION
EEPROM TEST	►► ■ to Exit	A test pattern will be sent to the EEPROM. "PASS" is displayed if the uProcessor read back the test pattern correctly, otherwise "FAIL" will be displayed.
EEPROM FORMAT TEST	◄◄	Load default data. Display shows "NEW" for 1 second. ***Caution!*** ***All presets from the customer will be lost!!***
ROTARY ENCODER TEST	Rotary Volume Knob or Jog Shuttle	Display shows value for 2 seconds. Values increases or decreases in steps of 1 until 0 (Min.) or 40 (Max.) is reached.
DEMO TOGGLE	DSC	Pressing this button will toggle between DEMO ON and DEMO OFF. The DEMO status will scroll once across the Display.
LEAVE SERVICE TEST PROGRAM	Disconnect mains cord	

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

Table 1

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

Note:
a) By holding the TUNER and ►► buttons depressed while switching on the Mains supply, the tuning grid frequency is toggled between 9kHz and 10kHz for the Oversea (/21) version.
b) This Tuner information is also applicable for /12 and /28 versions.

LEDs	FW-V520 , FW-V720 FW-V780 , FW-V785 FW-V795
DISC 1	On
DISC 3	On
TUNER	On
TAPE	On
VAC	On
VU BACK LIGHT	On
VU VOLUME	On

Table 2

Figure 1

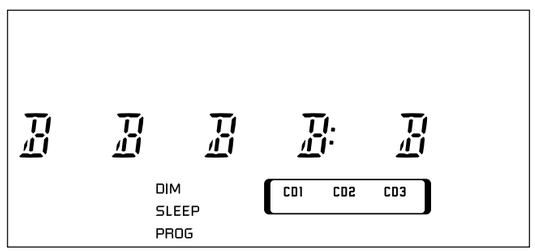
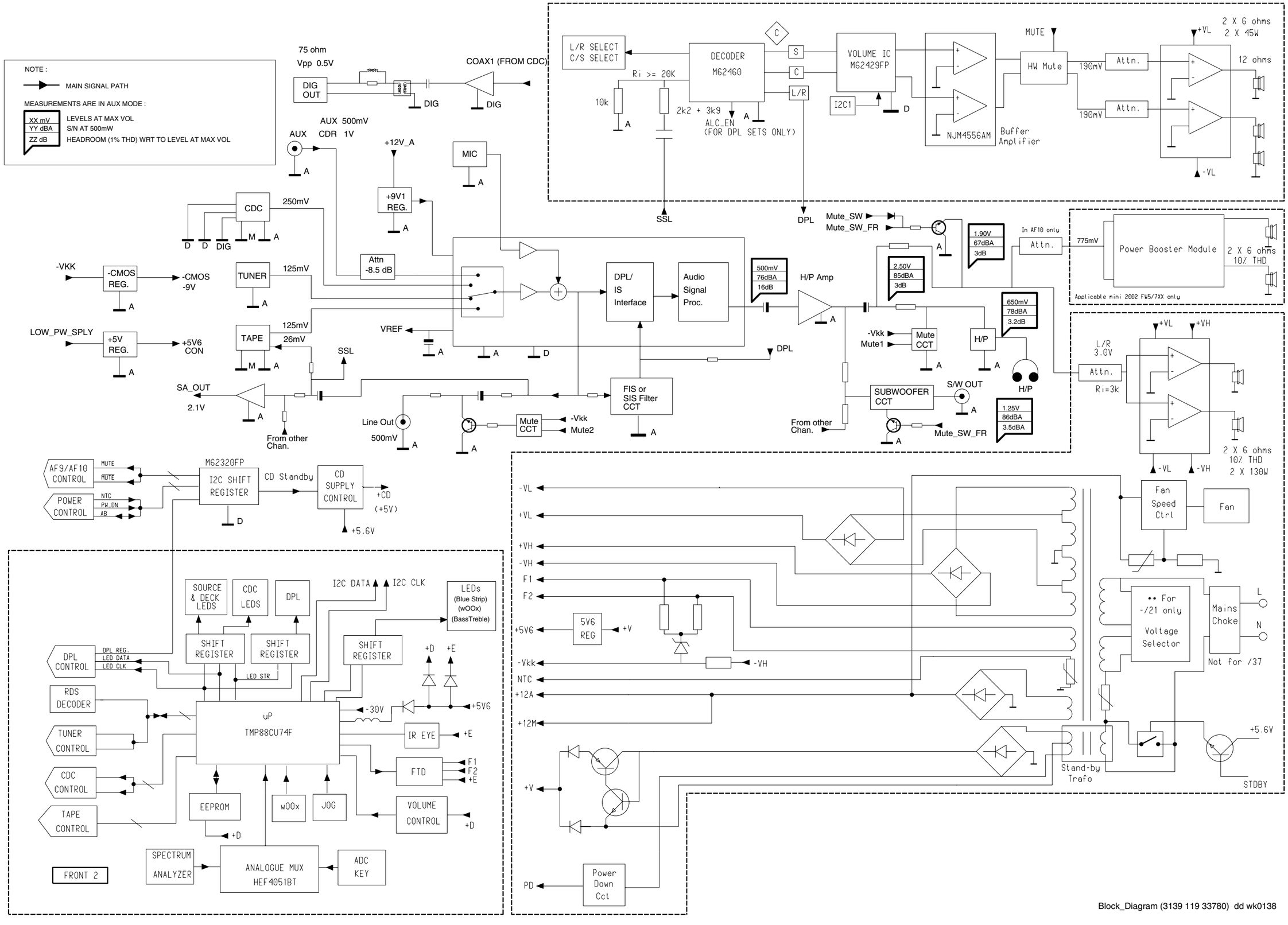


Figure 2

4-1

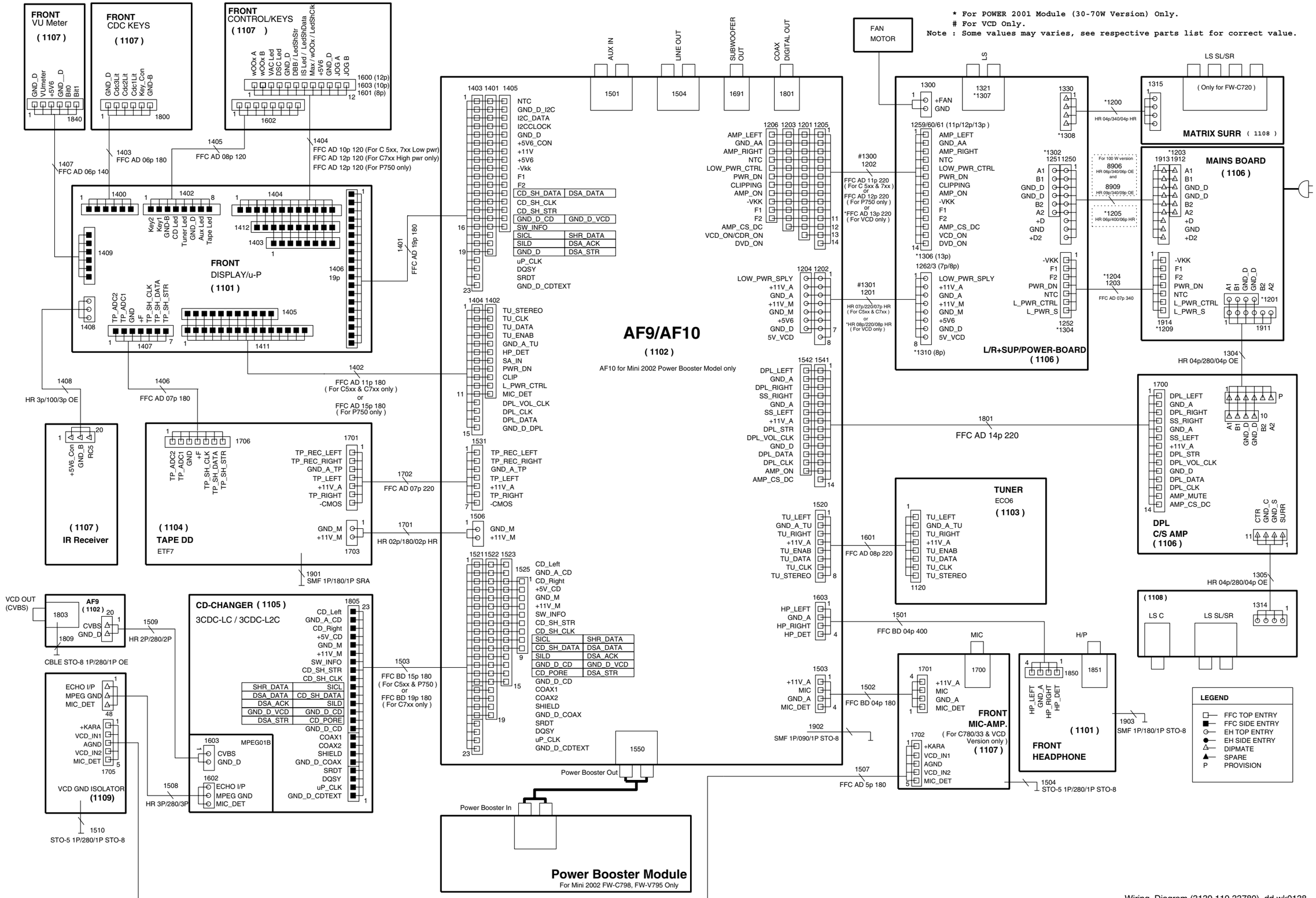
SET BLOCK DIAGRAM



Block_Diagram (3139 119 33780) dd wk0138

4-2

SET WIRING DIAGRAM



Wiring_Diagram (3139 119 33780) dd wk0138

5-1

REMARKS :

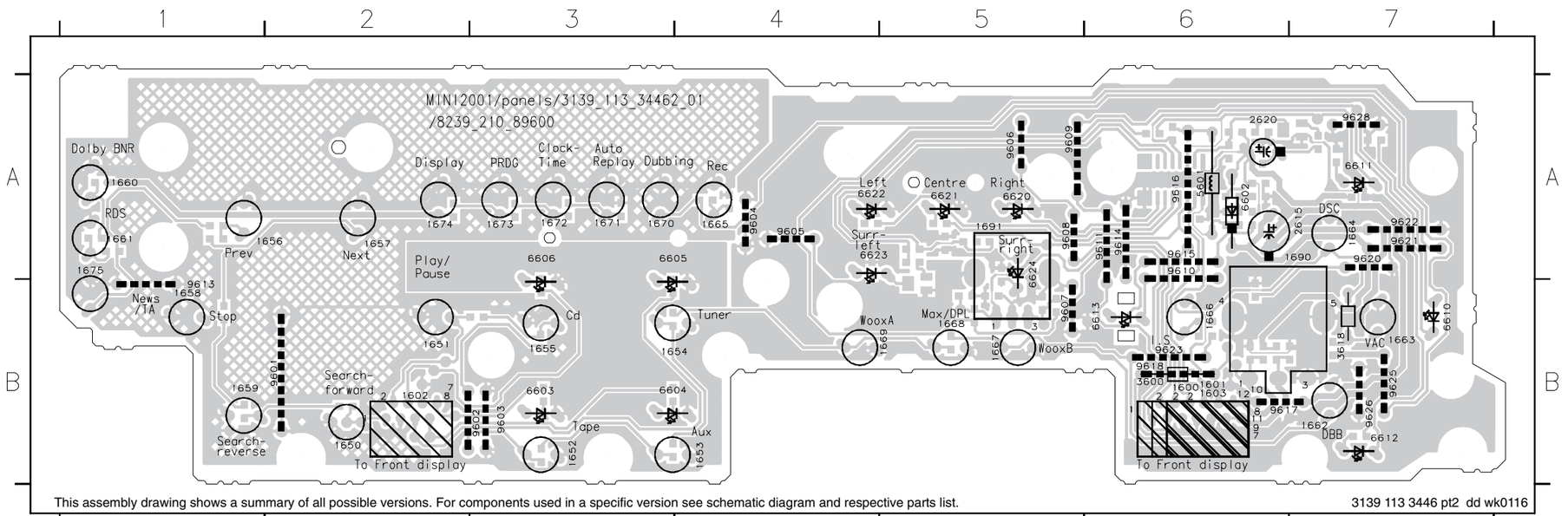
FRONT CONTROL BOARD

TABLE OF CONTENTS

5-2

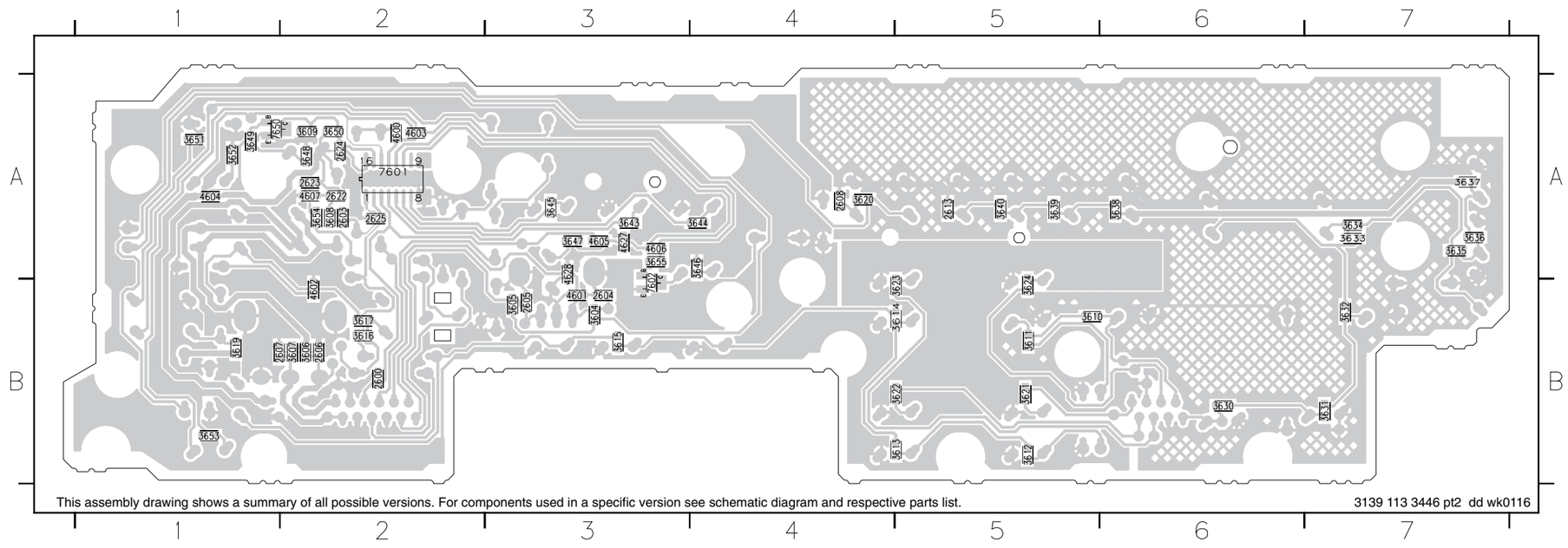
FRONT CONTROL BOARD - COMPONENT LAYOUT

1600 B6	1650 B2	1654 B3	1658 B1	1662 B7	1666 B6	1670 A3	1674 A2	2615 A7	5601 A6	6605 A3	6612 B7	6622 A4	9602 B3	9606 A5	9610 A6	9615 A6	9620 A7	9625 B7	
1601 B6	1651 B2	1655 B3	1659 B1	1663 B7	1667 B5	1671 A3	1675 A1	2620 A6	6602 A6	6606 A3	6613 B6	6623 A4	9603 B3	9607 B5	9611 A6	9616 A6	9621 A7	9626 B7	
1602 B2	1652 B3	1656 A2	1660 A1	1664 A7	1668 B5	1672 A3	1690 A7	3600 B6	6603 B3	6610 B7	6620 A5	6624 A5	9604 A4	9608 A5	9613 B1	9617 B6	9622 A7	9628 A7	
1603 B6	1653 B4	1657 A2	1661 A1	1665 A4	1669 B5	1673 A3	1691 A5	3618 B7	6604 B3	6611 A7	6621 A5	9601 B2	9605 A4	9609 A5	9614 A6	9618 B6	9623 B6		



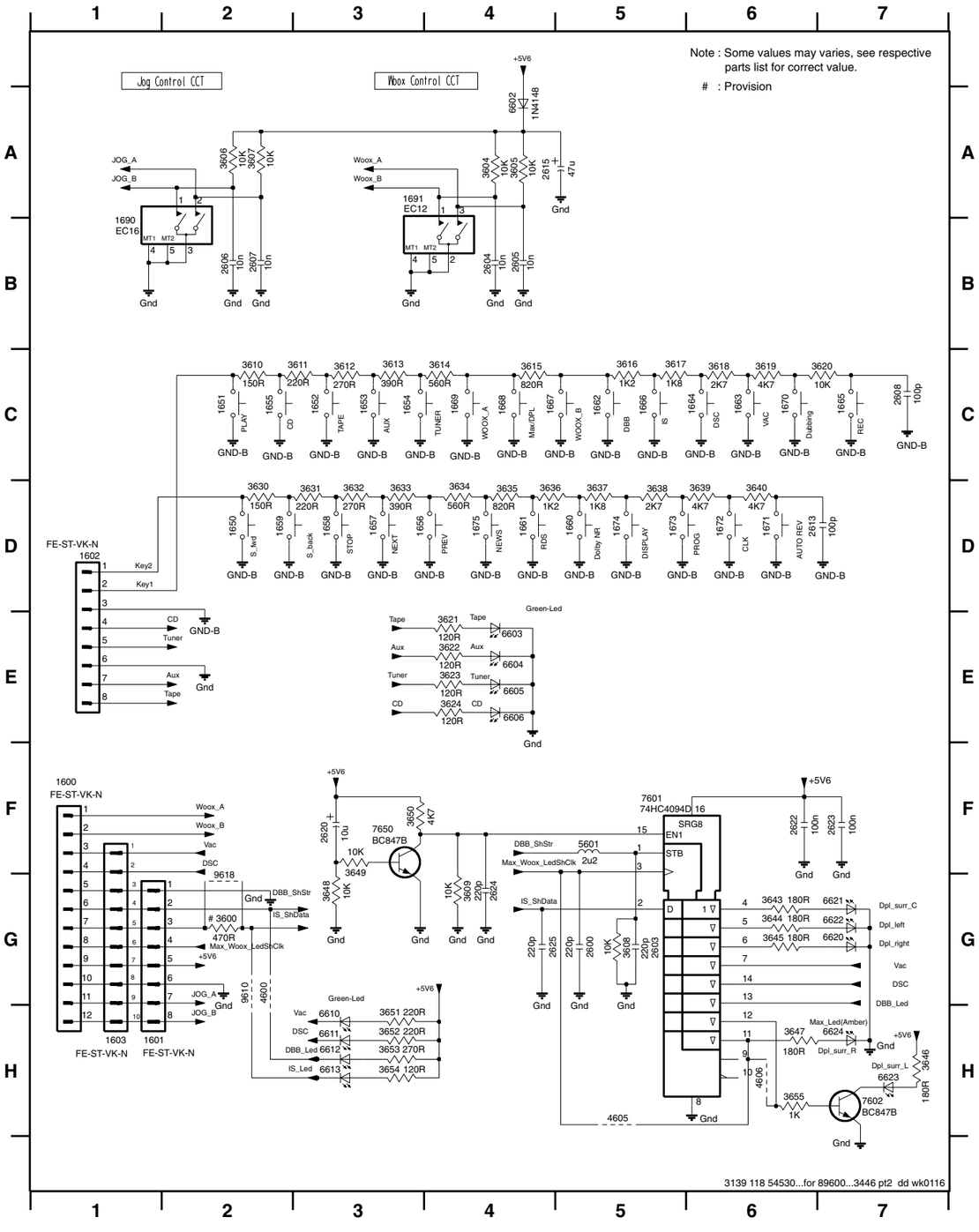
FRONT CONTROL BOARD - CHIP LAYOUT

2600 B2	2606 B2	2622 A2	3604 B3	3608 A2	3612 B5	3616 B2	3621 B5	3630 B6	3634 A7	3638 A6	3644 A4	3648 A2	3652 A1	4600 A2	4604 A1	4627 A3	7650 A1		
2603 A2	2607 B1	2623 A2	3605 B3	3609 A2	3613 B5	3617 B2	3622 B5	3631 B7	3635 A7	3639 A5	3645 A3	3649 A1	3653 B1	4601 B3	4605 A3	4628 A3			
2604 B3	2608 A4	2624 A2	3606 B2	3610 B5	3614 B5	3619 B1	3623 B5	3632 B7	3636 A7	3640 A5	3646 A4	3650 A2	3654 A2	4602 B2	4606 A3	7601 A2			
2605 B3	2613 A5	2625 A2	3607 B2	3611 B5	3615 B3	3620 A4	3624 B5	3633 A7	3637 A7	3643 A3	3647 A3	3651 A1	3655 A3	4603 A2	4607 A2	7602 B3			



FRONT CONTROL BOARD - CIRCUIT DIAGRAM

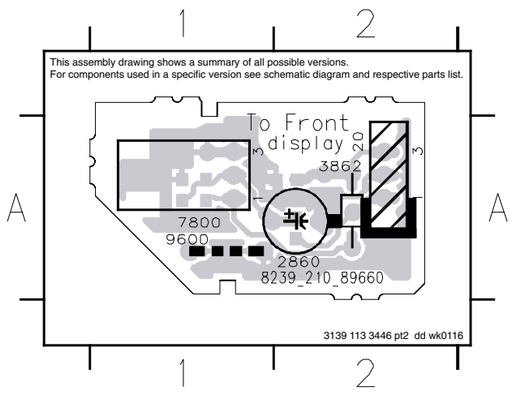
1600 F1	1653 C3	1660 D5	1667 C4	1674 D5	2605 B4	2622 F6	3606 A2	3613 C3	3620 C7	3632 D3	3639 D6	3648 G3	3655 H6	6604 E4	6620 G7	7650 F3
1601 H2	1654 C3	1661 D4	1668 C4	1675 D4	2606 B2	2623 F7	3607 A2	3614 C4	3621 E4	3633 D3	3640 D6	3649 F3	4600 G2	6605 E4	6621 G7	9610 G2
1602 D1	1655 C2	1662 C5	1669 C4	1690 B1	2607 B2	2624 G4	3608 G5	3615 C4	3622 E4	3634 D4	3643 G6	3650 F3	4605 H5	6606 E4	6622 G7	9618 G2
1603 H1	1656 D3	1663 C6	1670 C6	1691 A3	2608 C7	2625 G4	3609 G4	3616 C5	3623 E4	3635 D4	3644 G6	3651 H3	4606 H6	6610 H3	6623 H7	
1650 D2	1657 D3	1664 C6	1671 D6	2600 G5	2613 D6	3600 G2	3610 C2	3617 C5	3624 E4	3636 D4	3645 G6	3652 H3	5601 F5	6611 H3	6624 H7	
1651 C2	1658 D3	1665 C7	1672 D6	2603 G5	2615 A4	3604 A4	3611 C3	3618 C6	3630 D2	3637 D5	3646 H7	3653 H3	6602 A4	6612 H3	7601 F5	
1652 C3	1659 D2	1666 C5	1673 D5	2604 B4	2620 F3	3605 A4	3612 C3	3619 C6	3631 D3	3638 D5	3647 H6	3654 H3	6603 E4	6613 H3	7602 H7	



3139 118 54530...for 89600...3446 pt2 dd wk0116

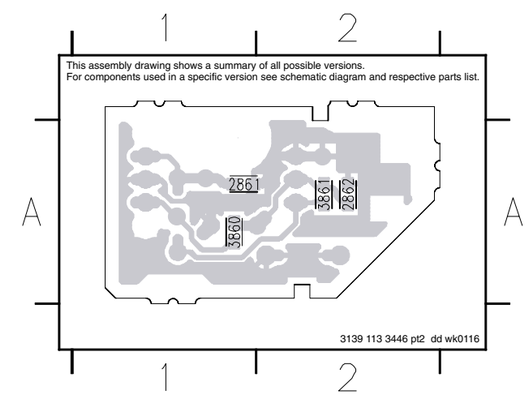
IR-EYE BOARD - COMPONENT LAYOUT

20 A2 3862 A2 9600 A1
2860 A2 7800 A1



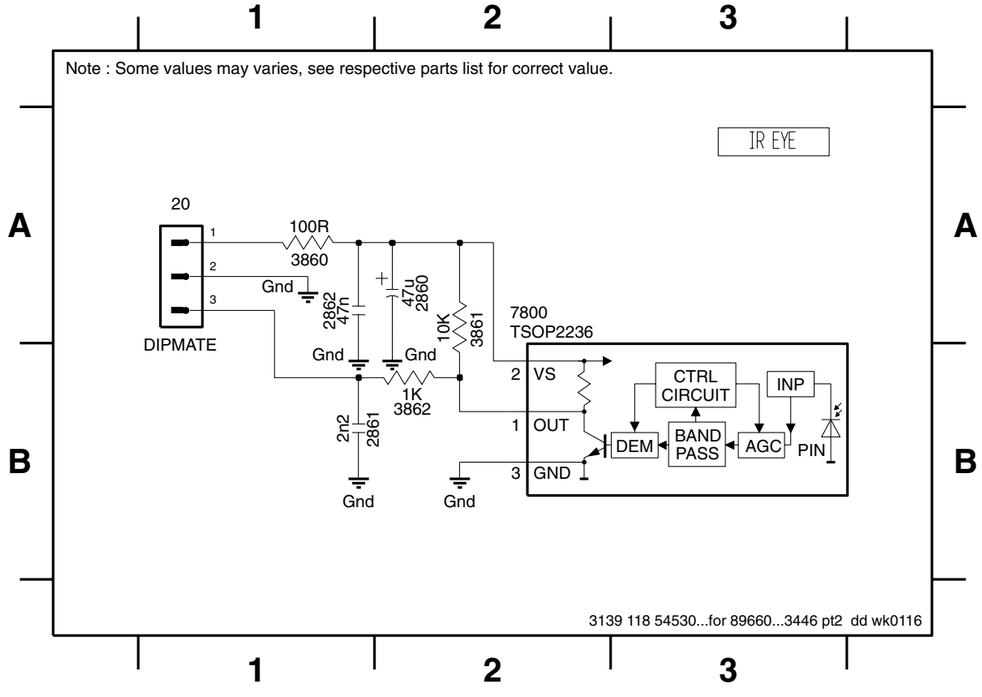
IR-EYE BOARD - CHIP LAYOUT

2861 A1 2862 A2 3860 A1 3861 A2

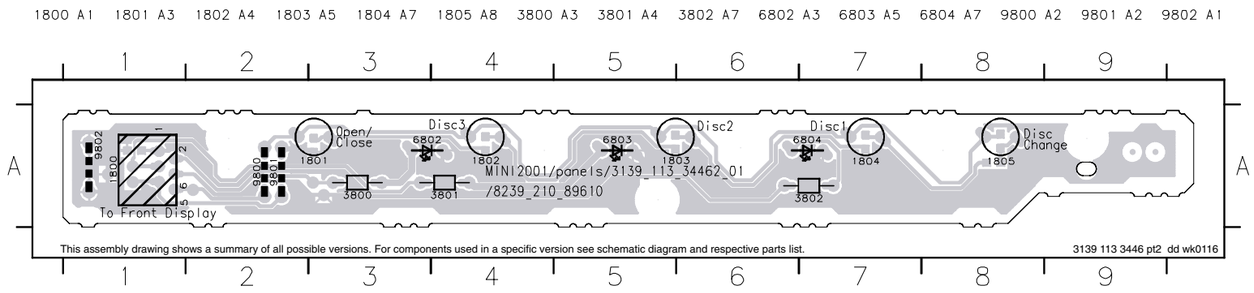


IR-EYE BOARD - CIRCUIT DIAGRAM

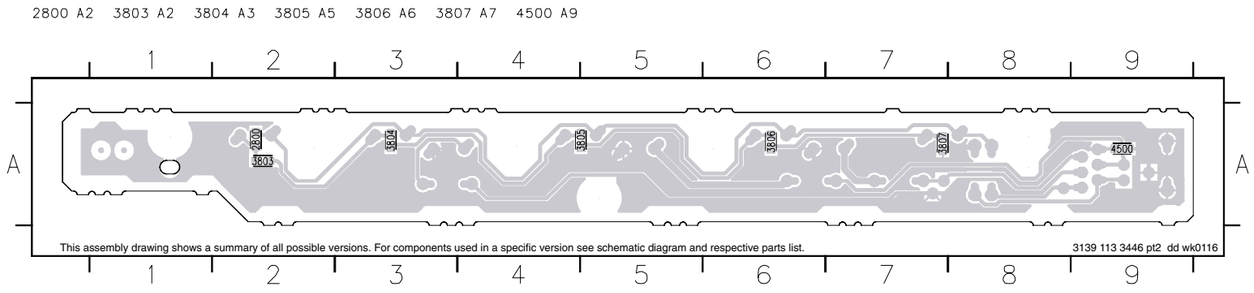
20 A1	2860 A2	2861 B1	2862 A1	3860 A1	3861 A2	3862 B2	7800 A2



KEY-CDC BOARD - COMPONENT LAYOUT

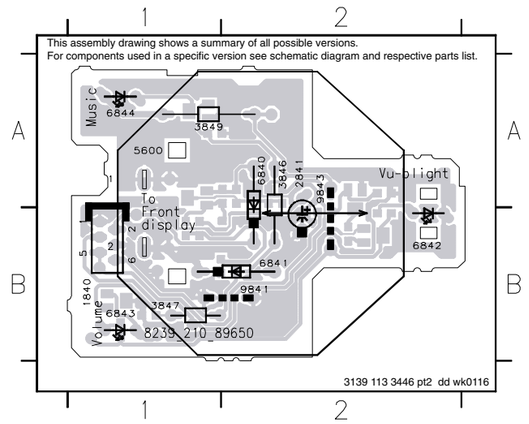


KEY-CDC BOARD - CHIP LAYOUT



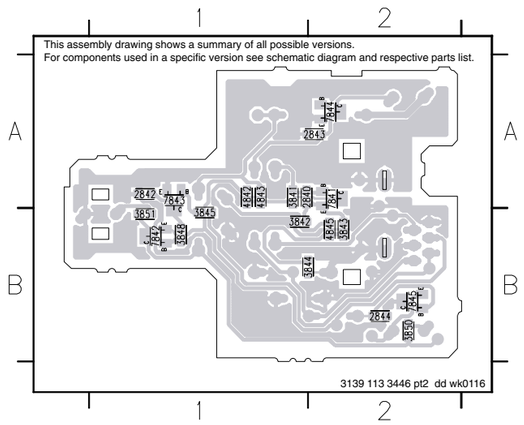
VU METER BOARD - COMPONENT LAYOUT

1840 B1 3846 A2 3849 A1 6840 A2 6842 B2 6844 A1 9843 A2
2841 A2 3847 B1 5600 A1 6841 B2 6843 B1 9841 B2



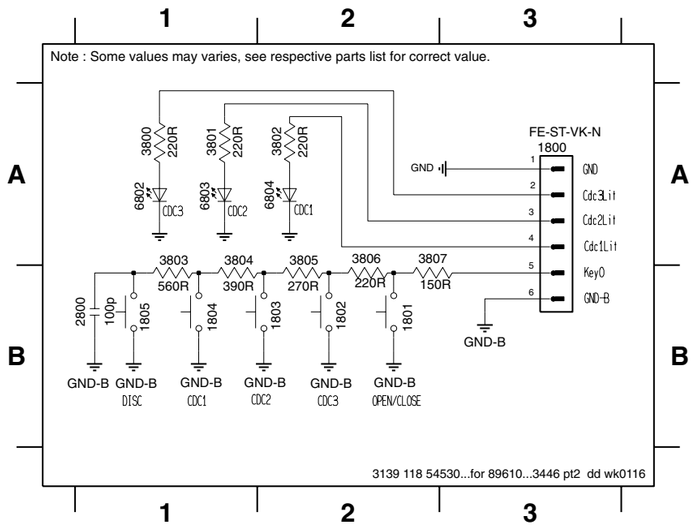
VU METER BOARD - CHIP LAYOUT

2840 A1 2844 B2 3843 B2 3848 B1 4842 A1 7841 A2 7844 A2
2842 A1 3841 A1 3844 B1 3850 B2 4843 A1 7842 B1 7845 B2
2843 A2 3842 B1 3845 B1 3851 B1 4845 B2 7843 A1



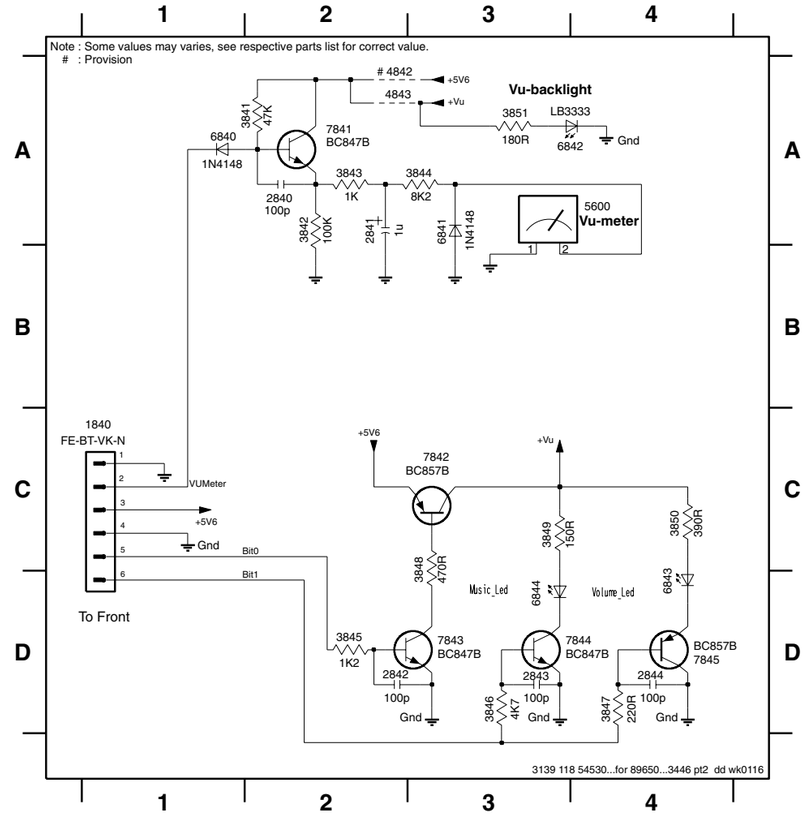
KEY-CDC BOARD - CIRCUIT DIAGRAM

1800 A3 1802 B2 1804 B1 2800 B1 3801 A1 3803 A1 3805 A2 3807 A2 6803 A1
1801 B2 1803 B2 1805 B1 3800 A1 3802 A2 3804 A1 3806 A2 6802 A1 6804 A2



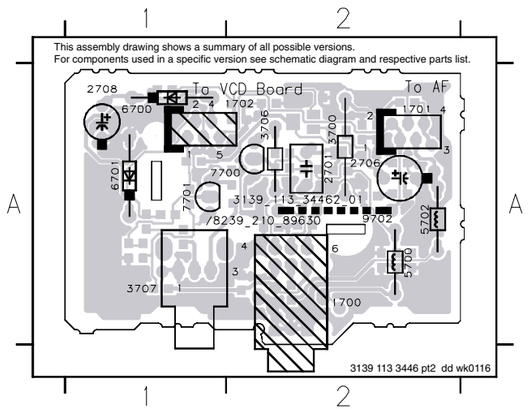
VU METER BOARD - CIRCUIT DIAGRAM

1840 C1 2842 D2 3841 A2 3844 A3 3847 D4 3850 C4 4843 A2 6841 A3 6844 D3 7843 D3
2840 A2 2843 D3 3842 A2 3845 D2 3848 C3 3851 A3 5600 A4 6842 A4 7841 A2 7844 D3
2841 A2 2844 D4 3843 A2 3846 D3 3849 C3 4842 A2 6840 A1 6843 D4 7842 C3 7845 D4



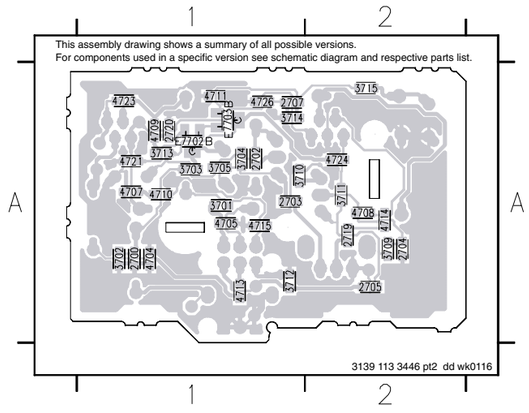
KARAOKE BOARD - COMPONENT LAYOUT

1700 A2 2701 A2 3700 A2 5700 A2 6701 A1 9702 A2
1701 A2 2706 A2 3706 A2 5702 A2 7700 A1
1702 A2 2708 A1 3707 A1 6700 A1 7701 A1



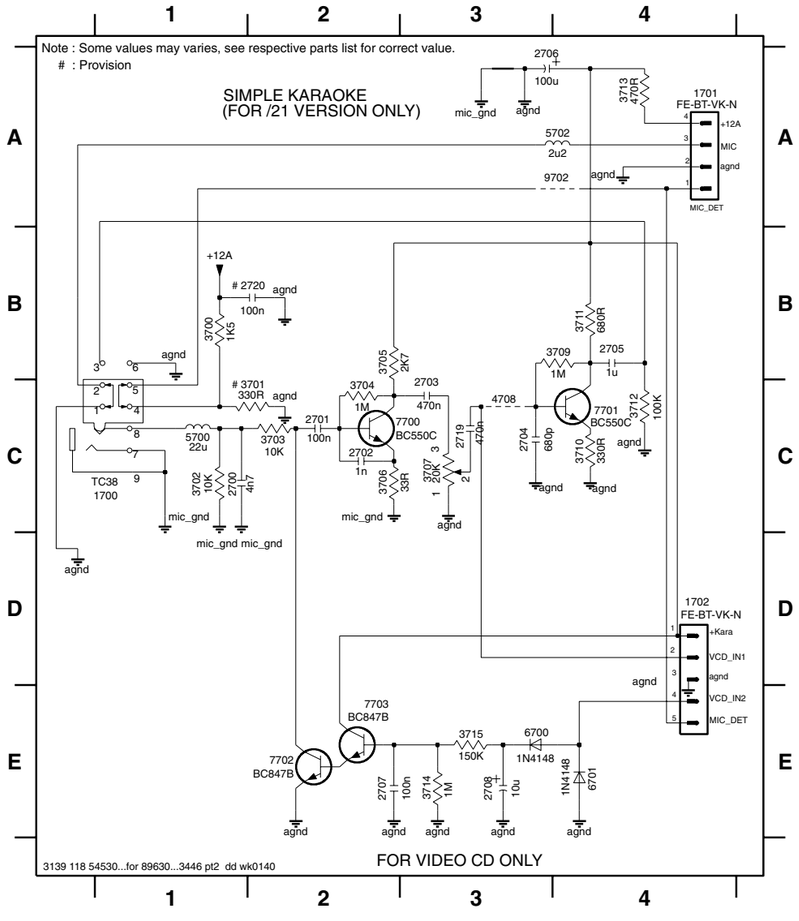
KARAOKE BOARD - CHIP LAYOUT

2700 A1 2719 A2 3705 A1 3714 A1 4709 A1 4721 A1
2702 A1 2720 A1 3709 A2 3715 A2 4710 A1 4723 A1
2703 A1 3701 A1 3710 A1 4704 A1 4711 A1 4724 A2
2704 A2 3702 A1 3711 A2 4705 A1 4713 A1 4726 A1
2705 A2 3703 A1 3712 A1 4707 A1 4714 A2 7702 A1
2707 A1 3704 A1 3713 A1 4708 A2 4715 A1 7703 A1



KARAOKE BOARD - CIRCUIT DIAGRAM

1700 C1 2700 C1 2703 C3 2706 A3 2719 C3 3701 C2 3704 C2 3707 C3 3711 B4 3714 E3 5700 C1 6701 E4 7702 E2
1701 A4 2701 C2 2704 C3 2707 E2 2720 B2 3702 C1 3705 B2 3709 B4 3712 C4 3715 E3 5702 A4 7700 C2 7703 E2
1702 D4 2702 C2 2705 B4 2708 E3 3700 B1 3703 C2 3706 C2 3710 C4 3713 A4 4708 C3 6700 E3 7701 C4 9702 A4



ELECTRICAL PARTS LIST - FRONT CONTROL BOARD

MISCELLANEOUS

1600	4822 267 51453	Flex Connector 12P
1602	4822 265 11535	Flex Connector 8P
1650	4822 276 13775	Tact Switch
1651	4822 276 13775	Tact Switch
1652	4822 276 13775	Tact Switch
1653	4822 276 13775	Tact Switch
1654	4822 276 13775	Tact Switch
1655	4822 276 13775	Tact Switch
1656	4822 276 13775	Tact Switch
1657	4822 276 13775	Tact Switch
1658	4822 276 13775	Tact Switch
1659	4822 276 13775	Tact Switch
1660	4822 276 13775	Tact Switch
1661	4822 276 13775	Tact Switch
1663	4822 276 13775	Tact Switch
1664	4822 276 13775	Tact Switch
1665	4822 276 13775	Tact Switch
1666	4822 276 13775	Tact Switch
1669	4822 276 13775	Tact Switch
1670	4822 276 13775	Tact Switch
1671	4822 276 13775	Tact Switch
1672	4822 276 13775	Tact Switch
1673	4822 276 13775	Tact Switch
1674	4822 276 13775	Tact Switch
1675	4822 276 13775	Tact Switch
1690	2422 129 16385	Rotary Encoder 12P
1691	2422 129 16386	Rotary Encoder 12P
1700	4822 265 11529	Microphone Socket
1701	4822 267 10733	Flex Connector 4P
1702	4822 267 10954	Flex Connector 5P
1800	4822 265 11207	Flex Connector 6P
1801	4822 276 13775	Tact Switch
1802	4822 276 13775	Tact Switch
1803	4822 276 13775	Tact Switch
1804	4822 276 13775	Tact Switch
1805	4822 276 13775	Tact Switch
1840	4822 267 10731	Flex Connector 6P

CAPACITORS

2604	5322 126 11583	10nF 10% 50V
2605	5322 126 11583	10nF 10% 50V
2606	5322 126 11583	10nF 10% 50V
2607	5322 126 11583	10nF 10% 50V
2608	2020 552 94427	100pF 5% 50V
2613	2020 552 94427	100pF 5% 50V
2615	4822 124 12233	47uF 20% 25V
2622	2238 586 59812	100nF 50V
2623	2238 586 59812	100nF 50V
2700	4822 126 13193	4,7nF 10% 63V
2701	5322 121 42386	100nF 5% 63V
2702	3198 016 31020	1nF 25V
2703	3198 017 44740	470nF 10V
2704	4822 126 13909	680pF 10% 50V
2705	3198 017 41050	1uF 10V
2706	4822 124 41643	100uF 20% 16V
2707	2238 586 59812	100nF 50V
2708	4822 124 21732	10uF 20% 25V
2719	3198 017 44740	470nF 10V
2800	2020 552 94427	100pF 5% 50V
2840	2020 552 94427	100pF 5% 50V
2841	4822 124 22651	1uF 20% 50V
2842	2020 552 94427	100pF 5% 50V
2843	2020 552 94427	100pF 5% 50V
2844	2020 552 94427	100pF 5% 50V
2860	4822 124 81286	47uF 20% 16V
2861	4822 126 14238	2,2nF 50V
2862	3198 017 34730	47nF 16V

RESISTORS

3604	4822 051 30103	10k 5% 0,062W
3605	4822 051 30103	10k 5% 0,062W
3606	4822 051 30103	10k 5% 0,062W
3607	4822 051 30103	10k 5% 0,062W
3610	4822 051 30151	150R 5% 0,062W
3611	4822 051 30221	220R 5% 0,062W
3612	4822 051 30271	270R 5% 0,062W
3613	4822 051 30391	390R 5% 0,062W
3614	4822 051 30561	560R 5% 0,062W
3615	4822 117 12968	820R 5% 0,62W
3616	4822 117 11817	1k2 1% 1/16W
3617	4822 117 12903	1k8 1% 0,063W
3618	4822 116 52263	2k7 5% 0,5W
3619	4822 051 30472	4k7 5% 0,062W
3620	4822 051 30103	10k 5% 0,062W
3621	4822 051 30121	120R 5% 0,062W
3622	4822 051 30121	120R 5% 0,062W
3623	4822 051 30121	120R 5% 0,062W
3624	4822 051 30121	120R 5% 0,062W
3630	4822 051 30151	150R 5% 0,062W
3631	4822 051 30221	220R 5% 0,062W
3632	4822 051 30271	270R 5% 0,062W
3633	4822 051 30391	390R 5% 0,062W
3634	4822 051 30561	560R 5% 0,062W
3635	4822 117 12968	820R 5% 0,62W
3636	4822 117 11817	1k2 1% 1/16W
3637	4822 117 12903	1k8 1% 0,063W
3638	4822 051 30272	2k7 5% 0,062W
3639	4822 051 30472	4k7 5% 0,062W
3640	4822 051 30103	10k 5% 0,062W
3646	4822 051 30181	180R 5% 0,062W
3651	4822 051 30221	220R 5% 0,062W
3652	4822 051 30221	220R 5% 0,062W
3653	4822 051 30271	270R 5% 0,062W
3654	4822 051 30121	120R 5% 0,062W

5-6

ELECTRICAL PARTS LIST - FRONT CONTROL BOARD

ELECTRICAL PARTS LIST - FRONT CONTROL BOARD

RESISTORS

3655	4822 051 30102	1k 5% 0,062W
3700	4822 116 52243	1k5 5% 0,5W
3702	4822 051 30103	10k 5% 0,062W
3703	4822 051 30103	10k 5% 0,062W
3704	4822 051 30105	1M 5% 0,062W
3705	4822 051 30272	2k7 5% 0,062W
3706	4822 116 52191	33R 5% 0,5W
3707	2120 366 90291	POTM CAR LOG 20k
3709	4822 051 30105	1M 5% 0,062W
3710	4822 051 30331	330R 5% 0,062W
3711	4822 051 30681	680R 5% 0,062W
3712	4822 117 13632	100k 1% 0,62W
3713	4822 051 30471	470R 5% 0,062W
3714	4822 051 30105	1M 5% 0,062W
3715	4822 051 30154	150k 5% 0,062W
3800	4822 116 83872	220R 5% 0,5W
3801	4822 116 83872	220R 5% 0,5W
3802	4822 116 83872	220R 5% 0,5W
3803	4822 051 30561	560R 5% 0,062W
3804	4822 051 30391	390R 5% 0,062W
3805	4822 051 30271	270R 5% 0,062W
3806	4822 051 30221	220R 5% 0,062W
3807	4822 051 30151	150R 5% 0,062W
3841	4822 117 12925	47k 1% 0,063W
3842	4822 117 13632	100k 1% 0,62W
3843	4822 051 30102	1k 5% 0,062W
3844	4822 117 12902	8k2 1% 0,063W
3845	4822 117 11817	1k2 1% 1/16W
3846	4822 116 52283	4k7 5% 0,5W
3847	4822 116 83872	220R 5% 0,5W
3848	4822 051 30471	470R 5% 0,062W
3849	4822 116 83868	150R 5% 0,5W
3850	4822 051 30391	390R 5% 0,062W
3851	4822 051 30181	180R 5% 0,062W
3860	4822 051 30101	100R 5% 0,062W
3861	4822 051 30103	10k 5% 0,062W
3862	4822 050 11002	1k 1% 0,4W
4500	4822 051 30008	0R Jumper 0603
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
4606	4822 051 30008	0R Jumper 0603
4607	4822 051 30008	0R Jumper 0603
4627	4822 051 30008	0R Jumper 0603
4628	4822 051 30008	0R Jumper 0603
4700	4822 051 30008	0R Jumper 0603
4704	4822 051 30008	0R Jumper 0603
4705	4822 051 30008	0R Jumper 0603
4707	4822 051 30008	0R Jumper 0603
4708	4822 051 30008	0R Jumper 0603
4709	4822 051 30008	0R Jumper 0603
4710	4822 051 30008	0R Jumper 0603
4711	4822 051 30008	0R Jumper 0603
4713	4822 051 30008	0R Jumper 0603
4714	4822 051 30008	0R Jumper 0603
4715	4822 051 30008	0R Jumper 0603
4720	4822 051 30008	0R Jumper 0603
4721	4822 051 30008	0R Jumper 0603
4723	4822 051 30008	0R Jumper 0603
4724	4822 051 30008	0R Jumper 0603
4726	4822 051 30008	0R Jumper 0603
4843	4822 051 30008	0R Jumper 0603
4845	4822 051 30008	0R Jumper 0603

COILS & FILTERS

5600	3139 110 53000	METER VU P-47SI-W WHITE
5700	4822 157 11235	Coil 22uH 5%
5702	4822 157 62552	Coil 2,2uH 5%

DIODES

6602	4822 130 30621	1N4148
6603	4822 130 10791	LTL-1CHGE
6604	4822 130 10791	LTL-1CHGE
6605	4822 130 10791	LTL-1CHGE
6606	4822 130 10791	LTL-1CHGE
6610	4822 130 10791	LTL-1CHGE
6611	4822 130 10791	LTL-1CHGE
6613	4822 130 10791	LTL-1CHGE
6623	9322 153 37676	LB3333RT-E7898
6700	4822 130 30621	1N4148
6701	4822 130 30621	1N4148
6802	4822 130 10791	LTL-1CHGE
6803	4822 130 10791	LTL-1CHGE
6804	4822 130 10791	LTL-1CHGE
6840	4822 130 30621	1N4148
6841	4822 130 30621	1N4148
6842	9322 153 37676	LB3333RT-E7898
6843	4822 130 82978	LTL-1CHPE
6844	4822 130 11589	LTL-1CHAE

TRANSISTORS & INTEGRATED CIRCUITS

7602	5322 130 60159	BC847B
7700	4822 130 41096	BC550C
7701	4822 130 41096	BC550C
7702	5322 130 60159	BC847B
7703	5322 130 60159	BC847B
7704	5322 130 60159	BC847B
7705	5322 130 60159	BC847B
7800	9322 155 82667	IR Receiver TSOP2236ZC1
7841	5322 130 60159	BC847B
7842	4822 130 60373	BC857B
7843	5322 130 60159	BC847B
7844	5322 130 60159	BC847B
7845	4822 130 60373	BC857B

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

FRONT DISPLAY BOARD

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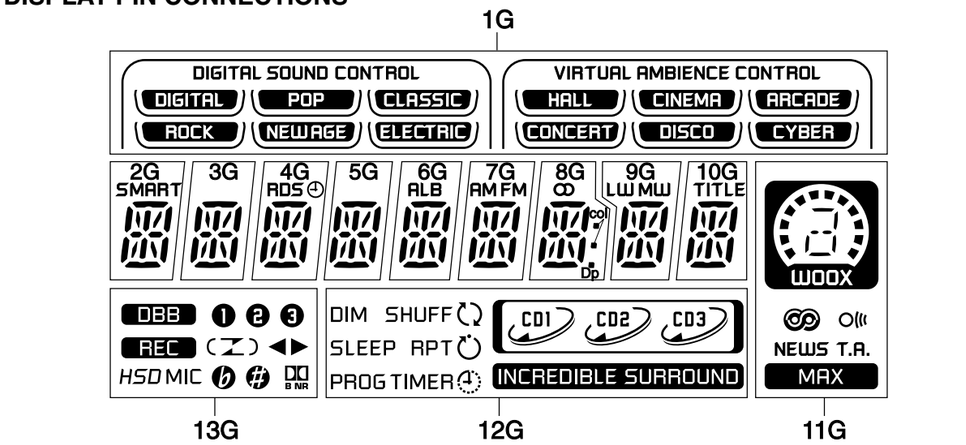
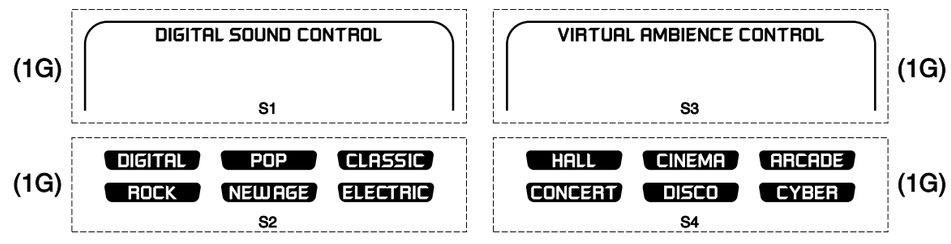
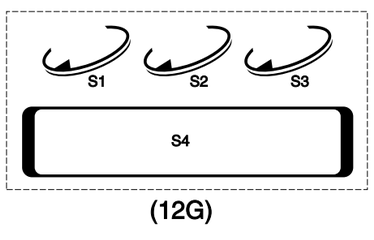
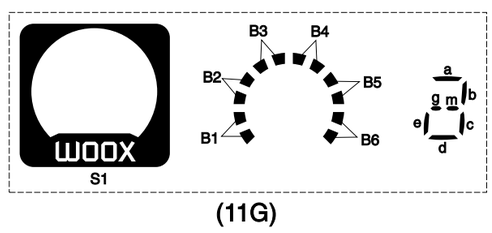
FTD DISPLAY PIN CONNECTIONS









	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G	12G	13G
P1	S1	a	a	a	a	a	a	a	a	a	S1	DIM	DBB
P2	S2	h	h	h	h	h	h	h	h	h	B1	SHUFF	❶
P3	(CLASSIC)	j , p	j , p	j , p	j , p	j , p	j , p	j , p	j , p	j , p	B2	SLEEP	❷
P4	(POP)	k	k	k	k	k	k	k	k	k	B3	RPT	❸
P5	(DIGITAL)	b	b	b	b	b	b	b	b	b	B4	PROG	REC
P6	(ELECTRIC)	f	f	f	f	f	f	f	f	f	B5	TIMER	☾
P7	(NEWAGE)	m	m	m	m	m	m	m	m	m	B6	CD1	⧗
P8	(ROCK)	g	g	g	g	g	g	g	g	g	a,g,m,d	S1	☽
P9	S3	c	c	c	c	c	c	c	c	c	b	CD2	◀
P10	S4	e	e	e	e	e	e	e	e	e	c	S2	▶
P11	(ARCADE)	r	r	r	r	r	r	r	r	r	e	CD3	*HSD*
P12	(CINEMA)	n	n	n	n	n	n	n	n	n	∞	S3	MIC
P13	(HALL)	d	d	d	d	d	d	d	d	d	O((	S4	♭
P14	(CYBER)	SMART	-	RDS	-	ALB	AM	∞	LW	TITLE	NEWS	INCREDIBLE SURROUND	♯
P15	(DISCO)	-	-	-	-	-	FM	col	MW	-	T.A.	-	DD B NR
P16	(CONCERT)	-	-	-	-	-	-	Dp	-	-	MAX	-	-

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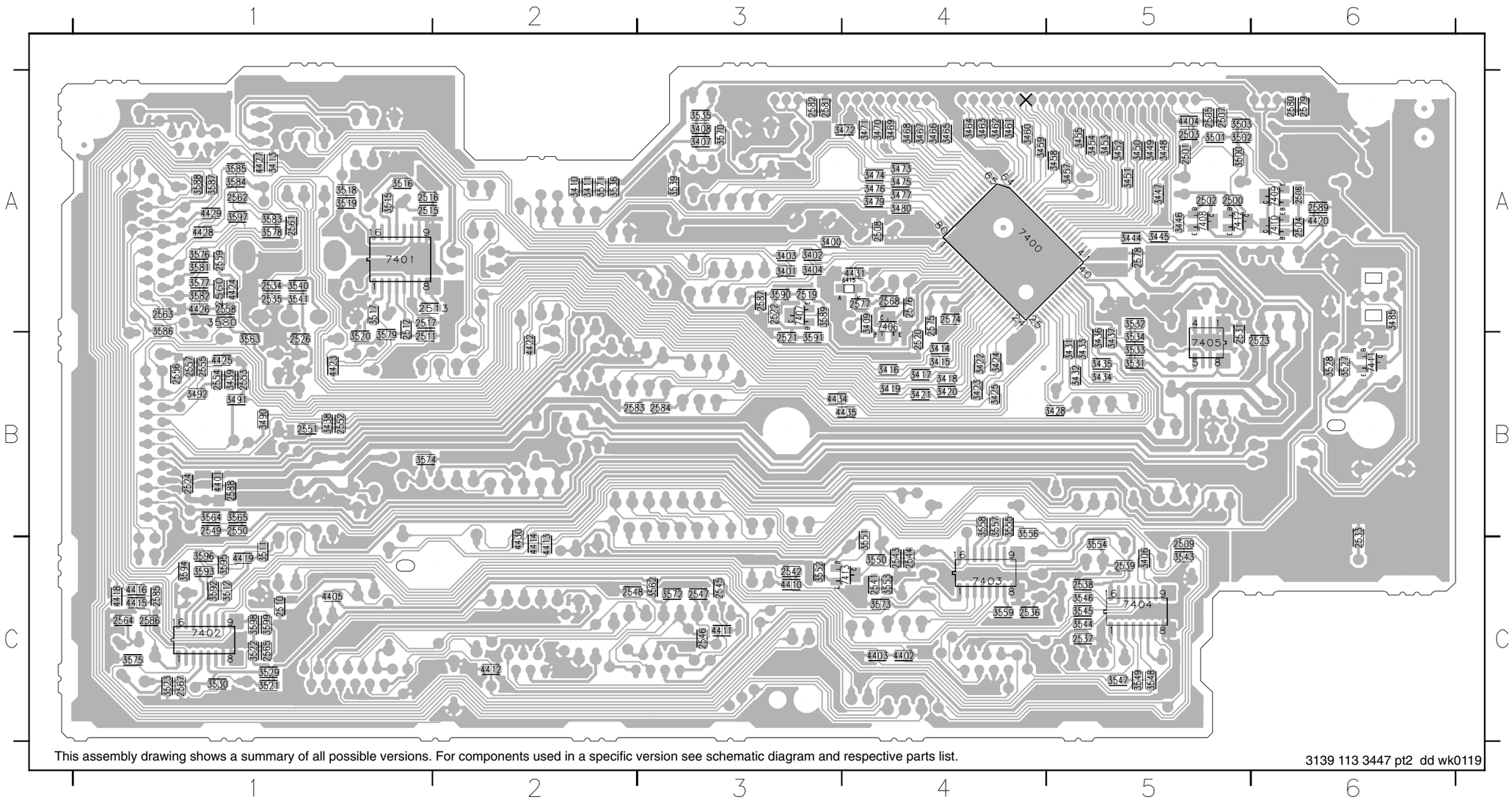
FRONT DISPLAY BOARD - CHIP LAYOUT

