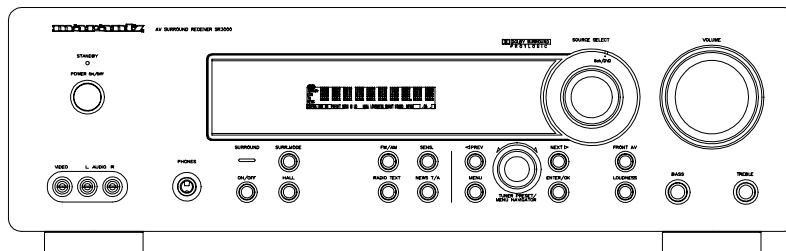


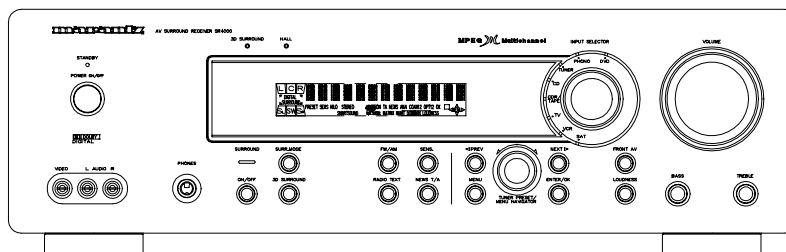
# Service Manual

SR3000 /N1B, /U1B  
SR4000 /K1B, /K1G, /N1B, /U1B  
AV Surround Receiver

SR3000



SR4000



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Please use this service manual with referring to the user guide (D.F.U) without fail.

# marantz®

## SR3000 / SR4000

## MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, **MARANTZ** company has created the ultimate in stereo sound. Only original **MARANTZ** parts can insure that your **MARANTZ** product will continue to perform to the specifications for which it is famous.

Parts for your **MARANTZ** equipment are generally available to our National Marantz Subsidiary or Agent.

### ORDERING PARTS :

Parts can be ordered either by mail or by Fax.. In both cases, the correct part number has to be specified.

The following information must be supplied to eliminate delays in processing your order :

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which part is required
5. Way of shipment
6. Signature : any order form or Fax. must be signed, otherwise such part order will be considered as null and void.

#### USA

**MARANTZ AMERICA, INC.**  
440 MEDINAH ROAD  
ROSELLE, ILLINOIS 60172  
USA  
PHONE : 630 - 307 - 3100  
FAX : 630 - 307 - 2687

#### EUROPE / TRADING

**MARANTZ EUROPE B.V.**  
P.O.BOX 80002, BUILDING SFF2  
5600 JB EINDHOVEN  
THE NETHERLANDS  
PHONE : +31 - 40 - 2732241  
FAX : +31 - 40 - 2735578

#### BRAZIL

**PHILIP DA AMAZONIA IND. ELET. ITDA**  
CENTRO DE INFORMACOES AO  
CEP 04698-970  
SAO PAULO, SP, BRAZIL  
PHONE : 0800 - 123123(Discagem Direta Gratuita)  
FAX : +55 11 534. 8988

#### PROFESSIONAL AMERICAS

**SUPERSCOPE TECHNOLOGIES, INC.**  
MARANTZ PROFESSIONAL PRODUCTS  
2640 WHITE OAK CIRCLE, SUITE A  
AURORA, ILLINOIS 60504 USA  
PHONE : 630 - 820 - 4800  
FAX : 630 - 820 - 8103

#### PROFESSIONAL AUSTRALIA

**TECHNICAL AUDIO GROUP PTY, LTD**  
558 DARLING STREET,  
BALMAIN, NSW 2041,  
AUSTRALIA  
PHONE : 61 - 2 - 9810 - 5300  
FAX : 61 - 2 - 9810 - 5355

#### CANADA

**LENBROOK INDUSTRIES LIMITED**  
633 GRANITE COURT,  
PICKERING, ONTARIO L1W 3K1  
CANADA  
PHONE : 905 - 831 - 6333  
FAX : 905 - 831 - 6936

#### AUSTRALIA

**JAMO AUSTRALIA PTY LTD**  
1 EXPO COURT, P.O. BOX 350  
MT. WAVERLEY VIC 3149  
AUSTRALIA  
PHONE : +61 - 3 - 9543 - 1522  
FAX : +61 - 3 - 9543 - 3677

#### THAILAND

**MRZ STANDARD CO.,LTD**  
746 - 754 MAHACHAI ROAD.,  
WANGBURAPAPIROM, PHRANAKORN,  
BANGKOK, 10200 THAILAND  
PHONE : +66 - 2 - 222 9181  
FAX : +66 - 2 - 224 6795

#### SINGAPORE

**WO KEE HONG (S) PTE LTD**  
WO KEE HONG CENTRE  
NO.23, LORONG 8, TOA PAYOH  
SINGAPORE 319257  
PHONE : +65 2544555  
FAX : +65 2502213

#### NEW ZEALAND

**WILDASH AUDIO SYSTEMS NZ**  
14 MALVERN ROAD MT ALBERT  
AUCKLAND NEW ZEALAND  
PHONE : +64 - 9 - 8451958  
FAX : +64 - 9 - 8463554

#### TAIWAN

**PAI- YUING CO., LTD.**  
6 TH FL NO, 148 SUNG KIANG ROAD,  
TAIPEI, 10429, TAIWAN R.O.C.  
PHONE : +886 - 2 - 25221304  
FAX : +886 - 2 - 25630415

#### MALAYSIA

**WO KEE HONG ELECTRONICS SDN. BHD.**  
SUITE 8.1, LEVEL 8, MENARA GENESIS,  
NO. 33, JALAN SULTAN ISMAIL,  
50250 KUALA LUMPUR, MALAYSIA  
PHONE : +60 3 - 2457677  
FAX : +60 3 - 2458180

#### JAPAN *Technical*

**MARANTZ JAPAN, INC.**  
35- 1, 7- CHOME, SAGAMIONO  
SAGAMIHARA - SHI, KANAGAWA  
JAPAN 228-8505  
PHONE : +81 42 748 1013  
FAX : +81 42 741 9190

#### 日本マランツ株式会社

本社 〒228-8505  
神奈川県相模原市相模大野7-35-1  
営業本部 〒150-0022  
東京都渋谷区恵比寿南1-11-9

#### KOREA

**MK ENTERPRISES LTD.**  
ROOM 604/605, ELECTRO-OFFICETEL, 16-58,  
3GA, HANGANG-RO, YONGSAN-KU, SEOUL  
KOREA  
PHONE : +822 - 3232 - 155  
FAX : +822 - 3232 - 154

### SHOCK, FIRE HAZARD SERVICE TEST :

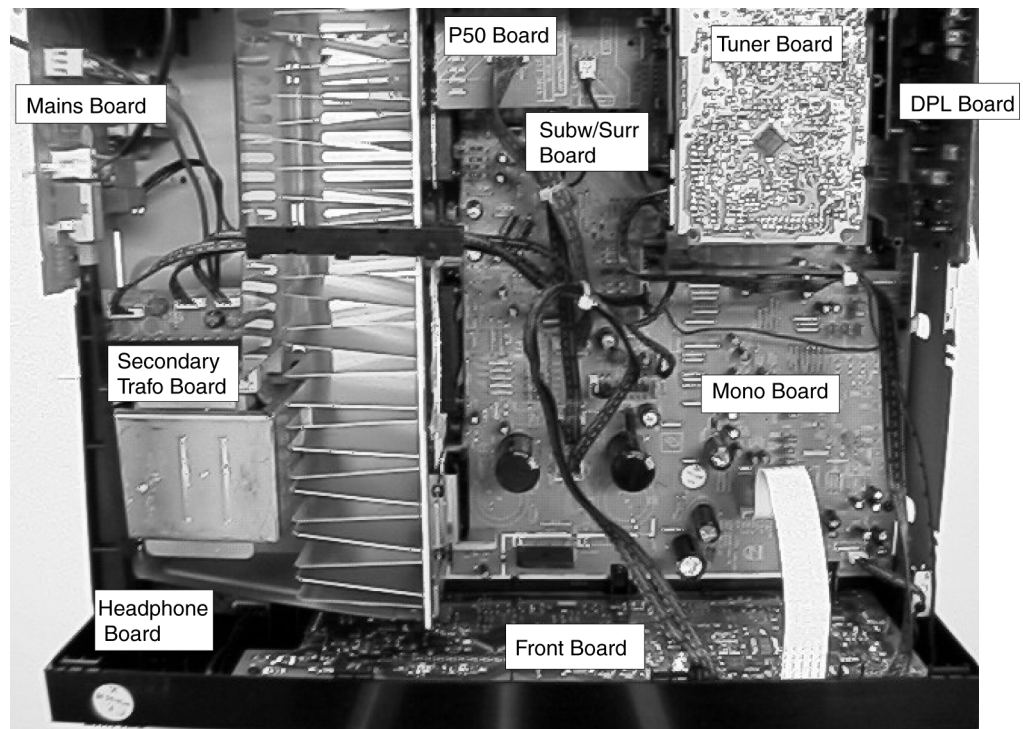
**CAUTION :** After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins ( with unit NOT connected to AC mains and its Power switch ON ), and the face or Front Panel of product and controls and chassis bottom.

Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before it is return to the user/customer.

Ref. UL Standard No. 1492.

In case of difficulties, do not hesitate to contact the Technical Department at above mentioned address.

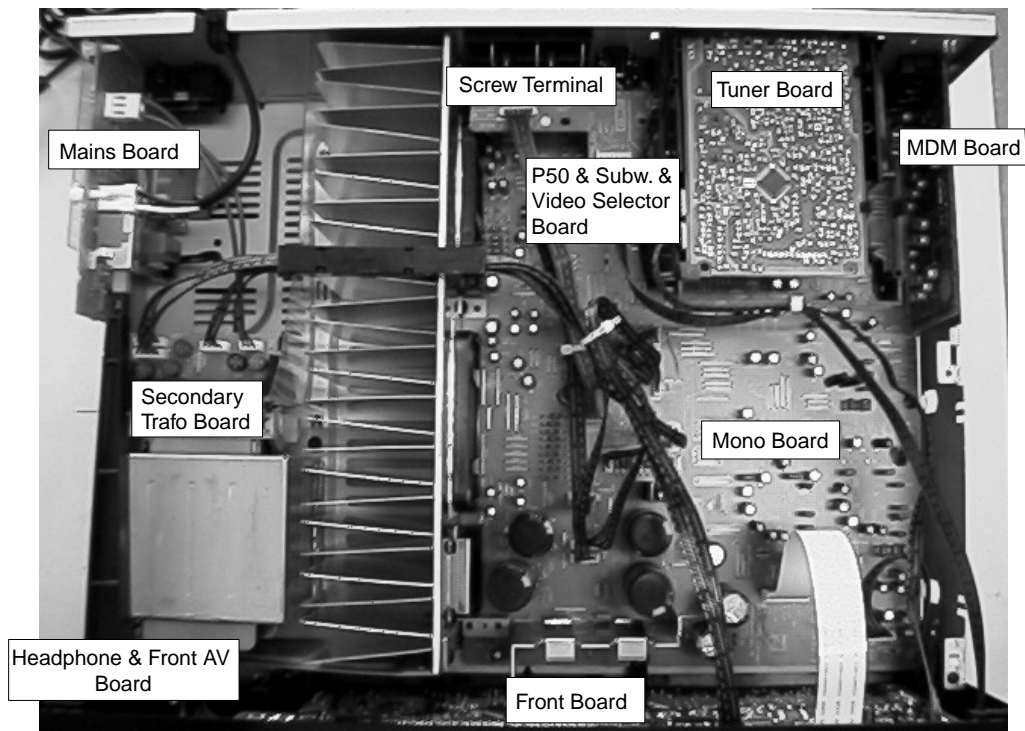
## LOCATION OF PRINTED CIRCUIT BOARDS for SR3000



## VERSION VARIATIONS

Features & Board in used	Type & version	SR3000	
		N	U
Tuner board - Tuner 95		x	
Tuner board – ECO 5			x
RDS		x	
P50 code (cinema link)		x	x
# Power channels		4	4
Center Pre-out		x	x
Surround Pre-out		x	x
Mains voltage		230	120

## LOCATION OF PRINTED CIRCUIT BOARDS for SR4000



## VERSION VARIATIONS

Features & Board in used	Type & Versions	SR4000		
		N	K	U
Tuner board - Tuner 95		x		
Tuner board – ECO 5			x	x
RDS		x		
P50 code (cinema link)		x	x	x
AV Front		x	x	x
Video selector		x	x	x
Center pre-out		x	x	x
Subwoofer pre-out		x	x	x
# power channels		5	5	5
Mains voltage		230	120/230	120
Voltage selector			x	

# TECHNICAL SPECIFICATION SR3000

## General

Mains voltage	:230V for /N :120V for /U
Mains frequency	: 50Hz for /N : 60Hz for /U
Power consumption	: ≤ 2W at stby
Dimension	: 440x138x350 mm
Remote control	: RC3000SR

## Amplifier

Output power	
L+R	: 2x50W at 6Ω D= 0,7% (1kHz)
Center	: 50W at 6Ω D= 0,7% (1kHz)
Surround	: 50W at 2X3Ω D= 0,7% (1kHz)

Distortion (1W)	
40Hz -1kHz -20kHz	: ≤ 0,05%(L,R,C) : ≤ 0,2% (Surround ch.)

Headphone	: 6,3mm stereo jack with switch
-----------	---------------------------------

Crosstalk between source (1W)	—1kHz : ≤ -65dB 250Hz – 10kHz : ≤ -60dB
-------------------------------	--

Crosstalk between channels (1W)	-1kHz : ≤ -45dB 250Hz – 10kHz : ≤ -40dB
---------------------------------	--

Frequency response	
Left/Right/Center	: ≤ 20Hz – ≥20kHz (-3dB)
Surround channel	: ≤ 100Hz – ≥7kHz (-3dB)

Power stage protection	: Shortcircuit : DC (Vout ≥10V)
Temperature	: Transformer (≥140° Celcius) : Heatsink (≥140° Celcius)

Input sensitivity	
CD	: 250mV impedance ≥ 47kΩ
CDR/TAPE	: 250mV impedance ≥ 47kΩ
VCR	: 250mV impedance ≥ 47kΩ
TV	: 250mV impedance ≥ 47kΩ

Output sensitivity	
CDR/TAPE	: 250mV impedance ≤ 1kΩ
VCR	: 250mV impedance ≤ 1kΩ

Output sensitivity (variable)	
Center pre-out	: 800mV impedance ≤ 1kΩ
Surround pre-out	: 800mV impedance ≤ 1kΩ

## Equalizer

Loudness	
(volume ≤ -20dB Ref: 1kHz=0dB)	: Bass 100Hz +6 dB : Treble 10kHz +3 dB

Tone control (Ref: 1kHz=0dB)	
	: Bass 100Hz -10dB →+10dB : Treble 10kHz -10dB →+10dB

DSC settings		100Hz	1kHz	10kHz
Personal	dB	0	0	0
Movie	dB	+ 4	+2	+4
Speech	dB	- 4	+2	- 2
Music	dB	+ 4	- 2	+2
Multimedia	dB	+ 8	0	+6

## Dolby Pro Logic

Stereo bypass from	: Lt , Rt into	Left, Right
Dolby Pro-logic decoding	: Lt , Rt into	Left, Right, Center, Surround
Dolby 3 stereo decoding	: Lt , Rt into	Left, Center, Right
Dolby Phantom decoding (Phantom = no center speaker)	: Lt , Rt into	Left, Right, Surround
Hall	: Lt , Rt into	Left, Surround, Right
Surround delay	: variable	
Center mode	: Large , small	
Testtone		

## Tuner

RDS	: Only in /N
-----	--------------

FM	
Tuning range	: 87.5 – 108MHz

Grid	: 50kHz for /N : 100kHz for /U
------	-----------------------------------

IF frequency	: 10.7MHz ±25kHz
Aerial input	: 75 Ω coaxial
Sensitivity at 26dB S/N	: ≤ 7μv
Selectivity at 600kHz bandwidth	: ≥ 50dB
Image rejection	: ≥ 25dB [ 75dB]
Distortion at RF=1mV,dev.75kHz	: ≤ 3% [ 2%]
-3dB Limiting point	: ≤ 7μV
Crosstalk at RF=1mV,dev.40kHz	: ≥18dB [ 26dB]

MW	
Tuning range	: 531 - 1602kHz for /N : 530 - 1700kHz for /U

Grid	: 9kHz for /N : 10kHz for /U
------	---------------------------------

IF frequency	: 450kHz ±1kHz
Aerial input	: Loop
Sensitivity at 26dB S/N	: ≤ 4.0mV/m
Selectivity at 18kHz bandwidth	: ≥ 18dB
IF rejection	: ≥ 45dB
Image rejection	: ≥ 28dB
Distortion at RF=50mV,m=80%	: ≤ 5%

LW only in /N	
Tuning range	: 153 - 279kHz
Grid	: 3kHz
IF frequency	: 450kHz ±1kHz
Aerial input	: Loop
Sensitivity at 26dB S/N	: ≤ 7.0mV/m
Selectivity at 18kHz bandwidth	: ≥ 24dB
IF rejection	: ≥ 26dB
Image rejection	: ≥ 35dB
Distortion at RF=50mV,m=80%	: ≤ 5%

[...] Values indicated are for "Tuner 95 Board" only  
\* Setting is software controlled

# TECHNICAL SPECIFICATION SR4000

## General

Mains voltage	: 230V for /N : 110V/240V switchable for /K : 120V for /U
Mains frequency	: 50Hz for /N : 50/60Hz for /K : 60Hz for /U
Power consumption	: ≤ 2W at stby
Dimension. wxhxd	: 440x138x350 mm
Remote control	: RC4000SR

## Amplifier

Output power	
L+R	: 2x100W at 6Ω D= 0,7% (1kHz)
Center	: 100W at 6Ω D= 0,7% (1kHz)
Surround Left	: 50W at 6Ω D= 0,7% (1kHz)
Surround Right	: 50W at 6Ω D= 0,7% (1kHz)

Distortion (5W)	
40Hz -1kHz	: ≤ 0,05%
20kHz	: ≤ 0,2%

Headphone : 6,3mm stereo jack with switch

Crosstalk between source	—1kHz : ≤ -65dB
(1W) 250Hz – 10kHz	: ≤ -60dB

Crosstalk between channels	-1kHz : ≤ -45dB
(1W) 250Hz – 10kHz	: ≤ -40dB

Frequency response : ≤ 20Hz – ≥ 20kHz (-3dB)

Power stage protection	: Shortcircuit : DC (Vout ≥ 10V)
Temperature	: Transformer ( ≥ 140° Celcius) : Heatsink ( ≥ 140° Celcius)

Input sensitivity	
Phono	: 5mV impedance 47kΩ/220pF
CD	: 250mV impedance ≥ 47kΩ
CDR/TAPE	: 250mV impedance ≥ 47kΩ
VCR	: 250mV impedance ≥ 47kΩ
TV	: 250mV impedance ≥ 47kΩ
SAT	: 250mV impedance ≥ 47kΩ
FRONT AV	: 250mV impedance ≥ 22kΩ

Output sensitivity	
CDR/TAPE	: 250mV impedance ≤ 1kΩ
VCR	: 250mV impedance ≤ 1kΩ

Output sensitivity (variable)	
Subwoofer pre-out	: 800mV impedance ≤ 1kΩ
Center pre-out	: 800mV impedance ≤ 1kΩ

## Video Selector

Input sensitivity	
DVD/VCR/TV/Front AV	: 1 Vpp impedance 75Ω
Output sensitivity	
Monitor/VCR	: 1 Vpp impedance 75Ω
Frequency response	: ≤ 50Hz → ≥ 6MHz

## Equalizer

Loudness	
(volume ≤ -20dB Ref: 1kHz=0dB)	: 100Hz +6 dB : 10kHz +3 dB

Tone control (Ref: 1kHz=0dB)	
Bass 100Hz	-9dB → +9dB
Treble 10kHz	-9dB → +9dB

DSC settings		100Hz	1kHz	10kHz
Personal	dB	0	0	0
Movie	dB	+ 4	+0	+4
Speech	dB	- 4	+2	- 2
Music	dB	+ 4	- 2	+2
Multimedia	dB	+ 8	0	+6

## Multi Channel Decoder

MPEG5.1 / MPEG 7.1 (7.1 downmix to 5.1)  
 Dolby Digital (AC-3)  
 Linear PCM  
 Automatic audio/data type detection (AC-3,MPEG-2,PCM)  
 Dolby Pro Logic  
 MPEG-2 dual mono channel selection I/II  
 MPEG-2 dual stereo channel selection I/II  
 Virtual Dolby Surround (422/423)  
 Virtual MPEG Digital (522/523)  
 Virtual Dolby Digital (522/523)  
 Digital Bass Management  
 Parallel Stereo Downmix  
 Four Stereo (224)  
 Volume Control  
 Noise Generator (test tone)  
 Surround mode selector  
 Delay C and SL and SR

## Tuner

RDS	: Only in /N
FM	
Tuning range	: 87.5 – 108MHz
Grid	: 50kHz : 100kHz only for /U : 50 & 100kHz for /K
IF frequency	: 10.7MHz ±25kHz
Aerial input	: 75 Ω coaxial : 300 Ω clickfit only for /U
Sensitivity at 26dB S/N	: ≤ 7μV
Selectivity at 600kHz bandwidth	: ≥ 50dB
Image rejection	: ≥ 75dB : ≥ 25dB only for /U, K
Distortion at RF=1mV,dev.75kHz	: ≤ 2%
-3dB Limiting point	: ≤ 3% only for /U, K : ≤ 7μV
Crosstalk at RF=1mV,dev.40kHz	: ≥ 26dB : ≥ 22dB only for /U, K

MW	
Tuning range	: 522 - 1611kHz for /N : 531 - 1602kHz for/K : 530 - 1700kHz for/K : 530 - 1700kHz for /U
Grid	: 9kHz for /N : 9 & 10kHz for /K : 10kHz for /U
IF frequency	: 450kHz ±1kHz
Aerial input	: Loop
Sensitivity at 26dB S/N	: ≤ 4.0mV/m
Selectivity at 18kHz bandwidth	: ≥ 18dB
IF rejection	: ≥ 45dB
Image rejection	: ≥ 28dB
Distortion at RF=50mV,m=80%	: ≤ 5%

LW only in /N	
Tuning range	: 153 - 279kHz
Grid	: 3kHz
IF frequency	: 450kHz ±1kHz
Aerial input	: Loop
Sensitivity at 26dB S/N	: ≤ 6mV/m
Selectivity at 18kHz bandwidth	: ≥ 22dB
IF rejection	: ≥ 26dB
Image rejection	: ≥ 35dB
Distortion at RF=50mV,m=80%	: ≤ 5%

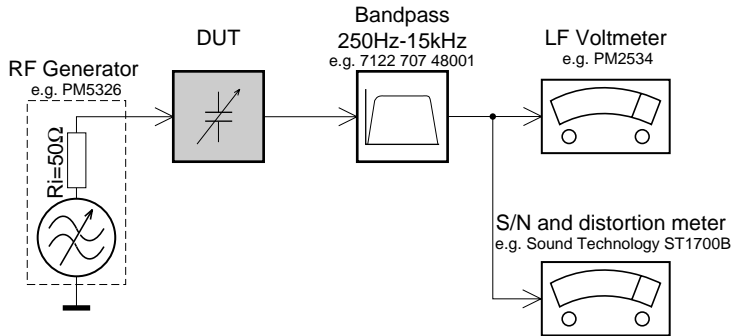
\* Setting is software controlled

# SERVICE TOOL

Audio Signals Test Disc 1 ..... 4822 397 30184

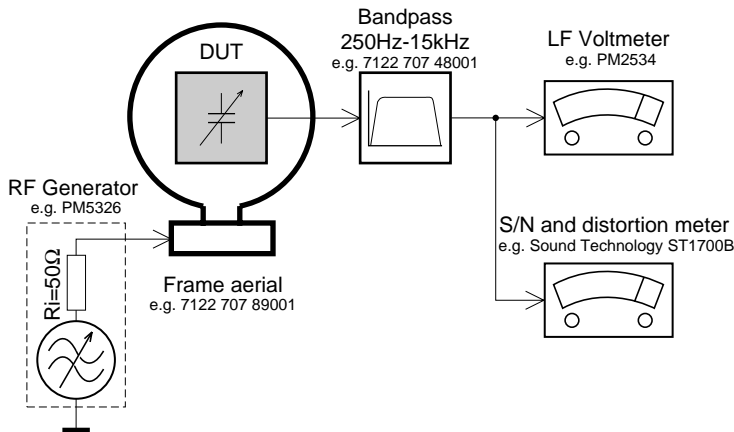
## MEASUREMENT SETUP

### Tuner FM



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

### Tuner AM (MW,LW)



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

## SAFETY



Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used. Safety components are marked by the symbol



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



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

## SAFETY



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



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

# WARNING

**(GB) WARNING**

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

**(F) ATTENTION**

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD). Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation. Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfilez le bracelet 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.

**ESD**



**(D) WARNUNG**

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD). Unsorgfältige Behandlung im Reparaturfall kann die Lebensdauer drastisch reduzieren. Sorgen Sie dafür, daß sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind. Halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

**(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.

**(I) AVVERTIMENTO**

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

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

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

# HANDLING CHIP COMPONENTS

**GENERAL**

**DISMOUNTING**

**MOUNTING**

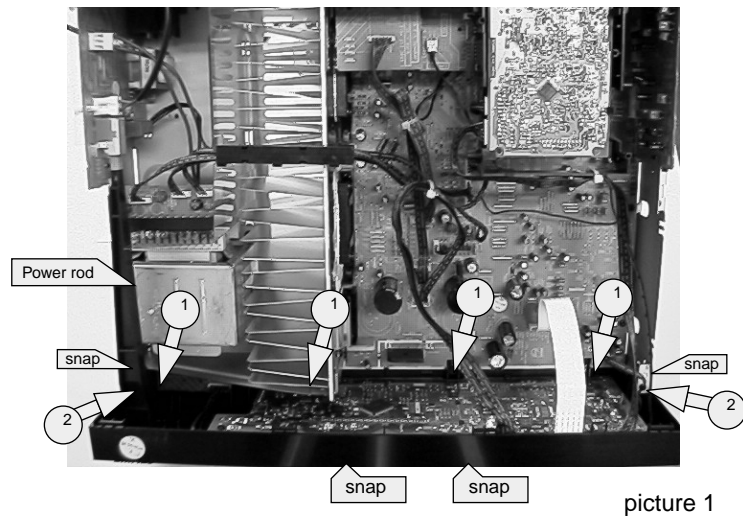
**PRECAUTIONS**

**EXAMPLES**

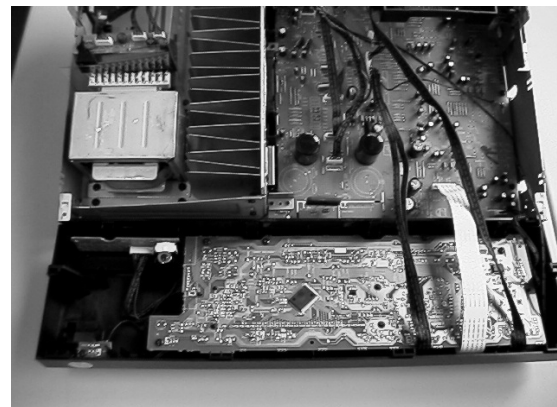


## DISMANTLING HINTS

### Dismantling of Front

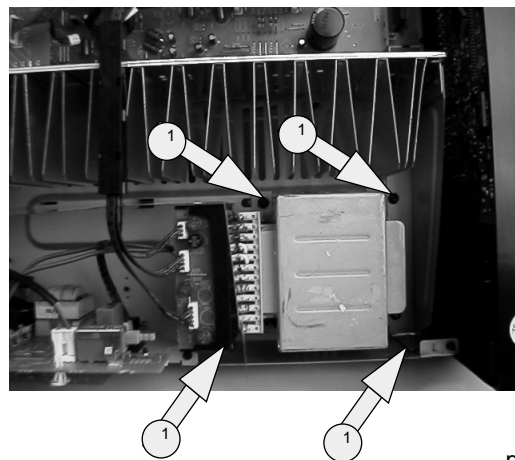


- 1) Remove top cover
- 2) Remove power rod
- 3) Remove 6 x screw as shown in picture 1
- 4) Release two snaps (left & right side front)
- 5) Release two snaps on the bottom side front
- 6) Tipp down front as shown in picture 2



picture 2

### Dismantling of maintrafo

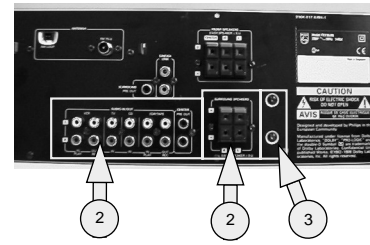


picture 8

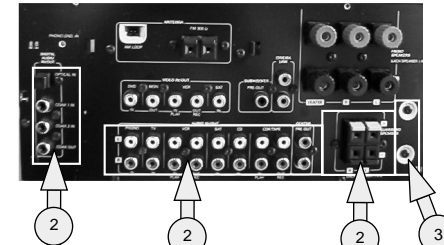
- 1) Remove power rod
- 2) Remove 4x screw as shown in picture 8

### Dismantling of mono board

- 1) Remove front . See picture 1
- 2) Remove whole front (disconnect the wires on the mono board coming from front)

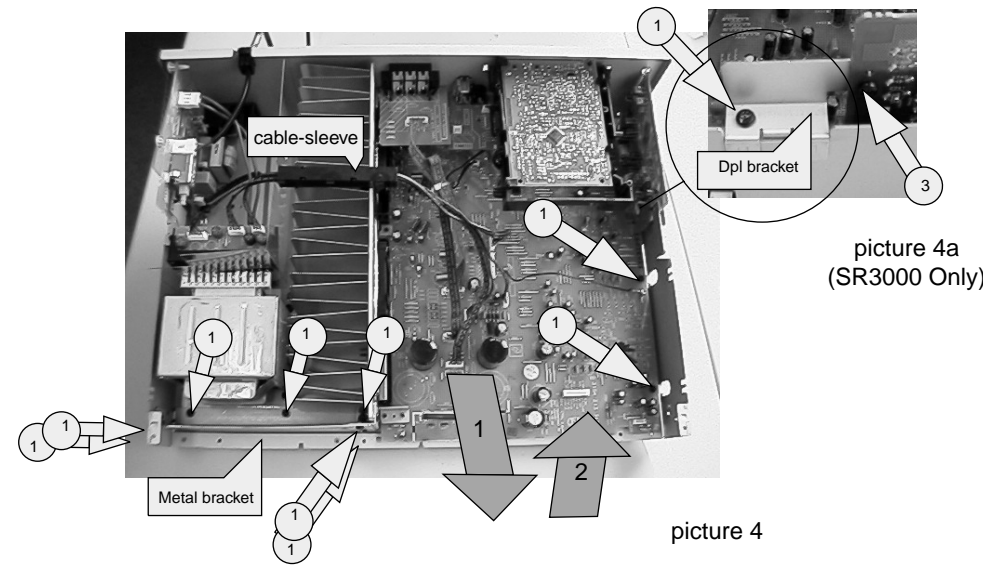


picture 3a  
(SR3000)



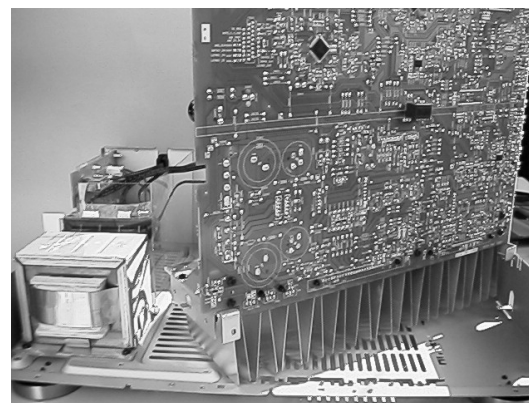
picture 3b  
(SR4000)

- 3) Remove 8 (SR3000) x screws shown in mentioned aria . See picture 3a
- 3) Remove 12 (SR4000) x screws shown in mentioned aria . See picture 3b



picture 4

- 4) Remove DPL bracket. See picture 4a (SR3000 Only)
- 5) Remove wires out the cable-sleeve.
- 6) Remove 7 x screw and remove metal bracket
- 7) Remove 2 x screw on mono board . See picture 4
- 8) Remove mono board as shown arrow 1 & 2 . See picture 4
- 9) Bring the mono board in the service position as shown in picture 5



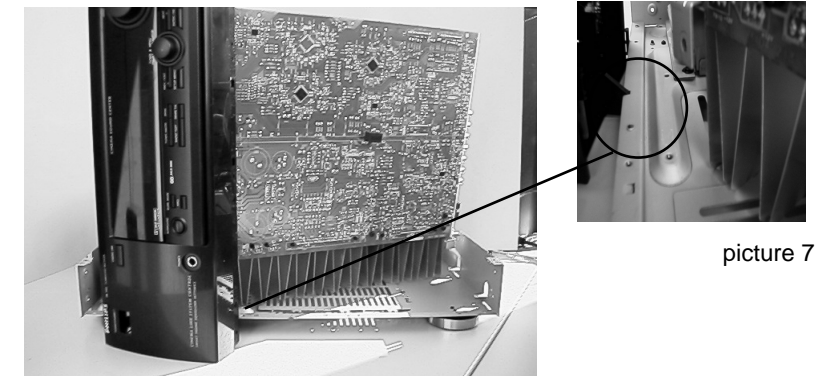
picture 5

### Legend

- ① → = Torx M3x6mm ( screw with big head )
- ② → = Torx 3x10mm
- ③ → = Torx M3x6mm

### Service position monoboard

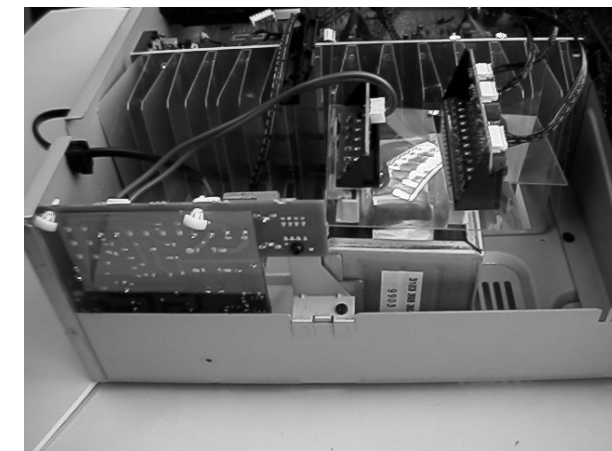
- 1) Bring front in position as shown in picture 6
  - 2) Snap nok of front in bottom to make front stable . See picture 7
  - 3) Connect front wiring back to monoboard.
- \*The tuner module doesn't have to be connected. Use an other source (pe.CD)



picture 7

picture 6

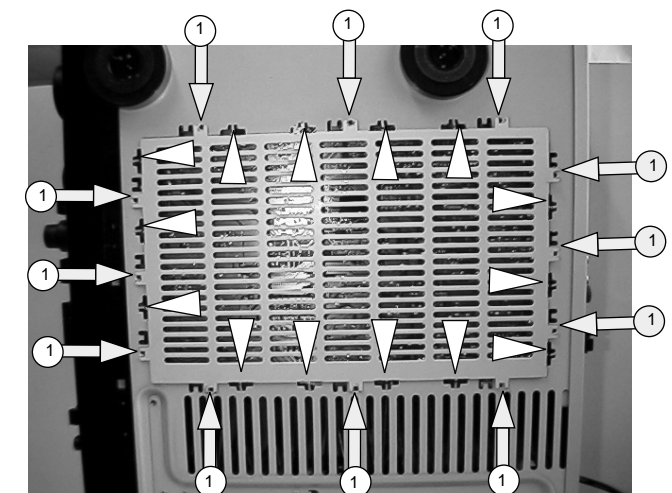
### Service position main trafo



picture 9

- 1) Put main trafo as shown in picture 9

### Handling service cover



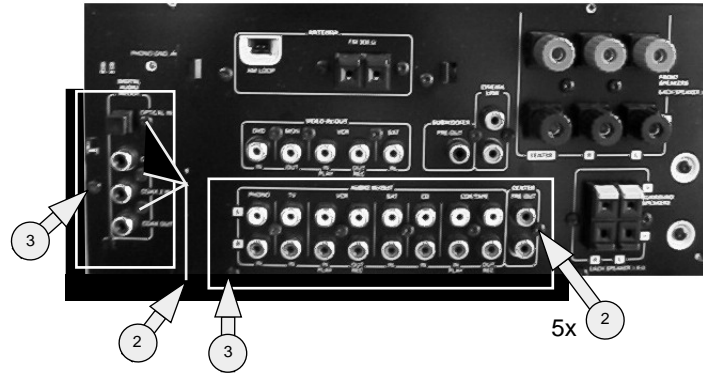
picture 10

- 1) To open the service cover cut 14 x lugs between cover and bottom . See picture 10 (▽)
  - 2) To close the service cover put 12 x screw in mentioned holes. See picture 10
- Service codenumber 12x Torx M3x6mm screw with big head = 4822 502 14659

## DISMANTLING HINTS

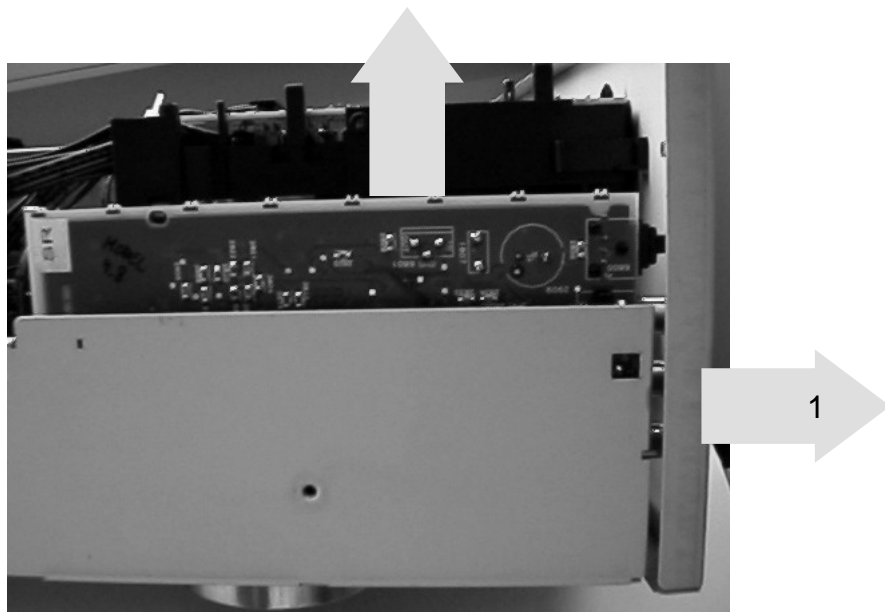
### Dismantling of MDM module (SR4000 Only)

1) Remove all the screws mentioned in the arial . See picture 11





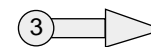
picture11

2) Remove backplate a little backwards. See arrow 1 (picture 12)  
 3) Pull module out the set as shown in picture 12



picture12

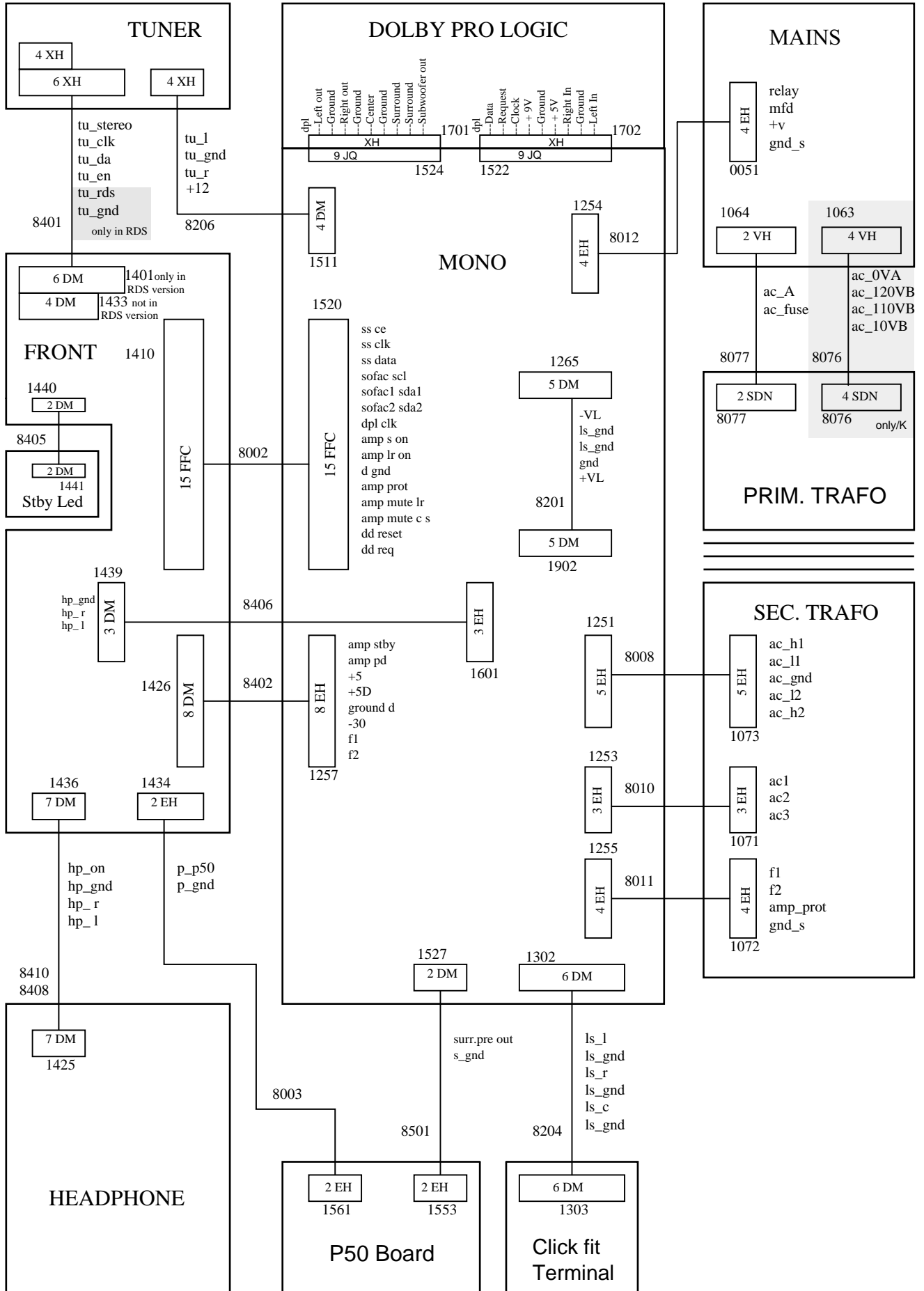
### Legend

-  = Torx M3x6mm ( screw with big head )
-  = Torx 3x10mm
-  = Torx M3x6mm

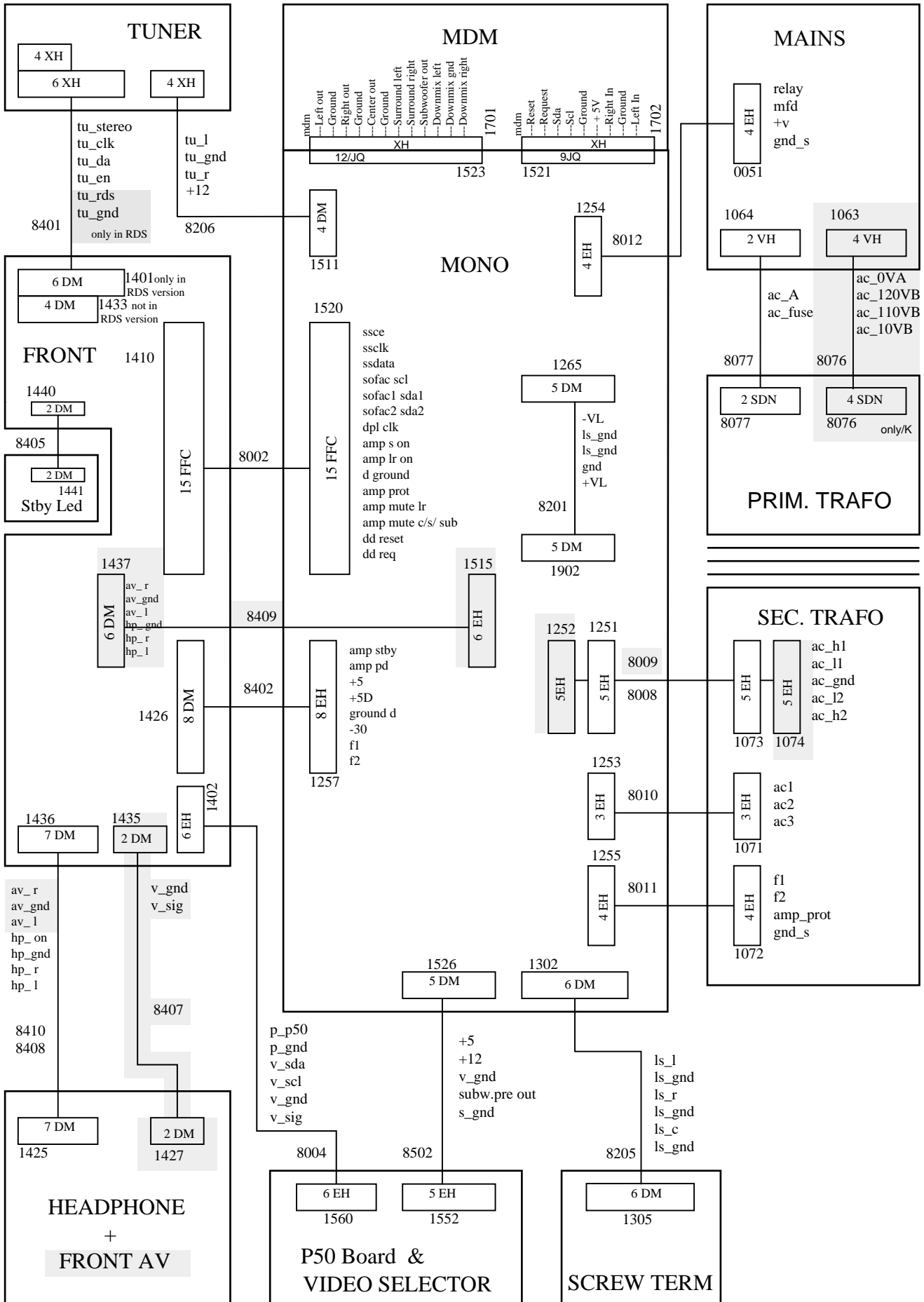
## ABBREVIATIONS

<b>A</b>		<b>M</b>	
ac 0VA	AC 0 Voltage	mdm	Multi channel Decoding Module
ac 10VB	AC 10 Voltage	mdm c out	— Center out
ac 110VB	AC 110 Voltage	mdm gnd	— ground
ac 120VB	AC 120 Voltage	mdm l dmix	— Downmix Left
ac gnd	AC ground	mdm l in	— Left in
ac h1	AC high voltage 1	mdm l out	— Left out
ac h2	AC high voltage 2	mdm r dmix	— Downmix Right
ac l1	AC low voltage 1	mdm r in	— Right in
ac l2	AC low voltage 2	mdm r out	— Right out
ac1	AC voltage 1	mdm req	— request
ac2	AC voltage 2	mdm rst	— reset
ac3	AC voltage 3	mdm scl	— I <sup>2</sup> C clock
amp l r on	Amplifier Left - Right On	mdm sda	— I <sup>2</sup> C data
amp mute c s	Amplifier mute center surround	mdm sl out	— surround Left out
amp mute c s sub	Amplifier mute center surround subwoofer	mdm sr out	— surround Right out
		mdm sub out	— subwoofer out
amp mute l r	Amplifier mute Left - Right	mfd	Mains failure detection
amp pd	Amplifier power down		
amp prot	Amplifier protection		
amp s on	Amplifier surround On	<b>P</b>	
amp stby	Amplifier Standby	p gnd	P50 ground
av gnd	Audio ground	p p50	Cinema link P50 code
av l	Audio Left	<b>S</b>	
av r	Audio Right	s gnd	Surround ground
A/V	Audio/Video	sofac scl	Sofac I <sup>2</sup> C clock
		sofac1 sda1	Sofac 1 I <sup>2</sup> C data1
<b>D</b>		sofac2 sda2	Sofac 2 I <sup>2</sup> C data2
d gnd	Dolby ground	ss ce	Source selector chipenable
dd req	Dolby decoder request	ss clk	Source selector clock
dpl c out	Dolbyprologic Center out	ss data	Source selector data
dpl clk	Dolbyprologic clock	surr pre-out	Surround pre-out
dpl gnd	Dolbyprologic ground		
dpl l in	Dolbyprologic Left in	<b>T</b>	
dpl l out	Dolbyprologic Left out	tu clk	Tuner clock
dpl r in	Dolbyprologic Right in	tu da	Tuner data
dpl r out	Dolbyprologic Right out	tu en	Tuner enable
dpl s	Dolbyprologic surround	tu gnd	Tuner ground
dpl sub	Dolbyprologic subwoofer	tu l	Tuner Left
		tu r	Tuner Right
<b>F</b>		tu rds	Tuner RDS
f1	Filament 1	tu stereo	Tuner stereo
f2	Filament 2		
fmute	Fast mute	<b>V</b>	
		v gnd	Video ground
<b>G</b>		v scl	Video I <sup>2</sup> C clock
gnd d	Ground digital	v sda	Video I <sup>2</sup> C data
gnd s	Ground signal	v sig	Video signal
		v sub sur	Video subwoofer surround
<b>H</b>			
hp gnd	Headphone ground		
hp l	Headphone Left		
hp on	Headphone On		
hp r	Headphone Right		
hst	Heatsink temperature		
<b>L</b>			
ls c	Loudspeaker Center		
ls gnd	Loudspeaker ground		
ls l	Loudspeaker Left		
ls r	Loudspeaker Right		

