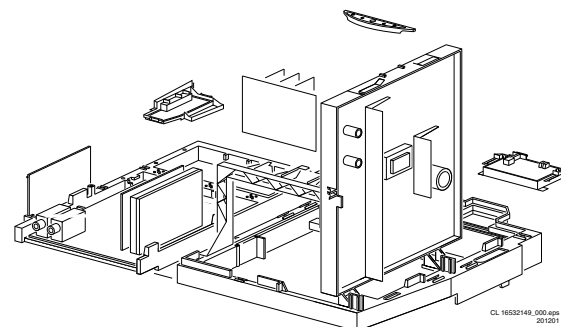


Service  
Service  
Service



# Service Manual

Contents	Page
1. Technical Specifications, Connections and Chassis Overview	2
2. Safety & Maintenance Instructions, Warnings and Notes	5
3. Directions for Use	7
4. Mechanical Instructions	24
5. Service Modes, Error Codes and Faultfinding	29
6. <i>Block Diagram, Testpoints, I<sup>2</sup>C and Supply Voltage Overview</i>	
Wiring Diagram	41
Block Diagram Supply and Deflection	42
Block Diagram Video	43
Block Diagram Audio 1 (Excl Wireless Audio)	44
Block Diagram Audio 2 (Wireless Audio)	45
I <sup>2</sup> C-IC Overview	46
Supply Lines Overview (Part 1)	47
Supply Lines Overview (Part 2)	48
Testpoint Overviews	49-52
7. <i>Electrical Diagrams and PWB's</i>	<i>Diagram PWB</i>
Line Deflection (Diagram A1)	53 57-58
Line Deflection (cont.) (Diagram A2)	54 57-58
Frame Deflection (Diagram A3)	55 57-58
Audio Amplifiers (Diagram A4)	56 57-58
Top Supply Panel (Diagram B)	59 60-61
Mains Switch Panel (Diagram E)	62 63
CRT / Auto Scavem Panel (Diagram F)	64 65-66
DC Shift Panel (Diagram G)	67 67
DAF Panel (Diagram I)	67 67
Tuner, IF and Video Processing (Diagram K1)	68 75-88
Input / Output (Diagram K2)	69 75-88
Sound Processing (Diagram K3)	70 75-88
Audio Dolby (Diagram K4)	71 75-88
Videocontrol & Geometrie (Diagram K6)	72 75-88
Teletext & Control (Diagram K7)	73 75-88

Contents	Page
Source Selection (add to K1) (Diagram K8)	74 75-88
Feature Box 7 (Diagram L1)	89 92-93
Feature Box 7 Eagle (Diagram L2)	90 92-93
Feature Box 7 Falconic (Diagram L3)	91 92-93
Full Dual Screen / PIP (Diagram M)	
Tuner / IF (Diagram M1)	94 99-100
Selector Switches (Diagram M2)	95 99-100
Filter and Buffers (Diagram M3)	96 99-100
Dual Screen IC and Memory (Diagram M4)	97 99-100
Audio (Diagram M5)	98 99-100
Core Top Level (Diagram NA)	101 118/9
Top-level MCS Module (Diagram NB)	102 118/9
MCS Module (Diagr. N1-17)	103 118/9
Side I/O (Diagram O)	120 121
Top Control (Diagram P)	122 122
Wireless Surround Transmitter (Diagram R)	123 124
Auto Scavem (Diagram SC1)	125 127/8
Auto Scavem PCR (Diagram SC2)	126 127/8
Wireless Surround Receiver (Diagram U)	129 130
Active Speaker Box: Amplifier (Diagram W1)	132 133
Active Speaker Box: SOPS (Diagram W2)	134 135
Active Speaker Box: Connector (Diagram W3)	136 136
Active Speaker Box: LED (Diagram W4)	136 136
8. Alignments	137
9. Circuit Description	146
Abbreviation List	152
Data Sheets	156
10 Spare Parts List	162

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# 1. Technical Specifications, Connections and Chassis Overview

## 1.1 Technical Specifications

### 1.1.1 Vision

Display type	: CRT, Real Flat WS
Screen size	: 28" (70 cm)
	: 32" (82 cm)
	: 36" (92 cm)
Tuning system	: PLL
Colour systems	: PAL: B/G, D/K, I, Plus
	: SECAM: B/G, D/K, L/L'
	: NTSC: playback only
Channel selections	: 100 presets
	: UVSH
Aerial input	: 75 Ω, IEC-type

### 1.1.2 Sound

Sound systems	: FM-mono, AM-mono
	: FM/FM: B/G, Czech
	: NICAM: B/G, D/K, I, L
Maximum power	: 4 x 20 Wrms (int.)
	: 2 x 15 Wrms (ext.)

### 1.1.3 Miscellaneous

Mains voltage	: 220 - 240 V
Mains frequency	: 50/60 Hz
Ambient temperature	: +5 to +45 deg. C
Maximum humidity	: 90 % R.H.
Power dissipation	: < 200 W
Standby Power dissipation	: < 350 mW

## 1.2 Connections

### 1.2.1 Front Control/Side Connections

#### Front and Side View

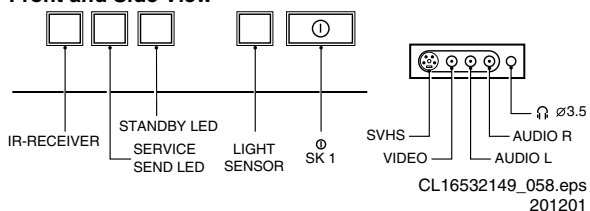


Figure 1-1

#### SVHS - In

1	-Y	Ground	⊥
2	-C	Ground	⊥
3	-Y	1 Vpp / 75 Ω	⊕
4	-C	0.3 Vpp / 75 Ω	⊕

#### Cinch - In

1	-CVBS	1 Vpp / 75 Ω	⊕⊕
2	-Audio - L	0.5 Vrms / 10 kΩ	⊕⊕
3	-Audio - R	0.5 Vrms / 10 kΩ	⊕⊕

#### Mini Jack - Out

-Headphone	32 - 600 Ω / 10 mW	⊕⊕
------------	--------------------	----

### 1.2.2 Rear Connections

#### Connection overview

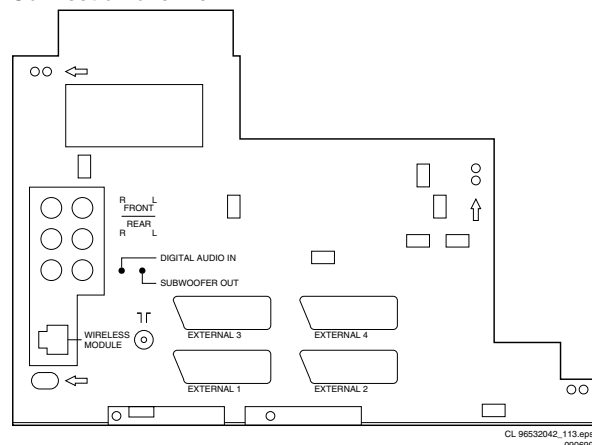


Figure 1-2

#### Cinch: Front R/L - Out

-Audio - R	0.5 Vrms / 1 kΩ	⊕⊕
-Audio - L	0.5 Vrms / 1 kΩ	⊕⊕

#### Cinch: Rear R/L - Out

-Audio - R	0.5 Vrms / 1 kΩ	⊕⊕
-Audio - L	0.5 Vrms / 1 kΩ	⊕⊕

#### Cinch: Digital Audio - In

-S/PDIF	⊕⊕
---------	----

#### Cinch: Subwoofer - Out

-SW	0.5 Vrms / 1 kΩ	⊕⊕
-----	-----------------	----

#### RJ45: Wireless Surround Transmitter - Out

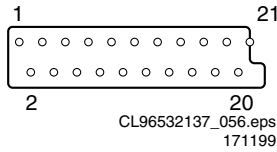
1	-CORDL_L	Signal	⊕
2	-CORDL_L	Ground	⊥
3	-CORDL_R	Signal	⊕
4	-CORDL_R	Ground	⊥
5	-12VP_IN	Supply	⊕
6	-SDA	Signal	⊕⊕
7	-SCL	Signal	⊕
8	-Supply	Ground	⊥

#### Aerial - In

-IEC-type	Coax, 75 Ω	⊥
-----------	------------	---

**External 1 - In/Out (RGB and CVBS)**

**SCART connector**



**Figure 1-3**

1	-Audio - R	0.5 Vrms / 1 kΩ	⊕
2	-Audio - R	0.5 Vrms / 10 kΩ	⊕
3	-Audio - L	0.5 Vrms / 1 kΩ	⊕
4	-Audio	Ground	⊥
5	-Blue	Ground	⊥
6	-Audio - L	0.5 Vrms / 10 kΩ	⊕
7	-Blue	0.7 Vpp / 75 Ω	⊕
8	-CVBS-status	0 - 1.3 V: INT 4.5 - 7 V: EXT 16:9 9.5 - 12 V: EXT 4:3	
9	-Green	Ground	⊥
10	-		
11	-Green	0.7 Vpp / 75 Ω	⊕
12	-		
13	-Red	Ground	⊥
14	-Status	Ground	⊥
15	-Red	0.7 Vpp / 75 Ω	⊕
16	-RGB-status / FBL	0 - 0.4 V: INT 1 - 3 V: EXT / 75 Ω	
17	-CVBS	Ground	⊥
18	-FBL	Ground	⊥
19	-CVBS	1 Vpp / 75 Ω	⊕
20	-CVBS	1 Vpp / 75 Ω	⊕
21	-Shielding	Ground	⊥

**External 2 - In/Out for VCR (RGB, Y/C and CVBS)**

1	-Audio - R	0.5 Vrms / 1 kΩ	⊕
2	-Audio - R	0.5 Vrms / 10 kΩ	⊕
3	-Audio - L	0.5 Vrms / 1 kΩ	⊕
4	-Audio	Ground	⊥
5	-Blue	Ground	⊥
6	-Audio - L	0.5 Vrms / 10 kΩ	⊕
7	-Blue / C	0.7 Vpp / 75 Ω	⊕
8	-CVBS-status	0 - 1.3 V: INT 4.5 - 7 V: EXT 16:9 9.5 - 12 V: EXT 4:3	
9	-Green	Ground	⊥
10	-Easy Link (P50)		⊕
11	-Green	0.7 Vpp / 75 Ω	⊕
12	-		
13	-Red	Ground	⊥
14	-Status	Ground	⊥
15	-Red / C	0.7 Vpp / 75 Ω	⊕
16	-RGB-status / FBL	0 - 0.4 V: INT 1 - 3 V: EXT / 75 Ω	
17	-CVBS	Ground	⊥
18	-FBL	Ground	⊥
19	-Y / CVBS	1 Vpp / 75 Ω	⊕
20	-Y / CVBS	1 Vpp / 75 Ω	⊕
21	-Shielding	Ground	⊥

**External 3 - In (CVBS, Audio)**

1	-		
2	-Audio - R	0.5 Vrms / 10 kΩ	⊕
3	-		
4	-Audio	Ground	⊥
5	-	Ground	⊥
6	-Audio - L	0.5 Vrms / 10 kΩ	⊕
7	-		

8	-CVBS-status	0 - 1.3 V: INT 4.5 - 7 V: EXT 16:9 9.5 - 12 V: EXT 4:3	
9	-	Ground	⊥
10	-		
11	-		
12	-		
13	-	Ground	⊥
14	-Status	Ground	⊥
15	-		
16	-		
17	-CVBS	Ground	⊥
18	-CVBS	Ground	⊥
19	-		
20	-CVBS	1 Vpp / 75 Ω	⊕
21	-Shielding	Ground	⊥

**External 4 - In (CVBS, Audio)**

1	-		
2	-Audio - R	0.5 Vrms / 10 kΩ	⊕
3	-		
4	-Audio	Ground	⊥
5	-	Ground	⊥
6	-Audio - L	0.5 Vrms / 10 kΩ	⊕
7	-		
8	-CVBS-status	0 - 1.3 V: INT 4.5 - 7 V: EXT 16:9 9.5 - 12 V: EXT 4:3	
9	-	Ground	⊥
10	-		
11	-		
12	-		
13	-	Ground	⊥
14	-Status	Ground	⊥
15	-		
16	-		
17	-CVBS	Ground	⊥
18	-CVBS	Ground	⊥
19	-		
20	-CVBS	1 Vpp / 75 Ω	⊕
21	-Shielding	Ground	⊥

### 1.3 Chassis Overview

#### PWB Location

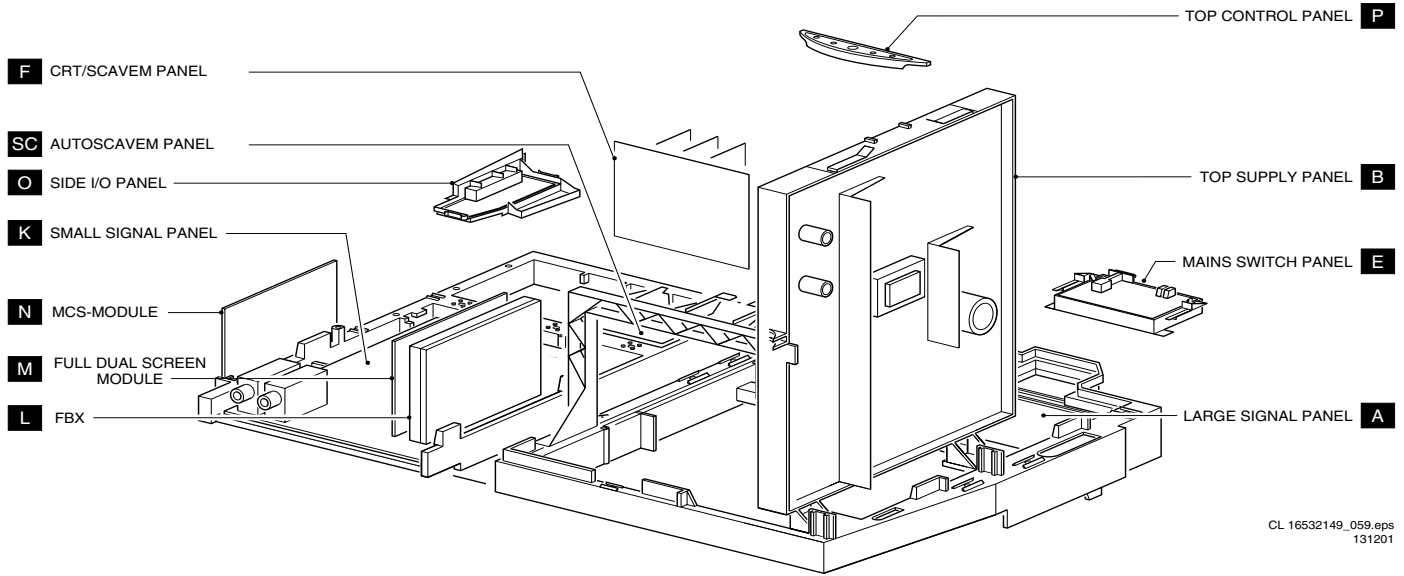


Figure 1-4



## 2. Safety and Maintenance Instructions, Warnings, and Notes

### 2.1 Safety Instructions

Safety regulations require that **during** a repair:

- Connect the set to the mains via an isolation transformer, as there are 'hot' parts in this chassis.
- Replace safety components, indicated by the symbol ▲, only by components identical to the original ones. Any other component substitution (other than original type) may increase risk of fire or electrical shock hazard.
- Wear safety goggles when you replace the CRT.

Safety regulations require that **after** a repair, you must return the set in its original condition. Pay, in particular, attention to the following points:

- General repair instruction: as a strict precaution, we advise you to re-solder the solder connections through which the horizontal deflection current is flowing. In particular this is valid for the:
  1. pins of the line output transformer (LOT).
  2. fly-back capacitor(s).
  3. S-correction capacitor(s).
  4. line output transistor.
  5. pins of the connector with wires to the deflection coil.
  6. other components through which the deflection current flows.

**Note:** This re-soldering is advised to prevent bad connections due to metal fatigue in solder connections, and is therefore only necessary for television sets more than two years old.

- Route the wire trees and EHT cable correctly and secure them with the mounted cable clamps.
- Check the insulation of the mains cord for external damage.
- Check the strain relief of the mains cord for proper function, to prevent the cord from touching the CRT, hot components, or heat sinks.
- Check the electrical DC resistance between the mains plug and the secondary side (only for sets that have an isolated power supply). Do this as follows:
  1. Unplug the mains cord and connect a wire between the two pins of the mains plug.
  2. Turn on the main power switch (keep the mains cord unplugged!).
  3. Measure the resistance value between the pins of the mains plug and the metal shielding of the tuner or the aerial connection of the set. The reading should be between 4.5 MΩ and 12 MΩ.
  4. Switch the TV 'off' and remove the wire between the two pins of the mains plug.
- Check the cabinet for defects, to prevent the possibility of the customer touching any internal parts.