2500 A5	2512 A1	2531 B5	2545 C3	2557 B1	2575 A4	2587 A3	3410 A2	3423 B4	3439 B1	3455 A5	3468 A4	3485 A6	3517 A1	3532 A5	3547 C5	3559 C4	3577 A1	3589 A3	4402 C4	4419 C1	4434 B3	7409 A6
2501 A5	2513 A2	2533 C6	2546 C3	2558 A1	2576 A4	2588 B1	3411 A2	3424 B4	3444 A5	3457 A5	3469 A4	3490 B1	3518 A1	3533 B5	3548 C5	3562 C3	3578 A1	3590 A3	4403 C4	4420 A6	4435 B4	7410 A6
2502 A5	2515 A1	2534 A1	2547 C3	2559 A1	2577 A4	2589 A6	3413 A1	3425 B4	3445 A5	3458 A5	3470 A4	3491 B1	3519 A1	3534 B5	3549 C5	3563 B1	3579 B1	3591 B3	4404 A5	4422 B2	6415 A4	7411 B6
2503 A5	2516 A1	2535 A1	2548 C2	2560 A1	2578 A5	3400 A3	3414 B4	3428 B5	3446 A5	3459 A4	3471 A4	3492 B1	3520 B1	3535 A3	3550 C4	3564 B1	3580 A1	3592 C1	4405 C1	4423 B1	7400 A4	7412 A5
2504 A6	2517 A1	2536 C4	2549 B1	2561 A1	2579 A6	3401 A3	3415 B4	3431 B5	3447 A5	3460 A4	3472 A4	3500 A5	3521 C1	3536 A2	3551 C4	3565 B1	3581 A1	3593 C1	4410 C3	4424 A1	7401 A1	7413 C4
2505 A5	2519 A3	2537 C5	2550 B1	2562 A1	2580 A6	3402 A3	3416 B4	3432 B5	3448 A5	3461 A4	3473 A4	3501 A5	3522 C1	3539 A3	3552 C3	3570 A3	3582 A1	3594 C1	4411 C3	4425 B1	7402 C1	
2506 A6	2520 B4	2538 C5	2551 B1	2563 A1	2581 A3	3403 A3	3417 B4	3433 B5	3449 A5	3462 A4	3474 A4	3502 A5	3523 C1	3540 A1	3553 C4	3571 A2	3583 A1	3595 C1	4412 C2	4426 A1	7403 C4	
2507 A5	2521 B3	2539 C5	2552 B1	2564 C1	2582 A3	3404 A3	3418 B4	3434 B5	3450 A5	3463 A4	3475 A4	3503 A5	3527 B6	3541 A1	3554 C5	3572 C3	3584 A1	3596 C1	4413 C2	4427 A1	7404 C5	
2508 A4	2522 A3	2541 C4	2553 B1	2565 C1	2583 B2	3406 C5	3419 B4	3435 B5	3451 A5	3464 A4	3476 A4	3511 C1	3528 B6	3543 C5	3555 B4	3573 C4	3585 A1	3597 A1	4414 C2	4428 A1	7405 B5	
2509 C5	2523 B6	2542 C3	2554 B1	2567 C1	2584 B3	3407 A3	3420 B4	3436 B5	3452 A5	3465 A4	3477 A4	3512 C1	3529 C1	3544 C5	3556 B4	3574 B1	3586 A1	3598 C1	4415 C1	4429 A1	7406 A4	
2510 C1	2524 B1	2543 C4	2555 B1	2568 A4	2585 C1	3408 A3	3421 B4	3437 B5	3453 A5	3466 A4	3479 A4	3515 A1	3530 C1	3545 C5	3557 B4	3575 C1	3587 A1	3599 C1	4416 C1	4430 C2	7407 A3	
2511 B1	2526 B1	2544 C4	2556 B1	2574 A4	2586 C1	3409 A4	3422 B4	3438 B1	3454 A5	3467 A4	3480 A4	3516 A1	3531 B5	3546 C5	3558 B4	3576 A1	3588 A1	4401 B1	4418 C1	4431 A4	7408 A5	



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

3139 113 3447 pt2 dd wk0119

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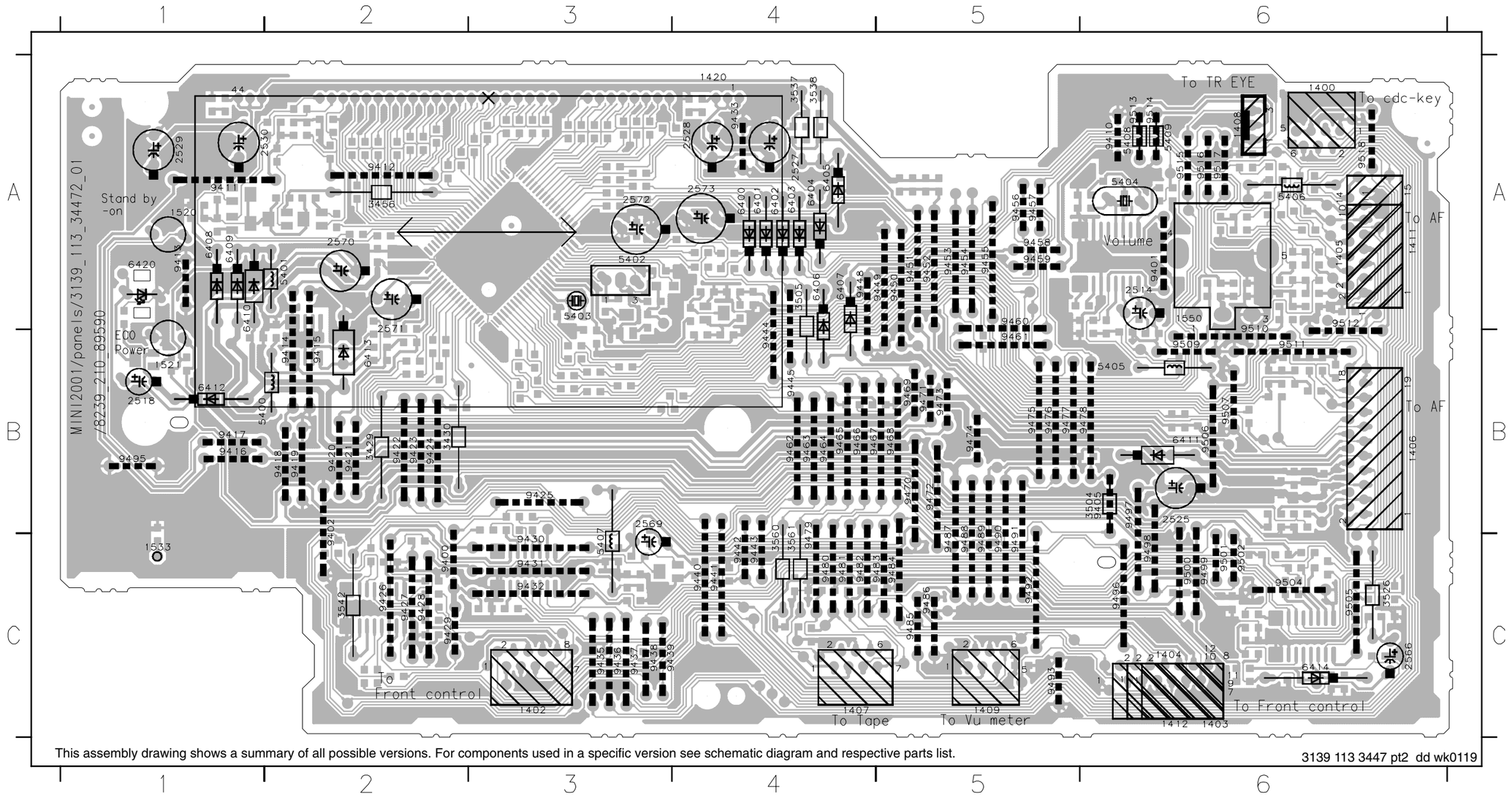
FRONT DISPLAY BOARD - COMPONENT LAYOUT

1400 A6	1409 C5	2514 A6	2569 B3	3504 B6	5400 B1	5408 A6	6406 A4	6414 C6	9412 A2	9420 B2	9428 C2	9437 C3	9445 B4	9455 A5	9463 B4	9471 B5	9479 C4	9487 C5	9496 C6	9505 C6	9514 A6
1402 C3	1411 A6	2518 B1	2570 A2	3505 A4	5401 A2	5409 A6	6407 A4	6420 A1	9413 A1	9421 B2	9429 C2	9438 C3	9448 A4	9456 A5	9464 B4	9472 B5	9480 C4	9488 C5	9497 B6	9506 B6	9515 A6
1403 C6	1412 C6	2525 B6	2571 A2	3526 C6	5402 A3	6400 A4	6408 A1	9400 C2	9414 B2	9422 B2	9430 C3	9439 C3	9449 A5	9457 A5	9465 B4	9473 B5	9481 C4	9489 C5	9498 C6	9507 B6	9516 A6
1404 C6	1420 A4	2527 A4	2572 A3	3537 A4	5403 A3	6401 A4	6409 A1	9401 A6	9415 B2	9423 B2	9431 C3	9440 C4	9450 A5	9458 A5	9466 B4	9474 B5	9482 C4	9490 C5	9499 C6	9509 B6	9517 A6
1405 A6	1520 A1	2528 A4	2573 A4	3538 A4	5404 A6	6402 A4	6410 A1	9402 B2	9416 B1	9424 B2	9432 C3	9441 C4	9451 A5	9459 A5	9467 B4	9475 B5	9483 C5	9491 C5	9500 C6	9510 A6	9518 A6
1406 B6	1521 B1	2529 A1	3429 B2	3542 C2	5405 B6	6403 A4	6411 B6	9405 B6	9417 B1	9425 B3	9433 A4	9442 C4	9452 A5	9460 A5	9468 B5	9476 B5	9484 C5	9492 C5	9501 C6	9511 B6	
1407 C4	1533 C1	2530 A1	3430 B2	3560 C4	5406 A6	6404 A4	6412 B1	9410 A6	9418 B2	9426 C2	9435 C3	9443 C4	9453 A5	9461 B5	9469 B5	9477 B5	9485 C5	9493 C5	9502 C6	9512 A6	
1408 A6	1550 A6	2566 C6	3456 A2	3561 C4	5407 C3	6405 A4	6413 B2	9411 A1	9419 B2	9427 C2	9436 C3	9444 B4	9454 A5	9462 B4	9470 B5	9478 B6	9486 C5	9495 B1	9504 C6	9513 A6		



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

3139 113 3447 pt2 dd wk0119

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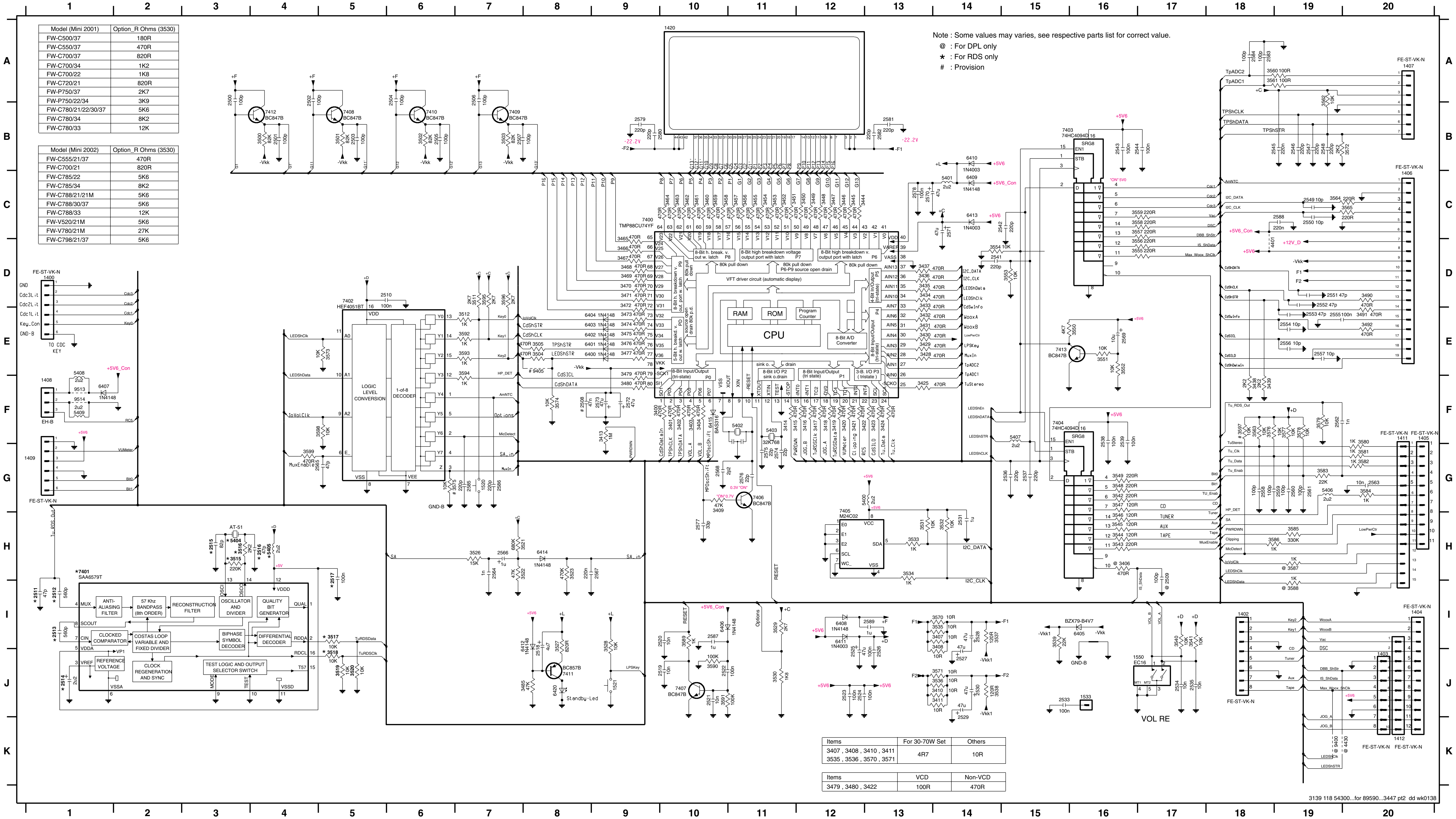
FRONT DISPLAY BOARD - CIRCUIT DIAGRAM

1400 D1	1408 F1	1533 J16	2505 B6	2512 I1	2519 J10	2526 J13	2534 J17	2542 C15	2549 C19	2556 E19	2563 G20	2570 C13	2577 H10	2584 A18
1402 I18	1409 G1	1550 J16	2506 A7	2513 I1	2520 I10	2527 J14	2535 J17	2543 B16	2550 C19	2557 E19	2564 H7	2571 C14	2578 C13	2585 G7
1403 J20	1411 F20	2500 A3	2507 B7	2514 J1	2521 J10	2528 I14	2536 G15	2544 B17	2551 D19	2558 G18	2565 G4	2572 F9	2579 B9	2586 G7
1404 I20	1412 K20	2501 B4	2508 F8	2515 H3	2522 J10	2529 K14	2537 G15	2545 B19	2552 D19	2559 G19	2566 H7	2573 F9	2580 B9	2587 I10
1405 F20	1420 A10	2502 A4	2509 H17	2516 H4	2523 J12	2530 J14	2538 F16	2546 B19	2553 E19	2560 G19	2567 H9	2574 G11	2581 B13	2588 C19
1406 C20	1520 G7	2503 B5	2510 D5	2517 H5	2524 J12	2531 H14	2539 F16	2547 B19	2554 E19	2561 G19	2568 G10	2575 G11	2582 B13	2589 I13
1407 A20	1521 J9	2504 A6	2511 I1	2518 J8	2525 J12	2533 J15	2541 D14	2548 B19	2555 E19	2562 F19	2569 E16	2576 G11	2583 A18	3400 F9

3401 F10	3409 G10	3417 F12	3424 F13	3433 D13	3444 C13	3451 C11	3458 C10	3465 C9	3472 D9	3480 F9	3502 B6	3516 H3	3523 H8	3532 H14
3402 F10	3410 J14	3418 F12	3425 F13	3434 D13	3445 C12	3452 C11	3459 C10	3466 D9	3473 E9	3485 J7	3503 B7	3517 I5	3526 H7	3533 H13
3403 F10	3411 J14	3419 F12	3428 E13	3435 D13	3446 C12	3453 C11	3460 C10	3467 D9	3474 E9	3490 D20	3504 E8	3518 J5	3527 I8	3534 H13
3404 F10	3413 F9	3420 F12	3429 E13	3436 D13	3447 C12	3454 C11	3461 C10	3468 D9	3475 E9	3491 E20	3505 E8	3519 J5	3528 I9	3535 I14
3406 H16	3414 F11	3421 F12	3430 E13	3437 D13	3448 C12	3455 C11	3462 C10	3469 D9	3476 E9	3492 E20	3511 D7	3520 J5	3529 I11	3536 J14
3407 I14	3415 F11	3422 F12	3431 E13	3438 F18	3449 C12	3456 C11	3463 C10	3470 D9	3477 E9	3500 B4	3512 E7	3521 H7	3530 J11	3537 I14
3408 I14	3416 F12	3423 F13	3432 E13	3439 F18	3450 C12	3457 C11	3464 C10	3471 D9	3479 E9	3501 B5	3515 H3	3522 H7	3531 H13	3538 J14

3539 I15	3546 H16	3553 D15	3560 A18	3571 J14	3578 F19	3585 H19	3592 E7	3599 G4	5404 H3	6401 E8	6408 I12	6415 F10	7405 H12	7412 B4
3540 I17	3547 G16	3554 D14	3561 A18	3572 B20	3579 F19	3586 H18	3593 E7	4401 D18	5405 H4	6402 E8	6409 C14	6420 J8	7406 G11	7413 E15
3541 I17	3548 G16	3555 D16	3562 A19	3573 E5	3580 F20	3587 H19	3594 E7	4430 K20	5406 G19	6403 E8	6410 B14	7400 C9	7407 J10	9400 K19
3542 G16	3549 G16	3556 D16	3563 F18	3574 F8	3581 G20	3588 I19	3595 D7	5400 G13	5407 F15	6404 E8	6411 I12	7401 H1	7408 B5	9405 E8
3543 H16	3550 E16	3557 C16	3564 C19	3575 G6	3582 G20	3589 I10	3596 D7	5401 C14	5408 E1	6405 I16	6412 I8	7402 D5	7409 B7	9513 F1
3544 H16	3551 E16	3558 C16	3565 C20	3576 F18	3583 G19	3590 J10	3597 F18	5402 F11	5409 F1	6406 I10	6413 C14	7403 B15	7410 B6	9514 F1
3545 H16	3552 E16	3559 C16	3570 I14	3577 F19	3584 G20	3591 J10	3598 F5	5403 F11	6400 E8	6407 F1	6414 H8	7404 F15	7411 J8	



Model (Mini 2001)	Option_R Ohms (3530)
FW-C500/37	180R
FW-C550/37	470R
FW-C700/37	820R
FW-C700/34	1K2
FW-C700/22	1K8
FW-C720/21	820R
FW-P750/37	2K7
FW-P750/22/34	3K9
FW-C780/21/22/30/37	5K6
FW-C780/34	8K2
FW-C780/33	12K

Model (Mini 2002)	Option_R Ohms (3530)
FW-C555/21/37	470R
FW-C700/21	820R
FW-C785/22	5K6
FW-C785/34	8K2
FW-C788/21/21M	5K6
FW-C788/30/37	5K6
FW-C788/33	12K
FW-V520/21M	5K6
FW-V780/21M	27K
FW-C798/21/37	5K6

Note : Some values may varies, see respective parts list for correct value.
@ : For DPL only
★ : For RDS only
: Provision

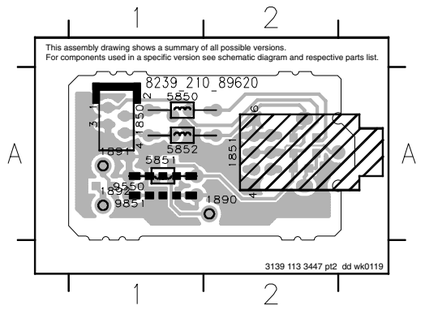
Items	For 30-70W Set	Others
3407 , 3408 , 3410 , 3411 3535 , 3536 , 3570 , 3571	4R7	10R

Items	VCD	Non-VCD
3479 , 3480 , 3422	100R	470R

3139 118 54300...for 89590...3447 pt2 dd wk0138

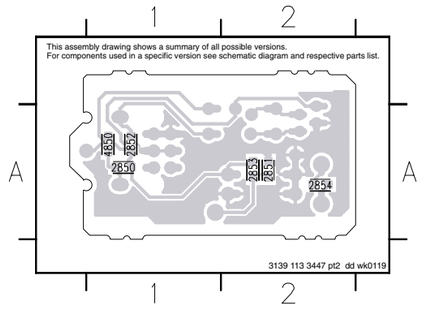
HEADPHONE BOARD - COMPONENT LAYOUT

1850 A1 1891 A1 5851 A1 9851 A1
1851 A2 1892 A1 5852 A1
1890 A2 5850 A1 9550 A1



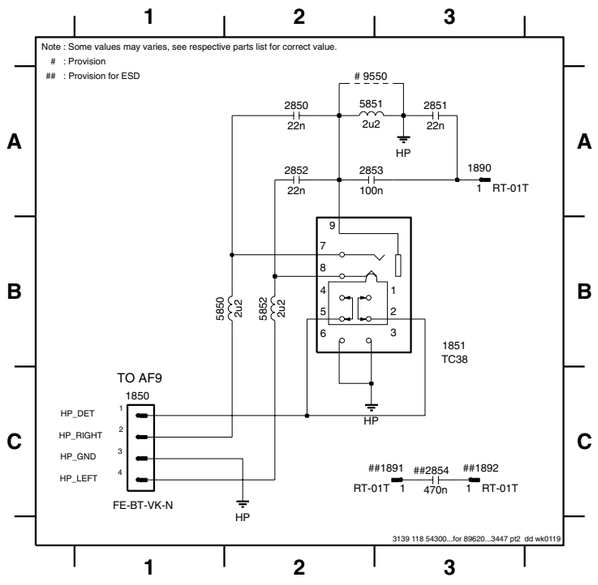
HEADPHONE BOARD - CHIP LAYOUT

2850 A1 2852 A1 2854 A2
2851 A2 2853 A2 4850 A1



HEADPHONE BOARD - CIRCUIT DIAGRAM

1850 C1 1890 A3 1892 C3 2851 A3 2853 A2 5850 B1 5852 B2
1851 B3 1891 C3 2850 A2 2852 A2 2854 C3 5851 A2 9550 A2



ELECTRICAL PARTS LIST - FRONT DISPLAY BOARD

MISCELLANEOUS

1400	4822 265 11207	Flex Connector 6P
1402	4822 265 11535	Flex Connector 8P
1404	4822 267 51453	Flex Connector 12P
1405	2422 025 14541	Flex Connector 11P
1406	4822 265 11545	Flex Connector 19P
1407	4822 267 10956	Flex Connector 7P
1409	4822 265 11207	Flex Connector 6P
1420	3139 110 52540	FTD Display
1520	4822 276 13775	Tact Switch
1521	4822 276 13775	Tact Switch
1550	4822 273 10365	Rotary Encoder 24P
1850	4822 267 10733	Flex Connector 4P
1851	4822 265 11529	Headphone Socket

CAPACITORS

2500	2020 552 94427	100pF 5% 50V
2501	2020 552 94427	100pF 5% 50V
2502	2020 552 94427	100pF 5% 50V
2503	2020 552 94427	100pF 5% 50V
2504	2020 552 94427	100pF 5% 50V
2505	2020 552 94427	100pF 5% 50V
2506	2020 552 94427	100pF 5% 50V
2507	2020 552 94427	100pF 5% 50V
2510	2238 586 59812	100nF 50V

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ELECTRICAL PARTS LIST - FRONT DISPLAY BOARD

2518	4822 124 22726	4,7uF 35V
2519	5322 126 11583	10nF 10% 50V
2520	5322 126 11583	10nF 10% 50V
2521	5322 126 11583	10nF 10% 50V
2522	2238 586 59812	100nF 50V
2523	2238 586 59812	100nF 50V
2524	2238 586 59812	100nF 50V
2525	4822 124 12233	47uF 20% 25V
2526	2238 586 59812	100nF 50V
2527	4822 124 22726	4,7uF 35V
2528	4822 124 22726	4,7uF 35V
2529	4822 124 22726	4,7uF 35V
2530	4822 124 22726	4,7uF 35V
2531	3198 017 41050	1uF 10V
2533	2238 586 59812	100nF 50V
2534	5322 126 11583	10nF 10% 50V
2535	5322 126 11583	10nF 10% 50V
2536	3198 016 36810	680pF 25V
2537	4822 126 13883	220pF 5% 50V
2538	2238 586 59812	100nF 50V
2539	2238 586 59812	100nF 50V
2541	4822 126 13883	220pF 5% 50V
2542	4822 126 13883	220pF 5% 50V
2543	2238 586 59812	100nF 50V
2544	2238 586 59812	100nF 50V
2545	4822 126 13879	220nF +80/-20% 16V
2546	4822 126 13883	220pF 5% 50V
2547	4822 126 13883	220pF 5% 50V
2548	4822 126 13883	220pF 5% 50V
2549	4822 122 33741	10pF 10% 50V
2550	4822 122 33741	10pF 10% 50V
2551	4822 122 33777	47pF 5% 63V
2552	4822 122 33777	47pF 5% 63V
2553	4822 122 33777	47pF 5% 63V
2554	4822 122 33741	10pF 10% 50V
2555	2238 586 59812	100nF 50V
2556	4822 122 33741	10pF 10% 50V
2557	4822 122 33741	10pF 10% 50V
2558	2020 552 94427	100pF 5% 50V
2559	2020 552 94427	100pF 5% 50V
2560	2020 552 94427	100pF 5% 50V
2561	2020 552 94427	100pF 5% 50V
2562	3198 016 31020	1nF 25V
2563	5322 126 11583	10nF 10% 50V
2564	5322 126 11578	1nF 10% 50V
2565	4822 122 33777	47pF 5% 63V
2566	4822 124 22651	1uF 20% 50V
2567	4822 126 13879	220nF +80/-20% 16V
2568	4822 126 14223	2,2pF 50V
2569	4822 124 11947	10uF 20% 16V
2570	4822 124 12052	220uF 20% 6,3V
2571	4822 124 12233	47uF 20% 25V
2572	3198 028 44790	47uF 20% 35V
2573	3198 028 44790	47uF 20% 35V
2574	4822 122 33761	22pF 5% 50V
2575	4822 122 33761	22pF 5% 50V
2576	4822 122 33761	22pF 5% 50V
2577	2222 867 15339	33pF 5% 50V
2578	2238 586 59812	100nF 50V
2579	4822 126 13883	220pF 5% 50V
2580	4822 126 13883	220pF 5% 50V
2581	4822 126 13883	220pF 5% 50V
2582	4822 126 13883	220pF 5% 50V
2583	2020 552 94427	100pF 5% 50V
2584	2020 552 94427	100pF 5% 50V
2585	4822 126 13883	220pF 5% 50V
2586	4822 126 13883	220pF 5% 50V
2587	3198 017 41050	1uF 10V
2588	4822 126 13879	220nF +80/-20% 16V
2589	3198 017 41050	1uF 10V
2850	4822 126 14494	22nF 10% 25V
2851	4822 126 14494	22nF 10% 25V
2852	4822 126 14494	22nF 10% 25V
2853	2238 586 59812	100nF 50V

RESISTORS

3400	4822 051 30471	470R 5% 0,062W
3401	4822 051 30471	470R 5% 0,062W
3402	4822 051 30471	470R 5% 0,062W
3403	4822 051 30471	470R 5% 0,062W
3404	4822 051 30471	470R 5% 0,062W
3407	4822 051 20478	4R7 5% 0,1W
3408	4822 051 20478	4R7 5% 0,1W
3409	4822 117 12925	47k 1% 0,063W
3410	4822 051 20478	4R7 5% 0,1W
3411	4822 051 20478	4R7 5% 0,1W
3413	4822 051 30105	1M 5% 0,062W
3414	4822 051 30471	470R 5% 0,062W
3415	4822 051 30471	470R 5% 0,062W
3416	4822 051 30471	470R 5% 0,062W
3417	4822 051 30471	470R 5% 0,062W
3418	4822 051 30471	470R 5% 0,062W
3419	4822 051 30471	470R 5% 0,062W
3420	4822 051 30471	470R 5% 0,062W
3421	4822 051 30471	470R 5% 0,062W
3422	4822 051 30101	100R 5% 0,062W
3423	4822 051 30471	470R 5% 0,062W
3424	4822 051 30471	470R 5% 0,062W
3425	4822 051 30471	470R 5% 0,062W
3428	4822 051 30471	470R 5% 0,062W
3429	4822 116 83883	470R 5% 0,5W
3430	4822 116 83883	470R 5% 0,5W
3431	4822 051 30471	470R 5% 0,062W
3432	4822 051 30471	470R 5% 0,062W
3433	4822 051 30471	470R 5% 0,062W
3434	4822 051 30102	1k 5% 0,062W

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ELECTRICAL PARTS LIST - FRONT DISPLAY BOARD

ELECTRICAL PARTS LIST - FRONT DISPLAY BOARD

RESISTORS

3435	4822 051 30471	470R 5% 0,062W
3436	4822 051 30471	470R 5% 0,062W
3437	4822 051 30471	470R 5% 0,062W
3438	4822 051 30222	2k2 5% 0,062W
3439	4822 051 30222	2k2 5% 0,062W
3444	4822 051 30471	470R 5% 0,062W
3445	4822 051 30471	470R 5% 0,062W
3446	4822 051 30471	470R 5% 0,062W
3447	4822 051 30471	470R 5% 0,062W
3448	4822 051 30471	470R 5% 0,062W
3449	4822 051 30471	470R 5% 0,062W
3450	4822 051 30471	470R 5% 0,062W
3451	4822 051 30471	470R 5% 0,062W
3452	4822 051 30471	470R 5% 0,062W
3453	4822 051 30471	470R 5% 0,062W
3454	4822 051 30471	470R 5% 0,062W
3455	4822 051 30471	470R 5% 0,062W
3456	4822 116 83883	470R 5% 0,5W
3457	4822 051 30471	470R 5% 0,062W
3458	4822 051 30471	470R 5% 0,062W
3459	4822 051 30471	470R 5% 0,062W
3460	4822 051 30471	470R 5% 0,062W
3461	4822 051 30471	470R 5% 0,062W
3462	4822 051 30471	470R 5% 0,062W
3463	4822 051 30471	470R 5% 0,062W
3464	4822 051 30471	470R 5% 0,062W
3465	4822 051 30471	470R 5% 0,062W
3466	4822 051 30471	470R 5% 0,062W
3467	4822 051 30471	470R 5% 0,062W
3468	4822 051 30471	470R 5% 0,062W
3469	4822 051 30471	470R 5% 0,062W
3470	4822 051 30471	470R 5% 0,062W
3471	4822 051 30471	470R 5% 0,062W
3472	4822 051 30471	470R 5% 0,062W
3473	4822 051 30471	470R 5% 0,062W
3474	4822 051 30221	220R 5% 0,062W
3475	4822 051 30221	220R 5% 0,062W
3476	4822 051 30471	470R 5% 0,062W
3477	4822 051 30471	470R 5% 0,062W
3479	4822 051 30101	100R 5% 0,062W
3480	4822 051 30101	100R 5% 0,062W
3485	4822 117 12925	47k 1% 0,063W
3490	4822 051 30471	470R 5% 0,062W
3491	4822 051 30471	470R 5% 0,062W
3492	4822 051 30471	470R 5% 0,062W
3500	4822 117 12864	82k 5% 0,6W
3501	4822 117 12864	82k 5% 0,6W
3502	4822 117 12864	82k 5% 0,6W
3503	4822 117 12864	82k 5% 0,6W
3504	4822 116 83883	470R 5% 0,5W
3505	4822 116 83883	470R 5% 0,5W
3511	4822 051 30272	2k7 5% 0,062W
3512	4822 051 30102	1k 5% 0,062W
3519	4822 051 30103	10k 5% 0,062W
3520	4822 051 30103	10k 5% 0,062W
3521	4822 051 30684	680k 5% 0,062W
3522	4822 117 12925	47k 1% 0,063W
3523	4822 051 30474	470k 5% 0,062W
3524	4822 051 30109	10R 5% 0,062W
3526	4822 116 52244	15k 5% 0,5W
3527	4822 117 12968	820R 5% 0,62W
3528	4822 051 30103	10k 5% 0,062W
3529	4822 051 30272	2k7 5% 0,062W
3530	4822 051 30272	2k7 5% 0,062W
3531	4822 051 30103	10k 5% 0,062W
3532	4822 051 30103	10k 5% 0,062W
3533	4822 051 30102	1k 5% 0,062W
3534	4822 051 30102	1k 5% 0,062W
3535	4822 051 20478	4R7 5% 0,1W
3536	4822 051 20478	4R7 5% 0,1W
3537	4822 116 52206	120R 5% 0,5W
3538	4822 116 52206	120R 5% 0,5W
3539	4822 051 30223	22k 5% 0,062W
3540	4822 051 30103	10k 5% 0,062W
3541	4822 051 30103	10k 5% 0,062W
3542	4822 116 83872	220R 5% 0,5W
3543	4822 051 30221	220R 5% 0,062W
3544	4822 051 30121	120R 5% 0,062W
3545	4822 051 30121	120R 5% 0,062W
3546	4822 051 30121	120R 5% 0,062W
3547	4822 051 30121	120R 5% 0,062W
3548	4822 051 30221	220R 5% 0,062W
3549	4822 051 30221	220R 5% 0,062W
3550	4822 051 30472	4k7 5% 0,062W
3551	4822 051 30103	10k 5% 0,062W
3552	4822 051 30103	10k 5% 0,062W
3553	4822 051 30103	10k 5% 0,062W
3554	4822 051 30103	10k 5% 0,062W
3555	4822 051 30221	220R 5% 0,062W
3556	4822 051 30121	120R 5% 0,062W
3557	4822 051 30271	270R 5% 0,062W
3558	4822 051 30221	220R 5% 0,062W
3559	4822 051 30221	220R 5% 0,062W
3560	4822 116 52175	100R 5% 0,5W
3561	4822 116 52175	100R 5% 0,5W
3562	4822 051 30103	10k 5% 0,062W
3563	4822 051 30103	10k 5% 0,062W
3564	4822 051 30221	220R 5% 0,062W
3565	4822 051 30221	220R 5% 0,062W
3570	4822 051 20478	4R7 5% 0,1W
3571	4822 051 20478	4R7 5% 0,1W
3572	4822 051 30222	2k2 5% 0,062W
3573	4822 051 30103	10k 5% 0,062W
3574	4822 051 30103	10k 5% 0,062W
3576	4822 051 30103	10k 5% 0,062W
3577	4822 051 30103	10k 5% 0,062W
3578	4822 051 30103	10k 5% 0,062W
3579	4822 051 30103	10k 5% 0,062W
3580	4822 051 30102	1k 5% 0,062W
3581	4822 051 30102	1k 5% 0,062W
3582	4822 051 30102	1k 5% 0,062W
3583	4822 051 30223	22k 5% 0,062W
3584	4822 051 30102	1k 5% 0,062W
3585	4822 051 30334	330k 5% 0,062W
3586	4822 051 30102	1k 5% 0,062W
3589	4822 051 30102	1k 5% 0,062W
3590	4822 117 13632	100k 1% 0,62W
3591	4822 117 13632	100k 1% 0,62W
3592	4822 051 30102	1k 5% 0,062W
3593	4822 051 30102	1k 5% 0,062W
3594	4822 051 30102	1k 5% 0,062W
3595	4822 051 30272	2k7 5% 0,062W
3596	4822 051 30272	2k7 5% 0,062W
3598	4822 051 30103	10k 5% 0,062W
3599	4822 051 30471	470R 5% 0,062W
4402	4822 051 30008	0R Jumper 0603
4403	4822 051 30008	0R Jumper 0603
4404	4822 051 30008	0R Jumper 0603
4410	4822 051 30008	0R Jumper 0603
4411	4822 051 30008	0R Jumper 0603
4412	4822 051 30008	0R Jumper 0603
4413	4822 051 30008	0R Jumper 0603
4414	4822 051 30008	0R Jumper 0603
4415	4822 051 30008	0R Jumper 0603
4416	4822 051 30008	0R Jumper 0603
4418	4822 051 30008	0R Jumper 0603
4419	4822 051 30008	0R Jumper 0603
4420	4822 051 30008	0R Jumper 0603
4422	4822 051 30008	0R Jumper 0603
4423	4822 051 30008	0R Jumper 0603
4424	4822 051 30008	0R Jumper 0603
4425	4822 051 30008	0R Jumper 0603
4426	4822 051 30008	0R Jumper 0603
4427	4822 051 30008	0R Jumper 0603
4428	4822 051 30008	0R Jumper 0603
4429	4822 051 30008	0R Jumper 0603
4431	4822 051 30008	0R Jumper 0603
4434	4822 051 30008	0R Jumper 0603
4435	4822 051 30008	0R Jumper 0603
4850	4822 051 30008	0R Jumper 0603

COILS & FILTERS

5400	4822 157 62552	Coil 2,2uH 5%
5401	4822 157 62552	Coil 2,2uH 5%
5402	5322 242 73686	RES CER 12MHz
5403	2422 543 01069	RES XTL 32,768kHz
5406	4822 157 62552	Coil 2,2uH 5%
5407	4822 157 62552	Coil 2,2uH 5%
5408	4822 157 62552	Coil 2,2uH 5%
5409	4822 157 62552	Coil 2,2uH 5%
5850	4822 157 62552	Coil 2,2uH 5%
5851	4822 157 62552	Coil 2,2uH 5%
5852	4822 157 62552	Coil 2,2uH 5%

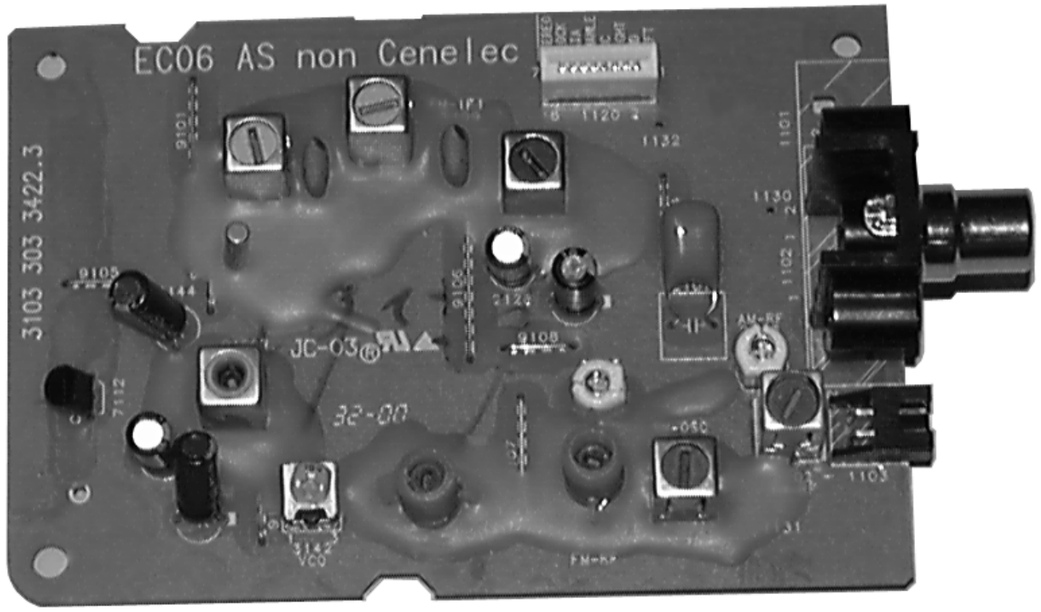
DIODES

6400	4822 130 30621	1N4148
6401	4822 130 30621	1N4148
6402	4822 130 30621	1N4148
6403	4822 130 30621	1N4148
6404	4822 130 30621	1N4148
6405	4822 130 34174	BZX79-B4V7
6406	4822 130 30621	1N4148
6407	4822 130 30621	1N4148
6408	4822 130 30621	1N4148
6409	4822 130 30621	1N4148
6410	4822 130 31878	1N4003G
6411	4822 130 31878	1N4003G
6412	4822 130 30621	1N4148
6413	4822 130 31878	1N4003G
6414	4822 130 30621	1N4148
6415	4822 130 11397	BAS316
6420	9322 167 73676	LTL-4221NLC-KA

TRANSISTORS & INTEGRATED CIRCUITS

7400	3139 110 53071	TMP88CU74YF - 'V785S53071'
7402	5322 209 11446	HEF4051BT
7403	4822 209 15449	74HC4094D
7404	4822 209 15449	74HC4094D
7405	9322 145 26668	M24C02-WMN6
7406	5322 130 60159	BC847B
7407	5322 130 60159	BC847B
7408	5322 130 60159	BC847B
7409	5322 130 60159	BC847B
7410	5322 130 60159	BC847B
7411	4822 130 60373	BC857B
7412	5322 130 60159	BC847B
7413	5322 130 60159	BC847B

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



ECO6 Tuner Board

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

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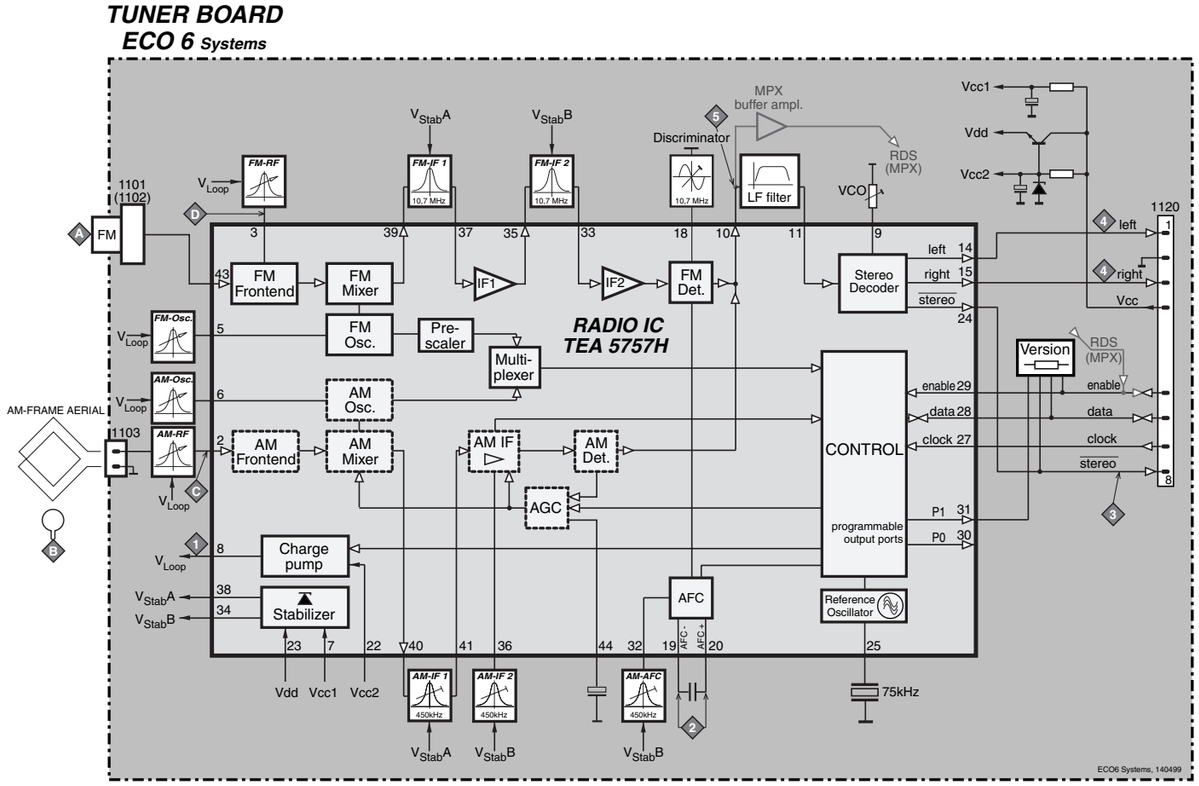
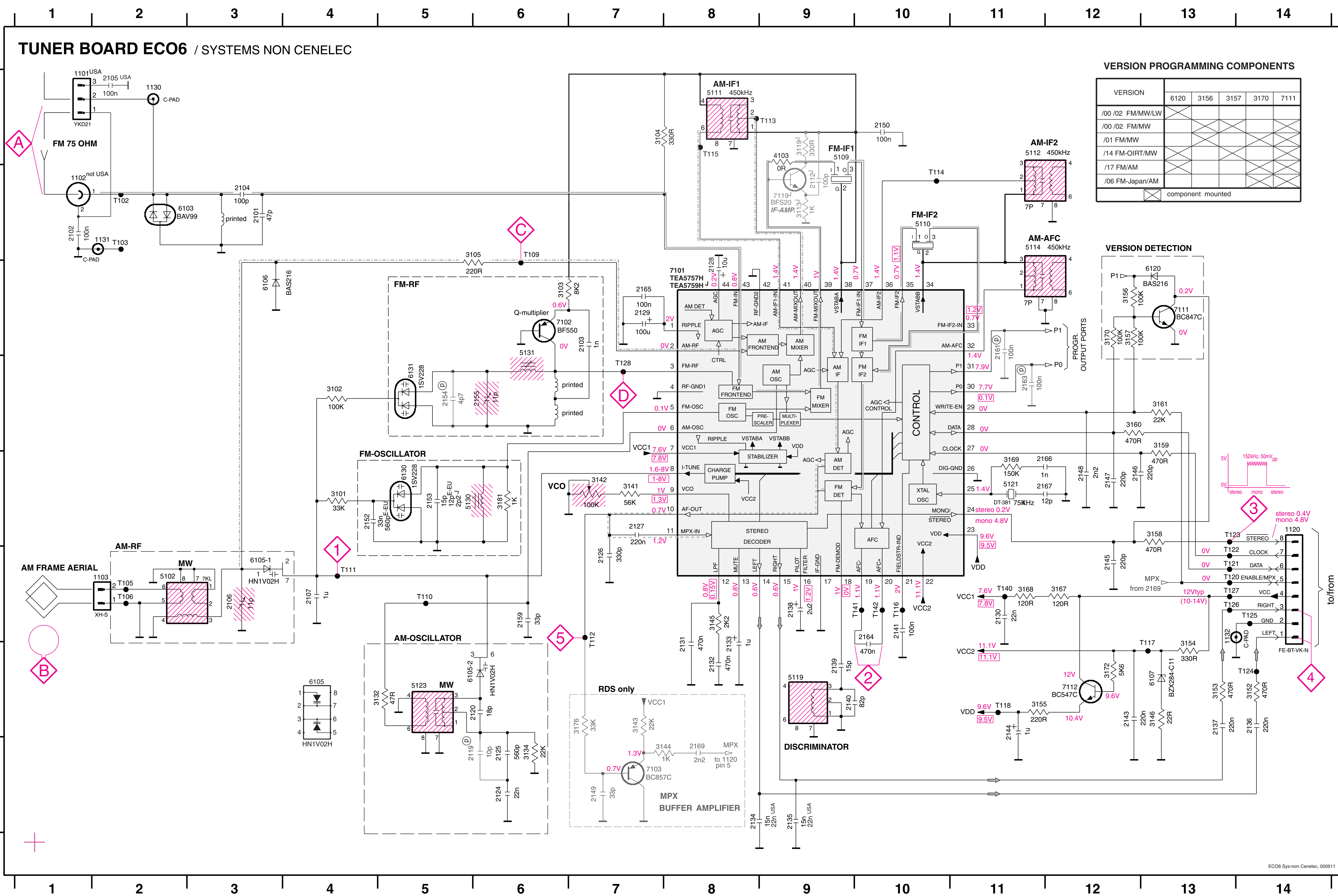
BLOCK DIAGRAM



TUNER BOARD ECO6 / SYSTEMS NON CENELEC



LEGEND

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

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

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

1101 A1
1102 B1
1103 F2
1120 E14
1130 A2
1131 B2
1132 G13
2101 B3
2102 B1
2103 C7
2104 B3
2105 A2
2106 F3
2107 F4
2119 H6
2120 G6
2124 H6
2125 H6
2126 F7
2127 E7
2128 C8
2129 C7
2130 F11
2131 G8
2132 G8
2133 G8
2134 H8
2135 H9
2136 G14
2137 G13
2138 F9
2139 G9
2140 G9
2141 F10
2143 G12
2144 G11
2145 F12
2146 E12
2147 E12
2148 E12
2149 H7
2150 A10
2152 E4
2153 E5
2154 D5
2155 D5
2159 F6
2161 C11
2163 D11
2164 F10
2165 C7
2166 E11
2167 E11
2169 H8
3101 E4
3102 D4
3103 C6
3104 A7
3105 B6
3132 G5
3134 H6
3141 E7
3142 E7
3143 G7
3144 H7
3145 F8
3146 G13
3152 G14
3153 G13
3154 G13
3155 G11
3156 C12
3157 C12
3158 E13
3159 D13
3160 D12
3161 D13
3167 F12
3168 F11
3169 E11
3170 C12
3172 G12
3176 G7
3181 E6
5102 F2
5109 B9
5110 B10
5111 A8
5112 A11
5114 B11
5119 G9
5121 E11
5123 G5
5130 E5
5131 C6
6103 B2
6105-1 F3
6105-2 G5
6106 C3
6107 G13
6120 C13
6130 E5
6131 D5
7101 C8
7102 C6
7103 H7
7111 C13
7112 G12
T102 B2
T103 B2
T105 F2
T106 F2
T109 B6
T110 F5
T111 F4
T112 F7
T113 A8
T114 B10
T115 A8
T116 F10
T117 G13
T118 G11
T120 F13
T121 F13
T122 F13
T123 E13
T124 G14
T125 F14
T126 F13
T127 F13
T128 D7
T140 F11
T141 F10
T142 F10

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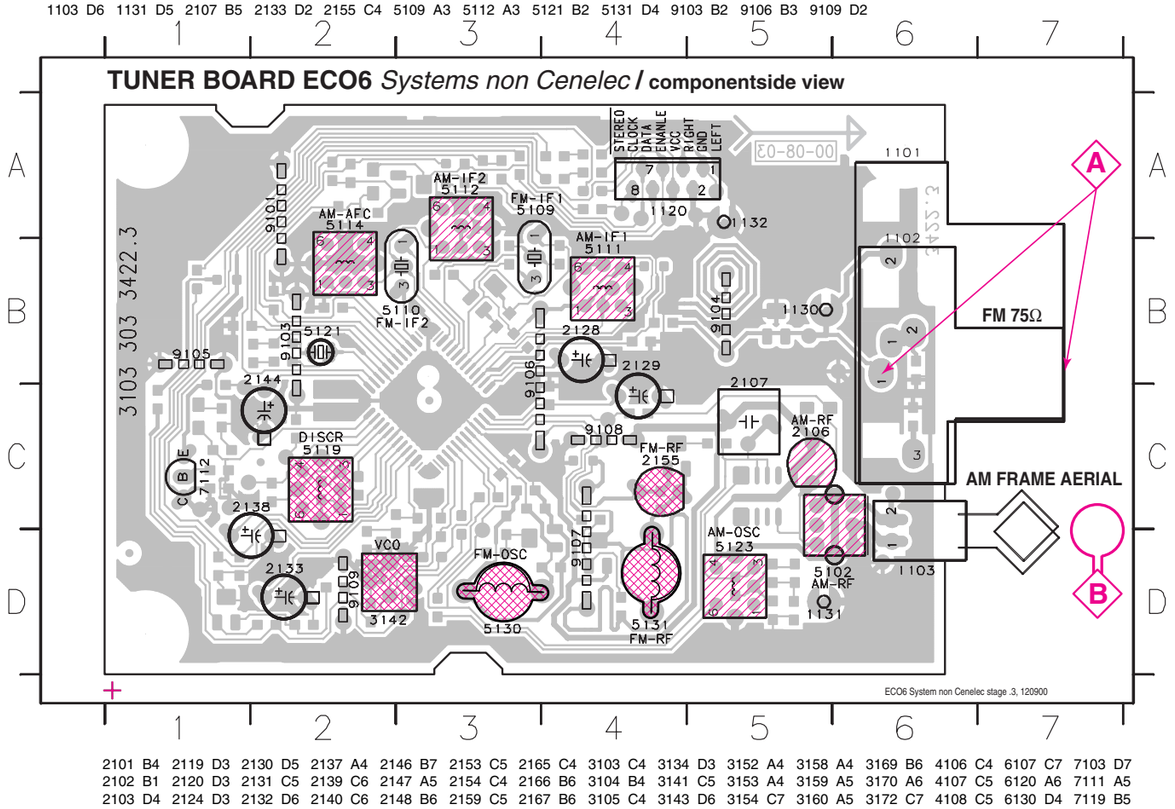
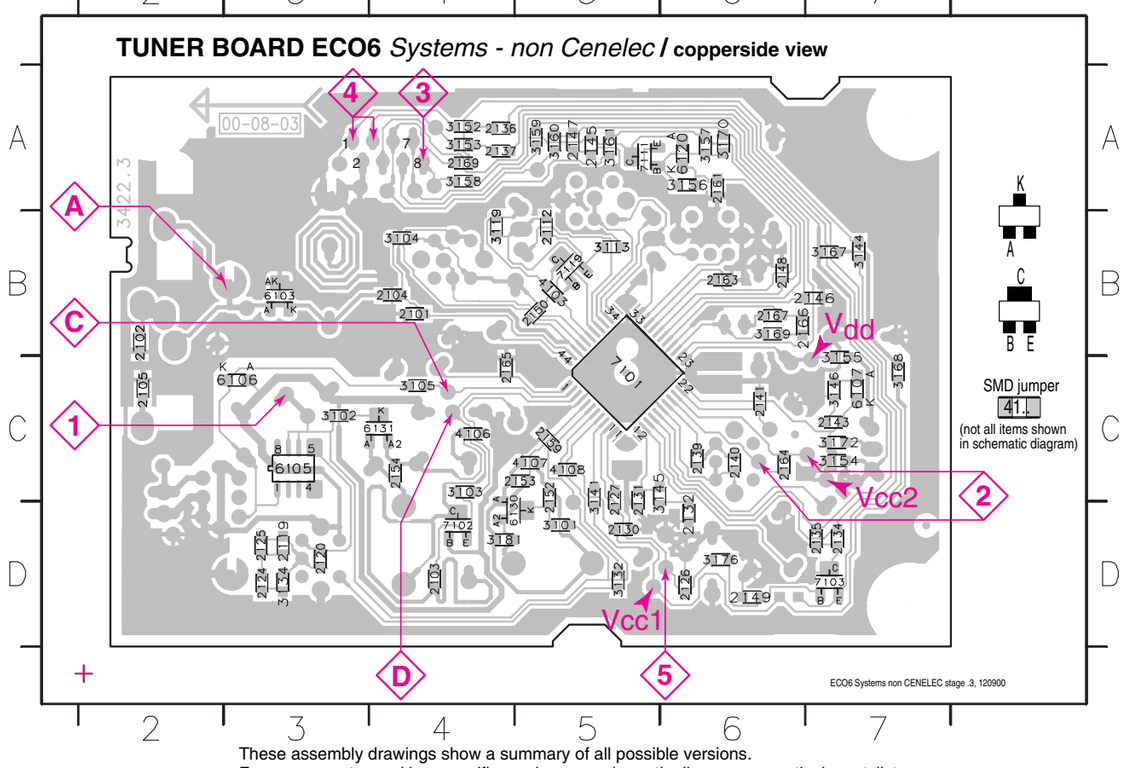
1101 A6 1120 A4 1132 A5 2128 C4 2138 C2 3142 D2 5110 B3 5114 A2 5123 D5 7112 C1 9104 B5 9107 D4
1102 B6 1130 B5 2106 C5 2129 B4 2144 B2 5102 D6 5111 B4 5119 C2 5130 D3 9101 A2 9105 B1 9108 C4
1103 D6 1131 D5 2107 B5 2133 D2 2155 C4 5109 A3 5112 A3 5121 B2 5131 D4 9103 B2 9106 B3 9109 D2



2101 B4 2119 D3 2130 D5 2137 A4 2146 B7 2153 C5 2165 C4 3103 C4 3134 D3 3152 A4 3158 A4 3169 B6 4106 C4 6107 C7 7103 D7
2102 B1 2120 D3 2131 C5 2139 C6 2147 A5 2154 C4 2166 B6 3104 B4 3141 C5 3153 A4 3159 A5 3170 A6 4107 C5 6120 A6 7111 A5
2103 D4 2124 D3 2132 D6 2140 C6 2148 B6 2159 C5 2167 B6 3105 C4 3143 D6 3154 C7 3160 A5 3172 C7 4108 C5 6130 D4 7119 B5
2104 B4 2125 D3 2134 D7 2141 C6 2149 D6 2161 A6 2169 A4 3113 B5 3144 B7 3155 C7 3161 A5 3176 D6 6103 B3 6131 C4
2105 C1 2126 D6 2135 D7 2143 C7 2150 B5 2163 B6 3101 D5 3119 B5 3145 C5 3156 A6 3167 B7 3181 D4 6105 C3 7101 C5
2112 B5 2127 C5 2136 A4 2145 A5 2152 C5 2164 C6 3102 C3 3132 D5 3146 C7 3157 A6 3168 C7 4103 B5 6106 C3 7102 D4



These assembly drawings show a summary of all possible versions.
For components used in a specific version see schematic diagram respectively 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 mod=1kHz Δf=±22.5kHz	108MHz	2155	◇4	MAX
	87.5MHz (65.81MHz)		87.5MHz (65.81MHz)	5131		
VCO						
FM	98MHz, 1mV continuous wave	◇A	98MHz	3142	◇3	152kHz ±1kHz [1]
AM IF						
MW	450kHz connect pin 6 of IC 7101 (AM Osc.) with 3.3kΩ to Vcc	◇C Δf=±10kHz V_{RF} = 0.5mV (as low as possible)	IC 7101 36 100nF 220R	5111	◇5	max. f_o symmetric
			see remark [2] IC 7101 40 100nF 220R	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 Δf = ±30kHz V_{RF} as low as possible	1494kHz	2106	◇5	max. f_o symmetric
	558kHz		558kHz	5102		
LW	198kHz		198kHz	5103		
MW FM/AM-version, 10kHz grid 530 - 1700kHz	1500kHz		1500kHz	2106		
	560kHz		560kHz	5102		

ECO6, Sys + PA with frame aerial, 070799

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*

7A-4

MISCELLANEOUS

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

CAPACITORS

2101 ©	4822 126 13692	47pF	1%	63V	
2102 ©	4822 126 13838	100nF	10%	50V	not USA
2103 ©	5322 122 31647	1nF	10%	63V	
2104 ©	5322 122 32531	100pF	5%	50V	
2105 ©	4822 126 13838	100nF	10%	50V	USA only
2106	2020 800 00191	3-11pF TRIMCAP.,N450			
2107	4822 121 51319	1µF	20%	50V	
2120 ©	4822 126 13689	18pF	1%	63V	
2124 ©	5322 122 32654	22nF	10%	63V	
2125 ©	2020 552 96199	560pF	1%	50V	
2126 ©	5322 122 31863	330pF	5%	50V	
2127 ©	4822 126 14076	220nF	20%	25V	
2128	4822 124 40248	10µF	20%	63V	
2129	4822 124 41584	100µF	20%	10V	
2130 ©	5322 122 32654	22nF	10%	63V	
2131 ©	4822 126 13482	470nF	20%	16V	
2132 ©	4822 126 13482	470nF	20%	16V	
2133	4822 124 21913	1µF	20%	63V	
2134 ©	4822 126 13188	15nF	5%	63V	not USA
2134 ©	5322 122 32654	22nF	10%	63V	USA only
2135 ©	4822 126 13188	15nF	5%	63V	not USA
2135 ©	5322 122 32654	22nF	10%	63V	USA only
2136 ©	4822 126 14076	220nF	20%	25V	
2137 ©	4822 126 14076	220nF	20%	25V	
2138	4822 124 22652	2,2µF	20%	50V	
2139 ©	4822 126 14236	15pF	5%	50V	
2140 ©	4822 126 13695	82pF	1%	63V	
2141 ©	4822 126 13838	100nF	10%	50V	
2143 ©	4822 126 14076	220nF	20%	25V	
2144	4822 124 21913	1µF	20%	63V	
2145 ©	4822 122 33575	220pF	5%	50V	
2146 ©	4822 122 33575	220pF	5%	50V	
2147 ©	4822 122 33575	220pF	5%	50V	
2148 ©	4822 122 33127	2,2nF	10%	63V	
2149 ©	5322 122 32659	33pF	5%	50V	RDS only
2150 ©	4822 126 13838	100nF	10%	50V	
2152 ©	4822 126 12105	33nF	5%	63V	not for East Europe
2152 ©	5322 116 80853	560pF	5%	63V	for East Europe only
2153 ©	4822 126 13486	15pF	2%	63V	not for East Europe
2153 ©	4822 122 33926	12pF	2%	50V	for East Europe only
2155	2020 800 00191	3-11pF TRIMCAP.,N450			
2159 ©	5322 122 32659	33pF	5%	50V	
2164 ©	4822 126 13482	470nF	20%	16V	
2165 ©	4822 126 13838	100nF	10%	50V	
2166 ©	5322 122 31647	1nF	10%	63V	
2167 ©	4822 122 33926	12pF	5%	50V	
2169 ©	4822 122 33127	2,2nF	10%	63V	RDS only

RESISTORS

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

RESISTORS

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

COILS

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

DIODES

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

TRANSISTORS

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

INTEGRATED CIRCUITS

7101 ©	9351 740 80557	TEA5757H/V1, RADIO IC

VCD - MPEG-01B MODULE

This chapter shows the MPEG-01B Board, for 3CDC-LC-VCD mechanism & electronics please refer to Chapter 10

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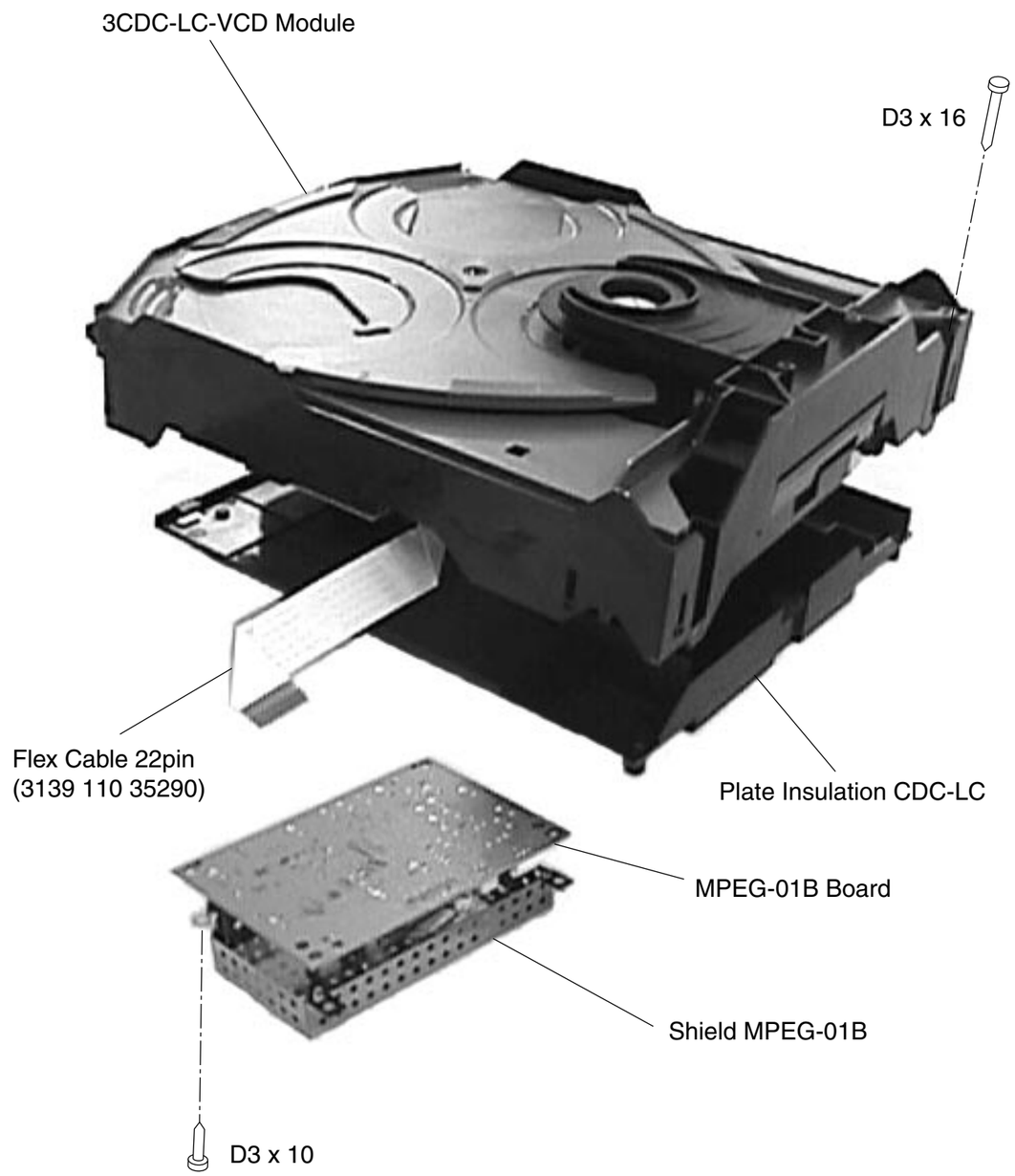
EXPLODED VIEW OF MODULE



Brief Introduction on the MPEG

1. When VCD source is selected the MPEG_RESET line will go positive triggering the following:
   - DRST pulse to reset 8-bit microcontroller IC 7212
   - RSTOUT# pulse to reset IC 7201 ES3880
   - IC7212 sends CD10_RST to reset Signal Processor IC 7802 on the CD Board.