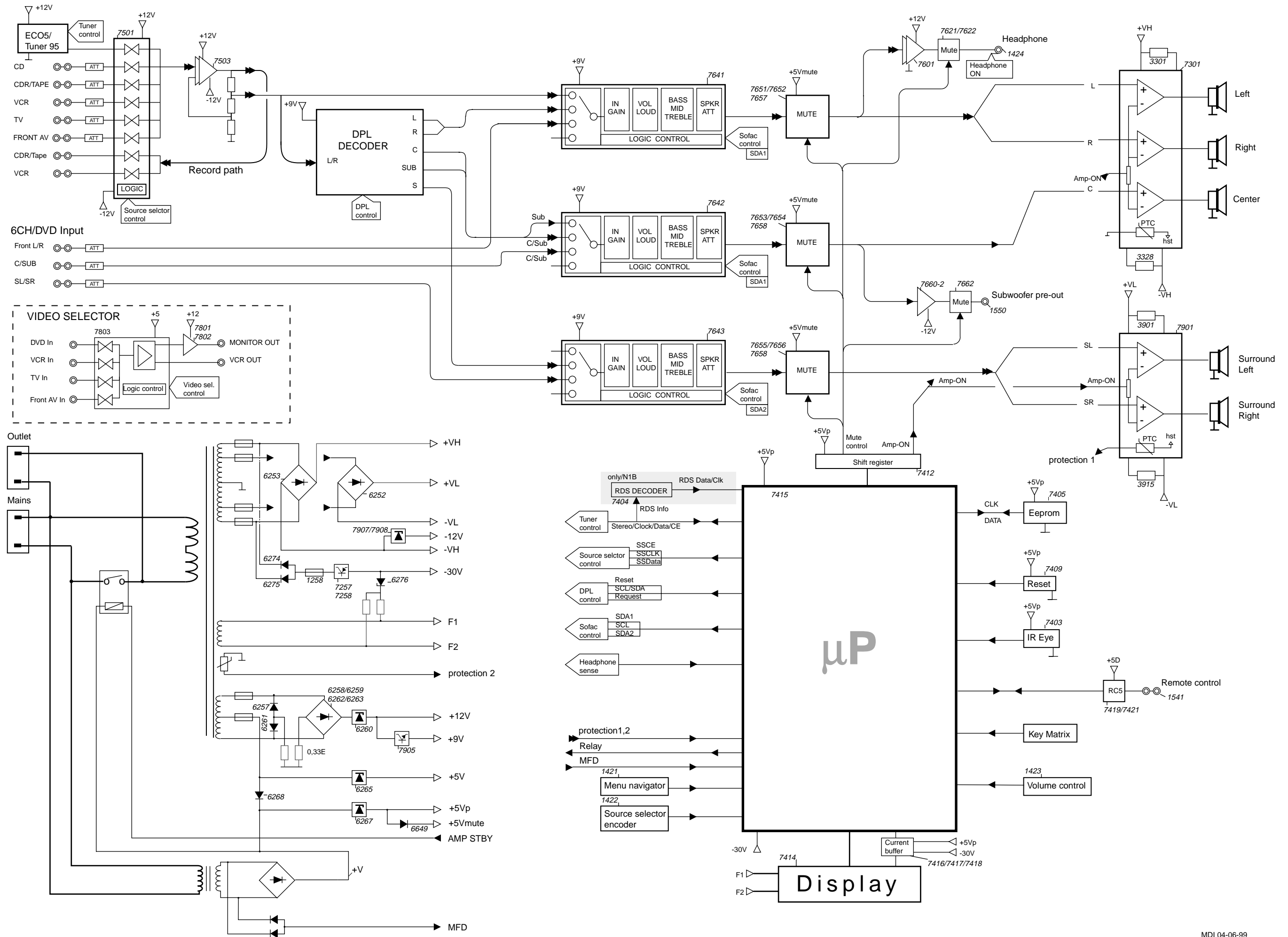
WIRING DIAGRAM SR3000



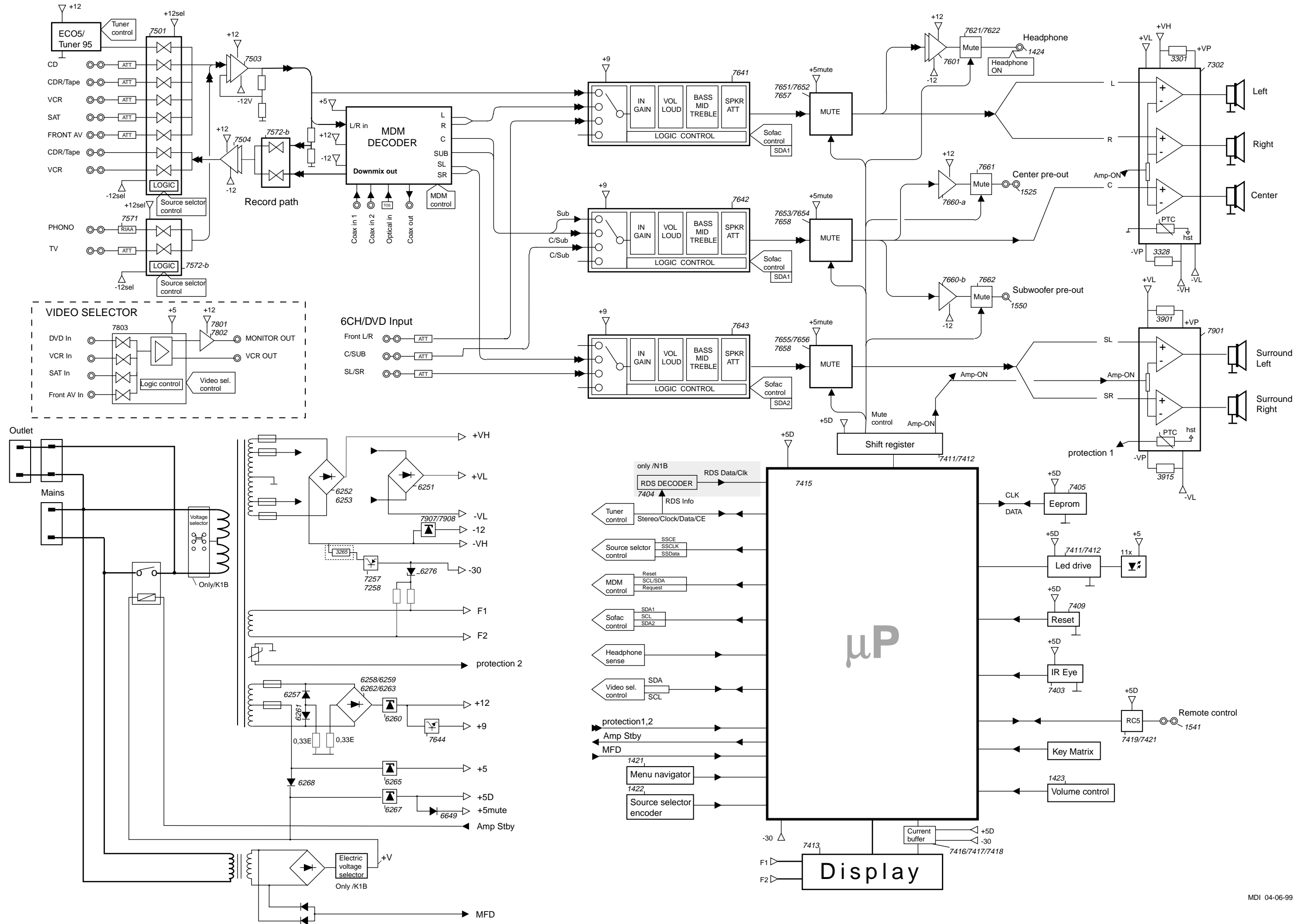
WIRING DIAGRAM SR4000



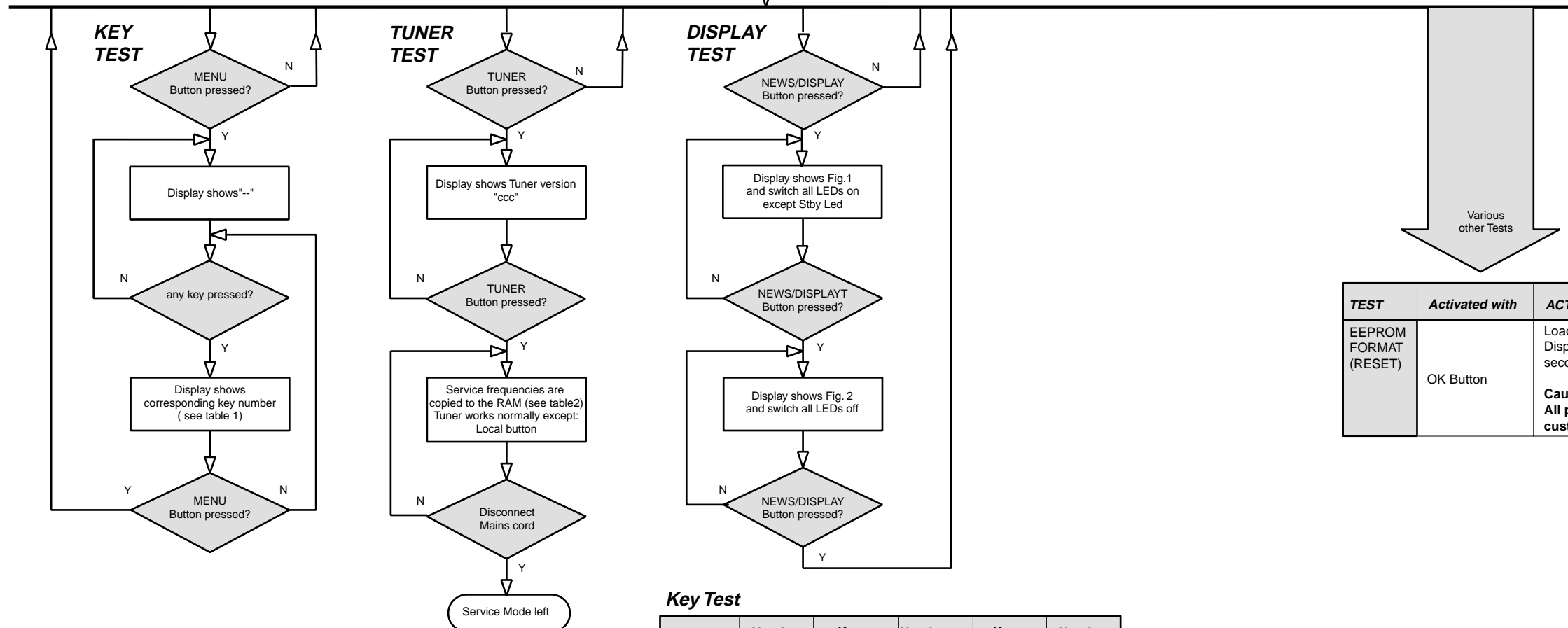
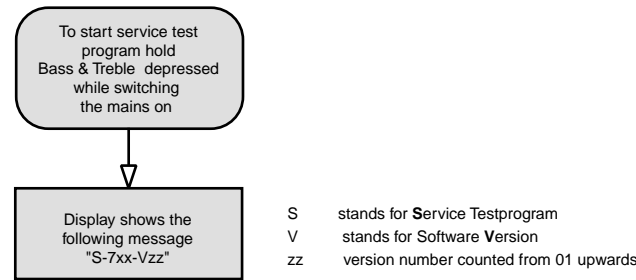
# BLOCK DIAGRAM SR3000



# BLOCK DIAGRAM SR4000



SERVICE TEST PROGRAM SR3000



TEST	Activated with	ACTION
EEPROM FORMAT (RESET)	OK Button	Load <b>default data</b> . Display shows "NEW" for 1 second.  <b>Caution!</b> All presets from the customer will be Lost

**Tuner Test**

Display info Version	Europe "EUR" /N	USA "USA" /U	Oversea "OSE" /K
Preset 1	87.5MHz	87.5MHz	87.5MHz
2	108MHz	108MHz	108MHz
3	531kHz	530kHz	531kHz
4	1602kHz	1700kHz	1602kHz
5	558kHz	560kHz	558kHz
6	1494kHz	1500kHz	1494kHz
7	153kHz	98MHz	----
8	279kHz	----	----
9	198kHz	----	----
10	98MHz	----	----
11	----	----	98MHz

This table is valid for all types of tuners. Table 2  
Customer presets will not be changed after this Tuner test.  
If a station is tuned then the display flag "OK" will be ON otherwise it will be OFF.  
If the tuned frequency is carrying RDS information, the display flag "RDS" will be ON.  
Oversea version: the tuning grid can be switched between 9kHz and 10kHz by pressing the key "TUNER" for longer than 2 seconds. "Grid 9" or "Grid10" will be shown accordingly.  
Grid 9kHz is in FM 50kHz, Grid 10kHz is in FM 100kHz  
Europe version: the LW can be switched On and Off by pressing the key "TUNER" for longer than 2 seconds. LW OFF or LW ON will be shown accordingly.

**Key Test**

Key	Number	Key	Number	Key	Number
		Sens	7	Loudness	13
Surr. on/off	2	*News T/A	8	Bass	14
Surr. Mode	3	Prev.Exit	9	Treble	15
Hall	4	SetupMenu	10	#Front AV	16
Tuner	5	Next	11		
*Radio Text	6	Enter/OK	12		

\*Button Radio Text change in Name/Frequency in /K, /U version Table 1  
Button News T/A change in Display in /K version

**Default Data**

Source =Tuner---Mode=stereo---Volume=10  
SubwooferVol=0---Left Volume=0---Center Volume=0  
Right Volume=0---RearL Volume=0---RearR Volume=0  
Bass=0---Treble=0---Loudness=Off---Smart Sound=Personal  
Center Present=Yes---Rear Present=Yes  
Center Size=Small---Rear Size=Small  
Front Dist = 4 meter---Rear Dist = 2 meter  
For /K: AM grid is 9kHz  
FM grid is 50kHz

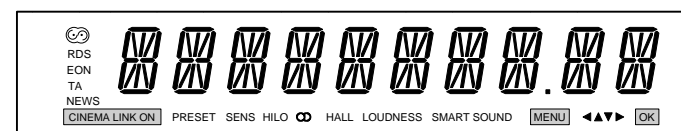


Figure 1

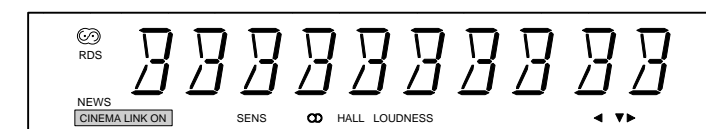
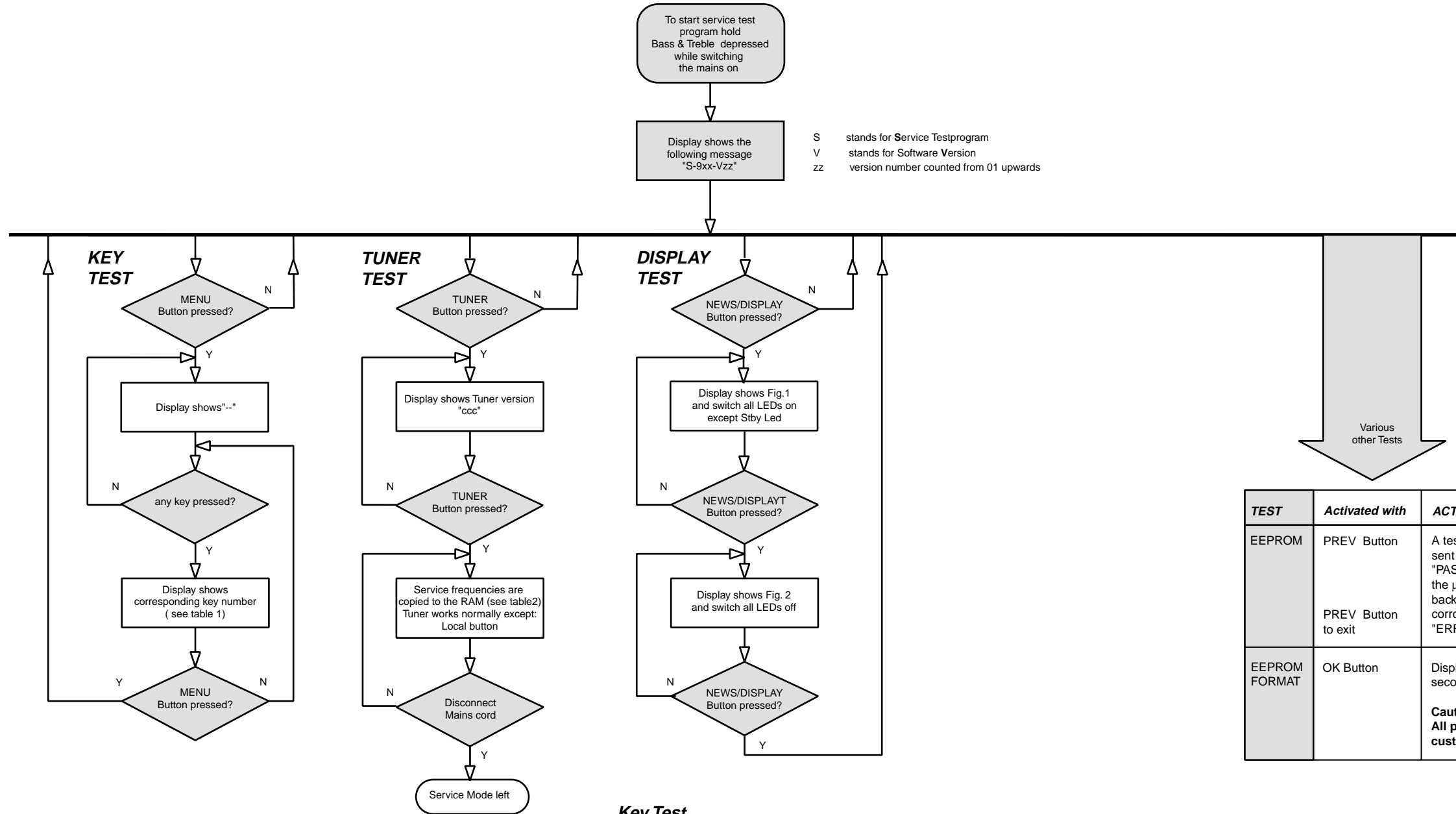


Figure 2



TEST	Activated with	ACTION
EEPROM	PREV Button	A test pattern will be sent to the Eeprom. "PASS" is displayed if the μProcessor read back the test pattern correctly, otherwise "ERR" will be displayed.
EEPROM FORMAT	OK Button	Display shows "NEW" for 1 second. <b>Caution!</b> All presets from the customer will be Lost

**Tuner Test**

Display info Version	Europe "EUR" /N	USA "USA" /U	Oversea "OSE" /K
Preset 1	87.5MHz	87.5MHz	87.5MHz
2	108MHz	108MHz	108MHz
3	531kHz	530kHz	531kHz
4	1602kHz	1700kHz	1602kHz
5	558kHz	560kHz	558kHz
6	1494kHz	1500kHz	1494kHz
7	153kHz	98MHz	----
8	279kHz	----	----
9	198kHz	----	----
10	98MHz	----	----
11	----	----	98MHz

This table is valid for all types of tuners. Table 2  
Customer presets will not be changed after this Tuner test.  
If a station is tuned then the display flag "OK" will be ON otherwise it will be OFF.  
If the tuned frequency is carrying RDS information, the display flag "RDS" will be ON.  
Oversea version: the tuning grid can be switched between 9kHz and 10kHz by pressing the key "TUNER" for longer than 2 seconds. "Grid 9" or "Grid10" will be shown accordingly.  
Grid 9kHz is in FM 50kHz, Grid 10kHz is in FM 100kHz  
Europe version: the LW can be switched On and Off by pressing the key "TUNER" for longer than 2 seconds. LW OFF or LW ON will be shown accordingly.

**Key Test**

Key	Number	Key	Number	Key	Number
Surr. on/off	2	Sens	7	Enter/OK	12
Surr. Mode	3	*News T/A	8	Loudness	13
3D Surr.	4	Prev.Exit	9	Bass	14
Tuner	5	Setup Menu	--	Treble	15
*Radio Text	6	Next	11	*Front A/V	16

\*Button Radio Text change in Name/Frequency in /K, /U version  
Button News T/A change in Display in /K, /U version  
Button Front A/V not in FR960

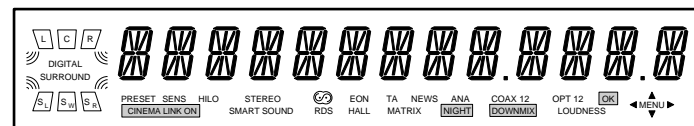


Figure 1

**Default Data**

Source =Tuner---Mode=stereo---Volume=10---SubwooferVol=0  
LeftVolume=0---CenterVolume=0---Right Volume=0  
RearVolume=0---RearLVolume=0---RearRVolume=0---Bass=0  
Treble=0---Loudness=Off---Smart Sound=Personal---Center Present=Yes---RearPresent=Yes---FrontSize=Large  
Subwooferpresent=Yes--- CenterSize=Small---RearSize=Small  
EffectIncr3D=100---DigInputCoax1=DVD  
L/RDist=4meter---CenterDist=3meter---RearDist=2meter  
For USA /17:  
L/RDist=13Feet---CenterDist=10Feet---RearDist=7Feet.  
For /01: AM grid is 9kHz  
: FM grid is 50kHz

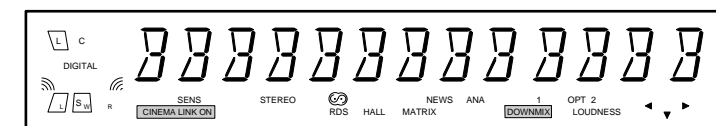
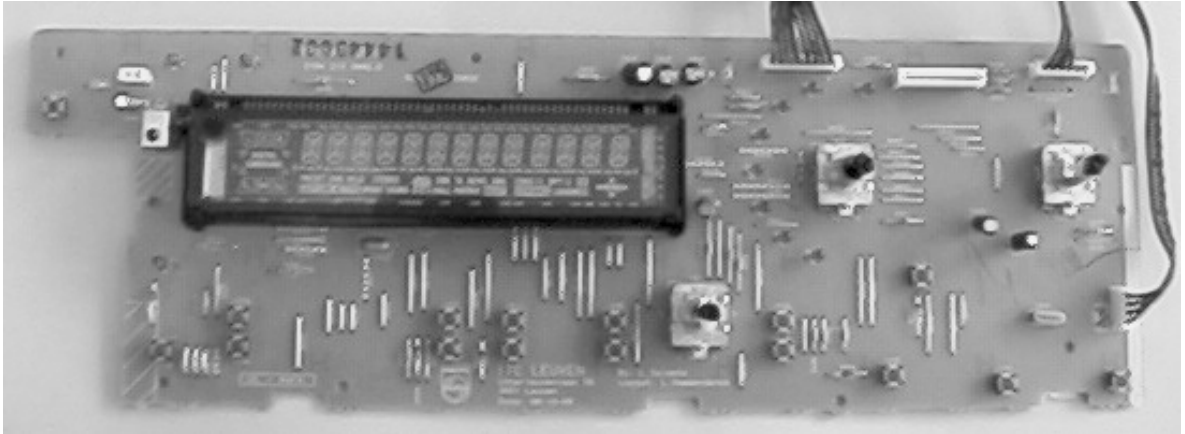


Figure 2



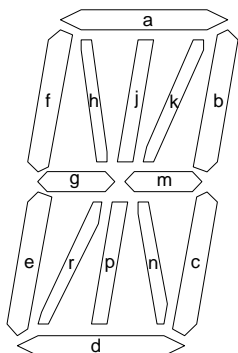
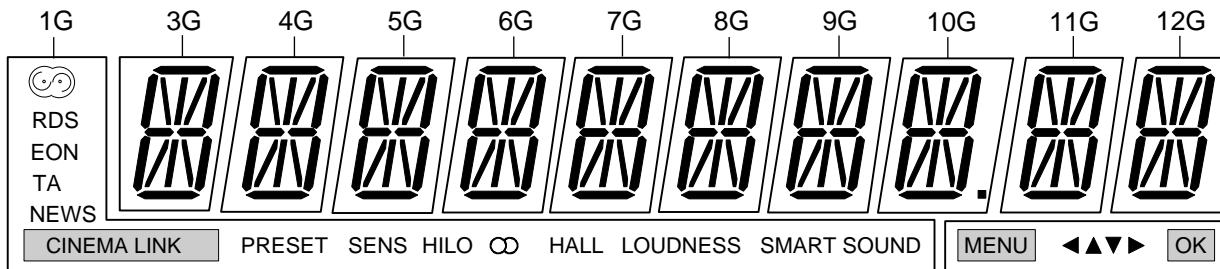


# ***FRONT BOARD***

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Headphone & Led board layout .....	6-4
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FTD DISPLAY PIN CONNECTIONS SR3000



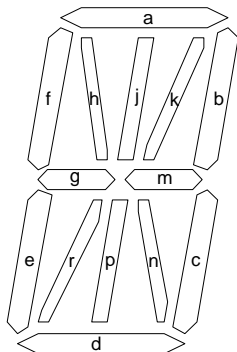
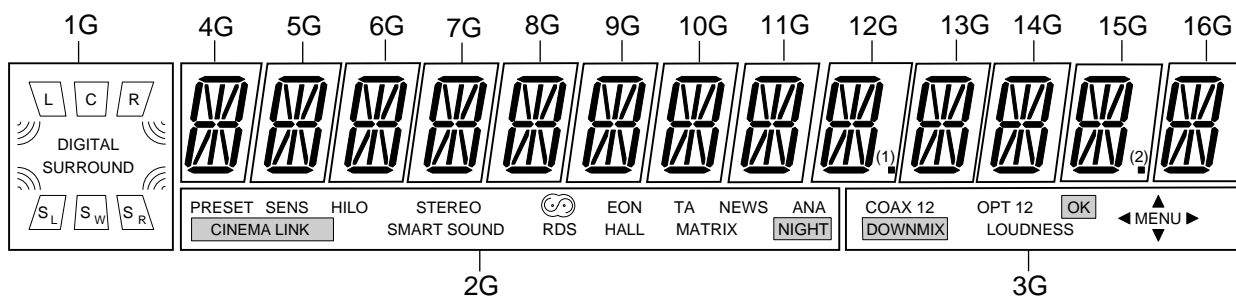
	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G	12G
P1	LOUDNESS	▼	a	a	a	a	a	a	a	a	a	a
P2	-	MENU	j p	j p	j p	j p	j p	j p	j p	j p	j p	j p
P3	-	▶	h	h	h	h	h	h	h	h	h	h
P4	LO	OK	k	k	k	k	k	k	k	k	k	k
P5	CINEMA LINK	◀	b	b	b	b	b	b	b	b	b	b
P6	EON	▲	f	f	f	f	f	f	f	f	f	f
P7	HALL	-	m	m	m	m	m	m	m	m	m	m
P8	HI	-	g	g	g	g	g	g	g	g	g	g
P9	NEWS	-	c	c	c	c	c	c	c	c	c	c
P10	PRESET	-	e	e	e	e	e	e	e	e	e	e
P11	RDS	-	r	r	r	r	r	r	r	r	r	r
P12	SMART SOUND	-	n	n	n	n	n	n	n	n	n	n
P13	∞	-	d	d	d	d	d	d	d	d	d	d
P14	TA	-	-	-	-	-	-	-	-	■	-	-
P15	SENS	-	-	-	-	-	-	-	-	-	-	-

Pin Connection

Pin numbers	4	4	4	4	4	3	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						
	5	4	3	2	1	0	9	8	7	6	5	4	3	2	1	0	9	8	7	6	5	4	3	2	1	0	9	8	7	6	5	4	3	2	1	0	9	8	7	6	5	4	3	2	1		
Connection	F	F	N	N	N	N	N	1	2	3	4	5	6	7	8	9	0	1	1	1																											
	2	2	P	P	C	C	C	C	G	G	G	G	G	G	G	G	G	C	C	C	C	C	C	C	C	5	4	3	2	1	0	9	8	7	6	5	4	3	2	1	P	P	1	1			

- Note:
- NC ----- No connection
  - NP ----- No pin
  - FI , F2 ----- Filament
  - 1G ~ 12G ----- Grid

FTD DISPLAY PIN CONNECTIONS SR4000



	1G	2G	3G	4G~11G	12G	13G, 14G	15G	16G
P1	L	MATRIX	DOWNMIX	a	a	a	a	a
P2	R	NIGHT	COAX	j p	j p	j p	j p	j p
P3	C	ANA	1(coax)	h	h	h	h	h
P4	(C)	LO	2(coax)	k	k	k	k	k
P5	(S <sub>L</sub> )	CINEMA LINK	OPT	b	b	b	b	b
P6	(S <sub>R</sub> )	EON	1(opt)	f	f	f	f	f
P7	S <sub>W</sub>	HALL	2(opt)	m	m	m	m	m
P8	S(L)	HI	LOUDNESS	g	g	g	g	g
P9	L	NEWS	▼	c	c	c	c	c
P10	S(R)	PRESET	MENU	e	e	e	e	e
P11	R	RDS	▶	r	r	r	r	r
P12	🔊 🔊	SMART SOUND	OK	n	n	n	n	n
P13	🔊 🔊	STEREO	◀	d	d	d	d	d
P14	SURROUND	TA	▲	-	■(1)	-	■(2)	-
P15	DIGITAL	SENS	-	-	-	-	-	-

Pin Connection

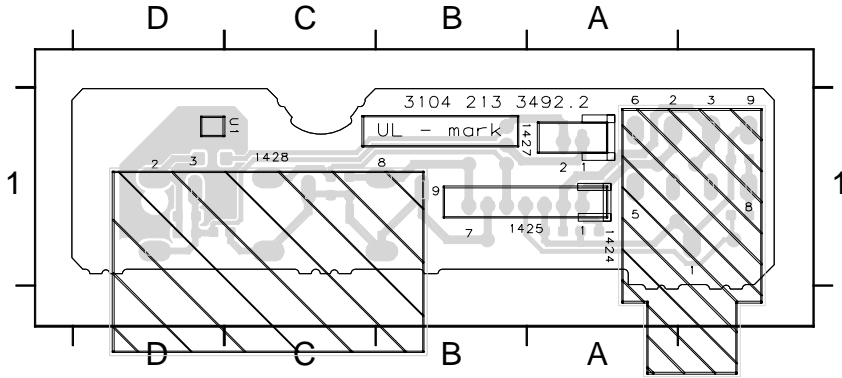
Pin numbers	54444444443333333333322222222221111111111110987654321098765432109876543210987654321
Connection	1234567890123456NNNNNNN1111111P P P P P P P P N N N N N N N N N N N N N F F G G G G G G G G G G G G G G G G C C C C C C 5 4 3 2 1 0 9 8 7 6 5 4 3 2 1 C C C C C C C C C C P P 1 1

Pin numbers	66655555555555210987654321
Connection	FFNNNNNNNNNN22PPCC C C C C C C

Note: FI, F2 ----- Filament  
 NC ----- No connection  
 NP ----- No pin  
 1G ~ 16G ----- Grid

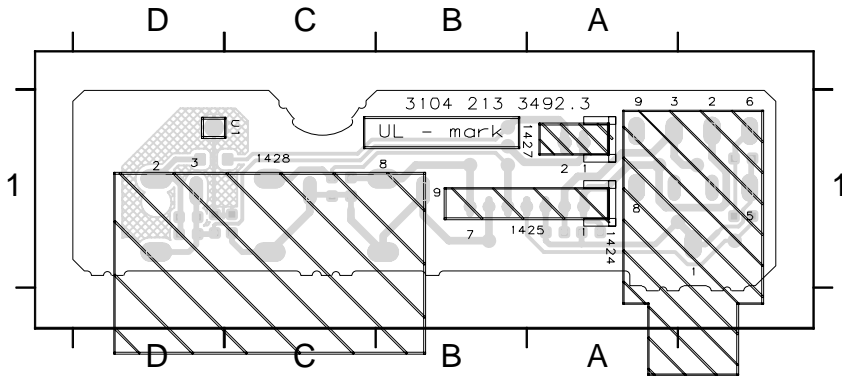
**HEADPHONE BOARD - COMPONENT VIEW**

SR3000



- U1 C1
- 1424 A1
- 1425 A1
- 1427 A1
- 1428 C1

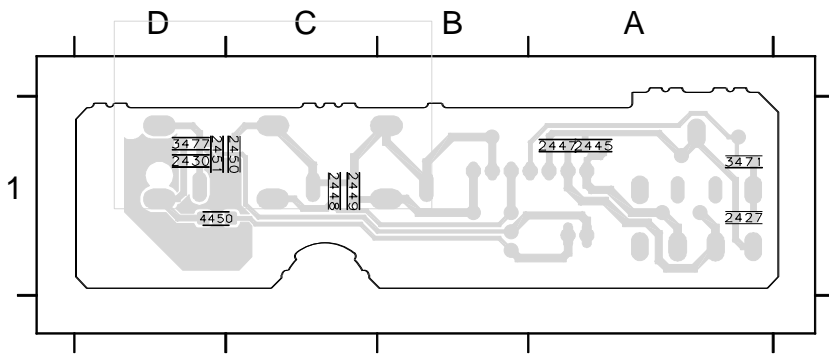
SR4000



- U1 C1
- 1424 A1
- 1425 A1
- 1427 A1
- 1428 C1

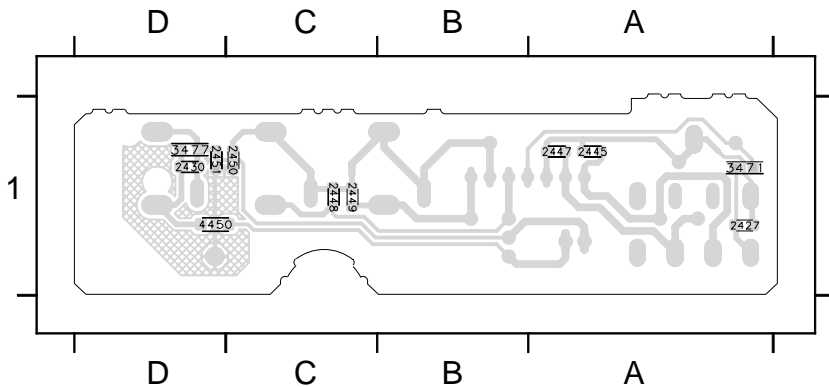
**HEADPHONE BOARD - COPPER SIDE VIEW**

SR3000



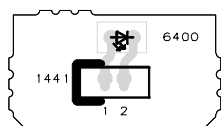
- 2427 A1
- 2430 D1
- 2445 A1
- 2447 A1
- 2448 C1
- 2449 C1
- 2450 C1
- 2451 D1
- 3471 A1
- 3477 D1
- 4450 D1

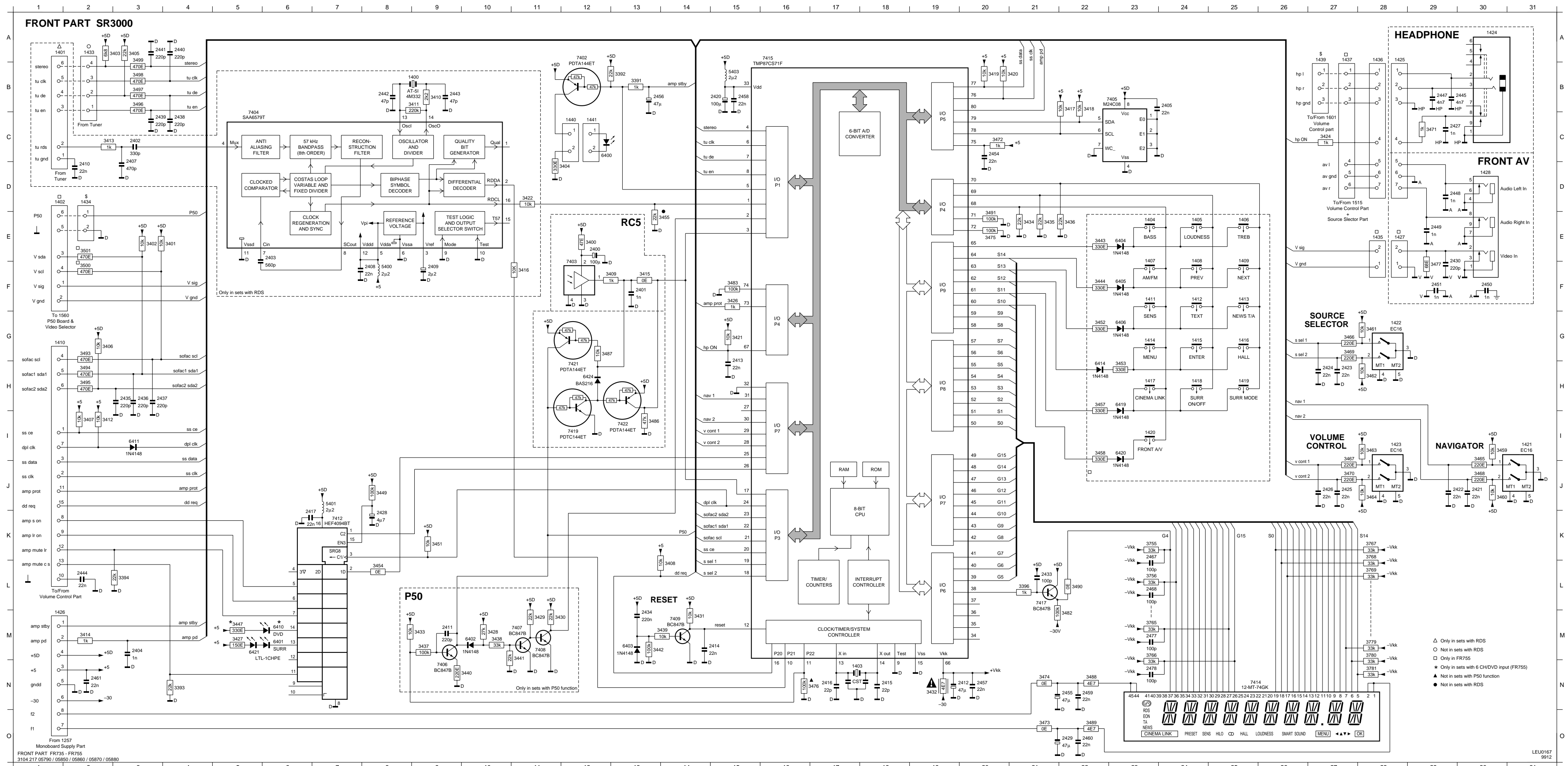
SR4000



- 2427 A1
- 2430 D1
- 2445 A1
- 2447 A1
- 2448 C1
- 2449 C1
- 2450 C1
- 2451 D1
- 3471 A1
- 3477 D1
- 4450 D1

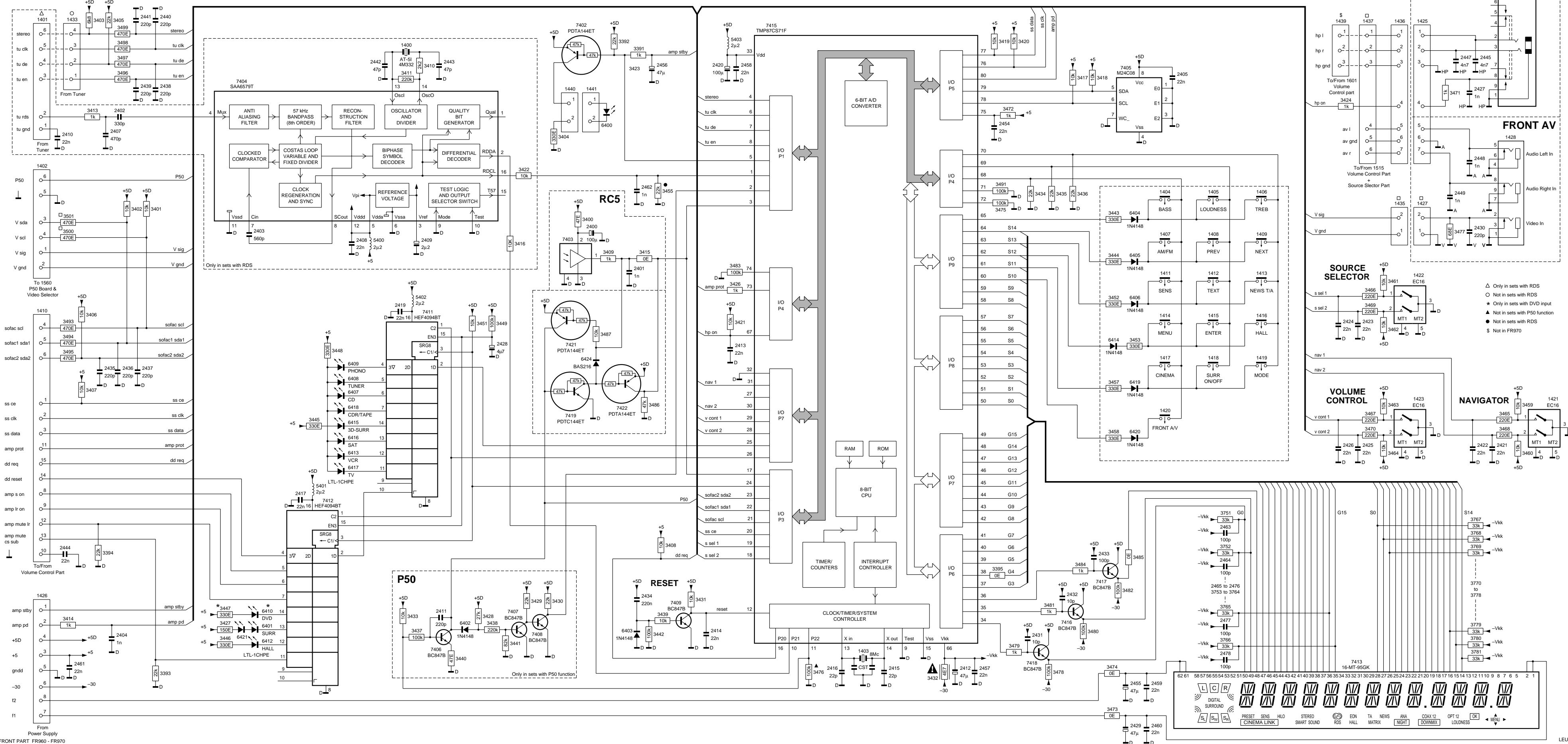
**LED BOARD - COMPONENT VIEW**





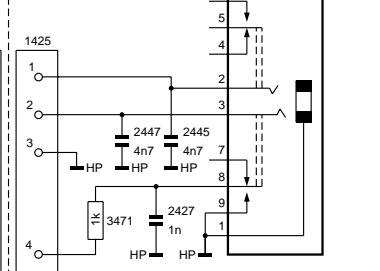
1400	B8	3421	G15
1401	A1	3422	D11
1402	D1	3424	C27
1403	N17	3426	F15
1404	E23	3427	M5
1405	E24	3428	M10
1406	E25	3429	M11
1407	F23	3430	M11
1408	F24	3431	M14
1409	F25	3432	N19
1410	G1	3433	M9
1411	F23	3434	E21
1412	F24	3435	E21
1413	F25	3436	E22
1414	G23	3437	M10
1415	G24	3438	M10
1416	G25	3439	M13
1417	H23	3440	N10
1418	H24	3441	N11
1419	H25	3442	M13
1420	I23	3443	E22
1421	I31	3444	F22
1422	G28	3447	M5
1423	G28	3449	J8
1424	A30	3451	K9
1425	A28	3452	G22
1426	M1	3453	H23
1427	E28	3454	J28
1428	D30	3455	E13
1433	A2	3457	H22
1434	D2	3458	I22
1435	E28	3459	I30
1436	A28	3460	J30
1437	A27	3461	G28
1439	A27	3462	H28
1440	C12	3463	I28
1441	C12	3464	J28
2400	E12	3465	I30
2401	F13	3466	G27
2402	C3	3467	I27
2403	E6	3468	J30
2408	F9	3473	C21
2410	D2	3474	N21
2411	M9	3475	E20
2412	N19	3476	N16
2413	H15	3477	F29
2414	M14	3482	M22
2415	N18	3483	F15
2416	N17	3486	I13
2417	K6	3487	G12
2420	B15	3488	N22
2421	J30	3489	O22
2422	J29	3490	L22
2423	H27	3491	E20
2424	H27	3493	G22
2425	J27	3494	H2
2426	J27	3495	H2
2427	C29	3496	B3
2428	K8	3497	B3
2429	O22	3498	B3
2430	F29	3499	A3
2433	L21	3500	F2
2434	M13	3501	E2
2435	H3	3755	K23
2436	H3	3756	L23
2437	H3	3765	M23
2438	C4	3766	M23
2439	C3	3767	K28
2440	A4	3768	K28
2441	A3	3769	L28
2442	B8	3779	M28
2443	B9	3780	M28
2444	L2	3781	N28
2445	B29	5400	F8
2447	B29	5401	J7
2448	D29	5403	B15
2449	E29	6400	C12
2450	F30	6401	M6
2451	F29	6402	M10
2454	C20	6403	M13
2455	N22	6404	E23
2456	B13	6405	F23
2457	N20	6406	G23
2458	B15	6410	M6
2459	N22	6411	I3
2460	O22	6414	H22
2461	N2	6419	H23
2462	K3	6420	I23
2468	L23	6421	M5
2477	M23	6424	H12
2478	N23	7402	A12
3391	B13	7403	F12
3392	B13	7404	C5
3393	N4	7405	B22
3394	L3	7406	N9
3396	L21	7407	M11
3400	E12	7408	M11
3401	E4	7409	M14
3402	E3	7412	K7
3403	A2	7414	N25
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3405	A3	7417	L21
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3410	B9		
3411	B8		
3412	I2		
3413	C2		
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3419	B20		
3420	B20		