### 2.2 Maintenance Instructions

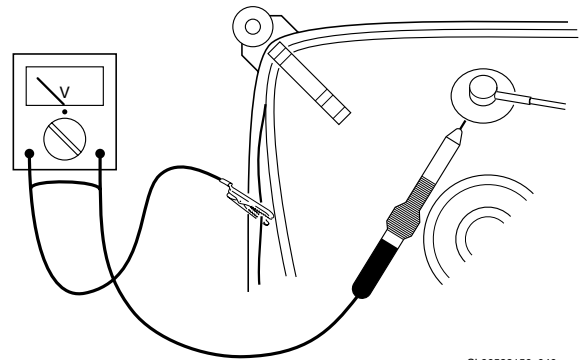
We recommend a maintenance inspection carried out by qualified service personnel. The interval depends on the usage conditions:

- When a customer uses the set under normal circumstances, for example in a living room, the recommended interval is three to five years.
- When a customer uses the set in an environment with higher dust, grease, or moisture levels, for example in a kitchen, the recommended interval is one year.
- The maintenance inspection includes the following actions:
  1. Perform the 'general repair instruction' noted above.
  2. Clean the power supply and deflection circuitry on the chassis.
  3. Clean the picture tube panel and the neck of the picture tube.

### 2.3 Warnings

- In order to prevent damage to ICs and transistors, avoid all high voltage flashovers. In order to prevent damage to the picture tube, use the method shown in Fig. 2-1, to discharge the picture tube. Use a high voltage probe and a multi-meter (position  $V_{DC}$ ). Discharge until the meter reading is 0 V (after approx. 30 s).

#### Discharge Picture Tube



CL96532156\_040.eps  
140501

Figure 2-1

- All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD, symbol ▲). Careless handling during repair can reduce life drastically. Make sure that, during repair, you are connected with the same potential as the mass of the set by a wristband with resistance. Keep components and tools also at this potential. Available ESD protection equipment:
  - Complete kit ESD3 (small tablemat, wristband, connection box, extension cable and ground cable) 4822 310 10671.
  - Wristband tester 4822 344 13999.
- Together with the deflection unit and any multi-pole unit, flat square picture tubes form an integrated unit. The deflection and the multi-pole units are set optimally at the factory. We do not recommend adjusting this unit during repair.
- Be careful during measurements in the high voltage section and on the picture tube.
- Never replace modules or other components while the unit is 'on'.
- When you align the set, use plastic rather than metal tools. This will prevent any short circuits and the danger of a circuit becoming unstable.

### 2.4 Notes

- Measure the voltages and waveforms with regard to the chassis (= tuner) ground (⊥), or hot ground (⤵), depending on the tested area of circuitry.
- The voltages and waveforms shown in the diagrams are indicative. Measure them in the Service Default Mode (see chapter 5) with a colour bar signal and stereo sound (L: 3 kHz, R: 1 kHz unless stated otherwise) and picture carrier at 475.25 MHz (PAL) or 61.25 MHz (NTSC, channel 3).
- Where necessary, measure the waveforms and voltages with (⊥) and without (⤵) aerial signal. Measure the voltages in the power supply section both in normal operation (Ⓜ) and in standby (Ⓜ). These values are indicated by means of the appropriate symbols.
- The picture tube panel has printed spark gaps. Each spark gap is connected between an electrode of the picture tube and the Aquadag coating.

- The semiconductors indicated in the circuit diagram and in the parts lists, are interchangeable per position with the semiconductors in the unit, irrespective of the type indication on these semiconductors.
- Manufactured under license from Dolby Laboratories. 'Dolby', 'Pro Logic' and the 'double-D symbol', are trademarks of Dolby Laboratories.

**Dolby PL Symbol****Figure 2-2**

# 3. Directions for Use

## Installation

**Your remote control**

**Peripherals** p. 31  
 selection of EXT1, EXT2, EXT3, EXT4 or FRONT  
 TV, videorecorder (VCR), DVD, Satellite (SAT), TUNER, CD, TAPE or cd-recordable (CDR) selection.

**Colour keys**  
 - select TV channels by theme p. 12  
 - direct teletext page or subject selection p. 25  
 - Pixel Plus p. 12

**Audio and Video equipment** p. 31-32  
 - select TV channels by theme p. 12  
 - direct teletext page or subject selection p. 25  
 - Pixel Plus p. 12

**Teletext** p. 26  
 - time display/subpage selection  
 - solution to puzzles  
 - display POC/PS code  
 - enlarge

**DMR** reduce image noise p. 12

**Zoom** p. 12  
 - zoom on/off

**Smart Controls**  
 - smart sound p. 11  
 - active control p. 11  
 - smart picture p. 11

**Dual Screen** p. 18-19  
 - dual screen on  
 - swap screens (only for 32-36PW767)  
 - still picture  
 - multipip p. 11 (only for 32-36PW767)  
 - strobe p. 11 (only for 28-32PW617)

**EasyLink** p. 12  
 - INSTANT recording  
 - picture format p. 12

**Installation** p. 5  
 - on screen info p. 10  
 - previous programme p. 10  
 - video recorder function p. 10

**Teletext** p. 26  
 - time display/subpage selection  
 - solution to puzzles  
 - display POC/PS code  
 - enlarge

**DMR** reduce image noise p. 12

**Zoom** p. 12  
 - zoom on/off

**Smart Controls**  
 - smart sound p. 11  
 - active control p. 11  
 - smart picture p. 11

**Dual Screen** p. 18-19  
 - dual screen on  
 - swap screens (only for 32-36PW767)  
 - still picture  
 - multipip p. 11 (only for 32-36PW767)  
 - strobe p. 11 (only for 28-32PW617)

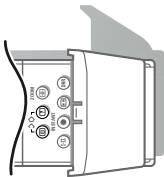
## Preparation

- Place the TV on a solid surface.**  

For ventilation, leave at least 5 cm free all around the TV. Do not place the TV on a carpet. To prevent any unsafe situations, do not place any objects on top of the TV. Avoid heat, direct sunlight and exposure to rain or water. Keep mobile telephones at a safe distance to avoid disturbances in picture and sound.
- Insert the aerial plug firmly into the aerial socket** at the back of the TV. For best picture quality use the suppressor-aerial cable supplied.
- Remote control:** Remove the cover of the battery compartment. Insert the 2 batteries supplied (Type R6-1.5V). Press the TV key to be sure your remote control is in the TV mode.  

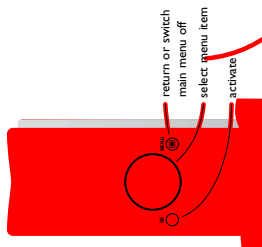
The batteries supplied do not contain the heavy metals mercury and cadmium. Nevertheless in many countries exhausted batteries may not be disposed of with your household waste. Please check on how to dispose of exhausted batteries according to local regulations.  
 Note: this remote control functions with TVs and other equipment which use the RC6 signalling standard.
- Wireless surround speaker system.**  
 Supplied and separately packed with your TV are:  
 - a wireless transmitter module with an integrated cable  
 - 2 surround loudspeakers  
 - connection cable  
**Wireless transmitter module**  
 • Attach the wireless module to the back of the TV as shown.  
 • Connect the attached cable to the wireless module connector.  
 Note: Make sure you only switch the TV on after you have plugged in the wireless module.
- Insert the mains plug of the TV in the wall socket** having a mains voltage of 220V-240V. To prevent damaging the mains (AC) cord which could cause a fire or electric shock, do not place the TV on the cord.
- Switch the TV on:** Press the power switch on the front of your TV. A green indicator on the front of the TV lights up and the screen comes on. If the indicator is red, press the -P+ keys on the remote control.  
 The green lamp blinks every time you press a key on the remote control.  
 When you switch on your set for the first time, the menu LANGUAGE automatically appears on the screen. The explanation appears in different languages one at a time. Choose your own language and press the OK key on the remote control.

Select the INSTALLATION menu

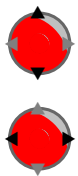


- 1 Open the door of the remote control.
- 2 Press **OK** and **7** at the same time.

To use the menus



- 1 Use the cursor in the up/down, left/right directions to select a menu item.
- 2 Press the **OK** key to activate.
- 3 Use the **OK** key to return or to switch the menu off.



Store TV channels

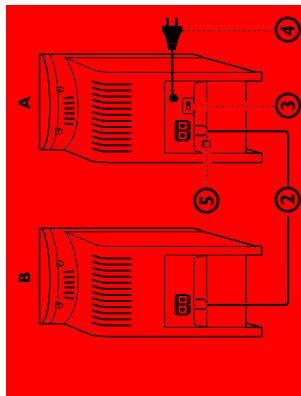
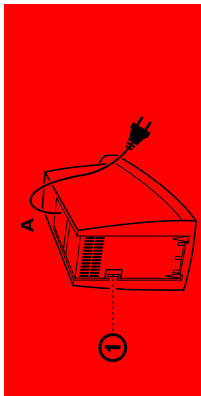
After the new or extra TV channels have been stored, the TV automatically transfers those TV channels to the video recorder if it is equipped with the EasyLink function. The message **EasyLink - Downloading .....** appears on the screen. The programme list of the video recorder is now the same as the one of the TV. If the TV is connected to a video recorder which supports the MEXTVIEWLink function, the TV also automatically transfers the language and country selections to the video recorder.



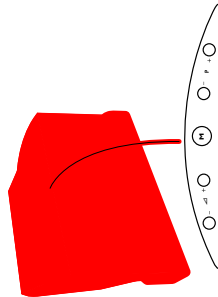
Surround loudspeakers

There are two surround loudspeakers supplied. One is the active loudspeaker A. The other loudspeaker B is a passive one which has to be connected with the active loudspeaker.

- The slide channel switch **1** at the bottom of the active loudspeaker has been set default to channel 1 in the factory. See also Sound Setup, p. 9.
- Connect the active to the passive loudspeaker with the supplied speaker cable **2**. Insert the marked wire into the openings of the same coloured connector clips on both speakers. Do not insert the wires too far.
- The Surround sound loudspeakers can be located behind or to either side of the listener. The front of the loudspeakers do not have to face the listener. The distance between the TV and the surround speakers should not exceed 15 m. *Note: In rare occasions people moving around close to the TV may interfere with the sound transmission.*
- Set the position switch **3** to the right, if the active loudspeaker is positioned to the right side of the listener, to the left, if it is positioned to the left side of the listener (seen from the point of view of watching the TV).
- Connect the active loudspeaker to the mains with the mains cable **4**.
- Switch on the active loudspeaker with the **POWER** switch **5**. The red indicator at the front of the active surround speaker shows that the speaker is in standby. During sound transmission the indicator turns to green. 10-15 min. after the sound transmission of the TV has stopped, the indicator turns back to red to indicate the low power standby.
- To switch the active speaker off, use the **POWER** switch.



Keys on Top of the TV



Should your remote control be lost or broken you can still change some of the basic picture settings with the keys on top of the TV.

Press the **M** key repeatedly to select **Volume, Brightness, Colour, Contrast, Treble and Bass**. Press the **P** - or + keys to carry out the selected adjustment. When the menu adjustment is not displayed, the **P** - or + keys enable you to select the TV channels, the **V** - or + keys to adjust the volume.

The selected adjustment automatically switches off when no action has been executed for 10 seconds.

Select the menu language and country

First, select your language and country.

- 1 Select **Menu language** and press the **OK** key.
- 2 Select your language and press the **OK** key. Use the cursor up/down to scroll through the list and to bring up other languages which are not displayed on the screen at present.
- 3 Select **Country** and press the **OK** key.
- 4 Select the country where you are now located and press the **OK** key. Use the cursor up/down to scroll through the list and bring up other countries which are not displayed on the screen at present.

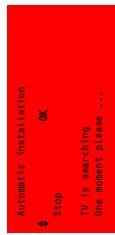


Select **Other** when none of the countries applies.

You can now search for and store the TV channels in two different ways: using **automatic installation** or **manual installation** (tuning-in channel by channel). Select your choice and press the **OK** key.

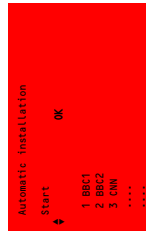
**Automatic installation**

In the Automatic Installation menu select **Start** and press the **OK** key to activate the searching. All TV channels are searched for and stored automatically.



If a cable system which broadcasts ACI (Automatic Channel Installation) or a TV channel transmitting a teletext page with the frequencies and programme names of all the TV channels which can be received, is detected, the search is stopped and a programme list appears.

The programme list is automatically filled with all the programme numbers and names of the TV channels transmitted.



*It is possible that the cable company or the TV channel displays a broadcast selection menu. Layout and items are defined by the cable company or the TV channel.  
Make your choice with the cursor and press the **OK** key.*

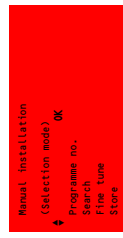
To exit from the menu press the **OK** key on the remote control.

Go on to page 7.

**Manual installation**

Searching for and storing TV channels is done channel by channel. You must go through every step of the Manual Installation menu.

**Selection mode** is only present and lights up if the country selected also offers the channel option (C-channels for aerial, S-channels for cable channels). You can choose either channel or frequency mode.



**1** Select the TV system. Select the country or part of the world from where you want to receive the TV channel. If you are connected to a cable system, select your country or part of the world where you are now located.

**2** Press the cursor down and enter the programme number with the digit keys.

**3** Search for a TV channel. Press the cursor left/right. The frequency or the channel number increases until a TV channel is found.

**Direct selection of a TV channel**  
If you know the frequency, the C- or S-channel number, enter it directly with the digit keys 0 to 9. Ask for a list from your cable company or dealer, alternatively consult the Table of frequencies on the inside backcover of this handbook.

**4** Fine tune. In case of poor reception, you can improve the reception by adjusting the frequency with the cursor left/right.

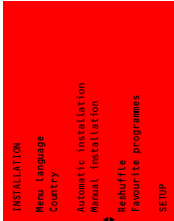
**5** To store your TV channel, select **Store** and press the **OK** key.

Repeat steps **1** to **5** to store another TV channel.

**6** To exit from the menu press the **OK** key on the remote control.

**Give name**

It is possible to change the name stored in the memory or to assign a name to a TV channel which has not yet been entered. A name with up to 3 letters or numbers can be given to the programme numbers 0 to 99. For example SUPER, BBC1, ... 99 and 0 you can also name any peripherals that are connected to a euroconnector:



- 1** Select **Give name** in the **INSTALLATION** menu and press the **OK** key
  - 2** Select the programme number.
  - 3** Press the **OK** key.
  - 4** Select the character with the cursor up/down.
  - 5** Select the following position with the cursor right.
  - 6** Select the following character.
  - 7** Press the **OK** key when finished.
  - 8** Press the **OK** key to return to the **INSTALLATION** menu.
- Space, numbers and other special characters are located between Z and A.

**Reshuffle the programme list**

According to your preference you can change the order of the stored TV channels.



- 1** Select **Reshuffle** in the **INSTALLATION** menu and press the **OK** key.
- 2** Select the programme number you want to exchange.
- 3** Press the **OK** key.
- 4** Select the new number you want to exchange it with.
- 5** Press the **OK** key. Repeat the operation until all TV channels are allocated as you like.
- 6** Press the **OK** key to return to the **INSTALLATION** menu.

**Select Favourite TV channels**

After leaving the installation you can browse through the TV channels by pressing the **- P +** keys. Only those TV channels which are in the favourite list will be displayed. Non-favourite TV channels can still be selected with the digit keys. By default all stored TV channels are added to the favourite list.



- 1** Select **Favourite programmes** in the **INSTALLATION** menu and press the **OK** key.
- 2** Select your favourite programme number.
- 3** Select **Yes** or **No** with the cursor left/right.
- 4** Repeat for every TV channel you want to make a favourite or a non-favourite TV channel.
- 5** Press the **OK** key to return to the **INSTALLATION** menu.

*In order for NEXTVIEW to function properly, the first TV channel from the favourite list should also broadcast the correct local date and time via teletext.*



### Install TV Setup

The Setup menu allows you to adjust initial settings, i.e. those which are not related to the installation of the TV channels.

The Setup menu contains items that control the settings of the TV's functions, features, services and peripherals you may have connected.

- 1 Use the cursor in the up/down, left/right directions to select the menu item.
- 2 Use the **OK** key to activate.
- 3 Use the **ESC** key to return or switch menu off.



#### Digital sources

See Connect Peripheral Equipment, p. 29 to connect your digital equipment, like a DVD, a digital satellite tuner or a similar digital device.

#### Sound Setup

See p. 9.

#### Decoder/Descrambler programme numbers

If a decoder or a descrambler is connected, see p. 27, you can define one or more programme numbers as decoder programme numbers.



Press the cursor left/right to select the input used to connect to your decoder: **Off**, **EXT1** or **EXT2**.  
Select **Off** if you do not want the selected programme number being activated as a decoder programme number.