2. Communication will establish as follows:
   - DSA_ACK, DSA_STB and DSA_DAT between μProcessor IC 7401 on the Front Board and IC 7201 ES3880.
   - DSA_STB to IC7204 ES3883 to select between NTSC (Lo) or PALS (Hi)
   - DSA_A, DSA_D and DSA_S between IC 7201 ES3880 and microcontroller IC7212
   - SILD, SICL, RAB and SDA between microcontroller IC7212 and Signal Processor IC7802 on the CD Board.

3. Other activities between IC7201 ES3880 and Eprom IC7202, Dram IC7203 and IC7204 ES3883 will follows resulting in the OSD display on the TV set connected to the Video out socket.

4. When play button is activated the I^2S signal (IIS_SCLK, IIS_WCLK and IIS_DATA) from the CD Board will enter IC7201 ES3880 which will work closely with the Eprom IC7202 and Dram IC7203. Inverter IC7205 74HC04D serves to reconstruct the Digital signal & level required by IC7201 ES3880.

5. Digital Audio information (AUDIOCLK, AUDATA and BCLK) will be send to DAC (Digital to Analog Converter) of IC7204 ES3883.

6. Analog output (AOL+, AOL-, AOR+ and AOR-) is amplified by the differential Op. Amplifier IC7207 NJM4560M.

7. Digital Video information YUV(0….7) will be send to the Video processing part of IC7204 ES3883 and out to the Video out socket.

8. The HSYNC & VSYNC from IC7204 ES3883 to IC7201 ES3880 are to synchronize the Digital Video Information.

9. Mic Echo Input into IC7204 ES3883 is converted to digital signal (ARCLK, AIN and ARFS) for IC7201 ES3880 to combine into the Digital Audio Information.

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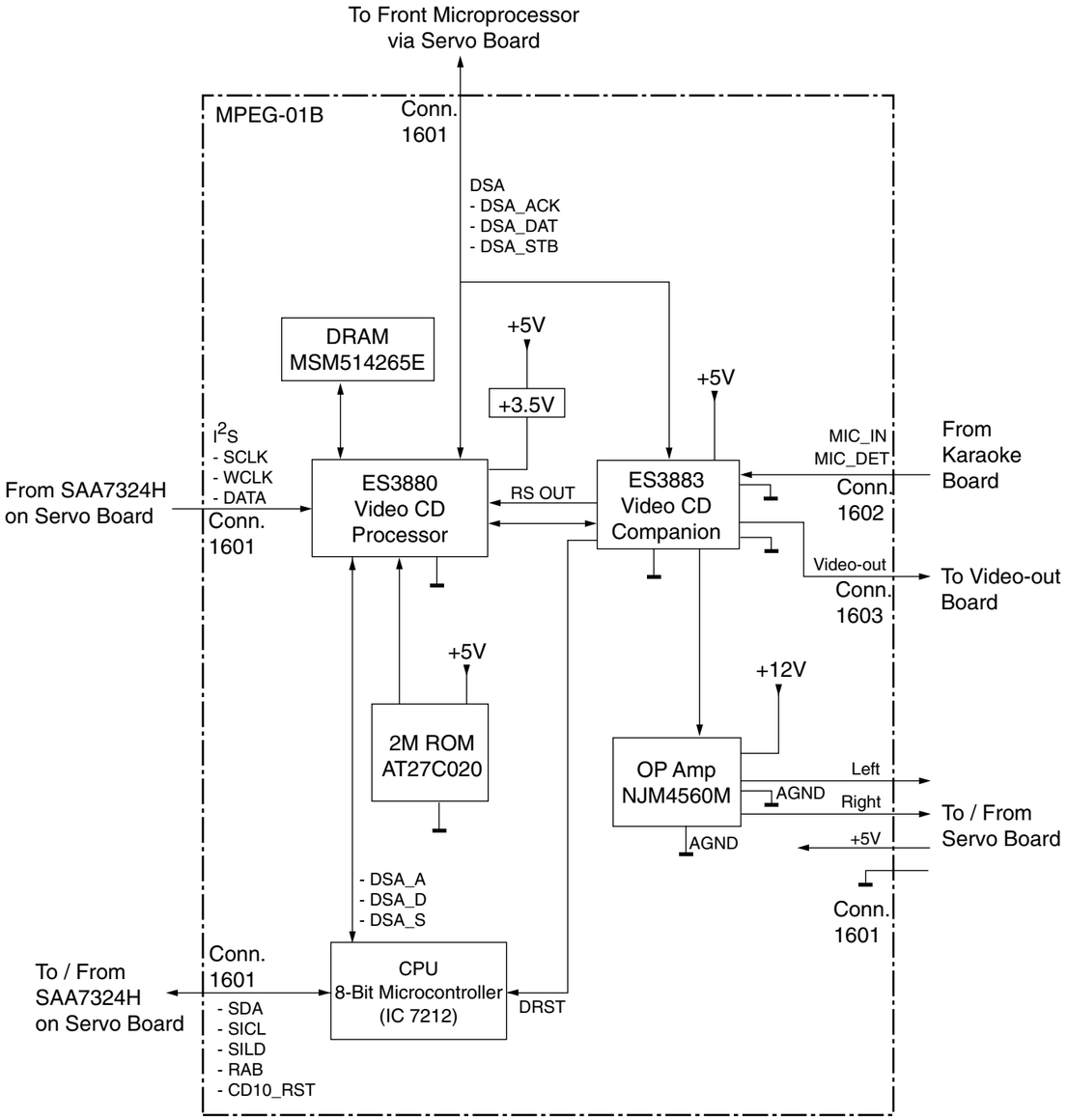
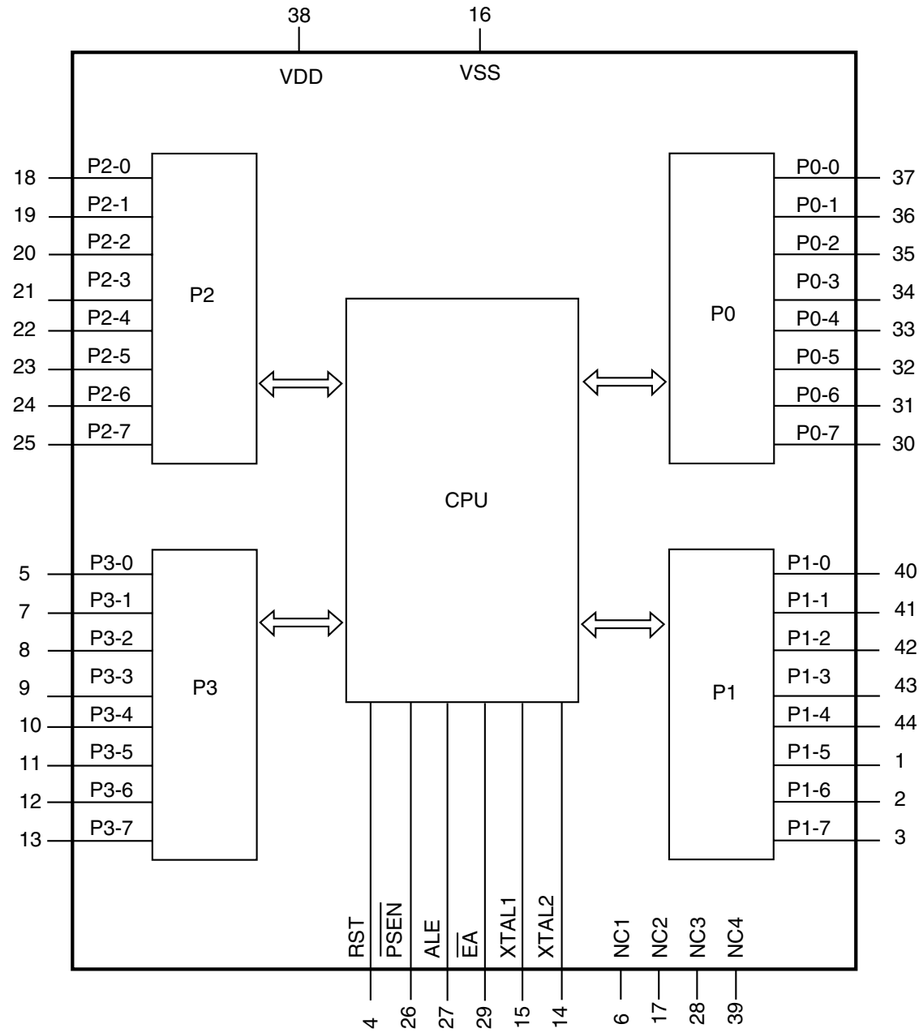
NOTES:

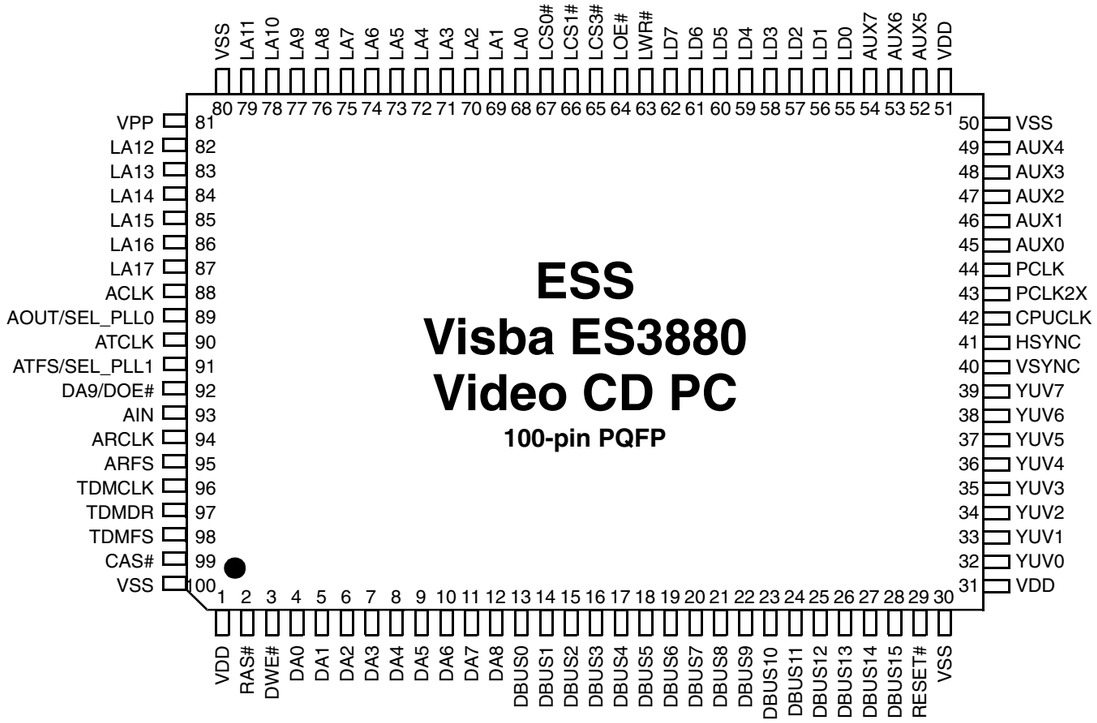
MPEG-01B BLOCK DIAGRAM

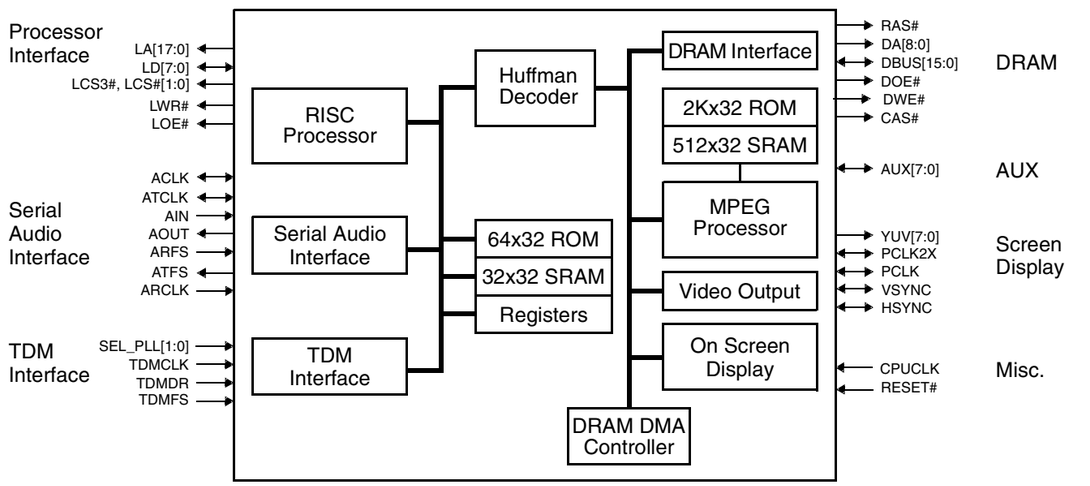


8-BIT MICROCONTROLLER (IC 7212) INTERNAL BLOCK



ES3880 VIDEO CD PROCESSOR CHIP





Visba Video CD PC Block Diagram

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VISBA VIDEO PC PROCESSOR CHIP PIN DESCRIPTION

Name	Number	I/O	Definition
VDD	1, 31, 51	I	Voltage supply for 3.3 V.
RAS#	2	O	DRAM row address strobe (active low).
DWE#	3	O	DRAM write enable (active low).
DA[8:0]	12:4	O	DRAM multiplexed row and column address bus.
DBUS[15:0]	28:13	I/O	DRAM data bus.
RESET#	29	I	System reset (active low).
VSS	30, 50, 80, 100	I	Ground.
YUV[7:0]	39:32	O	Y is luminance, UV are chrominance data bus for screen video interface. YUV[7:0] for 8-bit YUV mode.
VSYNC	40	I/O	Vertical sync for screen video interface, programmable for rising or falling edge.
HSYNC	41	I/O	Horizontal sync for screen video interface, programmable for rising or falling edge.
CPUCLK	42	I	RISC and system clock input. CPUCLK is used only if SEL_PLL[1:0] = 00.
PCLK2X	43	I/O	Pixel clock; two times the actual pixel clock for screen video interface.
PCLK	44	I/O	Pixel clock qualifier in for screen video interface.
AUX[7:0]	54, 52, 53, 49:45	I/O	Auxiliary control pins (AUX0 and AUX1 are open collectors).
LD[7:0]	62:55	I/O	RISC interface data bus.
LWR#	63	O	RISC interface write enable (active low).
LOE#	64	O	RISC interface output enable (active low).
LCS[3,1,0]#	65,66,67	O	RISC interface chip select (active low).
LA[17:0]	87:82, 79:68	O	RISC interface address bus.
VPP	81	I	Digital supply voltage for 5 V.
ACLK	88	I/O	Master clock for external audio DAC (8.192 MHz, 11.2896 MHz, 12.288 MHz, 16.9344 MHz, and 18.432 MHz).
AOUT/ SEL_PLL0	89	O	Dual-purpose pin. AOUT is the audio interface serial data output
		I	Pins SEL_PLL[1:0] select phase-lock loop (PLL) clock frequency CPUCLK for the Visba: 00 = bypass PLL. 01 = 54 MHz PLL. 10 = 67.5 MHz PLL. 11 = 81 MHz PLL.
ATCLK	90	I/O	Audio transmit bit clock.
ATFS/ SEL_PLL1	91	O	Dual-purpose pin. ATFS is the audio interface transmit frame sync.
		I	Pins SEL_PLL[1:0] select phase-lock loop (PLL) clock frequency CPUCLK for the Visba. See the SEL_PLL0 pin above for the settings.
DA9/DOE#	92	O	Dual purpose pin: DRAM output enable (active low)/DRAM multiplexed row and column address bus.
AIN	93	I	Audio interface serial data input.
ARCLK	94	I	Audio receive bit clock.
ARFS	95	I	Audio interface receive frame sync.
TDMCLK	96	I	TDM interface serial clock.
TDMDR	97	I	TDM interface serial data receive.
TDMFS	98	I	TDM interface frame sync.
CAS#	99	O	DRAM column address strobe bank 0 (active low).

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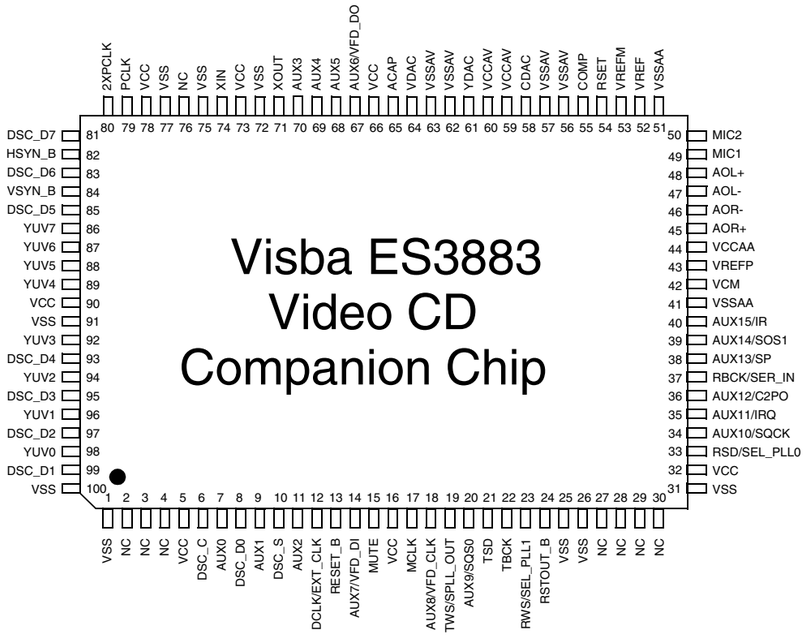
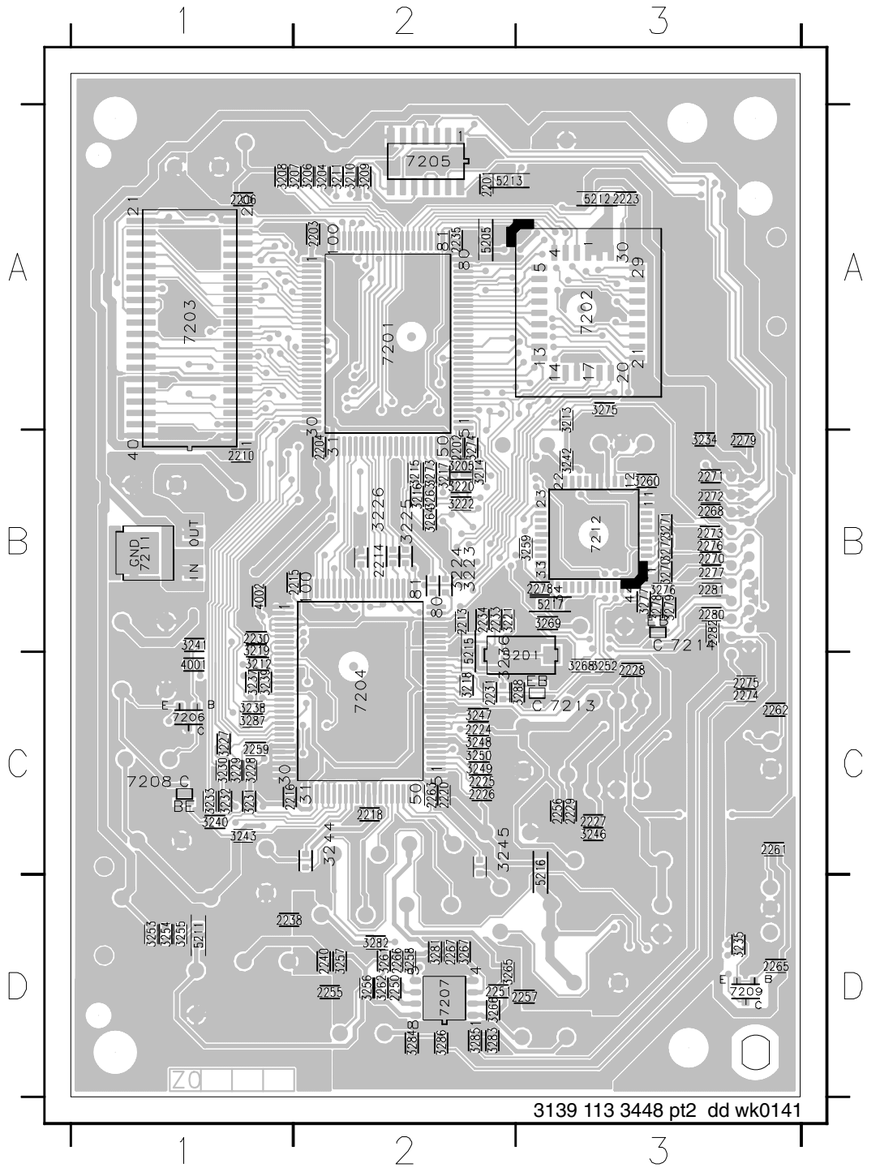
ES3883 VIDEO CD COMPANION CHIP



PIN DESCRIPTION

Name	Number	I/O	Definition
VSS	1,25:26,31,72,75,77,91,100	I	Ground.
VCC	5,16,32,66,73,78,90	I	Voltage supply, 5 V.
DSC_C	6	I	Clock for programming to access internal registers.
AUX0	7	I/O	Servo Forward or Control Pin.
AUX1	9	I/O	Servo Reverse or Control Pin.
AUX2	11	I/O	Servo LDON or Control Pin.
AUX3	70	I/O	Servo CW/Limit or Control Pin.
AUX4	69	I/O	Servo CCW/Close or Control Pin.
AUX5	68	I/O	Servo Data or Control Pin.
AUX6	67	I/O	Servo XLAT or Control Pin/VFD_DO.
AUX7	14	I/O	Servo BRKM/Sense or Control Pin/VFD_DI.
AUX8	18	I/O	Servo Mute/Open or Control Pin/VFD_CLK.
AUX9	20	I/O	Servo SQS0 or Control Pin.
AUX10	34	I/O	Servo SQCK or Control Pin.
AUX11	35	I/O	3880 IRQ or Interrupt Output or Control Pin.
AUX12	36	I/O	CD C2PO or Interrupt Input or Control Pin.
AUX13	38	I/O	Serial Interrupt/CD-Mute or Control Pin.
AUX14	39	I/O	Servo SCOR (S0S1) or Interrupt Input or Control Pin.
AUX15	40	I/O	Interrupt Input or Control Pin.
DSC_D[7:0]	81,83,85,93,95,97,99,8	I/O	Data for programming to access internal registers.
DSC_S	10	I	Strobe for programming to access internal registers.
DCLK	12	O	Dual-purpose pin DCLK is the MPEG decoder clock.
EXT_CLK		I	EXT_CLK is the external clock EXT_CLK is an input during bypass PLL mode.
RESET_B	13	I	Video reset (active-low).
MUTE	15	O	Audio mute.
MCLK	17	I	Audio master clock.
TWS	19	I	Dual-purpose pin TWS is the transmit audio frame sync.
SPLL_OUT		O	SPLL_OUT is the select PLL output.
TSD	21	I	Transmit audio data input.
TBCK	22	I	Transmit audio bit clock.
RWS	23	O	Dual-purpose pin RWS is the receive audio frame sync.
SEL_PLL1		I	Pins SEL_PLL[1:0] select the PLL clock frequency for the DCLK output. SEL_PLL1 SEL_PLL0 DCLK 0 0 Bypass PLL (input mode) 0 1 27 MHz (output mode) 1 0 32.4 MHz (output mode) 1 1 40.5 MHz (output mode)
RSTOUT_B	24	O	Reset output (active-low).
NC	2:4,27:30,76		No connect. Do not connect to these pins.
RSD	33	O	Dual-purpose pin. RSD is the receive audio data input.
SEL_PLL0		I	SEL_PLL0 along with SEL_PLL1 select the PLL clock frequency for the DCLK output. See the table for pin number 23.
RBCK	37	O	Dual-purpose pin. RBCK is the receive audio bit clock.
SER_IN		I	SER_IN is the serial input DSC mode. 0 - Parallel DSC mode. 1 - Serial DSC mode.
VSSAA	41,51	I	Audio Analog Ground.
VCM	42	I	ADC Common Mode Reference (CMR) buffer output. CMR is approximately 2.25 V. Bypass to analog ground with 47 mF electrolytic in parallel with 0.1 mF.
VREFP	43	I	DAC and ADC maximum reference. Bypass to VCMR with 10 mF in parallel with 0.1 mF.
VCCAA	44	I	Analog VCC, 5 V.
AOR+, AOR-	45:46	O	Right channel output.
AOL-, AOL+	47:48	O	Left channel output.
MIC1	49	I	Microphone input 1.
MIC2	50	I	Microphone input 2.
VREF	52	I	Internal resistor divider generates Common Mode Reference (CMR) voltage. Bypass to analog ground with 0.1 mF.
VREFM	53	I	DAC and ADC minimum reference. Bypass to VCMR with 10 mF in parallel with 0.1 mF.
RSET	54	I	Full scale DAC current adjustment.
COMP	55	I	Compensation pin.
VSSAV	56:57,62:63	I	Video Analog Ground
CDAC	58	O	Modulated chrominance output.
VCCAV	59,60	I	Video VCC, 5 V
YDAC	61	O	Y luminance data bus for screen video port.
VDAC	64	O	Composite video output.
ACAP	65	I	Audio CAP
XOUT	71	O	Crystal output.
XIN	74	I	27 MHz crystal input.
PCLK	79	I/O	13.5 MHz pixel clock.
2XPCLK	80	I/O	27 MHz (2 times pixel clock).
HSYN_B	82	O	Horizontal sync (active-low).
VSYN_B	84	O	Vertical sync (active-low).
YUV[7:0]	86:89,92,94,96,98	I	YUV data bus for screen video port.

MPEG-01B BOARD LAYOUT



2201	A2	3211	A2	3271	B3
2202	B2	3212	C1	3272	B3
2203	A2	3213	A3	3273	B2
2204	B2	3214	B2	3274	B2
2206	A1	3215	B2	3275	A3
2210	B1	3216	B2	3276	B3
2213	B2	3217	B2	3277	B3
2214	B2	3218	C2	3278	B3
2215	B2	3219	B1	3279	B3
2216	C1	3220	B2	3281	D2
2218	C2	3221	B2	3282	D2
2220	C2	3222	B2	3283	D2
2223	A3	3223	B2	3284	D2
2224	C2	3224	B2	3285	D2
2225	C2	3225	B2	3286	D2
2226	C2	3226	B2	3287	C1
2227	C3	3227	C1	3288	C3
2228	C3	3228	C1	4001	C1
2229	C3	3229	C1	4002	B1
2230	B1	3230	C1	5201	C3
2231	C2	3231	C1	5205	A2
2233	B2	3232	C1	5211	D1
2234	B2	3233	C1	5212	A3
2235	A2	3234	B3	5213	A2
2238	D1	3235	D3	5215	B2
2240	D2	3236	C2	5216	C3
2250	D2	3237	C1	5217	B3
2251	D2	3238	C1	7201	A2
2255	D2	3239	C1	7202	A3
2256	C3	3240	C1	7203	A1
2257	D3	3241	B1	7204	C2
2259	C1	3242	B3	7205	A2
2261	C3	3243	C1	7206	C1
2262	C3	3244	C2	7207	D2
2263	C2	3245	C2	7208	C1
2265	D3	3246	C3	7209	D3
2266	D2	3247	C2	7211	B1
2267	D2	3248	C2	7212	B3
2268	B3	3249	C2	7213	C3
2270	B3	3250	C2	7214	B3
2271	B3	3252	C3		
2272	B3	3253	D1		
2273	B3	3254	D1		
2274	C3	3255	D1		
2275	C3	3256	D2		
2276	B3	3257	D2		
2277	B3	3258	D2		
2278	B3	3259	B3		
2279	B3	3260	B3		
2280	B3	3261	D2		
2281	B3	3262	D2		
2282	B3	3263	B2		
3204	A2	3264	B2		
3205	B2	3265	D2		
3206	A2	3266	D2		
3207	A2	3267	D2		
3208	A1	3268	C3		
3209	A2	3269	B3		
3210	A2	3270	B3		

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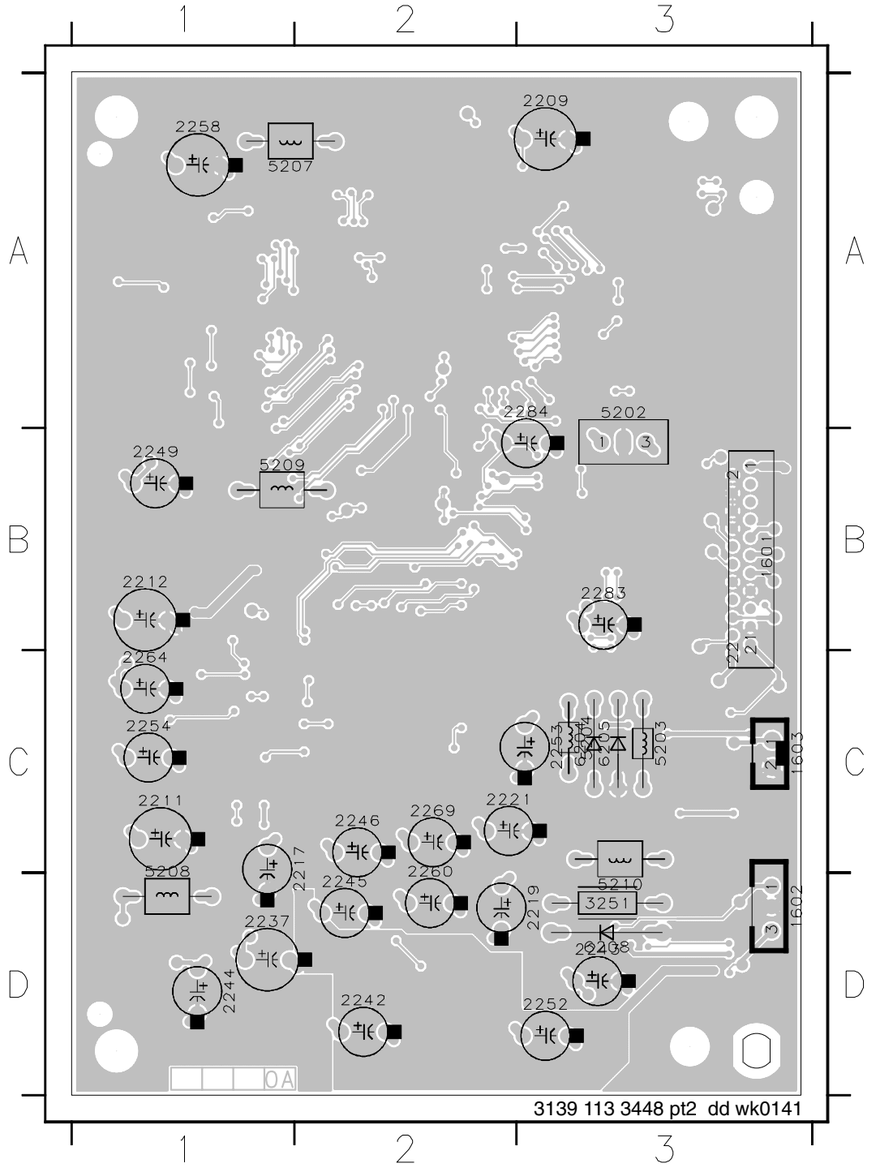

1601	B3
1602	D3
1603	C3
2209	A3
2211	C1
2212	B1
2217	C2
2219	D3
2221	C2
2237	D1
2242	D2
2243	D3
2244	D1
2245	D2
2246	C2
2249	B1
2252	D3
2253	C3
2254	C1
2258	A1
2260	C2
2264	C1
2269	C2
2283	B3
2284	A3
3251	D3
5202	A3
5203	C3
5204	C3
5207	A1
5208	C1
5209	B1
5210	D3
6204	C3
6205	C3
6208	D3

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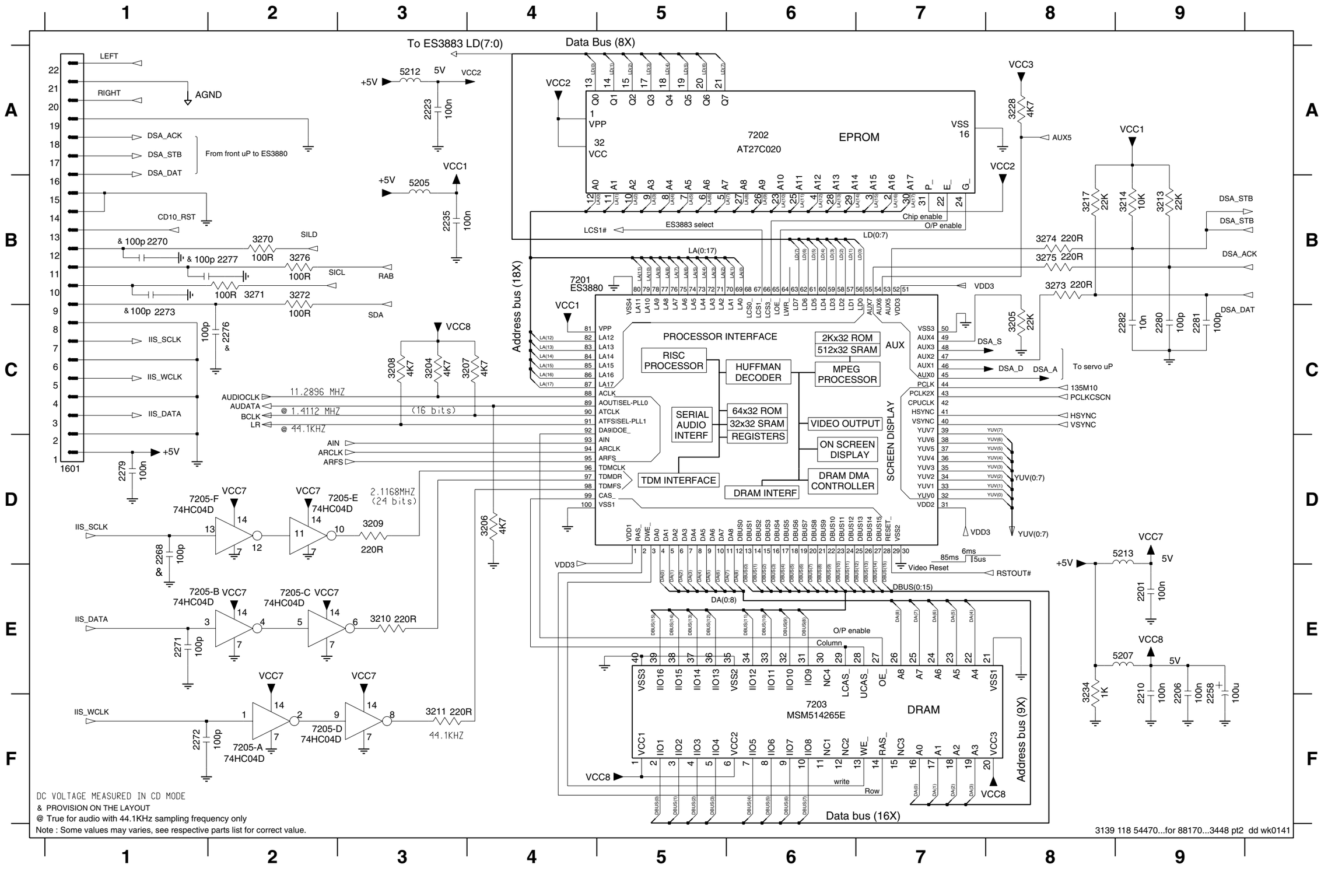
ES3880 CIRCUIT

1601 D1	2210 E9	2258 E9	2271 E1	2276 C2	2280 C9	3204 C3	3207 C4	3210 E3	3214 B9	3234 E8	3272 B2	3275 B8	5207 E9	7201 B4	7205-A F2	7205-D F2
2201 E9	2223 A3	2268 D1	2272 F1	2277 B2	2281 C9	3205 C8	3208 C3	3211 F3	3217 B8	3270 B2	3273 B8	3276 B2	5212 A3	7202 A6	7205-B E1	7205-E D2
2206 E9	2235 B3	2270 B1	2273 C1	2279 D1	2282 C9	3206 D4	3209 D3	3213 B9	3228 A8	3271 B2	3274 B8	5205 B3	5213 D9	7203 F6	7205-C E2	7205-F D1



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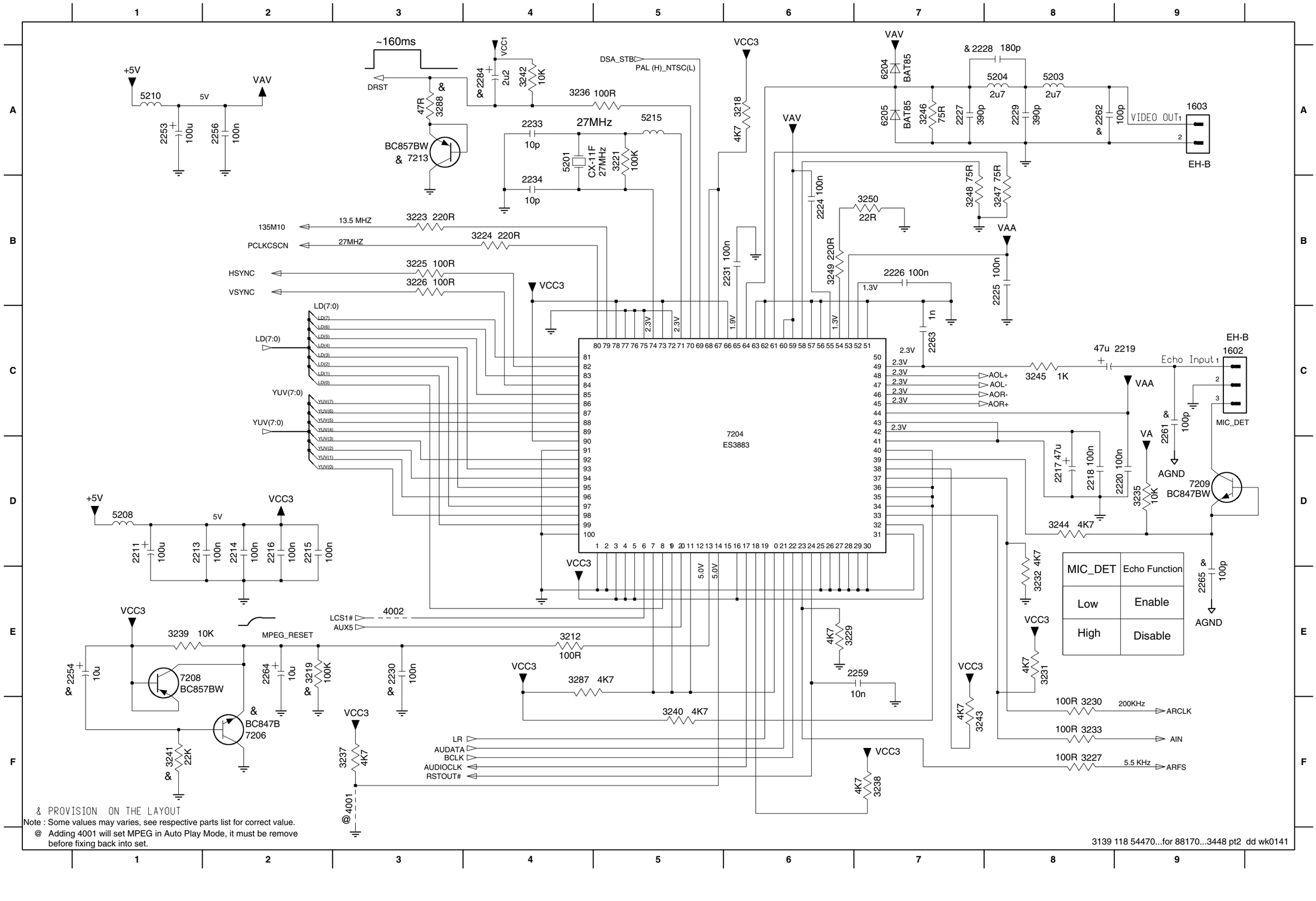
ES3883 CIRCUIT

1602 C9	2213 D1	2216 D2	2219 C9	2225 B8	2228 A7	2231 B6	2253 A1	2259 E7	2263 C7	2284 A4	3219 E2	3224 B4	3227 F8	3231 E8	3235 D9	3238 F7	3241 F1	3244 D8	3247 B8	3250 B7	4001 F3	5203 A8	5210 A1	6205 A7	7208 E1
1603 A9	2214 D2	2217 D8	2220 D9	2226 B7	2229 A8	2233 A4	2254 E1	2261 C9	2264 E2	3212 E4	3221 A5	3225 B3	3229 E6	3232 E8	3236 A4	3239 E1	3242 A4	3245 C8	3248 B7	3287 E4	4002 E3	5204 A8	5215 A5	7204 D6	7209 D9
2211 D1	2215 D2	2218 D8	2224 B6	2227 A7	2230 E3	2234 B4	2256 A2	2262 A8	2265 E9	3218 A6	3223 B3	3226 B3	3230 F8	3233 F8	3237 F3	3240 F5	3243 F7	3246 A7	3249 B6	3288 A3	5201 A4	5208 D1	6204 A7	7206 F2	7213 A3



& PROVISION ON THE LAYOUT

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

@ Adding 4001 will set MPEG in Auto Play Mode, it must be remove before fixing back into set.

3139 118 54470...for 88170...3448 pt2 dd wk0141

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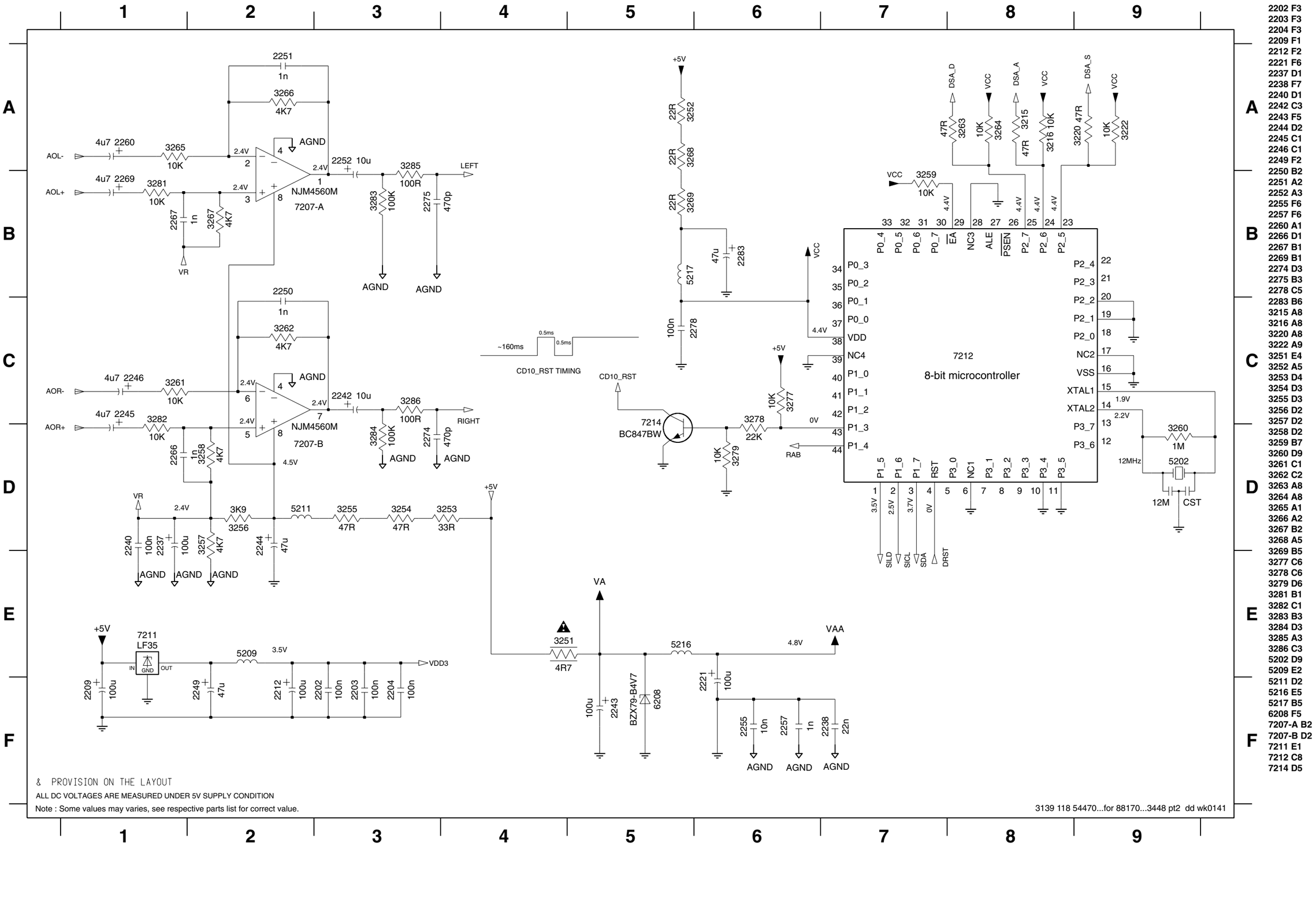
AUDIO CIRCUIT



& PROVISION ON THE LAYOUT

ALL DC VOLTAGES ARE MEASURED UNDER 5V SUPPLY CONDITION

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

3139 118 54470...for 88170...3448 pt2 dd wk0141

2202 F3
2203 F3
2204 F3
2209 F1
2212 F2
2221 F6
2237 D1
2238 F7
2240 D1
2242 C3
2243 F5
2244 D2
2245 C1
2246 C1
2249 F2
2250 B2
2251 A2
2252 A3
2255 F6
2257 F6
2260 A1
2266 D1
2267 B1
2269 B1
2274 D3
2275 B3
2278 C5
2283 B6
3215 A8
3216 A8
3220 A8
3222 A9
3251 E4
3252 A5
3253 D4
3254 D3
3255 D3
3256 D2
3257 D2
3258 D2
3259 B7
3260 D9
3261 C1
3262 C2
3263 A8
3264 A8
3265 A1
3266 A2
3267 B2
3268 A5
3269 B5
3277 C6
3278 C6
3279 D6
3281 B1
3282 C1
3283 B3
3284 D3
3285 A3
3286 C3
5202 D9
5209 E2
5211 D2
5216 E5
5217 B5
6208 F5
7207-A B2
7207-B D2
7211 E1
7212 C8
7214 D5

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ELECTRICAL PARTS LIST - MPEG-01B BOARD

ELECTRICAL PARTS LIST - MPEG-01B BOARD

MISCELLANEOUS

1601	2422 025 16837	Flex Socket 22pin Hort.