FRONT PART SR4000

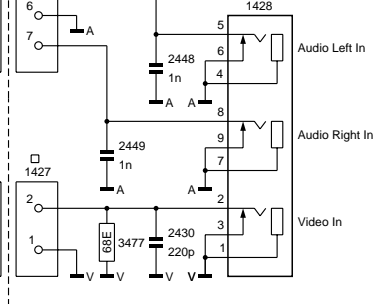


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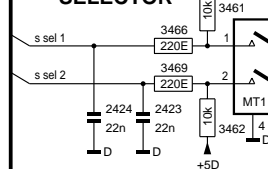
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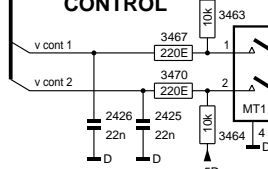
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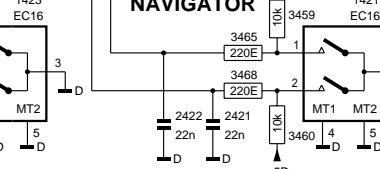
SOURCE SELECTOR



VOLUME CONTROL



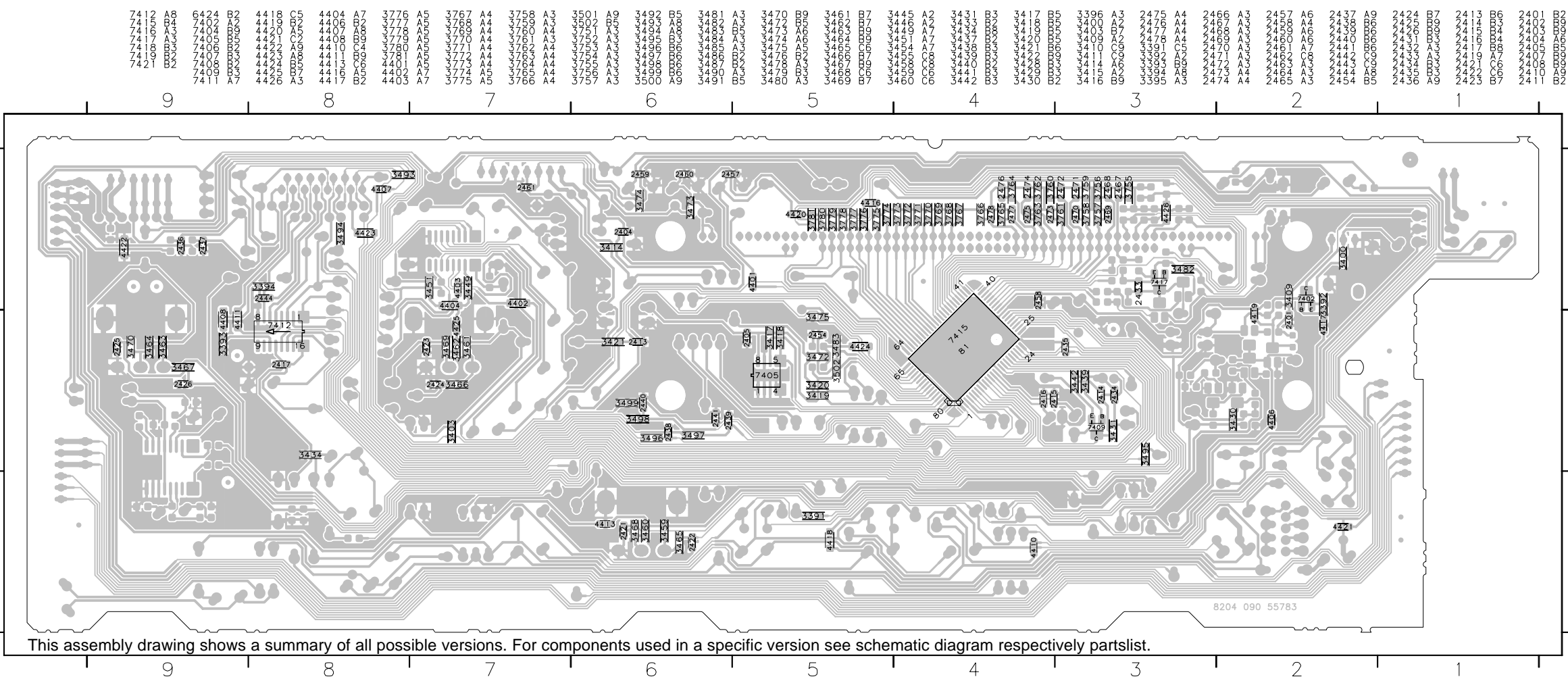
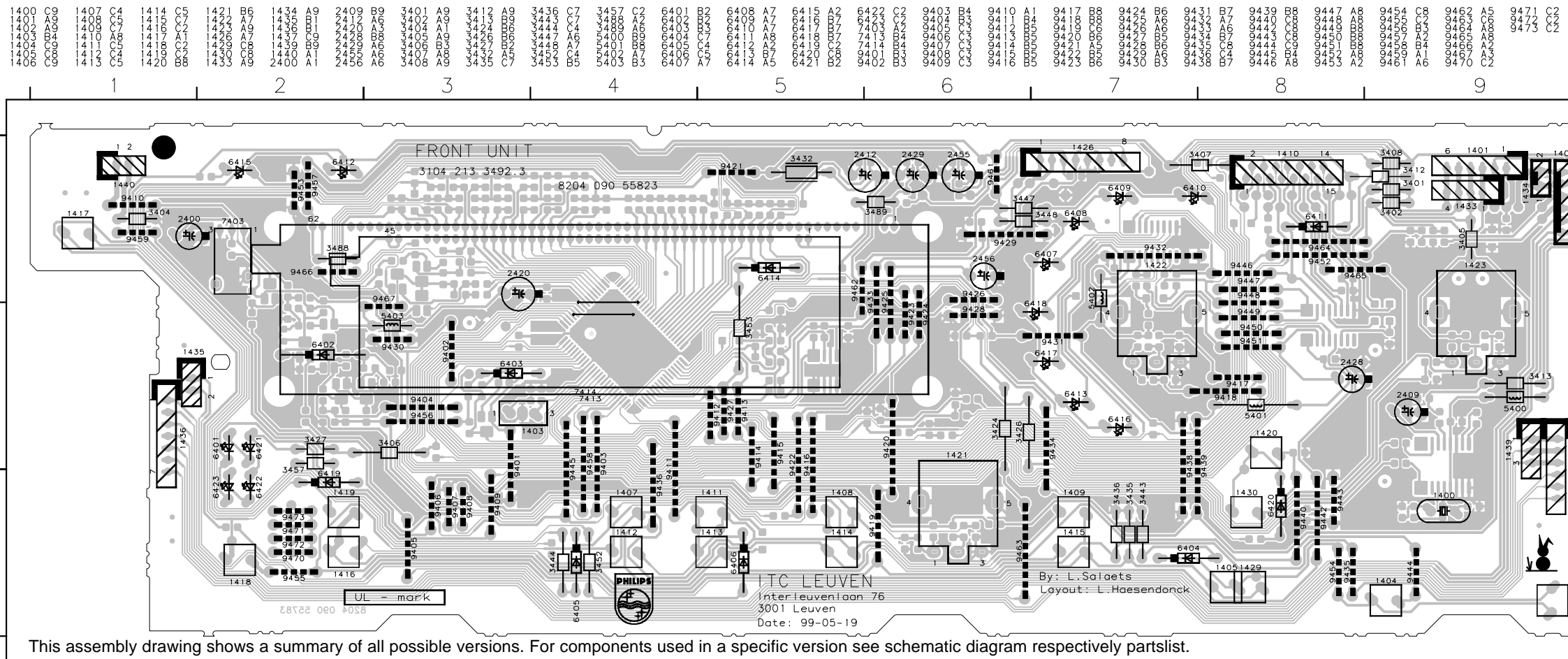
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1403	N17	3422	D11	7412	K7
1404	E23	3423	B13	7413	N27
1405	E24	3424	C27	7415	A16
1406	E25	3426	F15	7416	M21
1407	F23	3427	M5	7417	L22
1408	F24	3428	M10	7418	N21
1409	F25	3429	M11	7419	H12
1410	G1	3430	M11	7421	H12
1411	F23	3431	M14	7422	H13
1412	F24	3432	N19		
1413	F25	3433	M9		
1414	G23	3434	E21		
1415	G24	3435	E21		
1416	G25	3436	E22		
1417	H23	3437	M5		
1418	H24	3438	M10		
1419	H25	3439	M13		
1420	I23	3440	N10		
1421	I31	3441	N11		
1422	F28	3442	M13		
1423	I28	3443	E22		
1424	A30	3444	F22		
1425	A28	3445	I7		
1426	M1	3446	M5		
1427	E28	3447	M5		
1428	D30	3448	H7		
1433	A2	3449	G10		
1435	E28	3451	G10		
1436	A28	3452	G22		
1437	A27	3453	H23		
1439	A27	3455	E14		
1440	C12	3457	H22		
1441	C12	3458	H22		
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2404	M3	3463	J28		
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2407	D3	3465	I30		
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2409	F9	3467	I27		
2410	D2	3468	I30		
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2413	H15	3471	C29		
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2415	N18	3473	O22		
2416	N17	3474	N22		
2417	K6	3475	E20		
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2421	J30	3478	N21		
2422	J29	3479	N20		
2423	G27	3480	M22		
2424	G27	3481	M21		
2425	J27	3482	L23		
2426	J27	3483	F15		
2427	C29	3484	L22		
2428	H10	3485	L23		
2429	O23	3486	I13		
2430	E29	3487	G12		
2431	M21	3491	E20		
2432	M21	3493	G2		
2433	L22	3494	H2		
2434	M13	3495	H2		
2435	H3	3496	B3		
2436	H3	3497	B3		
2437	H3	3498	B3		
2438	G4	3499	A3		
2439	C3	3500	E2		
2440	A4	3501	E2		
2441	A3	3751	K24		
2442	G27	3752	L24		
2443	B9	3753	M24		
2444	L2	3764	M25		
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2447	B29	3766	M24		
2448	O29	3767	K29		
2449	E29	3768	K29		
2454	C20	3769	L29		
2455	N23	3770	L29		
2456	B13	3778	M29		
2457	N20	3779	M29		
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2459	N23	3781	N29		
2460	G23	5400	F8		
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2465	L24	6401	M6		
2476	L25	6402	M10		
2477	M24	6403	M13		
2478	N24	6404	E23		
3391	B13	6405	F23		
3392	B13	6406	G23		
3393	N4	6407	I7		
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3406	G2	6417	J7		
3407	I2	6418	I7		
3408	L14	6419	H23		
3409	F12	6420	I23		
3410	B9	6421	M5		
3411	B8	6424	H12		
3413	C2	7402	A12		
3414	M2	7403	F12		
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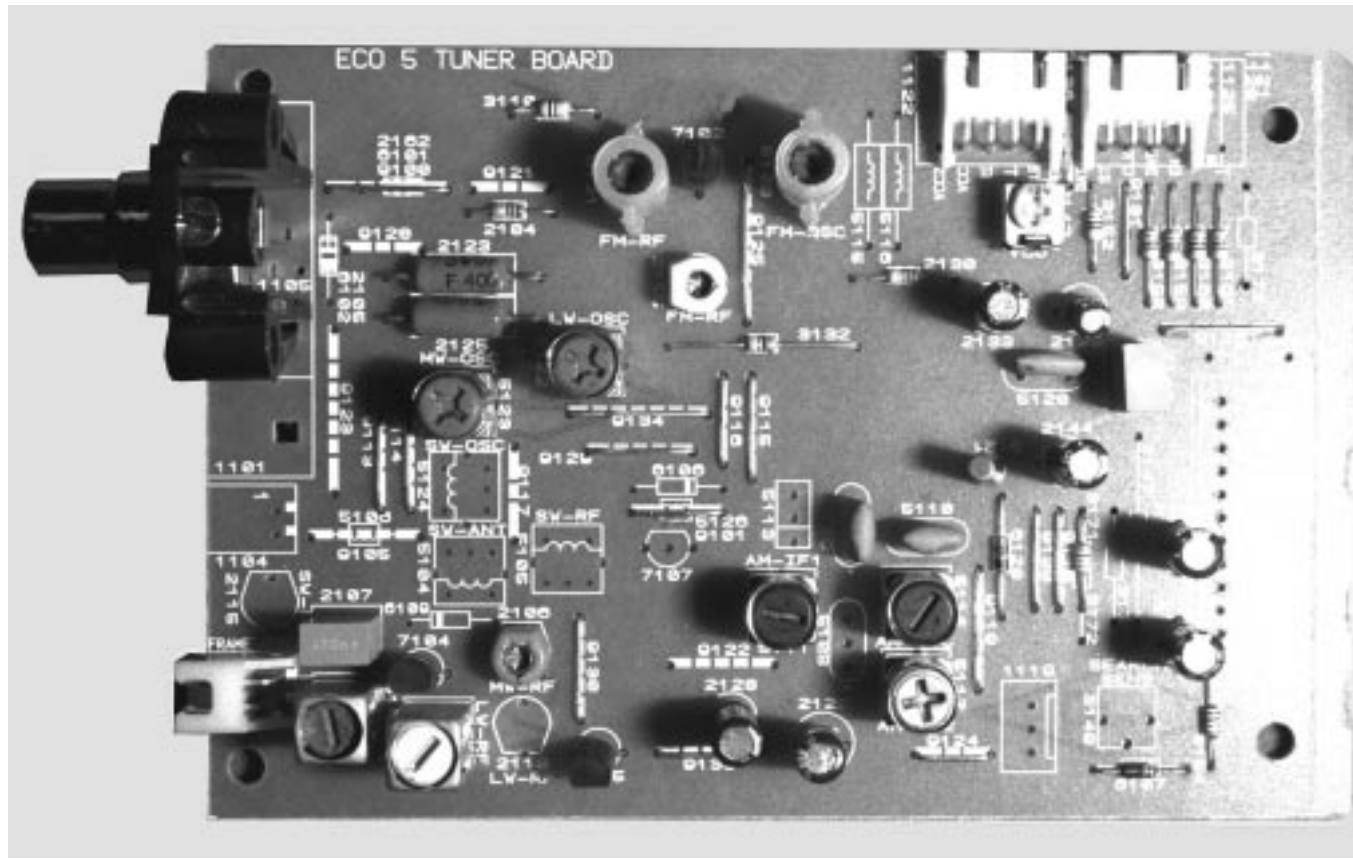
LEU0155 3919

FRONT BOARD - COMPONENT & COPPER SIDE VIEW

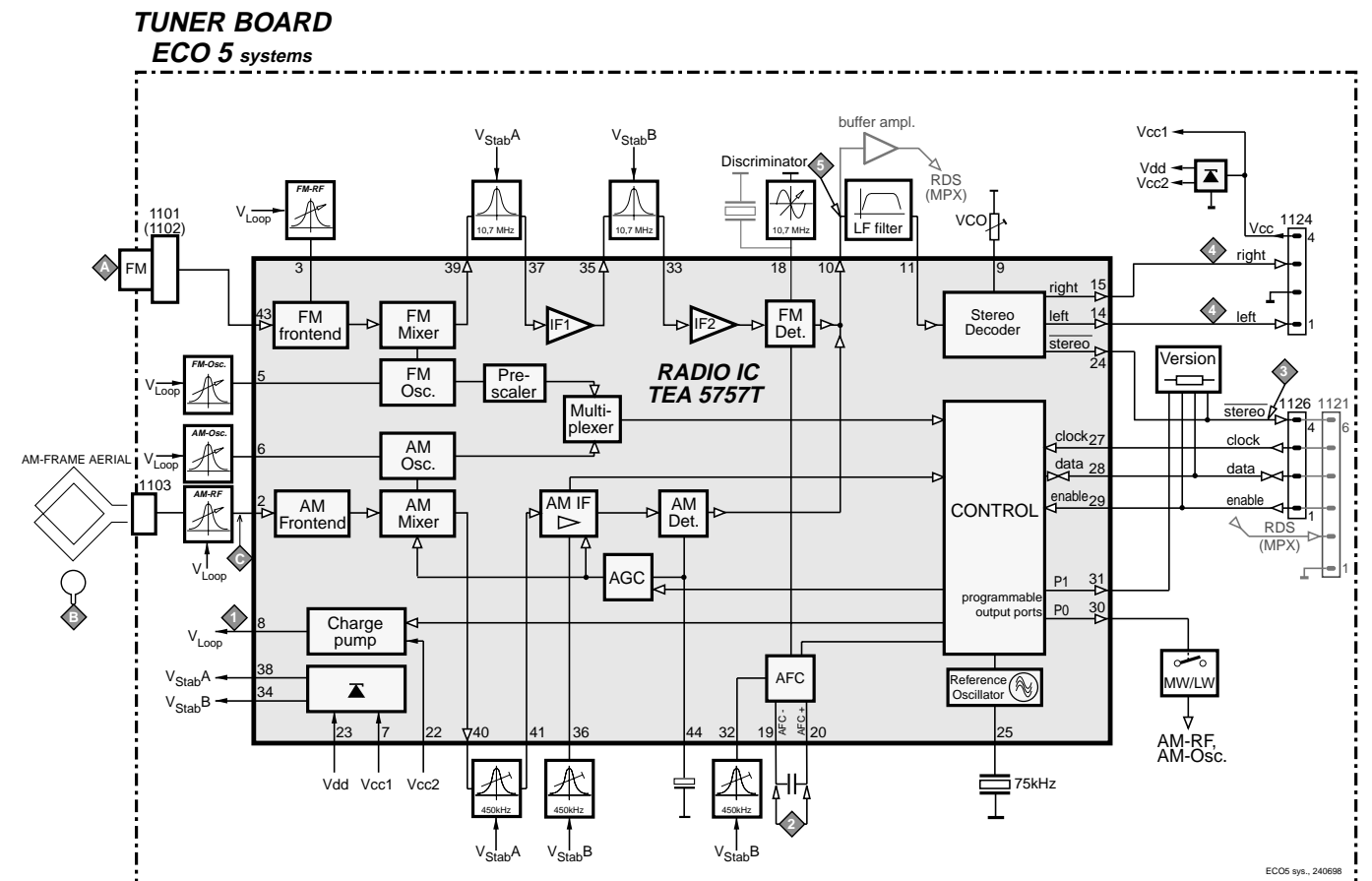








**BLOCK DIAGRAM**

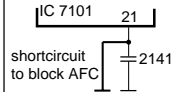
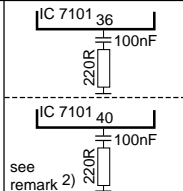
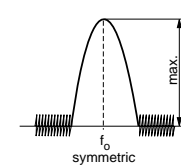
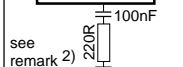

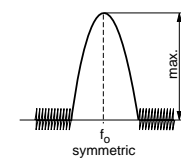
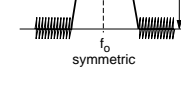


**TUNER BOARD ECO5**

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 Circuit diagram ..... 7B-4  
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**TUNER ADJUSTMENT TABLE ( ECO5 FM/MW- and FM/MW/LW - versions with AM-frame aerial )**

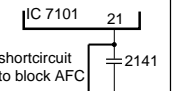
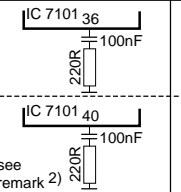
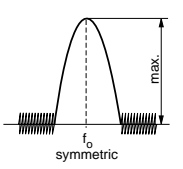
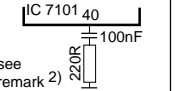
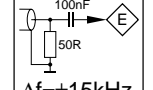
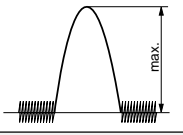

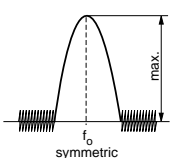
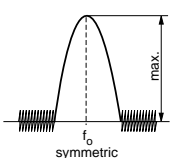
Waverange	Input frequency	Input	Tuned to	Adjust	Output	Scope/Voltmeter
<i>VARICAP ALIGNMENT</i>						
<b>FM</b> 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz)			108MHz	5130		8V ±0.2V
			87.5MHz (65.81MHz)	check		4.3V ±0.5V (1.2V ±0.5V)
<b>MW</b> FM/AM-version, 10kHz grid 530 - 1700kHz			1700kHz	5123		8V ±0.2V
			530kHz	check		1.1V ±0.4V
FM/MW-version, 9kHz grid 531 - 1602kHz			1602kHz	5123	1	6.9V ±0.2V
			531kHz	check		1.1V ±0.4V
<b>LW</b> 153 - 279kHz			279kHz	5122		8V ±0.2V
			153kHz	check		1.1V ±0.4V
<b>MW</b> FM/MW/LW- version, 9kHz grid 531 - 1602kHz			1602kHz	5123		8V ±0.2V
			531kHz	check		1.1V ±0.4V
<i>FM IF</i>						
<b>FM</b>	10.7MHz, 50mV continuous wave	F		5119	2	0 ± 3 mV DC
<i>FM RF</i>						
<b>FM</b> 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	5131		
<i>VCO</i>						
<b>FM</b>	98MHz, 1mV continuous wave	A	98MHz	3142	3	152kHz ±1kHz <sup>1)</sup>
<i>AM IF</i>						
<b>MW</b>	450kHz  connect pin 6 of IC 7101 (AM Osc.) with short wire to ground (pin 4)	C Δf=±15kHz V <sub>RF</sub> = 3mV		5111	4	
				5112		
<b>AM AFC</b>	connect pin 6 of IC 7101 (AM Osc.) with short wire to ground (pin 4)	C continuous wave V <sub>RF</sub> = 10mV		5114	2	0 ± 2 mV DC
<b>MW</b>						
<i>AM RF<sup>3)</sup></i>						
<b>MW</b> <sup>4)</sup> FM/MW/LW- and FM/MW-version (9kHz grid) 531 - 1602kHz	1494kHz	B 	1494kHz	2106	4	
	558kHz		558kHz	5102		
<b>LW</b>	198kHz		198kHz	5103		
<b>MW</b> FM/AM-version, 10kHz grid 530 - 1700kHz	1500kHz	Δf = ±30kHz V <sub>RF</sub> as low as possible	1500kHz	2106	4	
	560kHz		560kHz	5102		

Use service test program. 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

**TUNER ADJUSTMENT TABLE ( ECO5 FM/MW- stereo versions with AM-frame aerial )**

Waverange	Input frequency	Input	Tuned to	Adjust	Output	Scope/Voltmeter
<i>VARICAP ALIGNMENT</i>						
<b>FM</b> 87.5 - 108MHz			108MHz	5130		8V ±0.2V
			87.5MHz	check		4.3V ±0.5V
<b>FM Japan</b> 76 - 90MHz plus Ch1 95.75MHz, Ch2 101.75MHz, Ch3 107.75MHz			107,75MHz	5130	1	8V ±0.2V
			76MHz	check		2.4V ±0.5V
<b>MW</b> FM/AM-version, 10kHz grid 530 - 1700kHz			1700kHz	5123		8V ±0.2V
			530kHz	check		1.1V ±0.4V
<b>MW</b> FM/MW-version, 9kHz grid 531 - 1602kHz			1602kHz	5123		6.9V ±0.2V
			531kHz	check		1.1V ±0.4V
<i>FM IF</i>						
<b>FM</b>	10.7MHz, 50mV continuous wave	F		5119	2	0 ± 3 mV DC
<i>FM RF</i>						
<b>FM</b> 87.5 - 108MHz	108MHz	A mod=1kHz Δf=±22.5kHz	108MHz	2155	5	MAX
	87.5MHz		87.5MHz	5131		
<b>FM Japan</b> 76 - 90MHz plus Ch1 95.75MHz, Ch2 101.75MHz, Ch3 107.75MHz	107.75MHz	mod=1kHz Δf=±22.5kHz	107.75MHz	2155	5	MAX
	76MHz		76MHz	5131		
<i>VCO</i>						
<b>FM</b>	98MHz, 1mV (83MHz for Japan) continuous wave	A	98MHz (83MHz for Japan)	3142	3	152kHz ±1kHz <sup>1)</sup>
<i>AM IF</i>						
<b>MW</b>	450kHz  connect pin 6 of IC 7101 (AM Osc.) with short wire to ground (pin 4)	C Δf=±15kHz V <sub>RF</sub> = 3mV		5111	5	
				5112		
<b>AM AFC</b>	connect pin 6 of IC 7101 (AM Osc.) with short wire to ground (pin 4)	C continuous wave V <sub>RF</sub> = 10mV		5114	2	0 ± 2 mV DC
<b>MW</b>						
<b>IF stereo module</b>				5240	4	
<i>AM RF<sup>3)</sup></i>						
<b>MW</b> FM/MW-version, 9kHz grid 531 - 1602kHz	1494kHz	B 	1494kHz	2106	4	
	558kHz		558kHz	5102		
<b>MW</b> FM/AM-version, 10kHz grid 530 - 1700kHz	1500kHz	Δf = ±30kHz V <sub>RF</sub> as low as possible	1500kHz	2106	4	
	560kHz		560kHz	5102		

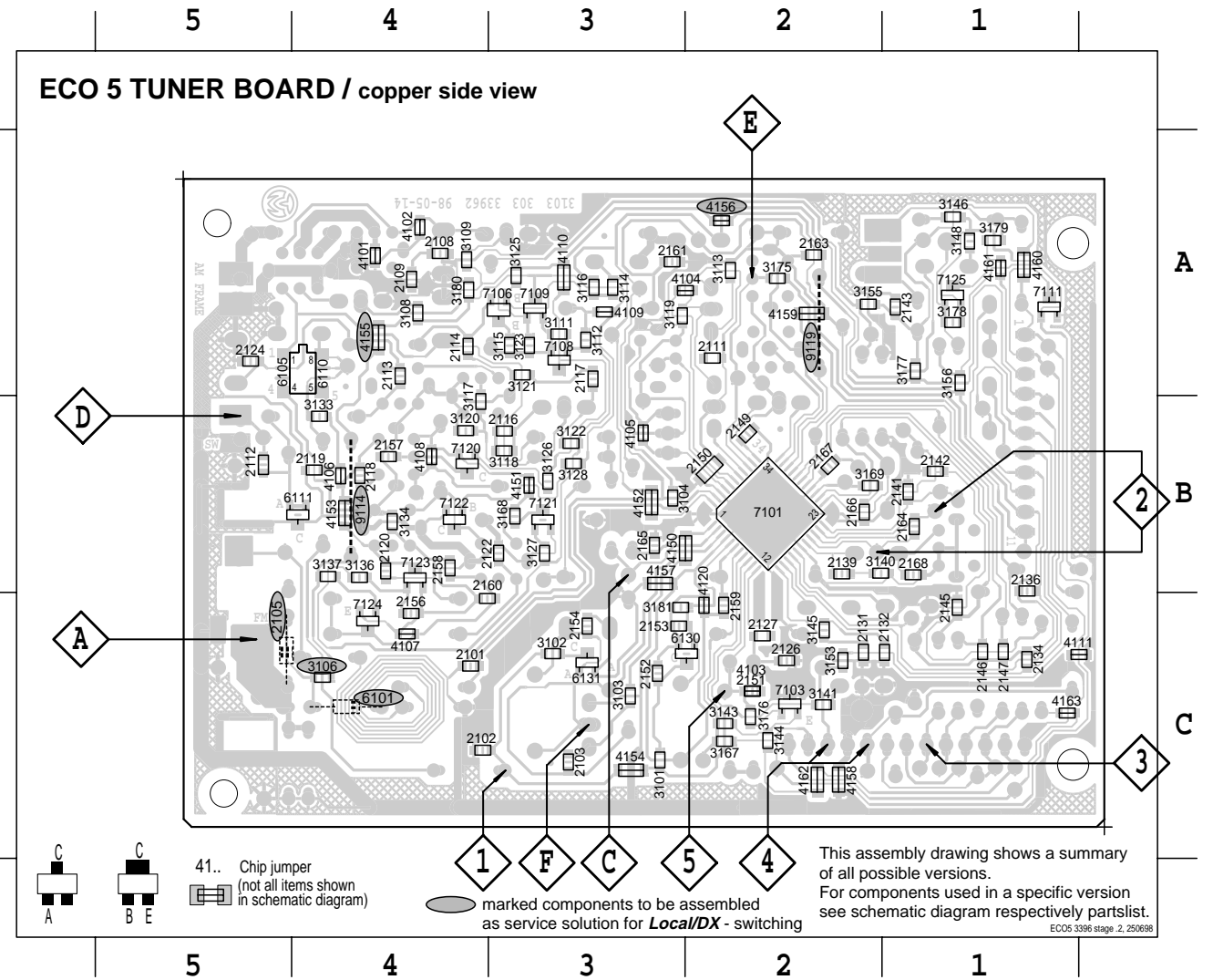
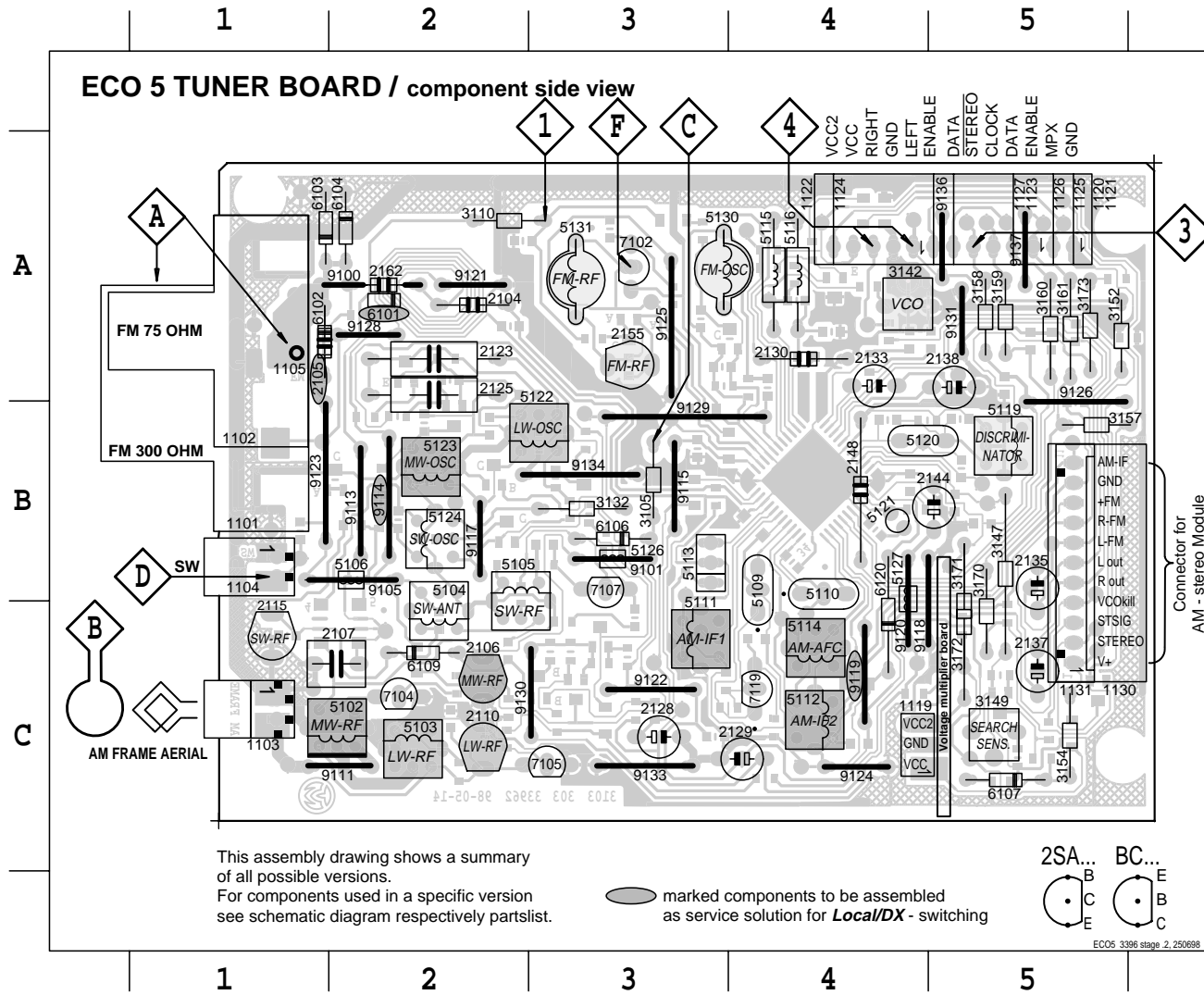
Use service test program. By selecting the TUNER TEST test frequencies will be stored as preset frequencies automatically.

- 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.

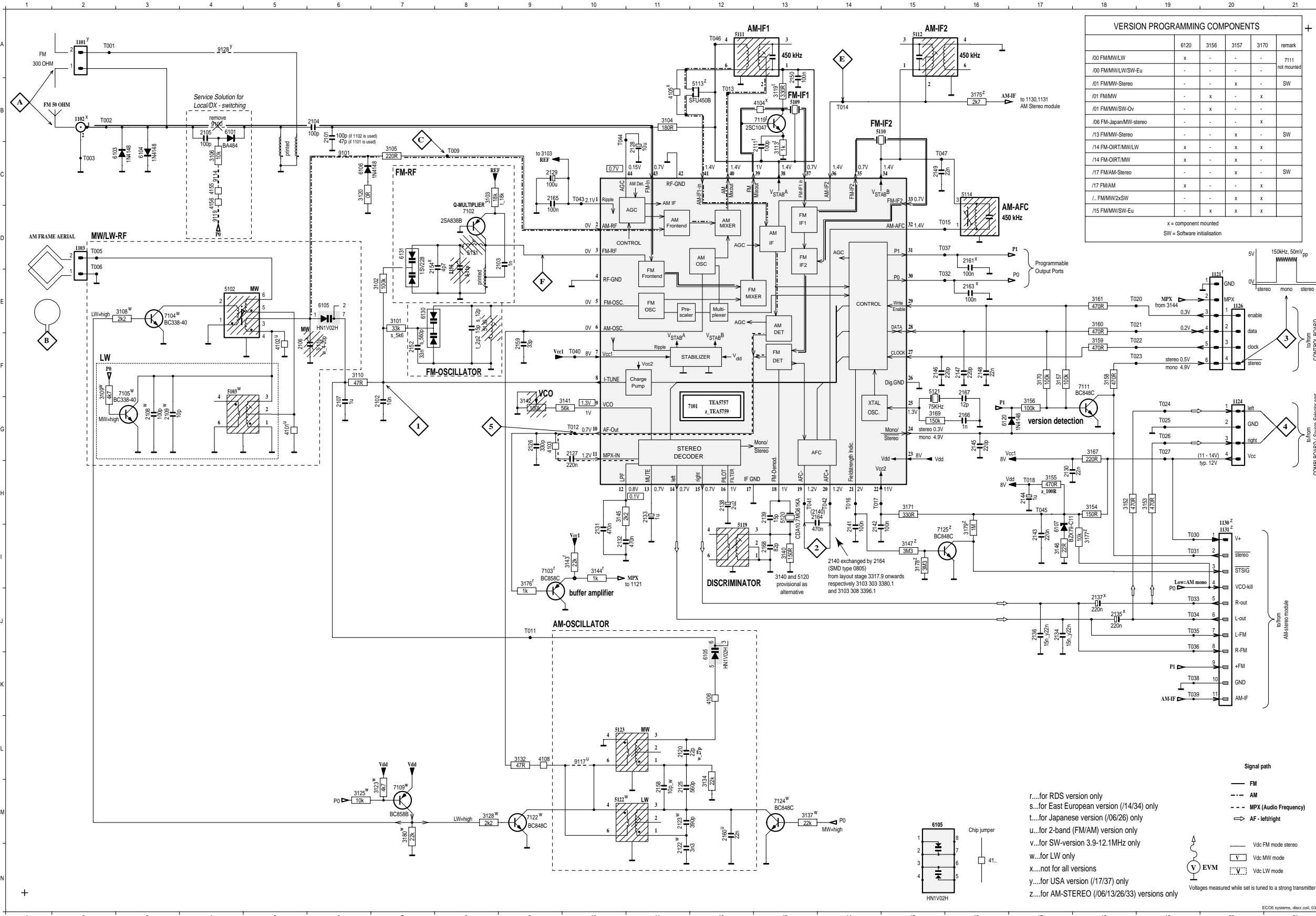
↑ Repeat

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1102 A1	2107 C2	2138 A5	3152 A5	5102 C2	5115 A4	5131 A3	7105 C3	9118 B4	9130 C3
1103 C1	2110 C2	2144 B5	3154 C5	5103 C2	5116 A4	6101 A2	7107 B3	9119 C4	9131 A5
1104 B1	2115 C1	2148 B4	3157 B5	5104 C2	5119 B5	6102 A1	7119 C4	9120 B4	9133 C3
1105 A1	2123 A2	2155 A3	3158 A5	5105 B2	5120 B4	6103 A1	9100 A2	9121 A2	9134 B3
1119 C5	2125 A2	2162 A2	3159 A5	5106 B2	5121 B4	6104 A2	9101 B3	9122 C3	9136 A5
1120 A5	2128 C3	3105 B3	3160 A5	5109 B4	5122 B3	6106 B3	9105 B2	9123 B1	9137 A5
1130 B5	2129 C4	3110 A2	3161 A5	5110 B4	5123 B2	6107 C5	9111 C2	9124 C4	
1131 B5	2130 A4	3132 B3	3170 C5	5111 C3	5124 B2	6109 C2	9113 B2	9125 A3	
2104 A2	2133 A4	3142 A4	3171 C5	5112 C4	5126 B3	6120 C4	9114 B2	9126 B5	
2105 A1	2135 B5	3147 B5	3172 C5	5113 B3	5127 B4	7102 A3	9115 B3	9128 A2	

2101 C4	2118 B4	2139 B2	2153 C3	2166 B2	3112 A3	3123 A3	3143 C2	3175 A2	4105 B3	4153 B4	6105 A4	7120 B4
2102 C4	2119 B4	2141 B1	2154 C3	2167 B2	3113 A2	3125 A3	3144 C2	3176 C2	4106 B4	4154 C3	6110 A4	7121 B3
2103 C3	2120 B4	2142 B1	2156 C4	2168 B1	3114 A3	3126 B3	3145 C2	3177 A1	4107 C4	4155 A4	6111 B4	7122 B4
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2112 B5	2127 C2	2147 C1	2160 C4	3104 B3	3118 B3	3134 B4	3155 A2	3181 C3	4111 C1	4159 A2	7103 C2	
2113 A4	2131 C2	2149 B2	2161 A3	3106 C4	3119 A3	3136 B4	3156 A1	4101 A4	4120 C2	4160 A1	7106 A3	
2114 A4	2132 C1	2150 B2	2163 A2	3108 A4	3120 B4	3137 B4	3167 C2	4102 A4	4150 B2	4161 A1	7108 A3	
2116 B3	2134 C1	2151 C2	2164 B1	3109 A4	3121 A3	3140 B2	3168 B3	4103 C2	4151 B3	4162 C1	7109 A3	
2117 A3	2136 B1	2152 C3	2165 B3	3111 A3	3122 B3	3141 C2	3169 B2	4104 A2	4152 B3	4163 C1	7111 A1	



# TUNER BOARD ECO5 / Systems

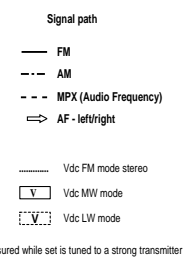


	6120	3156	3157	3170	remark
/00 FMMW/LW	x	-	-	-	7111 not mounted
/00 FMMW/LW/SW-Eu	-	-	-	-	
/01 FMMW-Stereo	-	-	x	-	SW
/01 FMMW	-	x	-	x	
/01 FMMW/SW-Ov	-	x	-	-	
/06 FM-Japan/MW-stereo	-	-	-	x	
/13 FMMW-Stereo	-	-	x	-	SW
/14 FM-OIRT/MW/LW	x	-	x	x	
/14 FM-OIRT/MW	x	-	x	-	
/17 FM/AM-Stereo	-	-	-	-	SW
/17 FM/AM	x	-	-	x	
/, FM/MW2x/SW	-	-	x	x	
/15 FMMW/SW-Eu	-	x	x	x	

x = component mounted  
SW = Software initialisation

1101 A 1  
1102 B 2  
1103 D 3  
1121 E 20  
1124 G 20  
1126 E 20  
1130 I 20  
1131 I 20  
2101 C 6  
2102 G 7  
2103 D 9  
2104 B 6  
2105 F 5  
2107 G 6  
2108 G 3  
2109 G 3  
2111 C 13  
2120 L 11  
2122 N 11  
2123 M 11  
2125 M 11  
2126 G 9  
2127 G 10  
2128 C 11  
2129 C 9  
2130 H 17  
2131 H 0  
2132 H 0  
2133 H 11  
2134 J 17  
2135 J 18  
2136 J 17  
2137 J 18  
2138 H 2  
2139 H 3  
2140 H 4  
2141 H 4  
2142 H 4  
2143 I 7  
2144 H 7  
2145 H 6  
2146 F 15  
2147 F 16  
2148 B 6  
2149 C 15  
2150 B 13  
2151 G 7  
2153 E 8  
2154 E 7  
2155 D 8  
2158 M 11  
2159 F 9  
2160 M 14  
2161 D 16  
2163 E 16  
2164 H 14  
2165 C 9  
2166 G 16  
2167 F 16  
2168 B 13  
3101 E 7  
3102 F 7  
3103 C 8  
3104 B 11  
3105 C 7  
3106 E 3  
3109 F 2  
3110 F 6  
3111 C 13  
3119 B 13  
3120 C 6  
3121 M 7  
3125 M 6  
3128 M 8  
3129 L 9  
3134 M 12  
3137 M 13  
3140 I 13  
3141 G 10  
3142 G 9  
3143 H 10  
3144 H 10  
3145 H 10  
3146 H 11  
3147 H 5  
3152 H 18  
3153 H 9  
3154 H 8  
3155 H 17  
3156 G 17  
3157 F 7  
3158 F 18  
3159 F 18  
3160 E 18  
3161 E 18  
3167 G 18  
3168 G 15  
3170 F 17  
3171 H 15  
3172 H 15  
3176 J 9  
3177 H 8  
3178 H 5  
3179 H 6  
3180 M 7  
4101 G 5  
4102 F 5  
4103 G 9  
4104 B 13  
4105 B 11  
4106 K 12  
4108 L 9  
5102 E 4  
5103 F 4  
5108 B 13  
5110 B 14  
5111 A 13  
5112 A 15  
5113 B 12  
5114 C 16  
5119 I 12  
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5130 E 8  
5131 D 8  
5132 C 2  
5134 C 3  
5135 K 12  
5136 E 6  
5138 C 6  
5139 H 7  
5140 H 7  
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5142 D 7  
5143 G 11  
5144 D 8  
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5399 M 9  
5400 M 9

r....for RDS version only  
s....for East European version (/14/34) only  
t....for Japanese version (/06/26) only  
u....for 2-band (FM/AM) version only  
v....for SW-version 3.9-12.1MHz only  
w....for LW only  
x....not for all versions  
y....for USA version (/17/37) only  
z....for AM-STEREO (/06/13/26/33) versions only