Select **EXT2** when the decoder is connected to your EasyLink video recorder.

When selecting the decoder, the message **EasyLink: Downloading Presets.....** appears on the screen.

#### Picture tilt

Select **Picture tilt** with the cursor up/down. Keep the cursor left/right pressed to adjust the rotation of the picture.

#### Information line

Select **On** and after the selection of a TV programme or after pressing the **INFO** key on the remote control, a TV channel which broadcasts teletext may transmit the name of the TV channel, the programme name or another message. This is displayed on screen next to information about sound picture format and DNR setting.

When selected **Off**, only sound picture format and DNR information is displayed after the selection of a TV channel or after pressing the **INFO** key.

#### Factory settings

Select **Factory settings** and press the **OK** key to restore picture and sound settings, predefined in the factory.

#### Auto format

Selecting **Yes** causes the screen to automatically fill as much of the picture as possible when TV programmes are not carrying special signals detecting the correct screen format.

With the **ESC** key on the remote control you can still select other picture formats. See p. 12.

#### NEXTVIEW provider

Most broadcasters in Europe are offering teletext pages containing the day's programme schedule. These pages can be requested by switching the TV to Teletext Guide. An increasing number of broadcasters are offering an extended programme guide service called NEXTVIEW.

NEXTVIEW is a new way of presenting programme schedules and offers more features than basic teletext.

With NEXTVIEW it is possible to show for instance all the movies or children programmes for tonight or the following days.

If you select **None** as NEXTVIEW provider, the TV will capture all data from the available TV channels which broadcast NEXTVIEW. Broadcaster defined menus will not be available.

If you select a programme number of a TV channel stored in the favourite list as NEXTVIEW provider, the selected TV channel will provide NEXTVIEW data and additional information of its own broadcasts as well as from other (non selected) TV channels.

Normally you will select the NEXTVIEW provider that transmits most information in your language. You can make the best selection via information from TV announcements or from the newspapers.

#### Important:

In order for NEXTVIEW to function properly, the first TV channel from the favourite list should also broadcast the correct local date and time via teletext.  
Please check at startup if the time and date are correct in the NEXTVIEW screen.

#### Remark:

**Not all TV channels support NEXTVIEW.**  
How to make use of NEXTVIEW, see p. 20.

### Sound Setup menu

#### Sound setup

Auto Surround  
Wireless Surround  
Extra front speakers  
Distance to front  
Distance to rear

#### Auto Surround

Sometimes the broadcaster transmits special signals for Surround Sound encoded programmes. The TV automatically switches to the best surround sound mode when **Auto Surround** is switched **On**. However it is possible to overwrite this setting.

#### Wireless Surround

The system has already been configured in the factory to work properly. In rare circumstances, interference from external RF (wireless) equipment such as RF headphones, mobile phones or remote controls for lights, may occur. Then it may be necessary to shift to another wireless channel. Use the cursor left/right to select another channel.

#### Important:

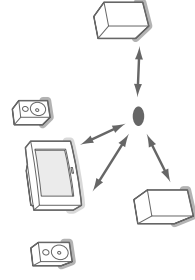
Always be sure that the active surround speaker and the Wireless Surround setting are switched to the same transmitting channel. Otherwise no sound or only a distorted sound will be heard on the surround speakers.

When the TV is tuned to a channel in the neighbourhood of 864 MHz (433 MHz in case you purchased a TV with a type number in the range 28-32PW9617101 or 158 or 32-36PW9767101 or 158), the transmitter is switched off because no RF surround sound is possible. This is necessary to avoid interfered picture. You can improve the picture quality by using the suppressor aerial cable supplied.

In rare cases, when no RF surround sound is possible or when there is too much interference, use the wired back up solution with a 3.5 mm stereo jack. In this case select **Off** in the Wireless surround menu item. See Connect Peripheral equipment, p. 28.

#### Extra front speakers

See Connect Extra loudspeakers/Amplifier, p. 30. If no extra front speakers/amplifier are connected, do not change the predefined factory setting which is **No** (TV).



#### Distance to front

Select the distance between the TV and the place you sit to watch TV.

#### Distance to rear

Select the distance between the rear surround speakers and the place you sit.

To exit from the menu press the **ESC** key repeatedly.

# Operation

## Use of the remote control

**Select peripherals**  
Press this key repeatedly to select EXTI, EXT2, EXT3, EXT4 or FRONT, according to where you connected the peripherals (p. 31).

**TV VCR DVD SAT TUNER CD TAPE CDR**  
Press one of these keys to use the remote control directly in the TV, video recorder, DVD or satellite mode. A green indicator lights up. Press the same key again within 3 seconds to use the remote control in the mode indicated below the key (tuner, CD, tape or CD-recordable).  
A red indicator lights up.  
Press the key again to return to the function mentioned above the key.

**no function**

**Video recorder** see p. 31

**NEXTVIEW on/off** see p. 20

**Screen information**  
Press for 5 seconds to activate/de-activate the extended or reduced display of TV channel and programme information on the screen.  
Press briefly to display information about the selected TV channel and programme, the sound reception, picture settings, the selected DNR setting and the remaining time set with the sleep timer.

**0/9 Digit keys**  
To select a TV channel.  
For a two digit programme number, enter the second digit within 2 seconds.  
To switch immediately to a selected one digit TV channel, keep the digit key pressed a bit longer.

**P/P Previous programme**  
The previously selected TV channel is displayed.  
The  $\leftarrow$  indicator is only for video recorder.

**Standby**  
The set is switched off and the red indicator (orange when acquiring NEXTVIEW information) lights up. When acquiring NEXTVIEW the TV is switched to full standby after a period of max. 1 hour and the red indicator lights up.  
To switch the TV on again, press - P + or the digit keys.  
If your EasyLink video recorder has the system standby function and you press the standby key for 3 seconds, both the TV and video recorder are switched to standby.

**Freeze**  
To activate/de-activate the frozen picture and to hold a teletext page.

**Surround mode**  
Press this key repeatedly to select another available surround mode: Dolby Pro Logic, 3D Surround, Dolby 3 Stereo, Stereo, Hall or Dolby Digital.

**Teletext on/off** see p. 25

**Main menu on/off** see p. 13

**Volume**  
Press + or - to adjust the volume.

**Mute**  
Temporarily interrupt the sound or restore it.

**P Programme selection**  
To browse through the TV channels activated in the Favourite Programme menu.

**Active control**  
Active control is a pro-active and automatic system. The TV continuously measures and corrects all incoming signals in order to provide the best picture possible. Thanks to the Ambient Light Sensor, which measures the light conditions of the room in which the TV is situated, the contrast, dynamic contrast, brightness and colour picture settings are adjusted automatically. The light sensor is active when the Active control function is switched to Medium (if provided) or Maximum. Press the  $\left[\text{Active Control}\right]$  key repeatedly to select the Active Control values Off, Minimum, Medium (if provided) or Maximum. Off, Sharpness and Dynamic Contrast are controlled automatically.  
Minimum, Sharpness, Dynamic Contrast and Noise Reduction are controlled (Medium, Dynamic Contrast, Colour, Sharpness and Noise reduction are controlled automatically).  
Maximum Contrast (if provided), Dynamic Contrast, Colour, Sharpness and Noise reduction are controlled automatically.  
Press the cursor in the up/down directions while the selected Active Control setting information is on top of the screen.  
The Active Control menu appears.  
The picture settings are being adapted continuously and automatically.  
The menu items cannot be selected.  
Colour enhancement (green enhancement, skintone correction and blue stretch) is switched on with certain Smart Picture selections.  
Press the cursor in the up/down directions again to switch off the menu.

*For 32-36PVP9617*

**Dual screen** see p. 18

**Multipip**  
Press  $\left[\text{Multipip}\right]$  to switch on Multipip. A menu line MOSAIC appears. Select the desired function with the cursor left/right and press the OK key.  
**Scan**: a scan of the TV channels placed in the favourite list is performed.  
Press the OK key again to have the continuation of the list.  
**Photo Finish**: the main picture is displayed in successive frozen pictures.  
Press the OK key again to have a new sequence of frozen pictures.  
**Strobe**: the picture is reproduced image by image.  
Press the OK key again to have a faster speed.  
Press  $\left[\text{Multipip}\right]$  to switch off multipip.

*For 28-32PVP9617*

**Dual screen** see p. 19

**no function**

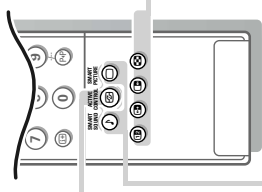
**Strobe**  
Press this key to reproduce the picture image by image.  
Press the  $\left[\text{Strobe}\right]$  key again to have a faster speed.  
Press the  $\left[\text{Strobe}\right]$  key again to switch off the strobe function.

**Smart Keys**  
To select predefined picture and sound settings.

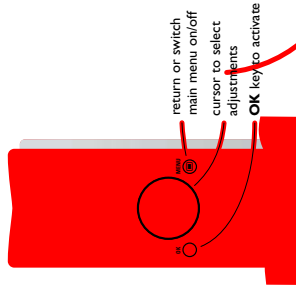
**Smart Sound**  
Each time it is pressed, a different sound setting is selected, corresponding with specific factory settings of treble and bass.

**Smart Picture**  
Each time it is pressed, a different picture setting is selected, corresponding with specific factory settings of Contrast, Colour, Sharpness, Dynamic Contrast and Colour enhancement.

**Personal** refers to the personal preference settings of picture and sound selected in the picture and sound menu.  
*Remark: the moment you are in a predefined smart sound or picture setting and you modify a setting in the picture or sound menu, all values of the menu will overwrite the previously made settings.*

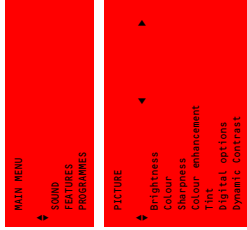


Use of the menus



- 1 Press the **Power** key to display/cancel the **MAIN MENU**.
- 2 Use the cursor in the up/down directions to select the **PICTURE, SOUND** or **FEATURES** menu or to select **PROGRAMMES**.
- 3 Press the cursor right to activate the selected menu.
- 4 Use the cursor in the up/down, left/right directions to select the menu item.
- 5 Use the **OK** key to activate.
- 6 Press the **Power** key repeatedly to return or to switch the menu off.

Picture menu



- **100 Hz Dig. Scan = 100 Hz + Dig. Scan (Field and line flicker reduction)** without motion compensation.
  - **Pixel Plus** = creates near-High Definition performance inside the TV on the basis of a regular input signal. The number of lines are increased and the number of pixels on a line are doubled in combination with Digital Natural Motion.
- As such Pixel Plus enhances both regular broadcast signals and DVD or Digital TV input towards unparalleled sharpness and depth, near-High Definition and natural detail.
- **Double Lines** = provides for a doubling of vertical resolution which adds astonishing sharpness and a total absence of visible picture lines. Motion compensation reduces jitter and offers smooth, yet sharp motion reproduction.

*Note:*  
Pixel Plus is not active when Multi screen (Stroke), Teletext (Except when Subtitled is activated), NEXTView or Teletext, Dual screen is selected.

Colour enhancement

When activated, this feature automatically controls skin tone correction, green enhancement and blue stretch. It makes the colours more vivid. Select **On** or **Off** in order to activate/de-activate Colour enhancement.

**Tint**  
Select the colour temperature: **Normal, Warm** or **Cool**.

**Digital options**  
Although Pixel Plus is the most ideal setting, it may be preferable, dependent on your own preference, to select Double lines .or. 100 Hz Digital Scan.

**Dynamic Contrast**  
To make the contrast in the darker and the brighter picture areas more noticeable, select the **Med** setting. In certain circumstances it may be preferred to select **Min, Max** or **Off**.

The modified adjustments for Contrast, Brightness, Colour, Sharpness, Colour enhancement, Tint, Digital options and Dynamic Contrast are automatically stored for all TV channels.  
Select **Factory settings** in the Setup menu to restore the predefined factory settings, see p. 8.

**Switching Pixel Plus on/off**  
The TV screen is divided into 2 parts: in the left part Pixel Plus and Digital Natural Motion switched off; in the right part Pixel Plus and Digital Natural Motion switched on. Press the **PIXEL PLUS** key again to switch the Pixel Plus demo off.

**Select TV channels by theme**  
If programmes in the TV guide of nextView have defined themes, it is possible to quickly select TV programmes with the coloured keys. Press the red, green, yellow or blue key to select one of the four predefined theme categories: **MOVIES, SPORTS, CHILDREN, NEWS**. The TV switches to the first TV channel broadcasting a programme of the selected theme. At the same time a list of all the TV channels currently transmitting a programme of the selected theme appears on the screen. Use the cursor up/down to select a programme. Press the same colour key again to remove the list.

**Time display**  
The time, downloaded from the TV channel (with teletext) stored on programme number 1 or the lowest favourite programme number, is displayed on the screen. *This function is not available when continuous subtitles have been switched on.*

**Teletext functions** see p. 26

**Zoom**  
Press the **ZOOM** key repeatedly to select one of the zoom magnifications (x1, x4, x9, x16). Additionally you can shift the selected zoom window over the screen with the cursor. Press **OK** to activate/de-activate the continuous display of the zoom magnification. The zoom window is reset after selecting another TV channel, another picture format or when another picture format is selected automatically. *Zooming is disabled in Dual Screen mode.*

**Bilingual choice and sound mode selection**  
Press this key  
• to switch from Stereo to Mono sound, in case of stereo transmission, or from Nicam Stereo to Nicam available, in case of digital transmission;  
• to choose between language I (Dual I) or language II (Dual II), in case of bilingual transmission. The setting is separately stored for each TV channel.

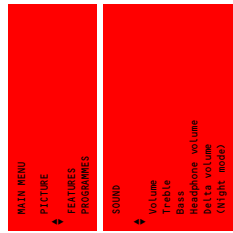
**Instant record**  
If your video recorder has the EasyLink function the **INSTANT** key for record can be operated in the TV mode.

**Picture format**  
Press this key repeatedly to select another picture format: 4:3, Movie Expand 1:49, Movie Expand 16:9 with or without subtitling, Wide Screen, Super zoom or Automatic (when Auto format is set to Yes in the SETUP menu). Auto format makes the picture to fill the screen as much as possible. Sometimes also video recorder programmes carry special signals which will automatically switch the TV to the correct screen format. *Auto format is disabled when in Dual Screen.* When in Automatic, Movie Expand 1:49 or 16:9 or Super zoom picture format, you can make subtitles visible with the cursor up/down.

**DNR Dyn. Noise Reduction**  
To reduce the image noise and improve picture quality when receiving weak signals, Press the **DNR** key to select **Off, Minimum, Medium** or **Maximum**.



**Sound menu**

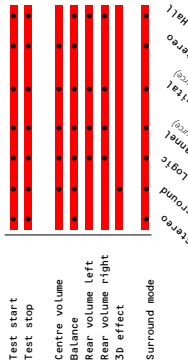


The modified adjustments for Volume, Treble and Bass are automatically stored for all TV channels. Select **Factory settings** in the Setup menu to restore the predefined factory settings, see p. 8.

Select **Surround settings** in the Sound menu.

The contents of the Surround settings menu depends on the selected Surround mode.

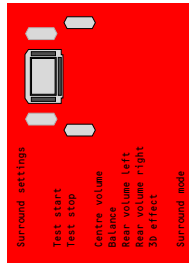
Surround settings



The graphical representation of the speakers is displayed on screen when controls are being changed or when in test tone mode. The drawing on screen is updated according to the chosen loudspeaker setup and the selected surround mode. Speakers which are active are highlighted. In 3D surround mode the graphical representation of the rear loudspeakers is replaced by the symbol . The menu item **3D effect** appears and the level of the 3D effect can be adjusted.

*Note: If extra front speakers are connected and selected in the Sound Setup menu, all internal TV speakers produce centre sound. See Connect Peripheral Equipment, Extra loudspeakers/Amplifier, p. 30.*

**Adjustment of the volume level of the loudspeakers**



The menu item **Test** enables you to have a reference of the internal and the rear loudspeakers loudness.

- 1** Select **Test start** and press the **OK** key. A steady noise tone is switched sequentially through the available loudspeakers, for 2 seconds each. This enables you to have a reference of the loudness of each loudspeaker and to adjust the level of each until they all sound equally loud. The loudspeakers activated light up in the screen graphic.
- 2** Select **Centre volume**, **Balance**, **Rear volume left** or **right** and alter the selected adjustments.
- 3** Select **Test stop** and press the **OK** key when you have finished the adjustment of the speaker levels.