CAPACITORS

2201	4822 126 14305	100nF 10% 16V
2202	4822 126 14305	100nF 10% 16V
2203	4822 126 14305	100nF 10% 16V
2204	4822 126 14305	100nF 10% 16V
2206	4822 126 14305	100nF 10% 16V
2209	4822 124 40207	100µF 20% 25V
2210	4822 126 14305	100nF 10% 16V
2211	4822 124 40207	100µF 20% 25V
2212	4822 124 40207	100µF 20% 25V
2213	4822 126 14305	100nF 10% 16V
2214	4822 126 14305	100nF 10% 16V
2215	4822 126 14305	100nF 10% 16V
2216	4822 126 14305	100nF 10% 16V
2217	4822 124 40433	47µF 20% 25V
2218	4822 126 14305	100nF 10% 16V
2219	4822 124 40433	47µF 20% 25V
2220	4822 126 14305	100nF 10% 16V
2221	4822 124 41584	100µF 20% 10V
2223	4822 126 14305	100nF 10% 16V
2224	4822 126 14305	100nF 10% 16V
2225	4822 126 14305	100nF 10% 16V
2226	4822 126 14305	100nF 10% 16V
2227	4822 126 14315	390pF 5% 50V
2229	4822 126 14315	390pF 5% 50V
2231	4822 126 14305	100nF 10% 16V
2233	4822 122 33741	10pF 10% 50V
2234	4822 122 33741	10pF 10% 50V
2235	4822 126 14305	100nF 10% 16V
2237	4822 124 40207	100µF 20% 25V
2238	4822 126 14494	22nF 10% 25V
2240	4822 126 14305	100nF 10% 16V
2242	4822 124 40248	10µF 20% 63V
2243	4822 124 41584	100µF 20% 10V
2244	4822 124 40433	47µF 20% 25V
2245	4822 124 40769	4,7µF 20% 100V
2246	4822 124 40769	4,7µF 20% 100V
2249	4822 124 40433	47µF 20% 25V
2250	3198 016 31020	1nF 5% 25V
2251	3198 016 31020	1nF 5% 25V
2252	4822 124 40248	10µF 20% 63V
2253	4822 124 41584	100µF 20% 10V
2255	5322 126 11583	10nF 10% 50V
2256	4822 126 14305	100nF 10% 16V
2257	3198 016 31020	1nF 5% 25V
2258	4822 124 40207	100µF 20% 25V
2259	5322 126 11583	10nF 10% 50V
2260	4822 124 40769	4,7µF 20% 100V
2263	3198 016 31020	1nF 5% 25V
2264	4822 124 40248	10µF 20% 63V
2266	3198 016 31020	1nF 5% 25V
2267	3198 016 31020	1nF 5% 25V
2269	4822 124 40769	4,7µF 20% 100V
2271	4822 122 31765	100pF 2% 63V
2272	4822 122 31765	100pF 2% 63V
2274	4822 126 13881	470pF 5% 50V
2275	4822 126 13881	470pF 5% 50V
2278	4822 126 14305	100nF 10% 16V
2279	4822 126 14305	100nF 10% 16V
2280	4822 122 31765	100pF 2% 63V
2281	4822 122 31765	100pF 2% 63V
2282	5322 126 11583	10nF 10% 50V
2283	4822 124 40433	47µF 20% 25V

RESISTORS

3204	4822 051 30472	4k7 5% 0,062W
3205	4822 051 30223	22k 5% 0,062W
3206	4822 051 30472	4k7 5% 0,062W
3207	4822 051 30472	4k7 5% 0,062W
3208	4822 051 30472	4k7 5% 0,062W
3209	4822 051 30221	220R 5% 0,062W
3210	4822 051 30221	220R 5% 0,062W
3211	4822 051 30221	220R 5% 0,062W
3212	4822 051 30101	100R 5% 0,062W
3213	4822 051 30223	22k 5% 0,062W
3214	4822 051 30103	10k 5% 0,062W
3215	4822 051 30479	47R 5% 0,062W
3216	4822 051 30103	10k 5% 0,062W
3217	4822 051 30223	22k 5% 0,062W
3218	4822 051 30472	4k7 5% 0,062W
3220	4822 051 30479	47R 5% 0,062W
3221	4822 117 13632	100k 1% 0,062W
3222	4822 051 30103	10k 5% 0,062W
3223	4822 051 30221	220R 5% 0,062W
3224	4822 051 30221	220R 5% 0,062W
3225	4822 051 30101	100R 5% 0,062W
3226	4822 051 30101	100R 5% 0,062W
3227	4822 051 30101	100R 5% 0,062W
3228	4822 051 30472	4k7 5% 0,062W
3229	4822 051 30472	4k7 5% 0,062W
3230	4822 051 30101	100R 5% 0,062W
3231	4822 051 30472	4k7 5% 0,062W
3232	4822 051 30472	4k7 5% 0,062W
3233	4822 051 30101	100R 5% 0,062W
3234	4822 051 30102	1k 5% 0,062W
3235	4822 051 30103	10k 5% 0,062W
3236	4822 051 30101	100R 5% 0,062W
3237	4822 051 30472	4k7 5% 0,062W
3238	4822 051 30472	4k7 5% 0,062W
3239	4822 051 30103	10k 5% 0,062W
3240	4822 051 30472	4k7 5% 0,062W
3242	4822 051 30103	10k 5% 0,062W
3243	4822 051 30472	4k7 5% 0,062W
3244	4822 051 30472	4k7 5% 0,062W
3245	4822 051 30102	1k 5% 0,062W
3246	4822 051 30759	75R 5% 0,062W
3247	4822 051 30759	75R 5% 0,062W
3248	4822 051 30759	75R 5% 0,062W
3249	4822 051 30221	220R 5% 0,062W
3250	4822 117 12139	22R 5% 0,062W
3251	4822 052 10478	⚠ 4R7 5% 0,33W
3252	4822 117 12139	22R 5% 0,062W
3253	4822 051 30339	33R 5% 0,062W
3254	4822 051 30479	47R 5% 0,062W
3255	4822 051 30479	47R 5% 0,062W
3256	4822 051 30392	3k9 5% 0,062W
3257	4822 051 30472	4k7 5% 0,062W
3258	4822 051 30472	4k7 5% 0,062W
3259	4822 051 30103	10k 5% 0,062W
3260	4822 051 30105	1M 5% 0,062W
3261	4822 051 30103	10k 5% 0,062W
3262	4822 051 30472	4k7 5% 0,062W
3263	4822 051 30479	47R 5% 0,062W
3264	4822 051 30103	10k 5% 0,062W
3265	4822 051 30103	10k 5% 0,062W
3266	4822 051 30472	4k7 5% 0,062W
3267	4822 051 30472	4k7 5% 0,062W
3268	4822 117 12139	22R 5% 0,062W
3269	4822 117 12139	22R 5% 0,062W
3270	4822 051 30101	100R 5% 0,062W
3271	4822 051 30101	100R 5% 0,062W
3272	4822 051 30101	100R 5% 0,062W
3273	4822 051 30221	220R 5% 0,062W
3274	4822 051 30221	220R 5% 0,062W
3275	4822 051 30221	220R 5% 0,062W
3276	4822 051 30101	100R 5% 0,062W
3277	4822 051 30103	10k 5% 0,062W
3278	4822 051 30223	22k 5% 0,062W
3279	4822 051 30103	10k 5% 0,062W
3281	4822 051 30103	10k 5% 0,062W
3282	4822 051 30103	10k 5% 0,062W
3283	4822 117 13632	100k 1% 0,062W
3284	4822 117 13632	100k 1% 0,062W
3285	4822 051 30101	100R 5% 0,062W
3286	4822 051 30101	100R 5% 0,062W
3287	4822 051 30472	4k7 5% 0,062W
4002	4822 051 30008	0R Jumper 0603

COILS & FILTERS

5201	2422 543 01137	X'tal Resonator 27MHz
5202	5322 242 73686	Ceram Resonator 12MHz
5203	4822 157 11868	Coil 2,7µH 5%
5204	4822 157 11868	Coil 2,7µH 5%
5205	4822 157 11506	Chip Ind. 120R 100MHz
5207	4822 526 10704	FE Bead 100MHz
5208	4822 526 10704	FE Bead 100MHz
5209	4822 526 10704	FE Bead 100MHz
5210	4822 526 10704	FE Bead 100MHz
5211	4822 157 11506	Chip Ind. 120R 100MHz
5212	4822 157 11506	Chip Ind. 120R 100MHz
5213	4822 157 11506	Chip Ind. 120R 100MHz
5215	4822 157 11506	Chip Ind. 120R 100MHz
5216	4822 157 11506	Chip Ind. 120R 100MHz
5217	4822 157 11506	Chip Ind. 120R 100MHz

DIODES

6204	4822 130 31983	BAT85
6205	4822 130 31983	BAT85
6208	4822 130 34174	BZX79-B4V7

TRANSISTORS & INTEGRATED CIRCUITS

7201	9322 139 79671	ES3880
7202	9965 000 08683	AT27C020-70JC
7203	9322 164 13668	MSM514265E-60JS
7204	9322 138 97671	ES3883
7205	9337 142 60653	74HC04D
7207	4822 209 83357	NJM4560M
7208	5322 130 42756	BC857BW
7209	3198 010 42310	BC847BW
7211	9322 154 82668	LF35ABDT
7212	9352 701 41518	CV9210B-83C51RC+
7214	3198 010 42310	BC847BW

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

ETF7 TAPE MODULE

(Non-Dolby Version)

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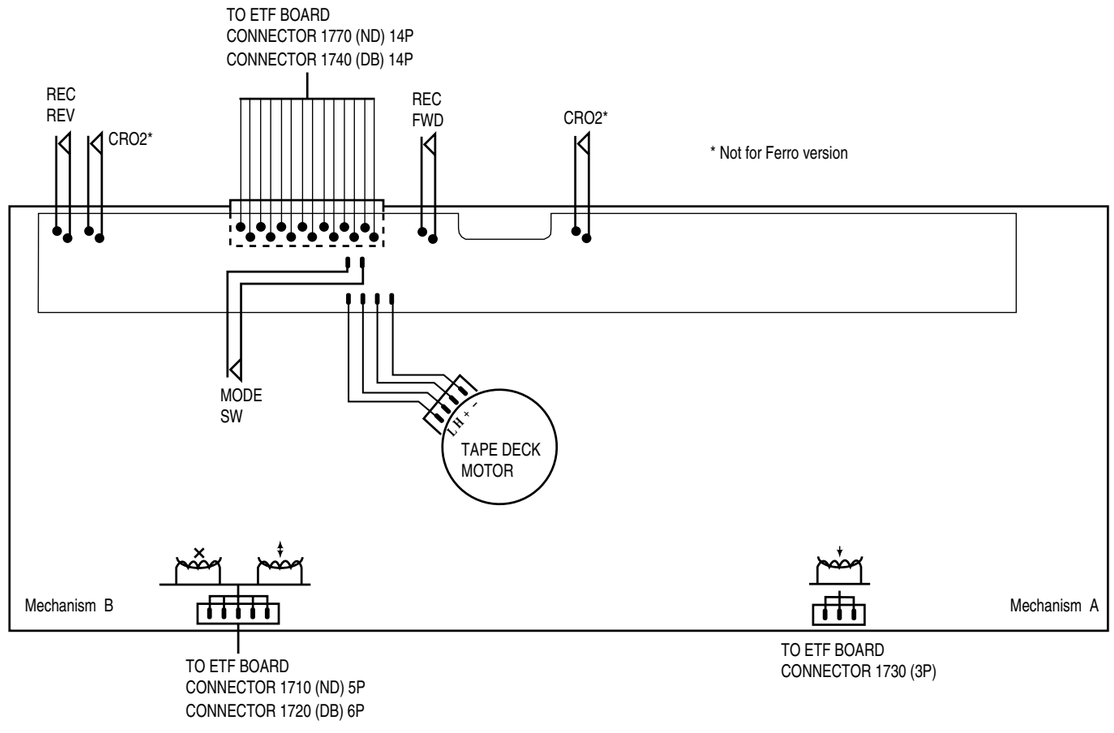
Tapedeck wiring (Double deck)



Variations table for Analog Circuit

	Autoreverse ND/DD/FR	Non-autoreverse ND/DD/FF	
	Chrome/Ferro	Chrome/Ferro	Ferro
2624	-	-	100nF
2701 , 2702	150pF	270pF	270pF
2703 , 2704	100pF	220pF	220pF
2717 , 2718	10nF	15nF	15nF
2721 , 2722	6,8nF	6,8nF	-
2727 , 2728	470pF	1nF	1nF
3616	10k	1k	1k
3618	6k8	-	-
3620	10k trimmer	-	-
3622	-	10k trimmer	10k trimmer
3672	4k7	-	-
3676	47k	-	-
3687	220R	220R	-
3688	680R	-	-
3723 , 3724	15k	18k	18k
3725 , 3726	10R	10R	-
3727 , 3728	5k6	6k8	6k8
3729 , 3730	3k3	4k7	4k7
3743 , 3744	1k5	2k2	2k2
3745 , 3746	3k3	5k6	5k6
3754 , 3755	1M	47R	47R

	Autoreverse ND/DD/FR	Non-autoreverse ND/DD/FF	
	Chrome/Ferro	Chrome/Ferro	Ferro
3769	12k	8k2	8k2
3772	6k8	5k6	5k6
4785	-	-	0R jumper
3774	15k	8k2	8k2
6614	1N4148	-	-
7616	BC857B	-	-
7622	BC847B	-	-

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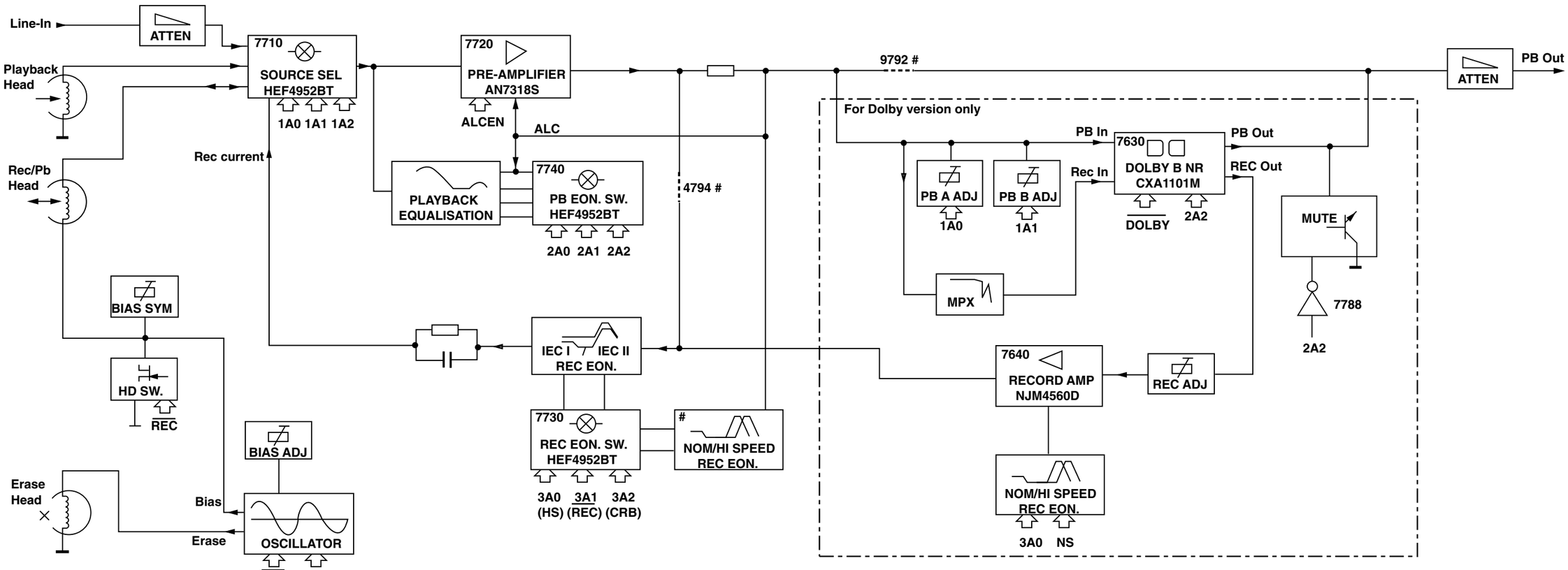
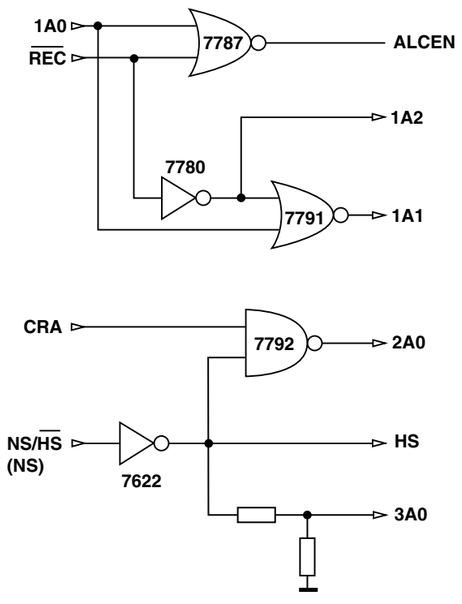
BLOCK DIAGRAM

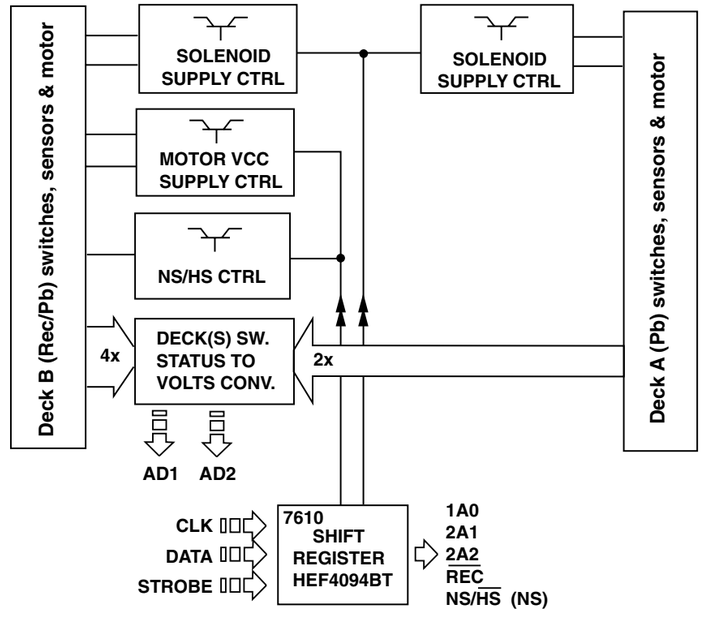


NOTE: # For Non-dolby version only
Only 1 channel is presented.

MicroProcessor Control / Communication lines

Direct / Indirect Control lines from Shift Registers





9-3

Brief introduction

General

1. Playback Mode
   Signal from the playback head Deck A or Deck B is selected and fed through by the Mode Selector IC7710 (HEF4952BT). The signal is amplified by amplifier IC7720 (AN7323S) before feeding to the IC7740 (HEF4952BT) and out to the AF Board via connector 1701.

2. Recording Mode
   Recording Signal is selected and fed through by the Mode Selector IC7710 (HEF4952BT) which is then amplified by the amplifier IC7720 (AN7323S). The amplified output signal will pass through IC7730 (HEF4952BT) for record equalization and back to IC7710 (HEF4952BT) before registered into the Rec/PB Head of Deck B.

3. Dubbing Mode
   In Dubbing mode, signal from the playback head Deck A is selected and fed through by the Mode Selector IC7710 (HEF4952BT) which is then equalised for playback mode by the amplifier IC7720 (AN7323S) so that a flat response is obtained after the pre-amp. The equalised signal will then follow the same path as in the Recording mode.

4. Mode Selector
   The Mode Selector IC7710 (HEF4952BT) caters for 4 inputs signal, namely Playback Signal from Deck A, Playback Signal from Deck B, Recording Signal and Dubbing Signal.

5. Amplifier PB/REC
   Amplifier IC7720 (AN7323S) is for the purpose of amplifying the Playback and Recording signal from the Mode Selector.

6. Automatic Level Control (ALC)
   ALC circuit consists of resistors (3760, 3765, 3766, 3767), capacitors (2762 , 2763) and control by transistor 7787 (BC847B). ALC limits the amplifier output to a constant value when input signal becomes too large, thus limiting recording current to below saturation level, to prevent recording distortion.

7. Muting Circuit (For Non-Dolby version only)
   Switch S4 of the IC7740 (HEF4952BT) is for the purpose of muting the output during Recording mode. During Recording mode, S4 is closed and shorted to the ground.

8. IC7740 (HEF4952BT)
   The function of the IC7740 (HEF4952BT) is to change time constant between 120us Ferro (IEC I) and 70us Chrome (IEC II) during playback mode. It will automatically determined whether the tape type is 120us Ferro (IEC I) or 70us Chrome (IEC II). This IC will switch to Flat Gain during the Recording mode.

9. IC7730 (HEF4952BT)
   The function of the IC7730 (HEF4952BT) is to change gain and time constant according to tape type and recording speed to boost recording current at higher frequency during recording to compensate for head loss. It will automatically determined whether the tape type is 120us Ferro (IEC I) or 70us Chrome (IEC II).

10. Bias Level
    Bias Level making use of the Variable resistor (3773) for adjusting the optimal level of the bias current for Ferro or Chrome.

11. Bias Symm (For Dolby B NR version only)
    Bias Symm making use of the Variable resistor (3785) to adjust the bias current for the left and the right channel to be equal.

12. PB Switch
    Playback Switch which consists of the FETs 7785 (For Dolby B NR version only) & 7786 (J111) is for the purpose of providing a virtual ground for the Rec/PB Head (Deck B) during Playback mode. During the Playback mode, the FETs are turn on and shorted pin 2 and 4 of connector 1720 to the ground. During Recording mode, the FETs are turn off to allow the oscillator signal to be superposition onto the Recording signal for recording.

13. Motor Speed (For FR versions only)
    During High speed dubbing, a feedback signal from the uP through pin 03 of the IC7610 (HEF4094BT) will trigger the transistors 7622 (BC847B) and 7616 (BC857B) to cause a change in the voltage level between High and Low, thus changing the speed of the motor.

14. IC7610 (HEF4094BT)
    IC7610 (HEF4094BT) is a Shift Register use for issues the logic for cmos switch ICs (HEF4952BT) via 1A0, 2A1 and 2A2. It also issues logic to On/Off SOL_A, SOL_B and MOT. Recording speed is controlled via NS/HS.

Dolby Circuit (For sets with Dolby B NR version only)

15. IC7630 (CXA1551M)
    IC7630 (CXA1551M) in the Dolby circuit is a Dolby Noise Reduction Type B IC for the Playback and Recording signal. Noise Reduction ON/OFF are controlled by $\overline{\text{DOLBY}}$, which is from CLK, direct from uP. After clocking in DATA, CLK is set to HIGH/ LOW for NR OFF/ON.

16. 19kHz Filter
    The 19kHz filters 5631 & 5632 (LXD-210) in the Dolby circuit is for the purpose of filtering the 19kHz Pilot Tone (for Tuner signal only) of the Recording signal.

17. Level Adjust
    The Variable resistor 3635, 3636,3641 and 3642 in the Dolby circuit is for adjusting the playback level of the Dolby reference (400Hz , 200nWb/m). Transistor 7631, 7632 are ON to enable adjustment of 3641, 3642 during Playback Deck A. Transistor 7633, 7634 and 3635, 3636 are active for Playback Deck B.

18. Amplifier IC7640 (NJM4560M)
    The Amplifiers 7640A & 7640B (NJM4560M) in the Dolby circuit is for the purpose of amplified the Recording signal.

19. Muting Circuit
    The muting circuit which consists of transistors 7788, 7789 and 7790 (BC847B) is for the purpose of muting the output during Recording mode.

NOTATIONS & ABBREVIATIONS USED IN THIS DOCUMENT

CR	Chrome (IEC type II)
DB	Dolby NR type B
DD	Double Deck
DM	Double Motor
FE	Ferro (IEC type I)
FF	Non-Autoreverse
FR	Autoreverse Deck B
Gnd x	Ground x
HSD	High speed dubbing
ND	Non Dolby
NR	Noise Reduction
NSD	Normal speed dubbing
PB	Playback
REC	Record
S/A	Sub-assy
SD	Single Deck
SM	Single Motor

9-4

CONNECTORS ASSIGNMENTS:

CONNECTOR 1701 — INTERCONNECTION TO AF BOARD

1	REC-L	Record input left
2	REC-R	Record input right
3	GND A	AF Ground
4	TAPE-L	Playback output left
5	+12V	D.C. supply (+12V) for AF electronics
6	TAPE-R	Playback output right
7	-CMOS	Negative d.c. supply (-9V) for CMOS ICs

CONNECTOR 1703 — INTERCONNECTION TO AF BOARD

1	GND M	Motor Ground
2	+MOTOR	D.C. supply (+12V) for tape deck motor & solenoid

CONNECTOR 1706 — INTERCONNECTION TO FRONT BOARD

1	AD2	Deck sensing switches output voltage / Deck A EOT
2	AD1	Deck sensing switches output voltage / Deck B EOT
3	+5V	DC supply +5V for ADC network
4	GND P	Control & Oscillator Ground
5	CLK	HEF4094BT shift register Clock line
6	DATA	HEF4094BT shift register Data line
7	STROBE	HEF4094BT shift register Strobe line

CONNECTOR 1710 — DECK B HEADS CONNECTON ***(For Non-Dolby version only)***

1	B R/P HD L+	R/P Head left channel positive
2	GND A	R/P Head return ground
3	B R/P HD R+	R/P Head right channel positive
4	ERASE HEAD	Erase Head
5	GND A	Erase Head ground

CONNECTOR 1720 — DECK B HEADS CONNECTON ***(For Dolby B NR version only)***

1	B R/P HD L+	R/P Head left channel positive
2	B R/P HD L-	R/P Head left channel negative
3	B R/P HD R+	R/P Head right channel positive
4	B R/P HD R-	R/P Head right channel negative
5	ERASE HEAD	Erase Head
6	GND A	Erase Head ground

CONNECTOR 1730 — DECK A HEAD CONNECTIONS ***(For Double Deck versions only)***

1	A PB HD L+	Pb Head left channel positive
2	GND A	Pb Head return ground shield
3	A PB HD R+	Pb Head right channel positive

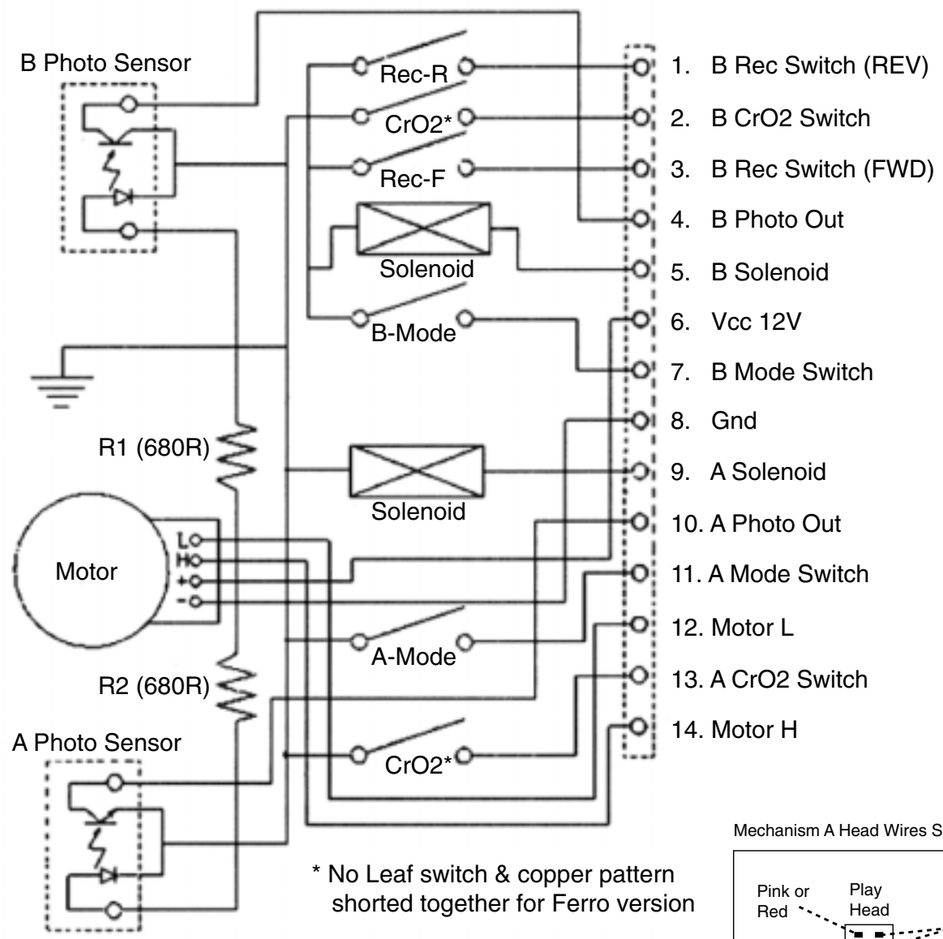
CONNECTOR 1740 — DECK A & B CONTROL INTERFACE ***(For Dolby B NR version only)***

1	REC REW	Record tab protection status switch (reverse)	[open=on: close=off]
2	CrO2 B	Chrome tape detection switch deck B	[open=Cr: close=Fe]
3	REC FWD	Record tab protection status switch (forward)	[open=on: close=off]
4	PHOTO B	Photo sensor output (tape movement indication)	
5	SOL B	Solenoid supply for deck B	
6	Vcc	Deck / Motor supply	
7	MODE B	Mode switch (head engagement)	[open=off: close=engaged]
8	GND M	Deck / Motor ground	
9	SOL A	Solenoid supply for deck A	
10	PHOTO A	Photo sensor output (tape movement indication)	
11	MODE A	Mode switch (head engagement)	[open=off: close=engaged]
12	L	L pin for motor	
13	CrO2 A	Chrome tape detection switch deck A	[open=Cr: close=Fe]
14	H	H pin for motor	

CONNECTOR 1770 — DECK A & B CONTROL INTERFACE ***(For Non-Dolby version only)***

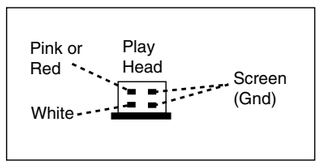
1	REC REW	Record tab protection status switch (reverse)	[open=on: close=off]
2	CrO2 B	Chrome tape detection switch deck B	[open=Cr: close=Fe]
3	REC FWD	Record tab protection status switch (forward)	[open=on: close=off]
4	PHOTO B	Photo sensor output (tape movement indication)	
5	SOL B	Solenoid supply for deck B	
6	Vcc	Deck / Motor supply	
7	MODE B	Mode switch (head engagement)	[open=off: close=engaged]
8	GND M	Deck / Motor ground	
9	SOL A	Solenoid supply for deck A	
10	PHOTO A	Photo sensor output (tape movement indication)	
11	MODE A	Mode switch (head engagement)	[open=off: close=engaged]
12	L	L pin for motor	
13	CrO2 A	Chrome tape detection switch deck A	[open=Cr: close=Fe]
14	H	H pin for motor	

TAPE MECHANISM ELECTRONICS

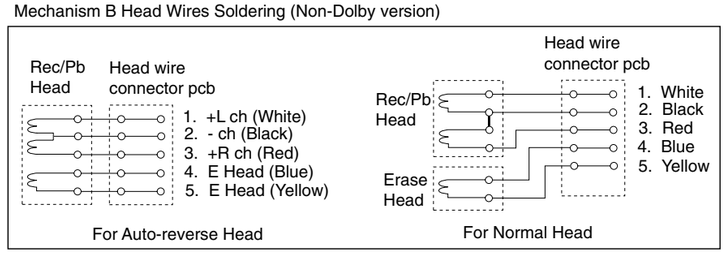


* No Leaf switch & copper pattern shorted together for Ferro version

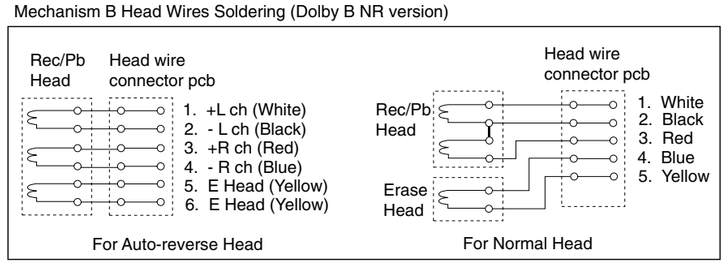
Mechanism A Head Wires Soldering



Mechanism B Head Wires Soldering (Non-Dolby version)



Mechanism B Head Wires Soldering (Dolby B NR version)



TAPE ADJUSTMENT & CHECK TABLE

	TEST CASSETTE	RECORDER MODE	MEASURE ON	READ ON	ADJUST with	ADJUST to
ADJUST MOTOR SPEED						
NORMAL SPEED	SBC420 3150Hz	PLAY B	◇1 or ◇2 LEFT RIGHT	frequency counter	3620	3150Hz +/- 0.5%
		PLAY A			check	3150Hz -0.8/+1.8%
CHECK WOW & FLUTTER						
DECK A & B	SBC420 3150Hz	PLAY	◇1 or ◇2 LEFT RIGHT	W&F-meter	check	<0.4 % DIN
ADJUST AZIMUTH						
DECK A & B	SBC420 10kHz	PLAY FWD	◇1 or ◇2 LEFT RIGHT	mV-meter	left hand screw	max. output level & left=right
		PLAY REV #			right hand screw	
CHECK PLAYBACK FREQUENCY RESPONSE						
DECK A & B	SBC420	PLAY	◇1 or ◇2 LEFT RIGHT	mV-meter	check	limits see fig.1
ADJUST BIAS CURRENT						
DECK B	SBC419A^	RECORD	◇5 or ◇6 LEFT RIGHT	mV-meter	3773	995mV
	SBC420				check	750mV +/- 1.5dB
CHECK OVERALL FREQUENCY RESPONSE AND DISTORTION						
Inject 3mV signals 100Hz, 250Hz, 1kHz, 10kHz, 12.5kHz via ◇3 or ◇4	SBC419A^ or SBC420	RECORD B				
	RECORDED CASSETTE	PLAY B	◇1 or ◇2 LEFT RIGHT	mV-meter	check	limits see fig. 2 *
Inject 1kHz 8.85mV via ◇3 or ◇4	SBC419A^ or SBC420	RECORD B				
	RECORDED CASSETTE	PLAY B	◇1 or ◇2 LEFT RIGHT	THD-meter	check	<3% *

SBC419A^ : 4822 397 30069
SBC420 : 4822 397 30071

\# For Auto-reverse version only
* If high frequencies are not within limits, decrease bias and re-measure.
If distortion is too high, increase bias and re-meaure
^ Not applicable for Ferro version

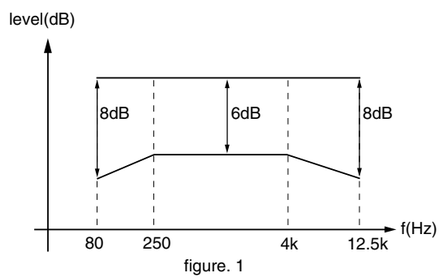


figure. 1

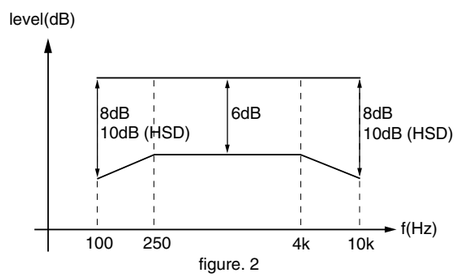
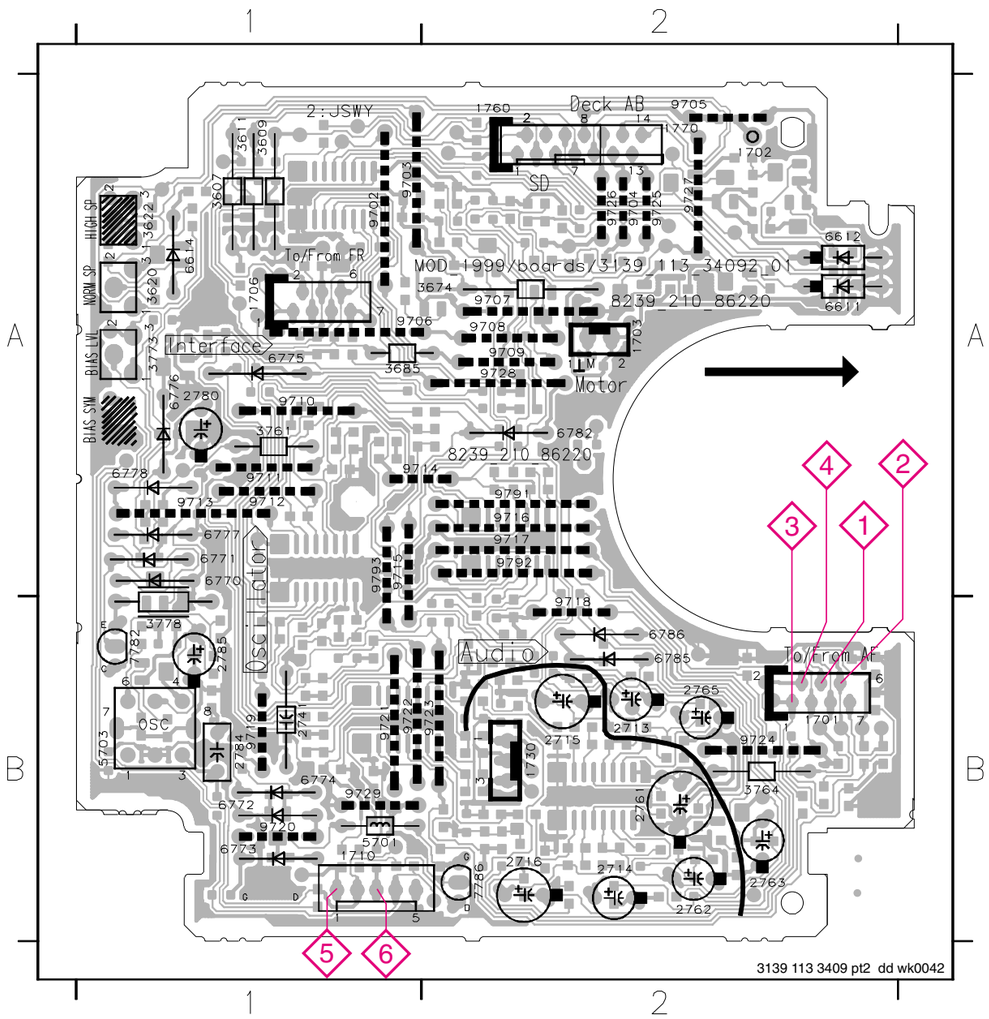


figure. 2

COMPONENT LAYOUT

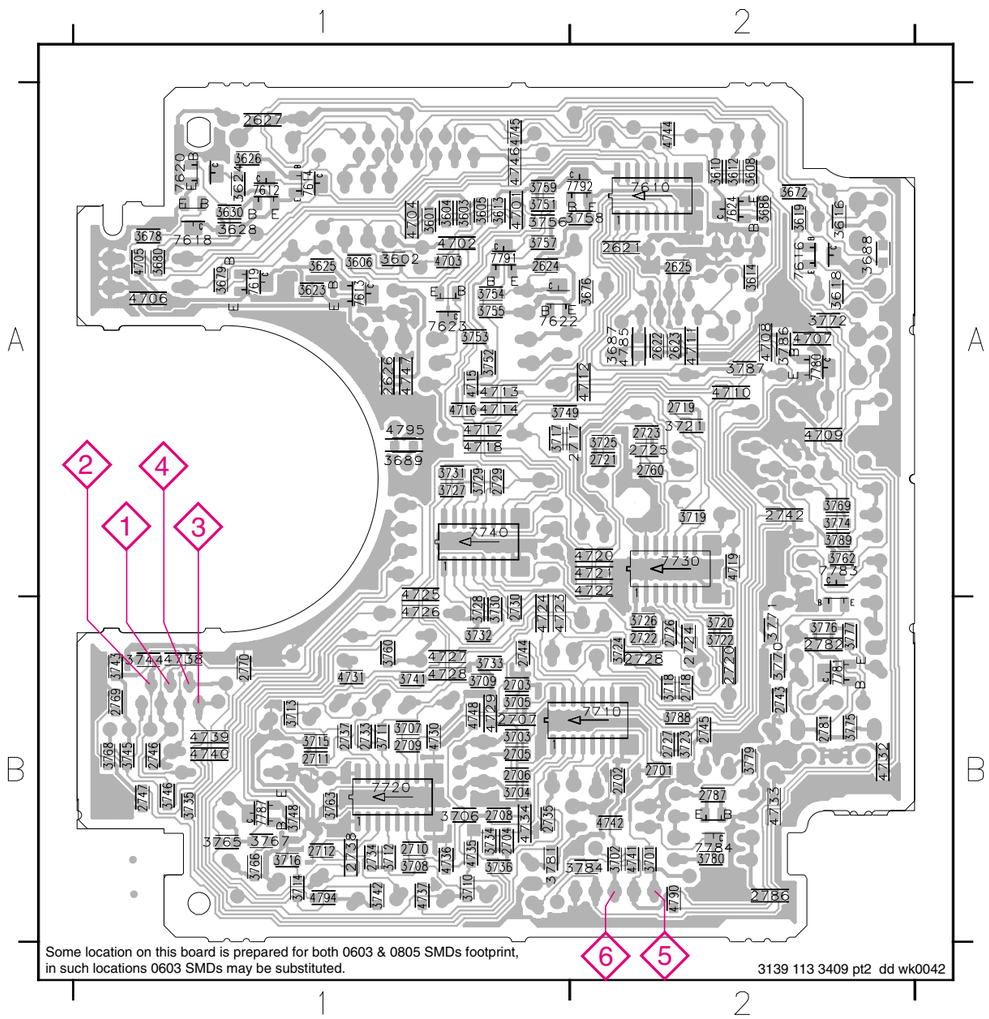
1701 B2	2714 B2	2784 B1	3761 A1	6770 A1	6782 A2	9706 A1	9715 A1	9724 B2
1702 A2	2715 B2	2785 B1	3764 B2	6771 A1	6785 B2	9707 A2	9716 A2	9725 A2
1703 A2	2716 B2	3607 A1	3773 A1	6772 B1	6786 B2	9708 A2	9717 A2	9726 A2
1706 A1	2741 B1	3609 A1	3778 B1	6773 B1	7782 B1	9709 A2	9718 B2	9727 A2
1710 B1	2761 B2	3611 A1	5701 B1	6774 B1	7786 B2	9710 A1	9719 B1	9728 A2
1730 B2	2762 B2	3620 A1	5703 B1	6775 A1	9702 A1	9711 A1	9720 B1	9729 B1
1760 A2	2763 B2	3622 A1	6611 A2	6776 A1	9703 A1	9712 A1	9721 B1	9791 A2
1770 A2	2765 B2	3674 A2	6612 A2	6777 A1	9704 A2	9713 A1	9722 B1	9792 A2
2713 B2	2780 A1	3685 A1	6614 A1	6778 A1	9705 A2	9714 A1	9723 B2	9793 A1



3139 113 3409 pt2 dd wk0042

CHIP LAYOUT

2621 A2	2724 B2	3602 A1	3688 A2	3725 A2	3757 A1	4701 A1	4727 B1	7612 A1
2622 A2	2725 A2	3603 A1	3689 A1	3726 B2	3758 A2	4702 A1	4728 B1	7613 A1
2623 A2	2726 B2	3604 A1	3701 B2	3727 A1	3759 A1	4703 A1	4729 B1	7614 A1
2624 A1	2727 B2	3605 A1	3702 B2	3728 B1	3760 B1	4704 A1	4730 B1	7616 A2
2625 A2	2728 B2	3606 A1	3703 B1	3729 A1	3762 A2	4705 A1	4731 B1	7618 A1
2626 A1	2729 A1	3608 A2	3704 B1	3730 B1	3763 B1	4706 A1	4732 B2	7619 A1
2627 A1	2730 B1	3610 A2	3705 B1	3731 A1	3765 B1	4707 A2	4733 B2	7620 A1
2701 B2	2733 B1	3612 A2	3706 B1	3732 B1	3766 B1	4708 A2	4734 B1	7622 A1
2702 B2	2734 B1	3613 A1	3707 B1	3733 B1	3767 B1	4709 A2	4735 B1	7623 A1
2703 B1	2735 B1	3614 A2	3708 B1	3734 B1	3768 B1	4710 A2	4736 B1	7624 A2
2704 B1	2737 B1	3616 A2	3709 B1	3735 B1	3769 A2	4711 A2	4737 B1	7710 B2
2705 B1	2738 B1	3618 A2	3710 B1	3736 B1	3770 B2	4712 A2	4738 B1	7720 B1
2706 B1	2742 A2	3619 A2	3711 B1	3741 B1	3771 B2	4713 A1	4739 B1	7730 A2
2707 B1	2743 B2	3623 A1	3712 B1	3742 B1	3772 A2	4714 A1	4740 B1	7740 A1
2708 B1	2744 B1	3624 A1	3713 B1	3743 B1	3774 A2	4715 A1	4741 B2	7780 A2
2709 B1	2745 B2	3625 A1	3714 B1	3744 B1	3775 B2	4716 A1	4742 B2	7781 B2
2710 B1	2746 B1	3626 A1	3715 B1	3745 B1	3776 B2	4717 A1	4744 A2	7783 A2
2711 B1	2747 B1	3628 A1	3716 B1	3746 B1	3777 B2	4718 A1	4745 A1	7784 B2
2712 B1	2760 A2	3630 A1	3717 A1	3748 B1	3779 B2	4719 A2	4746 A1	7787 B1
2717 A2	2769 B1	3672 A2	3718 B2	3749 A1	3780 B2	4720 A2	4747 A1	7791 A1
2718 B2	2770 B1	3676 A2	3719 A2	3751 A1	3781 B1	4721 A2	4748 B1	7792 A2
2719 A2	2781 B2	3678 A1	3720 B2	3752 A1	3784 B2	4722 A2	4785 A2	
2720 B2	2782 B2	3679 A1	3721 A2	3753 A1	3786 A2	4723 B1	4790 B2	
2721 A2	2786 B2	3680 A1	3722 B2	3754 A1	3787 A2	4724 B1	4794 B1	
2722 B2	2787 B2	3686 A2	3723 B2	3755 A1	3788 B2	4725 A1	4795 A1	
2723 A2	3601 A1	3687 A2	3724 B2	3756 A1	3789 A2	4726 B1	7610 A2	



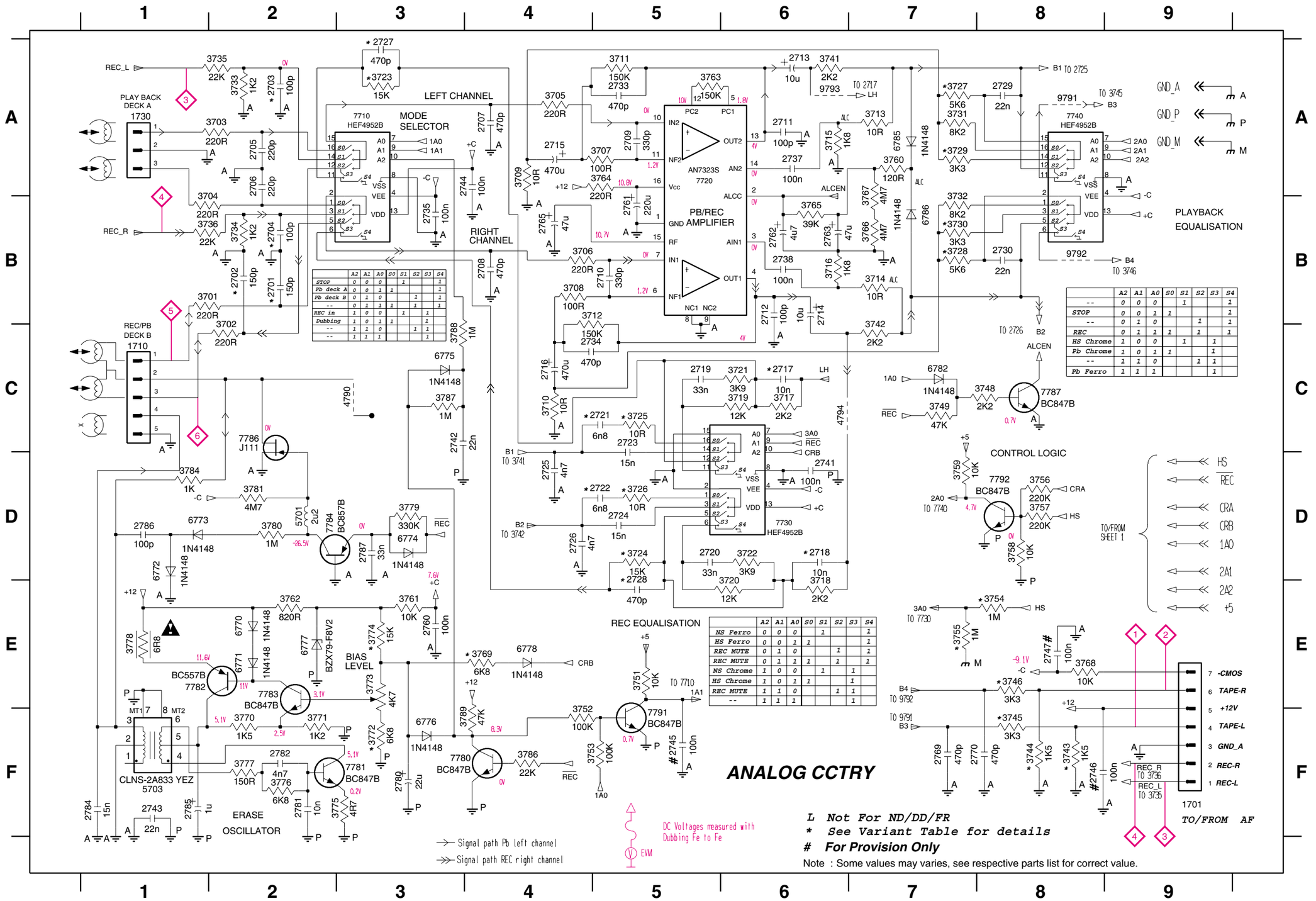
Some location on this board is prepared for both 0603 & 0805 SMDs footprint, in such locations 0603 SMDs may be substituted.

3139 113 3409 pt2 dd wk0042

9-7

ANALOG CIRCUIT

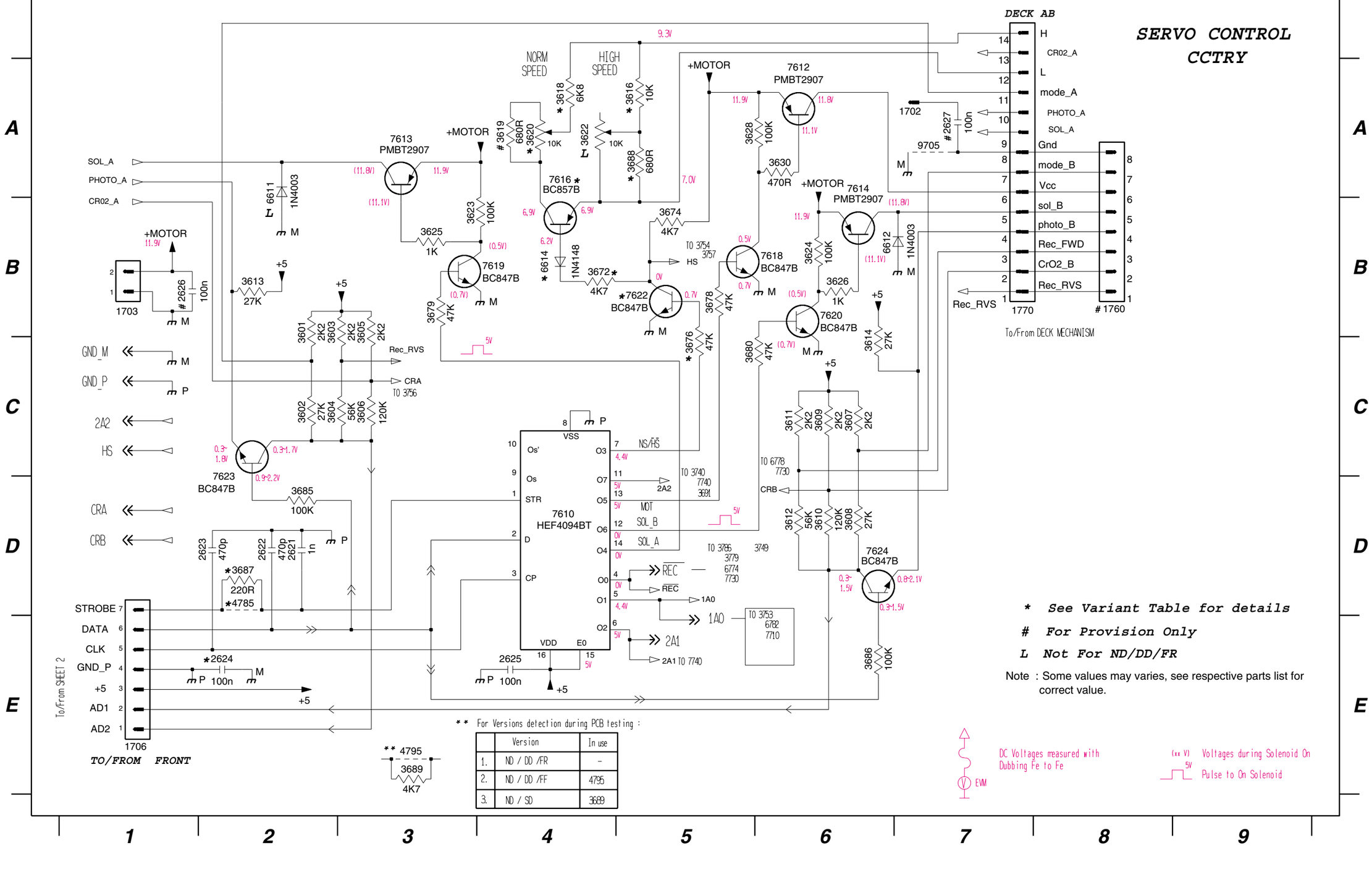
1701 F9	2705 A2	2712 B6	2719 C5	2726 D4	2735 B3	2745 F5	2765 B4	2785 F1	3705 A4	3712 B4	3719 C6	3726 D5	3733 A2	3744 F8	3753 F5	3760 A7	3767 A7	3774 E3	3781 D2	4794 C6	6774 D3	6786 B7	7782 E1	9791 A8
1710 C1	2706 A2	2713 A6	2720 D5	2727 A3	2737 A6	2746 F8	2769 F7	2786 D1	3706 B4	3713 A7	3720 E6	3727 A7	3734 B2	3745 F8	3754 E8	3761 E3	3768 E8	3775 F3	3784 D1	5701 D2	6775 C3	7710 A3	7783 E2	9792 B8
1730 A1	2707 A4	2714 B6	2721 C5	2728 E5	2738 B6	2747 E8	2770 F8	2787 D3	3707 A5	3714 B7	3721 C6	3728 B7	3735 A2	3746 E8	3755 E7	3762 E2	3769 E4	3776 F2	3786 F4	5703 F1	6776 F3	7720 A5	7784 D2	9793 A6
2701 B2	2708 B4	2715 A4	2722 D5	2729 A8	2741 D6	2760 E3	2780 F3	3701 B1	3708 B4	3715 A6	3722 D6	3729 A7	3736 B1	3748 C8	3756 D8	3763 A5	3770 F2	3777 F2	3787 C3	6770 E2	6777 E2	7730 D6	7786 C2	
2702 B2	2709 A5	2716 C4	2723 C5	2730 B8	2742 C3	2761 B5	2781 F2	3702 C2	3709 A4	3716 B6	3723 A3	3730 B7	3741 A6	3749 C7	3757 D8	3764 A5	3771 F2	3778 E1	3788 C3	6771 E2	6778 E4	7740 A8	7787 C8	
2703 A2	2710 B5	2717 C6	2724 D5	2733 A5	2743 F1	2762 B6	2782 F2	3703 A2	3710 C4	3717 C6	3724 D5	3731 A7	3742 C7	3751 E5	3758 D8	3765 B6	3772 F3	3779 D3	3789 F4	6772 D1	6782 C7	7780 F4	7791 F5	
2704 B2	2711 A6	2718 D6	2725 D4	2734 C4	2744 A4	2763 B6	2784 F1	3704 B1	3711 A5	3718 E6	3725 C5	3732 B7	3743 F8	3752 F4	3759 D7	3766 B7	3773 E3	3780 D2	4790 C3	6773 D1	6785 A7	7781 F3	7792 D8	



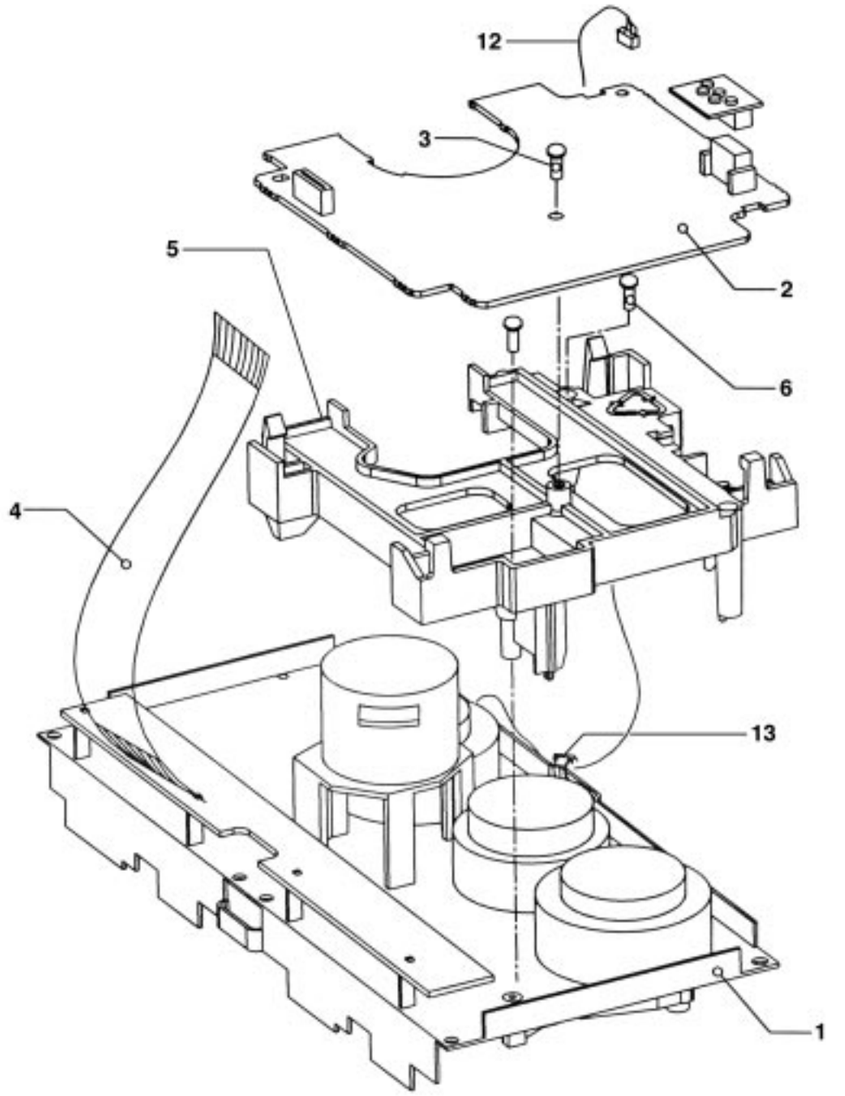
9-8

SERVO CONTROL CIRCUIT

1702 A7 1760 B8 2622 D2 2625 E4 3601 B2 3604 C2 3607 C6 3610 D6 3613 B2 3618 A4 3622 A4 3625 B3 3630 A6 3676 C5 3680 C5 3687 D2 4785 D2 6612 B6 7612 A6 7616 A4 7620 B6 7624 D6
1703 B1 1770 B7 2623 D2 2626 B1 3602 C2 3605 B3 3608 D6 3611 C6 3614 C6 3619 A4 3623 B3 3626 B6 3672 B4 3678 B5 3685 D2 3688 A5 4795 E3 6611 A2 6614 B4 7610 D4 7614 A6 7618 B4 7622 B5 9705 A7
1706 E1 2621 D2 2624 E2 2627 A7 3603 B2 3606 C3 3609 C6 3612 D6 3616 A5 3620 A4 3624 B6 3628 A5 3674 B5 3679 B3 3686 E6 3689 E3 6611 A2 7610 D4 7613 A6 7619 B4 7623 D2



	Version	In use
1.	ND / DD /FR	-
2.	ND / DD /FF	4795
3.	ND / SD	3689



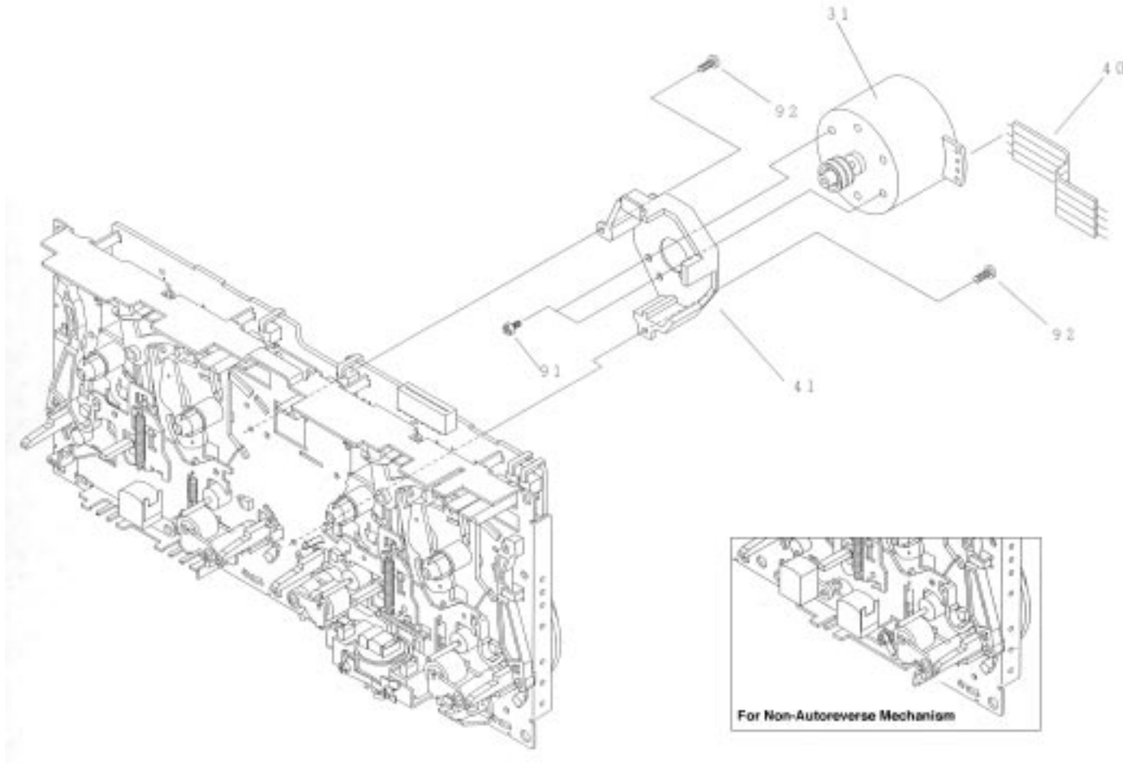
3139 118 77070 (Incl. ...77080) dd wk926

TAPE MODULE EXPLODED VIEW

1	3139 118 77130	Autoreverse Mech. CWE44FR01
1	3139 118 77140	Non-Autoreverse Mech. CWE44FF02 Chrome/Ferro
1	3139 118 77950	Non-Autoreverse Mech. CWE44FF05 Ferro
3	-	Screw D3 x 10
6	-	Screw M2 x 16
7	3139 110 34080	Flex Cable 14 pin 7,5 cm

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

9-9



TAPE MECHANISM - MOTOR EXPLODED VIEW

31	4822 361 11055	Motor Assembly
91	-	Screw M2,6 x 5
92	-	Screw M2 x 5

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

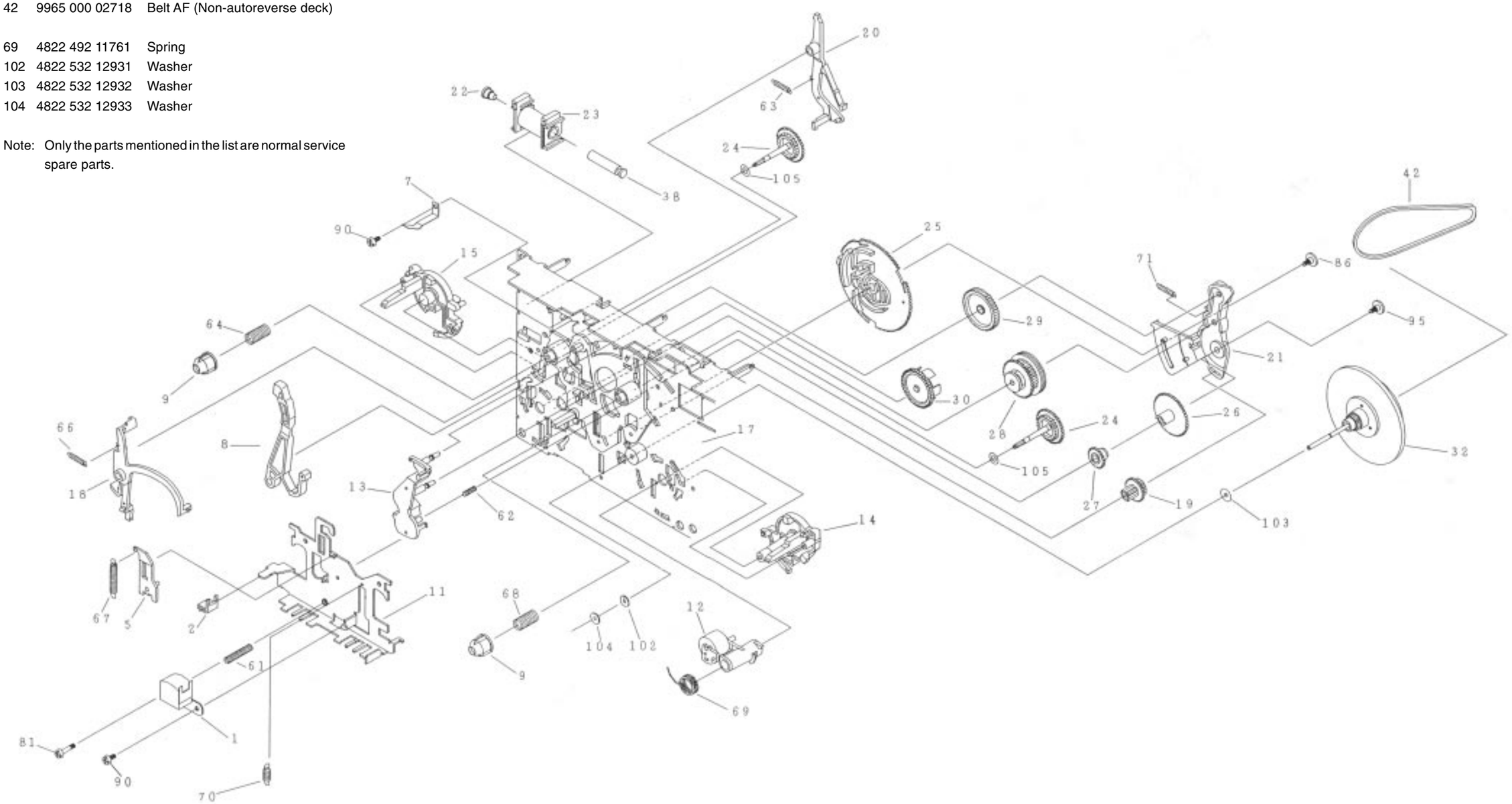
9-10

TAPE MECHANISM A - PLAY

MECHANICAL PARTS - PLAY MECHANISM

1	9965 000 02313	Play Head (Non-Autoreverse deck)
1	9965 000 02321	Play Head (Autoreverse deck)
12	4822 402 10972	Pinch Arm Assembly R
23	9965 000 02314	Coil Assembly
25	9965 000 06443	Cam Gear
32	4822 528 11209	Flywheel Assembly RV
42	9965 000 02315	Belt AF (Autoreverse deck)
42	9965 000 02718	Belt AF (Non-autoreverse deck)
69	4822 492 11761	Spring
102	4822 532 12931	Washer
103	4822 532 12932	Washer
104	4822 532 12933	Washer