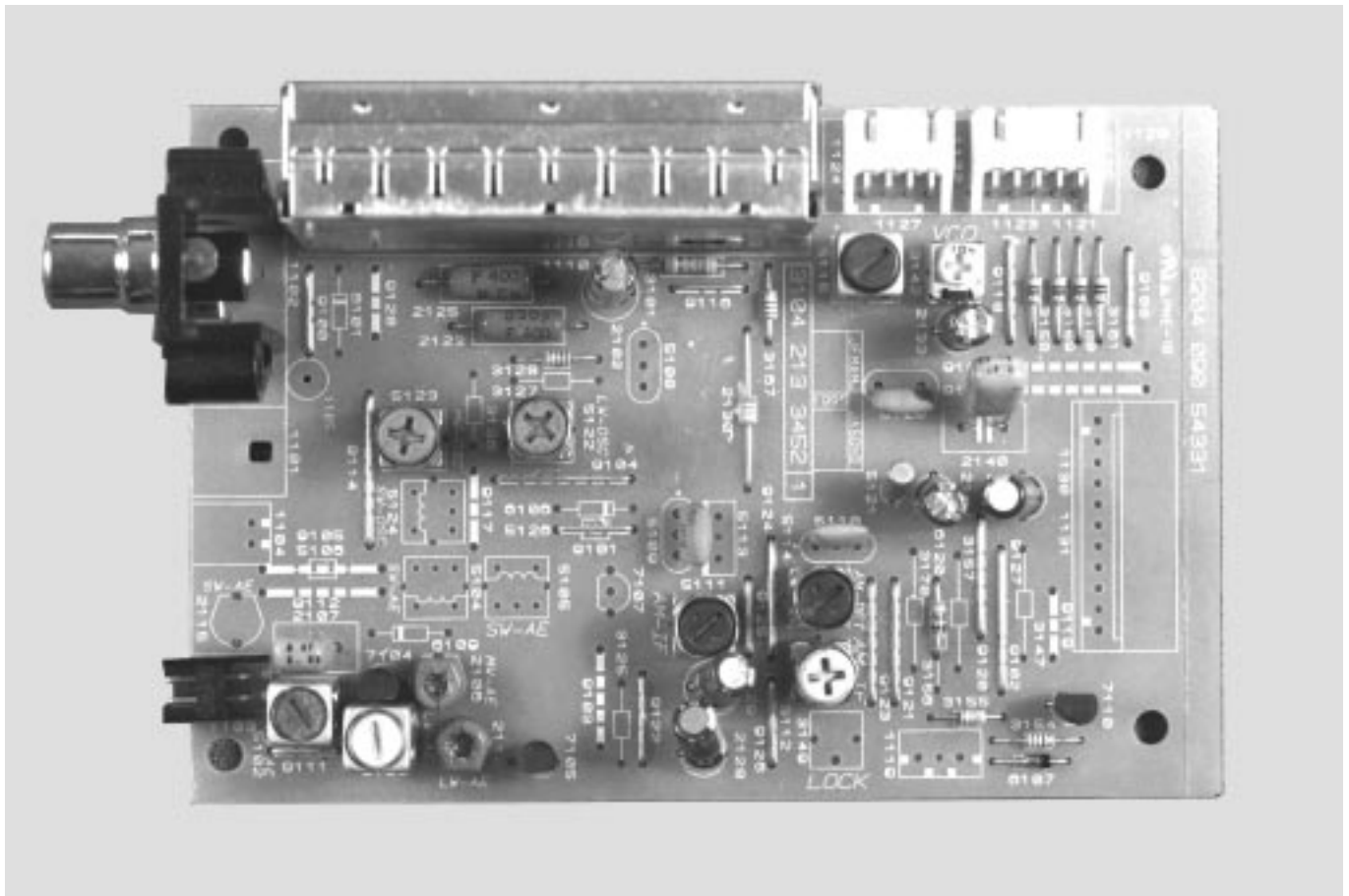




**ELECTRICAL PARTS LIST TUNER ECO5 for 06 ( Japanese version)**

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1102	4822 265 20598	SOCKET COAX YKD31-0468 75Ω
1130	4822 267 10749	CONNECTOR S11B-XH-A (11P)
2111	5322 122 32531	100pF 5%NPO 50V
2153	5322 122 33063	2.2pF 5% NPO 50V
3113	4822 051 10102	1kΩ 2% 0,25W
3119	4822 051 20331	330Ω 5% 0,1W
3134	4822 051 20223	22kΩ 5% 0,1W
3147	4822 111 50499	3.3MΩ 5% 0,2W
3155	4822 051 20101	100Ω 5% 0,1W
3175	4822 117 12955	2.7kΩ 1% 0,1W 0805
3177	4822 117 10833	10kΩ 1% 0,1W
3178	4822 051 20335	3.3MΩ 5% 0,1W
3179	4822 051 20105	1MΩ 5% 0,1W
4161	4822 051 20008	CHIP JUMPER. 0805
5113	4822 242 80989	FILTER SER. SFU450B 457kHz
5130	4822 157 70033	COIL-FM OSC
7101		TEA5759H/V1 RADIO IC
7119	4822 130 60163	2SC1047C
7125	5322 130 42755	BC847C BC848C

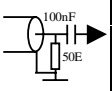


# ***TUNER 95 BOARD***

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Blockdiagram .....	7D-3
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**TUNER 95 bis Adjustment Table (FM, MW, LW with Frame antenna)**

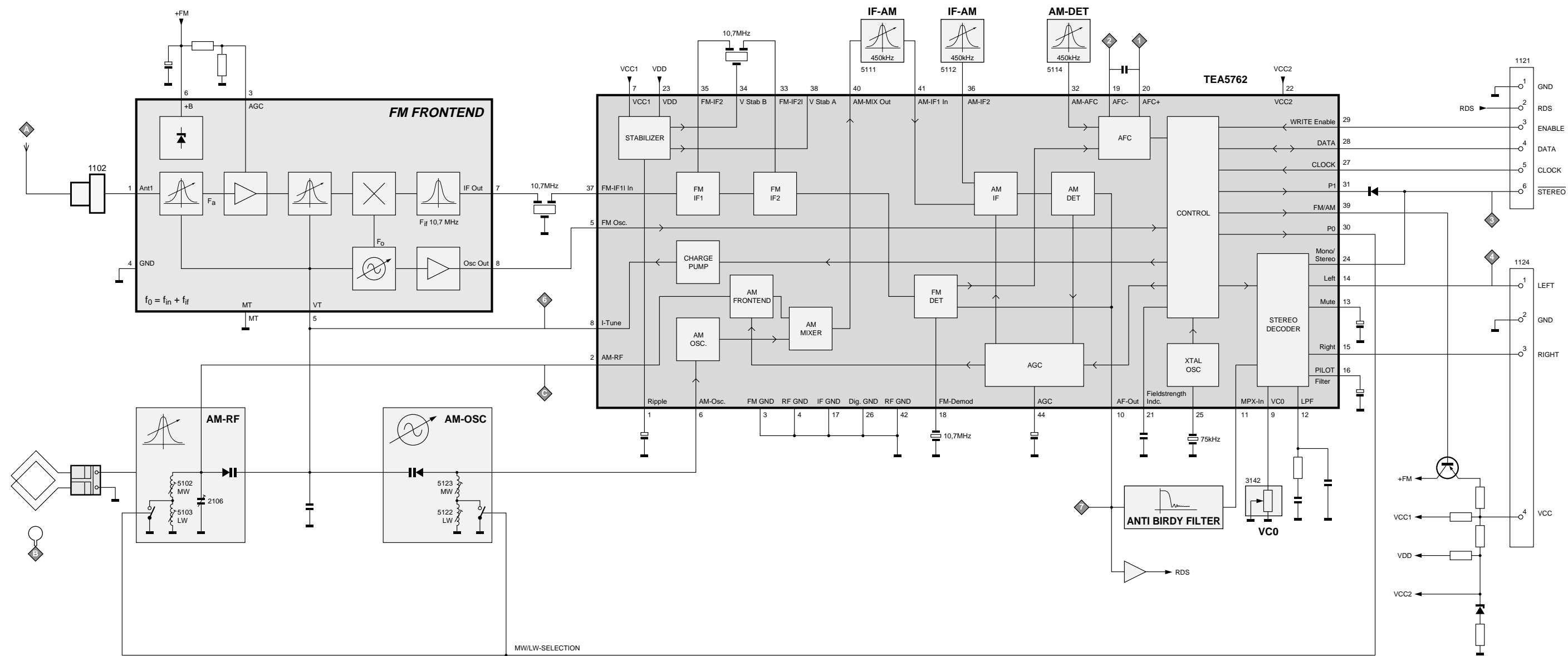
Waverange	Input frequency	Input	Set tuned to	Adjust	Output	Scope / Voltmeter
<b>VARICAP ALIGNMENT</b>						
<b>FM</b> (50) 87.5 - 108 MHz			108 MHz	check	◇ 6	7 ... 9V
			87.5 MHz	check		1.3 ... 2V
<b>MW</b> (9) 531 - 1602 kHz			1602 kHz	5123		8.3V ± 0.2V
			531 kHz	check		1V ± 0.4V
<b>LW</b> (3) 153 - 279 kHz			279 kHz	5122		8.3V ± 0.2V
			153 kHz	check		1V ± 0.4V
<b>FM - DETECTION</b>						
<b>FM</b>	98 MHz 1mV continuous wave  <i>short pin 21 (IC7101) to ground</i>	◇ A	98 MHz	5107	◇ 1 ◇ 2	0mV ± 3mV
<b>FM - VCO</b>						
<b>FM</b>	98 MHz 1 mV continuous wave	◇ A	98 MHz	3142	◇ 3	152kHz ± 1 kHz
<b>DISTORTION</b>						
<b>FM</b>	98 MHz 1 mV 90 % L + 9 % pilot mod = 1kHz	◇ A	98MHz	mixcoil inside Tuner 1110	◇ 4	Distortion minimum
<b>AM - IF</b>						
<b>MW</b>	450kHz Δf = 10kHz Low as possible Swept signal		MW	5111	◇ 7	symmetrical and max. height ↕
				5112		
	450kHz continuous wave	◇ C		5114	◇ 1 ◇ 2	0mV ± 2mV
<b>AM - RF</b>						
<b>MW</b>	558kHz Mod = 1kHz 30 % AM 1494 kHz	◇ B	558kHz	5102	◇	MAX ↕
			1494kHz	2106		
<b>LW</b>	198kHz mod = 1kHz 30 % AM		*	198kHz		

\* Signal send via a frame antenna  
(..) = tuning grid in kHz

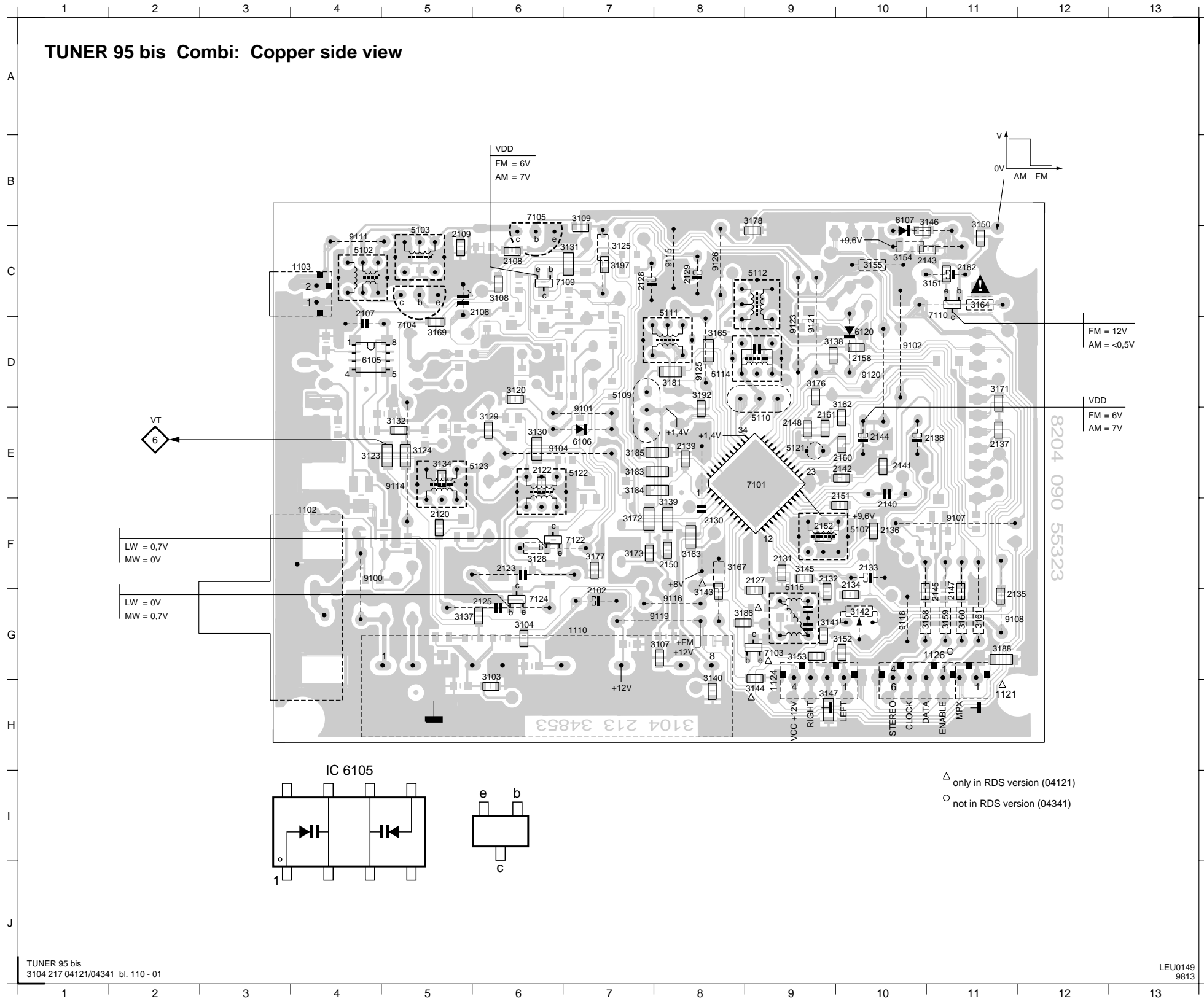
↕ repeat



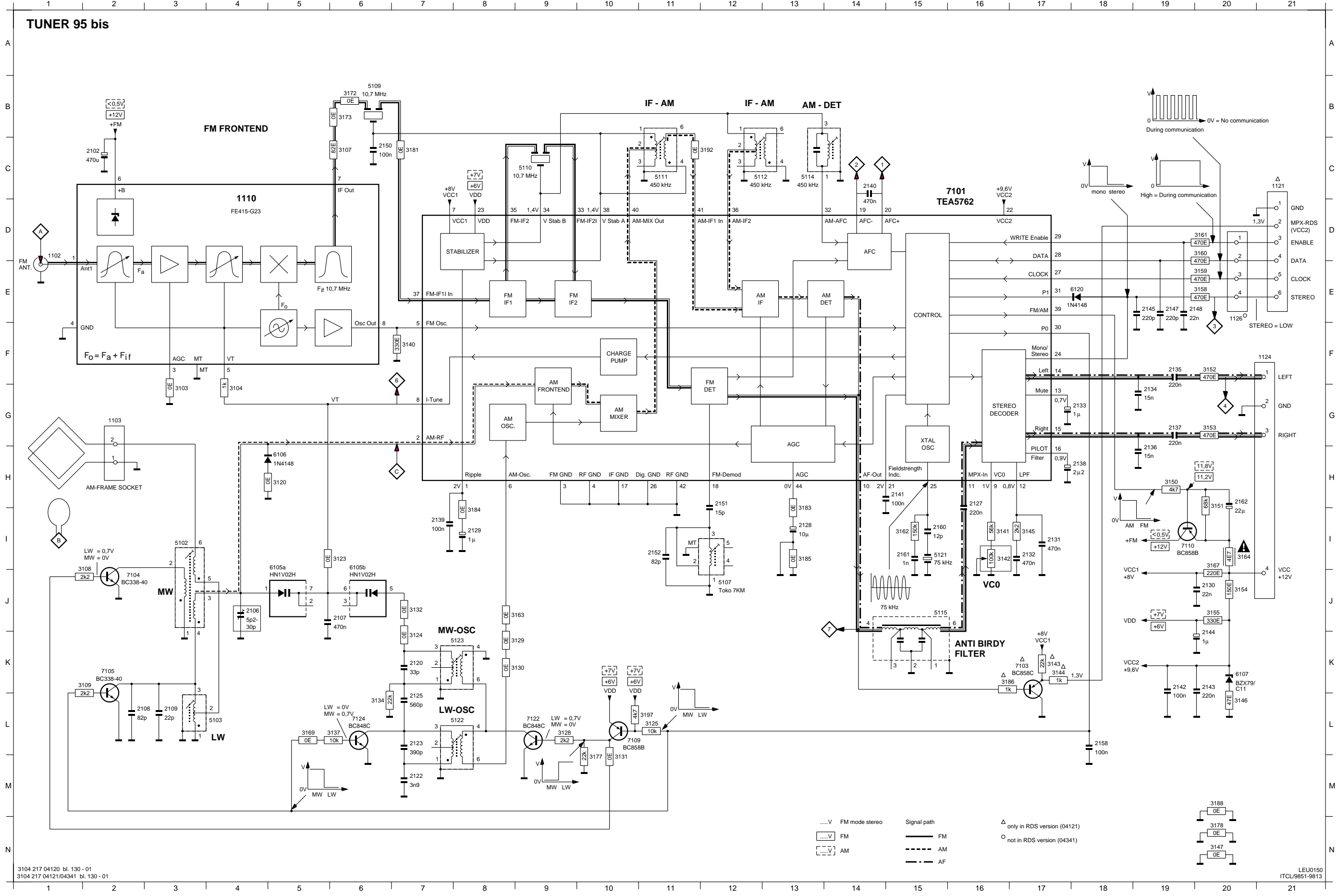
# BLOCKDIAGRAM



1102	F4	2107	C4	2128	C7	2136	G10	2144	E10	2160	E9	3120	D6	3132	E5	3143	G8	3153	G9	3163	F8	3176	D9	3188	G11	5111	C8	6106	E7	7110	D11	9108	G11	9121	D9
1103	C4	2108	C6	2129	C8	2137	E11	2145	G11	2161	E9	3123	E4	3134	E5	3144	H9	3154	C10	3164	C11	3177	F7	3192	D8	5112	C9	6107	B10	7122	F7	9111	C4	9123	D9
1110	G7	2109	C5	2130	F8	2138	E10	2147	G11	2162	C11	3124	E5	3137	G5	3145	F9	3155	C10	3165	D8	3178	B8	3197	C7	5114	D8	6120	D10	7124	G6	9114	E5	9125	D8
1121	H11	2120	F5	2131	F9	2139	E8	2148	E9	3103	H6	3125	C7	3138	D9	3146	B10	3158	G11	3167	F8	3181	D8	5102	C4	5115	G9	7101	E9	9100	F4	9115	C8	9126	C8
1124	H9	2122	E6	2132	F9	2140	F10	2150	F8	3104	G6	3128	F6	3139	F8	3147	H9	3159	G11	3169	D5	3183	E7	5103	C5	5121	E9	7103	G9	9101	E7	9116	G8		
1126	G10	2123	F6	2133	F10	2141	E10	2151	F9	3107	G7	3129	E6	3140	H8	3150	C11	3160	G11	3171	D11	3184	E7	5107	F10	5122	E7	7104	D5	9102	D10	9118	G10		
2102	G7	2125	G6	2134	G10	2142	E9	2152	F9	3108	C6	3130	E6	3141	G9	3151	C10	3161	G11	3172	F7	3185	E7	5109	D7	5123	E5	7105	B6	9104	E6	9119	G7		
2106	C5	2127	F9	2135	G11	2143	C10	2158	D10	3109	B7	3131	C6	3142	G10	3152	G9	3162	D9	3173	F7	3186	G8	5110	E9	6105	D4	7109	C6	9107	F11	9120	D10		



1102	D1	1124	F21	2107	J6	2122	M7	2128	I13	2132	I17	2136	H19	2140	C14	2144	K20	2150	C6	2160	I15	3104	G4	3120	H5	3128	L9	3132	J7	3141	I16	3145	I17	3151	I20	3155	J20	3161	D19	3167	I20	3177	M10	3184	I8	3192	C12	5107	J12	5112	C12	5122	L7	6106	H5	7103	K17	7110	I19
1103	G2	1126	E20	2108	L2	2123	L7	2129	I8	2133	G18	2137	G19	2141	H15	2145	E19	2151	H12	2161	I15	3107	C6	3123	I6	3129	K8	3134	L6	3142	I16	3146	L20	3152	F20	3158	E19	3162	I15	3169	L5	3178	N20	3185	I13	3197	L11	5109	B6	5114	C13	5123	K7	6107	K20	7104	J2	7122	L9
1110	D4	2102	C2	2109	L3	2125	L7	2130	J20	2134	G19	2138	H18	2142	K19	2147	E19	2152	I11	2162	H20	3108	J1	3124	K7	3130	K8	3137	L5	3143	K17	3147	N20	3153	G20	3159	E19	3163	J8	3172	B6	3181	C7	3186	K16	5102	I3	5110	C9	5115	J15	6105a	I5	6120	E17	7105	K2	7124	L6
1121	C21	2106	J4	2120	K7	2127	H16	2131	I17	2135	F19	2139	I7	2143	K20	2148	E19	2158	L18	3103	G3	3109	K1	3125	L11	3131	M10	3140	F7	3144	K17	3150	H19	3154	J20	3160	D19	3164	I20	3173	B6	3183	I13	3188	M20	5103	L4	5111	C11	5121	I15	6105b	I6	7101	C15	7109	L10		



**ELECTRICAL PARTS LIST - TUNER 95 BOARD****MISCELLANEOUS**

1102	4822 267 10283	Socket Coaxial IEC 75R
1103	4822 265 31184	JST Connector 2 pin
1110	4822 210 10739	Frontend Assembly FE415-G23

**CAPACITORS**

2102	4822 124 40433	47µF 20% 25V
2106	4822 125 60102	Trimmer 5,2-30pF 100V
2107	4822 121 51252	470nF 5% 63V
2108	4822 126 13695	82pF 1% 63V
2109	4822 126 13691	27pF 1% 63V
2120	5322 122 32659	33pF 5% 50V
2122	5322 126 10465	3,9nF 10% 63V
2125	4822 121 10578	560P 1% 630V
2127	4822 122 32927	220nF +80/-20% 50V
2128	4822 124 41579	10µF 20% 50V
2129	4822 124 40242	1µF 20% 63V
2130	4822 126 11585	22nF +80/-20% 25V
2131	4822 122 33325	470nF 16V
2132	4822 122 33325	470nF 16V
2133	4822 124 40242	1µF 20% 63V
2134	4822 126 13188	15nF 5% 63V
2135	4822 122 32927	220nF +80/-20% 50V
2136	4822 126 13188	15nF 5% 63V
2137	4822 122 32927	220nF +80/-20% 50V
2138	4822 124 41576	2,2µF 20% 50V
2140	4822 121 51252	470nF 5% 63V
2141	4822 122 31947	100nF 20% 63V
2142	4822 122 31947	100nF 20% 63V
2143	4822 122 32927	220nF +80/-20% 50V
2144	4822 124 40242	1µF 20% 63V
2145	4822 122 33575	220pF 5% 50V
2147	4822 122 33575	220pF 5% 50V
2148	4822 122 33809	22nF 20% 50V
2150	4822 122 31947	100nF 20% 63V
2151	4822 126 14236	50V 15pF 5%
2152	4822 126 13695	82pF 1% 63V
2158	4822 122 31947	100nF 20% 63V
2160	4822 122 32139	12pF 2% 63V
2161	5322 122 34123	1nF 10% 50V
2162	4822 124 81151	22µF 50V

**RESISTORS**

3103	4822 051 20008	0R Jumper 0805
3104	4822 051 10102	1k 2% 0,25W
3107	4822 051 20829	82R 5% 0,1W
3108	4822 117 11449	2k2 1% 0,1W
3109	4822 117 11449	2k2 1% 0,1W
3123	4822 051 10008	0R 5% 0,25W
3124	4822 051 10008	0R 5% 0,25W
3125	4822 116 83864	10k 5% 0,5W
3128	4822 116 52256	2k2 5% 0,5W
3129	4822 051 20008	0R Jumper 0805

3130	4822 051 10008	0R 5% 0,25W
3131	4822 051 10008	0R 5% 0,25W
3132	4822 051 20008	0R Jumper 0805
3134	4822 051 20223	22k 5% 0,1W
3137	4822 117 10833	10k 1% 0,1W
3138	4822 051 20008	0R Jumper 0805
3139	4822 051 10008	0R 5% 0,25W
3140	4822 051 20331	330R 5% 0,1W
3141	4822 051 20563	56k 5% 0,1W
3142	4822 100 11163	Trimmer 100k 30% 0,1W
3143	4822 051 20223	22k 5% 0,1W
3144	4822 051 10102	1k 2% 0,25W
3145	4822 117 11449	2k2 1% 0,1W
3146	4822 051 20479	47R 5% 0,1W
3150	4822 051 20472	4k7 5% 0,1W
3151	4822 051 20683	68k 5% 0,1W
3152	4822 051 20471	470R 5% 0,1W
3153	4822 051 20471	470R 5% 0,1W
3154	4822 116 83872	220R 5% 0,5W
3155	4822 116 52219	330R 5% 0,5W
3158	4822 116 83883	470R 5% 0,5W
3159	4822 116 83883	470R 5% 0,5W
3160	4822 116 83883	470R 5% 0,5W
3161	4822 116 83883	470R 5% 0,5W
3162	4822 051 20224	220k 5% 0,1W
3163	4822 051 10008	0R 5% 0,25W
3164	4822 052 10478	△ 4R7 5% 0,33W
3165	4822 051 10008	0R 5% 0,25W
3167	4822 116 83872	220R 5% 0,5W
3169	4822 051 20008	0R Jumper 0805
3171	4822 051 20008	0R Jumper 0805
3172	4822 051 10008	0R 5% 0,25W
3173	4822 051 20008	0R Jumper 0805
3176	4822 051 20008	0R Jumper 0805
3177	4822 051 20223	22k 5% 0,1W
3181	4822 051 10008	0R 5% 0,25W
3183	4822 051 10008	0R 5% 0,25W
3184	4822 051 10008	0R 5% 0,25W
3185	4822 051 10008	0R 5% 0,25W
3186	4822 051 10102	1k 2% 0,25W
3188	4822 051 10008	0R 5% 0,25W
3192	4822 051 20008	0R Jumper 0805
3197	4822 051 20472	4k7 5% 0,1W

**COILS & FILTERS**

5102	4822 157 71634	MW AERIAL
5103	4822 157 71635	LW AERIAL
5107	4822 157 11443	FM Discriminator 10,7MHz
5109	4822 157 71639	Ceram Filter 10,7MHz
5110	4822 242 70665	Ceram Filter 10,7MHz
5111	4822 158 60511	AM-IF Filter 450kHz
5112	4822 157 70302	AM-IF Filter 450kHz

**ELECTRICAL PARTS LIST - TUNER 95 BOARD**

5114	4822 157 70302	AM-IF Filter 450kHz
5115	4822 157 71636	Anti-Birdy Filter
5121	4822 242 10261	X'tal Resonator 75kHz
5122	4822 157 60517	RF Coil AM
5123	4822 157 60517	RF Coil AM

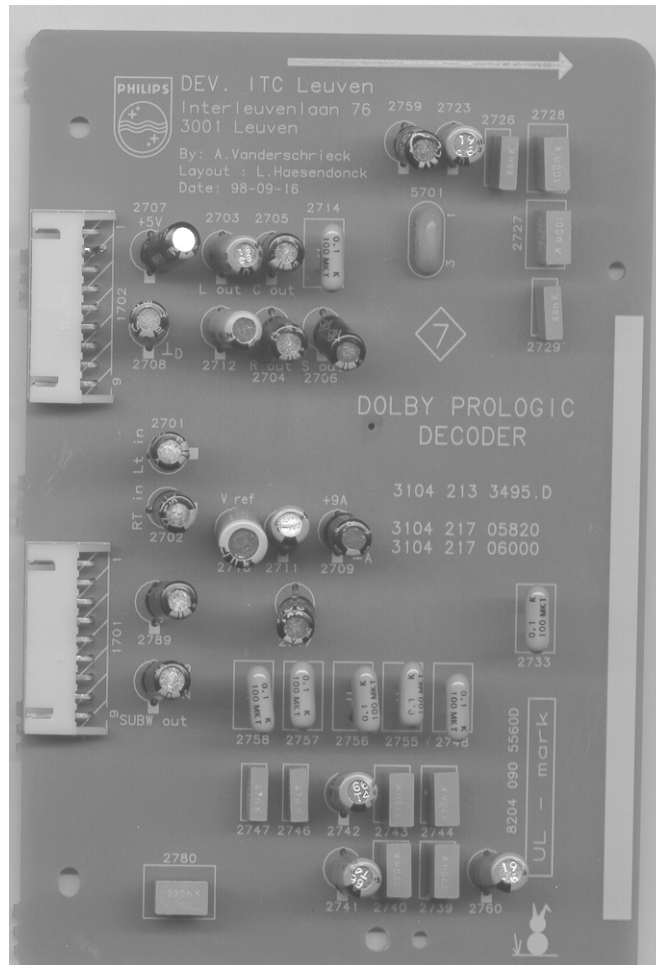
**DIODES**

6105	4822 130 83075	HN1V02H-B
6107	4822 130 34488	BZX79-B11
6120	4822 130 30621	1N4148

**TRANSISTORS & INTEGRATED CIRCUITS**

7101	4822 209 90315	TEA5762H/V1
7103	4822 130 42513	BC858C
7104	5322 130 44779	BC338-40
7105	5322 130 44779	BC338-40
7109	5322 130 41983	BC858B
7110	5322 130 41983	BC858B
7122	5322 130 42136	BC848C
7124	5322 130 42136	BC848C

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



# ***DOLBY PROLOGIC BOARD***

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## DOLBY PROLOGIC TEST DESCRIPTION

- The intention of this description is to explain the most important performance measurements for **DPL (Dolby Pro-Logic)** sets for service.

- Test instruments (recommended) :

- Dolby Prologic test CD 4822 395 10216
- AC mv meters (4x) L, C, R, S
- Oscilloscope (double beam)
- Distortion meter
- CD player.

**WARNING: Be sure that the ground connection (-) of each instrument is not connected with the safety earth  $\perp$  connection. To avoid damage to output amplifiers (balance type) Use only cinch (input) ground connection**

### STARTING CONDITION :

- Replace the loudspeakers for all four output amplifiers with loud resistors according the output impedance for each amplifier (or use  $8 \Omega$  as standard loudresistor).
- Set volume to min. position
- Set Bass + Treble at 0 db .
- Select Surround <Prologic> .
- Select "LARGE" size for Center channel.
- Set time delay in Surround channel at 20 msec.
- Dolby Prologic test CD in CD player.

### SERVICE TEST DESCRIPTION

**Test 1 : Output and balance setting for all four channels**

Select track 2 :

Adjust L, C, R and S for  $\approx 1W$  output on the loudresistor with master volume. Adjust with L/R balance and Centre/Surround "TRIM" all four channels to equal level (equal meter readings)

**Note:** 1Watt output corresponds with 2.83V across  $8 \Omega$

$$P = U^2/R \rightarrow U = \sqrt{P \times R} = \sqrt{1 \times 8} = 2,83V$$

**Test 2 : Frequency response for Left and Right channel**

Requirement : -3 dB points at  $\leq 50$  Hz and  $\geq 15$  kHz

Select track 3:

measure (and note) the overall gain of Left channel across the load resistor.

Select track 4:

measure (and note) the overall gain on Right channel across the load resistor.

**Test 3 : Frequency response for Center channel**

2 possibilitie :

1- Center size "LARGE" requirements : -3 dB at  $\leq 50$  Hz and  $\geq 15$  kHz (same as L/R requirements)

2- Center size "SMALL" requirements : -3 dB point at  $\pm 100$  Hz and  $\geq 15$  kHz (the difference is the roll-off behaviour of the bass frequencies).

Select track 5 :

measure (and note) the overall gain of Center channel across the load resistor in "LARGE" size (only in sets with this option) and repeat this measurement in "SMALL" size.

**Test 4 : Frequency response for Surround channel**

Surround requirements : -3 dB point at  $\leq 100$  Hz and  $\pm 7$  kHz (6 kHz ... 8 kHz)

The difference is the roll-off behaviour of the high treble frequencies.

Select track 6 :

measure (and note) the overall gain of Surround channel across the loud resistor.

**Test 5 : Modified Dolby B type NR decoding freq. response of the Surround channel**

Requirement : Roll off behaviour at  $\pm 5$  kHz related to 100 Hz. In this case use 100 Hz as 0 dB reference gain.

Select track 14:

measure (and note) the overall gain of Surround channel across the load resistor.

**Note :** The output level on track 14 = -35 dB below the 1W output reference of the Surround channel.

**Test 6 : Total harmonic distortion measurements for Left, Center, Right, Surround channels for 1 Watt output**

**Note :** If necessary use a special CD test filter 20 Hz ... 20 kHz between the output channel and the distortion meter to prevent spurious products out of audio waves ( $> 20$  kHz) from to the CD player in test.

Select track 3 :

Measure distortion at 1 kHz across the Left channel.

Output load resistor : requirement THD  $< 0,3$  %

Select track 4 :

Measure distortion at 1 kHz across the Right channel.

Output load resistor : requirement THD  $< 0,3$  %

Select track 5 :

Measure distortion at 1 kHz across the Center channel.

Output load resistor : requirements THD  $< 0,3$  %

Center size "LARGE" (if exists) and repeat for center size "SMALL"

Select track 6 :

Measure distortion at 1 kHz across the Surround channel load resistor.

**Note :** time delay setting = 20 msec.

Requirement THD =  $< 0,5$  %

**Test 7 : Signal to noise measurements for Left output amplifier**

Select track 3 :

Use 1W output at 1 kHz on the Left channel output loud resistor as 0 dB reference.

Select track 13 :

(silence) and measure the S/Nratio.--->with ccir/arm filter

Requirements for Left channel  $\leq -65$  dB

**Test 8 : Signal to noise measurements for Right output amplifier**

Select track 4 :

Use 1W output at 1 kHz on the Right channel output loud resistor as 0 dB reference.

Select track 13 :

(silence) and measure the S/N ratio.

Requirement for Right channel  $\leq -65$  dB

**Test 9 : Signal to noise measurements for Center output amplifier**

Select track 5 :

Use 1W output at 1 kHz on the Center channel (size "SMALL" or "LARGE")

Select track 13 :

(silence) and measure the S/N ratio.

Requirement for Center channel (size "SMALL" or "LARGE")  $\leq -65$  dB

**Test 10 : Signal to noise measurements for Surround output amplifier**

Select track 6 :

Use 1W output at 1 kHz on the Surround channel output loud resistor as 0 dB reference.

Select track 13 :

(silence) and measure the S/N ratio.

Requirement for Surround channel  $\leq -55$  dB (in all positions between 15 msec ... 30 msec in sets with variable time delay).

*Cross-talk (channel separation) between adjacent and opposite channels*

2 possibilities :

1- Centre size "LARGE" (use 1 kHz tone)

**Test 11a:**

Select track 3 :

For 1 kHz in Left channel and measure the crosstalk in Center, Right, Surround.

Requirement :  $< -25$  dB

**Test 12a :**

Select track 4 for 1 kHz in Right channel and measure the crosstalk in Surround , Left, Center.

Requirement :  $< -25$  dB

**Test 13a :**

Select track 5 :  
For 1 kHz in Center channel and measure the crosstalk in Left, Right, Surround.

Requirement : < -25 dB

**Test 14a :**

Select track 6 :  
For 1 kHz in Surround channel and measure the crosstalk in Left, Center, Right.

Requirement : < -25 dB

2- Centre mode "normal" (use 3 kHz or 1 kHz tone)

**Test 11b :**

Select track 3 :  
For 3 kHz in Left channel and measure the crosstalk in Center, Right, Surround  
Requirement : < -25 dB

**Test 12b :**

Select track 4 :  
For 3 kHz in Right channel and measure the crosstalk in Surround, Left, Center  
Requirement : < -25 dB

**Test 13b :**

Select track 5 :  
For 3 kHz in Centre channel and measure the crosstalk in Left, Right, Surround  
Requirement : < -25 dB

**Test 14b :**

Select track 6 :  
For 1 kHz in Surround channel and measure the crosstalk in Left, Center, Right  
Requirement : < -25 dB

**Inputs overload test (headroom to visible clipping)****General :**

Before starting these tests set Master Volume -15 dB lower to make a new output reference (1W on loudresistors).  
Requirement : check on scope for no visible signal clipping or measure THD <1,5 %

**Test 15 :**

Select track 7 :  
Check the Left output signal between 20 Hz ... 20 kHz

**Test 16 :**

Select track 8 :  
Check the Right output signal between 20 Hz ... 20 kHz

**Test 17 :**

Select track 9 :  
Check the Center output signal  
CENTER "SMALL" between 100 Hz ... 20 kHz  
CENTER "LARGE" between 20 Hz ... 20 kHz

**Test 18 :**

Select track 11 :  
Check the Surround output signal between 50 Hz ... 7 kHz

**Test 19 : Center Mode Check**

Select Center size "SMALL".  
a - Select track 5 at 1 kHz :  
Adjust the Center output again with master volume for 1W output as 0 dB reference.  
b - Select on track 5 the 100 Hz :  
Signal to check the roll-off behaviour at -3 dB on the Center output  
c - Select on track 5 the 50 Hz :  
Signal and measure on the Left and Right output channels.  
The lost 50 Hz signal on the Center output is equally splitted and added to the L and R channels.

**Test 20 : Center Mode Check**

Select Center size "LARGE"  
Repeat test 19 a,b and c  
The difference is no roll off behaviour at 100 Hz (Center) and no splitted bass (50 Hz signal) added to L and R.

**Test 21 : Center Mode Check**

Select Center mode phantom = Center speaker "No"  
Select track 5 (20 Hz ... 20 kHz) :  
No output signals on the Center output or at least minimum -40 dB related to 1W outputs.  
Measure now on the Left and Right output channels : the lost Center signals are equally splitted and added to these left and right channels (- 3 dB)

**Test 22 : 3 CH mode control**

Select Front 3 stereo (Rear speaker "No")  
Select track 6 (100 Hz ... 7 kHz):  
No output signals on the Surround output channel or at least minimum -40 dB related to 1W output.  
Measure now at the Left and Right output channels : the lost Surround signals are equally splitted and added to the Left and Right output channels (-3 dB)

**Test 23 : 2 CH mode control (stereo)**

Select Surround "OFF"  
Select track 5 :  
No output on Centre output channel  
Select track 6 :  
No output on Surround output channel

**Test 24 : Time delay control in Surround channel**

- Principle description encoded burst signal spots (see fig. 1)
  - 1- Tone burst 1 kHz during 1 msec with interval time at 20 msec are given at the same time to the L; R inputs. (in phase 0°)
  - 2- The next tone burst is given at the same time to the L R input, but in reverse phase to the R input (180°). These 2 tone bursts are repeated continuously during 2 minutes.
- Principle description decoded signal spots in Center/ Surround channel
  - In case of 20 msec time delay mode the results are shown in fig. 1 in Center and Surround channel.  
The center spots in Center channel can be used as iMarker spots (trigger signal) → repeated every 40 msec.  
The delayed surround spots occur at the same time as the center spots (markers)
  - When time delay mode is changed to 15 msec the delayed surround spots move to the left with respect to the centre mark spots.
  - When time delay mode is changed to 25 msec or 30 msec the delayed surround spots move to the right with respect to the center spots.
  - In case of no time delay ! (faulty condition) the surround spots fall just between 2 center markers spots (20 msec)
- **How to check with a double beam scope**  
**WARNING: Be sure that the ground connection (-) of each instrument is not connected with the safety earth ⊥ connection. To avoid damage to output amplifiers (balance type) Use only cinch (input) ground connection**

- Select Pro Logic size "LARGE" or "SMALL" (phantom in case of no Center output.)
- Select 20 msec time delay in Surround channel.
- Adjust scope at 5 msec/division and trigger at A input
- Connect input A to Center channel (or L or R in case of phantom mode)
- Connect input B to Surround channel
- Adjust trigger level and the X position to set pulse A in the middle of the scope . see fig.2 (if L or R used in phantom mode choose the largest (amplitude) pulse. see fig 3

**Select track 24:**

Pulse A = 20 msec marker

Pulse B = delayed surround signal pulse

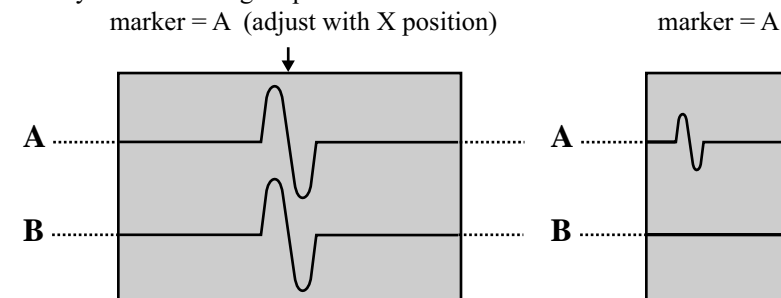


Fig 2

Fig 3



Change time delay to 15 msec (only in versions with variable delay).  
 The surround pulse in channel B moves to the left with respect to side from center marker (channel A) position.  
 Change time delay to 25 or 30 msec (versions with variable delay).  
 The surround pulse in channel B moves to the right with respect to center marker (channel A) position.

**Time delay with track 6**

Alternative methode :  
 The functional operation of the time delay can be made visible with a lisajous figure, with an single beam scope.  
 Connect X-direction on Surround output  
 Connect Y-direction on Left or Right output/input.  
**Note :** be careful and use only 1 ground connected to scope.  
 Select track 6 (surround test) :  
 Make the lisajous figure visible on the scope (amplitude adjust) see fig. 4

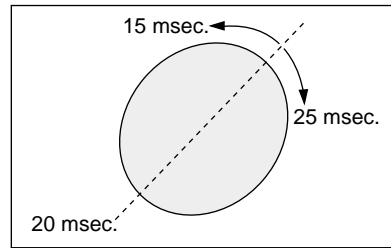


Fig 4 Lisajous out of phase  
 Time delay = OK

**Note :** in sets with variable time delay the ellipse of the lisajous figure must be always open. Changing the time delay changes the direction of the circle accordingly.

**CHANNEL modes:**

*Surround OFF* (Stereo) 2 channel mode  
 Signal on : L out (2703) and R out (2704)

*Surround ON*  
 -Prologic 4 channel mode → all four outputs are used  
 Signal on : L out (2703), R out (2704), Center out (2705), Surround (2706).

-Front 3 stereo → No surround speaker available  
 The surround information is equelly to the left and right outputs.  
 Signal on : L out (2703), R out (2704), Center out (2705).

-HALL  
 Signal on : L out (2703), R out (2704), Surround (2706).

*Subwoufer out.* not in all versions  
 Signal on : Subwoofer out (2788).

(....) as indicated on the component side of the DPL decoder board.

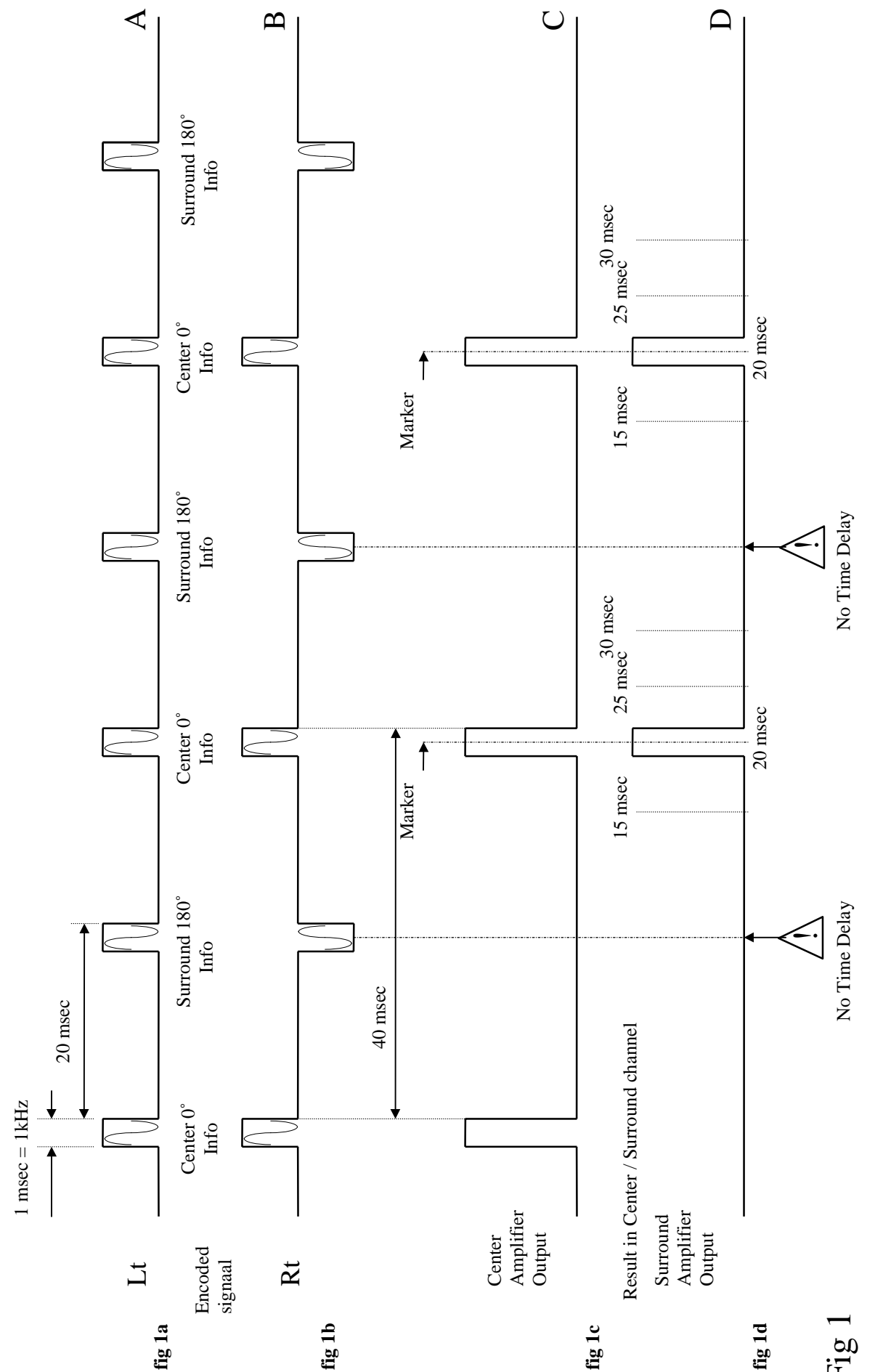
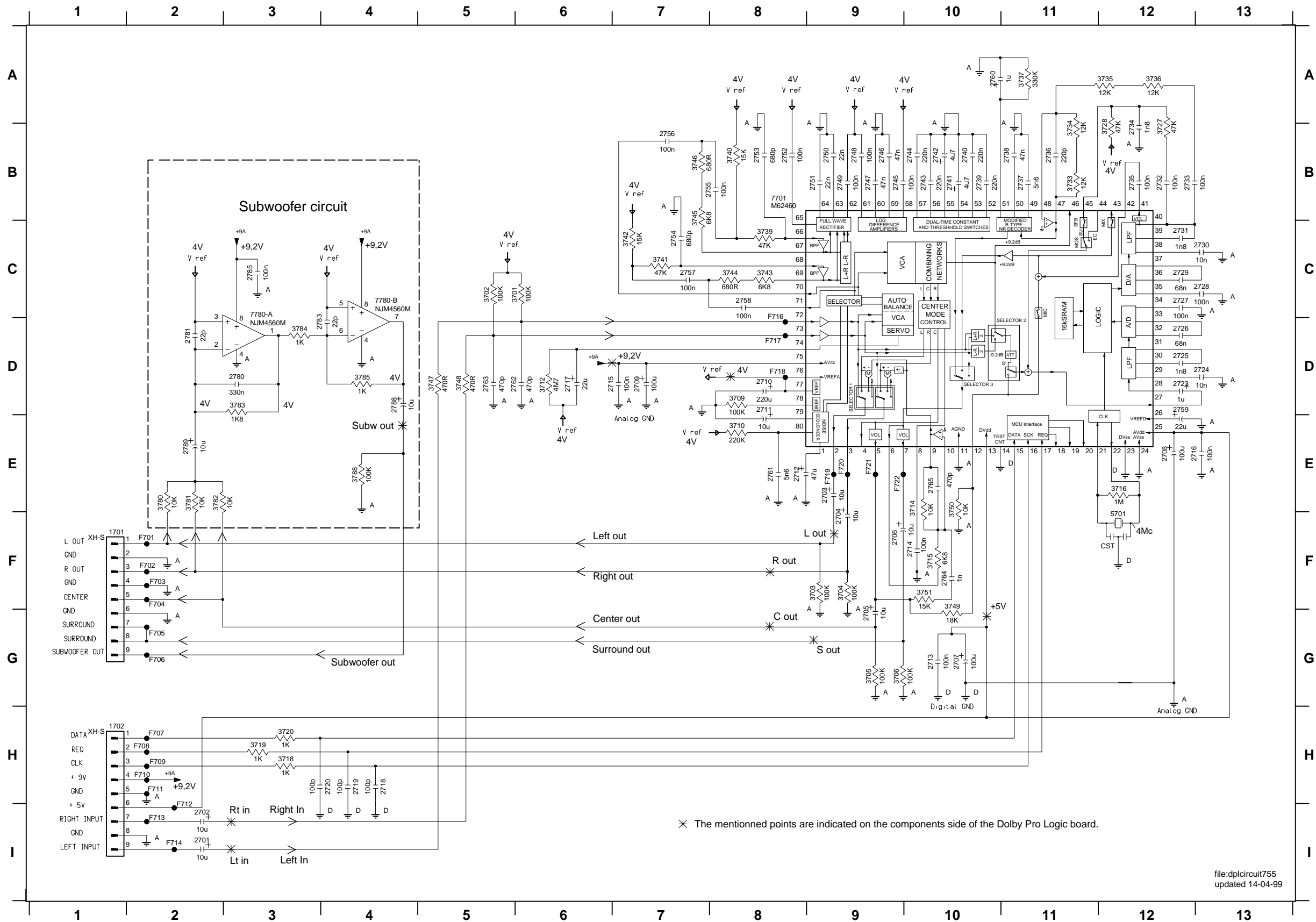


Fig 1

# DOLBY PROLOGIC - CIRCUIT DIAGRAM



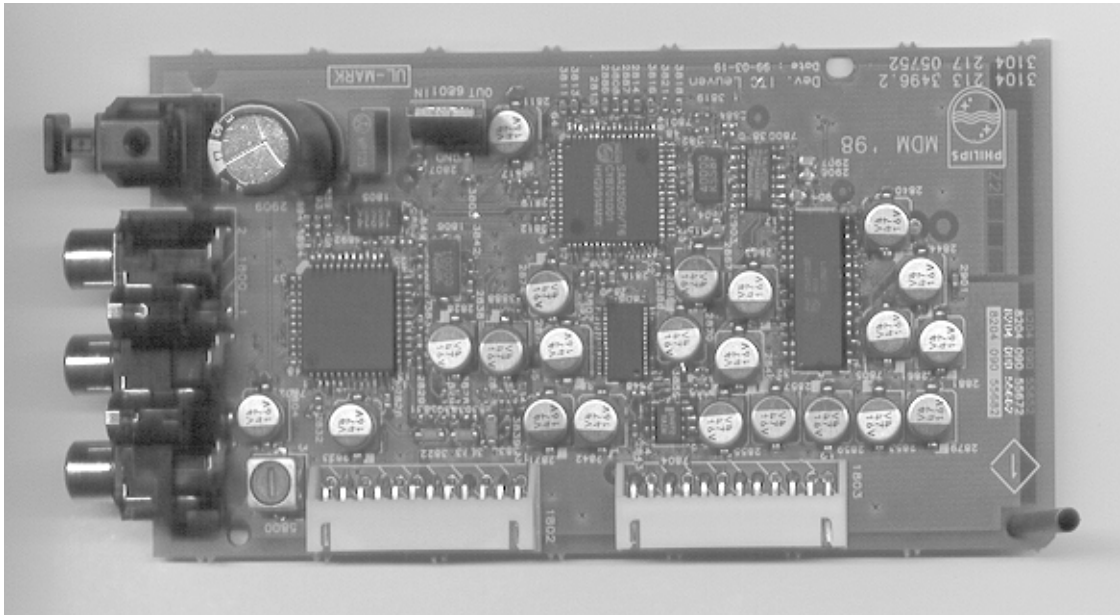
- 1701 F1
- 1702 H1
- 2701 I2
- 2702 I2
- 2703 E9
- 2704 F9
- 2705 G9
- 2706 F9
- 2707 G10
- 2708 E12
- 2709 D7
- 2710 D8
- 2711 D8
- 2712 E8
- 2713 G10
- 2714 F10
- 2715 D7
- 2716 E13
- 2717 D6
- 2718 H4
- 2719 H4
- 2720 H4
- 2723 D12
- 2724 D13
- 2725 D12
- 2726 D12
- 2727 C12
- 2728 C13
- 2729 C12
- 2730 C12
- 2731 C12
- 2732 B12
- 2733 B12
- 2734 B12
- 2735 B12
- 2736 B11
- 2737 B11
- 2738 B11
- 2739 B10
- 2740 B10
- 2741 B10
- 2742 B10
- 2743 B10
- 2744 B10
- 2745 B9
- 2746 B9
- 2747 B9
- 2748 B9
- 2749 B9
- 2750 B9
- 2751 B9
- 2752 B8
- 2753 B8
- 2754 C7
- 2755 B8
- 2756 B7
- 2757 C7
- 2758 C8
- 2759 D12
- 2760 A10
- 2761 E8
- 2762 D6
- 2763 D5
- 2764 F10
- 2765 E10
- 2766 D3
- 2767 D2
- 2768 D4
- 2769 C3
- 2770 D4
- 2771 E2
- 2772 C6
- 2773 C5
- 2774 F9
- 2775 G9
- 2776 G9
- 2777 D8
- 2778 E8
- 2779 D6
- 2780 E10
- 2781 F10
- 2782 E12
- 2783 H3
- 2784 H3
- 2785 H3
- 2786 B12
- 2787 B12
- 2788 B11
- 2789 B11
- 2790 A12
- 2791 A12
- 2792 A11
- 2793 C8
- 2794 B8
- 2795 C7
- 2796 C8
- 2797 C8
- 2798 C8
- 2799 D5
- 2800 E10
- 2801 F10
- 2802 E2

\* The mentioned points are indicated on the components side of the Dolby Pro Logic board.