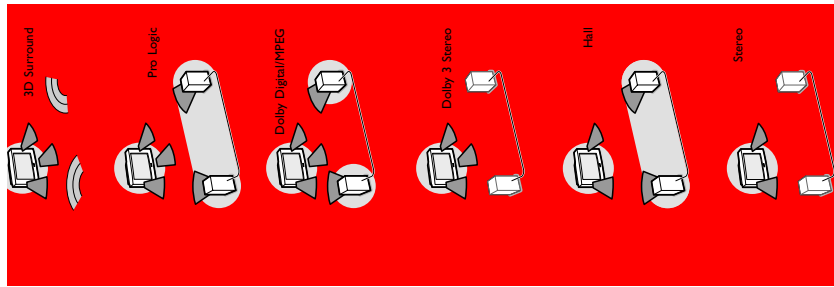
**Headphone volume**

See Connect Peripheral Equipment, p. 28 for the connection of the headphone.

**Delta volume**

Here you may adjust the volume differences of each selected TV channel or external device separately. This can compensate volume differences between different broadcasters. Use the **-** **P** + keys to compare to the volume of other TV channels or externals.

**Night mode** (only available with certain Dolby Digital sound sources)  
Select **Yes** to reduce the dynamics of the sound and to improve listening at low volume. This is useful for late-night listening, e.g. to a DVD disc.



**Surround Modes**  
Select the Surround mode according to the sound mode being broadcast.

**3D Surround** (optimal with Dolby Surround broadcasting)  
3D Surround enables you to experience the effect of Dolby Surround Pro Logic without the need of having rear speakers connected or activated. With Dolby Digital or MPEG Multichannel an improved virtual effect is offered. The graphical representation of the rear loudspeakers is replaced by the symbol . Select the level of **3D effect** with the cursor left/right.

**Pro Logic** (with Dolby Surround broadcasting)  
In addition to the left and right internal speakers, the centre and the rear surround loudspeakers reproduce the Dolby Surround Pro Logic sounds. This sound is always present in the movie or programme marked with **DD** Dolby Surround. This mode is especially recommended for such programmes or movies. Dolby Pro Logic signals are also present on some DVD tracks.

*Note: Normal stereo broadcast is not always encoded to produce a rear surround sound.*

**Dolby Digital**\* or **MPEG Multichannel**  
When you have connected a DVD player or a Laser Disc player containing a Dolby Digital decoder (AC-3) or MPEG 2 decoder output. (See Connecting Peripherals, Digital equipment p. 29), you can enjoy Multichannel Surround Sound in your home when playing discs recorded in Dolby Digital or MPEG2. In addition to the left and right internal speakers, the centre, the left and right rear surround loudspeakers and the subwoofer reproduce the Dolby Digital or Dolby MPEG 5-channel Surround sounds. Select Dolby Digital or MPEG Multichannel Surround mode.

**Dolby 3 Stereo** (optimal with Dolby Surround broadcasting)  
The sound signal is now distributed over the front, left, the front right and the centre TV loudspeakers. The rear loudspeakers do not produce any signal.

**Hall**  
The special sound signal is distributed over the rear loudspeakers which creates a hall effect from the rear. The centre loudspeaker does not reproduce any signal. This mode is recommended when you wish to add surround sound to a broadcast which is not encoded Dolby Surround or to a mono signal.

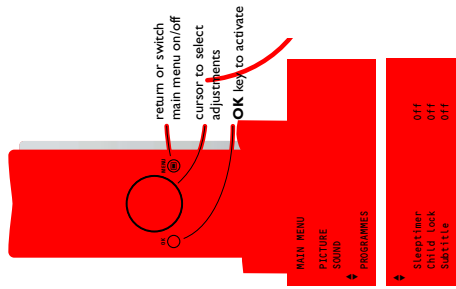
**Stereo**  
This mode reproduces only the left and right front sound signals. You only hear a stereo sound if the broadcast which you are receiving is transmitted in stereo or nicam stereo.



\* Manufactured under license from Dolby Laboratories, "Dolby Pro Logic" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation. © 1992, 1997 Dolby Laboratories, Inc. All rights reserved.

### Features menu

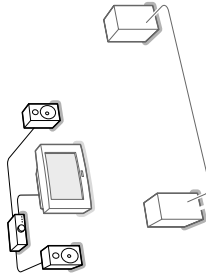
- 1 Press the **OK** key to display/cancel the **MAIN MENU**.
- 2 Use the cursor in the up/down directions to select the **FEATURES** menu.
- 3 Press the cursor right to activate the selected menu.
- 4 Use the cursor in the up/down directions to select a menu item.
- 5 Use the cursor in the left/right directions to select the desired setting.



### With two extra front loudspeakers connected

To enhance the sound reproduction of your TV you may connect two extra front loudspeakers via an external amplifier. See Connect Peripheral Equipment, Extra loudspeakers/Amplifier, p. 30  
In the Surround modes, Hall and Stereo (+ amp) is added to indicate that you should switch on your amplifier as in these modes the internal TV speakers do not produce any sound.  
The subwoofer output is muted.

*Note: If extra front speakers are connected and selected, all internal TV speakers produce centre sound in the surround modes Pro Logic, Dolby 3 Stereo, Dolby Digital, and MPEG.*



Press the **OK** key to return to the **SOUND** menu.

### Dolby Digital sound reception info via the **OK** key

Press the **OK** key.  
When Dolby Digital sound is reproduced, the sound info on screen displays the number of loudspeaker signals which are transmitted.  
This is indicated by 2 numbers: the first one indicates the number of front loudspeaker signals, the second one the number of rear loudspeaker signals.  
Eg. 'Dolby Digital 3/2' means that 3 front signals are transmitted: left, right and centre, and 2 rear signals: left and right surround.  
'Dolby Digital 1/0' means that a mono signal is transmitted.  
'Dolby Digital 2/0' means that the transmission contains a stereo signal which can be Dolby Pro Logic encoded.  
In this case the surround mode will display Dolby Pro Logic.

### Programme list

- 1 Press the **OK** key to display/cancel the **MAIN MENU**.
  - 2 Select **PROGRAMMES** with the cursor up/down.
  - 3 Press the cursor right to activate and to display an overview of all the TV channels installed.
  - 4 Press the cursor up/down to run through the list and press **OK** to select the desired TV channel.
- Press the **OK** key to switch off the Programme list.

### Sleep timer

With the sleep timer you can set a time period after which the TV should switch itself to standby.  
The counter runs from **Off** up to **180 min**.  
One minute before the TV is set to go to standby, the remaining seconds appear on screen. Not visible in dual screen mode. You can always switch off your set earlier or change the set time.

### Child lock

If the child lock is on, the TV can only be switched on with the remote control. The **P** - and + keys on top of the TV cannot be used to select a TV channel. In this way you can prevent unauthorised use of your TV.  
If the message **Child lock On** appears, the child lock must be switched off before you can use the **P** - and + keys on top of the TV to select a TV channel.

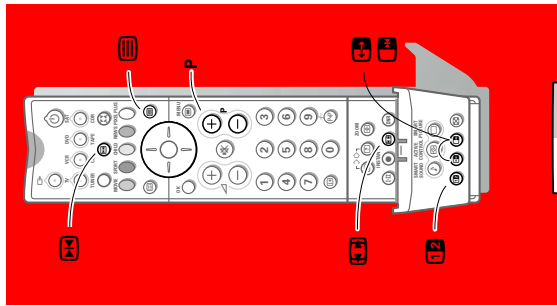
### Subtitle

TV channels with teletext often transmit certain programmes with subtitles. See Teletext, Continuous Subtitles, p. 26 how to select the proper subtitle page from the teletext index.  
Select **Subtitle On** or **Off**.

Press the **OK** key to switch off the Features menu.

**Dual screen**

Only for 32-36PW9767



- 1 Press the **[Left Arrow]** key to switch on Dual screen.  
The TV screen is divided into 2 parts:  
- the left side for the picture of the selected TV channel;  
- the right side for the picture from the TV channel in the favourite programme list following on the selected TV channel.
  - 2 Press the **[Right Arrow]** key under the door of the remote control to select a vertical squeezed or a non vertical squeezed picture size.
- Select left and right pictures**
- 1 Press **+ P** - to run through the TV channels in the left picture.
  - 2 Press the cursor up/down to select the TV channels in the right picture.  
Also TV channels which are not in the favourite list may be selected.  
Press the cursor left/right to select peripheral equipment connected to **EXT1, EXT2, EXT3, EXT4 or FRONT**.
    - Selecting TV channels in the right picture with the cursor up/down is not possible when a menu is displayed on the screen.
    - Programmes via a decoder/descrambler can not be reproduced in the right picture.
    - The sound of the right picture can be heard via headphones. Only programmes via a peripheral can be heard in stereo.
    - Zooming is reset to 1x when Dual screen is switched on.

**Swapping screens**

Press the **[P]** key to swap the right and left picture. The sound is swapped as well.

**Select still picture**

- Press the **[Freeze]** key to freeze the left picture.
- Press the **[Freeze]** key to freeze the right picture.

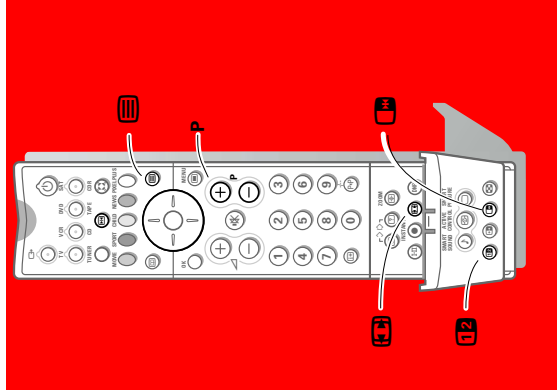
**Possible Dual screen combinations**

- TV channel/TV channel: see Select left and right pictures.
- TV channel/Peripheral: see Select left and right pictures.
- Peripherals/TV channel
  - Select the connection (**EXT1, EXT2, EXT3, EXT4 or FRONT**) of the connected peripheral.
  - Press the **[P]** key.
- TV channel/Teletext
  - Press the **[Teletext]** key to display teletext of the selected TV channel.
  - Press the **[Freeze]** key.
- To operate teletext, see p. 25.
- The **+P** - keys can only be used to run through the teletext pages.
- Press the **[Teletext]** key again to return to a full screen picture or press the **[Freeze]** key again to return to a full teletext picture.
- TV channel/NEXTVIEW
  - Press the **[NextView]** key to display NEXTVIEW.
  - Press the **[Freeze]** key.
- To operate NEXTVIEW, see p. 20.
- Press the **[NextView]** key again to return to a full screen picture or press the **[Freeze]** key again to return to a full NEXTVIEW picture.

BBC1	BBC2
BBC1	EXT2
EXT2	BBC1
BBC1	CEEFAX
BBC1	NEXTVIEW

**Dual screen**

Only for 28-32PW9617



- 1 Press the **[Left Arrow]** key to switch on Dual screen.  
The TV screen is divided into 2 parts:  
- the left side for the normal main picture;  
- the right side for teletext broadcast by the selected TV channel or for NEXTVIEW.
- To operate NEXTVIEW, see p. 20.  
To operate teletext, see p. 25.
- If Dual screen is **Off**, the picture, teletext or NEXTVIEW is displayed full screen.
- 2 Press the **[Right Arrow]** key under the door of the remote control to select a vertical squeezed or a non vertical squeezed picture size.
- 3 Press **+ P** -, digit keys or colour keys to run through the teletext pages.
- 4 Press the **[Teletext]** key to return to a full picture screen and to select another TV channel with the **+ P** - keys or with the digit keys.

**Select still teletext picture**

Press the **[Freeze]** key to freeze the teletext picture.  
The info in this page is not being updated by the teletext broadcaster.

**NEXTVIEW / Teletext guide**

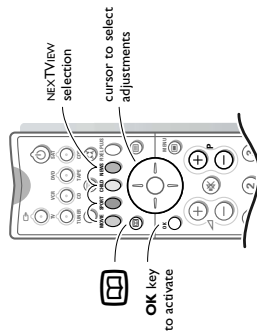
In the Setup menu, p. 8, you were asked to select a NEXTVIEW provider. If the selected provider supports nextTVView then the TV will automatically present the NEXTVIEW programme schedule. If the TV channel supports just teletext, then the TV will switch automatically to teletext guide. Both facilities are offering the same functions: record, remind, info and watch. However, in case of Teletext guide the broadcaster is responsible for the availability of these functions.

Some broadcasters provide information about their own programmes and sometimes other TV channels for one or more days. You can search for the programmes you want to watch up to 7 days in advance. It is also possible to search for a programme by theme, e.g. sport, movie, etc. Once a programme has been selected it can be tagged, to remind you, or to record on the video recorder automatically (provided the video recorder is equipped with NEXTVIEWLink), once, daily, weekly or series. Teletext guide/NEXTVIEW also allows direct access to detailed information about programmes if provided by the broadcaster.

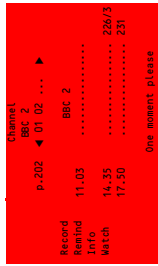
*The broadcaster is responsible for the content of the information. The TV is responsible for the capture of that information and for the presentation to the user.*

**Use of the Teletext guide/NEXTVIEW menus**

- 1 Press the **OK** key on the remote control to display/cancel the Teletext Guide/NEXTVIEW menu.
- 2 Use the cursor in the up/down, left/right directions to select the date, **DAY** for the daily guide, **THEME** for the theme guide, **OVERVIEW** for an overview of all the programmes which are marked as reminders or for recording, the programme guide page number or to enter the programme list.



**Teletext guide**



TV channels which broadcast teletext also transmit a page with the programme guide of the day. For each selected TV channel the programme guide page can be selected with the **OK** key:

- automatically if the selected TV channel supports services like PDC (Programme Delivery Control) or MIP (Magazine Inventory Page).
- if automatic pre-selection is not possible then the index page is displayed and the proper programme guide page number of the selected TV channel has to be entered with the digit keys.

The programme guide page will be stored automatically only if it satisfies Video Programming via Teletext (VPT) requirements.

Every time you press the **OK** key, the programme guide page of the selected TV channel will be available if the TV channel does not support NEXTVIEW.

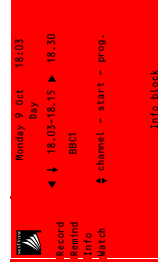
The function items record, remind, info and watch, corresponding with the coloured keys, become highlighted if the displayed programme page satisfies the Video Programming via Teletext (VPT) requirements. Select a Programme item and press one of the function keys, e.g. Record or Remind. See Basic functions further on. The Info item is enabled if the selected programme contains a page number with an optional subcode referring to a page with more info about the programme.

**NEXTVIEW modes to sort and represent information**

**Menu**  
If in the Setup menu, see p. 8, you have selected a TV channel as NEXTVIEW provider which also supports NEXTVIEW, NEXTVIEW menu is displayed or can be selected. The selected TV channel is responsible for this menu. The NEXTVIEW menu appears when NEXTVIEW is switched on.

Use the cursor up/down to select a menu item. Use the cursor right to select the menu item. While going through the menus, the TV is collecting the sorting criteria to finally display a list of programme events. The functions in the left column are shown at reduced brightness as long as the menu is displayed. If **None** has been selected as NEXTVIEW provider in the Setup menu, the broadcaster's defined menu will not be available.

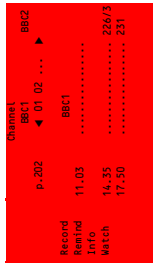
**Day**  
The day guide provides an overview of all programme titles active in the selected time block. Time blocks are 15 minute intervals starting from the current time of the current day. The default order is based on the programme list of the favourite TV channels as stored in the installation of the TV. TV channels not marked as favourite TV channels will not appear. Default NEXTVIEW opens with the day screen if the broadcast does not have its own menu.



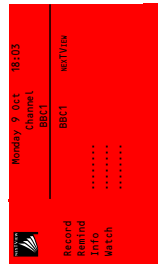
**NEXTVIEW**



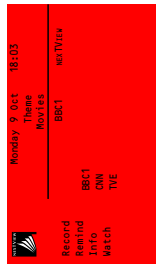
**Teletext guide**



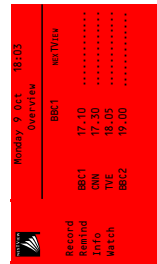
- 3 Select a programme with the cursor up/down.
- 4 Press one of the colour keys to select one of the basic functions (if available): record, remind, watch, info. See Basic functions further on.
- 5 Press the **OK** key to return to the header area again.
- 6 Press one of the colour keys to select one of the basic functions (if available): record, remind, watch, info. See Basic functions further on.
- 7 Press the **OK** key to return to the header area again.



**Channel**  
The Channel guide provides an overview of all programmes that are broadcast by a single channel during one day. Previous programmes can be made visible via cursor up. The list will start with the earliest broadcast programme. With cursor left/right another favourite TV channel can be selected.



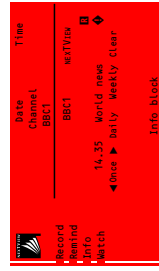
**Theme**  
The theme guide displays a list of all programmes at the selected date, that matches with the selected category (news, sport, culture, movies, ...). The default starting item will be the current or next programme on the current TV channel. The **THEME** selection is only present if programmes in the TV guide have defined themes.