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



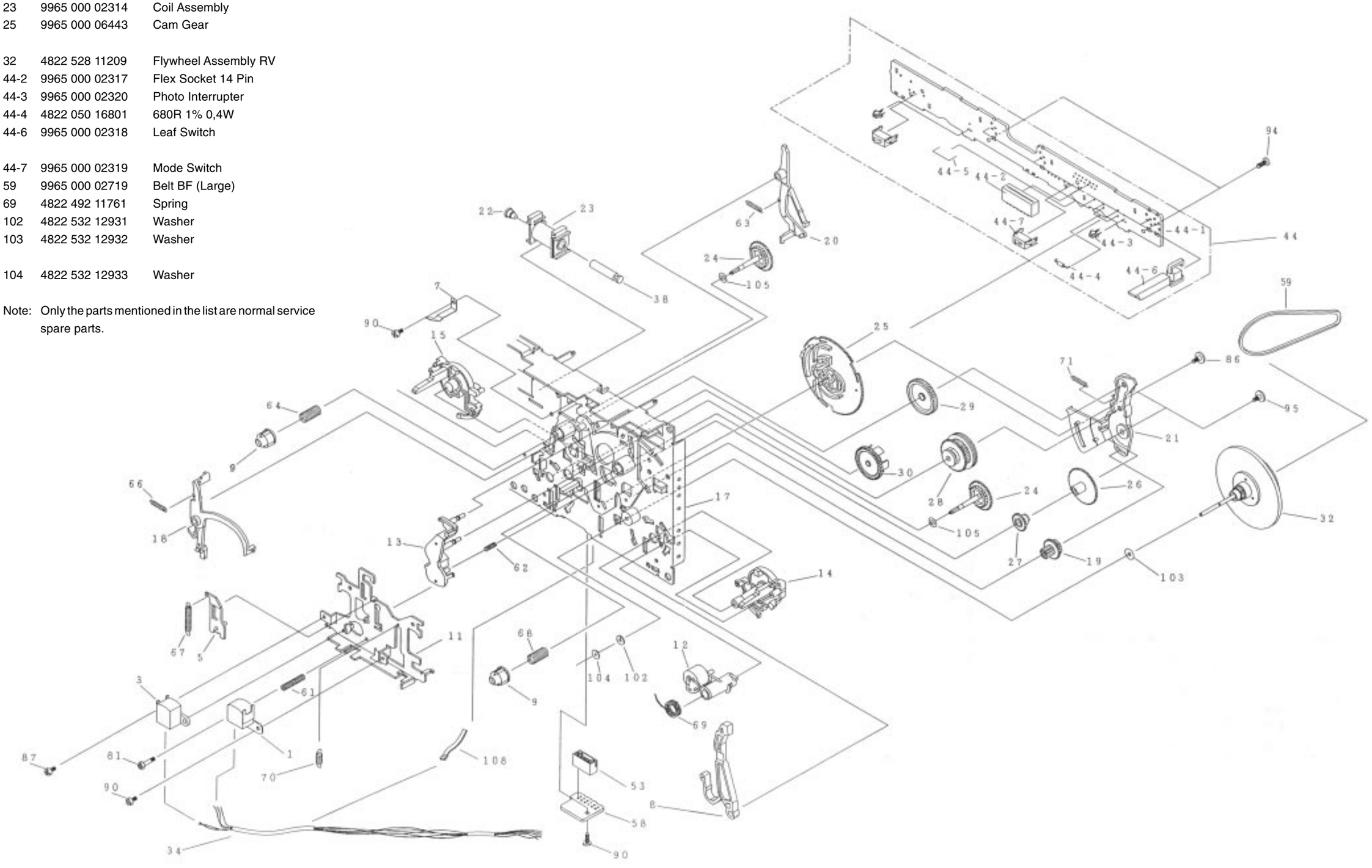
9-11

TAPE MECHANISM B - RECORD/PLAYBACK *(Non-Autoreverse version)*

MECHANICAL PARTS - REC/PB MECHANISM

1	9965 000 02313	Play Head
3	9965 000 02600	Head, Erase
12	4822 402 10972	Pinch Arm Assembly R
23	9965 000 02314	Coil Assembly
25	9965 000 06443	Cam Gear
32	4822 528 11209	Flywheel Assembly RV
44-2	9965 000 02317	Flex Socket 14 Pin
44-3	9965 000 02320	Photo Interrupter
44-4	4822 050 16801	680R 1% 0,4W
44-6	9965 000 02318	Leaf Switch
44-7	9965 000 02319	Mode Switch
59	9965 000 02719	Belt BF (Large)
69	4822 492 11761	Spring
102	4822 532 12931	Washer
103	4822 532 12932	Washer
104	4822 532 12933	Washer

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



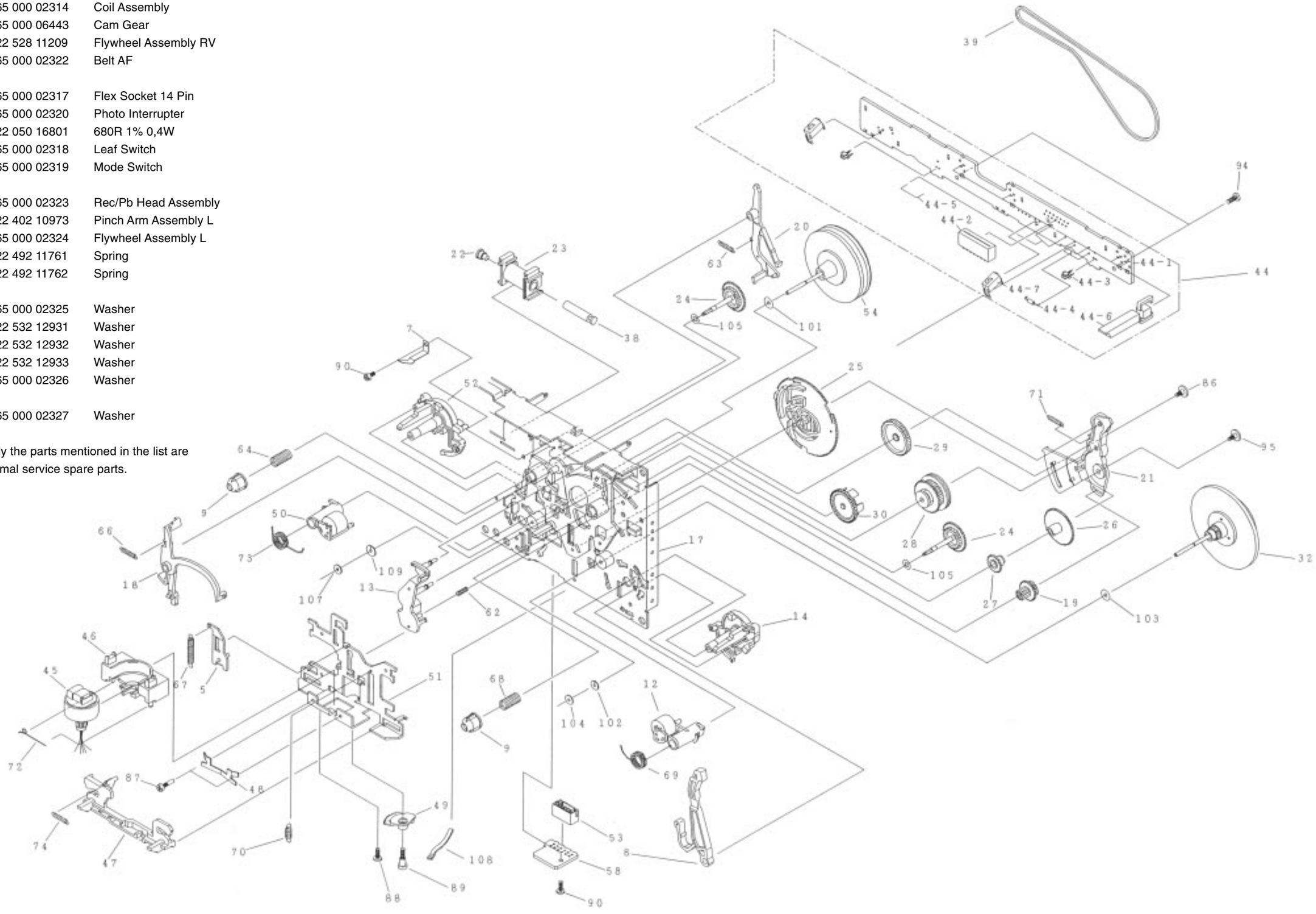
9-12

TAPE MECHANISM B - RECORD/PLAYBACK *(Autoreverse version)*

MECHANICAL PARTS - REC/PB MECHANISM

12	4822 402 10972	Pinch Arm Assembly R
23	9965 000 02314	Coil Assembly
25	9965 000 06443	Cam Gear
32	4822 528 11209	Flywheel Assembly RV
39	9965 000 02322	Belt AF
44-2	9965 000 02317	Flex Socket 14 Pin
44-3	9965 000 02320	Photo Interrupter
44-4	4822 050 16801	680R 1% 0,4W
44-6	9965 000 02318	Leaf Switch
44-7	9965 000 02319	Mode Switch
45	9965 000 02323	Rec/Pb Head Assembly
50	4822 402 10973	Pinch Arm Assembly L
54	9965 000 02324	Flywheel Assembly L
69	4822 492 11761	Spring
73	4822 492 11762	Spring
101	9965 000 02325	Washer
102	4822 532 12931	Washer
103	4822 532 12932	Washer
104	4822 532 12933	Washer
107	9965 000 02326	Washer
109	9965 000 02327	Washer

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



9-13

ELECTRICAL PARTS LIST - ETF7 NON-DOLBY BOARD

ELECTRICAL PARTS LIST - ETF7 NON-DOLBY BOARD

MISCELLANEOUS

1701	482226710953	Flex Socket 7pin Vert.
1706	482226710953	Flex Socket 7pin Vert.
1770	482226751255	Flex Socket 14pin Vert.

CAPACITORS

2621	532212231647	1nF 10% 63V
2622	532212234099	470pF 10% 63V
2623	532212234099	470pF 10% 63V
2624	482212614585	100nF 10% 50V only for Ferro
2625	482212614585	100nF 10% 50V
2701	532212233538	150pF 2% 63V Autoreverse
2701	482212233216	270pF 5% 63V Non-autoreverse
2702	532212233538	150pF 2% 63V Autoreverse
2702	482212233216	270pF 5% 63V Non-autoreverse
2703	532212232531	100pF 5% 50V Autoreverse
2703	482212233575	220pF 5% 63V Non-autoreverse
2704	532212232531	100pF 5% 50V Autoreverse
2704	482212233575	220pF 5% 63V Non-autoreverse
2705	482212233575	220pF 5% 63V
2706	482212233575	220pF 5% 63V
2707	532212234099	470pF 10% 63V
2708	532212234099	470pF 10% 63V
2709	532212231863	330pF 5% 63V
2710	532212231863	330pF 5% 63V
2711	532212232531	100pF 5% 50V
2712	532212232531	100pF 5% 50V
2713	482212440248	10µF 20% 63V
2714	482212440248	10µF 20% 63V
2715	482212480195	470µF 20% 10V
2716	482212480195	470µF 20% 10V
2717	482212233177	10nF 20% 50V Autoreverse
2717	482212613188	15nF 5% 63V Non-autoreverse
2718	482212233177	10nF 20% 50V Autoreverse
2718	482212613188	15nF 5% 63V Non-autoreverse
2719	482212612105	33nF 5% 50V
2720	482212612105	33nF 5% 50V
2721	532212231866	6,8nF 10% 63V not for Ferro
2722	532212231866	6,8nF 10% 63V not for Ferro
2723	482212613188	15nF 5% 63V
2724	482212613188	15nF 5% 63V
2725	532212610223	4,7nF 10% 63V
2726	532212610223	4,7nF 10% 63V
2727	532212234099	470pF 10% 63V Autoreverse
2727	532212231647	1nF 10% 63V Non-autoreverse
2728	532212234099	470pF 10% 63V Autoreverse
2728	532212231647	1nF 10% 63V Non-autoreverse
2729	532212232654	22nF 10% 63V
2730	532212232654	22nF 10% 63V
2733	532212234099	470pF 10% 63V
2734	532212234099	470pF 10% 63V
2735	482212614585	100nF 10% 50V
2737	482212614585	100nF 10% 50V
2738	482212614585	100nF 10% 50V
2741	482212611585	22nF +80/-20% 25V
2742	532212232654	22nF 10% 63V
2743	532212232654	22nF 10% 63V
2744	482212614585	100nF 10% 50V
2760	482212614585	100nF 10% 50V
2761	482212480144	220µF 20% 25V
2762	482212440769	4,7µF 20% 100V
2763	482212440433	47µF 20% 25V
2765	482212440433	47µF 20% 25V
2769	532212234099	470pF 10% 63V
2770	532212234099	470pF 10% 63V
2780	482212481151	22µF 20% 50V
2781	482212233177	10nF 20% 50V
2782	532212610223	4,7nF 10% 63V
2784	482212151305	15nF 10% 50V
2785	482212421913	1µF 20% 63V
2786	532212232531	100pF 5% 50V
2787	482212612105	33nF 5% 50V

RESISTORS

3601	482211711449	2k2 1% 0,1W
3602	482205120273	27k 5% 0,1W
3603	482211711449	2k2 1% 0,1W
3604	482211711148	56k 1% 0,1W
3605	482211711449	2k2 1% 0,1W
3606	482205120124	120k 5% 0,1W
3607	482211652256	2k2 5% 0,5W
3608	482205120273	27k 5% 0,1W
3609	482211652256	2k2 5% 0,5W
3610	482205120124	120k 5% 0,1W
3611	482211652256	2k2 5% 0,5W
3612	482211711148	56k 1% 0,1W
3613	482205120273	27k 5% 0,1W
3614	482205120273	27k 5% 0,1W
3616	482211710833	10k 1% 0,1W Autoreverse
3616	482205110102	1k 2% 0,25W Non-autoreverse
3618	482211711507	6k8 1% 0,1W Autoreverse
3620	482210011141	Trim. 10k 30% Autoreverse
3622	482210011141	Trim. 10k 30% Non-autoreverse
3623	482211710837	100k 1% 0,1W
3624	482211710837	100k 1% 0,1W
3625	482205110102	1k 2% 0,25W
3626	482205110102	1k 2% 0,25W
3628	482211710837	100k 1% 0,1W
3630	482205120471	470R 5% 0,1W
3672	482205120472	4k7 5% 0,1W Autoreverse
3674	482211652283	4k7 5% 0,5W
3676	482211710834	47k 1% 0,1W Autoreverse
3678	482211710834	47k 1% 0,1W
3679	482211710834	47k 1% 0,1W
3680	482211710834	47k 1% 0,1W
3685	482211652234	100k 5% 0,5W
3686	482211710837	100k 1% 0,1W
3687	482211711503	220R 1% 0,1W not for Ferro
3688	482211710361	680R 1% 0,1W Autoreverse
3701	482211711503	220R 1% 0,1W
3702	482211711503	220R 1% 0,1W
3703	482211711503	220R 1% 0,1W
3704	482211711503	220R 1% 0,1W
3705	482211711503	220R 1% 0,1W
3706	482211711503	220R 1% 0,1W
3707	482205120101	100R 5% 0,1W
3708	482205120101	100R 5% 0,1W
3709	482205120109	10R 5% 0,1W
3710	482205120109	10R 5% 0,1W
3711	482205120154	150k 5% 0,1W
3712	482205120154	150k 5% 0,1W
3713	482205120109	10R 5% 0,1W
3714	482205120109	10R 5% 0,1W
3715	482205120182	1k8 5% 0,1W
3716	482205120182	1k8 5% 0,1W
3717	482211711449	2k2 1% 0,1W
3718	482211711449	2k2 1% 0,1W
3719	482211711383	12k 1% 0,1W
3720	482211711383	12k 1% 0,1W
3721	482205120392	3k9 5% 0,1W
3722	482205120392	3k9 5% 0,1W
3723	482211683933	15k 1% 0,1W Autoreverse
3723	482211710965	18k 1% 0,1W Non-autoreverse
3724	482211683933	15k 1% 0,1W Autoreverse
3724	482211710965	18k 1% 0,1W Non-autoreverse
3725	482205120109	10R 5% 0,1W not for Ferro
3726	482205120109	10R 5% 0,1W not for Ferro
3727	482205120562	5k6 5% 0,1W Autoreverse
3727	482211711507	6k8 1% 0,1W Non-autoreverse
3728	482205120562	5k6 5% 0,1W Autoreverse
3728	482211711507	6k8 1% 0,1W Non-autoreverse
3729	482205120332	3k3 5% 0,1W Autoreverse
3729	482205120472	4k7 5% 0,1W Non-autoreverse
3730	482205120332	3k3 5% 0,1W Autoreverse
3730	482205120472	4k7 5% 0,1W Non-autoreverse
3731	482205120822	8k2 5% 0,1W
3732	482205120822	8k2 5% 0,1W
3733	482205120122	1k2 5% 0,1W
3734	482205120122	1k2 5% 0,1W
3735	482205120223	22k 5% 0,1W
3736	482205120223	22k 5% 0,1W
3741	482211711449	2k2 1% 0,1W
3742	482211711449	2k2 1% 0,1W
3743	482211711139	1k5 1% 0,1W Autoreverse
3743	482211711449	2k2 1% 0,1W Non-autoreverse
3744	482211711139	1k5 1% 0,1W Autoreverse
3744	482211711449	2k2 1% 0,1W Non-autoreverse
3745	482205120332	3k3 5% 0,1W Autoreverse
3745	482205120562	5k6 5% 0,1W Non-autoreverse
3746	482205120332	3k3 5% 0,1W Autoreverse
3746	482205120562	5k6 5% 0,1W Non-autoreverse
3748	482211711449	2k2 1% 0,1W
3749	482211710834	47k 1% 0,1W
3751	482211710833	10k 1% 0,1W
3752	482211710837	100k 1% 0,1W
3753	482211710837	100k 1% 0,1W
3754	482205120105	1M 5% 0,1W Autoreverse
3754	482205120479	47R 5% 0,1W Non-autoreverse
3755	482205120105	1M 5% 0,1W Autoreverse
3755	482205120479	47R 5% 0,1W Non-autoreverse
3756	482211713579	220k 1% 0,1W
3757	482211713579	220k 1% 0,1W
3758	482211710833	10k 1% 0,1W
3759	482211710833	10k 1% 0,1W
3760	482205120121	120R 5% 0,1W
3761	482205021003	10k 1% 0,6W
3762	482211711454	820R 1% 0,1W
3763	482205120154	150k 5% 0,1W
3764	482211683872	220R 5% 0,5W
3765	482205120393	39k 5% 0,1W
3766	482205120475	4M7 5% 0,1W
3767	482205120475	4M7 5% 0,1W
3768	482211710833	10k 1% 0,1W
3769	482211711383	12k 1% 0,1W Autoreverse
3769	482205120822	8k2 5% 0,1W Non-autoreverse
3770	482211711139	1k5 1% 0,1W
3771	482205120122	1k2 5% 0,1W
3772	482211711507	6k8 1% 0,1W Autoreverse
3772	482205120562	5k6 5% 0,1W Non-autoreverse
3773	482210012227	Trimmer 4k7 30% 0,1W
3774	482211683933	15k 1% 0,1W Autoreverse
3774	482205120822	8k2 5% 0,1W Non-autoreverse
3775	482205120478	4R7 5% 0,1W
3776	482211711507	6k8 1% 0,1W
3777	482211710353	150R 1% 0,1W
3778	482205210688	⚠ 6R8 5% 0,33W
3779	482205120334	330k 5% 0,1W
3780	482205120105	1M 5% 0,1W
3781	482205120475	4M7 5% 0,1W
3784	482205110102	1k 2% 0,25W
3786	482205120223	22k 5% 0,1W
3787	482205120105	1M 5% 0,1W
3788	482205120105	1M 5% 0,1W
3789	482211710834	47k 1% 0,1W
4701	482205120008	0R Jumper 0805
4702	482205120008	0R Jumper 0805
4703	482205120008	0R Jumper 0805
4704	482205120008	0R Jumper 0805
4705	482205120008	0R Jumper 0805

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ELECTRICAL PARTS LIST - ETF7 NON-DOLBY BOARD

RESISTORS

4706	482205120008	0R Jumper 0805	
4707	482205120008	0R Jumper 0805	
4708	482205120008	0R Jumper 0805	
4709	482205120008	0R Jumper 0805	
4710	482205120008	0R Jumper 0805	
4711	482205120008	0R Jumper 0805	
4712	482205120008	0R Jumper 0805	
4713	482205120008	0R Jumper 0805	
4714	482205120008	0R Jumper 0805	
4715	482205120008	0R Jumper 0805	
4716	482205120008	0R Jumper 0805	
4717	482205120008	0R Jumper 0805	
4718	482205120008	0R Jumper 0805	
4719	482205120008	0R Jumper 0805	
4720	482205120008	0R Jumper 0805	
4721	482205120008	0R Jumper 0805	
4722	482205120008	0R Jumper 0805	
4723	482205120008	0R Jumper 0805	
4724	482205120008	0R Jumper 0805	
4725	482205120008	0R Jumper 0805	
4726	482205120008	0R Jumper 0805	
4727	482205120008	0R Jumper 0805	
4728	482205120008	0R Jumper 0805	
4729	482205120008	0R Jumper 0805	
4730	482205120008	0R Jumper 0805	
4731	482205120008	0R Jumper 0805	
4732	482205120008	0R Jumper 0805	
4733	482205120008	0R Jumper 0805	
4734	482205120008	0R Jumper 0805	
4735	482205120008	0R Jumper 0805	
4736	482205120008	0R Jumper 0805	
4737	482205120008	0R Jumper 0805	
4738	482205120008	0R Jumper 0805	
4739	482205120008	0R Jumper 0805	
4740	482205120008	0R Jumper 0805	
4741	482205120008	0R Jumper 0805	
4742	482205120008	0R Jumper 0805	
4744	482205120008	0R Jumper 0805	
4745	482205120008	0R Jumper 0805	
4746	482205120008	0R Jumper 0805	
4748	482205120008	0R Jumper 0805	
4785	482205120008	0R Jumper 0805	only for Ferro
4790	482205120008	0R Jumper 0805	
4794	482205120008	0R Jumper 0805	
4795	482205120008	0R Jumper 0805	

COILS & FILTERS

5701	482215711477	Coil 2,2µH 5%
5703	482215620946	Osc Coil 100kHz

DIODES

6611	482213031878	1N4003G
6612	482213031878	1N4003G
6614	482213030621	1N4148 Autoreverse
6770	482213030621	1N4148
6771	482213030621	1N4148
6772	482213030621	1N4148
6773	482213030621	1N4148
6774	482213030621	1N4148
6775	482213030621	1N4148
6776	482213030621	1N4148
6777	482213034382	BZX79-F8V2
6778	482213030621	1N4148
6782	482213030621	1N4148
6785	482213030621	1N4148
6786	482213030621	1N4148

TRANSISTORS & INTEGRATED CIRCUITS

7610	532220911306	HEF4094BT	
7612	482213011201	PMBT2907	
7613	482213011201	PMBT2907	
7614	482213011201	PMBT2907	
7616	482213060373	BC857B	Autoreverse
7618	482213060511	BC847B	
7619	482213060511	BC847B	
7620	482213060511	BC847B	
7622	482213060511	BC847B	Autoreverse
7623	482213060511	BC847B	
7624	482213060511	BC847B	
7710	482220932919	HEF4952BT	
7720	932214000668	AN7323S	
7730	482220932919	HEF4952BT	
7740	482220932919	HEF4952BT	
7780	482213060511	BC847B	
7781	482213042804	BC817-25	
7782	482213044568	BC557B	
7783	482213060511	BC847B	
7784	482213060373	BC857B	
7786	482213063494	J111	
7787	482213060511	BC847B	
7791	482213060511	BC847B	
7792	482213060511	BC847B	

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

3CDC-LC-VCD

(3 Disc Carousel Changer)

Layout stage .2

TABLE OF CONTENTS

Service hints

CAUTION

CHARGED CAPACITORS ON THE SERVO BOARD MAY DAMAGE THE CD DRIVE ELECTRONICS WHEN CONNECTING A NEW CD MECHANISM. THAT´S WHY, BESIDES THE SAFETY MEASURES LIKE
• SWITCH OFF POWER SUPPLY
• ESD PROTECTION
ADDITIONAL ACTIONS MUST BE TAKEN BY THE REPAIR TECHNICIAN.

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

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

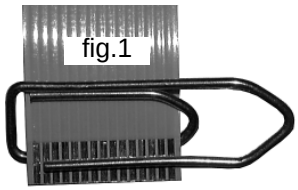
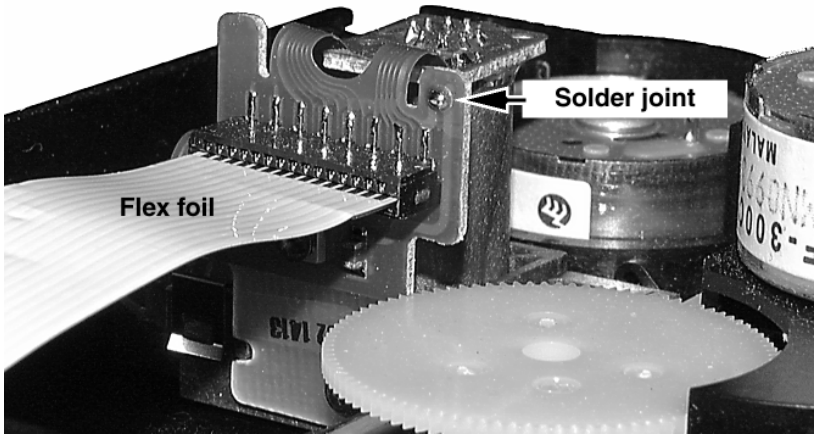


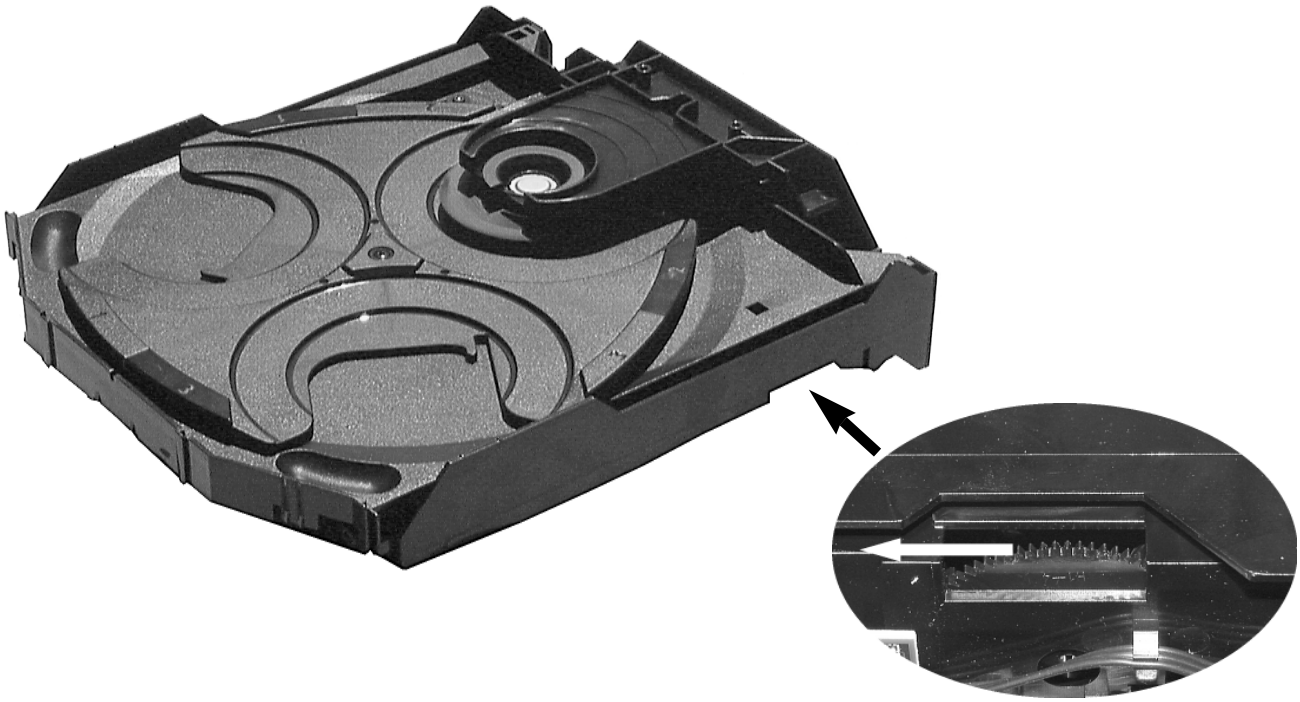
fig.1

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



Emergency open

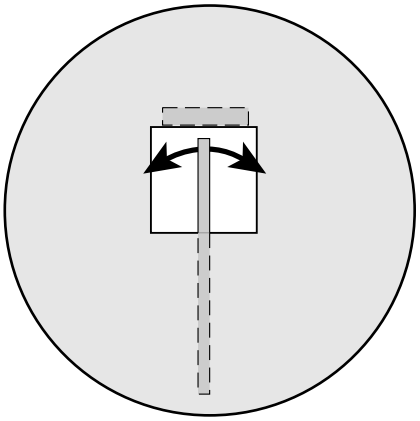
In case of a Supply fault, the tray can be opened manually.
1. Remove the top cover of the set to get access to the Changer Module.
2. Turn gearwheel clockwise (as shown in picture below).



Service hints

Dismantling of Tray

1. Open the tray.
2. Release 2x catch as shown in fig. 2 and Detail A
3. Pull tray out.



Detail A

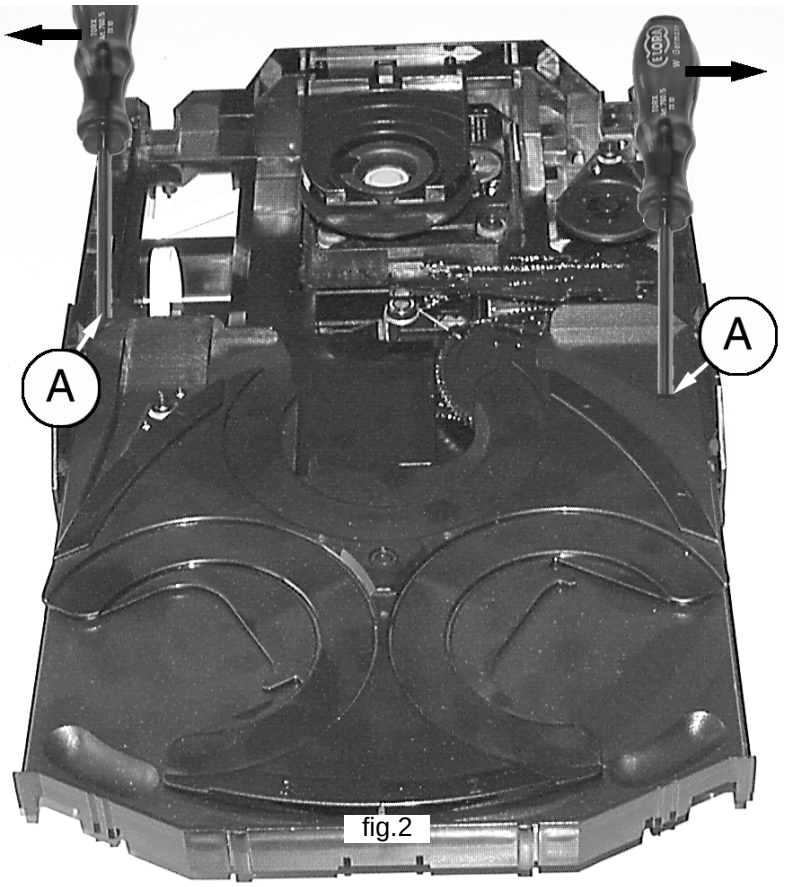
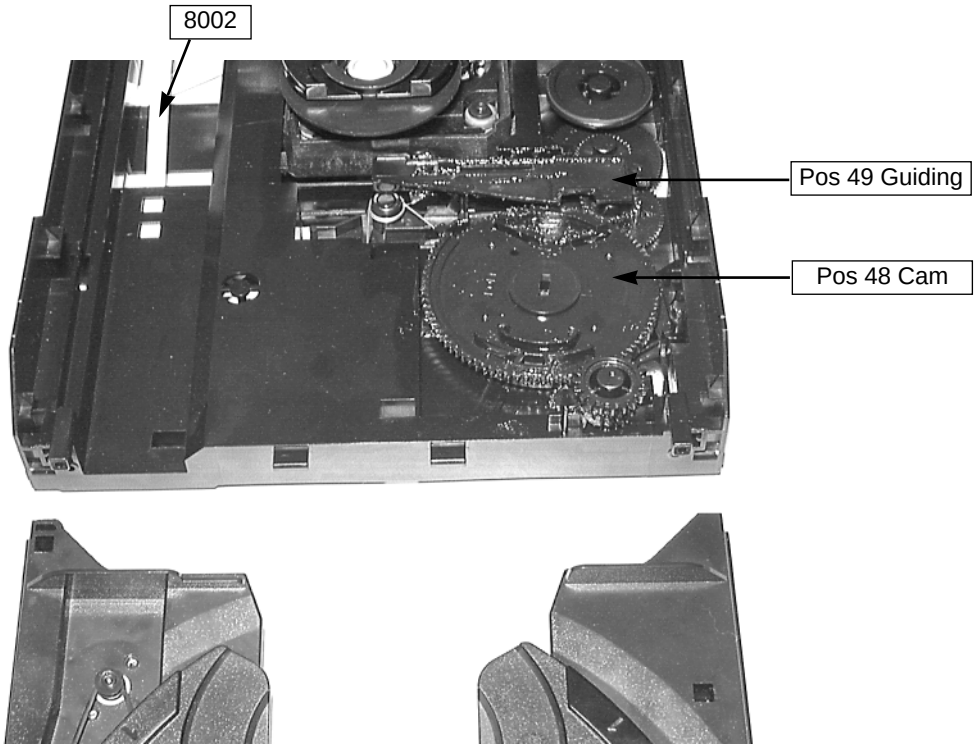


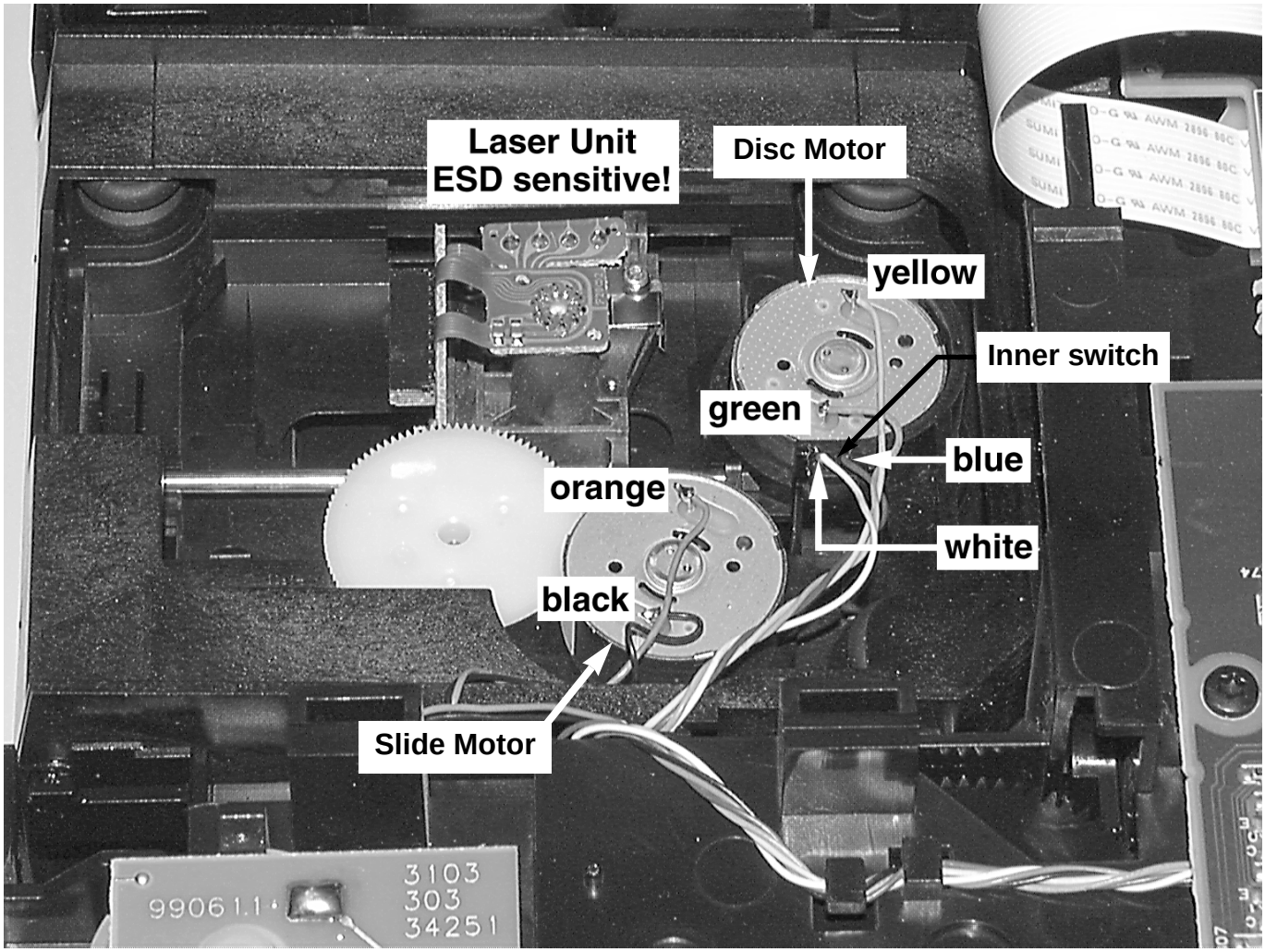
fig.2

Assembling of Tray

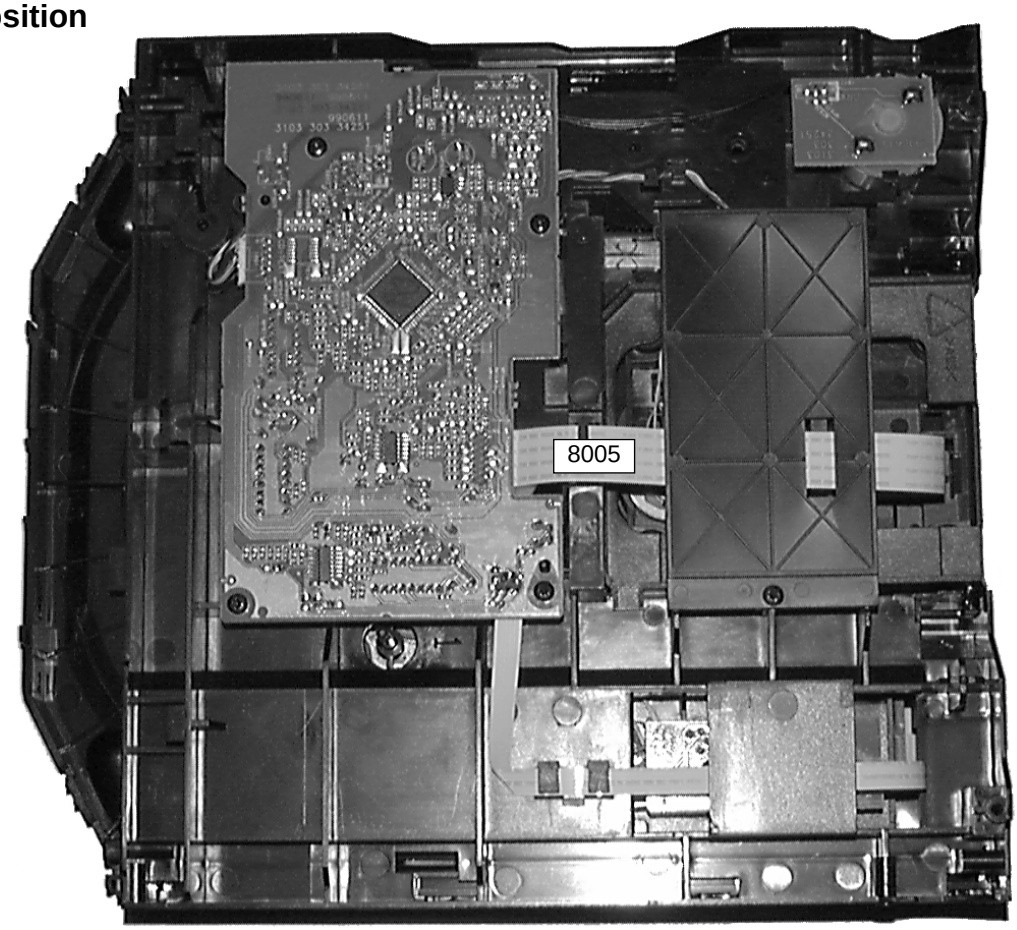
1. Turn Cam (pos. 48) clockwise to end position.
2. If necessary - move Guiding (pos. 49) to the right end position.
3. Insert the Tray.



Wiring



Service Position



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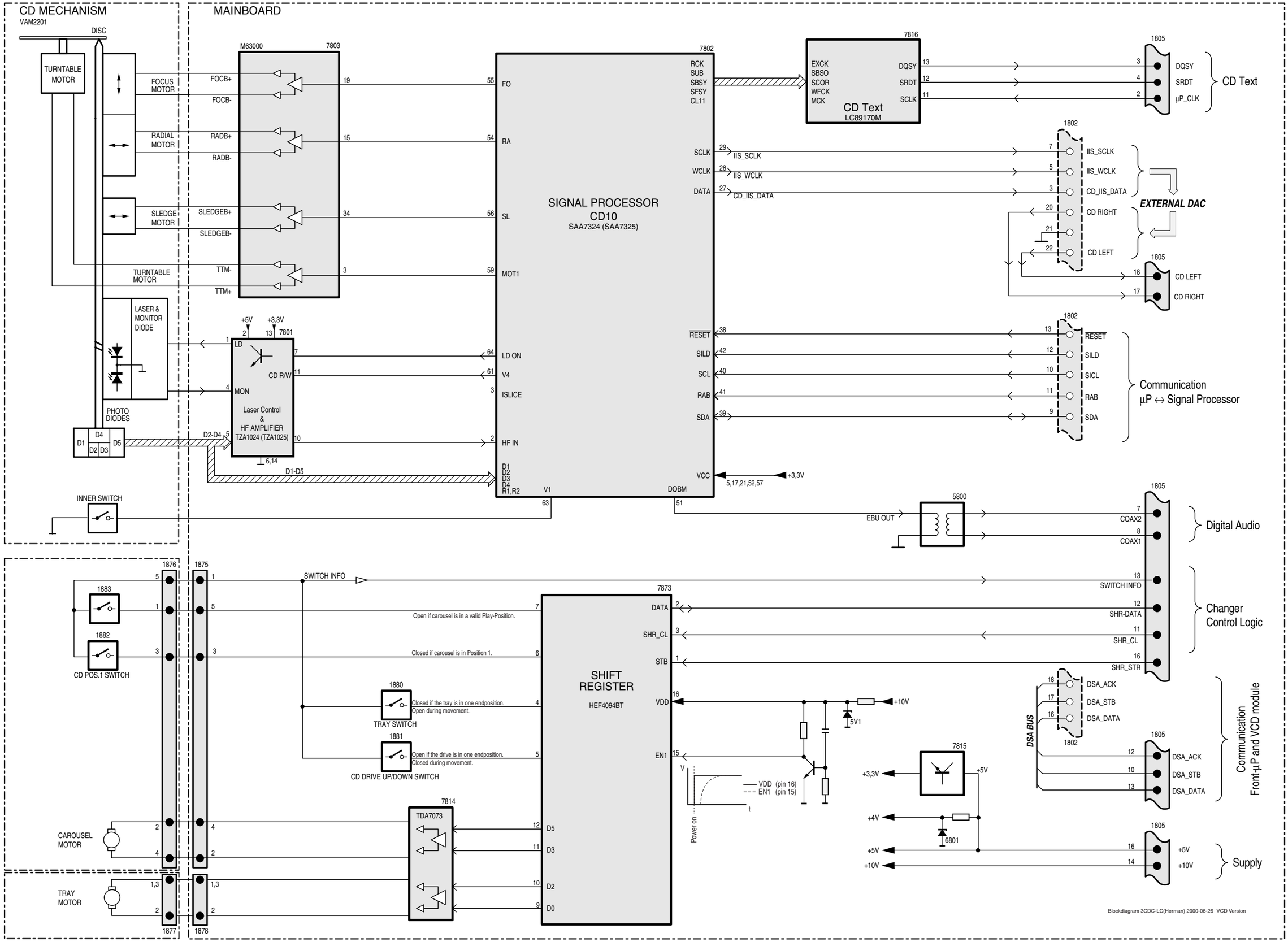
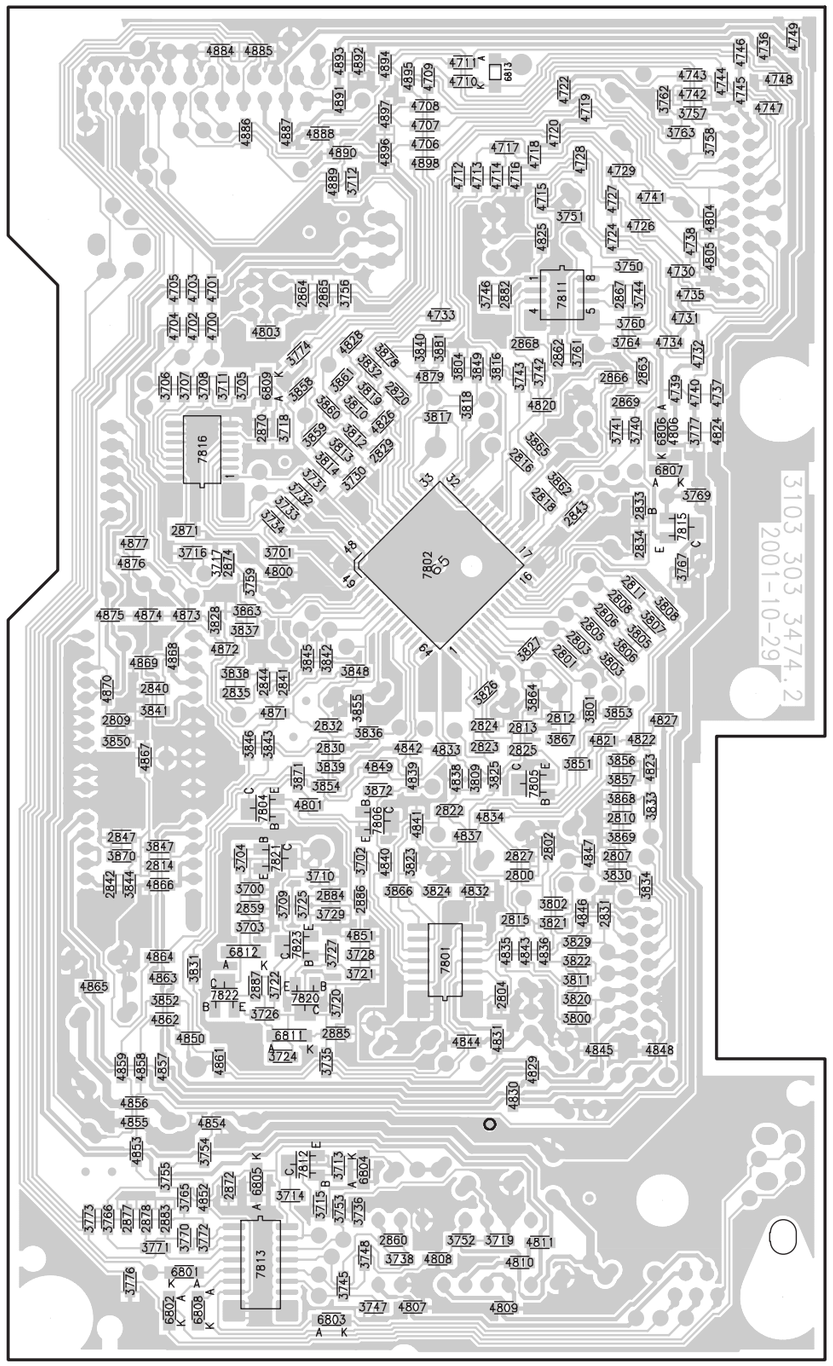
BLOCK DIAGRAM 3CDC-LC **VCD Version**



3CDC-LC (Herman) Copperside view



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

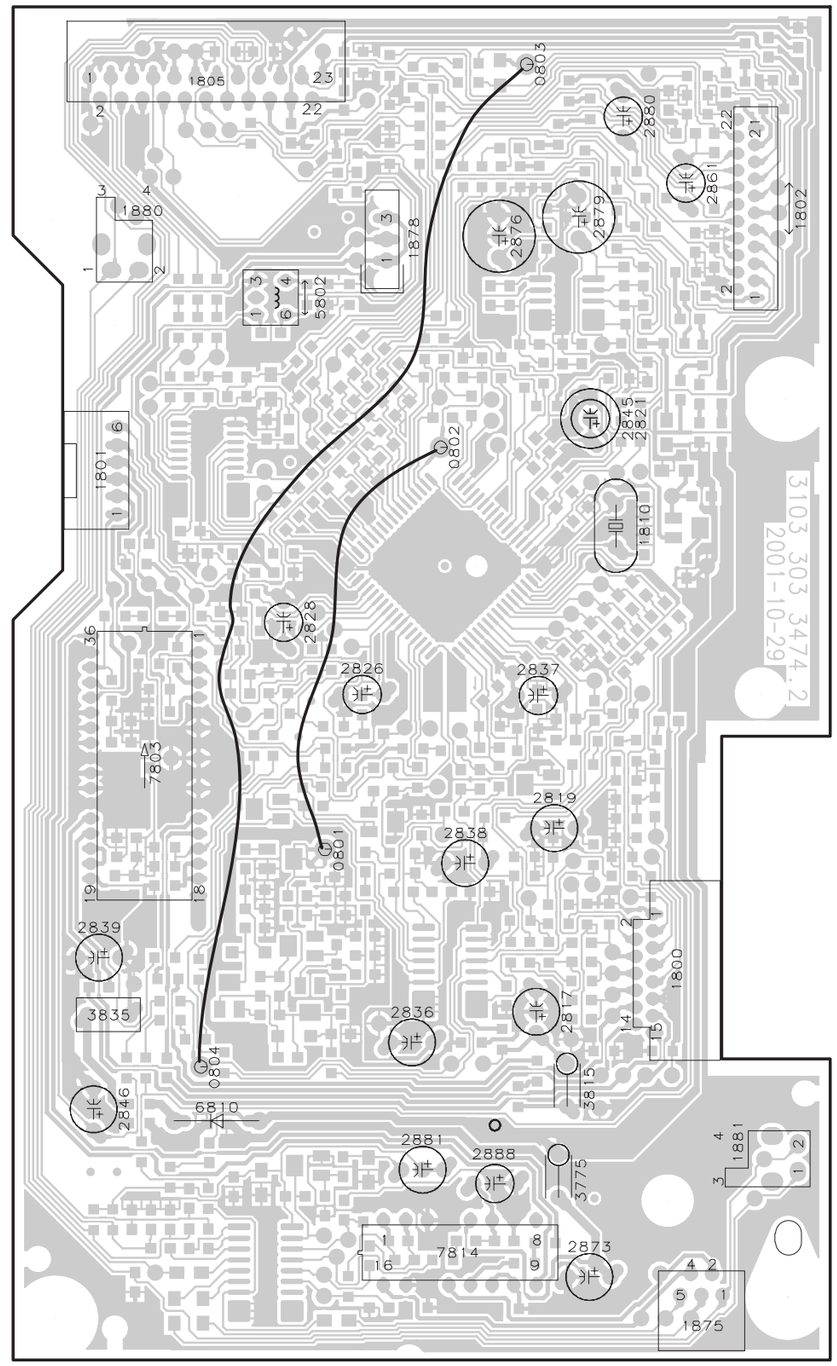
3CDC-LC VCD (Herman) Layout stage .2 2001-11-12

Mapping

Copperside								Componentside	
2800	F4	3732	C2	3851	E4	4828	C3	7823	F2
2801	D4	3733	C2	3852	F1	4829	G4		
2802	E4	3734	D2	3853	E4	4830	G3		
2803	D4	3735	G2	3854	E2	4831	G3		
2804	F3	3736	H3	3855	E3	4832	F3		
2805	D4	3738	H3	3856	E4	4833	E3		
2806	D4	3740	C4	3857	E4	4834	E3		
2807	F4	3741	C4	3858	C2	4835	F3		
2808	D4	3742	C4	3859	C2	4836	F4		
2809	E1	3743	C4	3860	C2	4837	E3		
2810	E4	3744	B4	3861	C2	4838	E3		
2811	D4	3745	H2	3862	C4	4839	E3		
2812	E4	3746	B3	3863	D2	4840	F3		
2813	E4	3747	H3	3864	E4	4841	E3		
2814	F1	3748	H3	3865	C4	4842	E3		
2815	F3	3750	B4	3866	F3	4843	F4		
2816	C4	3751	B4	3867	E4	4844	G3		
2818	C4	3752	H3	3868	E4	4845	G4		
2820	C3	3753	H2	3869	E4	4846	F4		
2822	E3	3754	G2	3870	F1	4847	F4		
2823	E3	3755	G1	3871	E2	4848	G4		
2824	E3	3756	B2	3872	E3	4849	E3		
2825	E4	3757	A5	3878	C3	4850	G2		
2827	F4	3758	A5	3881	C3	4851	F3		
2829	C3	3759	D2	4700	B2	4852	H2		
2830	E2	3760	B4	4701	B2	4853	G1		
2831	F4	3761	C4	4702	B2	4854	G2		
2832	E2	3762	A4	4703	B2	4855	G1		
2833	C4	3763	A4	4704	B1	4856	G1		
2834	D4	3764	C4	4705	B1	4857	G1		
2835	E2	3765	H2	4706	A3	4858	G1		
2840	E1	3766	H1	4707	A3	4859	G1		
2841	E2	3767	D4	4708	A3	4861	G2		
2842	F1	3769	C5	4709	A3	4862	F1		
2843	D4	3770	H2	4710	A3	4863	F1		
2844	E2	3771	H1	4711	A3	4864	F1		
2847	E1	3772	H2	4712	B3	4865	F1		
2859	F2	3773	H1	4713	B3	4866	F1		
2860	H3	3774	C2	4714	B3	4867	E1		
2862	C4	3776	H1	4715	B4	4868	D1		
2863	C4	3777	C5	4716	B3	4869	D1		
2864	B2	3800	F4	4717	A3	4870	E1		
2865	B2	3801	E4	4718	A4	4871	E2		
2866	C4	3802	F4	4719	A4	4872	D2		
2867	B4	3803	D4	4720	A4	4873	D2		
2868	C4	3804	C3	4722	A4	4874	D1		
2869	C4	3805	D4	4724	B4	4875	D1		
2870	C2	3806	D4	4726	B4	4876	D1		
2871	D2	3807	D4	4727	B4	4877	D1		
2872	G2	3808	D4	4728	A4	4879	C3		
2874	D2	3809	E3	4729	A4	4884	A2		
2877	H1	3810	C3	4730	B4	4885	A2		
2878	H1	3811	F4	4731	B4	4886	A2		
2882	B3	3812	C3	4732	C5	4887	A2		
2883	H1	3813	C2	4733	B3	4888	A2		
2884	F2	3814	C2	4734	C4	4889	B2		
2885	G2	3816	C3	4735	B5	4890	A2		
2886	F3	3817	C3	4736	A5	4891	A2		
2887	F2	3818	C3	4737	C5	4892	A3		
3700	F2	3819	C3	4738	B5	4893	A2		
3701	D2	3820	F4	4739	C4	4894	A3		
3702	F3	3821	F4	4740	C5	4895	A3		
3703	F2	3822	F4	4741	B4	4896	A3		
3704	F2	3823	F3	4742	A5	4897	A3		
3705	C2	3824	F3	4743	A5	4898	A3		
3706	C1	3825	E3	4744	A5	6801	H2		
3707	C2	3826	E3	4745	A5	6802	H1		
3708	C2	3827	D4	4746	A5	6803	H2		
3709	F2	3828	D2	4747	A5	6804	G3		
3710	F2	3829	F4	4748	A5	6805	G2		
3711	C2	3830	F4	4749	A5	6806	C4		
3712	B3	3831	F2	4800	D2	6807	C4		
3713	G2	3832	C3	4801	E2	6808	H2		
3714	H2	3833	E4	4803	B2	6809	C2		
3715	H2	3834	F4	4804	B5	6811	G2		
3716	D2	3836	E3	4805	B5	6812	F2		
3717	D2	3837	D2	4806	C4	6813	A3		
3718	C2	3838	D2	4807	H3	7801	F3		
3719	H3	3839	E2	4808	H3	7802	D3		
3720	F2	3840	C3	4809	H3	7804	E2		
3721	F3	3841	E1	4810	H4	7805	E4		
3722	F2	3842	D2	4811	H4	7806	E3		
3724	G2	3843	E2	4820	C4	7811	B4		
3725	F2	3844	F1	4821	E4	7812	G2		
3726	F2	3845	D2	4822	E4	7813	H2		
3727	F2	3846	E2	4823	E4	7815	D4		
3728	F3	3847	E1	4824	C5	7816	C2		
3729	F2	3848	D3	4825	B4	7820	F2		
3730	C3	3849	C3	4826	C3	7821	F2		
3731	C2	3850	E1	4827	E4	7822	F2		