**ELECTRICAL PARTSLIST - DOLBY PROLOGIC BOARD**

MISCELLANEOUS					
1003	4822 214 13051	DPL MODULE	2763	5322 122 32268	470PF 10% 50V
			2780	5322 121 42661	330NF 5% 63V
			2781	5322 122 32658	22PF 5% 50V
			2783	5322 122 32658	22PF 5% 50V
			2785	4822 126 13196	100NF 10% 0805 X7R 2
CAPACITORS					
2701	4822 124 41579	10UF 20% 50V	2788	4822 124 41579	10UF 20% 50V
2702	4822 124 41579	10UF 20% 50V	2789	4822 124 41579	10UF 20% 50V
2703	4822 124 41579	10UF 20% 50V	RESISTORS		
2704	4822 124 41579	10UF 20% 50V	3701	4822 051 20104	100K00 5% 0,1W
2705	4822 124 41579	10UF 20% 50V	3702	4822 051 20104	100K00 5% 0,1W
2706	4822 124 41579	10UF 20% 50V	3703	4822 051 20104	100K00 5% 0,1W
2707	4822 124 41584	100UF 20% 10V	3704	4822 051 20104	100K00 5% 0,1W
2708	4822 124 41584	100UF 20% 10V	3705	4822 051 20104	100K00 5% 0,1W
2709	4822 124 41584	100UF 20% 10V	3706	4822 051 20104	100K00 5% 0,1W
2710	4822 124 11912	220UF 20% 6,3V	3709	4822 051 20104	100K00 5% 0,1W
2711	4822 124 41579	10UF 20% 50V	3710	4822 117 13579	220K 1% 0.1W RC12H 0
2712	4822 124 40433	47UF20% 25V	3712	4822 051 20475	4M70 5% 0,1W
2713	4822 126 13196	100NF 10% 0805 X7R 2	3714	4822 117 10833	10K 1% 0,1W
2714	5322 121 42386	100NF 5% 63V	3715	4822 117 10833	10K 1% 0,1W
2715	4822 126 13196	100NF 10% 0805 X7R 2	3716	4822 051 20105	1M00 5% 0,1W
2716	4822 126 13196	100NF 10% 0805 X7R 2	3718	4822 051 10102	1K00 2% 0,25W
2717	4822 124 81151	22UF 50V	3719	4822 051 10102	1K00 2% 0,25W
2718	5322 122 32531	100PF 5%NP0 50V	3720	4822 051 10102	1K00 2% 0,25W
2719	5322 122 32531	100PF 5%NP0 50V	3727	4822 117 10834	47K 1% 0,1W
2720	5322 122 32531	100PF 5%NP0 50V	3728	4822 051 20184	180K00 5% 0,1W
2723	4822 124 40242	1UF20% 63V	3733	4822 117 11383	12K 1% 0,1W
2724	4822 122 33177	10NF 20% X7R 50V	3734	4822 117 11383	12K 1% 0,1W
2725	4822 126 10847	1,8NF10%X7R 63V	3735	4822 117 11383	12K 1% 0,1W
2726	5322 121 42465	68NF 5% 63V	3736	4822 117 11383	12K 1% 0,1W
2727	5322 121 42386	100NF 5% 63V	3737	4822 051 20334	330K00 5% 0,1W
2728	5322 121 42386	100NF 5% 63V	3739	4822 117 10834	47K 1% 0,1W
2729	5322 121 42465	68NF 5% 63V	3740	4822 051 20153	15K00 5% 0,1W
2730	4822 122 33177	10NF 20% X7R 50V	3741	4822 117 10834	47K 1% 0,1W
2731	4822 126 10847	1,8NF10%X7R 63V	3742	4822 051 20153	15K00 5% 0,1W
2732	4822 126 13196	100NF 10% 0805 X7R 2	3743	4822 117 11507	6K8 1% 0,1W
2733	5322 121 42386	100NF 5% 63V	3744	4822 051 20681	680R00 5% 0,1W
2734	4822 126 10847	1,8NF10%X7R 63V	3745	4822 117 11507	6K8 1% 0,1W
2735	4822 126 13196	100NF 10% 0805 X7R 2	3746	4822 051 20681	680R00 5% 0,1W
2736	4822 122 33575	220PF 5%NPO 50V	3747	4822 051 20471	470R00 5% 0,1W
2737	4822 122 32646	5,6NF10%X7R 50V	3748	4822 051 20471	470R00 5% 0,1W
2738	4822 122 33797	47NF20%Y5V 50V	3780	4822 117 10833	10K 1% 0,1W
2739	4822 121 42408	220NF 5% 63V	3781	4822 117 10833	10K 1% 0,1W
2740	4822 121 42408	220NF 5% 63V	3782	4822 117 10833	10K 1% 0,1W
2741	4822 124 40769	4,7UF20% 100V	3783	4822 051 20182	1K80 5% 0,1W
2742	4822 124 40769	4,7UF20% 100V	3784	4822 051 10102	1K00 2% 0,25W
2743	4822 121 42408	220NF 5% 63V	3785	4822 051 10102	1K00 2% 0,25W
2744	4822 121 42408	220NF 5% 63V	3788	4822 051 20104	100K00 5% 0,1W
2745	4822 126 13196	100NF 10% 0805 X7R 2	JUMPERS		
2746	4822 121 43526	47NF 5% 250V	4701	4822 051 20008	0R00 JUMP. (0805)
2747	4822 121 43526	47NF 5% 250V	to		
2748	5322 121 42386	100NF 5% 63V	4720	4822 051 20008	0R00 JUMP. (0805)
2749	4822 126 13196	100NF 10% 0805 X7R 2	FILTERS		
2750	5322 122 32654	22NF10%X7R 63V	5701	4822 242 72527	CST4,00MGW-TF01
2751	5322 122 32654	22NF10%X7R 63V	ICs		
2752	4822 126 13196	100NF 10% 0805 X7R 2	7701	4822 209 17347	M62460FP
2753	4822 122 32535	680PF10%X7R 63V	7780	4822 209 83357	NJM4560M
2754	5322 126 10184	680P 5% NPO 50V.			
2755	5322 121 42386	100NF 5% 63V			
2756	5322 121 42386	100NF 5% 63V			
2757	5322 121 42386	100NF 5% 63V			
2758	5322 121 42386	100NF 5% 63V			
2759	4822 124 81151	22UF 50V			
2760	4822 124 40242	1UF20% 63V			
2761	4822 122 32646	5,6NF10%X7R 50V			
2762	5322 122 32268	470PF 10% 50V			

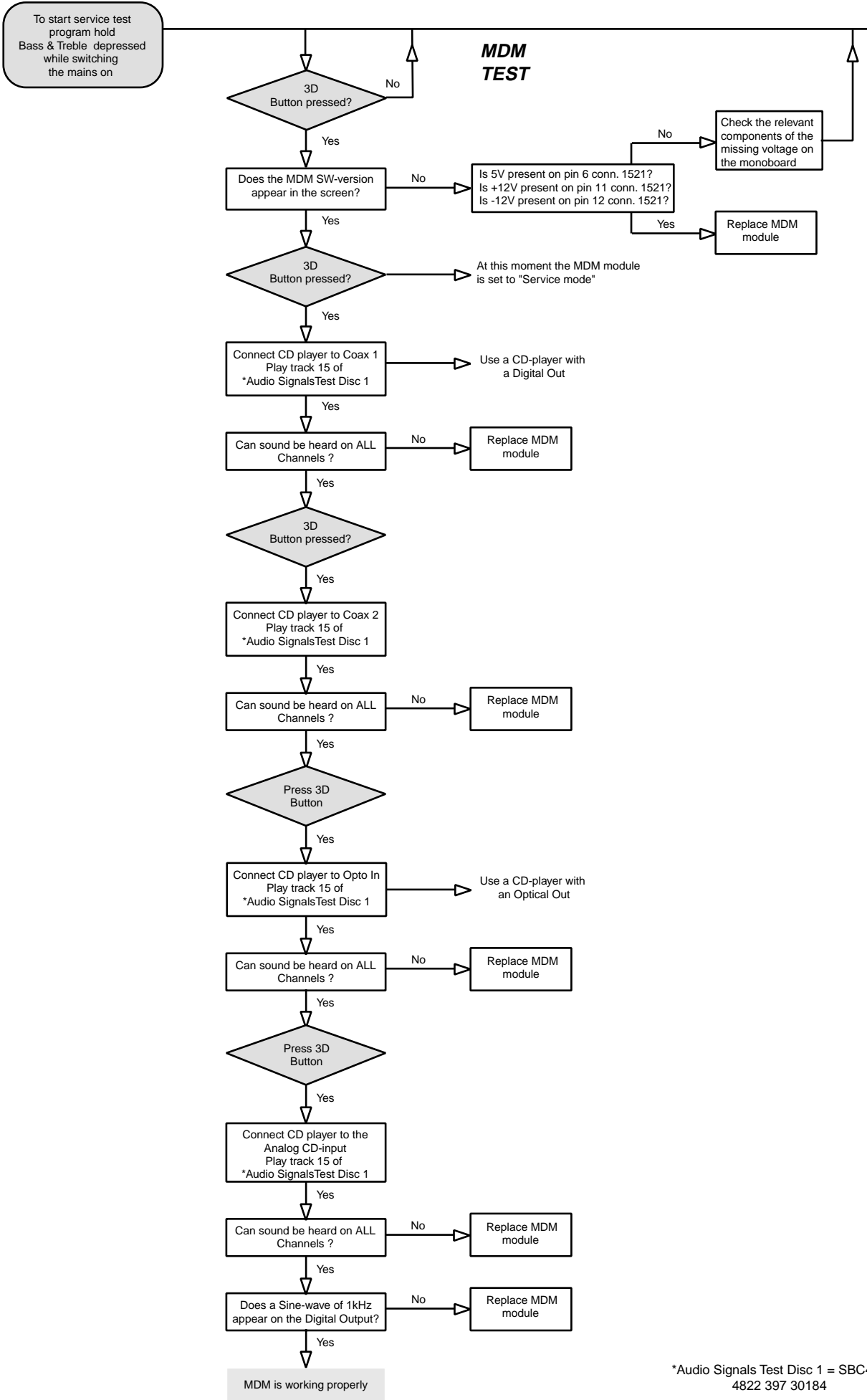


# ***MULTI-CHANNEL DECODING MODULE***

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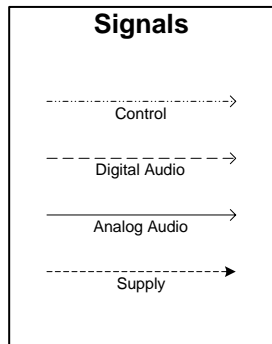
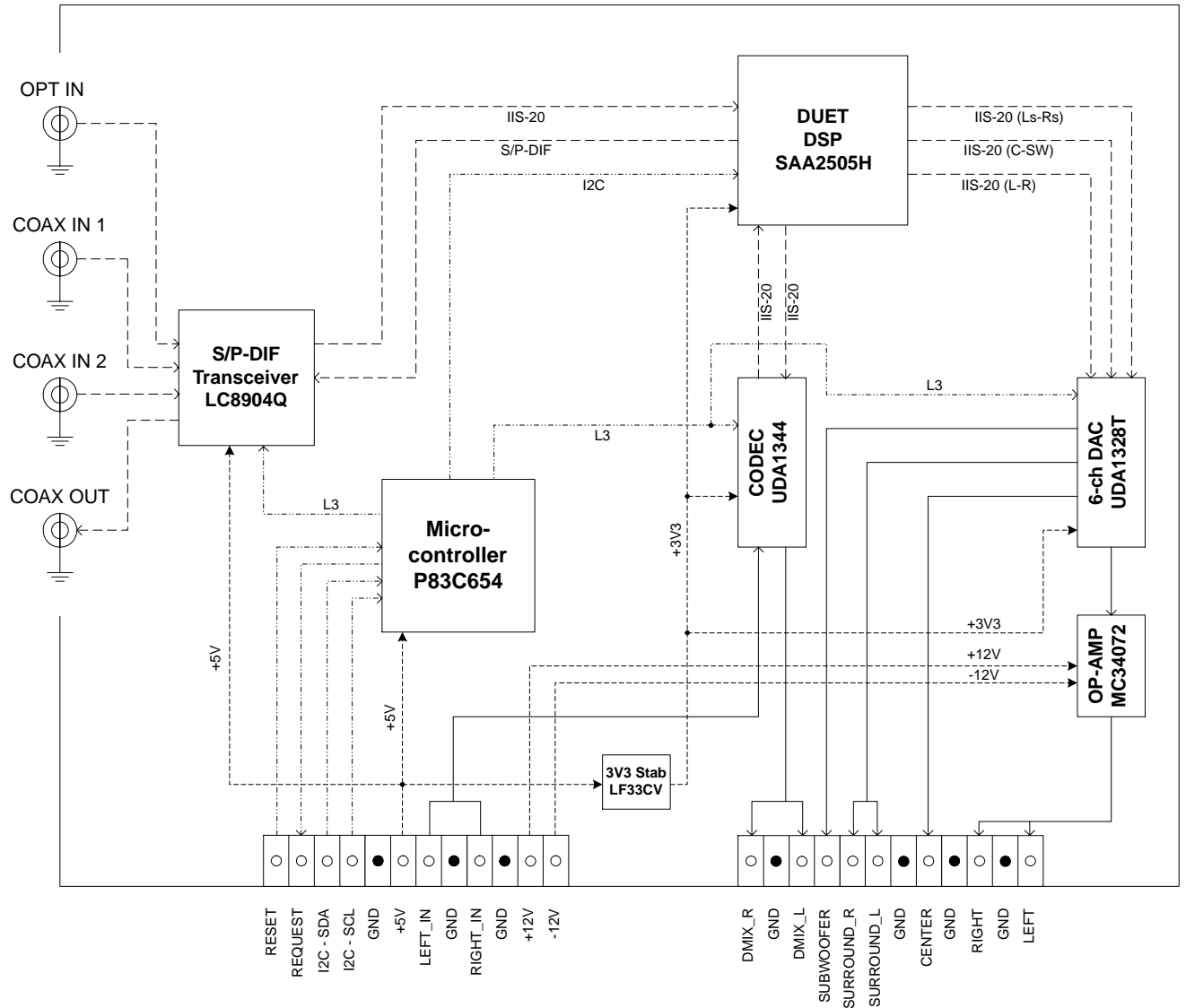
# MULTI-CHANNEL DECODING MODULE - Troubleshooting



\*Audio Signals Test Disc 1 = SBC429  
4822 397 30184

**BLOCK-DIAGRAM**

**MULTI-CHANNEL DECODING MODULE '98**



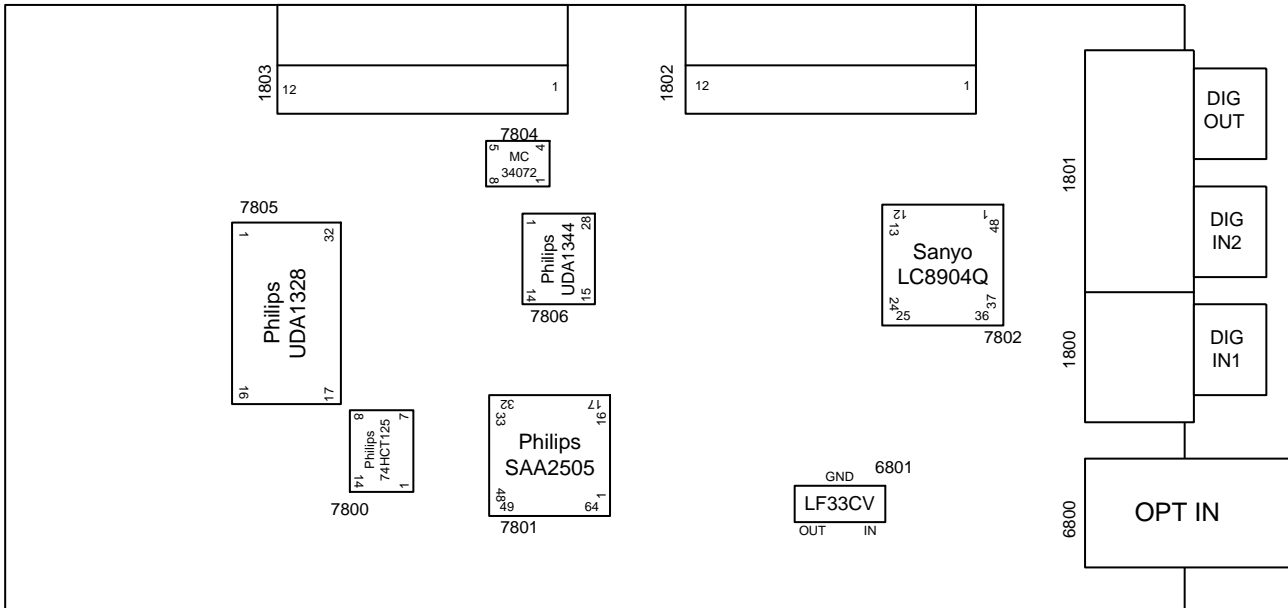
**Terms**

- DUET: Philips Dual Core DSP
- DSP: Digital Signal Processor
- DAC: Digital to Analog Converter
- ADC: Analog to Digital Converter
- CODEC: Combined ADC and DAC
- S/P-DIF: Sony/Philips Digital Interface
- Transceiver: Transmitter/Receiver
- IIS-20: Inter-IC Sound (20 bit)
- I2C: Inter-IC Communication
- L3 : 3-line Communication
- OP-AMP: Operational Amplifier
- Stab: Stabiliser
- DMIX: Downmix
- OPTO: Optical Connector
- COAX: Cinch Connector

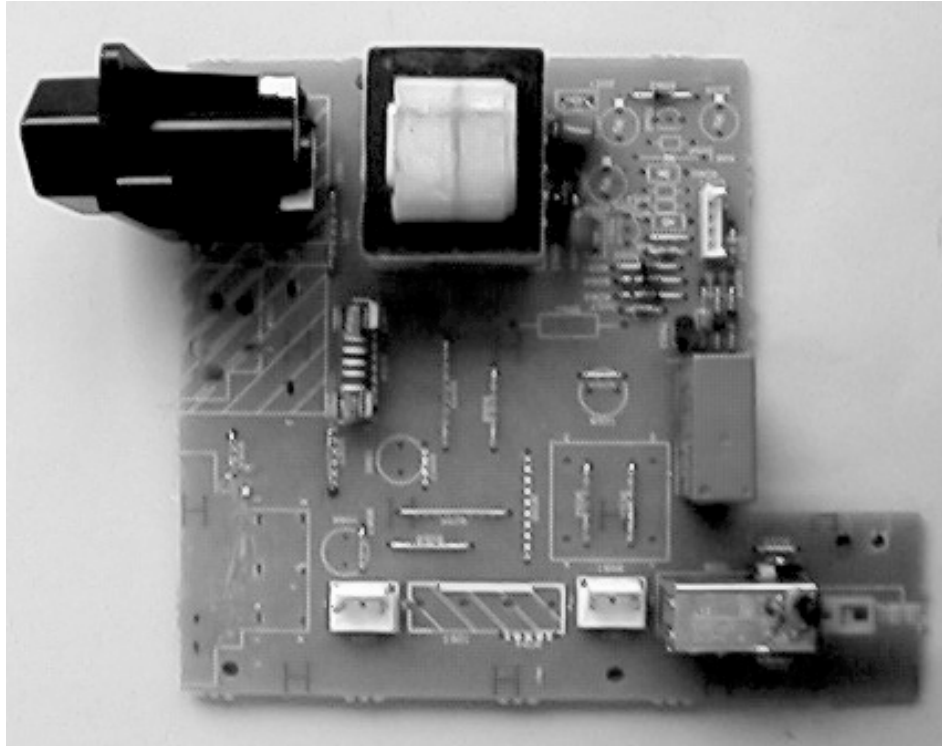
**ELECTRICAL PARTSLIST - MDM MODULE**

1003	3104 217 05750	MDM Module
1800	4822 267 31729	Connector
1801	4822 267 31448	Connector
6800	4822 218 11487	GP1F32R
6801	4822 209 16978	LF33CV

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







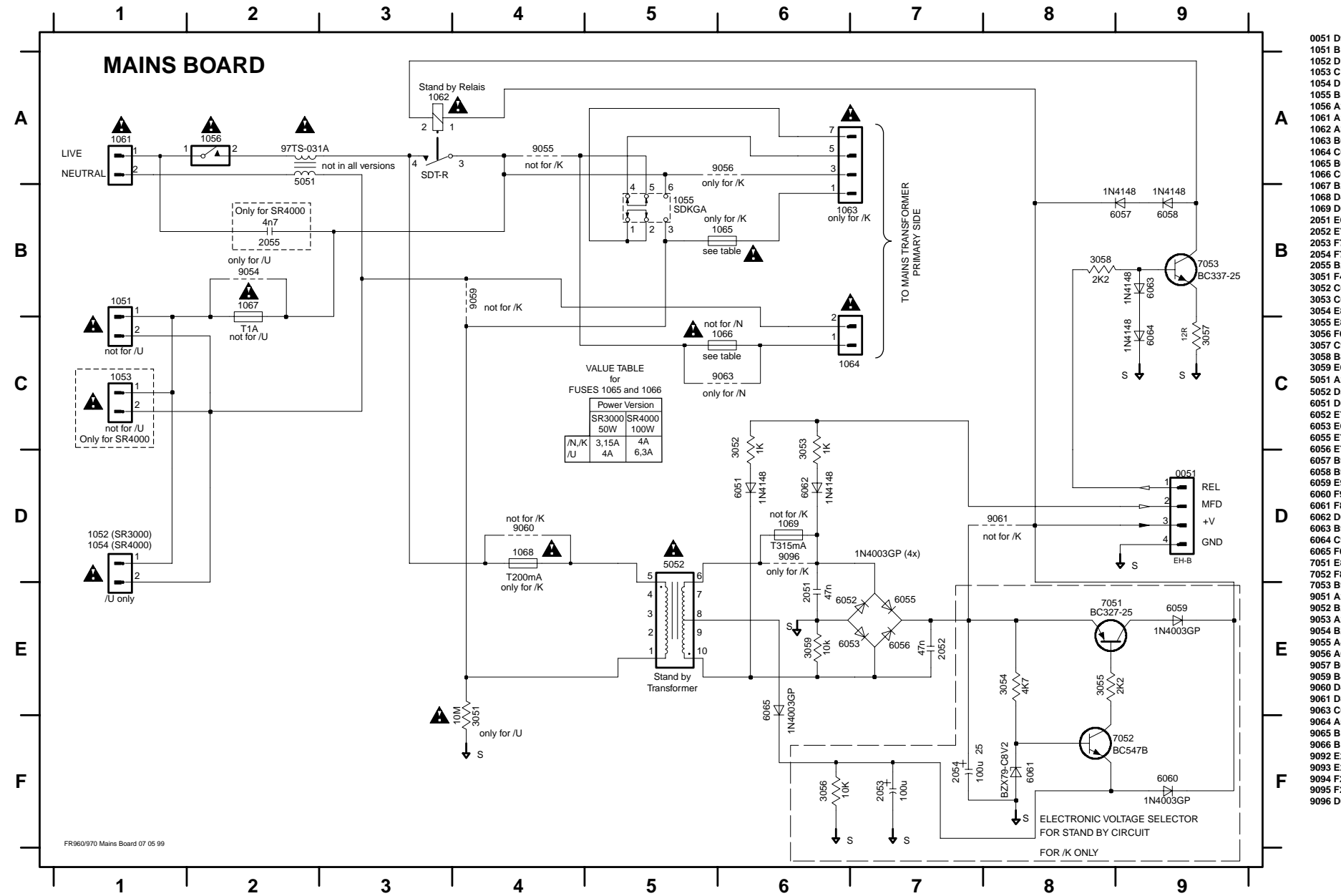
# ***MAINS BOARD***

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Circuit diagram .....	10-2
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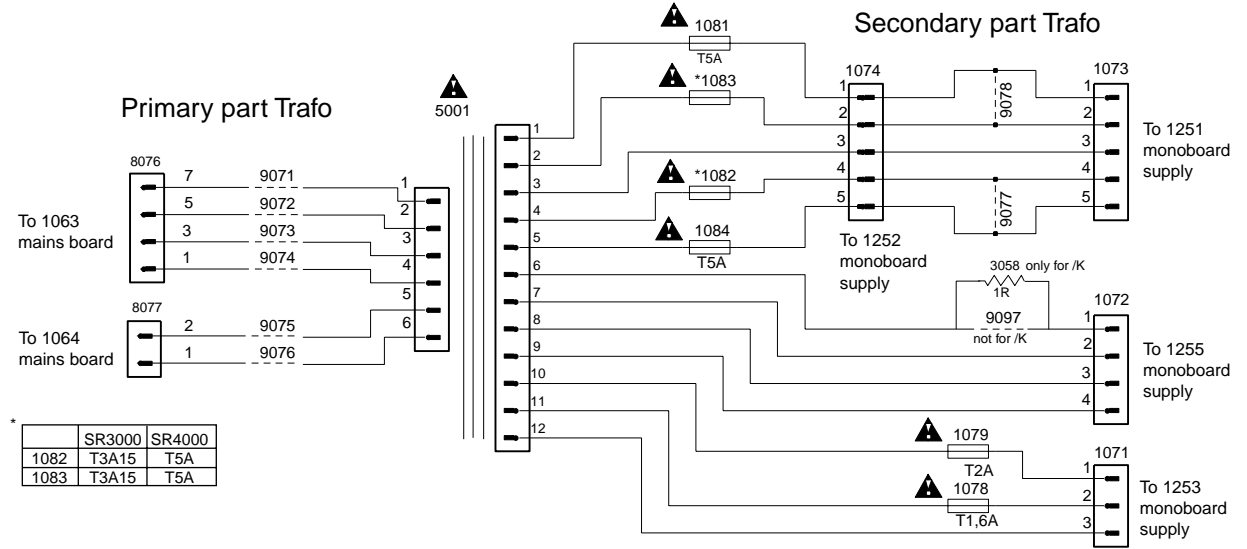


MAINS BOARD - CIRCUIT DIAGRAM

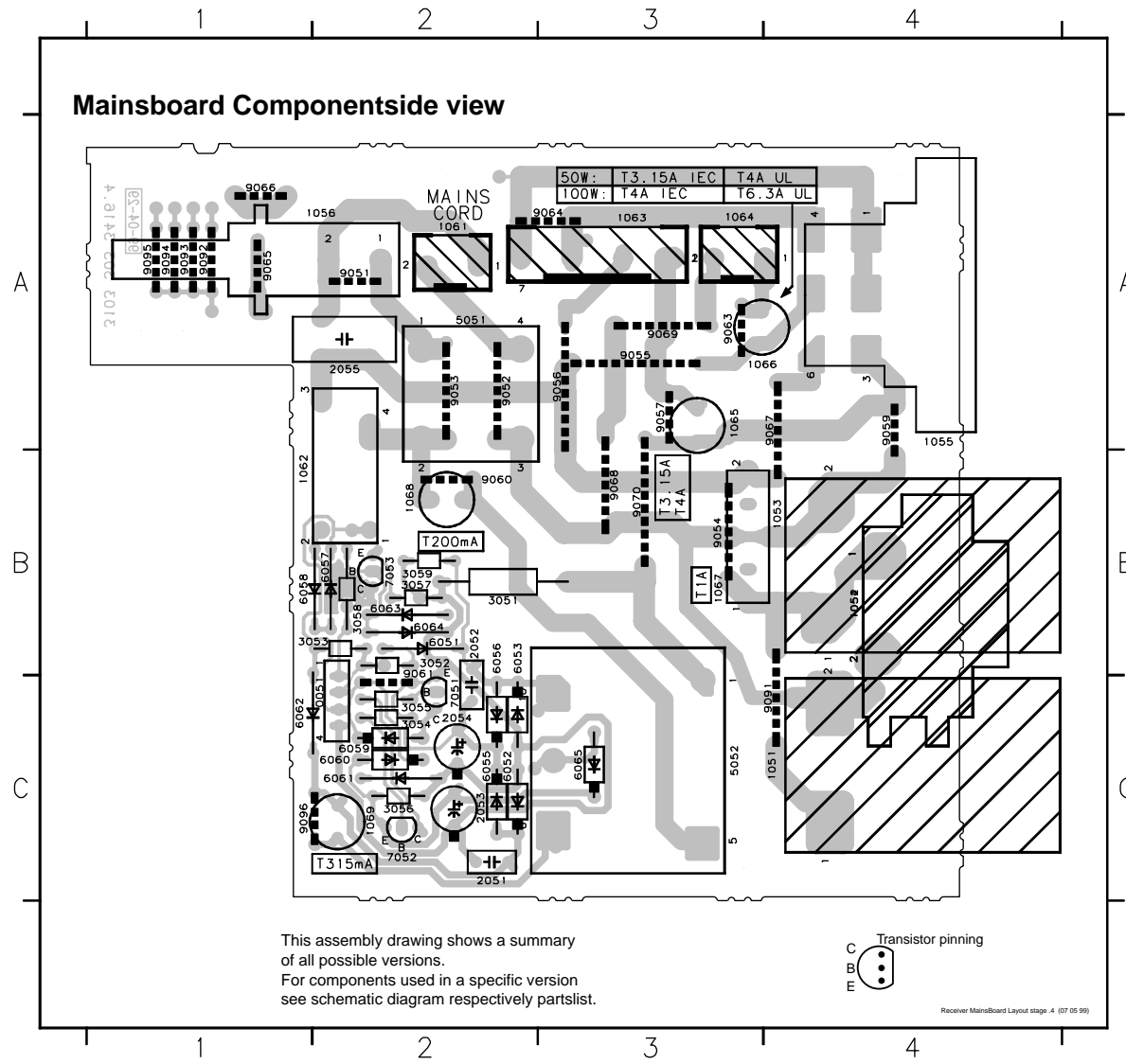


- 0051 D9
- 1051 B1
- 1052 D1
- 1053 C1
- 1054 D1
- 1055 B5
- 1056 A2
- 1061 A1
- 1062 A3
- 1063 B6
- 1064 C6
- 1065 B6
- 1066 C6
- 1067 B2
- 1068 D4
- 1069 D6
- 2051 E6
- 2052 E7
- 2053 F7
- 2054 F7
- 2055 B2
- 3051 F4
- 3052 C6
- 3053 C6
- 3054 E8
- 3055 E8
- 3056 F6
- 3057 C9
- 3058 B8
- 3059 E6
- 5051 A2
- 5052 D5
- 6051 D6
- 6052 E7
- 6053 E6
- 6055 E7
- 6056 E7
- 6057 B9
- 6058 B9
- 6059 E9
- 6060 F9
- 6061 F8
- 6062 D6
- 6063 B9
- 6064 C9
- 6065 F6
- 7051 E8
- 7052 F8
- 7053 B9
- 9051 A2
- 9052 B2
- 9053 A2
- 9054 B2
- 9055 A4
- 9056 A6
- 9057 B6
- 9059 B4
- 9060 D4
- 9061 D8
- 9063 C6
- 9064 A5
- 9065 B1
- 9066 B1
- 9092 E2
- 9093 E2
- 9094 F2
- 9095 F2
- 9096 D6

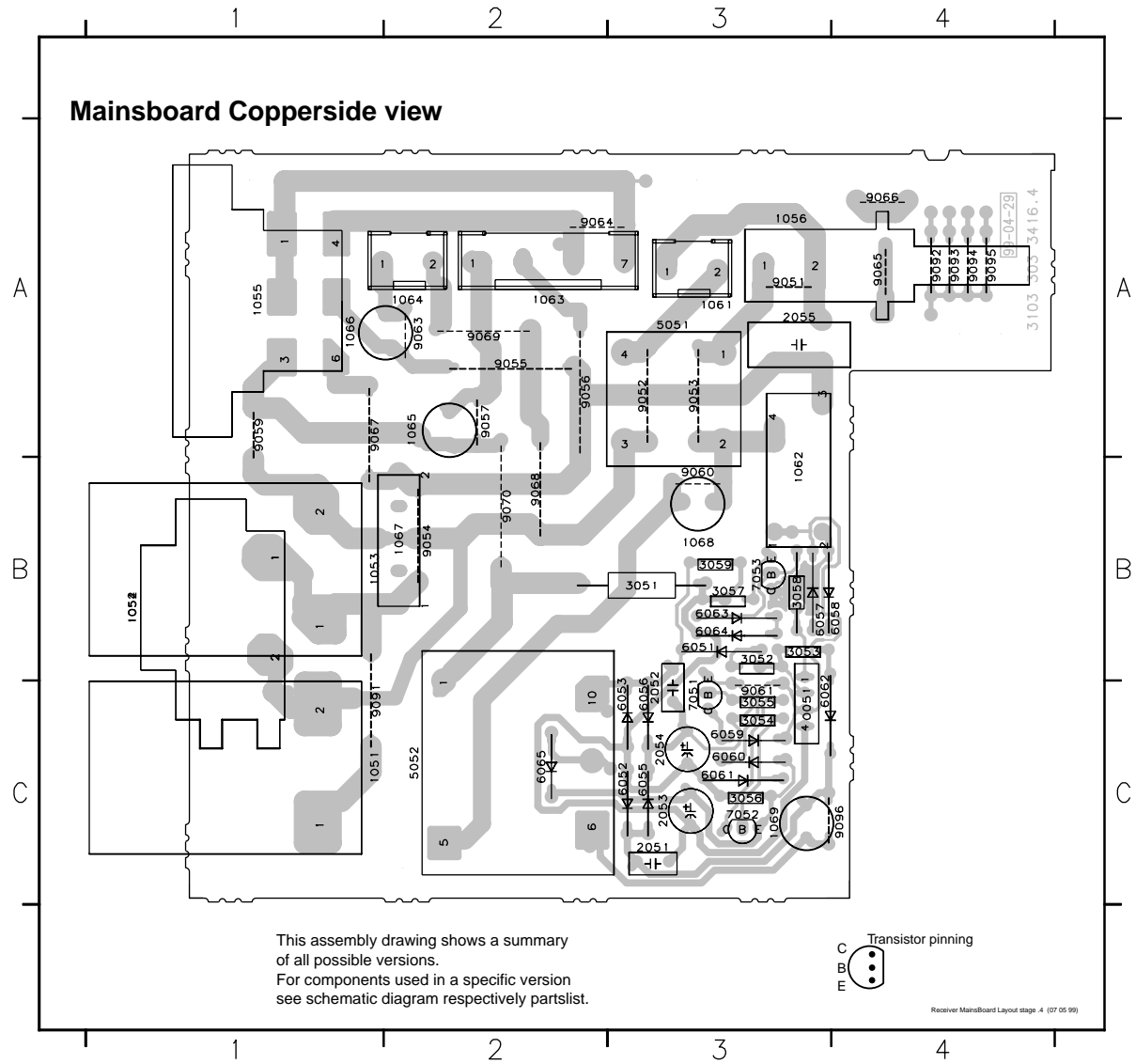
MAINS TRAF0 PART



MAINS BOARD - COMPONENTSIDE VIEW & COPPERSIDE VIEW



- 0051 C2
- 1051 C4
- 1052 B4
- 1053 B4
- 1054 B4
- 1055 A4
- 1056 A2
- 1061 A2
- 1062 B2
- 1063 A3
- 1064 A3
- 1065 A3
- 1066 A3
- 1067 B3
- 1068 B2
- 1069 C2
- 2051 C2
- 2052 C2
- 2053 C2
- 2054 C2
- 2055 A2
- 3051 B2
- 3052 B2
- 3053 B2
- 3054 C2
- 3055 C2
- 3056 C2
- 3057 B2
- 3058 B2
- 3059 B2
- 5051 A2
- 5052 C3
- 6051 B2
- 6052 C2
- 6053 C2
- 6054 C2
- 6055 C2
- 6056 C2
- 6057 B2
- 6058 B2
- 6059 C2
- 6060 C2
- 6061 C2
- 6062 C2
- 6063 B2
- 6064 B2
- 6065 C3
- 7051 C2
- 7052 C2
- 7053 B2
- 9051 A2
- 9052 A2
- 9053 A2
- 9054 B3
- 9055 A3
- 9056 A3
- 9057 A3
- 9059 A4
- 9060 B2
- 9061 C2
- 9063 A3
- 9064 A3
- 9065 A1
- 9066 A1
- 9067 A4
- 9068 B3
- 9069 A3
- 9070 B3
- 9091 C4
- 9092 A1
- 9093 A1
- 9094 A1
- 9095 A1
- 9096 C1



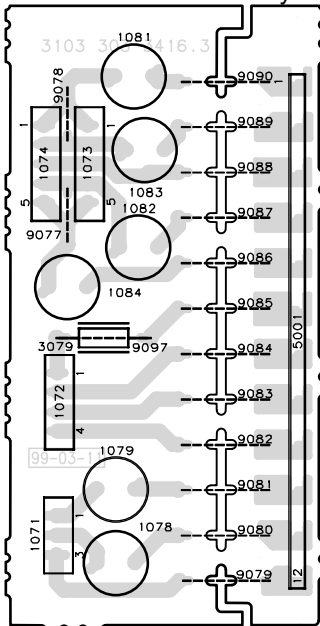
- 0051 C3
- 1051 C1
- 1052 B1
- 1053 B1
- 1054 B1
- 1055 A1
- 1056 A3
- 1061 A3
- 1062 B3
- 1063 A2
- 1064 A2
- 1065 A2
- 1066 A2
- 1067 B2
- 1068 B3
- 1069 C3
- 2051 C3
- 2052 C3
- 2053 C3
- 2054 C3
- 2055 A3
- 3051 B3
- 3052 B3
- 3053 B3
- 3054 C3
- 3055 C3
- 3056 C3
- 3057 B3
- 3058 B3
- 3059 B3
- 5051 A3
- 5052 C2
- 6051 B3
- 6052 C3
- 6053 C3
- 6054 C3
- 6055 C3
- 6056 C3
- 6057 B3
- 6058 B3
- 6059 C3
- 6060 C3
- 6061 C3
- 6062 C3
- 6063 B3
- 6064 B3
- 6065 C2
- 7051 C3
- 7052 C3
- 7053 B3
- 9051 A3
- 9052 A3
- 9053 A3
- 9054 B2
- 9055 A2
- 9056 A2
- 9057 A2
- 9059 A1
- 9060 B3
- 9061 C3
- 9063 A2
- 9064 A2
- 9065 A4
- 9066 A4
- 9067 A1
- 9068 B2
- 9069 A2
- 9070 B2
- 9091 C1
- 9092 A4
- 9093 A4
- 9094 A4
- 9095 A4
- 9096 C4

# TRAF0 BOARD

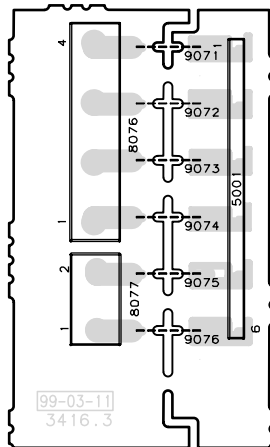
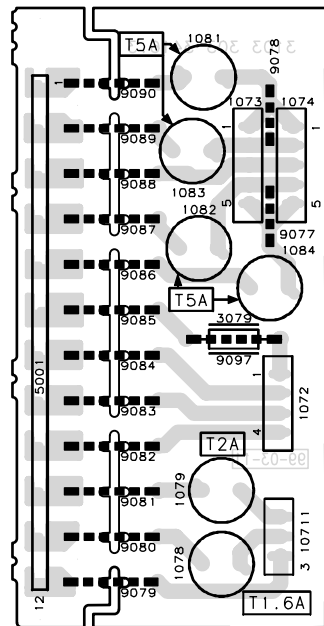
## Copperside view

## Componentside view

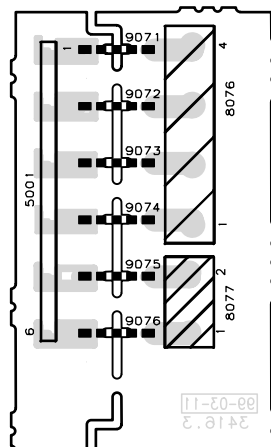
Interconnection Board  
Transformer secondary