**Overview**  
The Overview menu provides a list of programmes that are marked as reminders and those that have to be recorded. When more than one programme to be recorded has an overlap in time, these programmes will be marked by a red colour. After the programme has been broadcast, all items set for once will be deleted from the list the following day. This menu can be used to change a reminder or programmes to be recorded.

*Note: the TV will automatically interpret the broadcast time (as shown on the teletext guide) of your selected programme into the correct local time and date.*

**Basic functions**



The functions Record, Remind, Info and Watch can be activated with the corresponding colour keys on the remote control. If the function is not available, then the text is shown at reduced brightness. Select a programme with the cursor up/down.

**Record [R] or Remind [R]**

Press the red colour key to activate **Record** or the green colour key to activate **Remind**.

*If the programme number of the broadcaster is not yet known, a message appears with the request to input the correct programme number with the cursor left/right and press OK.*

A small menu pops up in which you can choose the interval: once, daily or weekly, or clear an earlier made record or remind setting. The default interval is set to **Once**. If a programme is an episode of a series, it is identified by the system and the options **daily** and **weekly** are replaced by the option **series**. In this case the system identifies when the next episode of the series will be broadcast. This is not possible in the Teletext guide.

Use the cursor in the left/right directions to select the interval. The colour of the tag refers to the interval.

Press the **OK** key.

When **Record [R]** is activated:

**Storing** appears to indicate the video recorder is programmed.

When **Remind [R]** is activated:

- a message will appear on the screen the moment the tagged programme with [R] starts, when watching the TV later on.
- the TV switches on the moment the tagged programme with [R] starts, when the TV is in standby.

*Note: Recordings and reminders are not possible when the broadcaster does not transmit dates and times of the programmes. The message **No TV programming possible** appears. Make sure you are on the TV programming page.*

**Info**

Press the yellow colour key to activate **Info**.

Advertisements or information relating to the selected programme are displayed. In some cases all of the information does not fit on the screen. Use the cursor up/down to browse through all of the information.

Press the yellow colour key again to switch off the information.

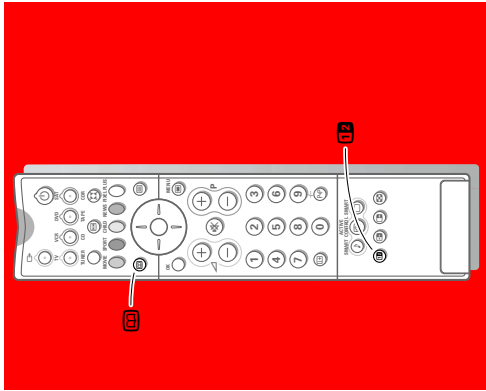
**Watch**

Press the blue colour key to activate **Watch**. This function is only available if a currently broadcast programme is selected. Otherwise the function is not available.

The selection causes the TV to tune to the selected TV channel. **NEXTVIEW** is switched off.

### Teletext

#### Select Picture/NEXTVIEW-Teletext Guide



Press the **Teletext** key.  
Press the **NEXTVIEW** key.  
The screen is divided into two parts: the left side for the normal main picture, the right side for NEXTVIEW/Teletext Guide.  
Press the **Teletext** key to return to a full NEXTVIEW/Teletext guide screen and press the **NEXTVIEW** key to return to a full picture screen.

Most TV channels broadcast information via teletext. Each channel which broadcasts teletext transmits a page with information on how to use its teletext system. Look for the teletext page with the main index (usually p. 100). Depending on the TV channel, teletext is transmitted in different systems.

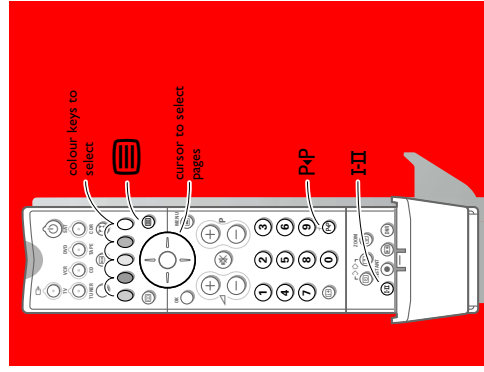
The colours used in the options line correspond with the colour keys of your remote control.

#### About Easy Text

Easy Text considerably reduces the waiting time (on condition that the teletext broadcast of the particular TV channel is received for at least half a minute) by:

- a direct selection of previous and following pages which are in transmission and of the pages referred to in the options line
- a habit-watcher list: frequently used pages are put automatically in a list of preferred pages, so that they are immediately available
- the precapturing of the page numbers referred to in the displayed page
- the precapturing of all the subpages.

#### Switch Teletext on and off



Press **Teletext** to switch the teletext on or off.  
The main index page appears on the screen together with two information lines at the top and one option line at the bottom of the screen.

Remark: if the displayed teletext characters on screen do not correspond with the characters used in your language, press the **Teletext** key, under the cover of the remote control, repeatedly to select language group 1 or 2.

#### Select a Teletext page

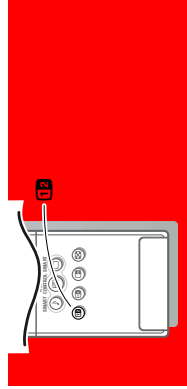
##### With the digit keys

Enter the desired page number with the digit keys. The page counter seeks the page or the page appears immediately when the page number has been stored in the memory.  
A message appears when you have entered a non-existent or incorrect page number. Page numbers beginning with 0 or 9 do not exist. Choose another number.

##### With the option line

Select with the colour keys, corresponding to the coloured options at the bottom of the screen, the desired subpage.

#### Select Picture/Teletext



Select a TV channel which broadcasts teletext.

Press the **Teletext** key.

Press the **NEXTVIEW** key.

The screen is divided into two parts: the left side for the normal main picture, the right side for teletext broadcast by the selected TV channel.

Press the **Teletext** key to return to a full screen picture or press the **NEXTVIEW** key to return to a full teletext picture.

#### Quickly run through the teletext pages

Press the cursor up/down or the **Teletext** + keys to run through the previous or the following pages.

#### Select the previously selected txt page

Press the **PAP** key.

#### Acquisition and updating of NEXTVIEW info

Acquisition and updating of NEXTVIEW is done when you are watching the TV channel of the selected NEXTVIEW provider; see Setup menu p. 8, or when the TV is switched to standby.

The indicator on the front of the TV remains orange during standby.

After all needed acquisition or updating is complete, it turns red.

Acquisition of fresh data will happen once during the night.

Note: it may be necessary to put the TV in standby mode when all NEXTVIEW information is outdated, e.g. returning from holiday.

#### Video recorder restrictions with NEXTVIEW

The **Record** item and the automatic recording will only be present and possible if your video recorder is equipped with NEXTVIEWLink.  
Your video recorder should be connected to **EXTERNAL 2**. See Connect Peripheral Equipments, p. 27.

The daily, weekly and series options, the number of recordings set and the way overlapping recordings are managed, depend on the type of video recorder you have. When all video recorder timers are full, **No free record timer** appears on the screen.

Upload video recorder overview.

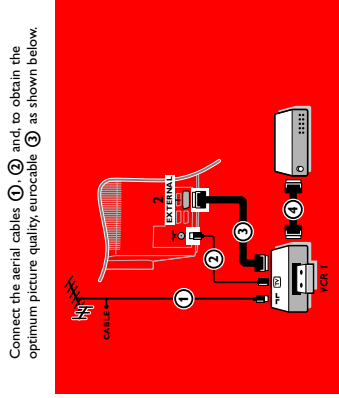
When the TV is switched on, the timer recordings are uploaded to the TV to check if any manual addition or deletions have been done. This is shown in the overview. The video recorder manages and removes timer recordings when performed.

Some NEXTVIEWLink video recorders do not allow a daily programming of the recording to start on a Saturday or Sunday. In this case the item **daily** will be removed from the menu on those days.

# Connect Peripheral Equipment

There is a wide range of audio and video equipment that can be connected to your TV. The following connection diagrams show you how to connect them.

## Video recorder



Connect the aerial cables ①, ② and, to obtain the optimum picture quality, eurocable ③ as shown below.

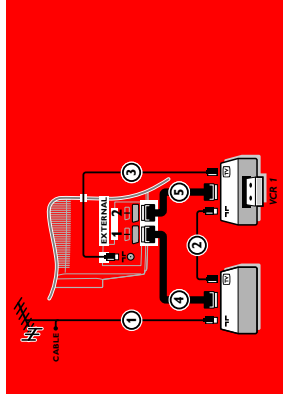
If your video recorder is provided with the EasyLink function, the eurocable supplied with it should be connected to EXTERNAL 2 to benefit from the EasyLink functionality.

If the eurocable ③ is not used the following steps are required:

- 1 Search for and store the test signal of the video recorder**  
Unplug the aerial cable ① from the aerial socket of your video recorder.
- 2 Switch on your TV and put the video recorder on the test signal.** (See the handbook for your video recorder)
- 3 Search for the test signal of your video recorder in the same way as you searched for and stored the TV signals.** See Installation, Searching for and storing TV channels, Manual Installation, p. 6.
- 4 Store the test signal under programme number 0 or between 90 and 99.**
- 5 Replace the aerial cable in the aerial socket of your video recorder after you have stored the test signal.**

**Decoder and video recorder**  
Connect a eurocable ③ to your decoder and to the special euroconnector of your video recorder. See also the video recorder handbook.  
See Define Decoder/Discrambler prog. numbers, p. 8. You can also connect your decoder directly to EXTERNAL 1 or 2 with a eurocable.

**Video recorder and other equipment**  
(except Digital Sources)



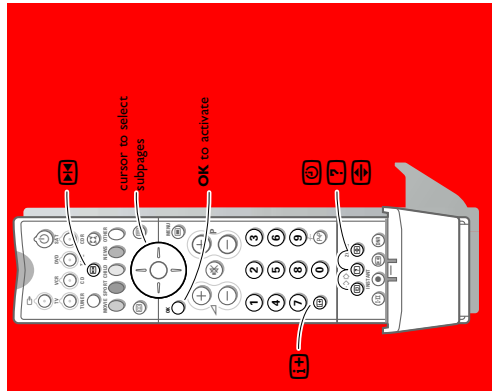
- 1 Connect the aerial cables ①, ② and ③ as shown.** Better picture quality can be obtained if you also connect eurocable ③ to EXTERNAL 2, and a eurocable ④ to EXTERNAL 1, 3 or 4.
- 2 Look for the test signal of your peripheral in the same way as you do for a video recorder.**

When a video recorder is connected to EXTERNAL 1 you can only record a programme from your TV.  
Only when a video recorder is connected to EXTERNAL 2 it is possible to record a programme from your TV as well as from other connected equipment. See Record with your video recorder, p. 33.

Note: EXTERNAL 1 can handle CVBS and RGB, EXTERNAL 2 CVBS, Y/C and RGB, EXTERNAL 3 and 4 only CVBS. It is preferred to connect peripherals with RGB output to EXTERNAL 1 or 2 as RGB provides a better picture quality.

## Select the index teletext page

Press the grey colour key to display the main index (usually p.100).



**Only for T.O.P teletext broadcasts :**  
TOP orders the pages in categories and adds other possibilities of enhancing ease of use.  
Press [L]. A TOP overview of the teletext subjects available is displayed.  
Note: all TV channels broadcast T.O.P teletext. When the teletext system is not T.O.P teletext, a message appears at the top of the screen.  
Select with the cursor up/down, left/right the desired subject and press the OK key.

## Select subpages

When a selected teletext page consists of different subpages, one of the subpages appears on the screen. The coloured number in the first information line refers to the displayed subpage.  
The other subpages can be selected in 2 ways :

### With the cursor left/right

The other subpage numbers appear in white as soon as the transmission has found them. They are stored in the memory so that they are available while the teletext page is on screen.  
Select with the cursor left/right the previous or the following subpage.

## With the OK key

- Enter the subpage number yourself:  
Press [OK]. Enter the desired subpage with the digit keys : eg. 3 for the third page of seven subpages.  
The TV searches for the selected subpage.

- Automatically rotating subpages:  
Press [OK] again to cancel the entered digit key for the subpage.  
Now the subpages rotate automatically.

Press [OK] again to select the subpages with the cursor left/right again.

## Special teletext functions

**Hold**  
Press [Hold] to stop the automatically rotating of the subpages or to stop the page counter from seeking when you have entered a wrong page number or when the page is not available.  
Enter another page number.

**Enlarge**  
Press [Enlarge] repeatedly to display the upper part, the lower part and then to return to the normal page size. When the upper part is displayed, you can scroll the text line by line using the cursor up/down.

**Reveal**  
Press [Reveal] to reveal/conceal the hidden information, such as solutions to riddles and puzzles.

## Select Continuous Subtitles

TV channels with teletext often transmit programmes with subtitling. For each TV channel you can store a subtitle page which will be displayed continuously if the programme being broadcast is transmitted with subtitles.

Switch on teletext and select the proper subtitle page from the index.  
Switch off teletext.  
Now the subtitle page is stored for the selected TV channel.

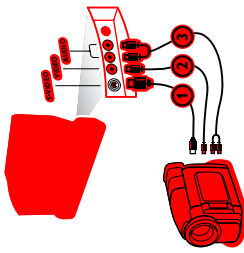
Once subtitles have been stored and Subtitle On has been selected they will automatically be displayed on the selected TV channel if subtitles are in the transmission.  
Select Subtitle On or Off in the Features menu, see p. 17.  
The subtitle symbol [S] appears when Subtitle On is selected.

Remark: you are in teletext mode, so only teletext functions are available.



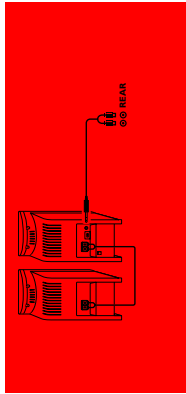
**Camera & camcorder**

- 1 Connect your camera or camcorder to sockets at the right side of your TV.
  - 2 Connect the equipment to VIDEO ② and AUDIO L ③ for mono equipment. Press the III key repeatedly to select the sound coming from one or both loudspeakers of your TV.
  - 3 For stereo equipment also connect AUDIO R ④.
- S-VHS quality with an S-VHS camcorder is obtained by connecting the S-VHS cables with the S-VIDEO input ① and AUDIO inputs ③.
- Warning: Do not connect cable ① and ② at the same time. This may cause picture distortion!*



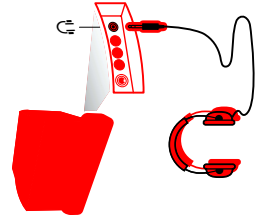
**Wired rear loudspeakers**

When no wireless RF surround sound is possible or when there is too much interference you can still enjoy Dolby Pro Logic and Dolby Digital surround sound by connecting the two rear loudspeakers to the TV with a stereo cinch to stereo 3.5 mm jack cable. Connect the (not supplied) cable with the PRE-AMP IN (TV) connector at the back of the active surround loudspeaker and with the black and red REAR R or L outputs at the back of the TV.

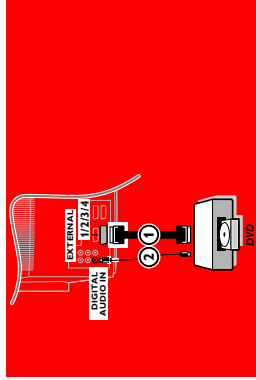


**Headphone**

- 1 Insert the plug into the headphone socket (H) at the right side of the TV.
  - 2 Press **HK** on the remote control to switch off the internal loudspeakers of the TV. *The headphone impedance must be between 8 and 4000 Ohm. The headphone socket has a 3.5 mm jack.*
- In the SOUND menu select: **Headphone volume** to adjust the headphone volume.



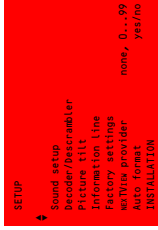
**Digital equipment (DVD, digital Set Top Box,...)**



Connect your digital equipment with a eurocable ① to one of the euroconnectors (EXT1, EXT2, EXT3 or EXT4), or with a cinch cable to the VIDEO input at the right side of the TV (see illustration above).

For digital sources with a Dolby Digital (AC-3)/MPEG2 audio output also connect an audio cable ② to the DIGITAL AUDIO IN socket of your TV to enjoy MultiChannel surround sound. This is only valid when you have connected your digital equipment to EXT1.

- 1 Press **⏏** and **⏏** at the same time.



- 2 Select **Digital sources** in the Setup menu of the **INSTALLATION** menu and select:
  - **None** if you have no digital source connected,
  - **EXT1, EXT2, EXT3** or **EXT4** if you have connected your equipment to a euroconnector,
  - **EXT1 + Dig. Audio** if you have connected your digital equipment with a Dolby Digital/MPEG2 audio output to EXT1 and to the **DIGITAL AUDIO IN** socket,
  - **EXT1, 2, 3** or **4 + Dig. STB** if you have connected your Digital Set Top Box to one of the euroconnectors,
  - **FRONT** in case you connected your equipment to the right side of the TV.
- 3 Press the **⏏** key to switch off all menus.