10-6

3CDC-LC (Herman) Components seen from Copperside



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

3CDC-LC VCD (Herman) Layout stage .2 2001-11-12

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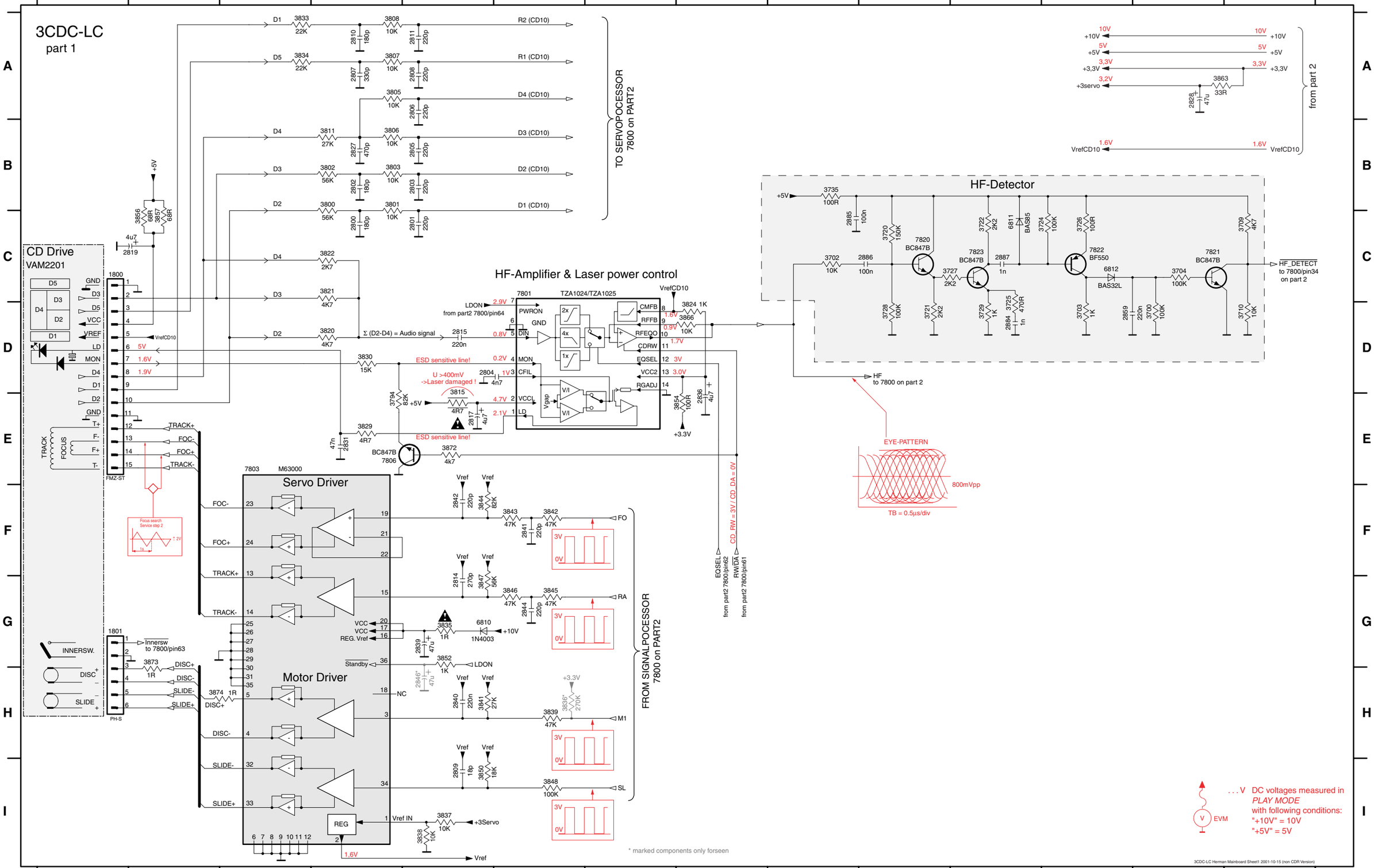
1800	C1	2803	B5	2808	A5	2815	D5	2830	H6	2839	G5	2848	H5	2886	C10	3704	C13	3722	C11	3728	D10	3802	B4	3808	A4	3822	C4	3834	A3	3839	H6
1801	G1	2804	D6	2809	I5	2817	E5	2831	E4	2840	H5	2859	D13	2887	C11	3709	C14	3724	C12	3729	D11	3803	B4	3811	B4	3824	D8	3835	G5	3841	H5
2800	C4	2805	B5	2810	A4	2819	C2	2832	I6	2841	F6	2860	A9	3700	D13	3710	D14	3725	D11	3735	B9	3805	A4	3815	E5	3829	E4	3836	H6	3842	F6
2801	C5	2806	A5	2811	A5	2827	B4	2835	I5	2842	F5	2884	D11	3702	C9	3720	C10	3726	C12	3800	B4	3806	B4	3820	D4	3830	D4	3837	I5	3843	F6
2802	B4	2807	A4	2814	G5	2828	A13	2836	E8	2844	G6	2885	C9	3703	D12	3721	D10	3727	C11	3801	B4	3807	A4	3821	C4	3833	A3	3838	I5	3844	F5

3845	G6	3852	H5	3866	D8	3874	H2	7801	D6	7822	C12																				
3846	G6	3854	E8	3868	A4	3886	A10	7803	E3	7823	C13																				
3847	G5	3856	C2	3869	A4	4801	E8	7806	E5																						
3848	I6	3857	C2	3872	E5	6811	C11	7820	C10																						
3850	I5	3863	A13	3873	G2	6812	C12	7821	C13																						



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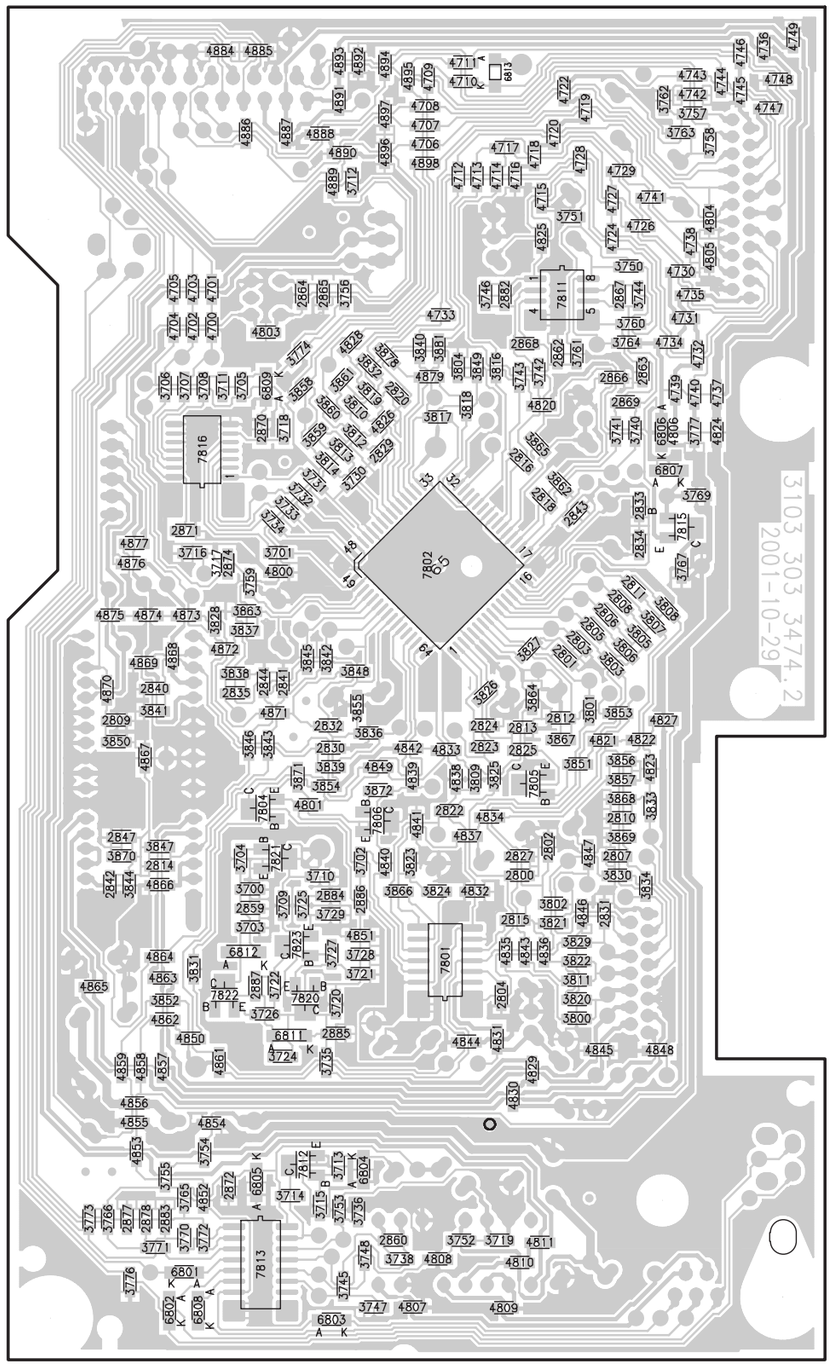
3CDC-LC (Herman) Copperside view



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

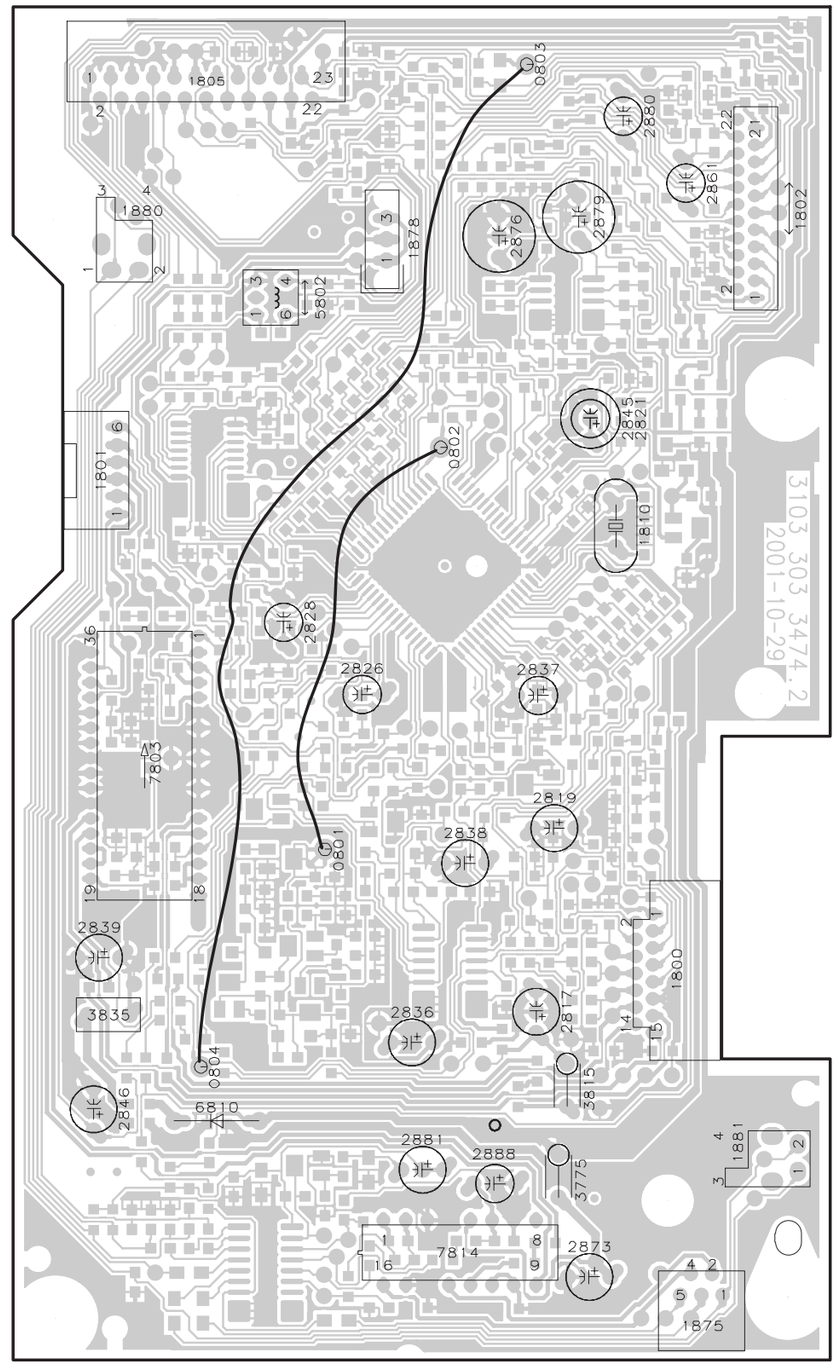
3CDC-LC VCD (Herman) Layout stage .2 2001-11-12

Mapping

Copperside								Componentside	
2800	F4	3732	C2	3851	E4	4828	C3	7823	F2
2801	D4	3733	C2	3852	F1	4829	G4		
2802	E4	3734	D2	3853	E4	4830	G3		
2803	D4	3735	G2	3854	E2	4831	G3		
2804	F3	3736	H3	3855	E3	4832	F3		
2805	D4	3738	H3	3856	E4	4833	E3		
2806	D4	3740	C4	3857	E4	4834	E3		
2807	F4	3741	C4	3858	C2	4835	F3		
2808	D4	3742	C4	3859	C2	4836	F4		
2809	E1	3743	C4	3860	C2	4837	E3		
2810	E4	3744	B4	3861	C2	4838	E3		
2811	D4	3745	H2	3862	C4	4839	E3		
2812	E4	3746	B3	3863	D2	4840	F3		
2813	E4	3747	H3	3864	E4	4841	E3		
2814	F1	3748	H3	3865	C4	4842	E3		
2815	F3	3750	B4	3866	F3	4843	F4		
2816	C4	3751	B4	3867	E4	4844	G3		
2818	C4	3752	H3	3868	E4	4845	G4		
2820	C3	3753	H2	3869	E4	4846	F4		
2822	E3	3754	G2	3870	F1	4847	F4		
2823	E3	3755	G1	3871	E2	4848	G4		
2824	E3	3756	B2	3872	E3	4849	E3		
2825	E4	3757	A5	3878	C3	4850	G2		
2827	F4	3758	A5	3881	C3	4851	F3		
2829	C3	3759	D2	4700	B2	4852	H2		
2830	E2	3760	B4	4701	B2	4853	G1		
2831	F4	3761	C4	4702	B2	4854	G2		
2832	E2	3762	A4	4703	B2	4855	G1		
2833	C4	3763	A4	4704	B1	4856	G1		
2834	D4	3764	C4	4705	B1	4857	G1		
2835	E2	3765	H2	4706	A3	4858	G1		
2840	E1	3766	H1	4707	A3	4859	G1		
2841	E2	3767	D4	4708	A3	4861	G2		
2842	F1	3769	C5	4709	A3	4862	F1		
2843	D4	3770	H2	4710	A3	4863	F1		
2844	E2	3771	H1	4711	A3	4864	F1		
2847	E1	3772	H2	4712	B3	4865	F1		
2859	F2	3773	H1	4713	B3	4866	F1		
2860	H3	3774	C2	4714	B3	4867	E1		
2862	C4	3776	H1	4715	B4	4868	D1		
2863	C4	3777	C5	4716	B3	4869	D1		
2864	B2	3800	F4	4717	A3	4870	E1		
2865	B2	3801	E4	4718	A4	4871	E2		
2866	C4	3802	F4	4719	A4	4872	D2		
2867	B4	3803	D4	4720	A4	4873	D2		
2868	C4	3804	C3	4722	A4	4874	D1		
2869	C4	3805	D4	4724	B4	4875	D1		
2870	C2	3806	D4	4726	B4	4876	D1		
2871	D2	3807	D4	4727	B4	4877	D1		
2872	G2	3808	D4	4728	A4	4879	C3		
2874	D2	3809	E3	4729	A4	4884	A2		
2877	H1	3810	C3	4730	B4	4885	A2		
2878	H1	3811	F4	4731	B4	4886	A2		
2882	B3	3812	C3	4732	C5	4887	A2		
2883	H1	3813	C2	4733	B3	4888	A2		
2884	F2	3814	C2	4734	C4	4889	B2		
2885	G2	3816	C3	4735	B5	4890	A2		
2886	F3	3817	C3	4736	A5	4891	A2		
2887	F2	3818	C3	4737	C5	4892	A3		
3700	F2	3819	C3	4738	B5	4893	A2		
3701	D2	3820	F4	4739	C4	4894	A3		
3702	F3	3821	F4	4740	C5	4895	A3		
3703	F2	3822	F4	4741	B4	4896	A3		
3704	F2	3823	F3	4742	A5	4897	A3		
3705	C2	3824	F3	4743	A5	4898	A3		
3706	C1	3825	E3	4744	A5	6801	H2		
3707	C2	3826	E3	4745	A5	6802	H1		
3708	C2	3827	D4	4746	A5	6803	H2		
3709	F2	3828	D2	4747	A5	6804	G3		
3710	F2	3829	F4	4748	A5	6805	G2		
3711	C2	3830	F4	4749	A5	6806	C4		
3712	B3	3831	F2	4800	D2	6807	C4		
3713	G2	3832	C3	4801	E2	6808	H2		
3714	H2	3833	E4	4803	B2	6809	C2		
3715	H2	3834	F4	4804	B5	6811	G2		
3716	D2	3836	E3	4805	B5	6812	F2		
3717	D2	3837	D2	4806	C4	6813	A3		
3718	C2	3838	D2	4807	H3	7801	F3		
3719	H3	3839	E2	4808	H3	7802	D3		
3720	F2	3840	C3	4809	H3	7804	E2		
3721	F3	3841	E1	4810	H4	7805	E4		
3722	F2	3842	D2	4811	H4	7806	E3		
3724	G2	3843	E2	4820	C4	7811	B4		
3725	F2	3844	F1	4821	E4	7812	G2		
3726	F2	3845	D2	4822	E4	7813	H2		
3727	F2	3846	E2	4823	E4	7815	D4		
3728	F3	3847	E1	4824	C5	7816	C2		
3729	F2	3848	D3	4825	B4	7820	F2		
3730	C3	3849	C3	4826	C3	7821	F2		
3731	C2	3850	E1	4827	E4	7822	F2		

Componentside	
0801	E2
0802	C3
0803	A4
0804	G2
1800	F4
1801	C1
1802	B5
1805	A2
1810	D4
1875	H5
1878	B3
1880	B1
1881	G5
2817	F4
2819	E4
2821	C4
2826	D3
2828	D2
2836	F3
2837	D4
2838	E3
2839	F1
2845	C4
2846	G1
2861	B5
2873	H4
2876	B3
2879	B4
2880	A4
2881	G3
2888	G3
3775	G4
3815	G4
3835	F1
5802	B2
6810	G2
7803	E1
7814	H3

3CDC-LC (Herman) Components seen from Copperside



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

3CDC-LC VCD (Herman) Layout stage .2 2001-11-12

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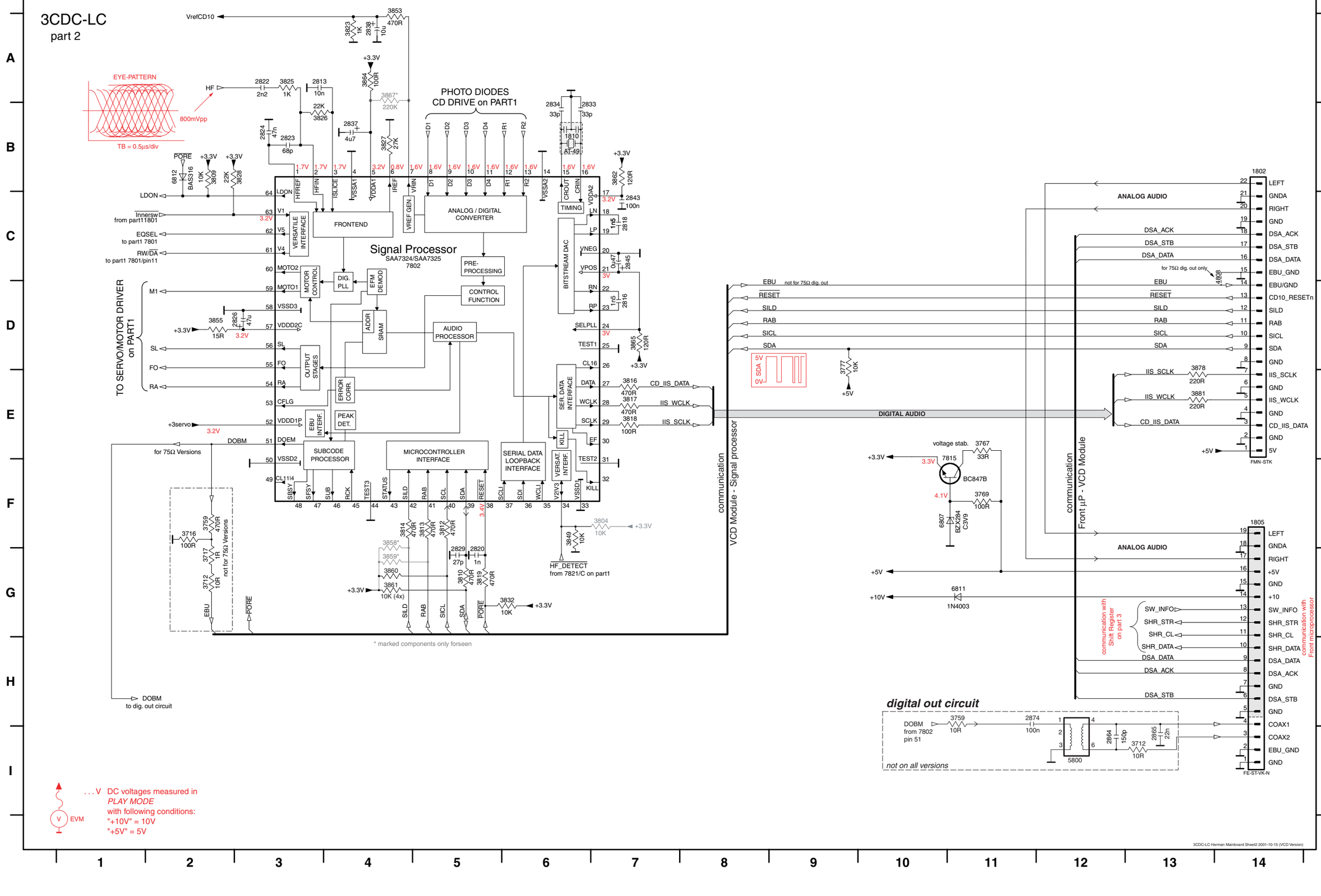
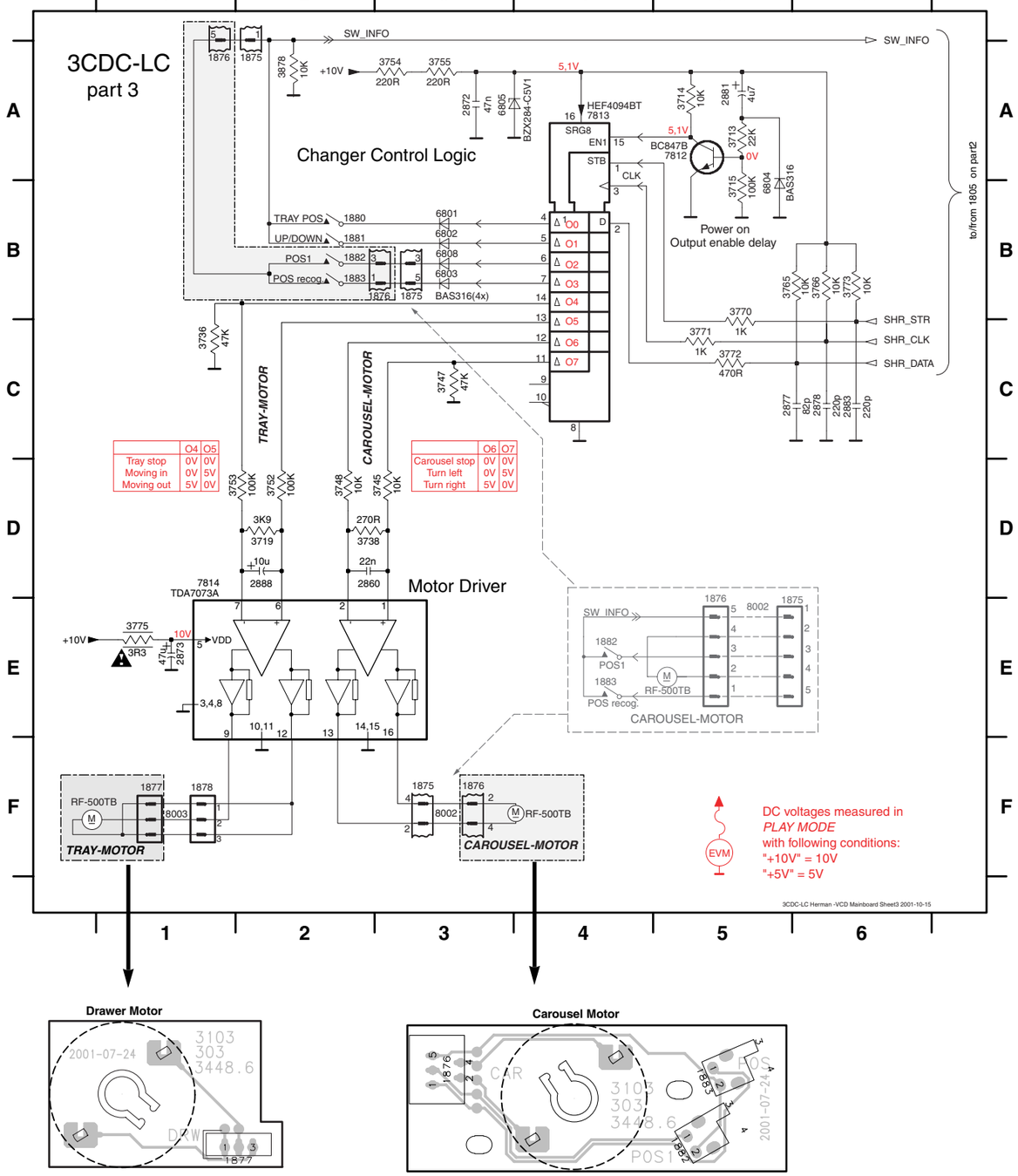
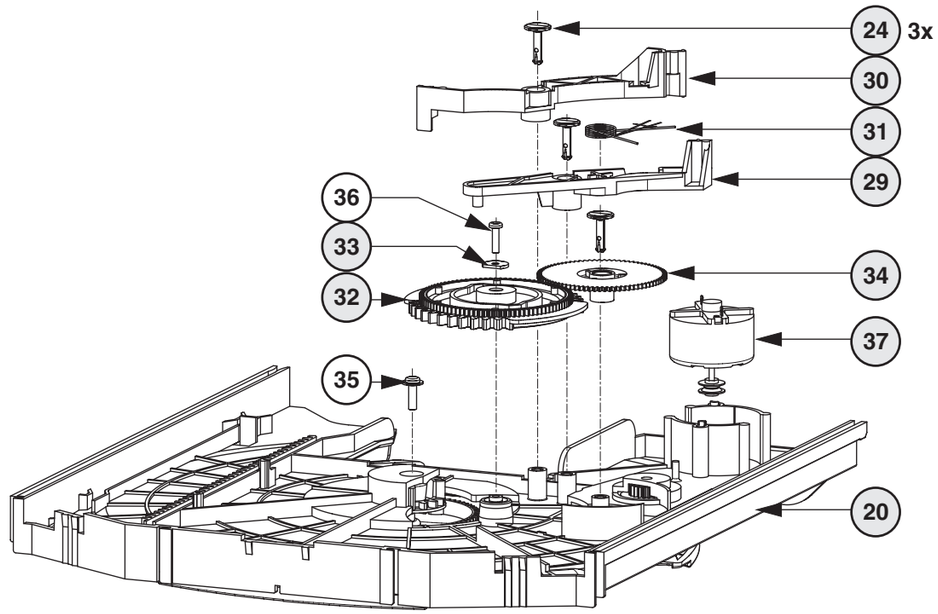
1802	B14	2816	D7	2823	B3	2833	B6	2843	C7	2870	I5	3705	H7	3712	G2	3718	H6	3733	I5	3767	E11	3804	F7	3812	F5	3817	E7	3825	A3	3832	G6	3858	G4	3862	B7	3878	E13	6807	F11	7802	C5
1805	F14	2818	C7	2824	B3	2834	B6	2845	C7	2871	H6	3706	I7	3712	I13	3730	I4	3734	I5	3769	F11	3808	I7	3813	F5	3818	E7	3826	B3	3849	F6	3859	G4	3864	A4	3881	E13	6809	H7	7815	F11
1810	B6	2820	G5	2826	D3	2837	B4	2854	I12	2874	H11	3707	I7	3716	F2	3731	I5	3759	F2	3774	H8	3809	B2	3814	F4	3819	G5	3827	B4	3853	A4	3860	G4	3865	D7	4808	C14	6811	G11	7816	I5
2813	A3	2822	A3	2829	G5	2838	A4	2865	I13	3701	I5	3711	I7	3717	G2	3732	I5	3759	H10	3777	D9	3810	G5	3816	E7	3823	A4	3828	B3	3855	D2	3861	G4	3867	A4	5800	I12	6812	B2		



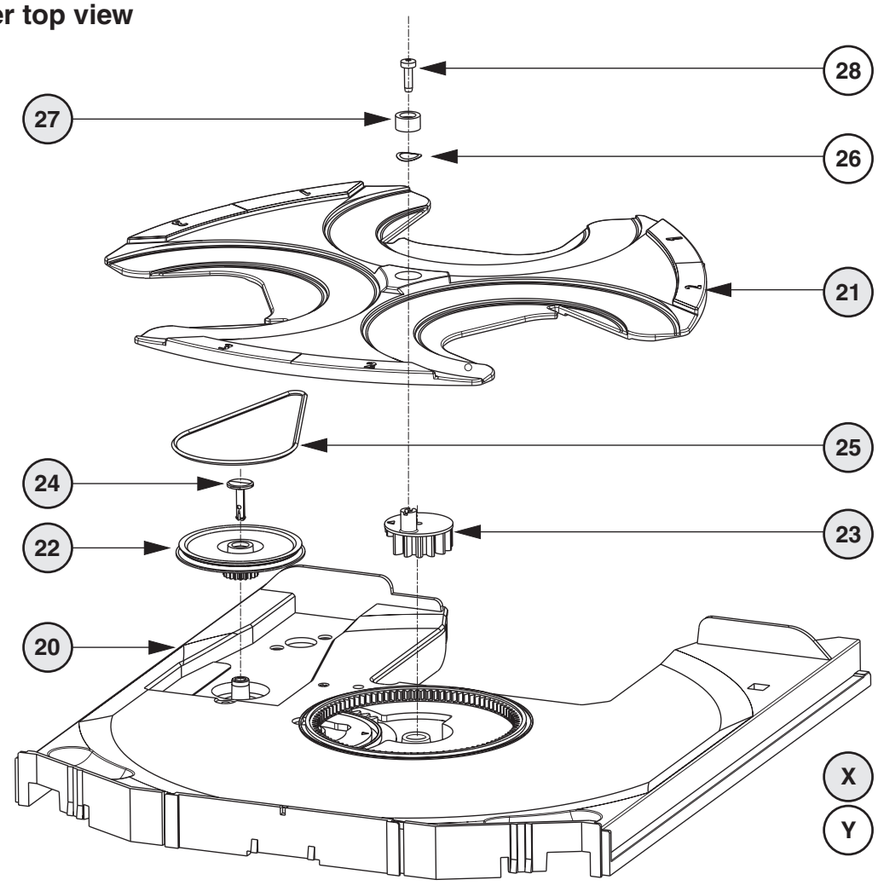
1875	F3	1876	B3	1880	B2	1883	E4	2878	C6	3714	A5	3745	D3	3754	A3	3771	C5	6801	B3	6808	B3	8003	F1
1875	E5	1876	F3	1881	B2	2860	D2	2881	A5	3715	B5	3747	C3	3755	A3	3772	C5	6802	B3	7812	A5		
1875	B3	1876	E5	1882	B2	2872	A3	2883	C6	3719	D2	3748	D2	3765	B6	3773	B6	6803	B3	7813	A4		
1875	A2	1877	F1	1882	E4	2873	E1	2888	D2	3736	C1	3752	D2	3766	B6	3775	E1	6804	B5	7814	E1		
1876	A1	1878	F1	1883	B2	2877	C6	3713	A5	3738	D2	3753	D2	3770	C5	3878	A2	6805	A4	8002	E5		



Drawer bottom view



Drawer top view



X spare part

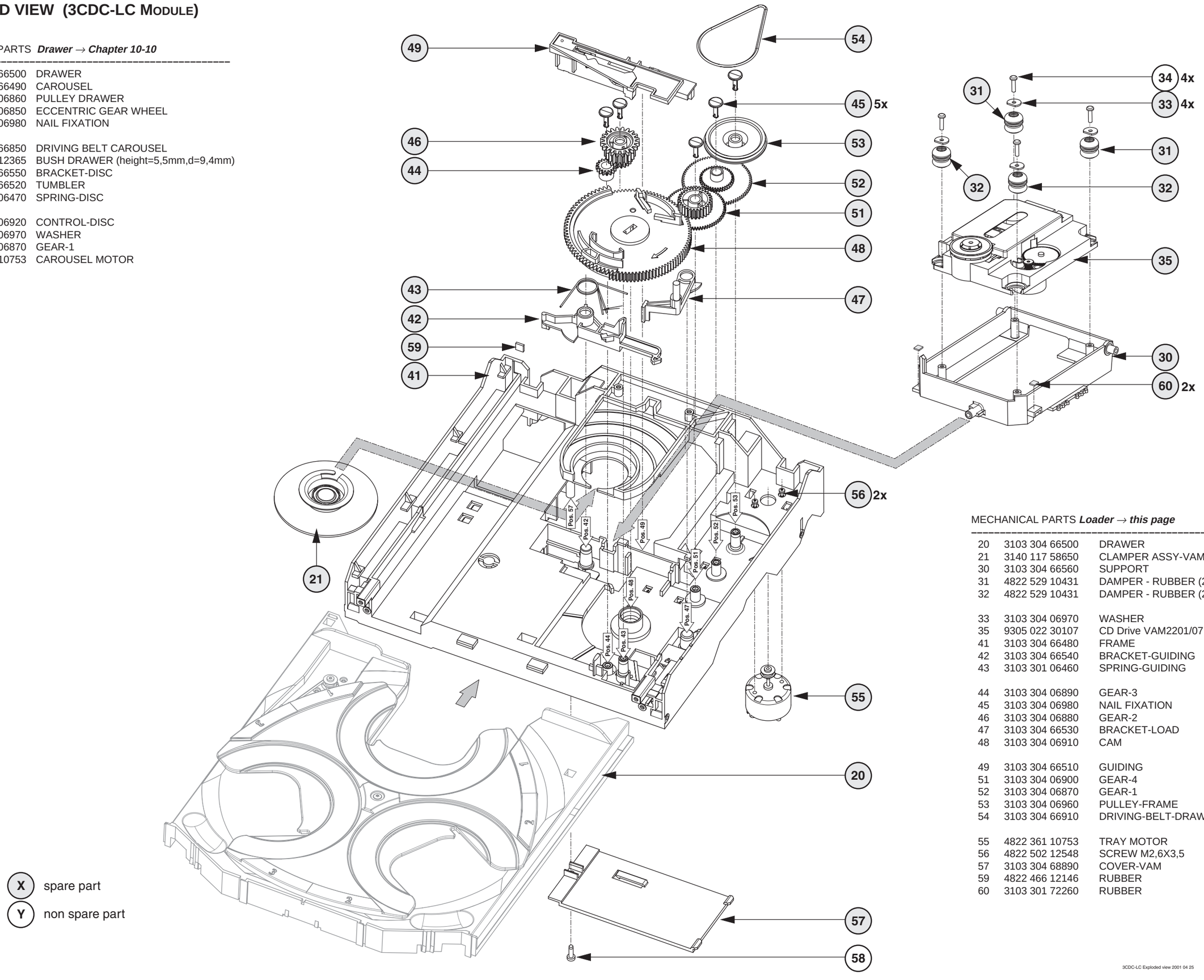
Y non spare part

10-11

EXPLODED VIEW (3CDC-LC MODULE)

MECHANICAL PARTS ***Drawer → Chapter 10-10***

20	3103 304 66500	DRAWER
21	3103 304 66490	CAROUSEL
22	3103 304 06860	PULLEY DRAWER
23	3103 304 06850	ECCENTRIC GEAR WHEEL
24	3103 304 06980	NAIL FIXATION
25	3103 304 66850	DRIVING BELT CAROUSEL
27	4822 532 12365	BUSH DRAWER (height=5,5mm,d=9,4mm)
29	3103 304 66550	BRACKET-DISC
30	3103 304 66520	TUMBLER
31	3103 301 06470	SPRING-DISC
32	3103 304 06920	CONTROL-DISC
33	3103 304 06970	WASHER
34	3103 304 06870	GEAR-1
37	4822 361 10753	CAROUSEL MOTOR



X spare part

Y non spare part

MECHANICAL PARTS ***Loader → this page***

20	3103 304 66500	DRAWER
21	3140 117 58650	CLAMPER ASSY-VAM
30	3103 304 66560	SUPPORT
31	4822 529 10431	DAMPER - RUBBER (25DEG)
32	4822 529 10431	DAMPER - RUBBER (25DEG)
33	3103 304 06970	WASHER
35	9305 022 30107	CD Drive VAM2201/07
41	3103 304 66480	FRAME
42	3103 304 66540	BRACKET-GUIDING
43	3103 301 06460	SPRING-GUIDING
44	3103 304 06890	GEAR-3
45	3103 304 06980	NAIL FIXATION
46	3103 304 06880	GEAR-2
47	3103 304 66530	BRACKET-LOAD
48	3103 304 06910	CAM
49	3103 304 66510	GUIDING
51	3103 304 06900	GEAR-4
52	3103 304 06870	GEAR-1
53	3103 304 06960	PULLEY-FRAME
54	3103 304 66910	DRIVING-BELT-DRAWER
55	4822 361 10753	TRAY MOTOR
56	4822 502 12548	SCREW M2,6X3,5
57	3103 304 68890	COVER-VAM
59	4822 466 12146	RUBBER
60	3103 301 72260	RUBBER

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ELECTRICAL PARTSLIST 3CDC-LC-VCD MODULE

MISCELLANEOUS

35	9305 022 30107	CD Drive VAM2201/07	
37	4822 361 10753	CAROUSEL MOTOR	
55	4822 361 10753	TRAY MOTOR	
1800	4822 265 10925	FLEX FOIL CONNECTOR 15P	
1802	2422 025 16837	FLEX FOIL CONNECTOR 22P	
1805	4822 265 10979	FLEX FOIL CONNECTOR 15P	
1805	4822 265 11545	FLEX FOIL CONNECTOR 19P	for digital out
1875	4822 267 10958	FLEX FOIL CONNECTOR 5P	
1876	2422 025 08332	FLEX FOIL CONNECTOR 5P	
1880	4822 276 13503	SWITCH, Tray position	
1881	4822 276 13503	SWITCH, Drive up/down	
1882	4822 276 13503	SWITCH, Position 1 recognized	
1883	4822 276 13503	SWITCH, valid position recognized	
8002	3103 308 91990	FLEX FOIL CABLE 5P, 200mm	
8005	3103 308 91980	FLEX FOIL CABLE 15P, 170mm	

CAPACITORS

2800 ©	4822 126 10326	180pF	5%	50V
2801 ©	4822 126 13883	220pF	5%	50V
2802 ©	4822 126 14508	180pF	5%	50V
2803 ©	4822 126 13883	220pF	5%	50V
2804 ©	4822 126 13193	4,7nF	10%	63V
2805 ©	4822 126 13883	220pF	5%	50V
2806 ©	4822 126 13883	220pF	5%	50V
2807 ©	5322 122 31863	330pF	5%	50V
2808 ©	4822 126 13883	220pF	5%	50V
2809 ©	4822 126 13879	220nF	20%	16V
2810 ©	4822 126 10326	180pF	5%	50V
2811 ©	4822 126 13883	220pF	5%	50V
2812 ©	3198 017 34730	47nF	10%	16V
2813 ©	4822 122 33177	10nF	20%	50V
2814 ©	4822 122 33216	270pF	5%	50V
2815 ©	4822 126 14076	220nF	20%	25V
2816 ©	4822 126 13344	1,5nF	5%	63V
2817	4822 124 40769	4,7µF	20%	100V
2818 ©	4822 126 13344	1,5nF	5%	63V
2819	4822 124 40769	4,7µF	20%	100V
2820 ©	5322 126 11578	1nF	10%	63V
2822 ©	2238 786 11554	2,2nF	5%	16V
2823 ©	4822 126 13956	68pF	5%	63V
2824 ©	4822 126 13751	47nF	10%	50V
2826	4822 124 12362	47µF	20%	4V
2827 ©	5322 122 34099	470pF	10%	63V
2828	4822 124 12362	47µF	20%	4V
2829 ©	4822 126 11669	27pF	10%	50V
2831 ©	4822 126 13751	47nF	10%	50V
2833 ©	4822 126 11671	33pF	5%	50V
2834 ©	4822 126 11671	33pF	5%	50V
2835 ©	3198 017 34730	47nF	10%	16V
2836	4822 124 40769	4,7µF	20%	100V
2837	4822 124 22726	4,7µF	20%	35V
2839	4822 124 40433	47µF	20%	25V
2840 ©	4822 126 13751	47nF	10%	50V
2841 ©	4822 122 33575	220pF	5%	50V
2842 ©	4822 126 13883	220pF	5%	50V
2843 ©	4822 126 14585	100nF	10%	50V
2844 ©	5322 126 10794	220pF	10%	50V
2845	5322 124 41948	0,47µF	20%	50V
2846	5322 124 41948	0,47µF	20%	50V
2859 ©	4822 126 14076	220nF	20%	25V
2860 ©	4822 126 14494	22nF	10%	25V
2864 ©	5322 122 33538	150pF	5%	63V
2865 ©	5322 122 32654	22nF	10%	63V
2866 ©	4822 126 13751	47nF	10%	50V
2872 ©	3198 017 34730	47nF	10%	16V
2873	4822 124 80231	47µF	20%	16V
2874 ©	4822 126 14305	100nF	10%	16V

CAPACITORS

2877 ©	4822 126 14226	82pF		50V
2878 ©	4822 126 13883	220pF	5%	50V
2881	4822 124 40769	4,7µF	20%	100V
2883 ©	4822 126 13883	220pF	5%	50V
2884 ©	5322 126 11578	1nF	10%	63V
2885 ©	4822 126 14585	100nF	10%	50V
2886 ©	4822 126 14585	100nF	10%	50V
2887 ©	5322 126 11578	1nF	10%	63V
2888	4822 124 11947	10µF	20%	16V

RESISTORS

3700 ©	4822 117 10837	100kΩ	1%	0,1W
3702 ©	4822 117 10833	10kΩ	1%	0,1W
3703 ©	4822 051 10102	1kΩ	2%	0,25W
3704 ©	4822 117 10837	100kΩ	1%	0,1W
3709 ©	4822 051 20472	4,7kΩ	5%	0,1W
3710 ©	4822 117 10833	10kΩ	1%	0,1W
3712 ©	4822 051 30109	10Ω	5%	0,06W
3713 ©	4822 051 30223	22kΩ	5%	0,06W
3714 ©	4822 051 30103	10kΩ	5%	0,06W
3715 ©	4822 117 13632	100kΩ	1%	0,06W
3716 ©	4822 051 30101	100Ω	5%	0,06W
3717 ©	4822 117 12917	1Ω	5%	0,06W
3719 ©	4822 051 30392	3,9kΩ	5%	0,06W
3720 ©	4822 051 20154	150kΩ	5%	0,1W
3721 ©	4822 117 11449	2,2kΩ	1%	0,1W
3722 ©	4822 117 11449	2,2kΩ	1%	0,1W
3724 ©	4822 117 10837	100kΩ	1%	0,1W
3725 ©	4822 051 20471	470Ω	5%	0,1W
3726 ©	4822 117 11373	100Ω	1%	0,1W
3727 ©	4822 117 11449	2,2kΩ	1%	0,1W
3728 ©	4822 117 10837	100kΩ	1%	0,1W
3729 ©	4822 051 20471	470Ω	5%	0,1W
3730 ©	4822 051 20333	33kΩ	5%	0,1W
3735 ©	4822 117 11373	100Ω	1%	0,1W
3736 ©	4822 117 12925	47kΩ	1%	0,06W
3738 ©	4822 051 30271	270Ω	5%	0,06W
3745 ©	4822 117 10833	10kΩ	1%	0,1W
3747 ©	4822 117 12925	47kΩ	1%	0,06W
3748 ©	4822 051 30103	10kΩ	5%	0,06W
3752 ©	4822 117 13632	100kΩ	1%	0,06W
3753 ©	4822 117 13632	100kΩ	1%	0,06W
3754 ©	4822 117 11503	220Ω	5%	0,1W
3755 ©	4822 117 11503	220Ω	5%	0,1W
3759 ©	4822 051 20109	10Ω	5%	0,1W
3765 ©	4822 051 30103	10kΩ	5%	0,06W
3766 ©	4822 117 10833	10kΩ	1%	0,1W
3767 ©	4822 051 30339	33Ω	5%	0,06W
3769 ©	4822 051 30101	100Ω	5%	0,06W
3770 ©	4822 051 30102	1kΩ	5%	0,06W
3771 ©	4822 051 30102	1kΩ	5%	0,06W
3772 ©	4822 051 30471	470Ω	5%	0,06W
3773 ©	4822 117 10833	10kΩ	1%	0,1W
3775 ⚠	4822 052 10338	3,3Ω	5%	NFR25
3776 ©	4822 051 30103	10kΩ	5%	0,06W
3777 ©	4822 051 30103	10kΩ	5%	0,06W
3800 ©	4822 051 30563	56kΩ	5%	0,06W
3801 ©	4822 051 30103	10kΩ	5%	0,06W
3802 ©	4822 117 11148	56kΩ	1%	0,1W
3803 ©	4822 117 10833	10kΩ	1%	0,1W
3804 ©	4822 051 30103	10kΩ	5%	0,06W
3805 ©	4822 051 30103	10kΩ	5%	0,06W
3806 ©	4822 051 30103	10kΩ	5%	0,06W
3807 ©	4822 051 30103	10kΩ	5%	0,06W
3808 ©	4822 051 30103	10kΩ	5%	0,06W
3809 ©	4822 051 30103	10kΩ	5%	0,06W

RESISTORS

3810 ©	4822 051 30471	470Ω	5%	0,06W
3811 ©	4822 051 20273	27kΩ	5%	0,1W
3812 ©	4822 051 20471	470Ω	5%	0,1W
3813 ©	4822 051 20471	470Ω	5%	0,1W
3814 ©	4822 051 20471	470Ω	5%	0,1W
3815 ⚠	4822 052 10478	4,7Ω	5%	NFR25
3816 ©	4822 051 20471	470Ω	5%	0,1W
3817 ©	4822 051 30471	470Ω	5%	0,06W
3818 ©	4822 051 30101	100Ω	5%	0,06W
3818 ©	4822 051 30471	470Ω	5%	0,06W
3819 ©	4822 051 20471	470Ω	5%	0,1W
3820 ©	4822 051 30472	4,7kΩ	5%	0,06W
3821 ©	4822 051 20472	4,7kΩ	5%	0,1W
3822 ©	4822 051 30272	2,7kΩ	5%	0,06W
3823 ©	4822 051 30102	1kΩ	5%	0,06W
3824 ©	4822 051 30102	1kΩ	5%	0,06W
3825 ©	4822 051 10102	1kΩ	2%	0,25W
3826 ©	4822 051 20223	22kΩ	5%	0,1W
3827 ©	4822 051 20273	27kΩ	5%	0,1W
3828 ©	4822 051 30223	22kΩ	5%	0,06W
3829 ©	4822 117 13608	4,7Ω	5%	0,06W
3830 ©	4822 116 83933	15kΩ	1%	0,1W
3832 ©	4822 117 10833	10kΩ	1%	0,1W
3833 ©	4822 051 30223	22kΩ	5%	0,06W
3834 ©	4822 051 20223	22kΩ	5%	0,1W
3835 ⚠	4822 052 10108	1Ω	5%	0,33W
3837 ©	4822 117 10833	10kΩ	1%	0,1W
3838 ©	4822 051 30103	10kΩ	5%	0,06W
3839 ©	4822 051 20273	27kΩ	5%	0,1W
3841 ©	4822 051 20273	27kΩ	5%	0,1W
3842 ©	4822 117 10834	47kΩ	1%	0,1W
3843 ©	4822 117 10834	47kΩ	1%	0,1W
3844 ©	4822 117 12864	82kΩ	5%	0,6W
3845 ©	4822 117 10834	47kΩ	1%	0,1W
3846 ©	4822 117 10834	47kΩ	1%	0,1W
3847 ©	4822 117 11148	56kΩ	1%	0,1W
3848 ©	4822 117 10837	100kΩ	1%	0,1W
3850 ©	4822 051 30183	18kΩ	5%	0,06W
3852 ©	4822 051 10102	1kΩ	2%	0,25W
3853 ©	4822 051 20471	470Ω	5%	0,1W
3854 ©	4822 051 30101	100Ω	5%	0,06W
3855 ©	4822 117 12971	15Ω	5%	0,06W
3856 ©	4822 117 12521	68Ω	1%	0,1W
3857 ©	4822 117 12521	68Ω	1%	0,1W
3860 ©	4822 117 10833	10kΩ	1%	0,1W
3862 ©	4822 051 20121	120Ω	5%	0,1W
3863 ©	4822 051 30339	33Ω	5%	0,06W
3864 ©	4822 051 30101	100Ω	5%	0,06W
3865 ©	4822 051 30121	120Ω	5%	0,06W
3866 ©	4822 051 30103	10kΩ	5%	0,06W
3871 ©	4822 117 11149	82kΩ	1%	0,1W
3872 ©	4822 051 20472	4,7kΩ	5%	0,1W
3878 ©	4822 117 11503	220Ω	5%	0,1W
3881 ©	4822 117 11503	220Ω	5%	0,1W
4707 ©	4822 051 20008	CHIP JUMPER 0805		
4708 ©	4822 051 20008	CHIP JUMPER 0805		
4709 ©	4822 051 20008	CHIP JUMPER 0805		
4710 ©	4822 051 20008	CHIP JUMPER 0805		
4711 ©	4822 051 20008	CHIP JUMPER 0805		
4713 ©	4822 051 20008	CHIP JUMPER 0805		
4714 ©	4822 051 20008	CHIP JUMPER 0805		
4717 ©	4822 051 30008	CHIP JUMPER 0603		
4724 ©	4822 051 20008	CHIP JUMPER 0805		
4726 ©	4822 051 20008	CHIP JUMPER 0805		
4727 ©	4822 051 20008	CHIP JUMPER 0805		

RESISTORS

4728 ©	4822 051 20008	CHIP JUMPER 0805
4729 ©	4822 051 20008	CHIP JUMPER 0805
4730 ©	4822 051 20008	CHIP JUMPER 0805
4731 ©	4822 051 30008	CHIP JUMPER 0603
4732 ©	4822 051 20008	CHIP JUMPER 0805
4733 ©	4822 051 30008	CHIP JUMPER 0603
4734 ©	4822 051 20008	CHIP JUMPER 0805
4735 ©	4822 051 20008	CHIP JUMPER 0805
4736 ©	4822 051 30008	CHIP JUMPER 0603
4737 ©	4822 051 30008	CHIP JUMPER 0603
4738 ©	4822 051 30008	CHIP JUMPER 0603
4739 ©	4822 051 30008	CHIP JUMPER 0603
4740 ©	4822 051 30008	CHIP JUMPER 0603
4743 ©	4822 051 20008	CHIP JUMPER 0805
4744 ©	4822 051 30008	CHIP JUMPER 0603
4745 ©	4822 051 20008	CHIP JUMPER 0805
4746 ©	4822 051 20008	CHIP JUMPER 0805
4747 ©	4822 051 20008	CHIP JUMPER 0805
4748 ©	4822 051 20008	CHIP JUMPER 0805
4749 ©	4822 051 30008	CHIP JUMPER 0603
4800 ©	4822 051 30008	CHIP JUMPER 0603
4801 ©	4822 051 30008	CHIP JUMPER 0603
4803 ©	4822 051 30008	CHIP JUMPER 0603
4804 ©	4822 051 20008	CHIP JUMPER 0805
4805 ©	4822 051 30008	CHIP JUMPER 0603
4806 ©	4822 051 20008	CHIP JUMPER 0805
4820 ©	4822 051 20008	CHIP JUMPER 0805
4823 ©	4822 051 30008	CHIP JUMPER 0603
4824 ©	4822 051 30008	CHIP JUMPER 0603
4826 ©	4822 051 20008	CHIP JUMPER 0805
4828 ©	4822 051 30008	CHIP JUMPER 0603
4829 ©	4822 051 20008	CHIP JUMPER 0805
4830 ©	4822 051 20008	CHIP JUMPER 0805
4831 ©	4822 051 20008	CHIP JUMPER 0805
4832 ©	4822 051 30008	CHIP JUMPER 0603
4833 ©	4822 051 20008	CHIP JUMPER 0805
4834 ©	4822 051 20008	CHIP JUMPER 0805
4835 ©	4822 051 20008	CHIP JUMPER 0805
4836 ©	4822 051 20008	CHIP JUMPER 0805
4837 ©	4822 051 20008	CHIP JUMPER 0805
4838 ©	4822 051 30008	CHIP JUMPER 0603
4839 ©	4822 051 20008	CHIP JUMPER 0805
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4865 ©	4822 051 30008	CHIP JUMPER 0603
4866 ©	4822 051 20008	CHIP JUMPER 0805
4867 ©	4822 051 30008	CHIP JUMPER 0603

ELECTRICAL PARTSLIST 3CDC-LC-VCD MODULE

RESISTORS

4868 ©	4822 051 20008	CHIP JUMPER 0805
4869 ©	4822 051 20008	CHIP JUMPER 0805
4870 ©	4822 051 20008	CHIP JUMPER 0805
4871 ©	4822 051 20008	CHIP JUMPER 0805
4872 ©	4822 051 20008	CHIP JUMPER 0805
4873 ©	4822 051 20008	CHIP JUMPER 0805
4874 ©	4822 051 20008	CHIP JUMPER 0805
4875 ©	4822 051 20008	CHIP JUMPER 0805
4876 ©	4822 051 20008	CHIP JUMPER 0805
4877 ©	4822 051 30008	CHIP JUMPER 0603
4879 ©	4822 051 20008	CHIP JUMPER 0805
4884 ©	4822 051 20008	CHIP JUMPER 0805
4885 ©	4822 051 20008	CHIP JUMPER 0805
4886 ©	4822 051 20008	CHIP JUMPER 0805
4887 ©	4822 051 30008	CHIP JUMPER 0603
4888 ©	4822 051 20008	CHIP JUMPER 0805
4889 ©	4822 051 20008	CHIP JUMPER 0805
4890 ©	4822 051 20008	CHIP JUMPER 0805
4891 ©	4822 051 30008	CHIP JUMPER 0603
4892 ©	4822 051 20008	CHIP JUMPER 0805
4893 ©	4822 051 20008	CHIP JUMPER 0805
4894 ©	4822 051 20008	CHIP JUMPER 0805
4895 ©	4822 051 20008	CHIP JUMPER 0805
4896 ©	4822 051 20008	CHIP JUMPER 0805
4897 ©	4822 051 20008	CHIP JUMPER 0805
4898 ©	4822 051 20008	CHIP JUMPER 0805

COILS

1810	4822 242 10849	CRYSTAL 8,46MHz
5802	2422 536 00019	TRANSFORMER, DIGITAL OUT

DIODES

6801 ©	4822 130 11397	BAS316
6802 ©	4822 130 11397	BAS316
6803 ©	4822 130 11397	BAS316
6804 ©	4822 130 11397	BAS316
6805 ©	4822 130 11383	BZX284-C5V1
6807 ©	4822 130 11366	BZX284-C3V9
6808 ©	4822 130 11397	BAS316
6810	4822 130 31878	1N4003G
6811 ©	4822 130 82334	BAS85
6812 ©	4822 130 80446	BAS32L
6813 ©	4822 130 11397	BAS316

TRANSISTORS

7806 ©	4822 130 60511	BC847B
7812 ©	4822 130 60511	BC847B
7815 ©	4822 130 60511	BC847B
7820 ©	4822 130 60511	BC847B
7821 ©	4822 130 60511	BC847B
7822	4822 130 42131	BF550
7823 ©	4822 130 60511	BC847B

INTEGRATED CIRCUITS

7801 ©	9352 622 36118	TZA1025T/V2 HF-Amplifier
7802 ©	9352 641 81557	SAA7327M2B Signal processor
7803 ©	9322 158 56682	M63000SP, MOTOR DRIVER
7813 ©	5322 209 11306	HEF4094BT, SHIFT REGISTER
7814	4822 209 32852	TDA7073A/N2

Technical remarks

P2002 100W VCD MODULE

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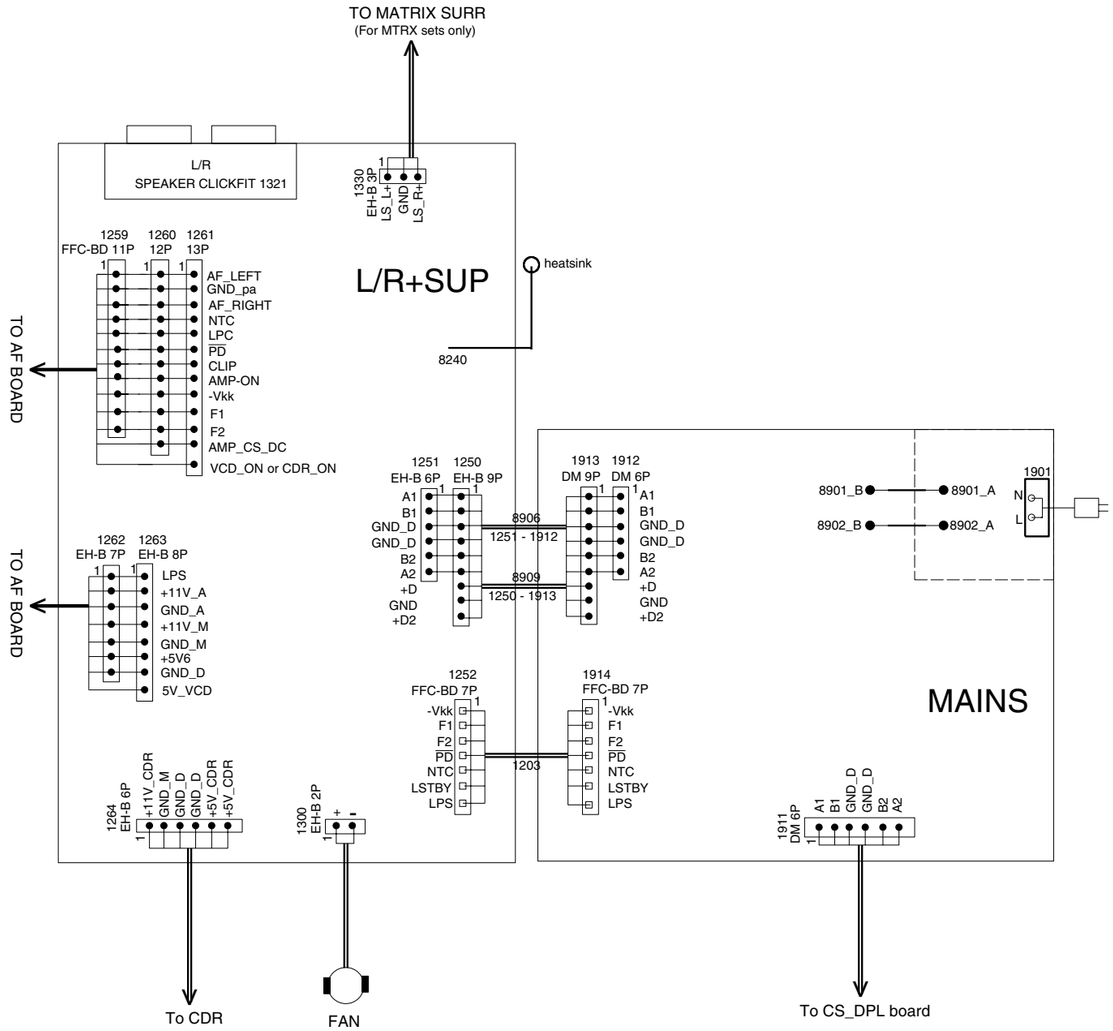
WIRING DIAGRAM