Interconnection Board  
Transformer secondary



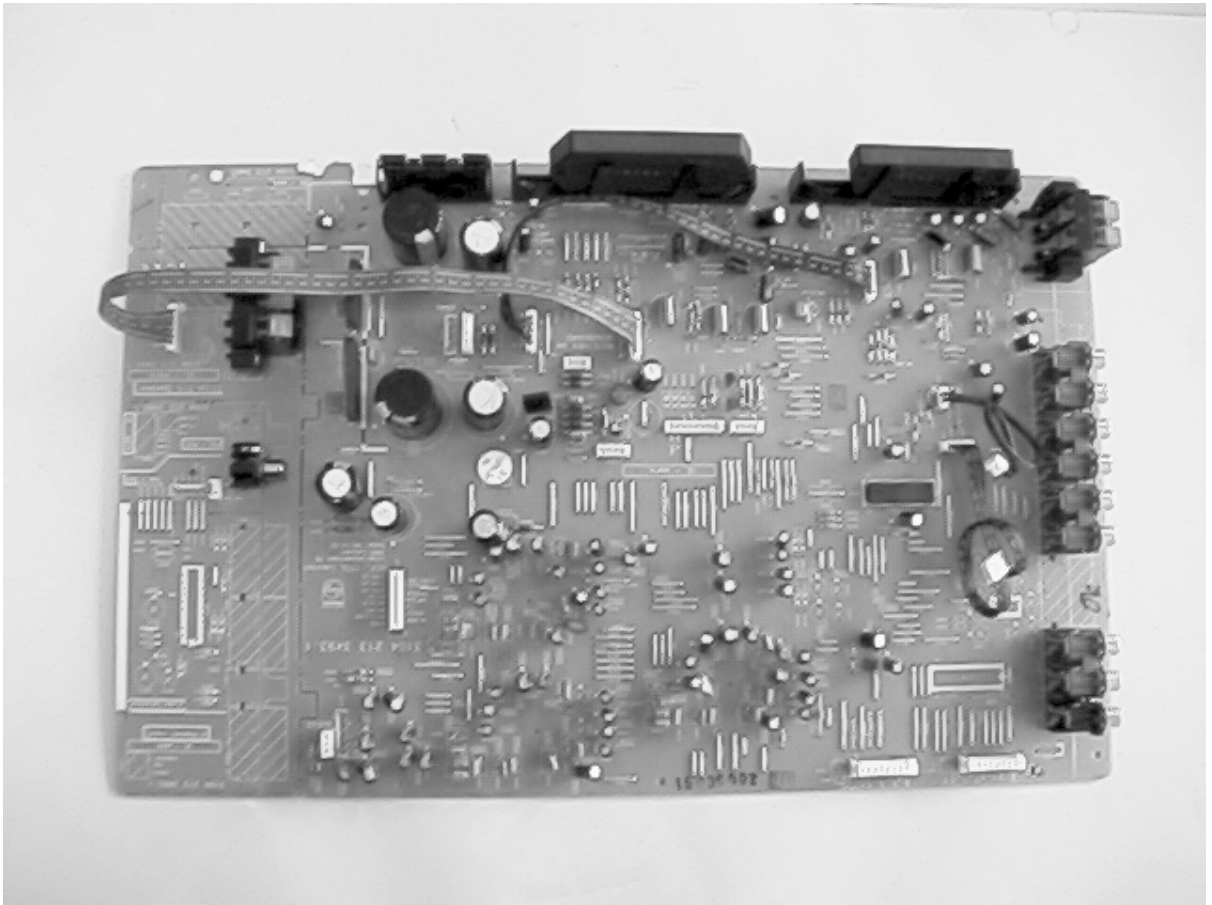
Interconnection Board  
Transformer primary



Interconnection Board  
Transformer primary

**ELECTRICAL PARTSLIST - MAINS BOARD**

POS. NO	MODEL	VERS. COLOR	PART NO.	DESCRIPTION
<b>MISCELLANEOUS</b>				
▲ 1051		N, K	4822 267 31994	MAINS OUTLET
▲ 1052	3000	U	4822 265 11605	CCT1302-0202 MAINS LET
▲ 1053	4000	N, K	4822 267 31994	MAINS OUTLET
▲ 1054	4000	U	2422 030 00301	MAINS OUTLET
▲ 1055	4000	K	4822 272 10269	VOLTAGE SEL.
▲ 1056			4822 276 13224	MAINS SWITCH
▲ 1061			4822 265 20723	MAINS INLET
1062			4822 280 10391	RELAY
▲ 1063	4000	K	4822 267 10728	B4P7-VH
▲ 1064			4822 265 20723	B2P3-VH
▲ 1065	4000	K	4822 071 54002	19372 (4A)
▲ 1066	3000	U	4822 253 10126	19374 (4,0A)
▲ 1066	4000	U	4822 252 51123	19374A1 (6,3A)
▲ 1066	4000	K	4822 071 54002	19372 (4A)
▲ 1067		N	2422 086 10912	FUSE 5X20 ET 2,50A 250V IEC B
▲ 1067	4000	K	2422 086 10915	FUSE 5X20 ET 5,00A 250V IEC B
▲ 1068	4000	K	4822 071 52001	19372 (200MA)
▲ 1069		U, N	4822 071 53151	19372 (315MA)
▲ 1078			4822 071 51602	19372 (1.6A)
▲ 1079			4822 071 52002	19372 (2A)
▲ 1081				
}			4822 071 55002	19372 (5A)
▲ 1084				
<b>CAPACITORS</b>				
2051			4822 121 43526	47NF 5% 250V
2052				
2053	4000	K	4822 124 40207	100UF 20% 25V
2054				
▲ 2055			4822 126 14084	4,7NF 20% 250V
<b>RESISTORS</b>				
▲ 3051		U	4822 053 21106	10M00 5% 0,5W
3052				
3053			4822 050 11002	1K00 1% 0,4W
3054	4000	K	4822 116 52283	4K7 5% 0,5W
3055	4000	K	4822 116 52256	2K2 5% 0,5W
3056	4000	K	4822 050 21003	10K00 1% 0,6W
3057			4822 116 52179	12E 5% 0,5W
3058			4822 116 52256	2K2 5% 0,5W
▲ 3079	4000	K	4822 052 10108	1R00 5% 0,33W
<b>TRAFO</b>				
▲ 5052		U	4822 146 11142	STBY TRAFO for U
▲ 5052		N	4822 146 11143	STBY TRAFO for N
▲ 5052	4000	K	4822 146 11144	STBY TRAFO for K
<b>DIODES</b>				
6051			4822 130 30621	1N4148
6052				
}			4822 130 31878	1N4003G
6056				
6057			4822 130 30621	1N4148
6058				
6059	4000	K	4822 130 31878	1N4003G
6060				
6061	4000	K	4822 130 34382	BZX79-B8V2
6062				
}			4822 130 30621	1N4148
6064				
6065	4000	K	4822 130 31878	1N4003G
<b>TRANSISTORS</b>				
7051	4000	K	4822 130 41246	BC327-25
7052	4000	K	4822 130 40959	BC547B
7053			4822 130 40981	BC337-25



# ***MONO BOARD***

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Mapping Chip side .....	11-14
Component layout .....	11-15
Chips layout .....	11-16

**MEASUREMENT REFERENCES TO LAYOUT ON PAGE 11-15 (for SR4000)****IC7643**

IC 7643 Pin	Can be measure via Test point on component side monoboard	Funtionality
17	TP 47	MDM Surround L in
18	TP 48	not used
9	TP 50	MDM Surround R in
10	TP 51	not used
3	TP 52	4,7V
2	TP 53	4,7V
4	TP 54	4,7V
26	TP 55	4,7V
27	TP 56	4,7V
33	TP 57	Surround Right out
36/40/43	TP 58	Ground
41/42	TP 59	9,4V
39	TP 60	4,7V
19	TP 61	8,7V
34	TP 63	Surround Left out
25	TP 64	4,7V
24	TP 65	4,7V
12	TP 66	4,7V
20	TP 67	4,7V
21	TP 68	4,7V

**IC7503**

IC 7503 Pin	Can be measure via Test point on component side monoboard	Funtionality
5	TP 73	Right in
4	TP 74	-12V
8	TP 75	11V
3	TP 76	Left in

**IC7504**

IC 7504 Pin	Can be measure via Test point on component side monoboard	Funtionality
5	TP 77	Rec - in Right
4	TP 78	-13,5V
7	TP 79	Rec - out Right
8	TP 80	12V
3	TP 81	Rec - in Left
1	TP 82	Rec - out Left



**MEASUREMENT REFERENCES TO LAYOUT ON PAGE 11-15 (for SR4000)**

**IC7641**

IC 7641 Pin	Can be measure via Test point on component side monoboard	Funtionality
16	TP 1	Left in
17	TP 2	MDM Left in
18	TP 3	not used
8	TP 4	Right in
9	TP 5	MDM Right in
10	TP 6	not used
3	TP 7	4,7V
2	TP 8	4,7V
4	TP 9	4,7V
26	TP 10	4,7V
27	TP 11	4,7V
33	TP 12	Right out
36/40/43	TP 13	Ground
41/42	TP 14	9,4V
39	TP 15	4,7V
19	TP 16	8,7V
34	TP 18	Left out
25	TP 19	4,7V
24	TP 20	4,7V
12	TP 21	4,7V
20	TP 22	4,7V
21	TP 23	4,7V

**IC7601**

IC 7601 Pin	Can be measure via Test point on component side monoboard	Funtionality
5	TP 69	Headphone Amp L in
4	TP 70	-13,5V
8	TP 71	12V
3	TP 72	Headphone Amp R in

**IC7502**

IC 7503 Pin	Can be measure via Test point on component side monoboard	Funtionality
5	TP 73	Right in
4	TP 74	-12V
8	TP 75	11V
3	TP 76	Left in

**Tr 7621**

Tr7621	Can be measure via Test point on component side monoboard	Funtionality
B	TP 96	-1,5V
C	TP 97	Ground
E	TP 98	Headphone Amp L out

**IC7642**

IC 7642 Pin	Can be measure via Test point on component side monoboard	Funtionality
16	TP 24	4,7V
17	TP 25	MDM Center in
18	TP 26	not used
8	TP 27	MDM Subwoofer in
9	TP 28	MDM Subwoofer in
10	TP 29	not used
3	TP 30	4,7V
2	TP 31	4,7V
4	TP 32	4,7V
26	TP 33	4,7V
27	TP 34	4,7V
33	TP 35	Subwoofer out
36/43	TP 36	Ground
40/41/42	TP 37	9,4V
39	TP 38	4,7V
19	TP 39	8,7V
34	TP 40	Center out
25	TP 41	4,7V
24	TP 42	4,7V
12	TP 43	4,7V
20	TP 44	4,7V
21	TP 45	4,7V

**Tr 7622**

Tr7622	Can be measure via Test point on component side monoboard	Funtionality
B	TP 99	-0,5V
C	TP 100	Ground
E	TP 101	Headphone Amp R out

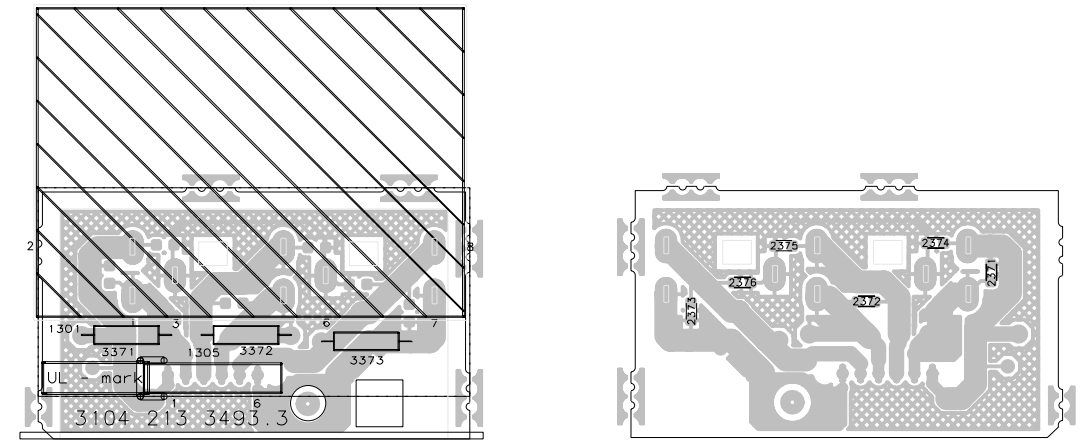
**Tr 7653**

Tr7653	Can be measure via Test point on component side monoboard	Funtionality
B	TP 86	-1,8V
E	TP 88	Center mute

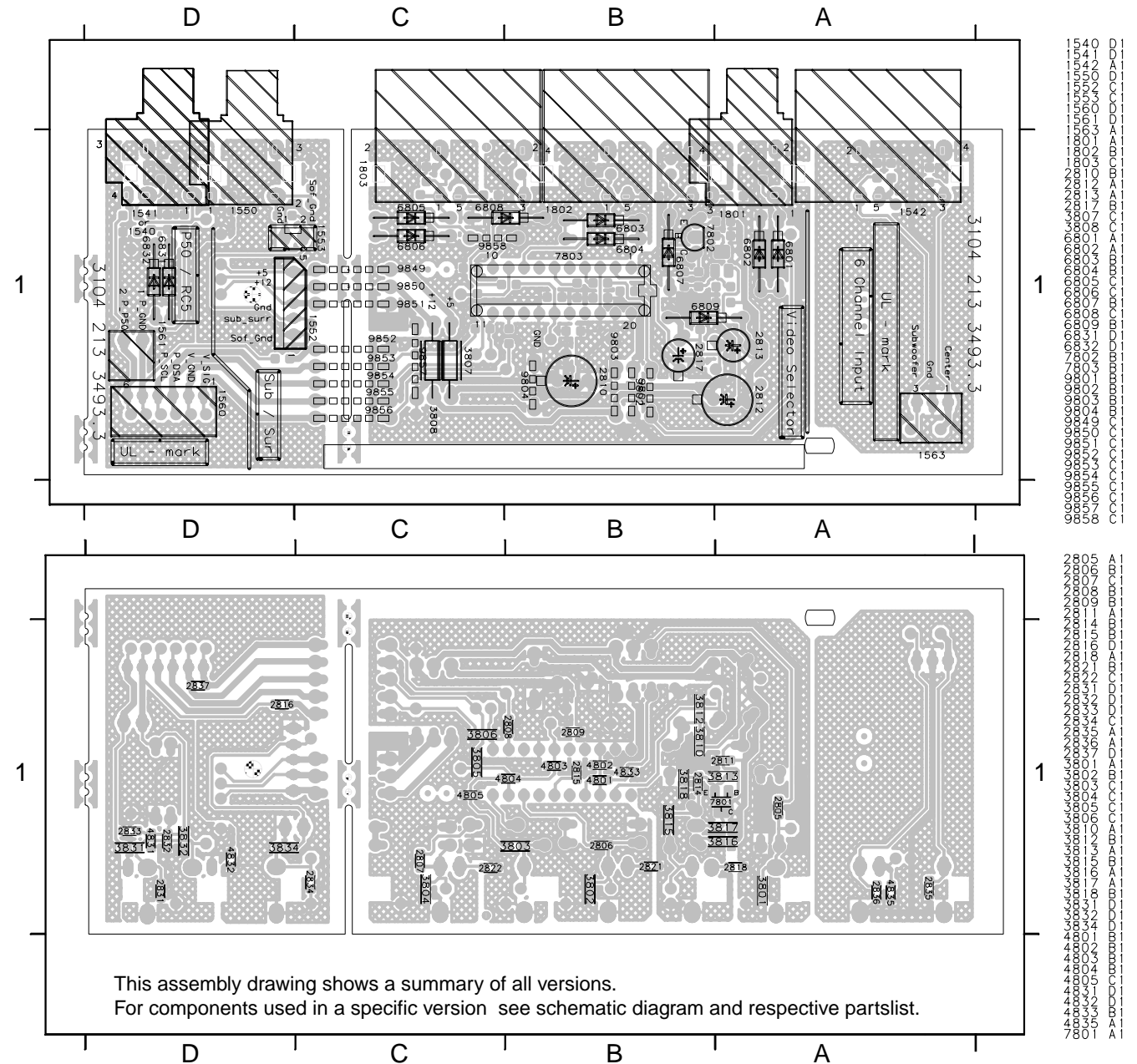
**Tr 7658**

Tr7658	Can be measure via Test point on component side monoboard	Funtionality
B	TP 83	5V
C	TP 84	-13V
E	TP 85	5V

**SCREW TERMINAL BOARD - COMPONENT VIEW & COPPER SIDE VIEW (for SR4000)**



**P50/RC5 / VIDEO SELECTOR BOARD - COMPONENT VIEW & COPPER SIDE VIEW**



**MEASUREMENT REFERENCES TO LAYOUT ON PAGE 11-15 (for SR3000)**

**IC7641**

IC 7641 Pin	Can be measure via Test point on component side monoboard	Funtionality
16	TP 1	Left in
17	TP 2	Dpl Left in
18	TP 3	not used
8	TP 4	Right in
9	TP 5	Dpl right in
10	TP 6	not used
3	TP 7	4,7V
2	TP 8	4,7V
4	TP 9	4,7V
26	TP 10	4,7V
27	TP 11	4,7V
33	TP 12	Right out
36/40/43	TP 13	Ground
41/42	TP 14	9,4V
39	TP 15	4,7V
19	TP 16	8,7V
34	TP 18	Left out
25	TP 19	4,7V
24	TP 20	4,7V
12	TP 21	4,7V
20	TP 22	4,7V
21	TP 23	4,7V

**IC7601**

IC 7601 Pin	Can be measure via Test point on component side monoboard	Funtionality
5	TP 69	Headphone Amp L in
4	TP 70	-13,5V
8	TP 71	12V
3	TP 72	Headphone Amp R in

**IC7502**

IC 7503 Pin	Can be measure via Test point on component side monoboard	Funtionality
5	TP 73	Right in
4	TP 74	-12V
8	TP 75	11V
3	TP 76	Left in

**Tr 7621**

Tr7621	Can be measure via Test point on component side monoboard	Funtionality
B	TP 96	-1,5V
C	TP 97	Ground
E	TP 98	Headphone Amp L out

**IC7642**

IC 7642 Pin	Can be measure via Test point on component side monoboard	Funtionality
16	TP 24	not used
17	TP 25	Dpl Center in
18	TP 26	not used
8	TP 27	not used
9	TP 28	Subwoofer in
10	TP 29	not used
3	TP 30	4,7V
2	TP 31	4,7V
4	TP 32	4,7V
26	TP 33	4,7V
27	TP 34	4,7V
33	TP 35	Subwoofer L out
36/43	TP 36	Ground
40/41/42	TP 37	9,4V
39	TP 38	4,7V
19	TP 39	8,7V
34	TP 40	Center out
25	TP 41	4,7V
24	TP 42	4,7V
12	TP 43	4,7V
20	TP 44	4,7V
21	TP 45	4,7V

**Tr 7622**

Tr7622	Can be measure via Test point on component side monoboard	Funtionality
B	TP 99	-0,5V
C	TP 100	Ground
E	TP 101	Headphone Amp R out

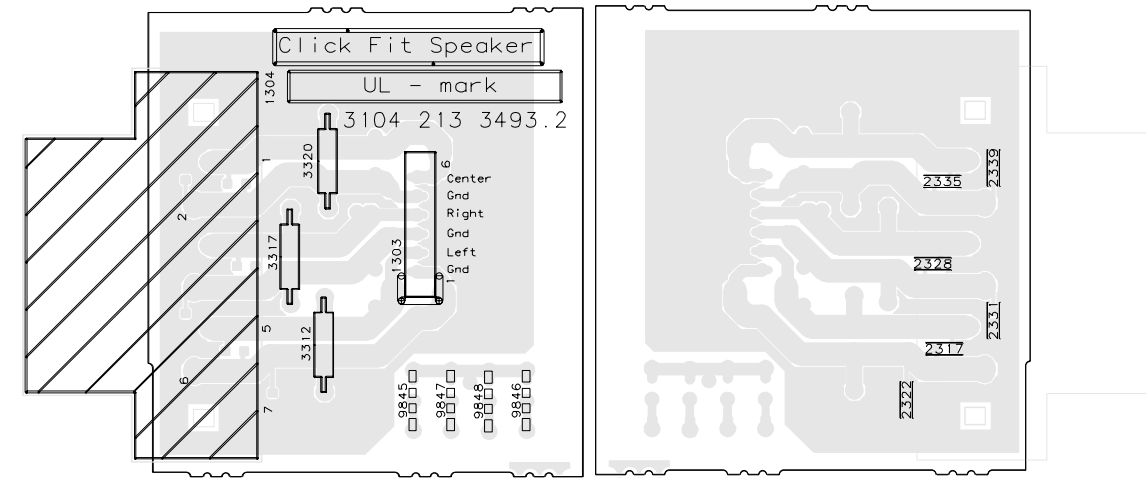
**Tr 7653**

Tr7653	Can be measure via Test point on component side monoboard	Funtionality
B	TP 86	-1,8V
E	TP 88	0V

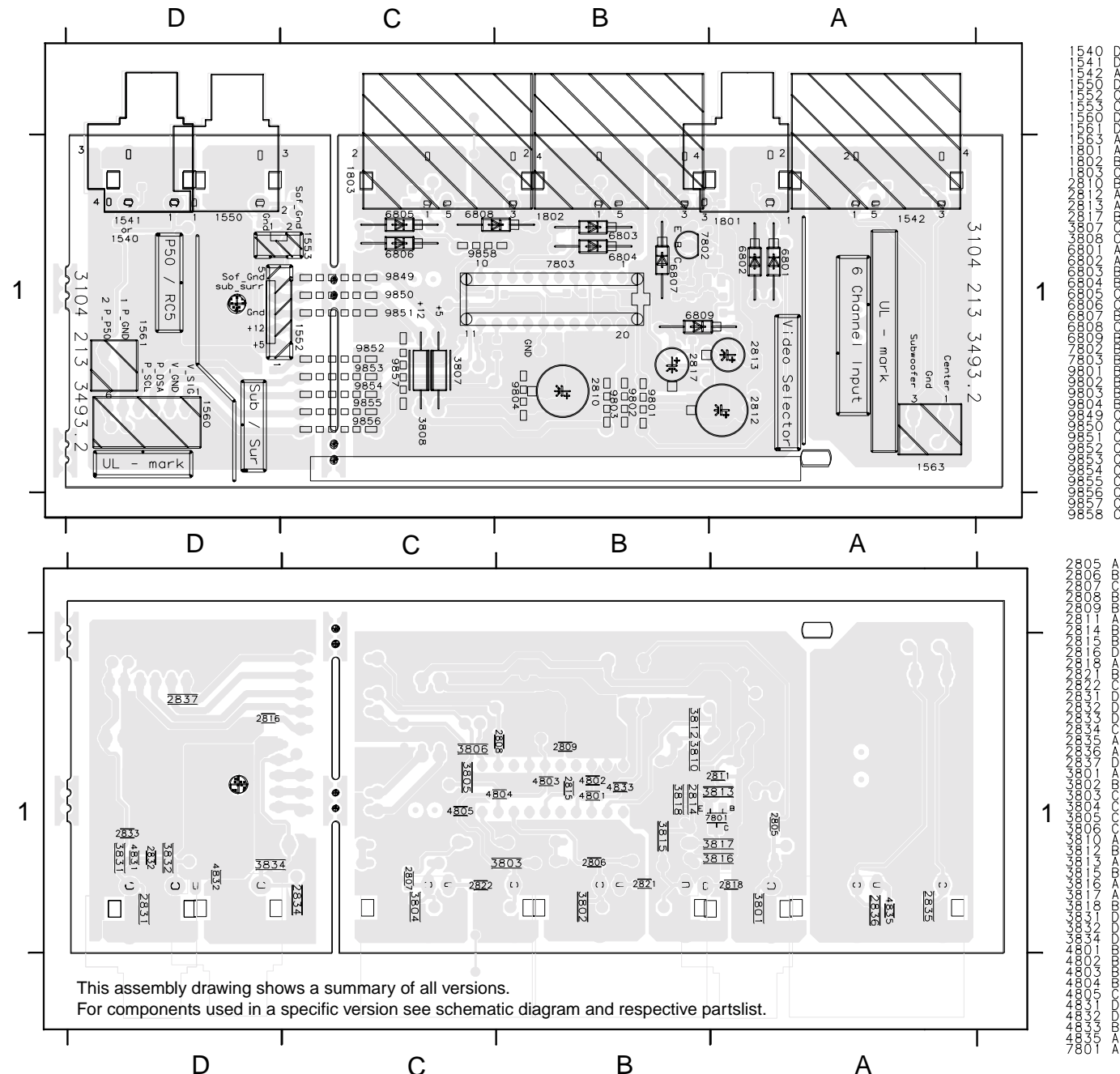
**Tr 7658**

Tr7658	Can be measure via Test point on component side monoboard	Funtionality
B	TP 83	5V
C	TP 84	-13V
E	TP 85	5V

**CLICK FIT SPEAKER BOARD - COMPONENT VIEW & COPPER SIDE VIEW (for SR3000)**

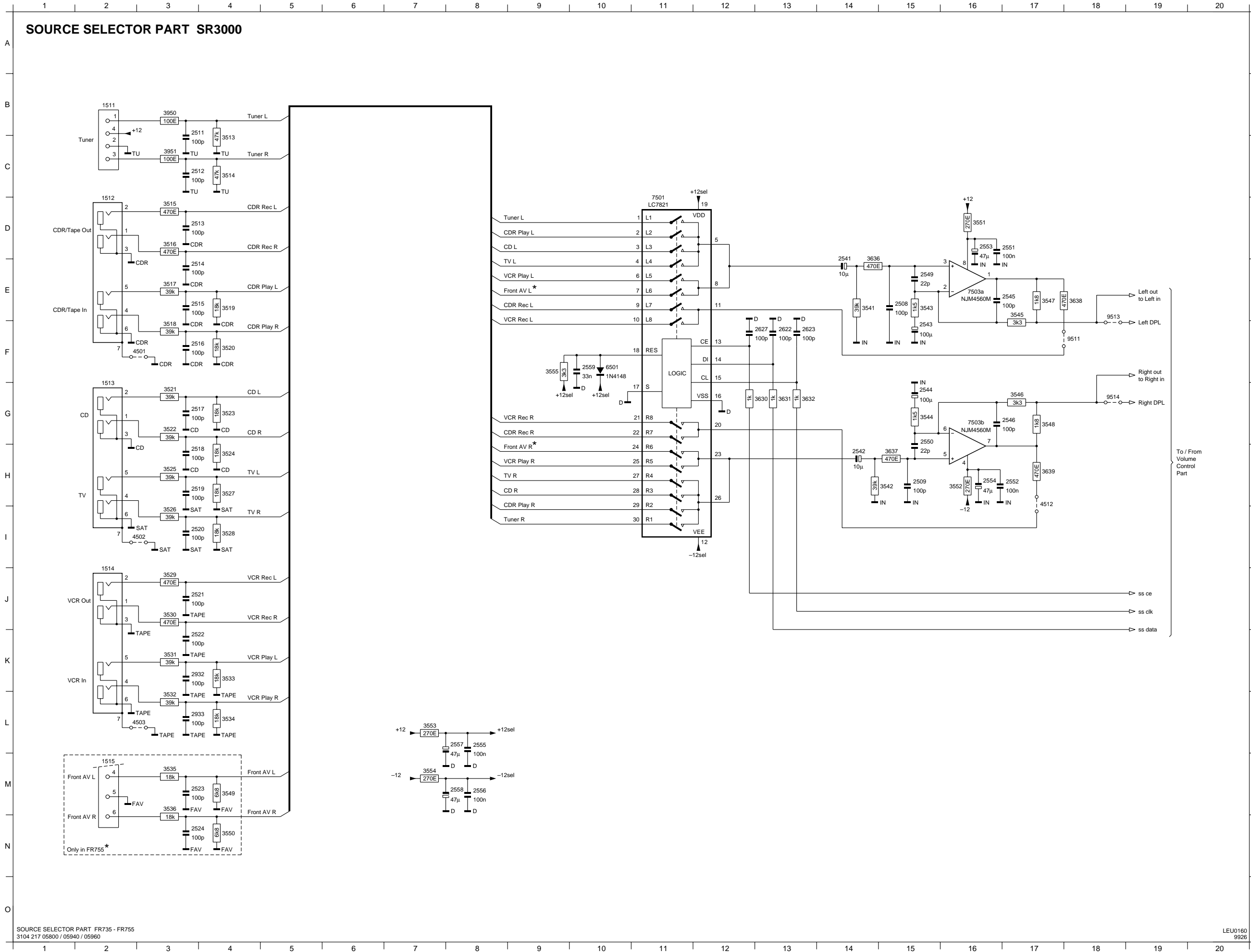


**P50/RC5 BOARD - COMPONENT VIEW & COPPER SIDE VIEW**



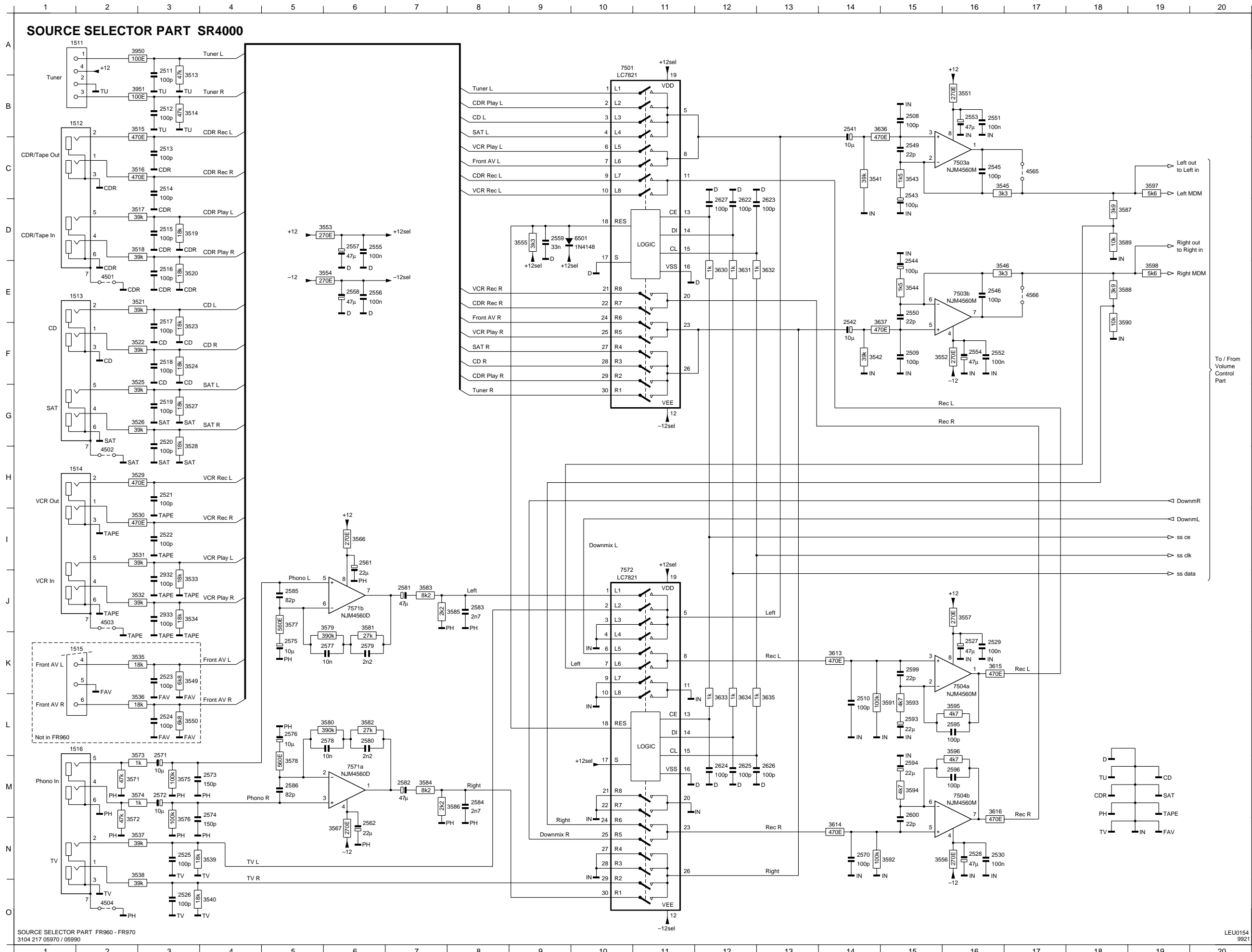
This assembly drawing shows a summary of all versions. For components used in a specific version see schematic diagram and respective partslist.

SOURCE SELECTOR PART SR3000



- 1511 B2
- 1512 D2
- 1513 G2
- 1514 J2
- 1515 M2
- 2508 E15
- 2509 H15
- 2511 B3
- 2512 C3
- 2513 D3
- 2514 E3
- 2515 E3
- 2516 F3
- 2517 G3
- 2518 H3
- 2519 H3
- 2520 I3
- 2521 J3
- 2522 K3
- 2523 M3
- 2524 N3
- 2541 E14
- 2542 H14
- 2543 F15
- 2544 G15
- 2545 E17
- 2546 G17
- 2549 B3
- 2550 G15
- 2551 D17
- 2552 H17
- 2553 D16
- 2554 H16
- 2555 L8
- 2556 M8
- 2557 L8
- 2558 M8
- 2559 F10
- 2622 F13
- 2623 F13
- 2627 F13
- 2932 K3
- 2933 L3
- 3513 C4
- 3514 C4
- 3515 D3
- 3516 D3
- 3517 E3
- 3518 F3
- 3519 E4
- 3520 F4
- 3521 G3
- 3522 G3
- 3523 G4
- 3524 H4
- 3525 H3
- 3526 I3
- 3527 H4
- 3528 I4
- 3529 J3
- 3530 J3
- 3531 K3
- 3532 L3
- 3533 K4
- 3534 L4
- 3535 M3
- 3536 M3
- 3537 H15
- 3538 E18
- 3539 H17
- 3540 B3
- 3541 E14
- 3542 H15
- 3543 E15
- 3544 G15
- 3545 E17
- 3546 G17
- 3547 E17
- 3548 G17
- 3549 M4
- 3550 N4
- 3551 D16
- 3552 H16
- 3553 L7
- 3554 M7
- 3555 F9
- 3630 G13
- 3631 G13
- 3632 G13
- 3636 E14
- 3637 H15
- 3638 E18
- 3639 H17
- 3950 B3
- 3951 C3
- 4501 F2
- 4502 I2
- 4503 L2
- 4512 H17
- 6501 F10
- 7501 D11
- 7503a E16
- 7503b G16
- 9511 F18
- 9513 E18
- 9514 G18

SOURCE SELECTOR PART SR4000

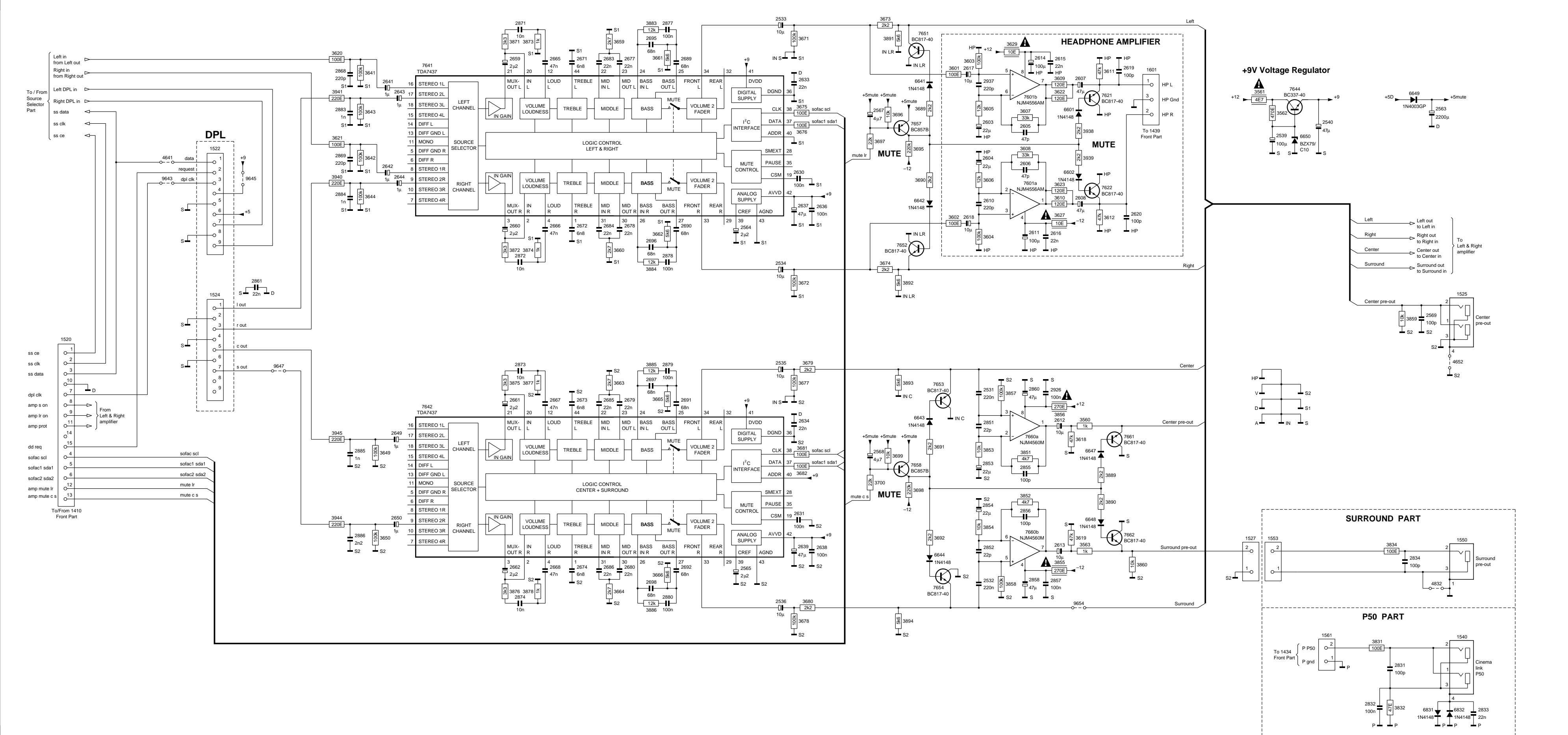


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1512	B1	3566	I6
1513	E1	3567	N6
1514	H1	3571	M2
1515	K1	3572	N2
1516	L1	3573	M2
2508	B15	3574	M2
2509	F15	3575	M3
2510	L14	3576	N3
2511	A3	3577	J5
2512	B3	3578	M5
2513	C3	3579	J5
2514	C3	3580	L5
2515	D3	3581	J6
2516	E3	3582	L6
2517	F3	3583	J7
2518	F3	3584	M7
2519	G3	3585	J8
2520	G3	3586	M8
2521	H3	3587	D18
2522	I3	3588	E18
2523	K3	3589	D18
2524	L3	3590	F18
2525	N3	3591	L15
2526	O3	3592	N15
2527	K16	3593	L15
2528	N16	3594	M15
2529	K16	3595	L16
2530	N16	3596	L16
2541	B14	3597	C19
2542	F14	3598	E19
2543	C15	3613	K14
2544	E15	3614	N14
2545	C16	3615	K16
2546	E16	3616	M16
2549	C15	3630	E12
2550	E15	3631	E12
2551	B16	3632	E13
2552	F16	3633	L12
2553	B16	3634	L12
2554	F16	3635	L13
2555	D6	3636	B14
2556	E6	3637	F14
2557	D6	3950	A2
2558	E6	3951	B2
2559	D9	4501	E2
2561	I6	4502	H2
2562	N6	4503	J2
2570	N14	4504	O2
2571	M3	4565	C17
2572	M3	4566	E17
2573	M4	6501	D10
2574	M4	7501	A10
2575	K5	7503a	C16
2576	L5	7503b	E16
2577	K5	7504a	K16
2578	L5	7504b	M16
2579	K6	7571a	M6
2580	L6	7571b	J6
2581	J7	7572	J10
2583	J8		
2584	M8		
2585	J5		
2586	M5		
2593	L15		
2594	L16		
2595	M16		
2599	K15		
2600	M15		
2622	D12		
2623	D13		
2624	M12		
2625	M12		
2626	M13		
2627	D12		
2932	J3		
2933	J3		
3513	B3		
3514	B3		
3515	B2		
3516	C2		
3517	D2		
3518	D2		
3519	D3		
3520	E3		
3521	E2		
3522	F2		
3523	F3		
3524	F3		
3525	F2		
3526	G2		
3527	G3		
3528	H3		
3529	H2		
3530	I2		
3531	I2		
3532	J2		
3533	J3		
3534	J3		
3535	K2		
3536	L2		
3537	N2		
3538	N2		
3539	N4		
3540	O4		
3541	C14		
3542	F14		
3543	C15		
3544	E15		
3545	C16		
3546	E16		
3549	K3		
3550	L3		
3551	B16		
3552	F15		
3553	D5		
3554	E5		
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SOURCE SELECTOR PART FR960 - FR970  
3104 217 05970 / 05990

LEU0154  
9921

VOLUME CONTROL PART SR3000

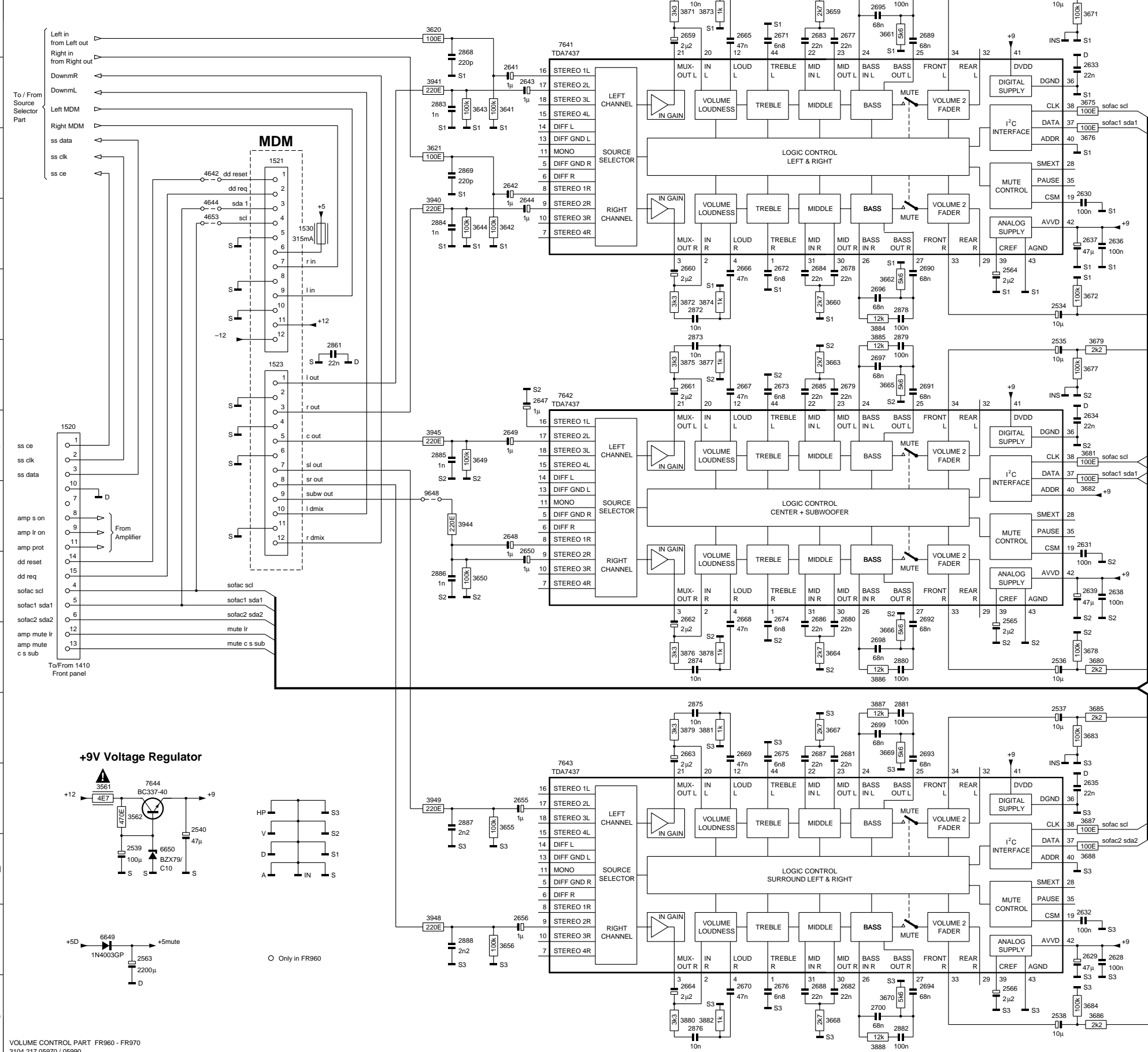


VOLUME CONTROL PART FR735  
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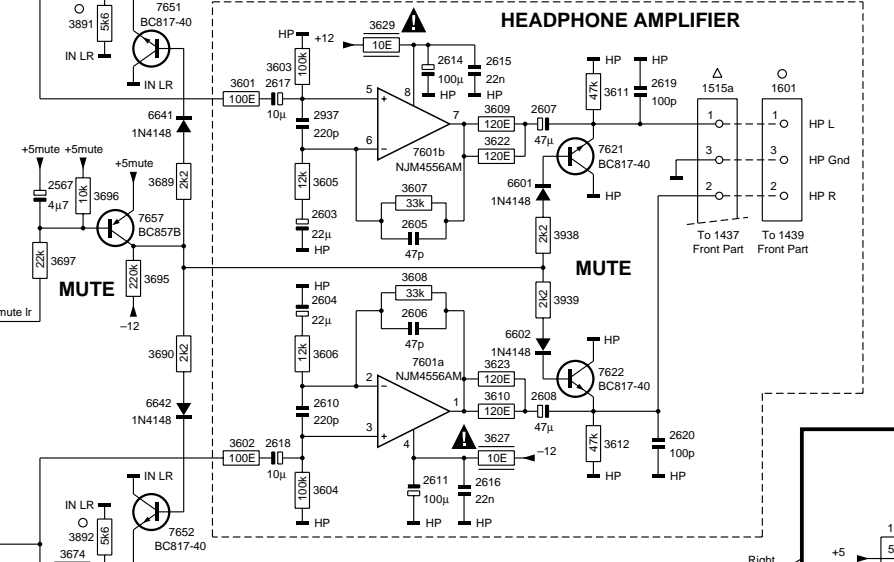
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9926

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1525	G29	3610	E21
1527	K25	3611	B22
1540	M29	3612	E22
1550	K29	3618	I22
1553	K25	3619	K22
1561	M27	3620	B7
1601	B23	3621	D7
2531	H20	3622	C21
2532	L20	3623	D21
2533	A16	3627	E21
2534	F16	3629	B20
2535	H16	3641	B8
2536	M16	3642	D8
2539	C26	3643	C8
2540	C27	3644	E8
2563	C29	3649	J8
2564	E15	3650	K8
2565	L15	3659	B13
2567	C18	3660	F13
2568	J18	3661	E13
2569	G29	3662	E13
2603	C20	3663	H13
2604	D20	3664	L13
2605	C21	3665	I13
2606	D21	3666	L13
2607	B22	3671	B16
2608	E22	3672	F16
2610	E20	3673	A18
2611	E21	3674	F18
2612	I21	3675	C16
2613	L21	3676	C16
2614	B21	3677	H16
2615	B21	3678	M16
2616	E21	3679	H16
2617	B20	3680	M16
2618	E20	3681	J16
2619	B23	3682	J16
2620	E23	3689	C19
2630	D16	3690	D19
2631	K16	3691	J19
2633	B16	3692	K19
2634	H16	3695	D19
2636	E17	3696	C18
2637	E16	3697	D18
2638	L17	3698	J19
2639	L16	3699	J18
2641	B8	3700	J18
2642	D8	3831	M28
2643	C8	3832	O28
2644	D8	3834	L28
2649	I8	3851	J21
2650	K8	3852	K21
2659	B11	3853	J20
2660	E11	3854	K20
2661	I11	3855	L21
2662	L11	3856	I21
2665	B11	3857	I20
2666	E11	3858	L20
2667	I11	3859	G28
2668	L11	3860	L23
2671	B12	3871	B11
2672	E12	3872	F11
2673	I12	3873	B11
2674	L12	3874	F11
2677	B13	3875	H11
2678	E13	3876	L11
2679	I13	3877	H11
2680	L13	3878	L11
2683	B12	3883	A13
2684	E12	3884	F13
2685	I12	3885	H13
2686	L12	3886	M13
2689	B14	3889	J22
2690	E14	3890	K22
2691	I14	3891	B18
2692	L14	3892	F18
2695	B13	3893	H18
2696	F13	3894	M18
2697	H13	3938	C22
2698	L13	3939	D22
2831	N28	3940	D7
2832	O27	3941	C7
2833	O30	3944	K7
2834	L28	3945	I7
2851	I20	4641	D4
2852	L20	4652	H29
2853	J20	4832	L29
2854	K20	6601	C22
2855	J21	6602	D22
2856	K21	6641	B19
2857	L21	6642	E19
2858	L21	6643	I19
2860	H21	6644	L19
2861	F5	6647	J22
2868	B7	6648	K22
2869	D7	6649	C28
2871	A11	6650	C26
2872	F11	6831	O29
2873	H11	6832	O29
2874	M11	7601a	D21
2877	A14	7601b	C21
2878	F14	7621	C22
2879	H14	7622	E22
2880	M14	7641	B9
2883	C7	7642	I9
2884	E7	7644	C26
2885	J8	7651	A19
2886	K8	7652	F18
2926	H21	7653	H19
2937	B20	7654	L19
3560	I22	7657	C18
3561	C25	7658	J18
3562	C26	7660a	I21
3563	L22	7660b	K21
3601	B19	7661	I23
3602	E19	7662	K23
3603	B20	9643	D4
3604	E20	9645	D5
3605	C20	9647	H6
3606	D20	9654	M22