*Note: When you have connected a digital source + Digital audio to EXT1 and a digital STB to one of the other externals*

- 1 Always select **EXT1 + Dig. Audio** in the Digital sources menu.

- 2 When you want to watch digital broadcasts via your Set Top Box, use the **⏏** key on the remote control, to select the external where the STB has been connected. In case of poor digital transmission, select this with the **Multimedia** setting using the Smart Picture **⏏** key without changing the picture settings manually.

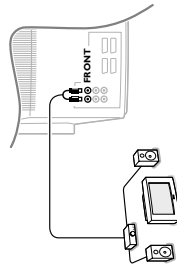
**Other equipment**

Other equipment can be connected to one of the remaining euroconnectors.

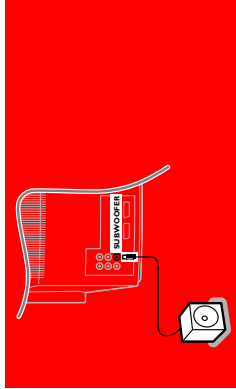


**Connect Extra loudspeakers / Amplifier**

**Stereo amplifier and two extra FRONT speakers**  
To enhance the sound reproduction of your TV you can connect two extra speakers via an external amplifier.



**Connect extra subwoofer**



- 1 Connect the audio cables to the audio input of your amplifier and to **AUDIO FRONT L** and **R** at the back of your TV. The output level is controlled by the volume control of your TV.  
*Note: Switch off the TV and your audio amplifier before connecting them. Set the audio amplifier's volume to minimum.*
- 2 Select **Extra front speakers Yes (Amp)** in the Sound Setup menu. See p. 9.  
See Surround settings, p. 15 for the available Surround modes.
- 3 Adjust the volume of the audio amplifier.  
You may make use of the test tone function in the Surround Settings menu, see p. 14, to have a reference of the loudness of the separate loudspeakers.  
*Note: Once you have adjusted the volume of the amplifier, do not change it while watching TV as the whole configuration operates with the volume adjustment of your TV.*

**Dolby Pro Logic Surround amplifier**

Although your TV is already equipped with a Digital Multichannel decoder you might want to connect your own Dolby Surround amplifier.

- 1 Connect the Dolby Pro Logic Surround amplifier to the **AUDIO FRONT L** and **R** at the back of your TV.
- 2 Select **Extra front speakers No** in the Sound Setup menu. See p. 9.  
The audio output is now independent of volume, treble, bass and surround settings.
- 3 Switch off the volume of the TV with the mute key .  
All volume settings, tone control and speaker connections have to be done via the external Dolby Pro Logic amplifier.

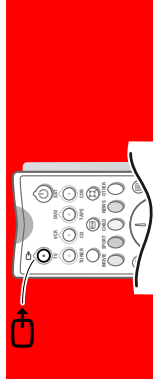
*Attention: the sound info on screen will not correspond with the actual sound reproduction. You will not be able to reproduce multichannel Dolby Digital or wireless surround sound through the AUDIO L and R output of your TV.*

**To select connected equipment**

If the TV is connected to a video recorder with the EasyLink function, in some cases the TV will be switched on, even when it was in standby. (E.g. playmode, tape...)  
This is not possible when Child Lock On is selected.

**Equipment connected with an aerial cable only :**  
Select the programme number under which you have stored the test signal with the digit keys.

**Equipment connected to a euroconnector or to the right side of the TV**



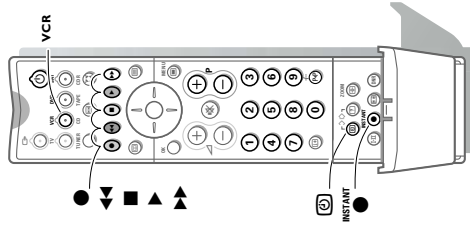
Press the **CH** key repeatedly to select **EXT1, EXT2, EXT3, EXT4** or **FRONT**, according to where you connected your equipment at the back or the right side of your TV.  
*Remark: Most equipment (decoder, video recorder, satellite receiver) carries out the switching itself.*

**If you want to change to TV channels?**

Enter the programme number of the TV channel which you want to watch with the digit keys or press the **TV** key.

**Audio- and video equipment keys**

Most of the audio and video equipment from our range of products can be operated with the remote control of your TV.



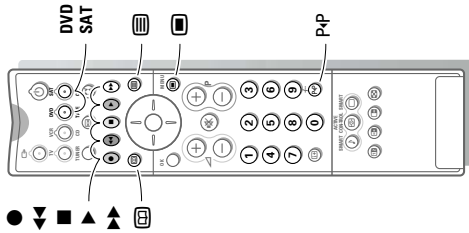
Press the **VCR, DVD, SAT, TUNER, CD, TAPE** or **CDR** key according to the equipment you want to operate with this remote control. See Use of the remote control, p. 10.

**Video recorder**  
Press one of the video recorder keys after you pressed the **VCR** key.

- for record,
- ◀ for rewind,
- for stop,
- ▶ for play,
- ▶▶ for fast forward,
- /- for selecting 1- or 2-digit programme numbers from the videorecorder,
- P + for sequential programme selection from the video recorder tuner,
- 0 to 9 to select a programme number from your video recorder tuner,
- ⏻ to switch the video recorder to standby
- ⏸ VCR timer

*These keys function with equipment which use the IEC5 signalling standard.*

*If your video recorder has the EasyLink function the key INSTANT ● for recording under the door of the remote control can be operated in the TV mode.*  
*If your EasyLink video recorder has the system standby function, when you press the ● key for 3 seconds, both TV and the video recorder are switched to standby.*

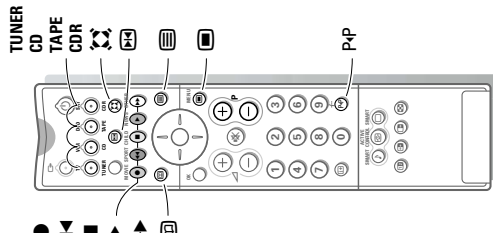


- DVD keys**  
Press one of the following keys after you have pressed the DVD key.
- to switch the DVD menu on or off
  - to select a DVD chapter
  - to select a DVD title
  - to select your choice of subtitle language
  - pause
  - to search down
  - stop
  - play
  - to search forward
  - 0-9** to enter a programme number from your DVD
  - OK** to enter the selected menu item

These keys function with equipment which use the RC6 signalling standard and with Philips DVD players.

**Satellite receiver keys**  
Press one of the TV keys after you have pressed the SAT key.

These keys function with equipment which use the RCS signalling standard.



- Tuner, CD, Tape and CDR keys**  
Press one of the following keys after you have pressed the TUNER, CD, TAPE or CDR key.
- to switch the menu on or off (tuner)
  - to select a frequency (tuner)
  - to record
  - to search down (tuner); rewind (CD/tape); speed down (CD)
  - stop
  - play
  - to search up (tuner); forward (CD/tape); speed up (CD)
  - RDS display (tuner); info on screen (CD/CDR)
  - RDS news/TA (tuner); disc increment (CD/CDR)
  - pause (CD/CDR/tape)
  - surround modes (CD/CDR/tape)
  - + P -** next/previous (CD)

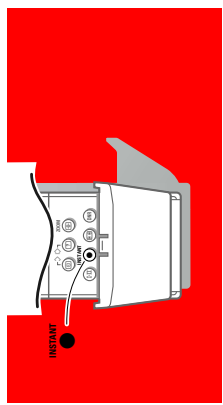
**Record with your video recorder without EasyLink**

- To record S-VHS quality, connect an S-VHS peripheral directly to the video recorder.
- Record a TV programme**
- 1** Select the programme number on your video recorder.
  - 2** Set your video recorder to record.
- See the handbook for your video recorder.
- Switching programme numbers on your TV does not disturb recording.

Do not switch programme numbers or do not switch off your TV when you are recording!

**Record with your video recorder with EasyLink**

- If you have connected an S-VHS video recorder, provided with the EasyLink function, you can record S-VHS quality from an S-VHS peripheral connected to the right side of the TV. (E.g. from an S-VHS camcorder)
- In TV mode, it is possible to start a direct recording of the programme, which is being displayed on the TV screen. Press the **INSTANT** record key, under the door of the remote control.



The video recorder switches on from standby and a message of what is being recorded appears on the screen. The video recorder starts recording the programme you are watching. Switching programme numbers on your TV does not disturb recording!

When recording a programme from a peripheral connected to EXTERNAL 1, 3, 4 or FRONT, you can not select another TV programme on the screen. To watch TV programmes again, press the programme number you want to select twice. Attention: the recording is stopped and your video recorder switches to standby.

If you switch to standby during recording of a programme from a peripheral connected to EXTERNAL 1, 3, 4 or FRONT, the blinking lamp on the front of your TV indicates that you are still recording. The blinking stops after the recording is finished.

**Record with your video recorder with NEXTVIEWLink**

If your video recorder is equipped with NEXTVIEWLink, and you tagged one or more programmes to be recorded automatically in the NEXTVIEW mode, it is not necessary for the TV to be in the standby mode or switched on for the recording to start.



**Tips**

**Care of the screen**  
Clean the TV with a slightly damp soft cloth. Do not use abrasive solvent as it can damage the TV screen.

**Mobile telephone warning!**  
To avoid disturbances in picture and sound, malfunctioning of your TV or even damage to the TV, keep away your mobile telephone from the TV.

- Poor Picture**
- Have you selected the correct TV system?
  - Is your TV or house aerial located too close to loudspeakers, non-earthed audio equipment or neon lights, etc.?
  - Mountains or high buildings can cause double pictures or ghost images. Sometimes you can improve the picture quality by changing the direction of the aerial.
  - Is the picture or teletext unrecognisable? Check if you have entered the correct frequency. See Installation, p. 6.
  - Are brightness, sharpness and contrast out of adjustment? Select Factory settings in the Setup menu, p. 8.
  - Sometimes poor picture quality is possible when having activated an S-VHS camera or camcorder connected to the right side of your TV and another peripheral is connected to EXT1, EXT2, EXT3 or EXT4 at the same time. In this case switch off one of the other peripherals.

- No sound**
- No sound on any channel? Check the volume isn't at minimum.
  - Is the sound interrupted with the mute key **MUTE**? Check if your speaker configuration corresponds with the selections made in the Sound Setup menu, p. 9. E.g. is your amplifier switched on when you have 2 extra front speakers connected?
  - No sound from the rear speakers or the centre speakers? Select an appropriate surround mode, according to the broadcasted sound signal or adjust the volume or check if the wireless transmitter is properly connected. See Surround Modes, p. 15.
  - In case you connected digital equipment with a digital audio connection you have to select **EXT1** + **dig. audio** in the Sound Setup. Digital sources, p. 29 to reproduce sound.

- Remote control**
- If your TV no longer responds to the remote control, the batteries may be dead or the wrong mode (TV or other peripheral, see p. 3) is selected.
  - You can still use the **M** key and the **-/+** keys at the top of your TV.
- Menu**
- Have you selected the wrong menu? Press the same key again to exit from the menu.
- NEXTVIEW - No information**  
See Acquisition and updating of NEXTVIEW information, p. 24.
- NEXTVIEW - Displayed time is wrong**  
The broadcaster on programme number one does not transmit the correct local date or time. Use **Reshuffle** in the **INSTALLATION** menu to place another broadcaster on programme number one.

- Wireless Surround speaker system**
- Are the active surround speaker and the Surround Sound setting in the Setup menu switched to the same transmitting channel?
  - External RF equipment, mobile telephones or people moving around close to the TV may disturb the sound transmission.
  - When no RF surround sound is possible, or when there is too much interference, try to switch to another wireless channel or use the wired back up solution. See Install Sound Setup, p. 9.
  - When you switch to another wireless transmitting channel as well in the setup menu as on the speaker box.
  - For wireless transmitter modules with a built in antenna, direct the antenna to achieve the best reception.

- No solution**  
Switch your TV off and then on again once.
- Never attempt to repair a defective TV yourself.**  
Check with your dealer or call a TV technician.

**End of life directives**  
Philips is paying a lot of attention to producing environmentally-friendly in green local areas. Your new TV contains materials which can be recycled and reused. At the end of its life specialised companies can dismantle the discarded TV to concentrate the reusable materials and to minimise the amount of materials to be disposed of.  
Please ensure you dispose of your old TV according to local regulations.

**How to dispose of dead batteries?**  
The batteries supplied do not contain the heavy metals mercury and cadmium. Nevertheless in many countries dead batteries may not be disposed of with your household waste. Please ensure you dispose of dead batteries according to local regulations.

**Index**

- a** ACI, 6
  - active control, 11
  - double lines, 13
  - dolby surround settings, 14
  - interrupt the sound, 10
  - language, 5
  - sound adjustments, 14
  - sound setup, 9
  - stereo, 12
  - store TV channels, 5
  - stroke, 11
  - subwoofer, 30
  - surround mode, 15
  - S-VHS, 32
  - switch TV on, 4
  - teletext, 25
  - triple, 14
  - video recorder, 27
  - volume, 10
  - wireless surround, 9
  - zoom, 12
  - 3D effect, 14
  - 3D surround, 15
- b** manual installation, 6
  - menu languages, 5
  - multitip, 11
  - dynamic contrast, 13
  - easy text, 23
  - NEXTVIEW, 20
  - NEXTVIEW provider, 8
  - nicam, 12
  - extra front speakers, 9
  - night mode, 14
  - picture adjustments, 13
  - picture format, 12
  - programme list, 17
  - Pro-Logic, 13
  - recording, 33
  - reshuffle, 7
  - satellite receiver keys, 32
  - search for TV channels, 6
  - setup, 8
  - sleep timer, 17
  - smart picture & sound, 11
- c** camcorder, 28
  - centre volume, 14
  - child lock, 17
  - colour enhancement, 13
  - continuous subtitles, 26
  - country, 5
  - decoder/descrambler, 8
  - delta volume, 14
  - digital options, 13
  - digital sources, 29
  - DNR, 12
  - dolby 3 stereo, 15
  - dolby digital, 15
- d** deinterlace, 28
  - headphone, 28
  - hue, 13
  - info on screen, 10
  - information line, 8
  - instant recording, 12
- e** auto surround, 9
  - easy text, 23
  - erratic, 27
  - extra front speakers, 9
  - factory settings, 8
  - favourite programmes, 7
  - fine tune, 6
  - freeze, 10
  - frequency, 6
  - give name, 7
  - hall, 15
- f** external RF equipment, mobile telephones or people moving around close to the TV may disturb the sound transmission.
  - When no RF surround sound is possible, or when there is too much interference, try to switch to another wireless channel or use the wired back up solution. See Install Sound Setup, p. 9.
  - When you switch to another wireless transmitting channel as well in the setup menu as on the speaker box.
  - For wireless transmitter modules with a built in antenna, direct the antenna to achieve the best reception.

**Glossary**

- 100 Hz Digital Scan**  
If you look at a television screen you will see small imperfections in the picture caused by line vibration. Digital Scan (an internal process) removes interline flicker. When combined with 100 Hz, you will see a totally stable image.
- Automatic Channel Installation (ACI)**  
Automatically installs all TV channels in the same order as offered by your cable company. Provided of course that the data is transmitted. It also automatically includes programme number and programme name. With ACI, channel installation is fully automatic, simple and fast.
- Child Lock**  
Feature to prevent unauthorised use of your TV.
- Digital Natural Motion**  
100 Hz Digital Natural Motion eliminates the juddering effect that is noticeable when there are moving objects in the picture. This results in razor sharp pictures and ensures smooth movements.
- DNR**  
Digital Noise Reduction. By encoding signals digitally in 100 Hz sets, it is possible to clean up picture noise. This is especially beneficial in poor signal areas and when viewing poor quality video tapes.
- Dolby Digital**  
The audience is completely surrounded by the sound. Both the left/right/centre and subwoofer speakers and the surround speakers are driven by the digitally processed sound system of the TV. The Dolby Digital sound contains 6 independent digital channels which results in a CD sound performance from both the front and rear sound channels.
- Dolby Surround Pro Logic**  
Literally wraps you in 4-channel sound. It brings your favourite movies to life with all the realism and impact of cinema sound as though you are part of the action.
- Easy Link**  
Digital "intelligent" ESI bus-system between TV and VCR (Start connection required). Turns source selection and control into a one-button operation.
- Easy Text**  
Teletext memory that automatically memorises Teletext pages and gives you instant access to them.
- Euroconnector**  
A 21-pin connector system enabling you to simply connect various types of audio/video and computer equipment.
- Menu**  
On-screen display of functions and facilities in a well-organised survey, which you can select using your remote control.
- NEXTVIEW**  
NEXTVIEW is a new feature to assist the TV and VCR user in selecting the programmes she or he likes to watch from a television programme guide on the screen. It enables the user to see a description of every programme, and mark interesting programmes to be reminded (auto TV on) or recorded (NEXTVIEWLink video recorder required).
- NTSC**  
The broadcasting system used in the USA, Japan and parts of South America and Southeast-Asia.