MAINS BOARD - COMPONENT VIEW

1902 C6 1903 D4 1904 D2 1905 C6 1911 B1 1912 B1 1913 B1 1914 B2 1921 B4 1922 B5 1923 B5 1924 B5 1925 B6
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2925 C3 2926 C3 2927 B3 2928 C2 2929 A3 2930 A3 2931 A5 2932 A5 2941 A2 2942 A2 2943 B2 2944 B2 2945 A1
2946 A1 2947 A1 2948 B1 2949 A1 2953 C1 2997 B3 2998 C2 3901 C4 3902 D4 3903 D2 3904 D2 3905 D2 3906 D2
3907 C2 3912 D1 3913 D1 3914 D1 3921 B2 3922 A2 3923 C2 3941 B1 3942 A1 3951 C1 3952 D1 3953 C1 3954 C1
3955 C1 5003 D5 5004 D5 5005 D5 5006 D5 5007 D6 5008 D6 5902 B6 5903 D3 5905 C3 5906 B6 5910 B6 5911 B6
5912 B6 5913 B6 5914 B5 5915 B5 5916 B5 5917 B5 5918 B5 5919 B5 5920 B4 5921 B4 6900 D1 6901 D2 6902 D3
6903 C2 6904 C3 6905 D2 6906 D2 6907 D3 6908 C2 6909 C2 6910 C2 6911 C2 6915 D1 6916 D1 6917 D1 6918 D1
6921 A4 6922 C4 6923 A2 6924 A1 6925 A2 6926 A2 6927 A2 6928 A2 6930 C1 6955 C1 6956 A2 7901 D2 7902 D2
7911 D1 7912 D1 7951 D1 7952 D1 8230 A4 8901_B B6 8902_B B6 9700 C4 9701 C5 9702 C5 9703 C5 9704 C5 9705 C5
9706 C5 9707 C5 9708 C6 9709 C6 9710 C6 9711 B6 9712 D5 9713 D5 9714 D5 9715 D5 9716 D5 9718 D6 9719 D6
9720 B5 9721 A4 9722 A4 9723 A4 9724 B4 9725 B3 9726 D4 9732 B4 9733 B4 9734 B4 9735 A2 9736 C3 9737 B4
9738 A2 9739 B2 9741 C2 9742 C1 9743 C1 9744 A1 9745 C3 9746 B3 9747 B3 9748 B3 9749 C1 9750 C1 9751 C2
9752 C1 9753 C1 9754 C2 9755 C2 9759 B4 9760 C4 9900 D3 9903 B6 9904 B6 9907 D4 9908 D2 9910 D2 9921 B5
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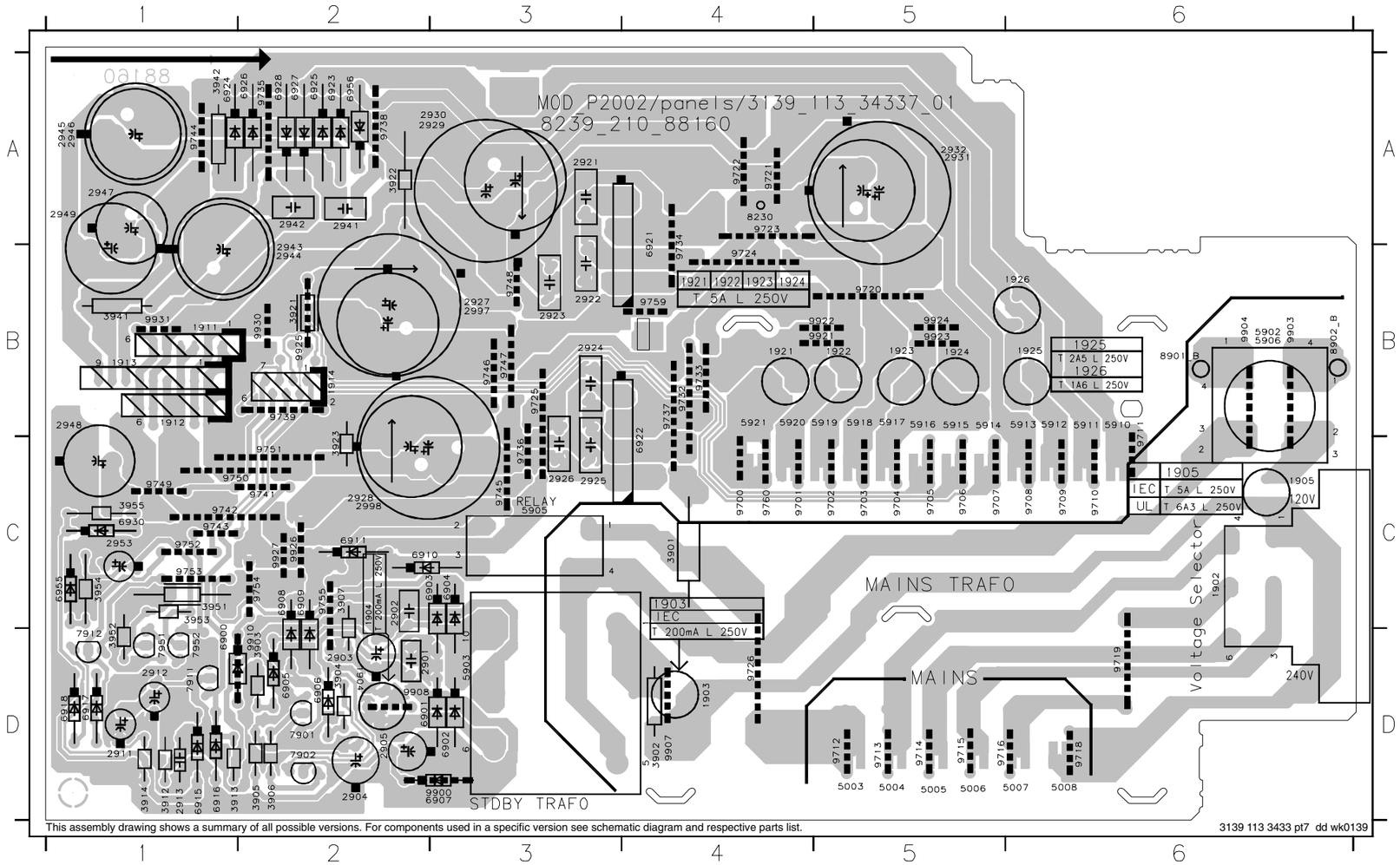

This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3433 pt7 dd wk0139

MAINS SOCKET - COMPONENT VIEW

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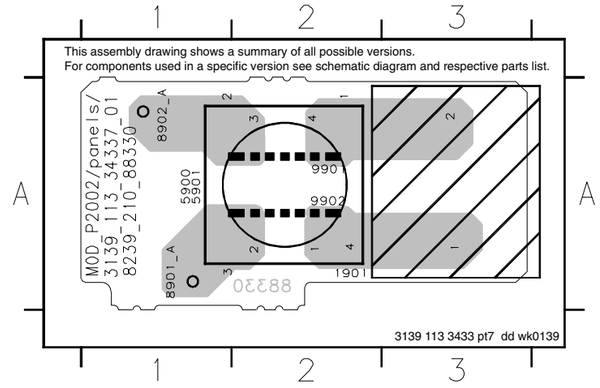

MAINS SOCKET - CIRCUIT DIAGRAM

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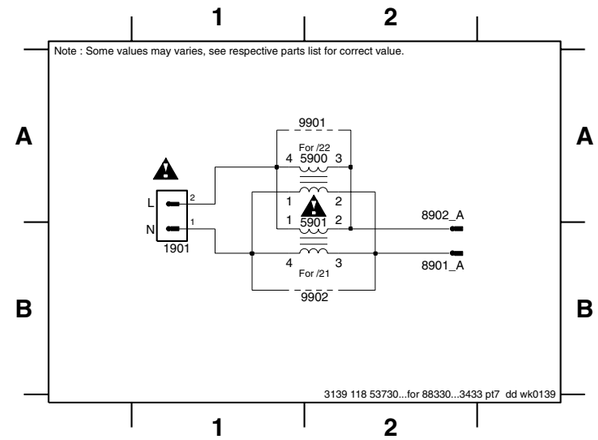

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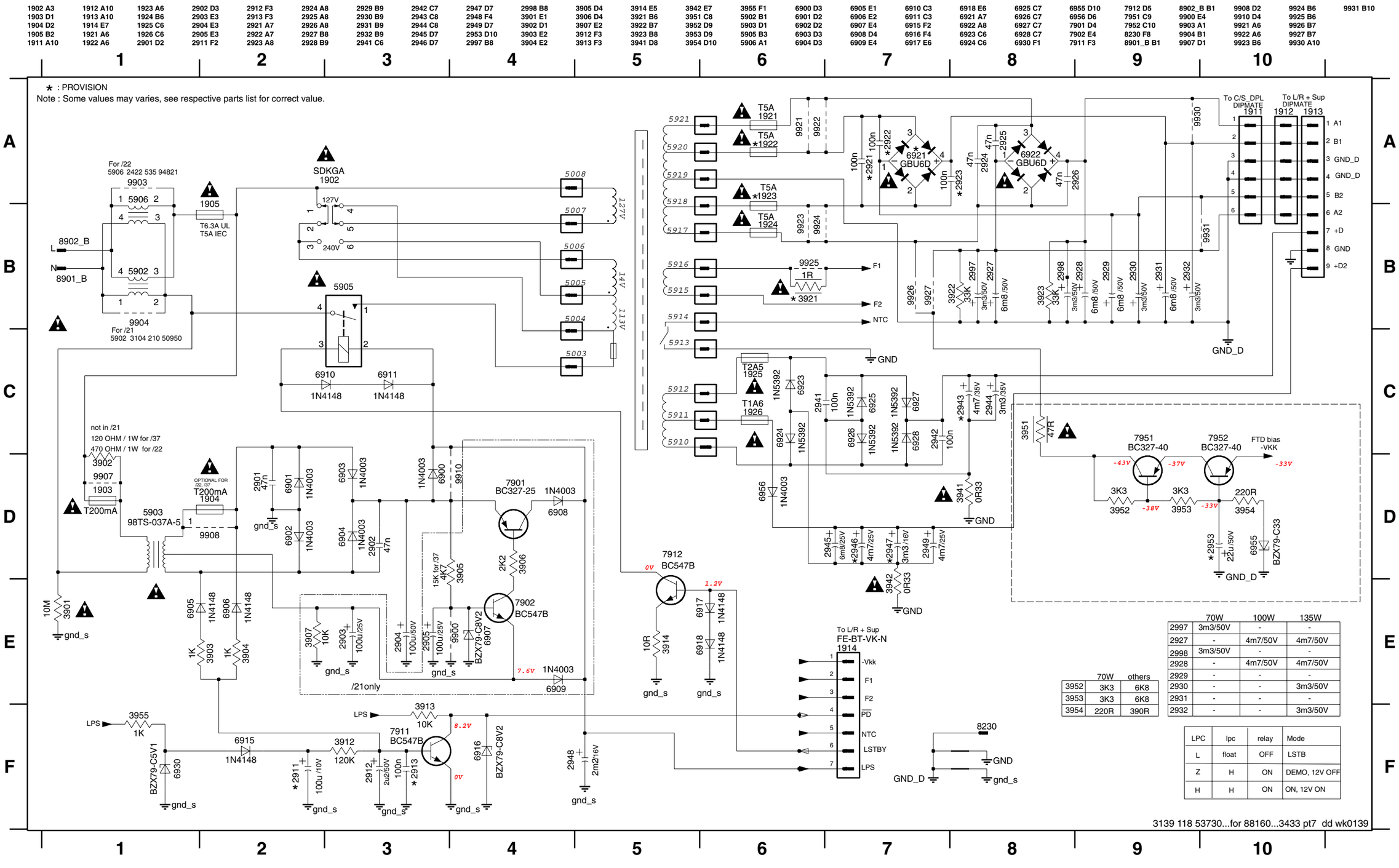
MAINS BOARD - CIRCUIT DIAGRAM



3139 118 53730...for 88160...3433 pt7 dd wk0139

LEFT/RIGHT AMPLIFIER & SUPPLY BOARD - COMPONENT VIEW

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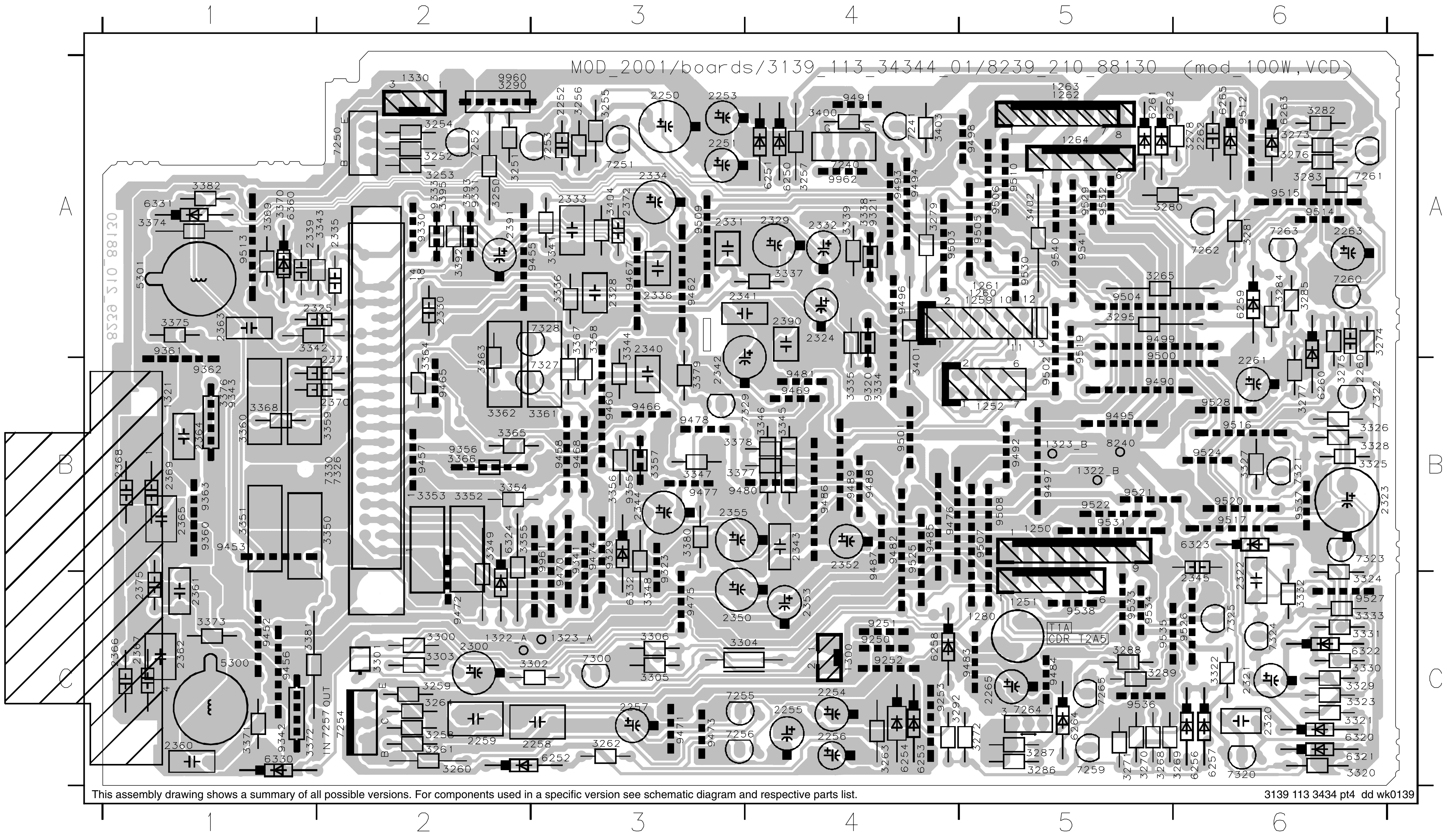
1251 C5	2262 A6	2353 C4	3260 C2	3290 A2	3338 A4	3367 A3	6252 C3	7254 C2	9320 B4	9469 B4	9498 A5	9529 A5
1252 B5	2263 A6	2355 B3	3261 C2	3292 C4	3339 A4	3368 B1	6253 C4	7255 C3	9321 A4	9470 C3	9499 A5	9530 A5
1259 A5	2265 C5	2360 C1	3262 C3	3295 A5	3341 A3	3369 A1	6254 C4	7256 C3	9323 B3	9471 C3	9500 A5	9531 B5
1260 A5	2300 C2	2361 C1	3263 C4	3300 C2	3342 A1	3370 A1	6256 C6	7257 C2	9329 B3	9472 C2	9501 B4	9532 A5
1261 A5	2320 C6	2362 C1	3264 C2	3301 C2	3343 A2	3371 C1	6257 C6	7259 C5	9330 A2	9473 C3	9502 B5	9533 C5
1262 A5	2321 C6	2363 A1	3265 A5	3302 C3	3344 A3	3372 C1	6258 C4	7260 A6	9331 A2	9474 B3	9503 A4	9534 C5
1263 A5	2322 C6	2364 B1	3268 C5	3303 C2	3345 B4	3373 C1	6259 A6	7261 A6	9333 A2	9475 C3	9504 A5	9535 C5
1264 A5	2323 B6	2365 B1	3269 C6	3304 C3	3346 B4	3374 A1	6260 B6	7262 A6	9341 B3	9476 B4	9505 A5	9536 C5
1280 C5	2324 A4	2366 C1	3270 C5	3305 C3	3347 B3	3375 A1	6261 A5	7263 A6	9342 C1	9477 B3	9506 A5	9537 B6
1300 C4	2325 A2	2367 C1	3271 C5	3306 C3	3348 C3	3376 B1	6262 A5	7264 C5	9343 B1	9478 B3	9507 B5	9538 C5
1321 B1	2328 A3	2368 B1	3272 C5	3320 C6	3349 B2	3377 B3	6263 A6	7265 C5	9355 B3	9480 B3	9508 B5	9540 A5
1322_A C2	2329 A4	2369 B1	3273 A6	3321 C6	3350 B2	3378 B3	6264 C5	7300 C3	9356 B2	9481 B4	9509 A3	9541 A5
1322_B B5	2330 A2	2370 B2	3274 A6	3322 C6	3351 B1	3379 B3	6265 A6	7320 C6	9360 B1	9482 B4	9510 A5	9960 A2
1323_A C3	2331 A3	2371 B2	3275 B6	3323 C6	3352 B2	3380 B3	6320 C6	7321 B6	9361 A1	9483 C5	9512 A6	9961 B3
1323_B B5	2332 A4	2372 A3	3276 A6	3324 C6	3353 B2	3381 C1	6321 C6	7322 B6	9362 B1	9484 C5	9513 A1	9962 A4
1330 A2	2333 A3	2375 C1	3277 B6	3325 B6	3354 B2	3382 A1	6322 C6	7323 B6	9363 B1	9485 B4	9514 A6	
2250 A3	2334 A3	2390 A4	3278 A6	3326 B6	3355 B2	3392 A2	6323 B6	7324 C6	9452 C1	9486 B4	9515 A6	
2251 A3	2335 A2	2391 A2	3279 A4	3327 B6	3356 B3	3393 A2	6324 B2	7325 C6	9453 B1	9487 B4	9516 B6	
2252 A3	2336 A3	3250 A2	3280 A5	3328 B6	3357 B3	3395 A2	6330 C1	7326 B2	9455 A3	9488 B4	9517 B6	
2253 A3	2339 A1	3251 A2	3281 A6	3329 C6	3358 A3	3400 A4	6331 A1	7327 B3	9456 C1	9489 B4	9519 A5	
2254 C4	2340 A3	3252 A2	3282 A6	3330 C6	3359 B2	3401 B4	6332 C3	7328 A3	9457 B2	9490 B5	9520 B6	
2255 C4	2341 A3	3253 A2	3283 A6	3331 C6	3360 B1	3402 A5	6360 A1	7329 B4	9458 B3	9491 A4	9521 B5	
2256 C4	2342 B3	3254 A2	3284 A6	3332 C6	3361 B3	3403 A4	7240 A4	7330 B2	9460 B3	9492 B5	9522 B5	
2257 C3	2343 B4	3255 A3	3285 A6	3333 C6	3362 B2	3404 A3	7241 A4	8240 B5	9462 A3	9493 A4	9524 B6	
2258 C3	2344 B3	3256 A3	3286 C5	3334 B4	3363 B2	5300 C1	7250 A2	9250 C4	9465 B2	9494 A4	9525 B4	
2259 C2	2345 C6	3257 A4	3287 C5	3335 B4	3364 A2	5301 A1	7251 A3	9251 C4	9466 B3	9495 B5	9526 C6	
2260 B6	2350 C3	3258 C2	3288 C5	3336 A3	3365 B2	6250 A4	7252 A2	9252 C4	9467 A3	9496 A4	9527 C6	



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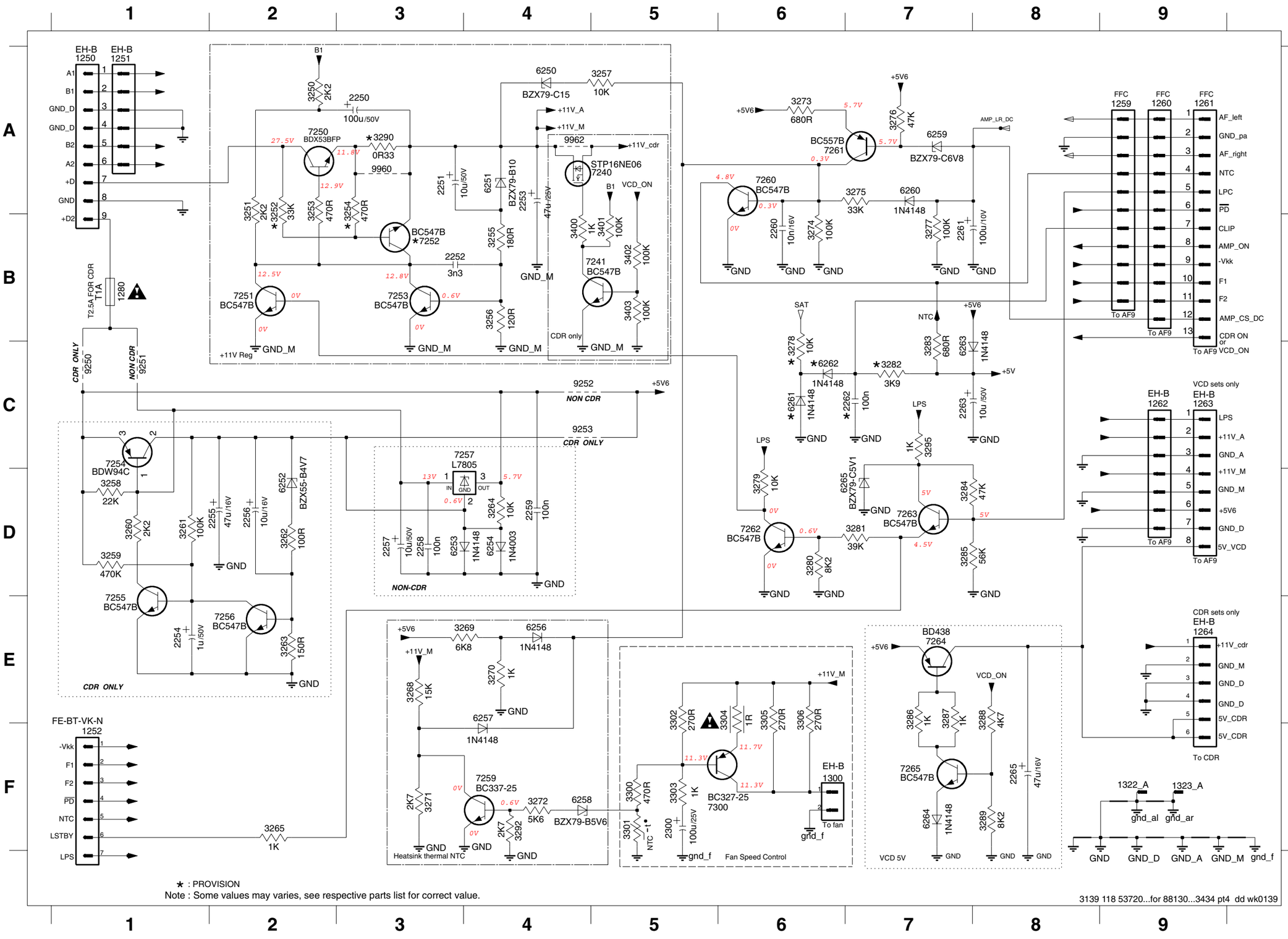
LEFT/RIGHT AMPLIFIER & SUPPLY BOARD - CIRCUIT DIAGRAM (PART 1)



★ : PROVISION

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

3139 118 53720...for 88130...3434 pt4 dd wk0139

1250 A1
1251 A1
1252 F1
1259 A9
1260 A9
1261 A9
1262 C9
1263 C9
1264 E9
1280 B1
1300 F6
1322_A F9
1323_A F9
2250 A3
2251 A3
2252 B3
2253 A4
2254 E1
2255 D1
2256 D2
2257 D3
2258 D3
2259 D4
2260 B6
2261 B7
2262 C7
2263 C7
2265 F8
2300 F5
3250 A2
3251 A2
3252 A2
3253 A2
3254 A3
3255 B4
3256 B4
3257 A5
3258 D1
3259 D1
3260 D1
3261 D1
3262 D2
3263 E2
3264 D4
3265 F2
3268 E3
3269 E4
3270 E4
3271 F3
3272 F4
3273 A6
3274 B6
3275 A7
3276 A7
3277 B7
3278 C6
3279 D6
3280 D6
3281 D7
3282 C7
3283 C7
3284 D7
3285 D7
3286 E7
3287 E7
3288 E8
3289 F8
3290 A3
3292 F4
3295 C7
3300 F5
3301 F5
3302 E5
3303 F5
3304 E6
3305 E6
3306 E6
3400 B4
3401 B5
3402 B5
3403 B5
6250 A4
6251 A4
6252 D2
6253 D3
6254 D4
6256 E4
6257 E4
6258 F4
6259 A7
6260 A7
6261 C6
6262 C6
6263 C7
6264 F7
6265 D6
7240 A5
7241 B5
7250 A2
7251 B2
7252 B3
7253 B3
7254 C1
7255 E1
7256 E2
7257 C4
7259 F4
7260 A6
7261 A6
7262 D6
7263 D7
7264 E7
7265 F8
7300 F5
9250 C1
9251 C1
9252 C4
9253 C4
9960 A3
9962 A4

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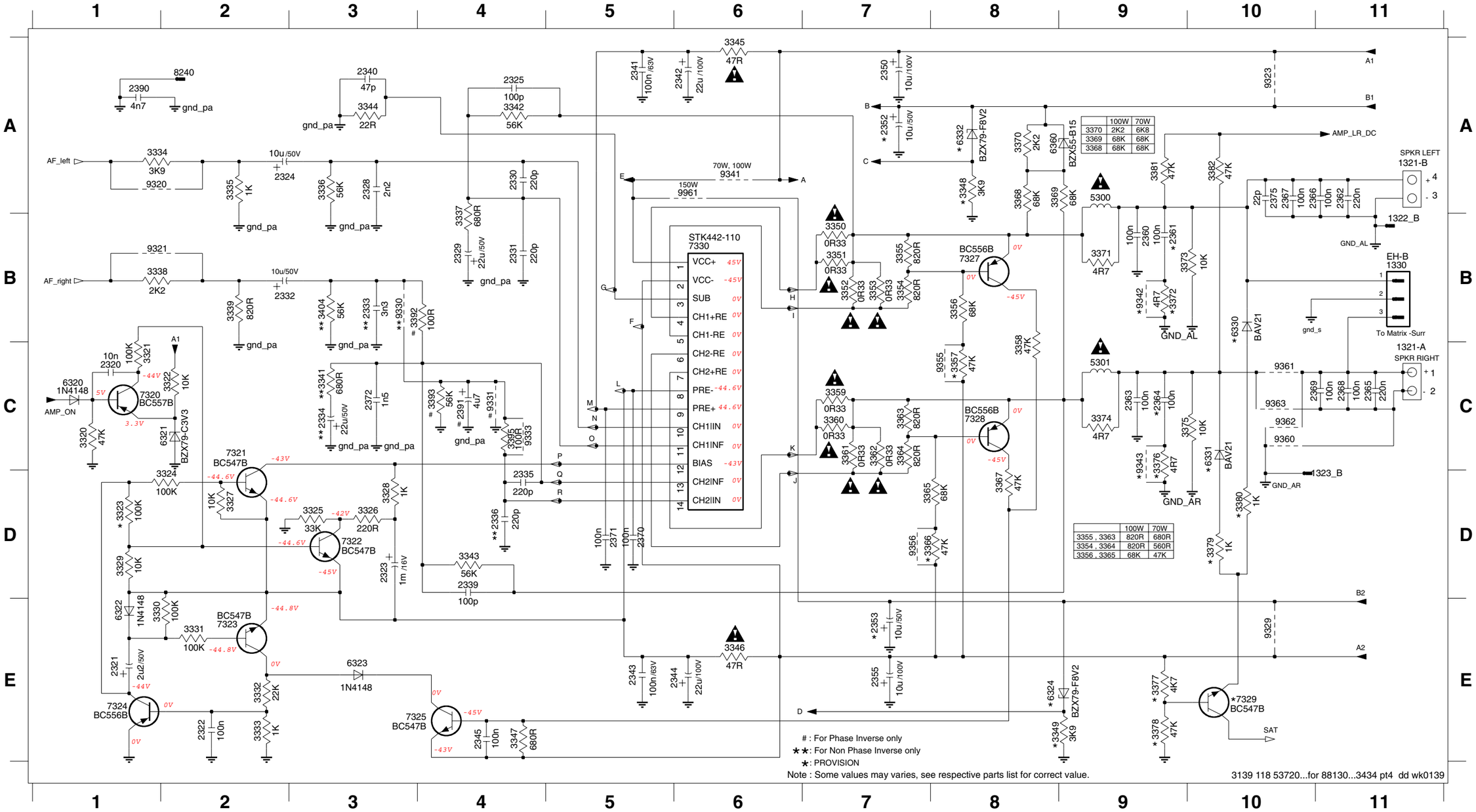
LEFT/RIGHT AMPLIFIER & SUPPLY BOARD - CIRCUIT DIAGRAM (PART 2)

1321-A C11	2323 D3	2333 B3	2343 E5	2361 B9	2369 C11	3321 C1	3329 D1	3337 B4	3346 E6	3354 B7	3362 C7	3370 A8	3378 E9	3404 B3	6330 B10	7324 E1	9321 B1	9343 C9
1321-B A11	2324 A2	2334 C3	2344 E6	2362 A11	2370 D5	3322 C2	3330 E1	3338 B1	3347 E4	3355 B7	3363 C7	3371 B9	3379 D10	5300 A9	6331 C10	7325 E4	9323 A10	9355 C8
1322_B B11	2325 A4	2335 D4	2345 E4	2363 C9	2371 D5	3323 D1	3331 E2	3339 B2	3348 A8	3356 B8	3364 C7	3372 B9	3380 D10	5301 C9	6332 A8	7327 B8	9329 E10	9356 D7
1323_B D11	2328 A3	2336 D4	2350 A7	2364 C9	2372 C3	3324 D2	3332 E2	3340 C3	3349 E8	3357 C8	3365 D8	3373 B10	3381 A9	6320 C1	6360 A8	7328 C8	9330 B3	9360 C10
1330 B11	2329 B4	2339 D4	2352 A7	2365 C11	2375 A10	3325 D3	3333 E2	3342 A4	3350 B7	3358 C8	3366 D8	3374 C9	3382 A10	6321 C1	7320 C1	7329 E10	9331 C4	9361 C10
2320 C1	2330 A4	2340 A3	2353 E7	2366 A10	2390 A1	3326 D3	3334 A1	3343 D4	3351 B7	3359 C7	3367 D8	3375 C10	3392 B3	6322 E1	7321 C2	7330 B6	9333 C4	9362 C10
2321 E1	2331 B4	2341 A5	2355 E7	2367 A10	2391 C4	3327 D2	3335 A2	3344 A3	3352 B7	3360 C7	3368 A8	3376 C9	3393 C4	6323 E3	7322 D3	8240 A2	9341 A6	9363 C10
2322 E2	2332 B2	2342 A6	2360 B9	2368 C11	3320 C1	3328 D3	3336 A3	3345 A6	3353 B7	3361 C7	3369 A8	3377 E9	3395 C4	6324 E8	7323 E2	9320 A1	9342 B9	9961 A6



ELECTRICAL PARTS LIST - MAINS BOARD

MISCELLANEOUS

1901	4822 265 31015	⚠ Mains Socket
1902	2422 129 16478	⚠ Voltage Selector
1903	4822 071 52001	⚠ Fuse T200mA
1904	4822 071 52001	⚠ Fuse T200mA
1905	2422 086 10963	⚠ Fuse T5A
1914	4822 267 10953	Flex Connector 7P
1921	4822 071 55002	⚠ Fuse T5A
1924	4822 071 55002	⚠ Fuse T5A
1925	4822 071 52502	⚠ Fuse T2,5A
1926	4822 071 51602	⚠ Fuse T1,6A

CAPACITORS

2901	4822 121 43526	47nF 5% 250V
2902	4822 121 43526	47nF 5% 250V
2903	4822 124 40207	100uF 20% 25V
2904	4822 124 40255	100uF 20% 63V
2912	4822 124 22652	2,2uF 20% 50V
2924	4822 121 43526	47nF 5% 250V
2925	4822 121 43526	47nF 5% 250V
2926	4822 121 43526	47nF 5% 250V
2927	4822 124 80415	4700uF 20% 50V
2928	4822 124 80415	4700uF 20% 50V
2941	5322 121 42386	100nF 5% 63V
2942	5322 121 42386	100nF 5% 63V
2944	4822 124 42367	3300uF 20% 35V
2945	4822 124 12328	6800uF 25V
2948	4822 124 40784	3300uF 20% 16V
2949	4822 124 12012	4700uF 20% 25V

RESISTORS

3903	4822 050 11002	1k 1% 0,4W
3904	4822 050 11002	1k 1% 0,4W
3905	4822 116 52283	4k7 5% 0,5W
3906	4822 116 52256	2k2 5% 0,5W
3907	4822 050 21003	10k 1% 0,6W
3912	4822 116 52245	150k 5% 0,5W
3913	4822 050 21003	10k 1% 0,6W
3914	4822 116 52176	10R 5% 0,5W
3922	4822 050 23303	33k 1% 0,6W
3923	4822 050 23303	33k 1% 0,6W
3941	4822 117 11342	⚠ 0R33 5% 2W
3942	4822 117 11342	⚠ 0R33 5% 2W
3951	4822 052 10479	⚠ 47R 5% 0,33W
3952	4822 116 83961	6k8 5%
3953	4822 116 83961	6k8 5%
3954	4822 116 83881	390R 5% 0,5W
3955	4822 050 11002	1k 1% 0,4W

COILS & FILTERS

5901	4822 157 11628	⚠ Mains Choke
5903	3103 308 30600	⚠ Standby Transformer
5905	4822 280 10382	⚠ Relay

DIODES

6901	5322 130 81917	SB140
6902	5322 130 81917	SB140
6903	5322 130 81917	SB140
6904	5322 130 81917	SB140
6905	4822 130 30621	1N4148
6906	4822 130 30621	1N4148
6907	4822 130 34382	BZX79-C8V2
6908	5322 130 81917	SB140
6909	4822 130 31878	1N4003G
6910	4822 130 30621	1N4148
6911	4822 130 30621	1N4148
6915	4822 130 30621	1N4148
6916	4822 130 34382	BZX79-C8V2
6917	4822 130 30621	1N4148
6918	4822 130 30621	1N4148
6922	4822 130 10944	⚠ GBU6D
6923	4822 130 31878	1N4003G
6923	5322 130 80686	1N5392
6924	4822 130 31878	1N4003G
6924	5322 130 80686	1N5392
6925	4822 130 31878	1N4003G
6925	5322 130 80686	1N5392
6926	4822 130 31878	1N4003G
6926	5322 130 80686	1N5392
6927	4822 130 31878	1N4003G
6927	5322 130 80686	1N5392
6928	4822 130 31878	1N4003G
6928	5322 130 80686	1N5392
6930	4822 130 34233	BZX79-C5V1
6955	4822 130 34142	BZX79-C33
6956	4822 130 31878	1N4003G

TRANSISTORS & INTEGRATED CIRCUITS

7901	4822 130 41246	BC327-25
7902	4822 130 40959	BC547B
7911	4822 130 40959	BC547B
7912	4822 130 40959	BC547B
7951	4822 130 41327	BC327-40
7952	4822 130 41327	BC327-40

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

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ELECTRICAL PARTS LIST - LEFT/RIGHT AMPLIFIER & SUPPLY BOARD

MISCELLANEOUS

0002	4822 492 11735	SPRING TRANS
0028	3139 114 70800	Holder STK 70/100W
1252	4822 267 10953	Flex Connector 7P
1261	4822 267 10738	Flex Connector 13P
1280	4822 071 52502	⚠ Fuse T2,5A
1321	4822 267 31176	L/R Speaker Terminal

CAPACITORS

2250	4822 124 40255	100uF 20% 63V
2251	4822 124 40248	10uF 20% 63V
2252	4822 122 10577	3,3nF 10% 16V
2253	4822 124 40196	220uF 20% 16V
2254	4822 124 21913	1uF 20% 63V
2255	4822 124 11912	220uF 20% 6,3V
2256	4822 124 40248	10uF 20% 63V
2260	4822 121 51387	10nF 20% 16V
2261	4822 124 41584	100uF 20% 10V
2263	4822 124 40248	10uF 20% 63V
2265	4822 124 41751	47uF 20% 50V
2300	4822 124 40207	100uF 20% 25V
2320	4822 121 43693	10nF 100V
2321	4822 124 22652	2,2uF 20% 50V
2322	5322 121 42386	100nF 5% 63V
2323	4822 124 81144	1000uF 16V
2324	4822 124 40248	10uF 20% 63V
2325	4822 122 33195	100pF 10% 50V
2329	4822 124 81151	22uF 50V
2330	4822 122 33519	470pF 10% 50V
2332	4822 124 40248	10uF 20% 63V
2334	4822 124 81151	22uF 50V
2335	4822 122 33519	470pF 10% 50V
2339	4822 122 33195	100pF 10% 50V
2340	4822 126 12726	47pF 5% 50V
2341	5322 121 42386	100nF 5% 63V
2342	4822 124 40764	22uF 100 V
2343	5322 121 42386	100nF 5% 63V
2344	4822 124 40764	22uF 100 V
2345	2020 561 90365	100nF +80/-20% 50V
2350	5322 124 40641	10uF 20% 100V
2355	5322 124 40641	10uF 20% 100V
2360	5322 121 42386	100nF 5% 63V
2362	4822 121 42868	220nF 5% 50V
2363	5322 121 42386	100nF 5% 63V
2365	4822 121 42868	220nF 5% 50V
2370	2020 561 90365	100nF +80/-20% 50V
2371	2020 561 90365	100nF +80/-20% 50V
2390	5322 122 32261	4,7nF 10% 100V

RESISTORS

3250	4822 116 52256	2k2 5% 0,5W
3251	4822 116 52256	2k2 5% 0,5W
3253	4822 116 83883	470R 5% 0,5W
3255	4822 116 52213	180R 5% 0,5W
3256	4822 116 52206	120R 5% 0,5W
3257	4822 050 21003	10k 1% 0,6W
3258	4822 116 52257	22k 5% 0,5W
3259	4822 116 52285	470k 5% 0,5W
3260	4822 116 52256	2k2 5% 0,5W
3261	4822 116 52234	100k 5% 0,5W
3262	4822 116 52175	100R 5% 0,5W
3263	4822 116 52206	120R 5% 0,5W
3265	4822 050 11002	1k 1% 0,4W
3268	4822 116 52244	15k 5% 0,5W
3269	4822 116 83961	6k8 5%
3270	4822 050 11002	1k 1% 0,4W
3271	4822 116 52263	2k7 5% 0,5W
3272	4822 116 52289	5k6 5% 0,5W
3273	4822 116 52228	680R 5% 0,5W
3274	4822 116 52234	100k 5% 0,5W
3275	4822 050 23303	33k 1% 0,6W
3276	4822 116 83884	47k 5% 0,5W
3277	4822 116 52234	100k 5% 0,5W
3279	4822 050 21003	10k 1% 0,6W
3280	4822 116 52303	8k2 5% 0,5W
3281	4822 116 83882	39k 5% 0,5W
3283	4822 116 52228	680R 5% 0,5W
3284	4822 116 83884	47k 5% 0,5W
3285	4822 116 52291	56k 5% 0,5W
3286	4822 050 11002	1k 1% 0,4W
3287	4822 050 11002	1k 1% 0,4W
3288	4822 116 52283	4k7 5% 0,5W
3289	4822 116 52303	8k2 5% 0,5W
3292	4822 116 52263	2k7 5% 0,5W
3295	4822 050 11002	1k 1% 0,4W
3300	4822 116 83883	470R 5% 0,5W
3301	4822 117 12063	NTC DC 5W 10k 5%
3302	4822 116 83876	270R 5% 0,5W
3303	4822 050 11002	1k 1% 0,4W
3304	4822 052 10108	⚠ 1R 5% 0,33W
3305	4822 116 83876	270R 5% 0,5W
3306	4822 116 83876	270R 5% 0,5W
3320	4822 116 83884	47k 5% 0,5W
3321	4822 116 52234	100k 5% 0,5W
3322	4822 050 21003	10k 1% 0,6W
3324	4822 116 52234	100k 5% 0,5W
3325	4822 050 23303	33k 1% 0,6W
3326	4822 116 83872	220R 5% 0,5W
3327	4822 050 21003	10k 1% 0,6W
3328	4822 050 11002	1k 1% 0,4W
3329	4822 050 21003	10k 1% 0,6W
3330	4822 116 52234	100k 5% 0,5W
3331	4822 116 52234	100k 5% 0,5W
3332	4822 116 52257	22k 5% 0,5W
3333	4822 050 11002	1k 1% 0,4W

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ELECTRICAL PARTS LIST - LEFT/RIGHT AMPLIFIER & SUPPLY BOARD

RESISTORS

3334	4822 116 52276	3k9 5% 0,5W
3335	4822 050 11002	1k 1% 0,4W
3336	4822 116 52291	56k 5% 0,5W
3337	4822 116 52228	680R 5% 0,5W
3338	4822 116 52276	3k9 5% 0,5W
3339	4822 050 11002	1k 1% 0,4W
3341	4822 116 52228	680R 5% 0,5W
3342	4822 116 52291	56k 5% 0,5W
3343	4822 116 52291	56k 5% 0,5W
3344	4822 116 52186	22R 5% 0,5W
3345	3198 012 14790	⚠ 47R 5% 1W
3346	3198 012 14790	⚠ 47R 5% 1W
3347	4822 116 52228	680R 5% 0,5W
3350	2322 194 96001	⚠ 0R33 5%
3351	2322 194 96001	⚠ 0R33 5%
3352	2322 194 96001	⚠ 0R33 5%
3353	2322 194 96001	⚠ 0R33 5%
3354	4822 116 52228	680R 5% 0,5W
3355	4822 116 52231	820R 5% 0,5W
3356	4822 116 52297	68k 5% 0,5W
3358	4822 116 83884	47k 5% 0,5W
3359	2322 194 96001	⚠ 0R33 5%
3360	2322 194 96001	⚠ 0R33 5%
3361	2322 194 96001	⚠ 0R33 5%
3362	2322 194 96001	⚠ 0R33 5%
3363	4822 116 52231	820R 5% 0,5W
3364	4822 116 52228	680R 5% 0,5W
3365	4822 116 52297	68k 5% 0,5W
3367	4822 116 83884	47k 5% 0,5W
3368	4822 116 52297	68k 5% 0,5W
3369	4822 116 52297	68k 5% 0,5W
3370	4822 116 52256	2k2 5% 0,5W
3371	4822 050 24708	4R7 1% 0,6W
3373	4822 050 21003	10k 1% 0,6W
3374	4822 050 24708	4R7 1% 0,6W
3375	4822 050 21003	10k 1% 0,6W
3381	4822 116 83884	47k 5% 0,5W
3382	4822 116 83884	47k 5% 0,5W
3404	4822 116 52291	56k 5% 0,5W

COILS & FILTERS

5300	4822 157 70599	⚠ IND FXD BEAD EMI
5301	4822 157 70599	⚠ IND FXD BEAD EMI

DIODES

6250	4822 130 34281	BZX79-C15
6251	4822 130 61219	BZX79-B10
6252	4822 130 34174	BZX79-B4V7
6256	4822 130 30621	1N4148
6257	4822 130 30621	1N4148
6258	4822 130 34173	BZX79-B5V6
6259	4822 130 34278	BZX79-C6V8
6260	4822 130 30621	1N4148
6263	4822 130 30621	1N4148
6264	4822 130 30621	1N4148
6265	4822 130 34233	BZX79-C5V1
6320	4822 130 30621	1N4148
6321	5322 130 31504	BZX79-C3V3
6322	4822 130 30621	1N4148
6323	4822 130 30621	1N4148

TRANSISTORS & INTEGRATED CIRCUITS

7250	9322 139 23687	BDX53BFP
7251	4822 130 40959	BC547B
7253	4822 130 40959	BC547B
7254	4822 130 10847	BDW94C
7255	4822 130 40959	BC547B
7256	4822 130 40959	BC547B
7259	4822 130 40981	BC337-25
7260	4822 130 40959	BC547B
7261	4822 130 44568	BC557B
7262	4822 130 40959	BC547B
7263	4822 130 40959	BC547B
7264	4822 130 40995	BD438
7265	4822 130 40959	BC547B
7300	4822 130 41246	BC327-25
7320	4822 130 44568	BC557B
7321	4822 130 40959	BC547B
7322	4822 130 40959	BC547B
7323	4822 130 40959	BC547B
7324	4822 130 41691	BC556B
7325	4822 130 40959	BC547B
7327	4822 130 41691	BC556B
7328	4822 130 41691	BC556B
7330	9322 160 21682	STK442-110

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

AF10 BOARD

TABLE OF CONTENTS

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BRIEF INTRODUCTION OF THE AF10 BOARD

The AF10 Board consists of the following features :

a. TDA7468D IC
TDA7468D IC (7501) which includes functions such as source selection, loudness control, dynamic bass control, treble control, volume control and muting function. Sound features such as ALC, DBB, DSC and IS are controllable via I²C Bus from the microprocessor.

The TDA7468D IC caters for 4 input sources namely TUNER, TAPE, CD and AUX. It also has a Mic mix input. In our application, software will switch the input source to previous source MUTE during STANDBY mode and some other occasions where noise from other input source is undesirable.

Note that the input to the TDA7468D IC must be ac coupled to prevent 'polp' noise.
Input networks are included to provide appropriate attenuation for various sources.

b. SIMPLE MIC MIXING
The AF10 Board has provisions which can be configured to cater for one of the following:
MM : which caters for Mic mixing with additional Mic amplifier board.
NM : non Mic mixing.

c. DOLBY PRO LOGIC (DPL) INTERFACE
The AF10 Board has provisions which can be configured to cater for DPL.

d. LINE OUT
Line out cinch socket for connection to external amplifier.

e. SUB-WOOFER OUT
Sub-woofer out cinch socket for connection to active sub-woofer speaker.

f. INCREDIBLE SURROUND
Incredible surround effect using transistor circuit to create phase shifting and spatial effect.

g. HEADPHONE AMPLIFIER
Headphone amplifier to drive 32 ohm to 1kohm headphone.

h. CD STANDBY CONTROL
CD Standby Control circuit which switches on the supply to CD servo control IC, digital out buffer IC, HF circuit and the laser light pen in CD mode only.

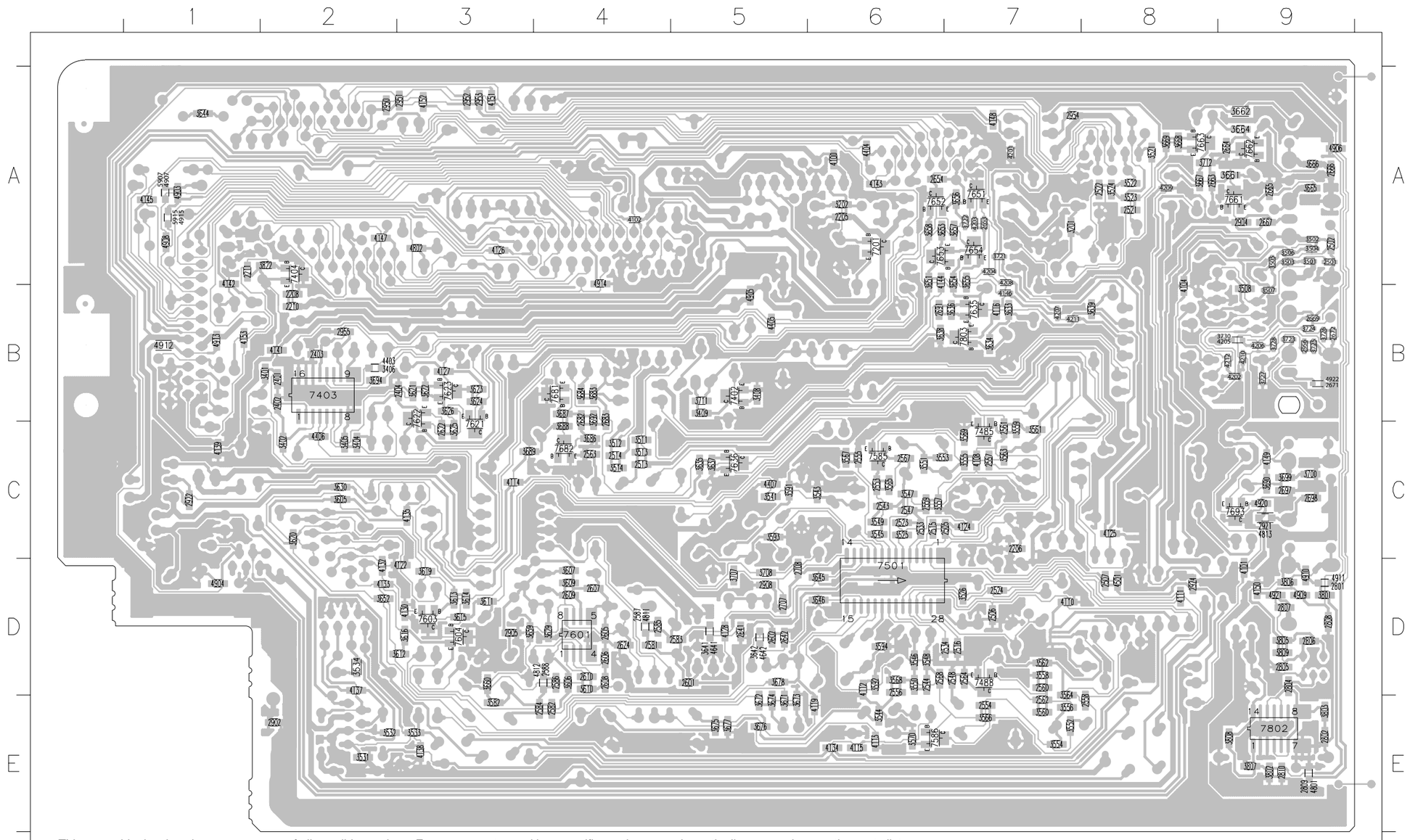
i. ATTENUATION NETWORK
Attenuation network is provided at the output of the AF10 Board for interfacing with power board of different output power.

j. CD DIGITAL OUT
CD Digital out cinch socket for connection to external digital audio decoders.