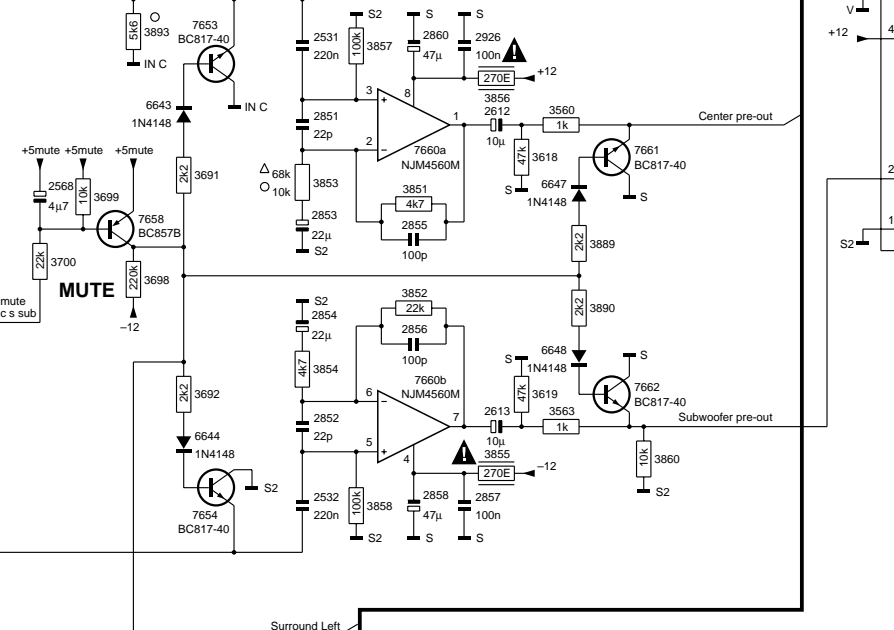
VOLUME CONTROL PART SR4000



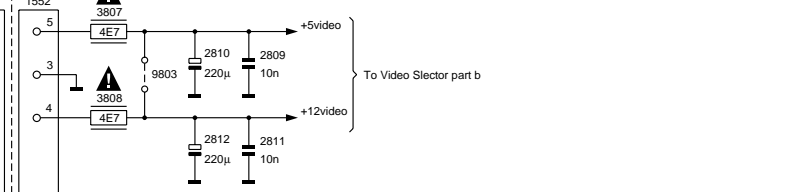
HEADPHONE AMPLIFIER



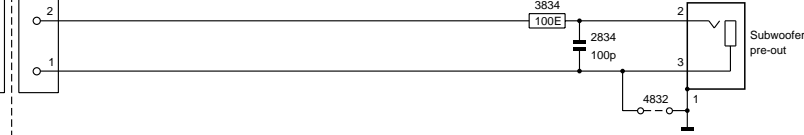
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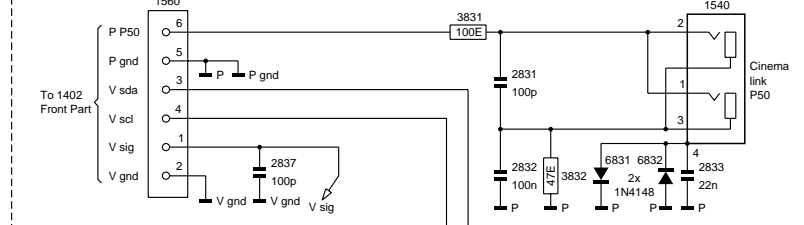
VIDEO SELECTOR PART a



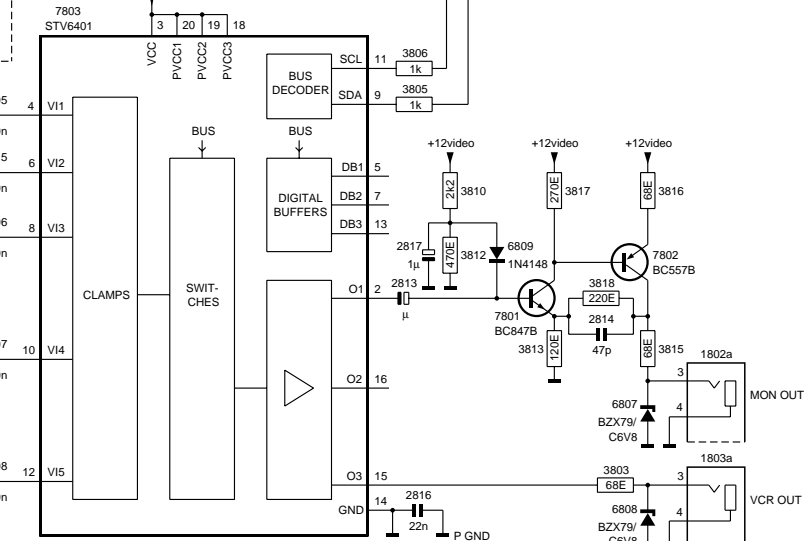
SUBWOOFER PART



P50 PART



VIDEO SELECTOR PART b

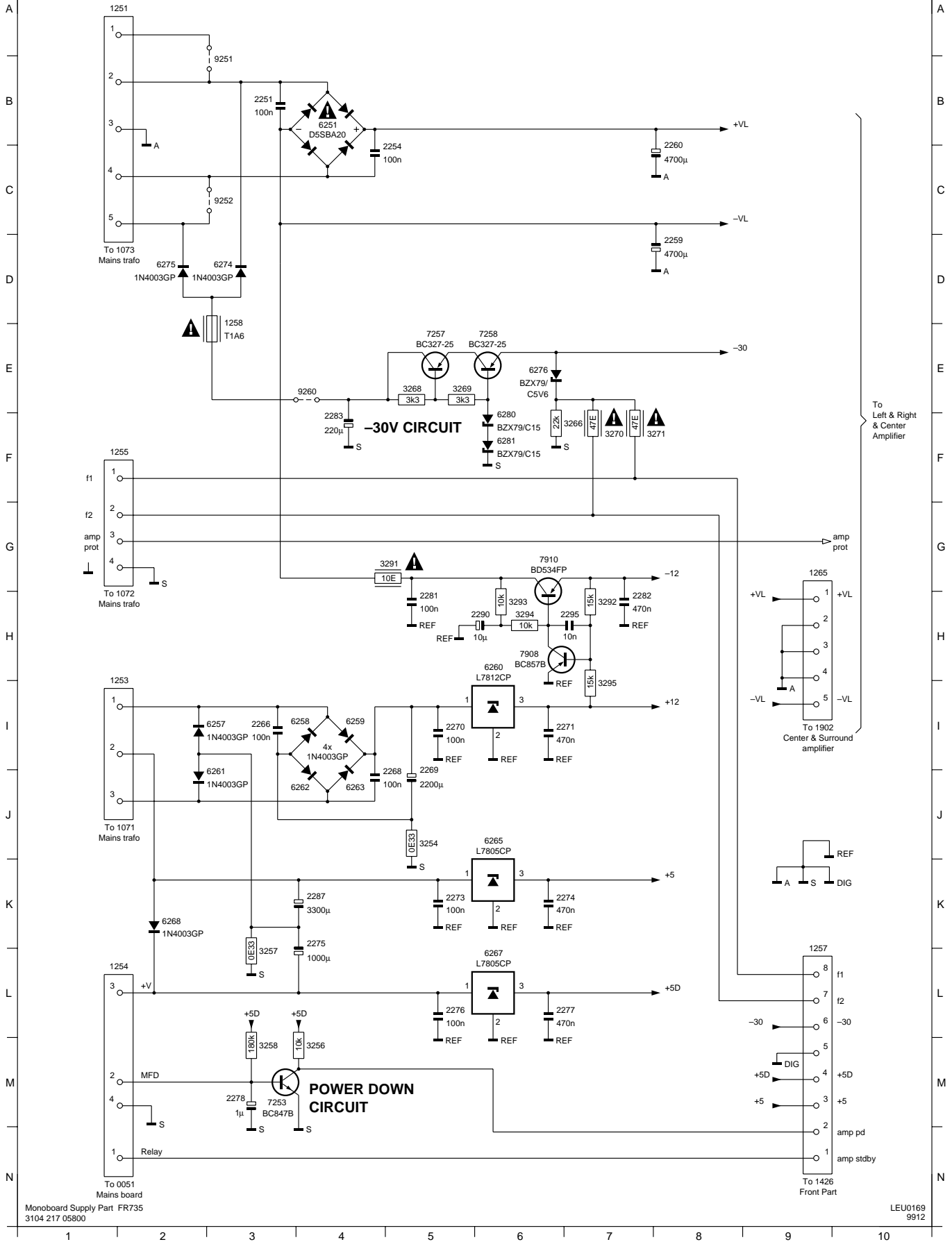


VIDEO SELECTOR PART

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1521	C4	2815	L24	3807	E25
1522	F4	2816	O28	3808	F25
1523	F4	2816	L24	3807	E25
1524	C30	2817	M28	3810	L28
1525	E24	2818	L23	3812	M28
1530	D5	2821	M23	3813	N29
1540	H30	2822	N23	3815	N30
1550	G30	2831	I29	3816	L30
1552	E25	2832	J29	3817	L29
1560	H26	2833	J30	3818	M29
1601	A23	2834	G29	3818	I29
1801	K22	2837	J27	3832	G29
1802a	N30	2851	G19	3834	G29
1802b	L22	2852	I19	3851	G29
1803a	N30	2853	G19	3852	H20
1803b	M22	2854	H19	3853	G19
2531	F19	2855	H20	3854	I19
2532	J19	2856	H20	3855	I21
2533	A15	2857	J21	3856	F21
2534	E15	2858	J20	3857	F20
2535	F15	2860	F20	3858	J20
2536	J15	2861	F5	3859	C29
2537	K16	2868	A7	3860	I22
2538	O15	2869	C7	3871	A10
2539	M2	2871	A10	3872	E10
2540	L3	2872	E10	3873	A10
2563	N2	2873	E10	3874	E10
2564	E15	2874	J10	3875	F10
2565	J15	2875	K10	3876	J10
2566	O15	2876	O10	3877	F10
2567	B17	2877	A13	3878	J10
2568	G17	2878	E13	3879	B10
2569	C30	2879	E13	3880	O10
2603	B19	2880	J13	3881	K10
2604	C19	2881	K13	3882	O10
2605	C20	2882	O13	3883	A13
2606	C20	2883	B7	3884	E13
2607	B21	2884	D7	3885	E13
2608	D21	2885	G7	3886	J13
2610	D10	2886	I7	3887	K13
2611	E20	2887	L7	3888	O13
2612	G21	2888	N7	3889	H22
2613	I21	2926	F21	3890	H22
2614	A20	2937	B19	3891	A17
2615	A21	3560	G21	3892	E17
2616	E21	3561	L2	3893	F18
2617	A19	3562	L2	3895	K18
2618	D19	3563	I21	3896	O18
2619	A22	3601	A19	3938	C21
2620	D22	3602	D19	3939	C21
2621	N18	3603	N18	3940	D6
2622	N16	3604	B19	3941	B6
2630	C16	3605	B19	3944	H7
2631	H16	3606	D19	3945	G6
2632	H16	3607	S20	3946	H6
2633	B16	3608	C20	3949	L6
2634	G16	3609	B21	4642	C3
2635	L16	3610	D21	4644	D3
2636	D16	3611	A22	4652	D30
2637	D16	3612	D22	4653	D3
2638	H6	3618	G21	4832	H30
2639	H6	3619	I21	6601	B21
2641	B6	3620	A5	6602	C21
2642	C8	3621	C6	6641	B18
2643	B8	3622	B21	6642	D18
2644	D8	3623	D21	6643	G18
2647	F8	3627	D21	6644	B18
2648	H8	3629	A20	6645	L18
2649	H8	3641	B8	6646	N18
2650	A10	3649	G7	6650	M3
2660	E10	3650	E10	6651	L23
2661	F10	3655	L8	6902	L23
2662	H0	3656	N8	6903	M23
2663	K10	3659	A12	6904	M23
2664	C10	3660	E12	6905	N23
2665	A11	3661	A13	6906	N23
2666	E11	3662	E13	6907	N29
2667	F11	3663	F12	6908	O29
2668	H11	3664	J12	6909	M29
2669	K11	3665	F13	6931	J29
2670	O11	3666	J13	6932	J30
2671	A11	3667	K12	7010	D20
2672	E11	3668	O12	7010b	B20
2673	F11	3669	K13	7621	B22
2674	H11	3670	O13	7622	D22
2675	K11	3671	A16	7641	A8
2676	O11	3672	E16	7642	F8
2677	A12	3673	A17	7643	L8
2678	E12	3674	E17	7644	L3
2679	F12	3675	B16	7651	A18
2680	H12	3676	C16	7652	E18
2681	K12	3677	F16	7653	F18
2682	O12	3678	J16	7654	J18
2683	A12	3679	F16	7655	K18
2684	E12	3680	J16	7656	O18
2685	F12	3681	G16	7657	O18
2686	H12	3682	H16	7658	G18
2687	K12	3683	K16	7659	G20
2688	O12	3684	O16	7660b	I20
2689	A13	3685	K16	7661	G22
2690	E13	3686	O16	7662	I22
2691	F13	3687	L16	7601	M28
2692	H13	3688	M16	7802	M30
2693	K13	3689	B18	7803	K25
2694	O13	3690	D18	9648	H6
2695	A13	3691	G18	9803	F26
2696	E13	3692	I18		
2697	F13	3693	M18		
2698	H13	3694	M18		
2699	K13	3695	C18		
2700	O13	3696	B18		
2805	K24	3697	C17		
2806	L24	3698	H18		
2807	M24	3699	G18		
2808	N24	3700	H17		
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2810	E28	3802	M24		
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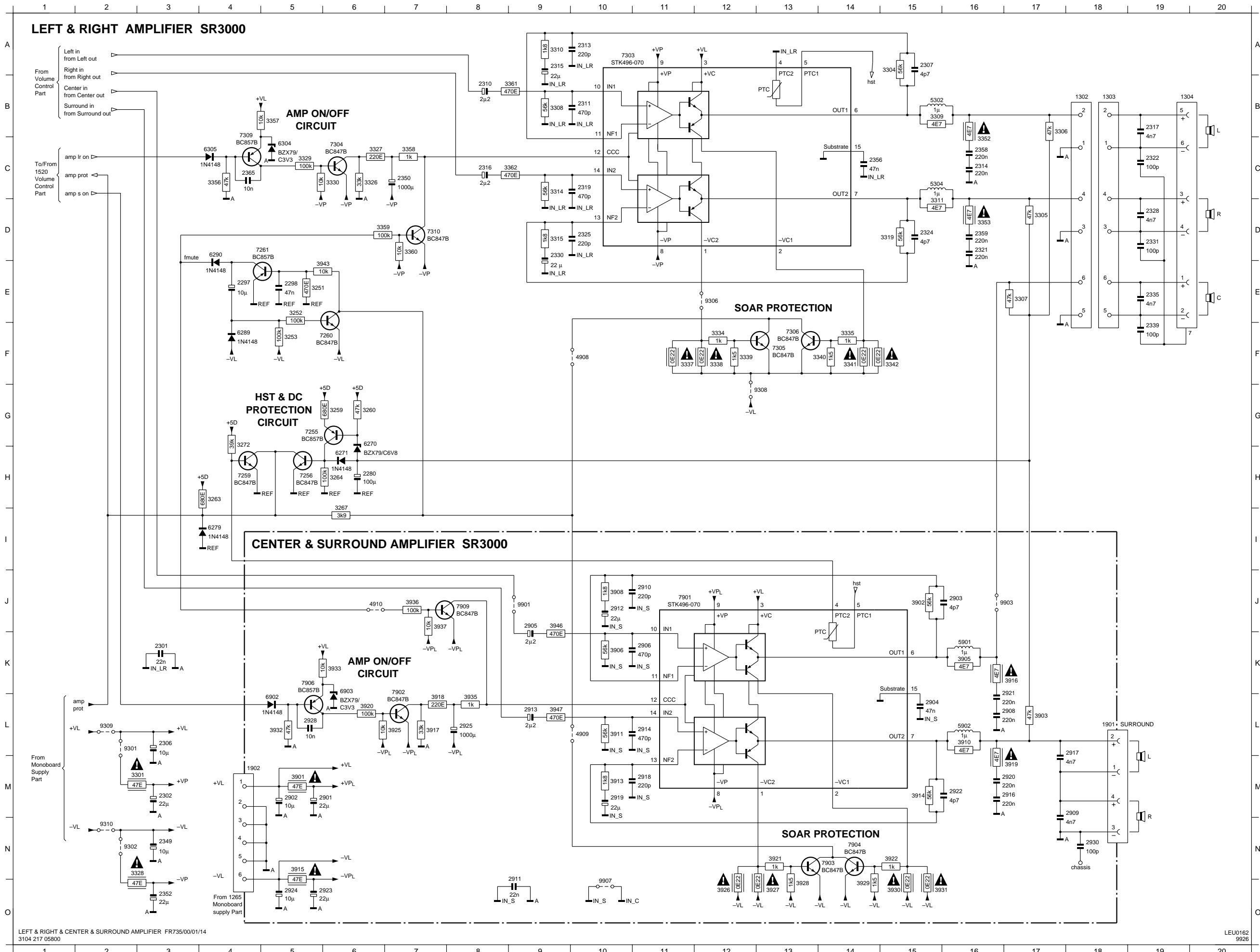
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1253	I1	1265	G9	2266	I3	2273	K5	2278	M3	2290	H5	3258	M3	3271	F7	3295	I7	6260	H6	6267	L6	6280	F6	7908	H6		
1254	L1	2251	B3	2268	J4	2274	K6	2281	H5	2295	H6	3266	F7	3291	G4	6251	B4	6261	J3	6268	K2	6281	F6	7910	G6		
1255	F1	2254	C4	2269	J5	2275	K4	2282	H7	3254	J5	3268	E5	3292	H7	6257	I3	6262	J3	6274	D3	7253	M3	9251	B3		
1257	L9	2259	D8	2270	I5	2276	L5	2283	F4	3256	M4	3269	E5	3293	H6	6258	I3	6263	J4	6275	D2	7257	E5	9252	C3		

**MONOBOARD SUPPLY PART SR3000**



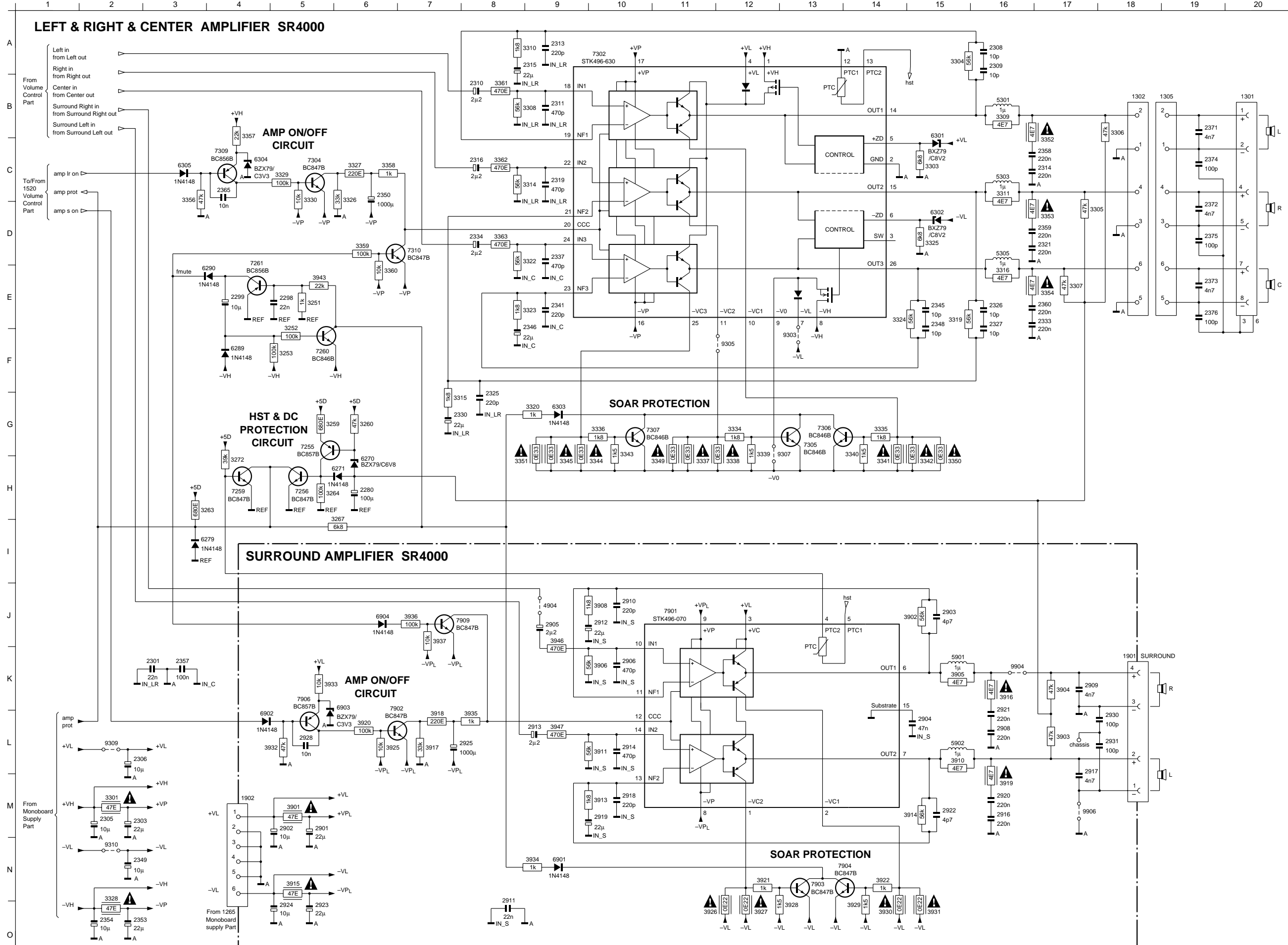






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1303	B18	3925	L7
1304	B19	3926	O12
1901	L18	3927	O13
1902	M4	3928	O13
2280	H6	3929	O14
2297	E4	3930	O15
2298	E5	3931	O15
2301	K3	3932	L5
2302	M3	3933	K6
2306	L3	3935	J8
2307	A15	3936	J7
2310	B8	3937	J7
2311	B10	3943	E5
2313	A10	3946	J9
2314	C16	3947	L9
2315	A9	4908	F10
2316	C8	4909	L10
2317	B19	4910	J6
2319	C10	5302	B15
2321	D16	5304	C15
2322	C19	5901	K16
2324	D15	5902	L16
2325	D10	6270	G6
2328	D19	6271	H6
2330	D9	6279	I4
2331	D19	6289	F4
2335	E19	6290	D4
2339	F19	6304	C5
2349	N3	6305	C4
2350	C7	6902	L5
2352	O3	6903	K6
2356	C14	7255	G5
2358	C16	7256	H5
2359	D16	7259	H4
2365	C4	7260	F5
2901	M5	7261	D4
2902	M5	7303	A10
2903	J16	7304	C6
2904	L15	7305	F13
2905	J9	7306	F13
2906	K11	7309	C4
2908	L16	7310	D7
2909	M18	7901	J11
2910	J11	7902	L7
2911	O8	7903	N14
2912	J10	7904	N14
2913	L9	7906	K5
2914	L11	7909	J8
2916	M16	9301	L2
2917	L18	9302	N2
2918	M11	9306	E12
2919	M10	9308	G12
2920	M16	9309	L2
2921	L16	9310	N2
2922	M16	9901	J9
2923	O5	9903	J16
2924	O5	9907	O10
2925	L8		
2928	L5		
2930	N18		
3251	E5		
3252	E5		
3253	F5		
3259	G6		
3260	G6		
3263	H4		
3264	H6		
3267	I6		
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3305	D17		
3306	B17		
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3311	D15		
3314	C9		
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3358	C7		
3359	D6		
3360	D7		
3361	B8		
3362	C8		
3361	M5		
3802	J15		
3803	L17		
3905	K16		
3906	K10		
3908	J10		
3910	L16		
3911	L10		
3913	M10		
3914	M15		
3915	N5		
3916	K17		
3917	L7		
3918	L7		
3919	M17		
3920	L6		
3921	N13		

LEFT & RIGHT & CENTER AMPLIFIER SR4000



1301	B20	3351	H8
1302	B18	3352	C17
1305	B18	3353	D17
1301	K18	3354	E17
1302	M4	3356	D3
2280	H6	3357	C4
2298	E5	3358	C6
2299	E4	3359	D6
2301	K3	3360	E6
2303	M2	3361	B8
2305	M2	3362	C8
2306	L2	3363	D8
2308	A16	3364	M5
2309	A16	3365	J4
2310	B8	3366	L17
2311	B9	3367	K17
2313	A9	3368	K15
2314	C17	3369	K10
2315	A8	3370	J10
2316	C8	3371	L15
2319	C9	3372	L10
2321	D17	3373	M10
2325	G8	3374	M14
2326	E16	3375	N5
2327	E16	3376	K16
2330	G7	3377	L7
2333	E17	3378	L7
2334	D8	3379	M16
2337	D9	3380	L6
2341	E9	3381	N12
2345	E15	3382	N14
2346	F8	3383	L6
2348	E15	3384	O11
2349	N2	3385	O12
2350	C6	3386	O13
2353	O2	3387	O14
2354	O2	3388	O14
2357	K3	3389	O15
2358	C17	3390	L4
2359	D17	3391	K5
2360	E17	3392	N9
2365	C4	3393	L8
2371	B19	3394	J7
2372	D19	3395	J7
2373	E19	3396	E5
2374	C19	3397	J9
2375	D19	3398	L9
2376	E19	3399	J9
2901	M5	5301	B16
2902	M5	5303	C16
2903	J15	5305	D16
2904	L15	5901	K15
2905	J9	5902	L15
2906	K10	6270	H6
2908	L16	6271	H5
2909	K17	6279	I3
2910	J10	6289	F4
2911	O8	6290	E3
2912	J10	6301	B15
2913	L10	6302	D15
2914	L10	6303	G9
2916	M16	6304	C4
2917	L17	6305	C3
2918	M10	6901	N9
2919	M10	6902	L4
2920	M16	6903	K6
2921	L16	6904	J6
2922	M15	7255	G5
2923	O5	7256	H5
2924	O5	7259	H4
2925	L7	7260	F5
2928	L5	7261	E4
2930	L18	7302	A10
2931	L18	7304	C5
3251	E5	7305	G13
3253	F5	7306	G13
3259	G5	7309	C4
3260	G6	7310	D7
3263	H3	7901	J11
3264	H8	7902	L5
3267	I5	7903	N13
3272	H4	7904	N13
3301	M2	7906	K5
3303	C15	7909	J7
3304	A15	9303	F13
3305	D17	9305	F12
3306	B18	9307	H12
3307	E17	9309	L2
3308	B8	9310	N2
3309	B16	9904	K16
3310	A8	9906	M17
3311	C16		
3314	C8		
3315	G7		
3316	E16		
3319	E15		
3320	G9		
3322	D8		
3323	E8		
3324	E14		
3325	D15		
3326	D6		
3327	C6		
3328	N2		
3329	C5		
3330	D5		
3334	G12		
3335	G14		
3336	G10		
3337	H11		
3338	H12		
3339	H12		
3340	H14		
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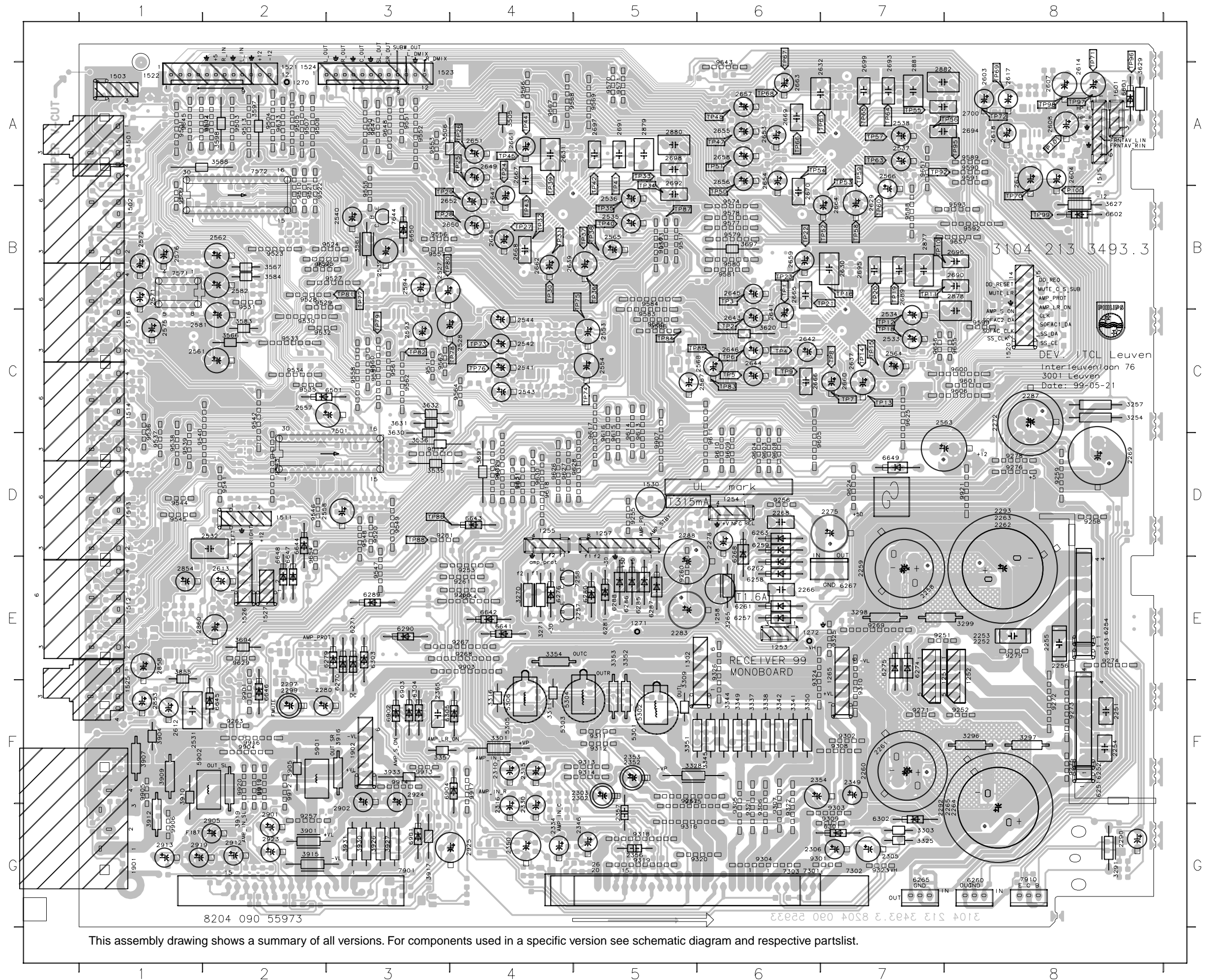
**MONO BOARD - MAPPING COMPONENT SIDE VIEW**

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1253 E6	2346 G5	2649 A4	3328 F5	6262 E6	9271 F7	9540 D1	9627 D4
1254 D6	2349 F7	2650 B4	3337 F6	6263 D6	9272 F8	9541 D2	9628 D5
1255 D4	2350 G4	2651 A4	3338 F6	6265 G7	9273 F8	9542 C2	9629 E2
1257 D5	2352 F5	2652 B3	3341 F6	6267 E7	9274 E8	9543 D2	9630 D4
1258 E6	2353 F5	2653 A6	3342 F6	6268 D6	9275 F8	9544 D1	9631 D4
1265 E7	2354 F6	2654 A6	3344 F6	6270 F3	9276 D8	9545 D1	9632 D4
1270 A2	2356 G5	2655 A6	3345 F6	6271 E3	9278 D8	9546 D2	9633 A2
1271 E5	2357 G5	2656 A6	3349 F6	6274 E7	9279 E8	9547 E3	9643 A6
1272 E6	2365 F3	2657 A6	3350 F6	6275 E7	9281 D3	9548 D3	9645 A1
1302 E5	2527 B3	2658 A6	3351 F5	6276 E4	9301 G6	9549 D3	9647 A3
1501 A1	2528 C4	2659 B6	3352 E5	6279 E2	9302 F7	9550 A3	9648 A3
1502 B1	2531 F1	2660 C7	3353 E5	6280 E5	9303 G7	9551 A3	9651 A7
1503 A1	2532 D2	2661 A4	3354 E4	6281 E5	9304 G6	9552 A3	9654 D2
1511 D2	2533 C7	2662 B4	3357 F3	6285 E5	9305 G6	9553 A3	9655 C8
1512 E1	2534 C7	2663 A6	3505 A4	6286 E5	9306 G6	9555 B3	9656 C7
1513 D1	2535 B5	2664 B7	3506 A3	6287 E5	9307 G6	9556 B3	9657 B8
1514 C1	2536 B5	2665 B6	3535 D3	6288 E5	9308 F7	9557 B3	9901 F2
1515 A8	2537 A7	2666 C6	3536 D3	6289 E3	9309 G7	9558 C3	9903 E4
1516 C1	2538 A7	2667 A4	3561 B3	6290 E3	9310 F7	9559 C3	9904 F2
1520 C8	2539 B3	2668 B4	3566 C2	6301 G7	9311 F5	9560 C3	9905 F1
1521 A2	2540 B3	2669 A6	3567 B2	6302 G7	9312 F5	9561 C3	9906 G1
1522 A1	2541 C4	2670 B6	3583 C2	6303 E3	9313 F5	9562 C3	9907 D5
1523 A3	2542 C4	2689 B7	3584 B2	6304 F3	9314 F5	9563 C3	9910 F2
1524 A2	2543 C4	2690 B8	3588 A2	6305 F3	9315 F5	9564 C4	9911 F2
1525 F1	2544 C4	2691 A5	3597 A2	6501 C3	9316 G5	9566 A4	9912 F2
1526 E2	2553 C5	2692 A5	3598 A2	6601 A8	9318 G5	9567 A4	9913 F3
1527 E2	2554 C5	2693 A7	3620 C6	6602 B8	9319 G5	9568 A4	9914 F3
1530 D5	2557 C2	2694 A8	3627 B8	6641 E4	9320 G6	9569 A5	9916 F2
1601 A8	2558 D2	2695 B7	3629 A8	6642 E4	9321 G6	9570 A5	9917 F4
1901 G1	2561 C1	2696 B8	3630 C3	6643 D4	9322 G6	9571 A5	9920 F2
1902 F3	2562 B2	2697 A5	3631 C3	6644 D2	9323 G7	9573 B5	9921 D8
2251 F8	2563 C7	2698 A5	3632 C3	6645 F2	9324 E6	9574 B6	
2252 E8	2564 C7	2699 A7	3691 D4	6646 F2	9325 E7	9577 B6	
2253 E8	2565 B5	2700 A8	3694 E2	6647 D2	9326 E6	9578 B6	
2254 F8	2566 A7	2853 F1	3697 B6	6648 D2	9501 A1	9579 B6	
2255 E8	2567 C6	2854 E1	3855 E1	6649 D7	9502 A2	9580 B6	
2256 E8	2568 C6	2858 E1	3901 G2	6650 B3	9503 A2	9581 B6	
2258 E7	2571 B1	2860 E1	3904 F1	6901 G3	9504 A2	9583 C5	
2259 E7	2572 B1	2877 B7	3905 F2	6902 F3	9505 A2	9584 B5	
2260 F7	2575 C1	2878 B8	3907 F1	6903 F3	9507 A2	9585 C5	
2261 F7	2576 B1	2879 A5	3909 F1	6904 F3	9508 A2	9586 C5	
2262 D8	2581 C1	2880 A5	3910 F1	7257 E5	9509 B1	9588 B7	
2263 D8	2582 B2	2881 A7	3912 G1	7258 E5	9510 B2	9589 A8	
2264 G8	2593 C3	2882 A7	3915 G2	7301 G6	9511 C3	9590 A8	
2265 G8	2594 B3	2901 G2	3916 F3	7302 G7	9513 A2	9591 A8	
2266 E6	2603 A8	2902 G3	3917 G3	7303 G6	9514 A2	9592 B8	
2268 D6	2604 A8	2905 G2	3919 G2	7501 C3	9515 D3	9593 B8	
2269 D8	2607 A8	2912 G2	3926 G3	7571 B1	9516 B5	9599 C8	
2272 C8	2608 A8	2913 G1	3927 G3	7572 A2	9517 B5	9600 C8	
2275 D7	2611 A8	2919 G1	3930 G3	7644 B3	9520 D3	9601 C8	
2278 D6	2612 F1	2923 G2	3931 G3	7901 G3	9521 B2	9603 D6	
2280 F2	2613 E2	2924 F3	3933 F3	7910 G8	9522 B2	9604 D6	
2283 E5	2614 A8	2925 G4	5301 F5	9251 E7	9523 B2	9605 D6	
2287 C8	2617 A8	3254 C8	5302 F5	9252 F8	9524 B3	9606 C8	
2288 D5	2618 A8	3257 C8	5303 F4	9253 E4	9525 B2	9608 D6	
2290 G8	2629 B7	3265 E6	5304 F4	9254 E4	9526 B2	9609 D6	
2292 G7	2630 B7	3270 E4	5305 F4	9255 D5	9527 B3	9610 D6	
2293 D8	2631 A4	3271 E4	5306 F4	9256 D6	9528 B2	9611 D6	
2297 F2	2632 A6	3291 G8	5901 F2	9257 G2	9529 B2	9613 C5	
2299 F2	2637 C7	3296 F8	5902 F1	9258 D8	9530 C2	9614 C5	
2302 F5	2639 B4	3297 F8	6251 F8	9259 D8	9531 B2	9615 D5	
2303 F5	2641 C6	3298 E7	6252 F8	9260 E5	9532 C2	9616 D5	
2305 G7	2642 C6	3299 E8	6253 E8	9261 E4	9533 C2	9617 C5	
2306 G6	2643 C6	3301 F4	6254 E8	9262 F5	9534 C2	9618 D4	
2310 F4	2644 C6	3303 G7	6257 E6	9263 F2	9535 C2	9619 D4	
2315 F4	2645 B6	3309 E5	6258 E6	9265 E4	9536 C1	9621 D4	
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**MONO BOARD - MAPPING COPPER SIDE VIEW**

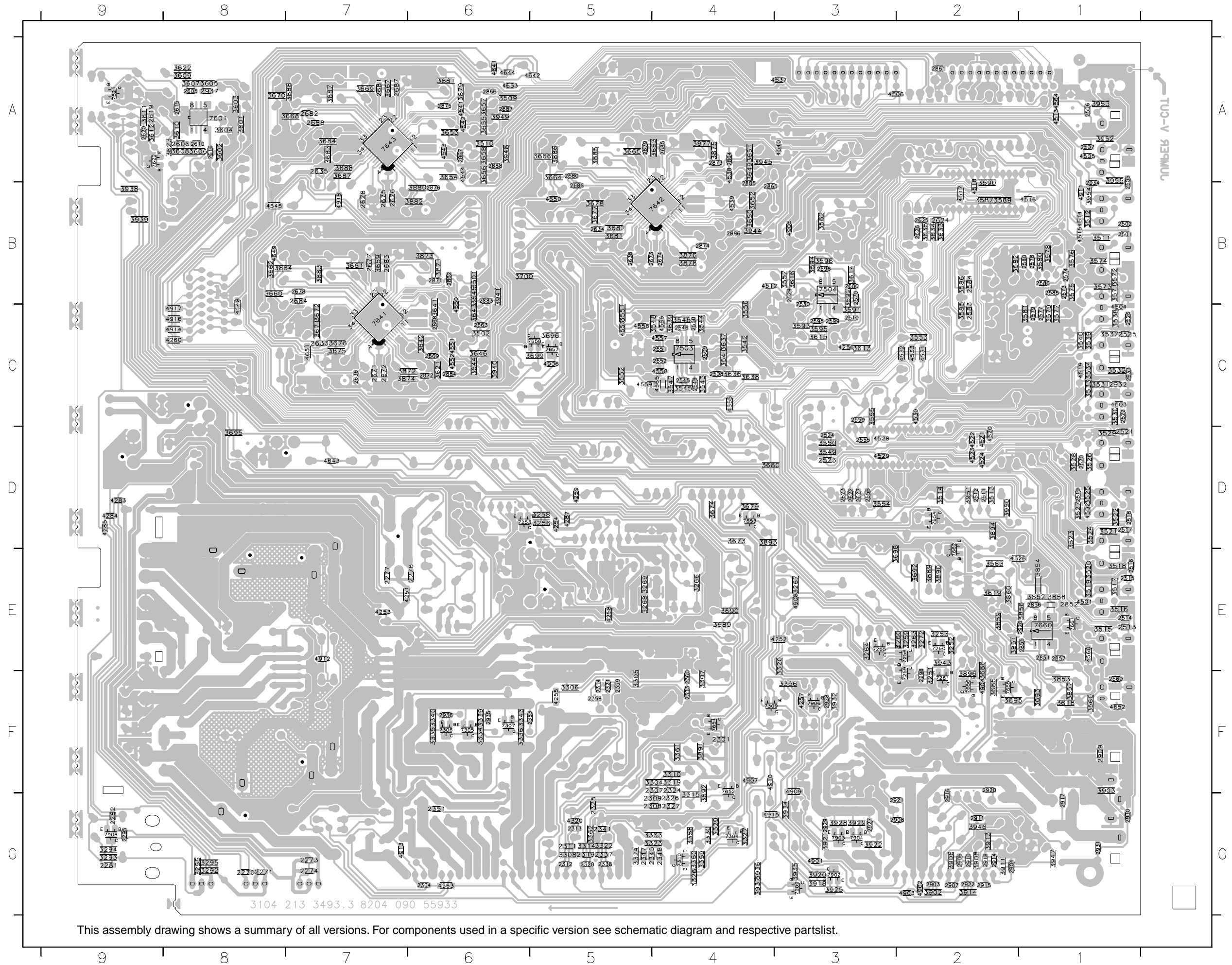
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2271 G8	2555 D3	2869 C6	3320 F3	3557 B3	3657 A6	3890 E2	4517 B2	7259 F2
2273 G7	2556 D3	2871 B6	3322 G5	3560 F1	3658 A6	3891 F4	4518 B2	7260 E2
2274 G7	2559 C3	2872 C6	3323 G4	3562 B3	3659 B7	3892 G4	4519 C1	7261 E2
2276 E6	2569 F1	2873 A4	3324 G5	3563 E2	3660 B8	3893 E4	4520 D2	7304 G4
2277 E7	2570 B3	2874 B4	3326 G4	3571 B1	3661 B7	3894 D2	4521 D2	7305 F6
2281 G9	2573 B1	2875 A6	3327 G4	3572 B1	3662 B8	3895 F2	4522 D2	7306 F6
2282 G9	2574 B1	2876 B6	3329 G4	3573 B1	3663 A4	3896 F2	4523 D2	7307 F6
2295 G9	2577 C1	2883 C6	3330 G4	3574 B1	3664 A5	3902 G2	4524 D2	7309 F4
2298 E2	2578 B1	2884 C6	3334 F6	3575 B1	3665 A5	3903 F1	4526 E2	7310 G4
2301 F4	2579 C1	2885 B4	3335 F6	3576 B1	3666 A6	3906 G2	4528 D3	7503 C4
2304 G6	2580 B1	2886 B4	3336 F6	3577 C1	3667 A7	3908 G2	4529 D3	7504 B3
2307 F5	2583 C2	2887 A6	3339 F6	3578 B1	3668 A8	3911 G2	4530 C2	7601 A8
2308 G5	2584 B2	2888 A6	3340 F6	3579 C1	3669 A7	3913 G2	4531 C2	7621 A9
2309 G5	2585 B1	2903 G2	3343 F6	3580 B1	3670 A8	3914 G2	4532 C3	7622 A9
2311 G5	2586 B1	2904 G2	3356 F3	3581 C1	3671 C7	3918 G3	4533 C2	7641 B7
2312 G5	2595 C3	2906 G2	3358 G4	3582 B2	3672 B7	3920 G3	4537 A3	7642 A5
2313 G5	2596 B3	2907 G2	3359 G4	3585 C2	3673 D4	3921 G3	4538 A4	7643 A7
2314 F5	2599 C3	2908 G2	3360 G4	3586 B2	3674 D4	3922 G3	4539 B4	7651 F4
2319 G5	2600 B3	2909 F1	3361 F4	3587 B2	3675 C7	3925 G3	4540 A3	7652 G4
2320 G5	2605 A8	2910 G2	3362 G5	3589 B2	3676 C7	3928 G3	4541 A6	7653 D4
2321 F5	2606 A8	2911 G2	3363 G4	3590 B2	3677 B5	3929 G3	4542 A6	7654 D2
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2325 F5	2615 A8	2915 G2	3502 C6	3592 B3	3679 D4	3934 G3	4544 A6	7656 F2
2326 G4	2616 A8	2916 F2	3509 A6	3593 C3	3680 D3	3935 G3	4545 B8	7657 C5
2327 G4	2619 A9	2917 G1	3510 A6	3594 B3	3681 B5	3936 G4	4548 C8	7658 C5
2333 F4	2620 A9	2918 G2	3511 B1	3595 C3	3682 B5	3937 G4	4550 C6	7660 E1
2337 G5	2622 D3	2920 G2	3512 B1	3596 B3	3683 A7	3938 B9	4551 C6	7661 E1
2338 G5	2623 D3	2921 F2	3513 D2	3601 A8	3684 A7	3939 B9	4552 C6	7662 E2
2341 G5	2624 B2	2922 G2	3514 D2	3602 A8	3685 F2	3940 C6	4553 C5	7902 G3
2345 G4	2625 B2	2926 E1	3515 E1	3603 A8	3686 E2	3941 B6	4555 C4	7903 G3
2347 G5	2626 B2	2927 G3	3516 E1	3604 A8	3687 A7	3943 E2	4556 C5	7904 G3
2348 G4	2627 D3	2928 F3	3517 E1	3605 A8	3688 A7	3944 B4	4557 C4	7906 F3
2351 G6	2628 B7	2929 G3	3518 E1	3606 A8	3689 E4	3945 A4	4558 C4	7908 G9
2358 F5	2633 C7	2930 G1	3519 E1	3607 A8	3690 E4	3946 G2	4559 C5	7909 G3
2359 F5	2634 B5	2931 G1	3520 E1	3608 A8	3692 E2	3947 G1	4560 E1	
2360 F4	2635 A7	2932 C1	3521 D1	3609 A8	3693 F1	3948 A6	4563 G6	
2363 F5	2636 C7	2933 C1	3522 D1	3610 A8	3695 D8	3949 A6	4564 A1	
2501 B1	2638 B5	2934 A1	3523 D1	3611 A9	3696 C5	3950 D2	4565 C4	
2502 B1	2671 C7	2935 F6	3524 D1	3612 A9	3698 E3	3951 D2	4566 C4	
2505 A1	2672 C7	2936 F6	3525 D1	3613 C3	3699 C6	3952 A1	4641 A6	
2506 A1	2673 B4	2937 A8	3526 D1	3614 B3	3700 B6	3953 A1	4642 A5	
2507 A1	2674 B4	3251 F2	3527 D1	3615 C3	3851 E2	3954 B1	4643 D7	
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2509 C4	2676 B7	3253 E2	3529 D1	3618 F1	3853 F1	4251 E7	4649 B8	
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2511 D2	2678 B7	3256 D5	3531 C1	3621 C6	3856 E2	4253 E7	4651 C7	
2512 D2	2679 A5	3258 D5	3532 C1	3622 A8	3857 F1	4254 D5	4652 F1	
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2518 D1	2685 A4	3267 E3	3540 C1	3637 C4	3873 B6	4260 C8	4905 B3	
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2520 D1	2687 A7	3269 E5	3542 C4	3639 C4	3875 A4	4284 D9	4907 F4	
2521 D1	2688 A7	3272 E2	3543 C4	3641 B6	3876 B4	4285 D9	4908 E3	
2522 C1	2851 E1	3292 G8	3544 C4	3642 C6	3877 A4	4287 D5	4909 F3	
2523 D3	2852 E1	3293 G9	3545 C4	3643 C6	3878 B4	4320 G5	4910 F3	
2524 D3	2855 E2	3294 G9	3546 C4	3644 C6	3879 A6	4501 E1	4911 B1	
2525 C1	2856 E1	3295 G8	3547 C4	3645 B6	3880 A6	4502 D1	4912 E7	
2526 C1	2857 E1	3304 F4	3548 C4	3646 C6	3881 A6	4503 C1	4913 G7	
2529 B3	2861 A2	3305 F5	3549 D3	3649 A4	3882 B6	4504 B1	4914 C8	
2530 C3	2862 B6	3306 F5	3550 D3	3650 B4	3883 B7	4505 A1	4915 G4	
2545 C4	2863 C6	3307 F4	3551 B5	3651 A4	3884 B7	4506 A3	4916 C8	
2546 C4	2864 A4	3308 G5	3552 C5	3652 B4	3885 A5	4512 B4	4917 B8	
2549 C4	2865 B4	3310 F4	3553 C2	3653 A6	3886 A5	4513 A1	4918 B7	
2550 C4	2866 A6	3314 G5	3554 D3	3654 B6	3887 A7	4514 B1	7253 D6	
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# MONO BOARD - COMPONENT SIDE VIEW