- Smart Picture and Sound Controls**  
Keys on the remote control to select predefined picture and sound settings.
- Sleep timer**  
Function with which you can set a time period after which the TV should switch itself to standby.
- Picture Freeze**  
TV mode which allows you to "freeze" a certain image in order to study a specific detail at ease, e.g. to make notes of certain programme information like phone numbers.
- Teletext**  
See also Easy Text  
WST/World Standard Teletext.  
FLOF-Full Level One Features. System applied by the BBC, RVE... that provides a fast access to the teletext pages.  
TOP-Table of (Teletext) Pages. German system for an easy access to the teletext pages.
- Tint**  
TV-function to modify the general colour balance between cool and warm and to adjust it according to your personal preference.

- NextView**  
NEXTVIEW is a new feature to assist the TV and VCR user in selecting the programmes she or he likes to watch from a television programme guide on the screen. It enables the user to see a description of every programme, and mark interesting programmes to be reminded (auto TV on) or recorded (NEXTVIEWLink video recorder required).
- NTSC**  
The broadcasting system used in the USA, Japan and parts of South America and Southeast-Asia.

## 4. Mechanical Instructions

Index of this chapter:

1. Set Disassembly
2. Service Positions
3. Board Removal
4. Set Reassembly

**Note:** Figures below can deviate slightly from the actual situation, due to different set executions.

### 4.1 Set Disassembly

Follow the disassemble instructions in described order.

#### 4.1.1 Wireless Surround Transmitter Removal (if attached)

Transmitter module

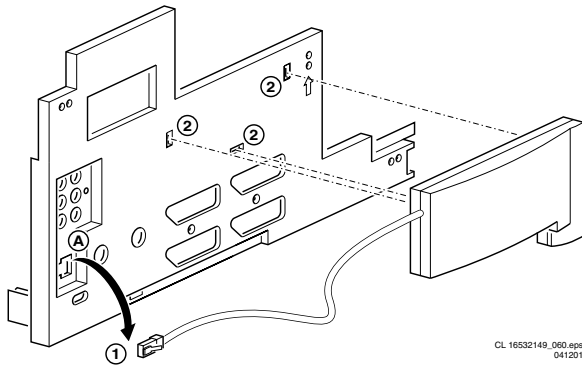


Figure 4-1

1. Remove the cable [1] of the Wireless Surround Transmitter box (at the left side of this RJ45 plug you can find the release-hook of the lock-mechanism).
2. Pull the Wireless Surround Transmitter box backwards. It is clicked to the rear cover via three clamps [2].

#### 4.1.2 Rear Cover Removal

Rear view

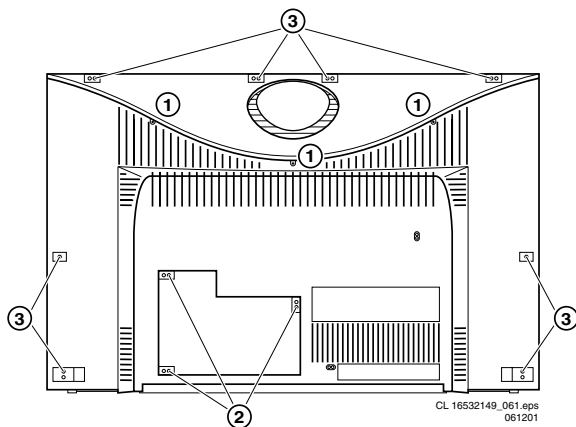


Figure 4-2

**Warning:** disconnect the mains power cord before you remove the rear cover.

First, remove the top cover (= plate with 'saucer'):

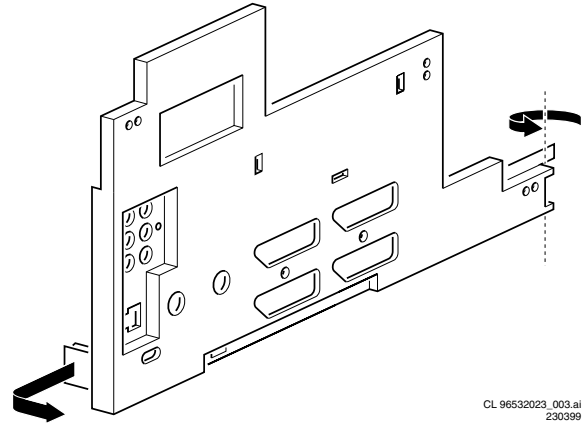
1. Remove the three fixation screws [1] that hold the cover plate.
2. Pull the cover (horizontally) backwards.

To be able to access the electronics of the set, you must remove the rear cover:

1. Remove the three remaining fixation screws [2] of the I/O-cover plate.
2. Remove the remaining fixation screws [3] at the two sides and the top of the rear cover.
3. Now remove the rear cover. Make sure that wires and cables are not damaged during cover removal.

#### 4.1.3 I/O Cover Plate Removal

Cover plate



CL 16532149\_003.ai  
230399

Figure 4-3

It is rather easy to remove the I/O-cover plate:

1. Release the hook on the left side (pull slightly outwards).
2. Now remove the plate (it hinges at the right side).

#### 4.1.4 Sub-woofer Removal

How to remove the sub-woofer:

1. Disconnect the loudspeaker cable at the top of the sub-woofer box.
2. The subwoofer has two rubber feet at the bottom. Behind them, there is a snap hook. Release this hook (pull backwards), and at the same time pull the sub-woofer box upwards.
3. Now remove the sub-woofer.

4.1.5 DAF-module Removal

DAF-bracket

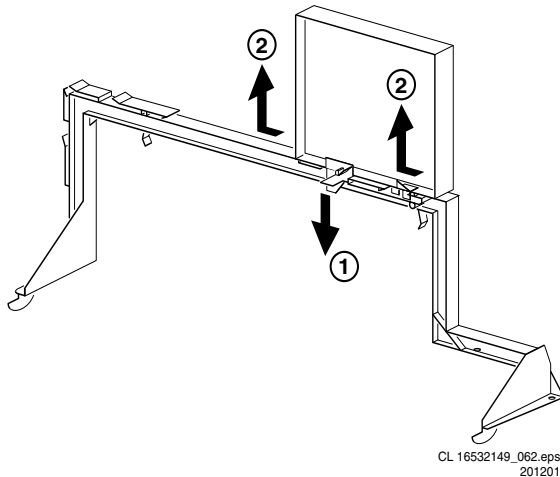


Figure 4-4

How to remove the DAF-module:

1. Press down the snap hook [1].
  2. At the same time, slide the complete DAF-module to the left
- Caution:** be very careful not to damage the CRT while doing this!.
3. Now lift the module from the LSP top bracket.

4.1.6 Support Brackets Removal

SSP support bracket

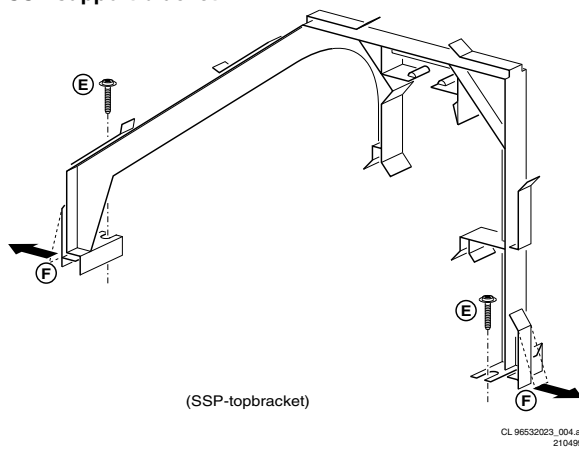


Figure 4-5

How to remove the 'module support bracket' on the Small Signal Panel (SSP):

1. Remove the two fixation screws [E].
2. Pull the snap-hooks [F] to the outside direction, and remove the bracket. The left snap-hook is somewhat difficult to release (with some effort it is possible to release it, by manipulating the hook with a finger underneath the MCS-module at the left hand side).

LSP support bracket

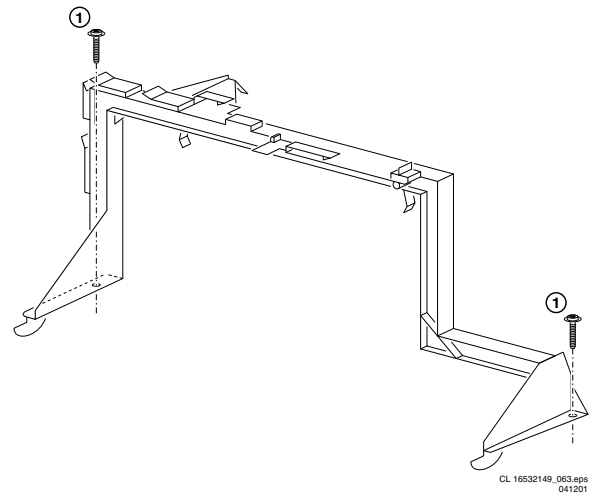


Figure 4-6

How to remove the 'module support bracket' on the Large Signal Panel (LSP):

1. Remove the two fixation screws [1].
2. Remove the Top Supply panel (besides the LSP, see 'Service position 3' below).
3. Now remove the bracket.

4.2 Service Positions

This chassis has several predefined service positions:

1. For the component side of the main chassis panels (SSP, LSP and Top Supply).
  2. For the copper side of the Multi Channel Sound (MCS) panel.
  3. For the copper side of the Top Supply panel (TSP).
  4. For the copper side of both the LSP and TSP.
- All service positions are explained in more detail below.

4.2.1 Service Position 1

Overview 1

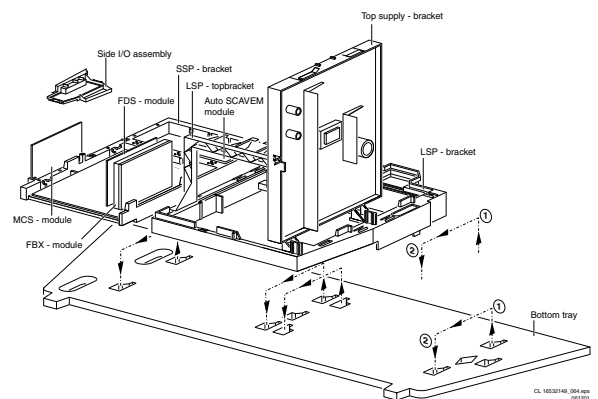


Figure 4-7

1. Pull the complete SSP- and LSP assembly about eight cm backwards
- Caution:** be very careful not to damage the CRT panel with the DAF-module!.
- The brackets are not fixed together, but can be repositioned backwards, as if they were one bracket.
2. Hook the brackets in the first row of the fixation-holes in the bottom plate (in other words: re-position the fixation from [1] to [2]).
  3. Now all important service test points are accessible at the topside of the SSP.

### 4.2.2 Service position 2

#### Overview 2

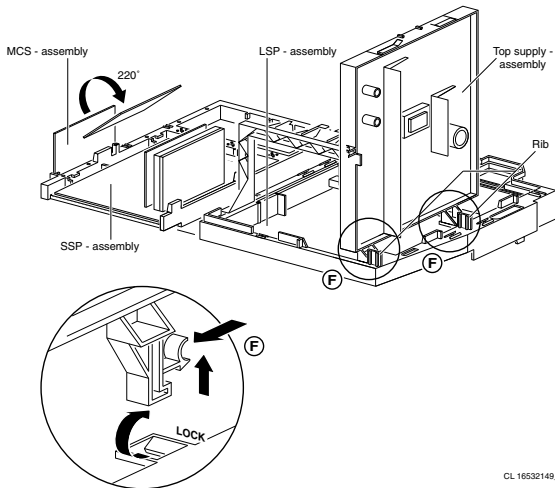


Figure 4-8

In its normal position, the MCS module can be serviced from the copper side (left hand side). In order to gain access to the other side of the board (reflow side), do the following:

1. First, release the snap construction at the bottom side of the MCS module. To do this, release the hook with e.g. a screwdriver (approach it from the rear).
2. After release, rotate the board about 220 degrees clockwise (hinge at connectors). The board can lean on the SSP top bracket.
3. All reflow components and test points on this side, are accessible now.

### 4.2.3 Service Position 3

#### Overview 3

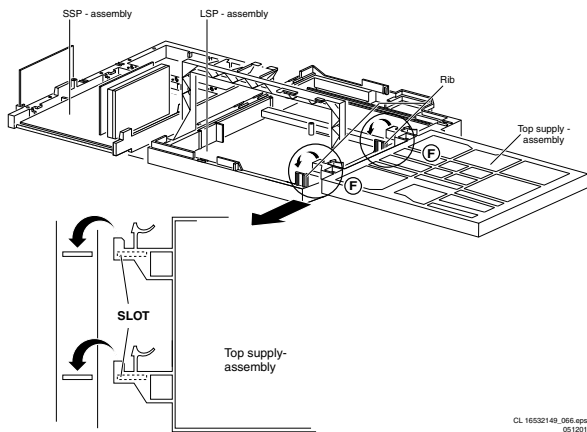


Figure 4-9

In order to gain easy access to the copper side of the Top Supply (TSP) assembly, do the following:

1. Pull the two release hooks (F) of the TSP-bracket backwards (see figure of 'Service position 2').
2. After you hear a release click, you can lift the bracket.
3. Now, rotate the assembly 90 degrees clockwise (from vertical to horizontal position).  
**Caution:** before doing this, release the wire cables from their clamps and, if necessary, disconnect the wire cable 0390 coming from the rotation-coil.
4. Place the two support-posts [F] of the assembly over the two ribs that are available on the right side of the LSP bracket.

5. The copper side of the TSP, with its service test points is available now.

### 4.2.4 Service position 4

#### Overview 4

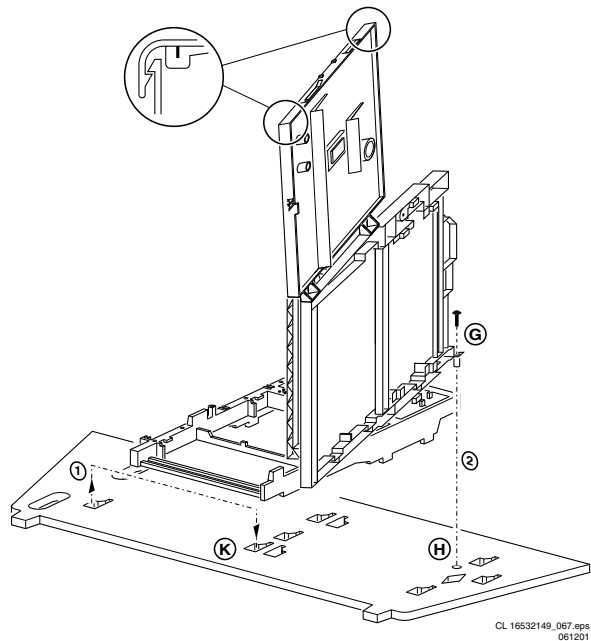


Figure 4-10

In order to gain easy access to the component sides of the LSP and Top Supply assembly, do the following:

1. First, reinforce the above-described 'TSP fixation' with a screw (the rear support-post contains a hole for this).
2. Now move as well the SSP- as the LSP bracket about 25 cm to the right.
3. Rotate the complete LSP/TSP assembly 90 degrees anti-clockwise, such that snap hook [G] is placed into hole [H]. If necessary, reinforce this construction with a screw.
4. Now you can measure all the service test points of the LSP on the right hand side, and of the TSP at the left hand side.
5. For measurement safety, shift the left front hook of the SSP bracket in the right SSP hole of the bottom plate (see [K] of service position 1).

### 4.2.5 FDS-module

One side is easy accessible whit the module on its place. One way to measure the other side (= FBX side) is to remove the FBX and overrule the protections (see 'Repair Tips' in chapter 5).

### 4.2.6 Feature Box (FBX)

First, remove the shielding of the FBX. Now, the test points on the 'LOT side' are easy accessible.

To get access to the test points on the 'FDS side', you have to remove the FDS module and bypass the RGB-path (see also the 'Repair Tips' in chapter 5).

### 4.2.7 Auto-SCAVEM

This panel is placed in front of the SSP. Because most of its components are placed on the bottom side, you must lift the panel from its bracket before you can measure it. Therefore release the two fixation clamps (one at the 'SSP side' and one at the 'LSP side'), and lift the panel.

### 4.3 Board Removal

Sometimes, it can be necessary to swap a complete Printed Wiring Board (PWB). How that can be done is explained below.