12-2

AF10 BOARD - CHIP LAYOUT

2205 A6	2524 D7	2581 D4	2654 A6	2807 D9	3402 C2	3524 A8	3556 E7	3606 D4	3634 B7	3661 A9	3689 C3	3803 E9	4124 C7	4149 C9	4407 C5	4915 A1	7635 B7
2206 C7	2533 C6	2582 E4	2663 A8	2808 D9	3404 C2	3525 C6	3557 C6	3607 D4	3635 C5	3662 A9	3690 C9	3805 D9	4125 C8	4150 D9	4501 D8	4920 C9	7636 C5
2208 B2	2534 D7	2583 D5	2664 A9	2809 E9	3405 C2	3526 D7	3558 D7	3609 D4	3636 B7	3664 A9	3692 B4	3806 D9	4126 A3	4151 A3	4641 D5	4921 D9	7651 A7
2210 B2	2543 C6	2584 E4	2665 A9	2810 E9	3406 B2	3531 E2	3559 C7	3610 D4	3637 C5	3665 A9	3694 B2	3807 E9	4127 B3	4152 A3	4642 D5	4922 B9	7652 A6
2211 A1	2544 D6	2585 D4	2666 A9	2902 E2	3408 B5	3532 E2	3560 E7	3611 D3	3638 B6	3666 A9	3699 C9	3808 E9	4128 D5	4153 B1	4801 E9	5907 A1	7653 A6
2401 B2	2547 C6	2586 D4	2667 A9	2904 A9	3409 B5	3533 E3	3561 C7	3612 D3	3639 B8	3667 A8	3700 C9	3809 D9	4130 D3	4201 A7	4802 A3	5915 A1	7654 A7
2402 B2	2548 D7	2587 D4	2669 B9	2905 D3	3501 A9	3534 D2	3562 D7	3613 D3	3641 D5	3668 A8	3707 D5	3822 A2	4132 D2	4202 B9	4811 D4	7201 A6	7661 A9
2403 B2	2553 C6	2588 D4	2671 B9	2908 D5	3502 A9	3541 C5	3563 C7	3614 D3	3642 D5	3669 A8	3708 D5	4100 A6	4133 D2	4203 A7	4812 D4	7402 B5	7662 A9
2404 B3	2554 E7	2601 D5	2672 B9	2921 C9	3503 A9	3543 C6	3564 D7	3615 D3	3644 A1	3671 E5	3711 B5	4101 D9	4134 E6	4204 A7	4813 C9	7403 B2	7663 A8
2501 A9	2555 C6	2602 D5	2682 B4	2922 C1	3504 A9	3544 E6	3565 C6	3616 D3	3645 D6	3672 E5	3712 A8	4102 A4	4135 C3	4205 B9	4903 A1	7404 A2	7681 B4
2502 A9	2556 D6	2605 D4	2683 B4	2924 D8	3505 A9	3545 C6	3566 E7	3619 D3	3646 D6	3673 E5	3721 A7	4104 B8	4137 D2	4206 B9	4904 D1	7485 C7	7682 C4
2505 C7	2557 C7	2606 D4	2691 B6	2950 A2	3506 A9	3546 D6	3567 C6	3620 C2	3651 A6	3674 E5	3722 A7	4108 C7	4138 E3	4207 B7	4905 B5	7488 D7	7693 C9
2506 D7	2558 E8	2607 D4	2697 C9	2951 A3	3507 B9	3547 C6	3568 D6	3621 B3	3652 D2	3675 E5	3723 B9	4110 D7	4139 C1	4208 A7	4906 A9	7501 D6	7802 E9
2507 D8	2559 C6	2608 D4	2698 C9	2952 A3	3508 B9	3548 D6	3569 C7	3622 B3	3653 A6	3676 E5	3724 B9	4111 D8	4141 B2	4209 A8	4907 A1	7585 C6	7803 B7
2513 C4	2560 D7	2609 D4	2707 D5	2953 A3	3511 C4	3549 C6	3570 E6	3623 B3	3654 A7	3677 E5	3725 B9	4112 D6	4142 A1	4210 B9	4908 A1	7586 E6	
2514 C4	2561 C7	2610 D4	2708 D5	2954 A7	3512 C4	3550 D6	3582 E3	3624 B3	3655 A7	3678 D5	3726 B9	4113 E6	4143 A6	4211 B7	4909 D9	7601 D4	
2515 C6	2562 E7	2622 C3	2801 D9	2955 B2	3513 C4	3551 C6	3591 C5	3625 C3	3656 A7	3683 B4	3727 B9	4114 C3	4144 A6	4212 B9	4910 D9	7603 D3	
2516 D7	2563 C4	2624 D4	2802 E9	2956 B9	3514 C4	3552 E7	3592 D6	3626 B3	3657 A7	3684 B4	3728 B9	4115 E6	4145 A1	4403 B2	4911 D9	7604 D3	
2521 A8	2564 D7	2641 D5	2804 D9	3201 A7	3521 A8	3553 C6	3593 C5	3629 D4	3658 A6	3686 C4	3730 B9	4116 B7	4146 B7	4404 A6	4912 B1	7621 C3	
2522 A8	2567 C6	2642 D5	2805 D9	3202 A6	3522 A8	3554 E7	3594 D6	3630 C2	3659 D3	3687 B4	3801 D9	4119 E6	4147 A2	4405 B5	4913 B1	7622 B3	
2523 C6	2568 D6	2653 A7	2806 D9	3401 B2	3523 A8	3555 C7	3605 C2	3633 B7	3660 D3	3688 C4	3802 E9	4122 D3	4148 A7	4406 C2	4914 A4	7623 B3	



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

3139 113 3475 pt1 dd wk0210

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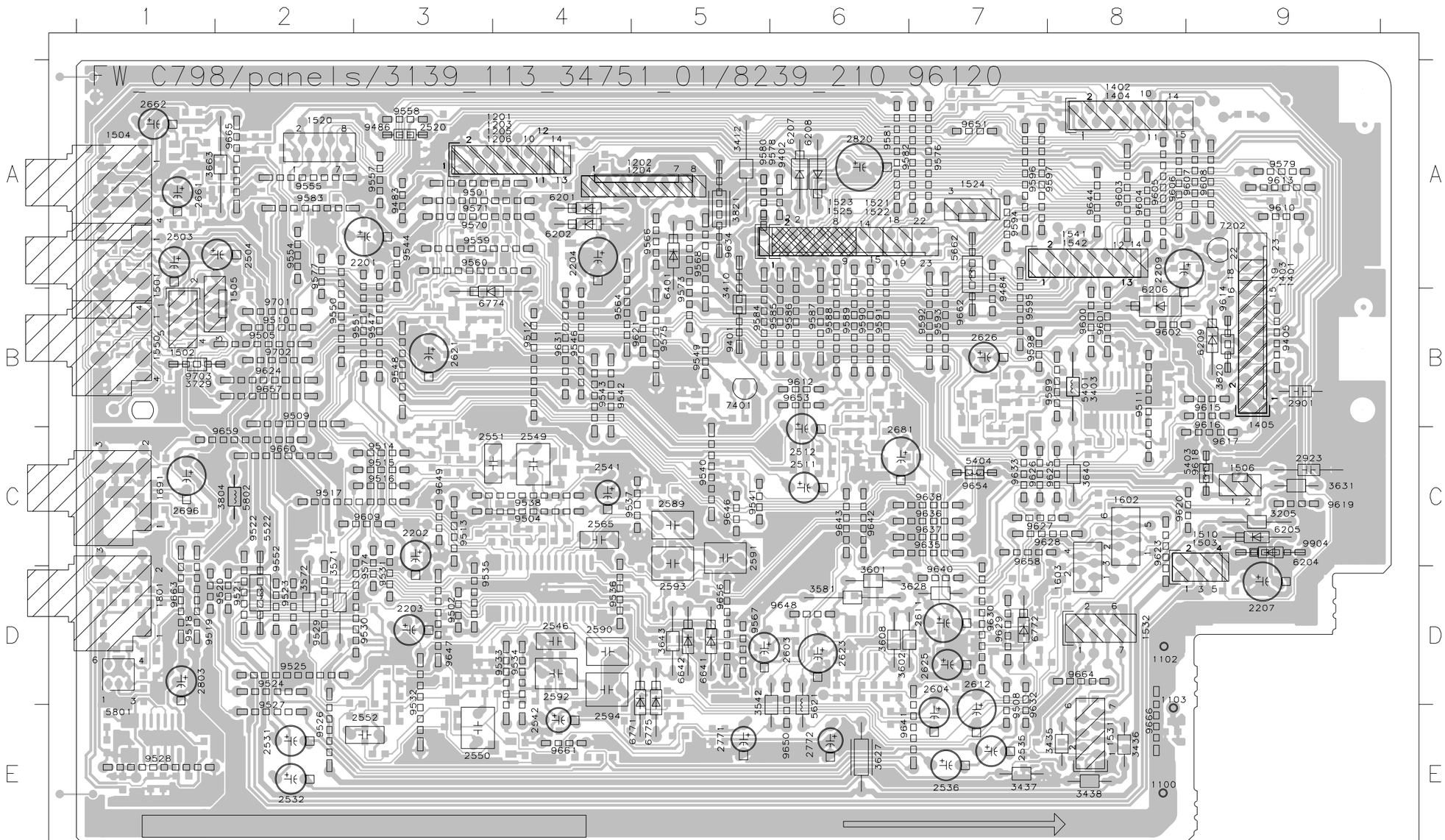
AF10 BOARD - COMPONENT LAYOUT

1100 E8	1504 A1	1691 C1	2541 C4	2612 D7	3410 A5	3643 D5	6205 C9	9483 A3	9518 D1	9535 D3	9555 A2	9579 A9	9596 A7	9614 B9	9632 E7	9651 A7	9904 C9		
1102 D8	1505 B2	1801 D1	2542 E4	2621 B3	3412 A5	3663 A1	6206 B8	9484 B7	9519 D1	9536 D4	9557 A3	9580 A5	9597 A8	9615 B9	9633 C7	9653 B6			
1103 D8	1506 C9	2201 A3	2546 D4	2623 D6	3435 E8	3729 B1	6207 A6	9486 A3	9520 D2	9537 C4	9558 A3	9581 A6	9598 B7	9616 B9	9634 A5	9654 C7			
1201 A4	1510 C9	2202 C3	2549 C4	2625 D7	3436 E8	3804 C2	6208 A6	9501 A3	9521 D2	9538 C4	9559 A3	9582 A6	9599 B8	9617 C9	9635 C7	9656 D5			
1202 A5	1520 A2	2203 D3	2550 E3	2626 B7	3437 E7	3820 B9	6209 B9	9502 D3	9522 C2	9540 C5	9560 A3	9583 A2	9600 B8	9618 C9	9636 C7	9657 B2			
1203 A4	1521 A6	2204 A4	2551 C3	2661 A1	3438 E8	3821 A5	6401 A5	9504 C4	9523 D2	9541 C5	9564 B4	9584 B5	9601 B8	9619 C9	9637 C7	9658 C7			
1204 A5	1522 A6	2207 D9	2552 E3	2662 A1	3542 D5	5401 B8	6641 D5	9505 B2	9524 D2	9542 B4	9566 A5	9585 B6	9602 B8	9620 C8	9638 C7	9659 C2			
1205 A4	1523 A6	2209 A8	2565 C4	2681 C6	3571 C2	5403 C9	6642 D5	9508 E7	9525 D2	9543 B4	9567 D5	9586 B6	9603 A8	9621 B5	9640 D7	9660 C2			
1206 A4	1524 A7	2503 A1	2589 C5	2696 C1	3572 D2	5404 C7	6771 E5	9509 B2	9526 E2	9544 A3	9568 A5	9587 B6	9604 A8	9623 C8	9641 E6	9661 E4			
1401 A9	1525 A6	2504 A2	2590 D4	2771 E5	3581 D6	5522 C2	6772 D7	9510 B2	9527 E2	9546 B4	9570 A3	9588 B6	9605 A8	9624 B2	9642 C6	9662 B7			
1402 A8	1531 E8	2511 C6	2591 C5	2772 E6	3601 D6	5621 E6	6774 B3	9511 B8	9528 E1	9547 B3	9571 A3	9589 B6	9606 A8	9625 C8	9643 C6	9663 D1			
1403 A9	1532 D8	2512 C6	2592 D4	2803 D1	3602 D6	5662 A7	6775 E5	9512 B4	9529 D2	9548 B3	9573 B5	9590 B6	9607 A9	9626 C7	9644 A8	9664 D8			
1404 A8	1541 A8	2520 A3	2593 D5	2820 A6	3608 D6	5801 E1	7202 A9	9513 C3	9530 D3	9549 B5	9574 D3	9591 B6	9608 A9	9627 C7	9646 C5	9665 A2			
1405 B9	1542 A8	2531 E2	2594 E4	2901 B9	3627 E6	5802 C2	7401 B5	9514 C3	9531 D3	9550 B2	9575 B5	9592 B7	9609 C3	9628 C7	9647 D3	9666 E8			
1501 A1	1550 B1	2532 E2	2603 D6	2923 C9	3628 D7	6201 A4	9401 B5	9515 C3	9532 D3	9551 B3	9576 A7	9593 B7	9610 A9	9629 D7	9648 D6	9701 B2			
1502 B1	1602 C8	2535 E7	2604 D7	3205 C9	3631 C9	6202 A4	9402 A6	9516 C3	9533 D4	9552 C2	9577 A2	9594 A7	9612 B6	9630 D7	9649 C3	9702 B2			
1503 C9	1603 D8	2536 E7	2611 D7	3403 B8	3640 C8	6204 C9	9405 B9	9517 C2	9534 D4	9554 A2	9578 A6	9595 B7	9613 A9	9631 B4	9650 E6	9703 B1			



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

3139 113 3475 pt1 dd wk0210

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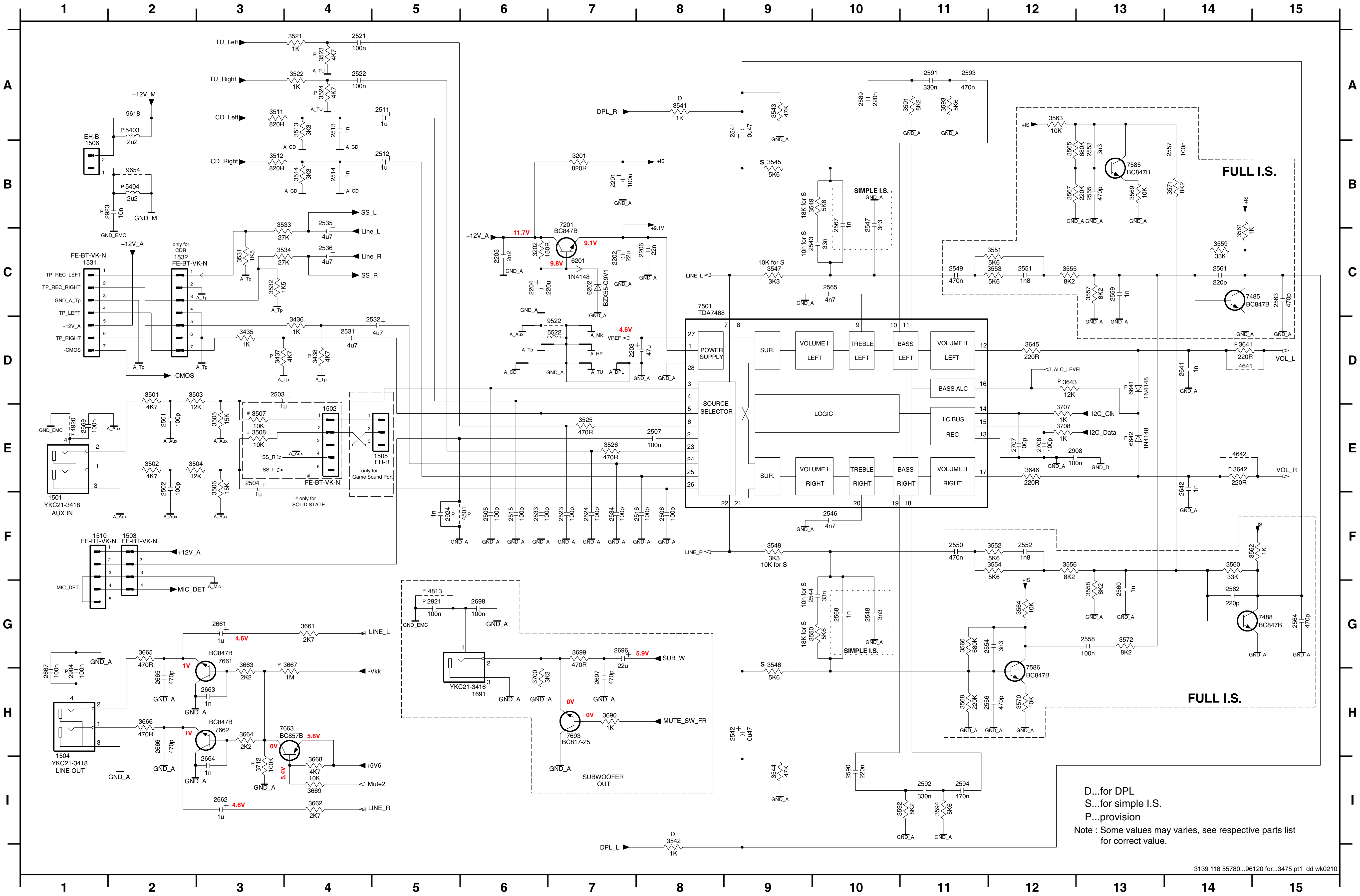
AF10 BOARD - CIRCUIT DIAGRAM (PART 1)

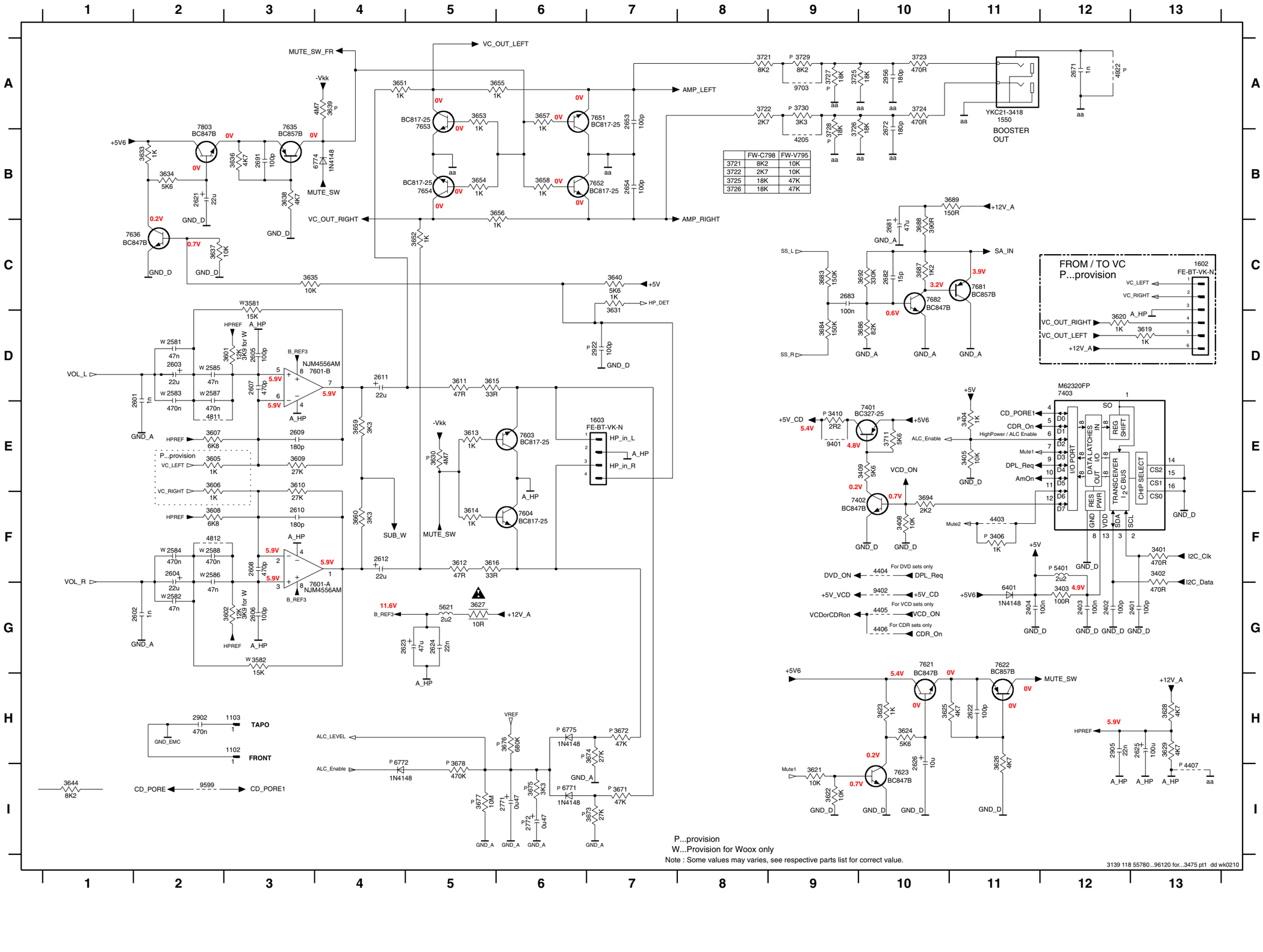
1501 F1	1510 F1	2203 D7	2503 D3	2512 B5	2522 A4	2534 F7	2544 G10	2551 C12	2557 B14	2563 C15	2590 I10	2642 E14	2666 H2	2707 E12	2924 F5	3438 D4
1502 E4	1531 C1	2204 C6	2504 E3	2513 A4	2523 F7	2535 B4	2546 F10	2552 F12	2558 G13	2564 G15	2591 A11	2661 G3	2667 H1	2708 E12	3201 B7	3501 D2
1503 F2	1532 C2	2205 C6	2505 F6	2514 B4	2524 F7	2536 C4	2547 B10	2553 B13	2559 C13	2565 C10	2592 I11	2662 I3	2669 E1	2904 H1	3202 C6	3502 E2
1504 H1	1691 H6	2206 C8	2506 F8	2515 F6	2531 D4	2541 A9	2548 G10	2554 G12	2560 G13	2567 B10	2593 A11	2663 H3	2696 G7	2908 E12	3435 D3	3503 D2
1505 E5	2201 B7	2501 E2	2507 E8	2516 F8	2532 D4	2542 H9	2549 C11	2555 B13	2561 C14	2568 G10	2594 I11	2664 I3	2697 H7	2921 G5	3436 D4	3504 E2
1506 B1	2202 C7	2502 E2	2511 A5	2521 A4	2533 F6	2543 C10	2550 F11	2556 H12	2562 G14	2589 A10	2641 D14	2665 H2	2698 G6	2923 B1	3437 D3	3505 E3

3506 E3	3514 B4	3526 E7	3542 I8	3548 F9	3554 F12	3560 F14	3566 G11	3572 G13	3642 E14	3663 G3	3669 I4	3712 I3	5403 A2	6642 E13	7586 H12	9618 A2
3507 E3	3521 A4	3531 C3	3543 A9	3549 B10	3555 C12	3561 C14	3567 B12	3591 A11	3643 D12	3664 H3	3690 H7	4501 F6	5404 B2	7201 B7	7661 G3	9654 B2
3508 E3	3522 A4	3532 C3	3544 I9	3550 G10	3556 F12	3562 F15	3568 H11	3592 I11	3645 D12	3665 G2	3699 G7	4641 D14	5522 D7	7485 C14	7662 H3	
3511 A3	3523 A4	3533 B3	3545 B9	3551 C12	3557 C13	3563 A12	3569 B13	3593 A11	3646 E12	3666 H2	3700 H6	4642 E14	6201 C7	7488 G15	7663 H3	
3512 B3	3524 A4	3534 C3	3546 G9	3552 F12	3558 G13	3564 G12	3570 H12	3594 I11	3661 G4	3667 G4	3707 E12	4813 G5	6202 C7	7501 C8	7693 H7	
3513 A4	3525 E7	3541 A8	3547 C9	3553 C12	3559 C14	3565 B12	3571 B14	3641 D14	3662 I4	3668 I4	3708 E12	4920 E1	6641 D13	7585 B13	9522 D7	



12-5

AF10 BOARD - CIRCUIT DIAGRAM (PART 2)



	FW-C798	FW-V795
3721	8K2	10K
3722	2K7	10K
3725	18K	47K
3726	18K	47K

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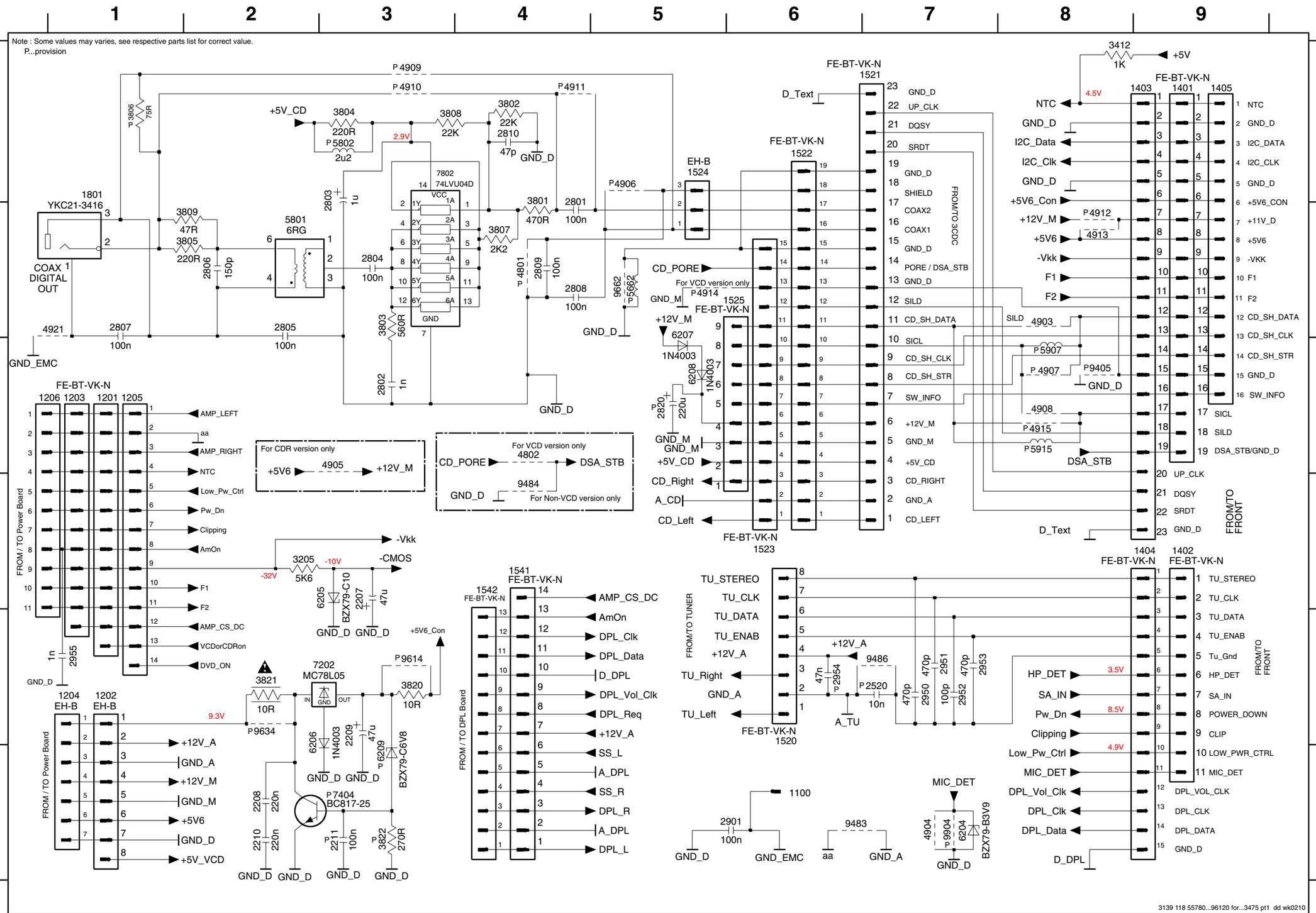
AF10 BOARD - CIRCUIT DIAGRAM (PART 3)

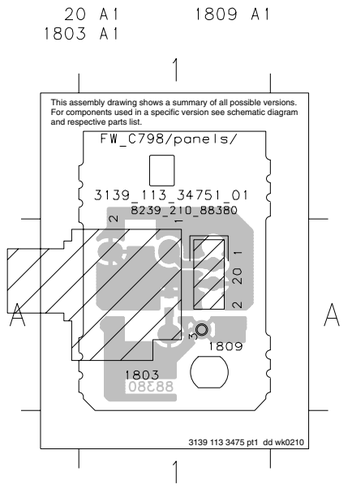
Note : Some values may varies, see respective parts list for correct value.
P...provision



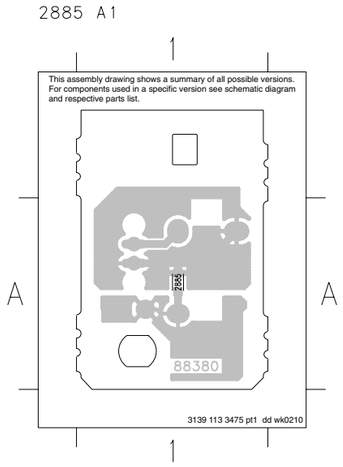
3139 118 55780...96120 for...3475 pt1 dd wk0210

1100 F6
1201 C1
1202 E1
1203 C1
1204 E1
1205 C1
1206 C1
1401 A9
1402 D9
1403 A9
1404 D9
1405 A9
1520 E6
1521 A7
1522 A6
1523 D6
1524 A5
1525 B5
1541 D4
1542 D4
1801 A1
2207 D3
2208 F2
2209 E3
2210 F2
2211 F3
2520 E7
2801 B4
2802 C3
2803 A3
2804 B3
2805 B2
2806 B2
2807 B1
2808 B4
2809 B4
2810 A4
2820 C5
2901 F6
2950 E7
2951 E7
2952 E7
2953 E7
2954 E6
2955 E1
3205 D2
3412 A8
3801 B4
3802 A4
3803 B3
3804 A3
3805 B2
3806 A1
3807 B4
3808 A3
3809 B2
3820 E3
3821 E2
3822 F3
4801 B4
4802 C4
4903 B8
4904 F7
4905 C3
4906 A5
4907 C8
4908 C8
4909 A3
4910 A3
4911 A4
4912 B8
4913 B4
4914 B5
4915 C8
4921 B1
5662 B5
5801 B2
5802 A3
5907 C8
5915 C8
6204 F7
6205 D3
6206 E2
6207 B5
6208 C5
6209 F3
7202 E3
7404 F3
7802 A3
9405 C8
9483 F6
9484 D4
9486 E7
9614 E3
9634 E2
9662 B5
9904 F7

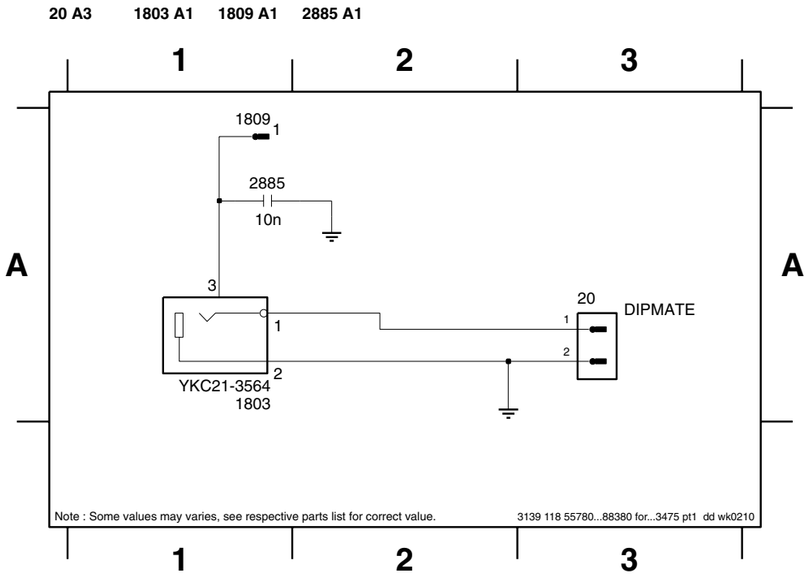
VIDEO OUT CINCH BOARD - COMPONENT LAYOUT



VIDEO OUT CINCH BOARD - CHIP LAYOUT



VIDEO OUT CINCH PART - CIRCUIT DIAGRAM



ELECTRICAL PARTS LIST - AF10 BOARD

MISCELLANEOUS

1201	4822 267 10738	Flex Connector 13P
1401	4822 265 11553	Flex Connector 19P
1402	4822 267 11039	Flex Connector 11P
1501	4822 265 20553	Cinch Socket - Aux in
1503	4822 267 10733	Flex Connector 4P
1520	4822 265 11515	Flex Connector 8P
1523	4822 265 10981	Flex Connector 15P
1531	4822 267 10953	Flex Connector 7P
1550	2422 026 05292	Cinch Socket - Booster out
1603	4822 267 10733	Flex Connector 4P
1803	4822 267 31996	Cinch Socket - Video out

CAPACITORS

2201	4822 124 40207	100uF 20% 25V
2202	4822 124 81151	22uF 50V
2203	4822 124 40433	47uF 20% 25V

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ELECTRICAL PARTS LIST - AF10 BOARD

2204	4822 124 40196	220uF 20% 16V
2205	4822 126 14238	2,2nF 50V
2206	4822 126 14494	22nF 10% 25V
2207	4822 124 40433	47uF 20% 25V
2208	4822 126 13879	220nF +80/-20% 16V
2209	4822 124 41751	47uF 20% 50V
2210	4822 126 13879	220nF +80/-20% 16V
2401	2020 552 94427	100pF 5% 50V
2402	2020 552 94427	100pF 5% 50V
2403	2238 586 59812	100nF 50V
2404	2238 586 59812	100nF 50V
2501	2020 552 94427	100pF 5% 50V
2502	2020 552 94427	100pF 5% 50V
2503	4822 124 22466	1uF 20% 50V
2504	4822 124 22466	1uF 20% 50V
2505	2020 552 94427	100pF 5% 50V
2506	2020 552 94427	100pF 5% 50V
2507	2238 586 59812	100nF 50V
2511	4822 124 22466	1uF 20% 50V
2512	4822 124 22466	1uF 20% 50V
2513	3198 016 31020	1nF 25V
2514	3198 016 31020	1nF 25V
2515	2020 552 94427	100pF 5% 50V
2516	2020 552 94427	100pF 5% 50V
2521	2238 586 59812	100nF 50V
2522	2238 586 59812	100nF 50V
2523	2020 552 94427	100pF 5% 50V
2524	2020 552 94427	100pF 5% 50V
2531	4822 124 40769	4,7uF 20% 100V
2532	4822 124 40769	4,7uF 20% 100V
2533	2020 552 94427	100pF 5% 50V
2534	2020 552 94427	100pF 5% 50V
2535	4822 124 40769	4,7uF 20% 100V
2536	4822 124 40769	4,7uF 20% 100V
2541	4822 124 41407	0,47uF 20% 63V
2542	4822 124 41407	0,47uF 20% 63V
2543	5322 126 11583	10nF 10% 50V
2544	5322 126 11583	10nF 10% 50V
2546	4822 121 43856	4,7nF 5% 250V
2547	5322 126 11579	3,3nF 10% 63V
2548	5322 126 11579	3,3nF 10% 63V
2565	4822 121 43856	4,7nF 5% 250V
2567	3198 016 31020	1nF 25V
2568	3198 016 31020	1nF 25V
2589	4822 121 42408	220nF 5% 63V
2590	4822 121 42408	220nF 5% 63V
2591	5322 121 42661	330nF 5% 63V
2592	5322 121 42661	330nF 5% 63V
2593	4822 121 51252	470nF 5% 63V
2594	4822 121 51252	470nF 5% 63V
2601	3198 016 31020	1nF 25V
2602	3198 016 31020	1nF 25V
2603	4822 124 81151	22uF 50V
2604	4822 124 81151	22uF 50V
2605	2020 552 94427	100pF 5% 50V
2606	2020 552 94427	100pF 5% 50V
2607	4822 126 13881	470pF 5% 50V
2608	4822 126 13881	470pF 5% 50V
2609	4822 126 14508	180pF 5% 50V
2610	4822 126 14508	180pF 5% 50V
2611	4822 124 81151	22uF 50V
2612	4822 124 81151	22uF 50V
2621	4822 124 81151	22uF 50V
2622	2020 552 94427	100pF 5% 50V
2623	4822 124 40433	47uF 20% 25V
2624	3198 017 42230	22nF 50V
2625	4822 124 40207	100uF 20% 25V
2626	4822 124 40248	10uF 20% 63V
2653	2020 552 94427	100pF 5% 50V
2654	2020 552 94427	100pF 5% 50V
2669	2238 586 59812	100nF 50V
2671	3198 016 31020	1nF 25V
2672	4822 126 14508	180pF 5% 50V
2681	4822 124 40433	47uF 20% 25V
2682	4822 122 33752	15pF 5% 50V
2683	2238 586 59812	100nF 50V
2691	2020 552 94427	100pF 5% 50V
2707	2020 552 94427	100pF 5% 50V
2708	2020 552 94427	100pF 5% 50V
2771	4822 124 41407	0,47uF 20% 63V
2885	4822 122 33177	10nF 20% 50V
2901	2020 561 90365	100nF +80/-20% 50V
2902	3198 017 44740	470nF 10V
2905	3198 017 42230	22nF 50V
2908	2238 586 59812	100nF 50V
2950	4822 126 13881	470pF 5% 50V
2951	4822 126 13881	470pF 5% 50V
2952	2020 552 94427	100pF 5% 50V
2953	4822 126 13881	470pF 5% 50V
2956	4822 126 14508	180pF 5% 50V

RESISTORS

3201	4822 117 12968	820R 5% 0,62W
3202	4822 051 30151	150R 5% 0,062W
3205	4822 116 52289	5k6 5% 0,5W
3401	4822 051 30471	470R 5% 0,062W
3402	4822 051 30471	470R 5% 0,062W
3403	4822 116 52175	100R 5% 0,5W
3405	4822 051 30103	10k 5% 0,062W
3408	4822 051 30103	10k 5% 0,062W
3412	4822 050 11002	1k 1% 0,4W
3435	4822 050 11002	1k 1% 0,4W
3436	4822 050 11002	1k 1% 0,4W
3501	4822 051 30472	4k7 5% 0,062W

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ELECTRICAL PARTS LIST - AF10 BOARD

ELECTRICAL PARTS LIST - AF10 BOARD

RESISTORS

3502	4822 051 30472	4k7 5% 0,062W
3503	4822 051 30123	12k 5% 0,062W
3504	4822 051 30123	12k 5% 0,062W
3505	4822 051 30153	15k 5% 0,062W
3506	4822 051 30153	15k 5% 0,062W
3511	4822 117 12968	820R 5% 0,62W
3512	4822 117 12968	820R 5% 0,62W
3513	4822 051 30332	3k3 5% 0,062W
3514	4822 051 30332	3k3 5% 0,062W
3521	4822 051 30102	1k 5% 0,062W
3522	4822 051 30102	1k 5% 0,062W
3525	4822 051 30471	470R 5% 0,062W
3526	4822 051 30471	470R 5% 0,062W
3531	4822 051 30152	1k5 5% 0,062W
3532	4822 051 30152	1k5 5% 0,062W
3533	4822 051 30273	27k 5% 0,062W
3534	4822 051 20273	27k 5% 0,1W
3543	4822 117 12925	47k 1% 0,063W
3544	4822 117 12925	47k 1% 0,063W
3545	4822 051 30562	5k6 5% 0,063W
3546	4822 051 30562	5k6 5% 0,063W
3547	4822 051 30103	10k 5% 0,062W
3548	4822 051 30103	10k 5% 0,062W
3549	4822 051 30183	18k 5% 0,062W
3550	4822 051 30183	18k 5% 0,062W
3591	4822 117 12902	8k2 1% 0,063W
3592	4822 117 12902	8k2 1% 0,063W
3593	4822 051 30562	5k6 5% 0,063W
3594	4822 051 30562	5k6 5% 0,063W
3601	4822 116 52238	12k 5% 0,5W
3602	4822 116 52238	12k 5% 0,5W
3607	4822 051 30682	6k8 5% 0,062W
3608	4822 116 83961	6k8 5%
3609	4822 051 30273	27k 5% 0,062W
3610	4822 051 30273	27k 5% 0,062W
3611	4822 051 30479	47R 5% 0,062W
3612	4822 051 30479	47R 5% 0,062W
3613	4822 051 30102	1k 5% 0,062W
3614	4822 051 30102	1k 5% 0,062W
3615	4822 051 30339	33R 5% 0,062W
3616	4822 051 30339	33R 5% 0,062W
3621	4822 051 30103	10k 5% 0,062W
3622	4822 051 30103	10k 5% 0,062W
3623	4822 051 30102	1k 5% 0,062W
3624	4822 051 30562	5k6 5% 0,063W
3625	4822 051 30472	4k7 5% 0,062W
3626	4822 051 30472	4k7 5% 0,062W
3627	4822 052 10109 ⚠	10R 5% 0,33W
3628	4822 116 52283	4k7 5% 0,5W
3629	4822 051 30472	4k7 5% 0,062W
3631	4822 050 11002	1k 1% 0,4W
3633	4822 051 30102	1k 5% 0,062W
3634	4822 051 30562	5k6 5% 0,063W
3635	4822 051 30103	10k 5% 0,062W
3636	4822 051 30472	4k7 5% 0,062W
3637	4822 051 30103	10k 5% 0,062W
3638	4822 051 30472	4k7 5% 0,062W
3640	4822 116 52289	5k6 5% 0,5W
3644	4822 117 12902	8k2 1% 0,063W
3645	4822 051 30221	220R 5% 0,062W
3646	4822 051 30221	220R 5% 0,062W
3651	4822 051 30102	1k 5% 0,062W
3652	4822 051 30102	1k 5% 0,062W
3653	4822 051 30102	1k 5% 0,062W
3654	4822 051 30102	1k 5% 0,062W
3655	4822 051 30102	1k 5% 0,062W
3656	4822 051 30102	1k 5% 0,062W
3657	4822 051 30102	1k 5% 0,062W
3658	4822 051 30102	1k 5% 0,062W
3683	4822 051 30154	150k 5% 0,062W
3684	4822 051 30154	150k 5% 0,062W
3686	4822 117 12864	82k 5% 0,6W
3687	4822 117 11817	1k2 1% 1/16W
3688	4822 051 30391	390R 5% 0,062W
3689	4822 051 30151	150R 5% 0,062W
3692	4822 051 30334	330k 5% 0,062W
3694	4822 051 30222	2k2 5% 0,062W
3707	4822 051 30102	1k 5% 0,062W
3708	4822 051 30102	1k 5% 0,062W
3721	4822 051 30103	10k 5% 0,062W
3722	4822 051 30103	10k 5% 0,062W
3723	4822 051 30471	470R 5% 0,062W
3724	4822 051 30471	470R 5% 0,062W
3725	4822 117 12925	47k 1% 0,063W
3726	4822 117 12925	47k 1% 0,063W
3820	4822 116 52176	10R 5% 0,5W
3821	4822 052 10109 ⚠	10R 5% 0,33W
4100	4822 051 30008	0R Jumper 0603
4101	4822 051 30008	0R Jumper 0603
4104	4822 051 30008	0R Jumper 0603
4108	4822 051 30008	0R Jumper 0603
4110	4822 051 30008	0R Jumper 0603
4111	4822 051 30008	0R Jumper 0603
4112	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
4119	4822 051 30008	0R Jumper 0603
4122	4822 051 30008	0R Jumper 0603
4124	4822 051 30008	0R Jumper 0603
4125	4822 051 30008	0R Jumper 0603
4126	4822 051 30008	0R Jumper 0603
4127	4822 051 30008	0R Jumper 0603
4128	4822 051 30008	0R Jumper 0603
4130	4822 051 30008	0R Jumper 0603
4132	4822 051 30008	0R Jumper 0603
4133	4822 051 30008	0R Jumper 0603
4134	4822 051 30008	0R Jumper 0603
4135	4822 051 30008	0R Jumper 0603
4137	4822 051 30008	0R Jumper 0603
4138	4822 051 30008	0R Jumper 0603
4139	4822 051 30008	0R Jumper 0603
4141	4822 051 30008	0R Jumper 0603
4142	4822 051 30008	0R Jumper 0603
4143	4822 051 30008	0R Jumper 0603
4144	4822 051 30008	0R Jumper 0603
4145	4822 051 30008	0R Jumper 0603
4146	4822 051 30008	0R Jumper 0603
4147	4822 051 30008	0R Jumper 0603
4148	4822 051 30008	0R Jumper 0603
4150	4822 051 30008	0R Jumper 0603
4151	4822 051 30008	0R Jumper 0603
4152	4822 051 30008	0R Jumper 0603
4153	4822 051 30008	0R Jumper 0603
4201	4822 051 30008	0R Jumper 0603
4202	4822 051 30008	0R Jumper 0603
4203	4822 051 30008	0R Jumper 0603
4204	4822 051 30008	0R Jumper 0603
4205	4822 051 30008	0R Jumper 0603
4206	4822 051 30008	0R Jumper 0603
4207	4822 051 30008	0R Jumper 0603
4208	4822 051 30008	0R Jumper 0603
4209	4822 051 30008	0R Jumper 0603
4210	4822 051 30008	0R Jumper 0603
4211	4822 051 30008	0R Jumper 0603
4212	4822 051 30008	0R Jumper 0603
4403	4822 051 30008	0R Jumper 0603
4405	4822 051 30008	0R Jumper 0603
4641	4822 051 30008	0R Jumper 0603
4642	4822 051 30008	0R Jumper 0603
4802	4822 051 30008	0R Jumper 0603
4811	4822 051 30008	0R Jumper 0603
4812	4822 051 30008	0R Jumper 0603
4907	4822 051 30008	0R Jumper 0603
4913	4822 051 30008	0R Jumper 0603
4915	4822 051 30008	0R Jumper 0603
4921	4822 051 30008	0R Jumper 0603

COILS & FILTERS

5522	4822 526 10704	FXD IND BEAD 100MHz 50R
5621	4822 157 62552	Coil 2,2uH 5%

DIODES

6201	4822 130 30621	1N4148
6202	4822 130 30862	BZX55-C9V1
6204	3198 010 53980	BZX79-B3V9
6205	4822 130 61219	BZX79-C10
6206	4822 130 31878	1N4003G
6207	4822 130 31878	1N4003G
6208	4822 130 31878	1N4003G
6401	4822 130 30621	1N4148
6774	4822 130 30621	1N4148

TRANSISTORS & INTEGRATED CIRCUITS

7201	5322 130 60159	BC847B
7202	4822 209 72042	MC78L05ACP
7403	4822 209 17345	M62320FP
7501	9322 150 74668	TDA7468D
7601	4822 209 31378	NJM4556AM
7603	4822 130 42804	BC817-25
7604	4822 130 42804	BC817-25
7621	5322 130 60159	BC847B
7622	4822 130 60373	BC857B
7623	5322 130 60159	BC847B
7635	4822 130 60373	BC857B
7636	5322 130 60159	BC847B
7651	4822 130 42804	BC817-25
7652	4822 130 42804	BC817-25
7653	4822 130 42804	BC817-25
7654	4822 130 42804	BC817-25
7681	4822 130 60373	BC857B
7682	5322 130 60159	BC847B
7803	5322 130 60159	BC847B

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

VCD GND ISOLATOR BOARD

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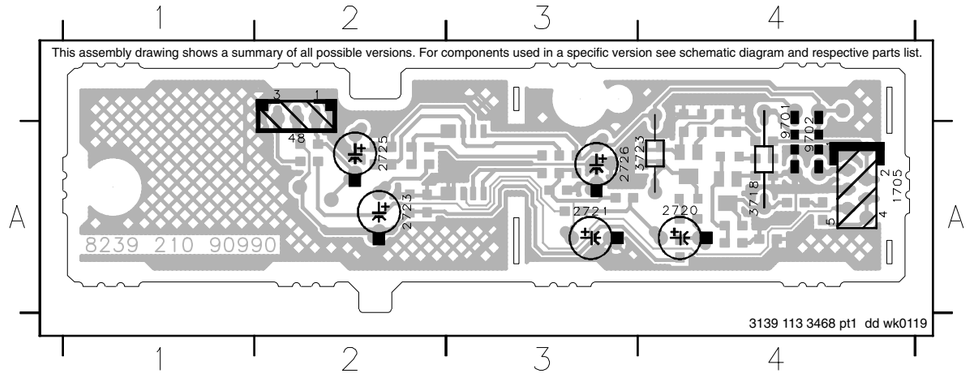
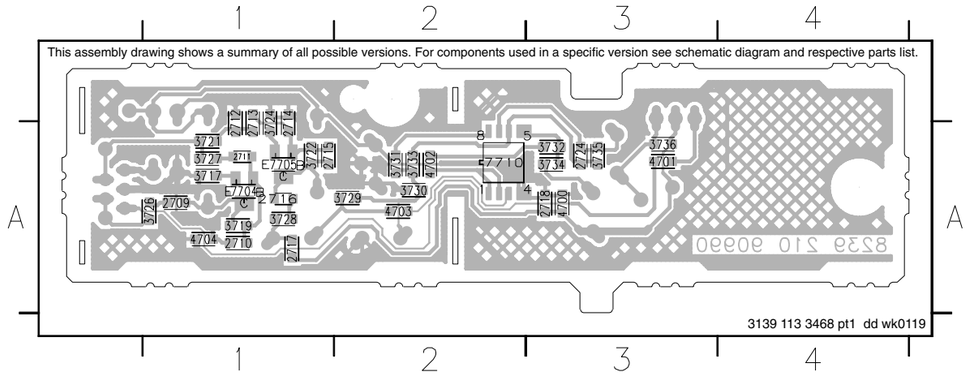
VCD GND ISOLATOR BOARD - COMPONENT LAYOUT

48 A2 2720 A4 2723 A2 2726 A3 3723 A4 9702 A4
1705 A4 2721 A3 2725 A2 3718 A4 9701 A4



VCD GND ISOLATOR BOARD - CHIP LAYOUT

2709 A1 2714 A1 2724 A3 3724 A1 3730 A2 3735 A3 4703 A2
2710 A1 2715 A1 3717 A1 3726 A1 3731 A2 3736 A3 4704 A1
2711 A1 2716 A1 3719 A1 3727 A1 3732 A3 4700 A3 7704 A1
2712 A1 2717 A1 3721 A1 3728 A1 3733 A2 4701 A3 7705 A1
2713 A1 2718 A3 3722 A1 3729 A2 3734 A3 4702 A2 7710 A2



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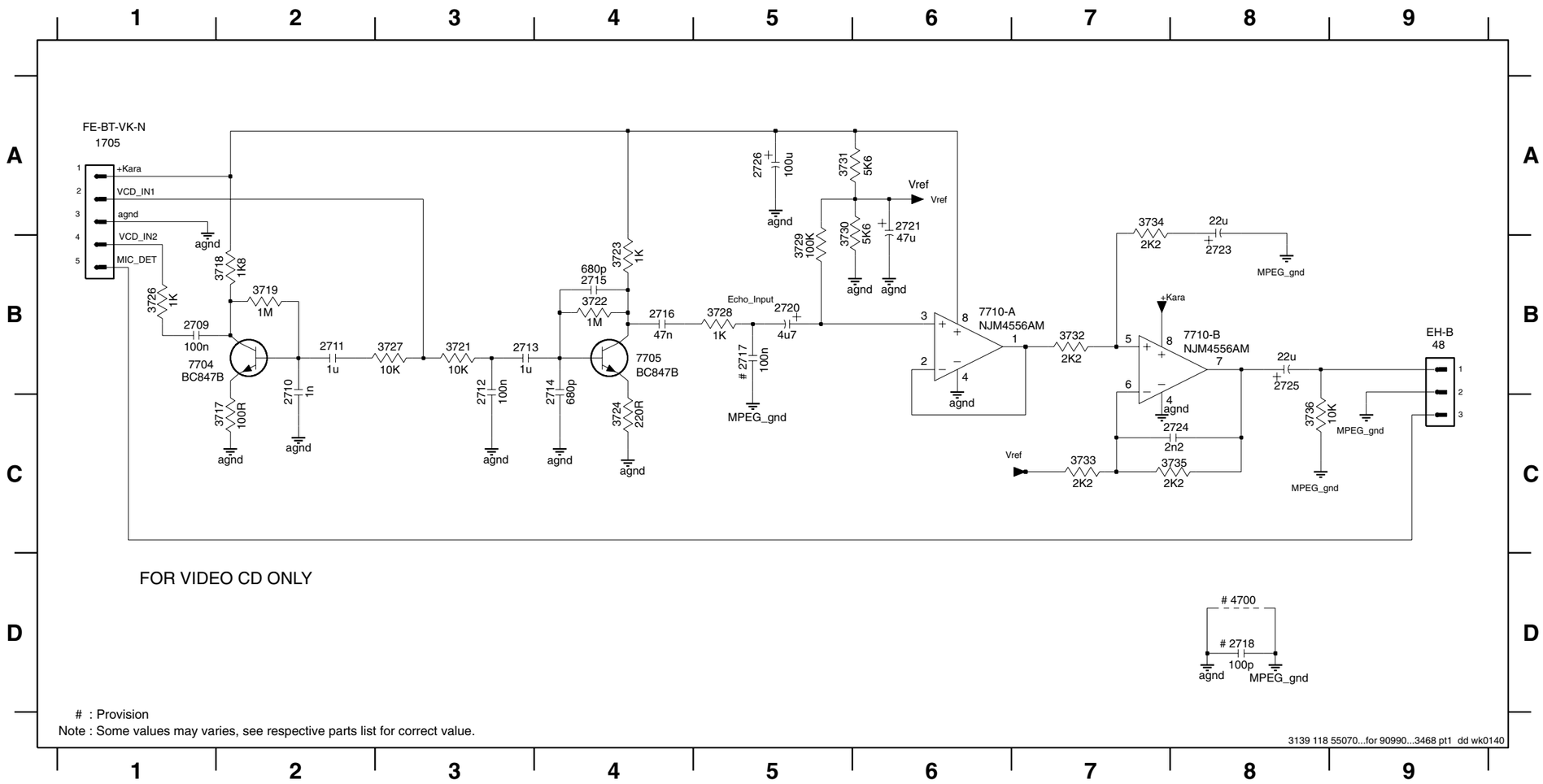
VCD GND ISOLATOR BOARD - CIRCUIT DIAGRAM

48 B9	2710 B2	2713 B3	2716 B4	2720 B5	2724 C8	3717 C2	3721 B3	3724 C4	3728 B5	3731 A6	3734 A7	4700 D8	7710-A B6
1705 A1	2711 B2	2714 B4	2717 B5	2721 A6	2725 B8	3718 B2	3722 B4	3726 B1	3729 A5	3732 B7	3735 C8	7704 B1	7710-B B8
2709 B1	2712 B3	2715 B4	2718 D8	2723 B8	2726 A5	3719 B2	3723 B4	3727 B3	3730 A5	3733 C7	3736 C8	7705 B4	



ELECTRICAL PARTS LIST - VCD GND ISOLATOR BOARD

MISCELLANEOUS

1705	4822 267 10954	Flex Connector 5P

CAPACITORS

2709	4822 126 14305	100nF 10% 16V
2710	5322 126 11578	1nF 10% 50V
2711	4822 126 14043	1µF +80/-20% 16V
2712	4822 126 14305	100nF 10% 16V
2713	3198 017 41050	1µF 10V
2714	3198 016 36810	680pF 25V
2715	4822 126 13909	680pF 10% 50V
2716	3198 017 34730	47nF 16V
2720	4822 124 40769	4,7µF 20% 100V
2721	4822 124 40433	47µF 20% 25V
2723	4822 124 81151	22µF 50V
2724	4822 126 14238	2,2nF 50V
2725	4822 124 81151	22µF 50V
2726	4822 124 40207	100µF 20% 25V

RESISTORS

3717	4822 051 30101	100R 5% 0,062W
3718	4822 116 52249	1k8 5% 0,5W
3719	4822 051 30105	1M 5% 0,062W
3721	4822 051 30103	10k 5% 0,062W
3722	4822 051 30105	1M 5% 0,062W

ELECTRICAL PARTS LIST - VCD GND ISOLATOR BOARD

3723	4822 050 11002	1k 1% 0,4W
3724	4822 051 30221	220R 5% 0,062W
3726	4822 051 30102	1k 5% 0,062W
3727	4822 051 30103	10k 5% 0,062W
3728	4822 051 30102	1k 5% 0,062W
3729	4822 117 13632	100k 1% 0,62W
3730	4822 051 30562	5k6 5% 0,063W
3731	4822 051 30562	5k6 5% 0,063W
3732	4822 051 30222	2k2 5% 0,062W
3733	4822 051 30222	2k2 5% 0,062W
3734	4822 051 30222	2k2 5% 0,062W
3735	4822 051 30222	2k2 5% 0,062W
3736	4822 051 30103	10k 5% 0,062W
4701	4822 051 30008	0R Jumper 0603
4702	4822 051 30008	0R Jumper 0603
4703	4822 051 30008	0R Jumper 0603
4704	4822 051 30008	0R Jumper 0603

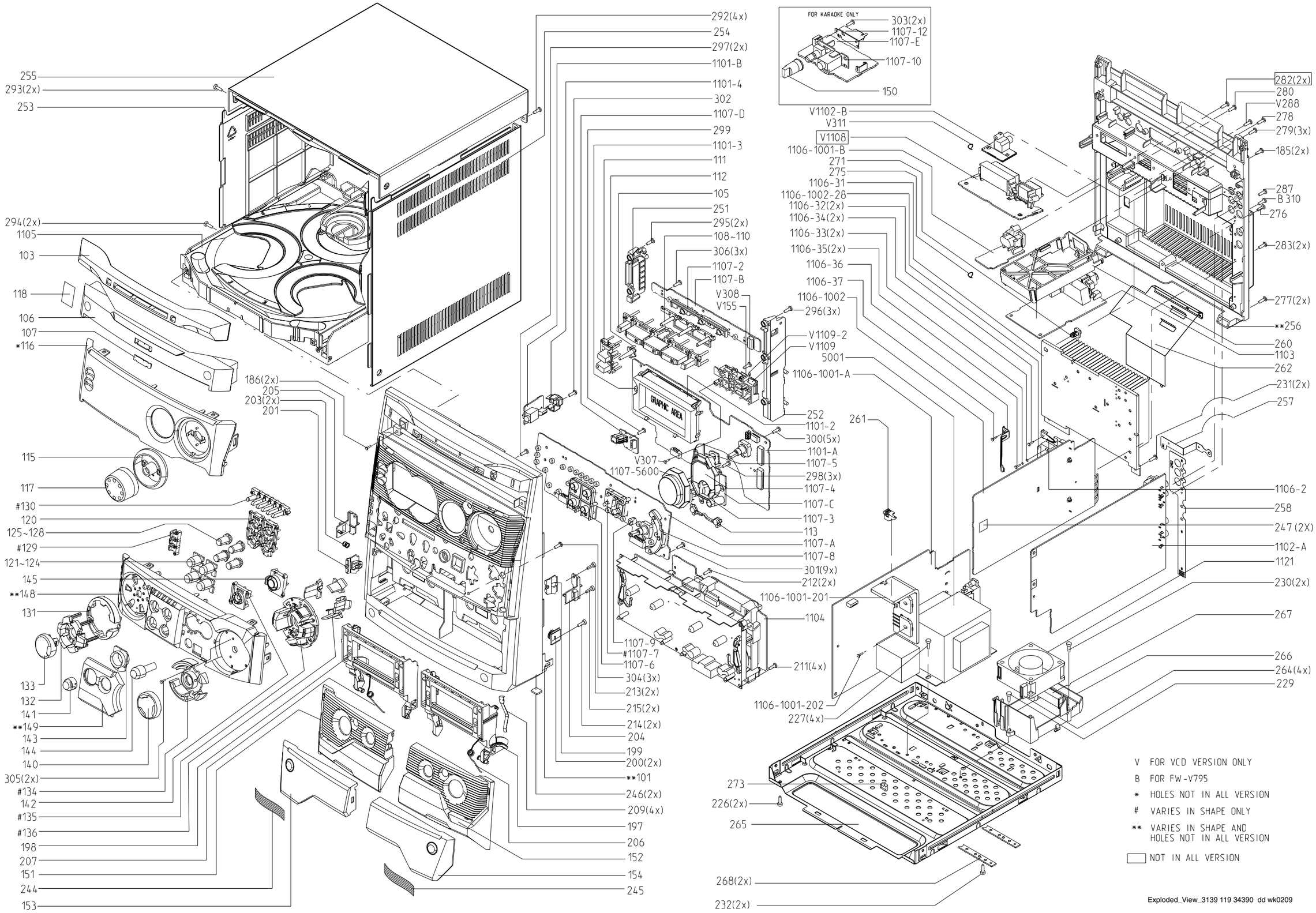
TRANSISTORS & INTEGRATED CIRCUITS

7704	4822 130 60511	BC847B
7705	4822 130 60511	BC847B
7710	4822 209 31378	NJM4556AM

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

14-1

SET MECHANICAL EXPLODED VIEW



MECHANICAL & ACCESSORIES PARTS LIST - MAIN UNIT

0101	3139 118 16990	Cabinet Front	0205	4822 402 11245	Bracket Left
0103	3139 118 14320	Window CDC	0206	3139 111 01380	Spring Torsion Right
0105	3139 118 16820	Button Set CDC	0207	3139 111 01390	Spring Torsion Left
0106	3139 118 15600	Cover Tray VCD	0209	4822 492 42787	Spring Cassette
0107	4822 454 13408	Badge Philips	0246	4822 462 40683	Foot Rubber (SQ)
0111	3139 118 14350	Button Standby/Eco Power	0251	3139 114 72750	Bracket CDC Left
0115	3139 118 14370	Cover Ring Volume/VU Chrome	0252	3139 114 72760	Bracket CDC Right
0116	3139 118 17730	Window Display	0253	3139 114 73570	Panel Left
0117	3139 118 16840	Knob Volume Gloss Black	0254	3139 114 73580	Panel Right
0118	3139 110 00150	Badge Super Error Correction	0255	3139 114 73590	Cover Top
0120	3139 114 72360	Frame Button Set Source Select	0256	3139 114 74430	Panel Rear
0121	3139 118 15640	Button Cap Source-VCD	0271	3139 114 71010	Stopper Heatsink
0122	3139 118 15650	Button Cap Source-VTuner	0350	3139 118 79110	Left & Right Loudspeaker Box
0123	3139 118 15660	Button Cap Source-VTape	0351	4822 303 50063	FM Aerial
0124	3139 118 15670	Button Cap Source-VAux	0353	3139 118 79630	Power Booster PWB-V795/01
0125	3139 114 72410	Lightguide Source-CD	0356	3139 228 87410	Remote Control
0126	3139 114 72420	Lightguide Source-Tuner	0358	2422 076 00437	Cable Cinch 1m 2P Green/Blue
0127	3139 114 72430	Lightguide Source-Tape	0384	2422 549 45067	Antenna AM Loop
0128	3139 114 72440	Lightguide Source-Aux	0385	2422 070 98151 ⚠	Mains Cord
0129	3139 118 15320	Button Set Title/PBC/Return	0387	3139 115 21280	Instruction For Use
0130	3139 118 14440	Button Prog/Time-Disp	0395	4822 263 21206	Cable Cinch 1,7m
0131	3139 118 16850	Cover Ring Func Control	1121	4822 361 11161	Fan KD1206PTS3
0132	3139 118 15460	Button Set Func Control	1204	3139 110 35010	FFC Foil 07P/340/07P AD
0133	3139 118 15610	Cap Func Control	1300	4822 320 12246	FFC Foil 13P/220/13P AD
0134	3139 118 14820	Cover Ring DSC/VAC/IS	1401	3139 110 34970	FFC Foil 19P/180/19P AD
0135	3139 118 16830	Button DSC/VAC/IS	1402	3139 110 34610	FFC Foil 11P/180/11P AD
0140	3139 118 14500	Knob Jog Rotary	1403	3139 110 35130	FFC Foil 06P/180/06P AD
0141	3139 118 14780	Button Woox Plus Chrome	1404	3139 110 34990	FFC Foil 12P/120/12P AD
0142	3139 114 72470	Frame Button Set Woox	1405	3139 110 35000	FFC Foil 08P/120/08P AD
0144	3139 118 14790	Knob Rotary Woox Chrome	1406	4822 320 12752	FFC Foil 07P/180/07P AD
0145	3139 114 72500	Guide Rotary Woox	1407	3139 110 34010	FFC Foil 06P/140/06P AD
0148	3139 118 17250	Cover Orn Control	1501	3139 110 35120	FFC Foil 04P/400/04P BD
0149	3139 118 17260	Cover Control Woox	1502	3139 110 33940	CWAS FFC BD 04P 180
0150	3139 118 15580	Knob Karaoke	1503	3139 110 35880	FFC Foil 15P/180/15P BD
0151	3139 118 16800	Cover Cassette Left	1507	3139 110 35330	FFC Foil 05P/180/05P AD
0152	3139 118 16810	Cover Cassette Right	1601	3139 110 35050	FFC Foil 08P/220/08P AD
0153	3139 114 74910	Lens Cassette Left	1702	4822 320 12654	FFC Foil 07P/220/07P AD
0154	3139 114 74920	Lens Cassette Right	5001	3103 308 30700 ⚠	Mains Transformer
0197	3139 114 68630	Door Cassette Right	5002	4322 020 90860	Toroid Ring
0198	3139 114 68620	Door Cassette Left			
0199	4822 402 10621	Push-Catch			
0200	4822 529 10322	Damper Assembly			
0201	3139 114 68640	Push Catch Left			
0203	4822 492 11344	Spring Compression			
0204	4822 402 11246	Bracket Right			

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

LEFT & RIGHT LOUDSPEAKER BOX BREAKDOWN

9965 000 12996	Woofer 6,5" 120W 6R	
9965 000 12997	Tweeter 2"	
9965 000 12987	Woox 6,5"	
9965 000 12988	Woox Ring	
9965 000 12989	Woofer Ring	
9965 000 11656	Kendo Mask	
9965 000 03233	Grommet (Dia. 11mm)	
9965 000 12990	Piezo Assembly	

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

SCREW LISTS - MAIN UNIT

185	D3 x 12
186	D3 x 12
211	D3 x 12
212	D3 x 12
213	D3 x 12
214	M3 x 12
215	M3 x 12
226	M3 x 6
227	M3 x 10
229	M3 x 10
230	D3 x 10
231	M3 x 6
232	M3 x 6
276	M3 x 6
277	M3 x 10
278	D3 x 16
279	D3 x 12
280	D3 x 12
283	D3 x 12
287	D3 x 12
288	D3 x 12
292	M3 x 12
293	M3 x 12
294	M3 x 10
295	D3 x 12
296	D3 x 12
297	D2 x 8
298	D3 x 10
299	D3 x 10
300	D3 x 12
301	D3 x 12
302	D3 x 12
303	D3 x 12
304	D3 x 12
305	D2 x 8
306	D3 x 12
307	D3 x 12
308	D3 x 12
310	D3 x 12