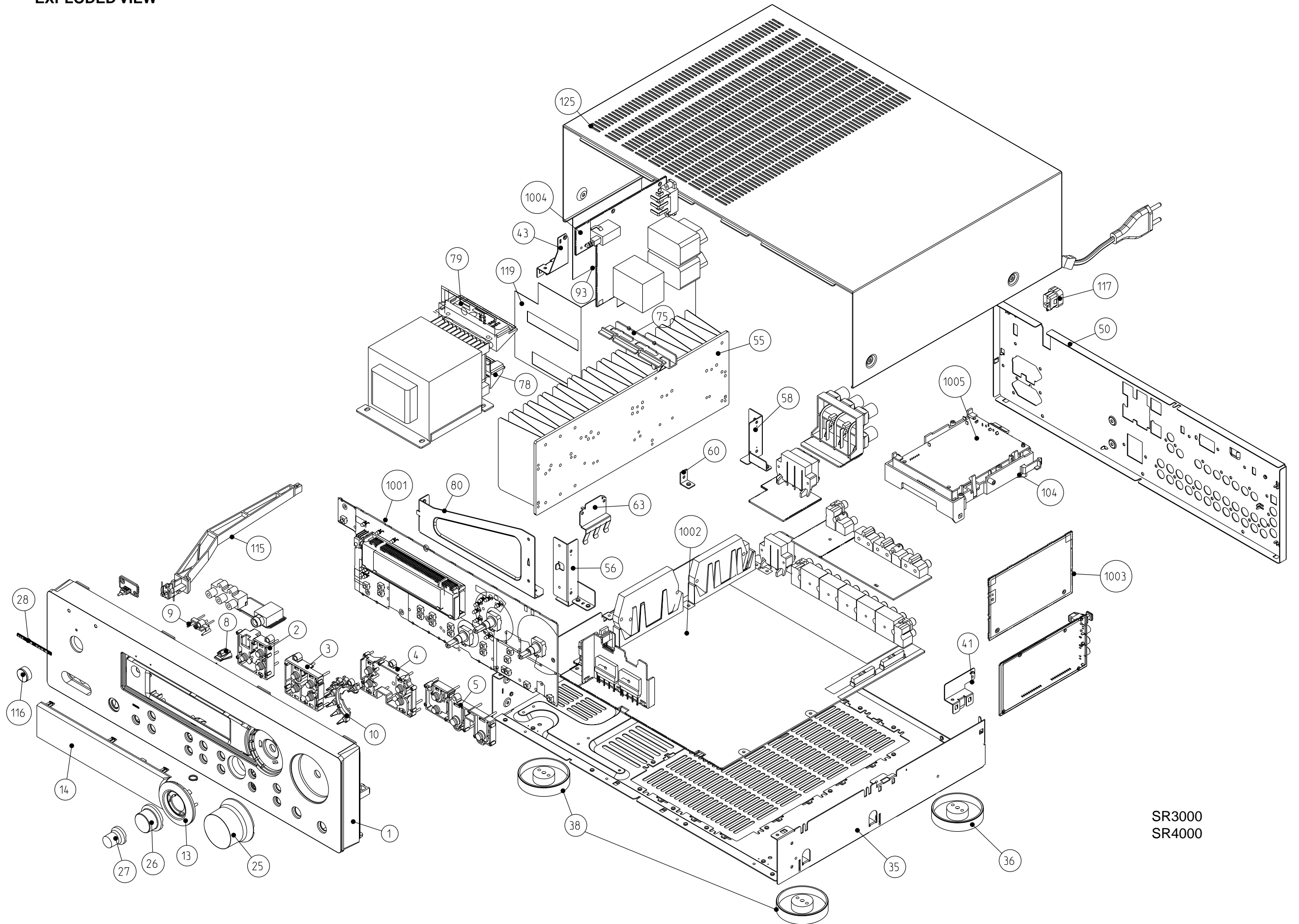
This assembly drawing shows a summary of all versions. For components used in a specific version see schematic diagram and respective partslist.

MONO BOARD - COPPER SIDE VIEW



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

EXPLODED VIEW



SR3000  
SR4000

**MECHANICAL PARTSLIST - EXPLODED VIEW**

**ELECTRICAL PARTSLIST - MONO BOARD**

POS. NO	MODEL	VERS. COLOR	PART NO.	DESCRIPTION
0001	3000	U	3103 307 97730	FRONT CAB ASSY SR3000/U
0001	3000	N	3103 307 97690	FRONT CAB ASSY SR3000/N
0001	4000	U, K (BLACK)	3103 307 97740	FRONT CAB ASSY SR4000 /U, /K BLACK
0001	4000	K (GOLD)	3103 307 98120	FRONT CAB ASSY SR4000 /K GOLD
0001	4000	N	3103 307 97710	FRONT CAB ASSY SR4000/N
0002		BLACK	3103 304 67030	BUTTON-SURROUND
0002		GOLD	3103 307 98100	BUTTON-SURROUND GOLD
0003		BLACK	3103 304 67040	BUTTON-TUNER
0003		GOLD	3103 307 98110	BUTTON-TUNER GOLD
0004		BLACK	3103 304 67020	BUTTON-MENU
0004		GOLD	3103 307 98090	BUTTON-MENU GOLD
0005		BLACK	3103 304 67010	BUTTON-BASS TREBLE
0005		GOLD	3103 307 98080	BUTTON-BASS TREBLE GOLD
0008			3103 304 67070	LIGHT-GUIDE-SURROUND
0009	4000		3103 304 67080	LIGHT-GUIDE-VIRTUAL-HALL
0010	3000		3103 304 67120	LIGHT-GUIDE-SELECTOR-6CH
0010	4000		3103 304 67060	LIGHT-GUIDE-SELECTOR
0013	3000		3103 307 97700	RING-KNOB-SOURCE-SEL-PRI
0013	4000	BLACK	3103 307 97720	RING-KNOB-SOURCE-SEL-PRI
0013	4000	GOLD	3103 307 98160	RING-KNOB-SOURCE-SEL-PRI GOLD
0014			3103 304 67110	WINDOW-DISPLAY
0025		BLACK	3103 304 07010	KNOB-VOLUME
0025		GOLD	3103 307 98150	KNOB-VOLUME GOLD
0026		BLACK	3103 304 07000	KNOB-SOURCE-SEL
0026		GOLD	3103 307 98140	KNOB-SOURCE-SEL GOLD
0027		BLACK	3103 304 06990	KNOB-MENU-NAV
0027		GOLD	3103 307 98130	KNOB-MENU-NAV GOLD
0028			4822 454 11825	BADGE MARANTZ
0029			4822 492 51374	SPRING
0036			4822 462 42129	FOOT GOLD
0038			3103 307 97870	LEG GOLD MARANTZ
0094			4822 466 93148	SPACER STEEL
0115			3103 304 67100	POWER-ROD
0116		BLACK	4822 410 12499	BUTTON POWER
0116		GOLD	3103 307 99120	BUTTON POWER GOLD
0117			4822 532 60948	BUSH PLASTIC
0125		BLACK	nsp	COVERPLATE
0125		GOLD	nsp	COVERPLATE GOLD
0350		U	4822 320 11094	FM AERIAL 300R
0350		N, K	4822 303 50063	FM AERIAL 75R
0352			4822 303 50082	AM FRAME AERIAL
0356	3000		3139 228 84030	IRT ASSY RC2537/02 PACKED
0356	4000		3104 219 03910	IRT ASSY PACKED
0358		K	4822 263 21092	ADAPTER PLUG
0387	3000	U	3104 215 36170	USER GUIDE SR3000/U
0387	3000	N	3104 215 36150	USER GUIDE SR3000/N
0387	4000	U	3104 215 36180	USER GUIDE SR4000/U
0387	4000	N	3104 215 36160	USER GUIDE SR4000/N
0387	4000	K	3104 215 36190	USER GUIDE SR4000/K
1003	4000		3104 217 05750	MULTI CHANNEL DECODING MODULE
▲ 5001	3000	U	3103 308 30240	MAINS TRAF0 SR3000/U
▲ 5001	3000	N	3103 308 30370	MAINS TRAF0 SR3000/N
▲ 5001	4000	U	4822 146 21225	MAINS TRAF0 SR4000/U
▲ 5001	4000	N	4822 146 11165	MAINS TRAF0 SR4000/N
▲ 5001	4000	K	4822 146 11169	MAINS TRAF0 SR4000/K
8002			4822 320 12706	FFC 15P - 220MM
▲ 8020		N, K	4822 321 11139	MAINS CORD

POS. NO	MODEL	VERS. COLOR	PART NO.	DESCRIPTION
0026			4822 492 11068	SPRING
▲ 1258	3000		4822 071 51602	MISCELLANEOUS 19372(1.6A)
1304	3000		2422 015 19011	CON BM CLICK H 6P F 3*RDBK B
1306	4000		2422 015 19189	CON BM SCREW H 6P F RDBK B
1502			4822 267 31823	YKC21-3424
1514			4822 267 31823	YKC21-3424
1516	4000		4822 267 31823	YKC21-3424
1520			4822 265 10981	15FE-BT-VK-N
1521	4000		2422 025 11067	CON BM V 12P F 2.50
1523			4822 071 53151	19372(315MA)
▲ 1530	4000		4822 267 41009	MTZJ2.0B
1541			4822 267 31448	CONNECTOR
1542			4822 267 31729	CONNECTOR
1550			4822 267 31996	CONN. 1P
1801			4822 265 11619	CINCH 2P
1802			4822 265 11619	CINCH 2P
1803			4822 265 10967	YKD21-0185
1901				
2251			5322 121 42578	100NF 5% 250V
2252	3000		4822 121 43526	47NF 5% 250V
2253	4000		4822 121 43526	47NF 5% 250V
2254			5322 121 42578	100NF 5% 250V
2255	3000		4822 121 43526	47NF 5% 250V
2256	4000		4822 121 43526	47NF 5% 250V
2258	3000		4822 124 42367	3300UF 20% 35V
2259	4000		4822 124 80415	4700UF 20% 50V
2260	4000		4822 124 80415	4700UF 20% 50V
2261	3000		4822 124 42367	3300UF 20% 35V
2263	3000		4822 124 80415	4700UF 20% 50V
2265	3000		4822 124 80415	4700UF 20% 50V
2266			5322 121 42386	100NF 5% 63V
2268			5322 121 42386	100NF 5% 63V
2269			4822 124 11583	2200UF 20% 35V
2270			4822 126 13838	100NF Y5V 0805 50V P80M20
2271			4822 126 14583	470NF 10% 16V XTR 0805
2272	4000		4822 124 12328	6800UF 16V
2273			4822 126 14585	100NF 10% X7R 0805 50V
2274			4822 126 14583	470NF 10% 16V XTR 0805
2275			4822 124 81144	1000U 16V
2276			4822 126 14585	100NF 10% X7R 0805 50V
2277			4822 126 14583	470NF 10% 16V XTR 0805
2278			4822 124 21913	1UF 20% 63V
2280			4822 124 41584	100UF 20% 10V
2281			4822 126 13838	100NF Y5V 0805 50V P80M20
2282			4822 126 14583	470NF 10% 16V XTR 0805
2283	3000		4822 124 11769	220UF 20% 50V
2287	3000		4822 124 40784	3300UF 20% 16V
2290			4822 124 40248	10UF 20% 63V
2292	4000		4822 124 12132	6800UF 20% LA5 63V
2293	4000		4822 124 12132	6800UF 20% LA5 63V
2295			4822 122 33177	10NF 20% X7R 50V
2297	3000		4822 124 40248	10UF 20% 63V
2298	3000		4822 126 13751	47NF 10% X7R 63V
2298	4000		5322 122 32654	22NF 10% X7R 63V
2299	4000		5322 124 40641	10UF 20% 100V
2301			5322 122 32654	22NF 10% X7R 63V
2302	3000		4822 124 81151	22UF 50V
2303	4000		4822 124 40764	22UF 100V
2305	4000		5322 124 40641	10UF 20% 100V
2306			4822 124 40248	10UF 20% 63V
2307	3000		5322 122 32287	4,7PF 5% NPO 50V
2308	4000		5322 122 32448	10PF 5% NPO 63V CASE 0805
2309	4000		5322 122 32448	10PF 5% NPO 63V CASE 0805
2310			4822 124 22652	2,2UF 20% 50V
2311			5322 122 32268	470PF 10% 50V
2313			4822 122 33575	220PF 5% NPO 63V CASE 0805
2314			4822 126 13473	220NF 80-20% 50V
2315			4822 124 81151	22UF 50V
2316			4822 124 22652	2,2UF 20% 50V

POS. NO	MODEL	VERS. COLOR	PART NO.	DESCRIPTION
2317	3000		5322 126 10223	4,7NF 10% X7R 63V
2319			5322 122 32268	470PF 10% 50V
2321			4822 126 13473	220NF 80-20% 50V
2322	3000		5322 122 32531	100PF 5%NPO 50V
2324	3000		5322 122 32287	4,7PF 5% NPO 50V
2325			4822 122 33575	220PF 5% NPO 63V CASE 0805
2326	4000		5322 122 32448	10PF 5% NPO 63V CASE 0805
2327	4000		5322 122 32448	10PF 5% NPO 63V CASE 0805
2328	3000		5322 126 10223	4,7NF 10% X7R 63V
2330			4822 124 81151	22UF 50V
2331	3000		5322 122 32531	100PF 5% NPO 50V
2333			4822 126 13473	220NF 80-20% 50V
2334			4822 124 22652	2,2UF 20% 50V
2335	3000		5322 126 10223	4,7NF 10% X7R 63V
2337			5322 122 32268	470PF 10% 50V
2339	3000		5322 122 32531	100PF 5% NPO 50V
2341			4822 122 33575	220PF 5% NPO 63V CASE 0805
2345	4000		5322 122 32448	10PF 5% NPO 63V CASE 0805
2346			4822 124 81151	22UF 50V
2347	3000		5322 122 32287	4,7PF 5% NPO 50V
2348	4000		5322 122 32448	10PF 5% NPO 63V CASE 0805
2349			4822 124 40248	10UF 20% 63V
2350			4822 124 40181	220UF 20% 10V
2351	3000		4822 126 13751	47NF 10% X7R 63V
2352	3000		4822 124 81151	22UF 50V
2353	4000		4822 124 40764	22UF 100V
2354	4000		5322 124 40641	10UF 20% 100V
2357			4822 126 12882	100NF +80-20% 50V
2358			4822 126 13473	220NF 80-20% 50V
2360				
2365			4822 121 41857	10NF 5% 250V
2371				
2373			5322 126 10223	4,7NF 10% X7R 63V
2374				
2376				
2501			5322 126 10511	1NF 5% NPO 50V
2502			5322 126 10511	1NF 5% NPO 50V
2505				
2507			5322 126 10511	1NF 5% NPO 50V
2508			5322 122 32531	100PF 5% NPO 50V
2509			5322 122 32531	100PF 5% NPO 50V
2510	4000		5322 122 32531	100PF 5% NPO 50V
2511				
2512			5322 122 32531	100PF 5% NPO 50V
2524				
2525	4000		5322 122 32531	100PF 5% NPO 50V
2526	4000		5322 122 32531	100PF 5% NPO 50V
2527	4000		4822 124 41751	47UF 20% 50V
2528	4000		4822 124 41751	47UF 20% 50V
2529	4000		4822 126 13838	100NF Y5V 0805 50V P80M20
2530	4000		4822 126 13838	100NF Y5V 0805 50V P80M20
2531			4822 121 42408	220NF 5% 63V
2532			4822 121 42408	220NF 5% 63V
2533			4822 124 40248	10UF 20% 63V
2538				
2539			4822 124 40207	100UF 20% 25V
2540			4822 124 40433	47UF 20% 25V
2541			4822 124 40248	10UF 20% 63V
2542			4822 124 40248	10UF 20% 63V
2543			4822 124 41584	100UF 20% 10V
2544			4822 124 41584	100UF 20% 10V
2545			5322 122 32531	100PF 5% NPO 50V
2546			5322 122 32531	100PF 5% NPO 50V
2549			5322 122 32658	22PF 5% 50V
2550			5322 122 32658	22PF 5% 50V
2551			4822 126 13838	100NF Y5V 0805 50V P80M20
2552			4822 126 13838	100NF Y5V 0805 50V P80M20
2553			4822 124 41751	47UF 20% 50V
2554			4822 124 41751	47UF 20% 50V

POS. NO	MODEL	VERS. COLOR	PART NO.	DESCRIPTION
2555			4822 126 13838	100NF Y5V 0805 50V P80M20
2556			4822 126 13838	100NF Y5V 0805 50V P80M20
2557			4822 124 41751	47UF 20% 50V
2558			4822 124 41751	47UF 20% 50V
2559			4822 126 12105	CER2 0805 X7R 50V 33NF PM5
2561	4000		4822 124 40764	22UF 100V
2562	4000		4822 124 40764	22UF 100V
2563			4822 123 14025	16V 2200U



## ELECTRICAL PARTSLIST - MONO BOARD

POS. NO	MODEL	VERS. COLOR	PART NO.	DESCRIPTION	POS. NO	MODEL	VERS. COLOR	PART NO.	DESCRIPTION
2642					2905			4822 124 22652	2,2UF 20% 50V
2652					2906			5322 122 32268	470PF 10% 50V
2655					2908			4822 126 13473	220NF 80-20% 50V
2658					2909			5322 126 10223	4,7NF 10% X7R 63V
2659					2910			4822 122 33575	220PF 5% NPO 63V CASE 0805
2664					2911			5322 122 32654	22NF 10% X7R 63V
2665					2912			4822 124 81151	22UF 50V
2670					2913			4822 124 22652	2,2UF 20% 50V
2671					2914			5322 122 32268	470PF 10% 50V
2676					2916			4822 126 13473	220NF 80-20% 50V
2677					2917			5322 126 10223	4,7NF 10% X7R 63V
2688					2918			4822 122 33575	220PF 5% NPO 63V CASE 0805
2689					2919			4822 124 81151	22UF 50V
2700					2920			4822 126 13473	220NF 80-20% 50V
2805					2921			4822 126 13473	220NF 80-20% 50V
2808					2922			5322 122 32287	4,7PF 5% NPO 50V
2809					2923			4822 124 81151	22UF 50V
2810					2924			4822 124 40248	10UF 20% 63V
2811					2925			4822 124 40181	220UF 20% 10V
2812					2926			4822 126 14585	100NF 10% X7R 0805 50V
2813					2928			4822 122 33177	10NF 20% X7R 50V
2814					2930				
2815					2933			5322 122 32531	100PF 5% NPO 50V
2816					2934			5322 126 10511	1NF 5% NPO 50V
2817					2937			5322 126 10794	220PF 5% NPO 63V
2818								<b>RESISTORS</b>	
2821					3251	3000		4822 051 20471	470R00 5% 0,1W
2822					3251	4000		4822 051 10102	1K00 2% 0,25W
2823					3252			4822 117 10837	100K 1% 0,1W
2824					3253			4822 117 10837	100K 1% 0,1W
2825					▲ 3254			4822 117 11342	0R33 5% 2W
2826					3256			4822 117 10833	10K 1% 0,1W
2827					▲ 3257			4822 117 11342	0R33 5% 2W
2828					3258			4822 051 20184	180K00 5% 0,1W
2829					3259			4822 117 10361	680R 1% 0,1W
2830					3260			4822 117 10834	47K 1% 0,1W
2831					3263			4822 117 10361	680R 1% 0,1W
2832					3264			4822 117 10837	100K 1% 0,1W
2833					▲ 3265	4000		4822 052 10479	47R00 5% 0,33W
2834					3266			4822 051 20223	22K00 5% 0,1W
2837					3267	3000		4822 051 20392	3K90 5% 0,1W
2851					3267	4000		4822 117 11507	6K8 1% 0,1W
2852					3268			4822 051 20332	3K30 5% 0,1W
2853					3269			4822 051 20332	3K30 5% 0,1W
2854					▲ 3270			4822 052 10479	47R00 5% 0,33W
2855					▲ 3271			4822 052 10479	47R00 5% 0,33W
2856					3272			4822 051 20393	39K00 5% 0,1W
2857					▲ 3291			4822 052 10109	10R00 5% 0,33W
2858					3292			4822 116 83933	15K 1% 0,1W
2860					3293			4822 117 10833	10K 1% 0,1W
2861					3294			4822 117 10833	10K 1% 0,1W
2862					3295			4822 116 83933	15K 1% 0,1W
2867					▲ 3301	4000		4822 052 10479	47R00 5% 0,33W
2868					3303			4822 116 83961	6K8 5% 0,1W
2869					3304			4822 117 11148	56K 1% 0,1W
2871					3305				
2873					3307			4822 117 10834	47K 1% 0,1W
2875					3308			4822 117 11148	56K 1% 0,1W
2876					3309			4822 050 24708	4R70 1% 0,6W
2877					3310			4822 051 20182	1K80 5% 0,1W
2882					3311			4822 050 24708	4R70 1% 0,6W
2883					3314			4822 117 11148	56K 1% 0,1W
2886					3315			4822 051 20182	1K80 5% 0,1W
2887					3316			4822 050 24708	4R70 1% 0,6W
2888					3319			4822 117 11148	56K 1% 0,1W
2901					3320			4822 051 10102	1K00 2% 0,25W
2902					3322			4822 117 11148	56K 1% 0,1W
2903					3323			4822 051 20182	1K80 5% 0,1W
2904					3324			4822 117 11148	56K 1% 0,1W
					3325	4000		4822 116 83961	6K8 5% 0,1W
					3326			4822 051 20333	33K00 5% 0,1W

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POS. NO	MODEL	VERS. COLOR	PART NO.	DESCRIPTION	POS. NO	MODEL	VERS. COLOR	PART NO.	DESCRIPTION
3327			4822 117 11503	220R 1% 0.1W	3540	4000		4822 117 10965	18K 1% 0,1W
▲ 3328			4822 052 10479	47R00 5% 0,33W	3541			4822 051 20393	39K00 5% 0,1W
3329			4822 117 10837	100K 1% 0.1W	3542			4822 051 20393	39K00 5% 0,1W
3330			4822 117 10833	10K 1% 0,1W	3543			4822 117 11139	1K5 1% 0,1W
3334	3000		4822 051 10102	1K00 2% 0,25W	3544			4822 117 11139	1K5 1% 0,1W
3334	4000		4822 051 20182	1K80 5% 0,1W	3545			4822 051 20332	3K30 5% 0,1W
3335	3000		4822 051 10102	1K00 2% 0,25W	3546			4822 051 20332	3K30 5% 0,1W
3335	4000		4822 051 20182	1K80 5% 0,1W	3547	3000		4822 051 20182	1K80 5% 0,1W
3336	3000		4822 051 10102	1K00 2% 0,25W	3548	3000		4822 051 20182	1K80 5% 0,1W
3336	4000		4822 051 20182	1K80 5% 0,1W	3549			4822 117 11507	6K8 1% 0,1W
▲ 3337	3000		4822 117 11744	OR22 5% 1W	3550			4822 117 11507	6K8 1% 0,1W
▲ 3337	4000		4822 117 11342	OR33 5% 2W	3551			4822 117 11504	270R 1% 0.1W
▲ 3338	3000		4822 117 11744	OR22 5% 1W	3554			4822 117 11504	270R 1% 0.1W
▲ 3338	4000		4822 117 11342	OR33 5% 2W	3555			4822 051 20332	3K30 5% 0,1W
3339			4822 117 11139	1K5 1% 0,1W	3556	4000		4822 117 11504	270R 1% 0.1W
3340			4822 117 11139	1K5 1% 0,1W	3557	4000		4822 117 11504	270R 1% 0.1W
▲ 3341	3000		4822 117 11744	OR22 5% 1W	3560			4822 051 10102	1K00 2% 0,25W
▲ 3341	4000		4822 117 11342	OR33 5% 2W	▲ 3561			4822 052 10478	4R70 5% 0,33W
▲ 3342	3000		4822 117 11744	OR22 5% 1W	3562			4822 051 20471	470R00 5% 0,1W
▲ 3342	4000		4822 117 11342	OR33 5% 2W	3563			4822 051 10102	1K00 2% 0,25W
3343			4822 117 11139	1K5 1% 0,1W	3566	4000		4822 116 83876	270R 5% 0,5W
▲ 3344	3000		4822 117 11744	OR22 5% 1W	3567	4000		4822 116 83876	270R 5% 0,5W
▲ 3344	4000		4822 117 11342	OR33 5% 2W	3571	4000		4822 117 10834	47K 1% 0,1W
▲ 3345	3000		4822 117 11744	OR22 5% 1W	3572	4000		4822 117 10834	47K 1% 0,1W
▲ 3345	4000		4822 117 11342	OR33 5% 2W	3573	4000		4822 051 10102	1K00 2% 0,25W
3351					3574	4000		4822 051 10102	1K00 2% 0,25W
▲ 3352					3575	4000		4822 117 10837	100K 1% 0.1W
3354			4822 053 10478	4R70 5% 1W	3576	4000		4822 117 10837	100K 1% 0.1W
3356			4822 117 10834	47K 1% 0,1W	3577	4000		4822 051 20561	560R00 5% 0,1W
3357	3000		4822 050 21003	10K00 1% 0,6W	3578	4000		4822 051 20561	560R00 5% 0,1W
3357	4000		4822 116 52257	22K 5% 0,5W	3579	4000		4822 051 20394	390K00 5% 0,1W
3358			4822 051 10102	1K00 2% 0,25W	3580	4000		4822 051 20394	390K00 5% 0,1W
3359			4822 117 10837	100K 1% 0.1W	3581	4000		4822 051 20273	27K00 5% 0,1W
3360			4822 117 10833	10K 1% 0,1W	3582	4000		4822 051 20273	27K00 5% 0,1W
3361					3583	4000		4822 116 52303	8K2 5% 0,5W
3363			4822 051 20471	470R00 5% 0,1W	3584	4000		4822 116 52303	8K2 5% 0,5W
3501			4822 117 11383	12K 1% 0,1W	3585	4000		4822 117 11449	2K2 1% 0,1W
3502			4822 117 11383	12K 1% 0,1W	3586	4000		4822 117 11449	2K2 1% 0,1W
3505			4822 116 52238	12K 5% 0,5W	3587	4000		4822 051 20392	3K90 5% 0,1W
3506			4822 116 52238	12K 5% 0,5W	3588	4000		4822 116 52276	3K9 5% 0,5W
3509			4822 117 11383	12K 1% 0,1W	3589	4000		4822 117 10833	10K 1% 0,1W
3510			4822 117 11383	12K 1% 0,1W	3590	4000		4822 117 10833	10K 1% 0,1W
3511			4822 051 20101	100R00 5% 0,1W	3591	4000		4822 117 10837	100K 1% 0,1W
3512			4822 051 20101	100R00 5% 0,1W	3592	4000		4822 117 10837	100K 1% 0,1W
3513			4822 117 10834	47K 1% 0,1W	3593				
3514			4822 117 10834	47K 1% 0,1W	3596	4000		4822 051 20472	4K70 5% 0,1W
3515			4822 051 20471	470R00 5% 0,1W	3597	4000		4822 116 52289	5K6 5% 0,5W
3516			4822 051 20471	470R00 5% 0,1W	3598	4000		4822 116 52289	5K6 5% 0,5W
3517			4822 051 20393	39K00 5% 0,1W	3601			4822 051 20101	100R00 5% 0,1W
3518			4822 051 20393	39K00 5% 0,1W	3602			4822 051 20101	100R00 5% 0,1W
3519			4822 117 10965	18K 1% 0,1W	3603			4822 117 10837	100K 1% 0,1W
3520			4822 117 10965	18K 1% 0,1W	3604			4822 117 10837	100K 1% 0,1W
3521			4822 051 20393	39K00 5% 0,1W	3605			4822 117 11383	12K 1% 0,1W
3522			4822 051 20393	39K00 5% 0,1W	3606			4822 117 11383	12K 1% 0,1W
3523			4822 117 10965	18K 1% 0,1W	3607			4822 051 20333	33K00 5% 0,1W
3524			4822 117 10965	18K 1% 0,1W	3608			4822 051 20333	33K00 5% 0,1W
3525			4822 051 20393	39K00 5% 0,1W	3609			4822 051 20121	120R00 5% 0,1W
3526			4822 051 20393	39K00 5% 0,1W	3610			4822 051 20121	120R00 5% 0,1W
3527			4822 117 10965	18K 1% 0,1W	3611			4822 117 10834	47K 1% 0,1W
3528			4822 117 10965	18K 1% 0,1W	3612			4822 117 10834	47K 1% 0,1W
3529			4822 051 20471	470R00 5% 0,1W	3613				
3530			4822 051 20471	470R00 5% 0,1W	3616	4000		4822 051 20471	470R00 5% 0,1W
3531			4822 051 20393	39K00 5% 0,1W	3618			4822 117 10834	47K 1% 0,1W
3532			4822 051 20393	39K00 5% 0,1W	3619			4822 117 10834	47K 1% 0,1W
3533			4822 117 10965	18K 1% 0,1W	3620			4822 116 52175	100E 5% 0,5W
3534			4822 117 10965	18K 1% 0,1W	3621				
3535			4822 116 52251	18K 5% 0,5W	3623			4822 051 20121	120R00 5% 0,1W
3536			4822 116 52251	18K 5% 0,5W	▲ 3627			4822 052 10109	10R00 5% 0,33W
3537	4000		4822 051 20393	39K00 5% 0,1W	▲ 3629			4822 052 10109	10R00 5% 0,33W
3538	4000		4822 051 20393	39K00 5% 0,1W					
3539	4000		4822 117 10965	18K 1% 0,1W					

## ELECTRICAL PARTSLIST - MONO BOARD

POS. NO	MODEL	VERS. COLOR	PART NO.	DESCRIPTION	POS. NO	MODEL	VERS. COLOR	PART NO.	DESCRIPTION
3630	4000		4822 050 11002	1K00 1% 0,4W	3813			4822 051 20121	120R00 5% 0,1W
3632					3815			4822 117 12521	68R 1% 0,1W
3633	3000		4822 051 10102	1K00 2% 0,25W	3816			4822 117 12521	68R 1% 0,1W
3635					3817			4822 117 11504	270R 1% 0,1W
3636	3000		4822 051 20471	470R00 5% 0,1W	3818			4822 117 11503	220R 1% 0,1W
3637					3831			4822 051 20101	100R00 5% 0,1W
3638	3000		4822 051 20471	470R00 5% 0,1W	3832			4822 051 20479	47R00 5% 0,1W
3639					3834			4822 051 20101	100R00 5% 0,1W
3641	3000		4822 117 10837	100K 1% 0,1W	3851			4822 051 20472	4K70 5% 0,1W
3644					3852			4822 051 20223	22K00 5% 0,1W
3645	3000		4822 117 10834	47K 1% 0,1W	3853	3000	4000	4822 117 10833	10K 1% 0,1W
3646					3854			4822 051 20683	68K00 5% 0,1W
3649	3000		4822 117 10837	100K 1% 0,1W	3855			4822 051 20472	4K70 5% 0,1W
3650					3855			4822 116 83876	270R 5% 0,5W
3651	3000		4822 117 10837	100K 1% 0,1W	3856			4822 117 11504	270R 1% 0,1W
3652					3857			4822 117 10837	100K 1% 0,1W
3655	3000		4822 117 10834	47K 1% 0,1W	3858			4822 117 10837	100K 1% 0,1W
3656					3859			4822 117 10833	10K 1% 0,1W
3657	3000		4822 117 10837	100K 1% 0,1W	3860			4822 117 10833	10K 1% 0,1W
3658					3871			4822 051 20332	3K30 5% 0,1W
3659	3000		4822 117 12955	2K7 1% 0,1W 0805	3872			4822 051 20332	3K30 5% 0,1W
3660					3873			4822 051 10102	1K00 2% 0,25W
3661	3000		4822 051 20562	5K6 5% 0,1W 0805	3874			4822 051 10102	1K00 2% 0,25W
3662					3875			4822 051 20332	3K30 5% 0,1W
3663	3000		4822 117 12955	2K7 1% 0,1W 0805	3877			4822 051 10102	1K00 2% 0,25W
3664					3878			4822 051 10102	1K00 2% 0,25W
3665	3000		4822 051 20562	5K6 5% 0,1W 0805	3879			4822 051 20332	3K30 5% 0,1W
3666					3880			4822 051 20332	3K30 5% 0,1W
3667	3000		4822 117 12955	2K7 1% 0,1W 0805	3881			4822 051 10102	1K00 2% 0,25W
3668					3882			4822 051 10102	1K00 2% 0,25W
3669	3000		4822 117 12955	2K7 1% 0,1W 0805	3883			4822 117 11383	12K 1% 0,1W
3670					3888				
3671	3000		4822 051 20562	5K6 5% 0,1W 0805	3889			4822 117 11449	2K2 1% 0,1W
3672					3890			4822 117 11449	2K2 1% 0,1W
3673	3000		4822 117 10837	100K 1% 0,1W	3891	3000		4822 051 20562	5K6 5% 0,1W 0805
3674					3893				
3675	3000		4822 117 11449	2K2 1% 0,1W	3895	3000		4822 051 20562	5K6 5% 0,1W 0805
3676					3896				4822 051 20562
3677	3000		4822 051 20101	100R00 5% 0,1W	▲ 3901			4822 052 10479	47R00 5% 0,33W
3678					3902				4822 117 11148
3679	3000		4822 117 10837	100K 1% 0,1W	3903			4822 117 10834	47K 1% 0,1W
3680					3904				4822 116 83884
3681	3000		4822 117 11449	2K2 1% 0,1W	3905			4822 050 24708	4R70 1% 0,6W
3682					3906				4822 117 11148
3683	3000		4822 051 20101	100R00 5% 0,1W	3908			4822 051 20182	1K80 5% 0,1W
3684					3910				4822 050 24708
3685	3000		4822 117 10837	100K 1% 0,1W	3911			4822 117 11148	56K 1% 0,1W
3686					3913				4822 051 20182
3687	3000		4822 117 11449	2K2 1% 0,1W	3914			4822 117 11148	56K 1% 0,1W
3688					▲ 3915				4822 052 10479
3689	3000		4822 051 20101	100R00 5% 0,1W	▲ 3916			4822 053 10478	4R70 5% 1W
3690					3917				4822 050 23303
3691	3000		4822 117 11449	2K2 1% 0,1W	3918			4822 117 11503	220R 1% 0,1W
3692					▲ 3919				4822 053 10478
3693	3000		4822 117 11449	2K2 1% 0,1W	3920			4822 117 10837	100K 1% 0,1W
3694					3921				4822 051 20182
3695	3000		4822 116 52256	2K2 5% 0,5W	3921	4000		4822 051 10102	1K00 2% 0,25W
3696					3922				4822 051 20182
3697	3000		4822 117 13579	220K 1% 0,1W RC12H 0805	3922			4822 051 10102	1K00 2% 0,25W
3698					3925				4822 117 10833
3699	3000		4822 117 13579	22K 5% 0,5W	▲ 3926			4822 117 11744	0R22 5% 1W
3700					▲ 3927				4822 117 11744
3801	3000		4822 051 20223	22K00 5% 0,1W	3928			4822 117 11139	1K5 1% 0,1W
3804					3929				4822 117 11139
3805	3000		4822 117 12521	68R 1% 0,1W	▲ 3930			4822 117 11744	0R22 5% 1W
3806					▲ 3931				4822 117 11744
▲ 3807	3000		4822 051 10102	1K00 2% 0,25W	3932			4822 117 10834	47K 1% 0,1W
▲ 3808					3933				4822 050 21003
3810	3000		4822 052 10478	4R70 5% 0,33W	3934			4822 051 10102	1K00 2% 0,25W
3812					3935				4822 051 10102
	3000		4822 117 11449	2K2 1% 0,1W	3936			4822 117 10837	100K 1% 0,1W
					3937				4822 117 10833

## ELECTRICAL PARTSLIST - MONO BOARD

POS. NO	MODEL	VERS. COLOR	PART NO.	DESCRIPTION	POS. NO	MODEL	VERS. COLOR	PART NO.	DESCRIPTION
3938			4822 117 11449	2K2 1% 0,1W	4913	4000		4822 051 20008	0R00 JUMP. (0805)
3939			4822 117 11449	2K2 1% 0,1W	4914				
3940			4822 117 11503	220R 1% 0.1W	}			4822 051 20008	0R00 JUMP. (0805)
3941			4822 117 11503	220R 1% 0.1W	4918				
3943	3000		4822 117 10833	10K 1% 0,1W					
3943	4000		4822 051 20223	22K00 5% 0,1W					<b>FILTERS</b>
3944			4822 117 11503	220R 1% 0.1W	5301	4000		4822 157 70599	COIL
3945			4822 117 11503	220R 1% 0.1W	5302	3000		4822 157 62255	COIL
3946			4822 051 20471	470R00 5% 0,1W	5303	4000		4822 157 70599	COIL
3947			4822 051 20471	470R00 5% 0,1W	5304	3000		4822 157 62255	COIL
3948			4822 117 11503	220R 1% 0.1W	5305	4000		4822 157 70599	COIL
3949			4822 117 11503	220R 1% 0.1W	5306	3000		4822 157 62255	COIL
3950					5901			4822 157 62255	COIL
}					5902			4822 157 62255	COIL
3955			4822 051 20101	100R00 5% 0,1W					<b>DIODES</b>
					▲ 6252			4822 130 82079	D3SBA20
					▲ 6253			4822 130 82078	D5SBA20
4251			4822 051 20008	0R00 JUMP. (0805)	6257				
4252			4822 051 20008	0R00 JUMP. (0805)	}			4822 130 31878	1N4003G
4253	4000		4822 051 20008	0R00 JUMP. (0805)	6259				
4254					6260			4822 209 33575	L7812CP
}			4822 051 20008	0R00 JUMP. (0805)	6261				
4258					}			4822 130 31878	1N4003G
4259	3000		4822 051 20008	0R00 JUMP. (0805)	6263				
4260			4822 051 20008	0R00 JUMP. (0805)	6265			4822 209 31841	L7805CP
4283					6267			4822 209 31841	L7805CP
}			4822 051 20008	0R00 JUMP. (0805)	6268			4822 130 31878	1N4003G
4285					6270			4822 130 34278	BZX79-B6V8
4287			4822 051 20008	0R00 JUMP. (0805)	6271			4822 130 30621	1N4148
4320			4822 051 20008	0R00 JUMP. (0805)	6274	3000		4822 130 31878	1N4003G
4501					6275	3000		4822 130 31878	1N4003G
}			4822 051 20008	0R00 JUMP. (0805)	6276			4822 130 34173	BZX79-B5V6
4503					6279			4822 130 30621	1N4148
4504	4000		4822 051 20008	0R00 JUMP. (0805)	6280	3000		4822 130 34281	BZX79-B15
4506			4822 051 20008	0R00 JUMP. (0805)	6280	4000		4822 130 61219	BZX79-B10
4512	3000		4822 051 20008	0R00 JUMP. (0805)	6281	3000		4822 130 34281	BZX79-B15
4513					6281	4000		4822 130 34441	BZX79-B22
}			4822 051 20008	0R00 JUMP. (0805)	6289			4822 130 30621	1N4148
4524					6290			4822 130 30621	1N4148
4526			4822 051 20008	0R00 JUMP. (0805)	6301	4000		4822 130 34382	BZX79-B8V2
4528					6302	4000		4822 130 34382	BZX79-B8V2
}			4822 051 20008	0R00 JUMP. (0805)	6303			4822 130 30621	1N4148
4533					6304			5322 130 31504	BZX79-B3V3
4537					6305			4822 130 30621	1N4148
}			4822 051 20008	0R00 JUMP. (0805)	6501			4822 130 30621	1N4148
4545					6601			4822 130 30621	1N4148
4548			4822 051 20008	0R00 JUMP. (0805)	6602			4822 130 30621	1N4148
4550					6641				
}			4822 051 20008	0R00 JUMP. (0805)	}			4822 130 30621	1N4148
4553					6648				
4555					6649			4822 130 31878	1N4003G
}			4822 051 20008	0R00 JUMP. (0805)	6650			4822 130 61219	BZX79-B10
4560					6801				
4563			4822 051 20008	0R00 JUMP. (0805)	}			4822 130 34278	BZX79-B6V8
4564			4822 051 20008	0R00 JUMP. (0805)	6808				
4565	4000		4822 051 20008	0R00 JUMP. (0805)	6809			4822 130 30621	1N4148
4566	4000		4822 051 20008	0R00 JUMP. (0805)	6831			4822 130 30621	1N4148
4641	3000		4822 051 20008	0R00 JUMP. (0805)	6832			4822 130 30621	1N4148
4642	4000		4822 051 20008	0R00 JUMP. (0805)	6901			4822 130 30621	1N4148
4644	4000		4822 051 20008	0R00 JUMP. (0805)	6902			4822 130 30621	1N4148
4651			4822 051 20008	0R00 JUMP. (0805)	6903			5322 130 31504	BZX79-B3V3
4652			4822 051 20008	0R00 JUMP. (0805)	6904			4822 130 30621	1N4148
4653	4000		4822 051 20008	0R00 JUMP. (0805)					<b>TRANSISTORS</b>
4801					7253			4822 130 60511	BC847B
}			4822 051 20008	0R00 JUMP. (0805)	7255			4822 130 60373	BC856B
4805					7256			4822 130 60511	BC847B
4832			4822 051 20008	0R00 JUMP. (0805)	7257			4822 130 41246	BC327-25
4833			4822 051 20008	0R00 JUMP. (0805)	7258			4822 130 41246	BC327-25
4835			4822 051 20008	0R00 JUMP. (0805)	7259			4822 130 60511	BC847B
4901	3000		4822 051 20008	0R00 JUMP. (0805)	7260	3000		4822 130 60511	BC847B
4902					7260	4000		5322 130 60159	BC846B
}			4822 051 20008	0R00 JUMP. (0805)	7261			4822 130 60373	BC856B
4905									
4911			4822 051 20008	0R00 JUMP. (0805)					

**ELECTRICAL PARTSLIST - MONO BOARD**

POS. NO	MODEL	VERS. COLOR	PART NO.	DESCRIPTION
7301	3000		4822 209 17447	STK496-270
7302	4000		4822 209 17507	STK496-630
7304			4822 130 60511	BC847B
7305	3000		4822 130 60511	BC847B
7305	4000		5322 130 60159	BC846B
7306	3000		4822 130 60511	BC847B
7306	4000		5322 130 60159	BC846B
7307	3000		4822 130 60511	BC847B
7307	4000		5322 130 60159	BC846B
7309			4822 130 60373	BC856B
7310			4822 130 60511	BC847B
7501			4822 209 72748	LC7821
7503			4822 209 83357	NJM4560M JRC
7504	4000		4822 209 83357	NJM4560M JRC
7571	4000		4822 209 70157	NJM4560DD
7572	4000		4822 209 72748	LC7821
7601			4822 209 31378	NJM4556MB
7621			4822 130 42615	BC817-40
7622			4822 130 42615	BC817-40
7641				
7643			4822 209 17386	TDA7437T
7644			4822 130 40855	BC337
7651				
7656			4822 130 42615	BC817-40
7657			4822 130 60373	BC856B
7658			4822 130 60373	BC856B
7660			4822 209 83357	NJM4560M JRC
7661			4822 130 42615	BC817-40
7662			4822 130 42615	BC817-40
7801			4822 130 60511	BC847B
7802			4822 130 44568	BC557B
7803			4822 209 16886	STV6401
7901	3000		4822 209 17448	STK496-040B
7901	4000		4822 209 17385	STK496-070
7902				
7904			4822 130 60511	BC847B
7906			4822 130 60373	BC856B
7908			4822 130 60373	BC856B
7909			4822 130 60511	BC847B
7910			9322 139 22687	BD242BFP