#### 4.3.1 Small Signal Panel (SSP)

1. Remove the 'module support bracket' (see paragraph 4.1.6).
2. Release the three fixation clamps on the right hand side of the bracket.
3. Press the board upwards at the same side.
4. Remove the board from the bracket.

#### 4.3.2 Top Supply Panel (TSP)

1. Remove the fixation screws (one at the top, one on the right side, and two on the left side).
2. Release the two top-corner snap constructions (see circle in figure 'Position 4'), by forcing them outwards.
3. The panel hinges at the bottom of the bracket. Remove the bracket, by forcing the two sides of the bracket somewhat outwards.

#### 4.3.3 Large Signal Panel (LSP)

1. Remove the Top Supply module (see paragraph above)
2. Remove the 'module support bracket' (see paragraph 4.1.6).
3. Remove the fixation screw in the middle of the Large Signal board.
4. Release the fixation clamps on the right, rear, and front side of the bracket (the board hinges at the left side).
5. Remove the board from the bracket.

#### 4.3.4 Top Control Assy/Panel

##### Control assy

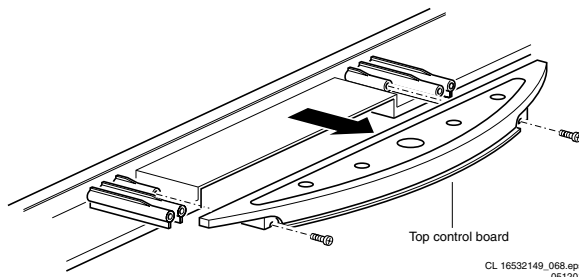


Figure 4-11

1. Release both fixation screws about 5 full turns.
2. Pull the complete assy back- and upwards (it hinges in the cabinet front).
3. Flip the assy, and you can access the board by releasing (carefully) the four fixation clamps.

#### 4.3.5 Side-I/O Assy/Panel

##### Side I/O

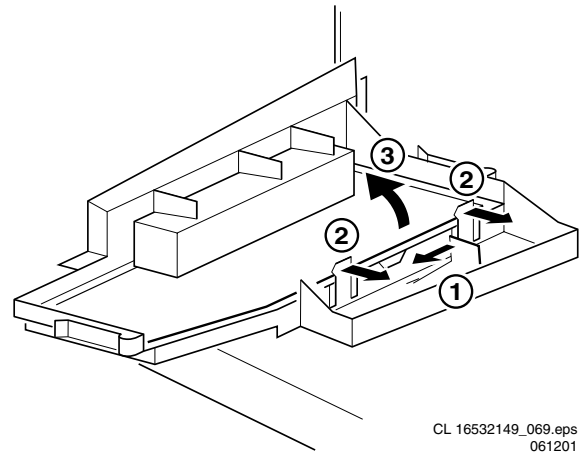


Figure 4-12

1. Release the snap-hook [1] with your finger.
2. At the same time, pull the assy backwards [2].
3. Release the two fixation clamps on the right side of the bracket (the board hinges at the left side).
4. Remove the board from the bracket.

#### 4.3.6 Mains Switch Assy/Panel

##### Mains Switch

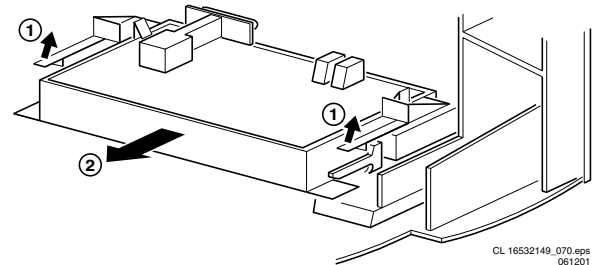


Figure 4-13

1. Release the two fixation clamps (rather difficult to reach), by pushing them upwards [1]. At the same time, pull the complete assy backwards [2]  
**Note:** be aware that the degaussing coil can hamper this.
2. Release the two fixation clamps on the two sides of the bracket (the board hinges at the connector side).
3. Remove the board from the bracket.
4. When the light guide (sitting in the cabinet, in front of the LEDs) is defective, you can replace it by pushing it forwards at the left side (seen from the rear). It hinges at the right side.

## 4.3.7 Wireless Active Surround Box

## Exploded view

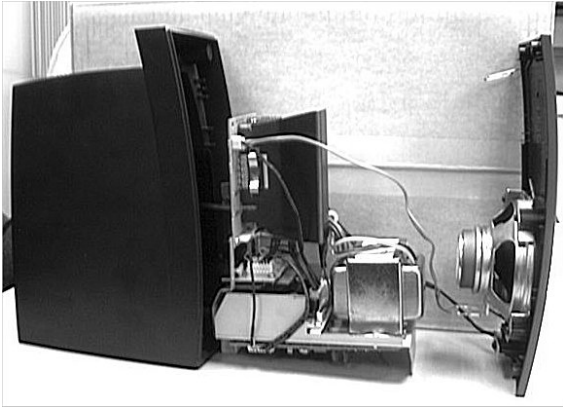


Figure 4-14

The box consists of four panels (W1 to W4), which are part of one family/combi-board. They are fixed together with wire cables (sometimes without connectors).

1. Remove the four screws which hold the front cover.
2. If necessary, unplug the loudspeaker and the LED panel (W4).
3. Remove the two screws which hold the clickfit connector for the passive loudspeaker.
4. Remove the six screws that hold the metal frame (which hold all PWBs and transformer).
5. See photo above for the exploded view.

## PWB location

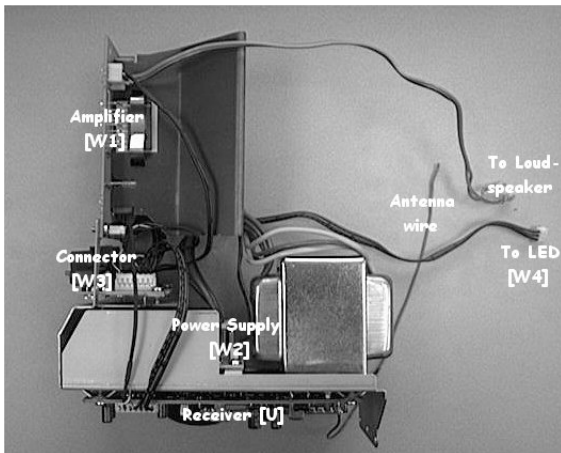


Figure 4-15

Each panel is now easily accessible to measure. If necessary, remove the panel from the metal frame by removing the belonging screws. See photo above for the panel positions. See further chapter 8.7 of the Training Manual MG3.1E.

To reassemble the box, do all processes in reverse order.

Be sure that, before the front cover is mounted:

- The (blue) antenna wire is mounted correctly in its guiding brackets.
- The 'foam dust cover' is replaced on the channel selector switch (on the bottom PWB).
- All wires/cables are returned in their original positions.

## 4.4 Set Reassembly

To reassemble the whole set, do all processes in reverse order.

Be sure that, before the rear cover is mounted:

- The mains cord is mounted correctly in its guiding brackets.
- All wires/cables are returned in their original positions.



## 5. Service Modes, Error Codes and Fault Finding

Index of this chapter:

1. Test Points
2. Service Modes
3. Problems and Solving Tips (related to TV-settings).
4. ComPair
5. Error Codes
6. Protections
7. Repair/Service Tips

### 5.1 Test Points

#### 5.1.1 General Test Conditions

Perform the measurements under the following conditions:

- Service Default Mode.
- Video: Colour bar signal.
- Audio: 3 kHz left, 1 kHz right.

#### 5.1.2 Waveform Test Points

The chassis is equipped with test points, which are, in most cases, printed on the circuit board assemblies (if not, please check chapter 6 'test point overview'). They refer to the functional blocks. The test points have names starting with I for IF, S for sound etc. The numbering is done in a logical sequence for diagnostics.

**Note:** Not all test points are measured, but they can serve as identification names in Service communication (e.g. ComPair fault find trees, SearchMan files).

In the following cases, there will be no waveform:

- When already a  $V_{DC}$  voltage is displayed in the diagrams, or when the waveform does not have an added value.
- External AV-inputs are not measured, as the waveform is equal to the source (dependent of load resistor matching).

#### 5.1.3 DC-voltage Test Points

From practically all semiconductor pins, the DC-voltages are measured. These values are displayed in the circuit diagrams. If a DC-value is displayed between brackets then this value is measured in STANDBY-mode.

### 5.2 Service Modes

Service Default Mode (SDM) and Service Alignment Mode (SAM) offer several features for the service technician, while the Customer Service Mode (CSM) is used for communication between a Philips Customer Care Centre (P3C) and a customer.

There is also the option of using ComPair, a hardware interface between a computer (see requirements below) and the TV chassis. It offers the ability of structured troubleshooting, test pattern generation, error code reading, software version readout, and software upgrading.

**Requirements:** a Pentium processor, Windows 95/98, and a CD-ROM drive (see also paragraph 5.4).

#### 5.2.1 Service Default Mode (SDM)

##### **Purpose**

- To create a pre-defined setting to get the same measurement results as given in this manual.
- To override SW protections (only when SDM is entered via the 'service pins' on SSP connector 0356).

##### **Specifications**

- Tuning frequency: 475.25 MHz for PAL/SECAM.
- Colour system: SECAM L for France or PAL B/G for the rest of Europe.
- All picture settings at 50 % (brightness, colour, contrast).
- All sound settings at 50 % (except volume: at 25 %).
- All service-unfriendly modes (if present) are disabled, like:
  - (sleep) timer,
  - child/parental lock,
  - blue mute,
  - auto switch-off (when no 'IDENT' video signal was received for 10 minutes),
  - skip/blank of non-favourite pre-sets,
  - smart modes,
  - auto store of personal presets,
  - auto user menu time-out.

##### **How to Enter SDM**

Use one of the following methods:

- Use the standard RC-transmitter and key in the code **0 6 2 5 9 6**, directly followed by the 'MENU' button.
 

**Note:** It is possible that, together with the SDM, the main menu will appear. To switch it off, push the 'MENU' button again).
- Short pins 2 and 3 on connector 0356 of the SSP (see Fig. 'SSP Component Side' in chapter 8) while the set is in the normal operation mode.
 

**Caution:** Entering SDM by this method will override all the processor-controlled protections. When doing this, the service-technician must know exactly what he is doing, as it could lead to damaging the set.
- Use the 'DEFAULT' button on the Dealer Service Tool (RC7150).
- Use the DST-emulation feature of ComPair.

##### **SDM Menu**



CL 16532044\_031.eps  
140501

Figure 5-1

After entering SDM, a blank screen is visible, with 'Service Default' in the lower right part for recognition.

##### **How to Navigate**

To toggle to the SAM mode, use a standard customer RC-transmitter and key in the code **0 6 2 5 9 6**, directly followed by the 'OSD (i+)' key.

##### **How to Exit**

Switch the set to STANDBY by pressing the Standby button (⏻) on the remote control transmitter. If you switch the set 'off' via the mains switch, the set will return in SDM when Mains power is re-applied.

### 5.2.2 Service Alignment Mode (SAM)

#### Purpose

- To perform (software) alignments.
- To change option settings.
- To easily identify the used software version.
- To view operational hours.
- To display (or clear) the error code buffer.

#### Specifications

- Software version.
- Operational hours counter.
- Options setting.
- Error buffer reading and erasing.
- Software alignments.

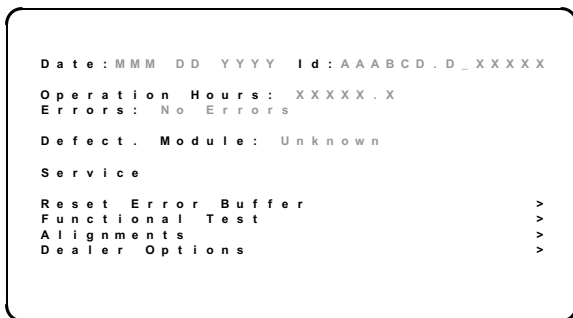
#### How to Enter

Use one of the following methods:

- Use the standard RC-transmitter and key in the code **0 6 2 5 9 6** directly followed by the 'OSD (+)' button.
- Short pins 1 and 2 of connector 0356 on the SSP.
- Use the 'ALIGN' button on the Dealer Service Tool (RC7150), enter password **3 1 4 0** and press 'OK'.
- Use the DST-emulation feature of ComPair.

The following screen is visible:

#### SAM Menu



CL16532044\_032.eps  
140501

Figure 5-2

- **Date.** Displays the software date.
- **ID.** Displays the main software version of the ROM (example: MG32E11. 0\_01234 = AAABCD.D\_XXXXX).
  - A = the chassis name (MG32).
  - B = the region: E = Europe, A = Asia Pacific, U = NAFTA, L = LATAM.
  - C = the language cluster number.
  - D = the main software version number.
  - X = latest 5 digits of 12nc code software.
  - For the latest software versions, see the 'Product Survey - Colour Television' publication, which is issued 4 times per year.
- **Operation Hours.** Displays the accumulated total of operation hours.
- **Errors** (followed by maximal 10 errors). The most recent error is displayed at the upper left (for an error explanation see paragraph 5.5).
- **Defect. Module.** Here, the module that generates the error is displayed. If there are multiple errors in the buffer that have not all been generated by a single module there is probably another defect. It will then display the message 'Unknown' here.
- **Reset Error Buffer.** When you press the 'OK' button, the error buffer is reset.
- **Functional Test.** All devices are tested via the 'OK' button. Eventual errors are displayed in the error buffer. The error buffer is not erased, the content returns when this test is terminated.
- **Alignments.** This will activate the 'Alignments' sub-menu.

- **Dealer Options.** Extra features for the dealers.

**Note:** When an NVM was corrupted (or replaced) in the MG3.1E chassis, the microprocessor replaced the content with default data (to assure that the set can operate). However, all presets and alignment values are gone now, and option numbers are also not correct. So, this was a very drastic way. In the MG3.2E chassis, the procedure is implemented in another way:

- The moment the processor recognises a corrupted NVM, an extra line will be added to the SAM menu: '**Initialise NVM**'.
- Now, you can do two things (dependent of the service instructions at that moment):
  - Save the content of the NVM via ComPair for development analysis, **before** initialising. This will give the Philips Service department an extra possibility for diagnosis (e.g. when Development asks for this).
  - Initialise the NVM (same as in the past, however now it happens conscious).

#### How to Navigate

- In SAM, you can select the menu items with the 'CURSOR UP/DOWN' key on the RC-transmitter. The selected item will be highlighted. When not all menu items fit on the screen, move the 'CURSOR UP/DOWN' key to display the next/previous menu items.
- With the 'CURSOR LEFT/RIGHT' keys, it is possible to:
  - (De)activate the selected menu item.
  - Change the value of the selected menu item.
  - Activate the selected submenu.
- When you press the 'MENU' key in a submenu, you will return to the previous menu.

#### How to Exit

Use one of the following methods:

- Press the 'MENU' button on the RC-transmitter.
- Switch the set to 'STANDBY' (⏻) via the RC-transmitter.
- Switch the set 'off' and 'on' with the mains switch.
- Press the 'EXIT' button on the DST.

### 5.2.3 Customer Service Mode (CSM)

#### Purpose

When a customer is having problems with his TV-set, he can call his dealer. The service technician can then ask the customer to activate the CSM, in order to identify the status of the set. Now, the service technician can judge the severness of the complaint. In many cases, he can advise the customer how to solve the problem, or he can decide if it is necessary to visit the customer.

The CSM is a read only mode, therefore modifications in this mode are not possible.

#### How to Enter CSM

Use one of the following methods:

- Press the 'MUTE' button on the RC-transmitter simultaneously with the 'MENU' button on the TV (top control) for, at least, 4 seconds (be sure to point the RC-transmitter directly to the IR-receiver of the set, otherwise you will activate the 'Dealer Demo Mode').
- Key in the code **1 2 3 6 5 4** via the standard RC transmitter.

#### Notes

- Activation of the CSM is only possible if there is no (user) menu on the screen!
- If you do not point the RC-transmitter correctly to the RC-receiver in the set, and you push the 'MENU' button for more than 6 s, the TV starts in 'demo' mode. To leave this mode, push 'MENU' again for more than 6 s.

After activation of the Customer Service Menu, the following screen (Customer Service Menu 0) will appear:

## CSM Menu 0

CL16532149\_072.eps  
061201

Figure 5-3

- **Type number.** This information (e.g. 32PW9767/12) is very helpful for a helpdesk or repair shop, as reference for further diagnosis. In this way, it is not necessary for the customer to look at the rear of his TV-set.
- **FBX SW Version.** The 12nc-code of the build-in Feature Box software version. For the latest software versions, see the 'Product Survey - Colour Television' publication, which is issued four times per year.

By means of the 'CURSOR-DOWN' knob on the RC-transmitter the Customer Service Menu 1 will appear. By means of the 'CURSOR-UP' knob on the RC-transmitter the Customer Service Menu 0 will appear again.

Customer Service Menu 1 represents following information:

## CSM Menu 1

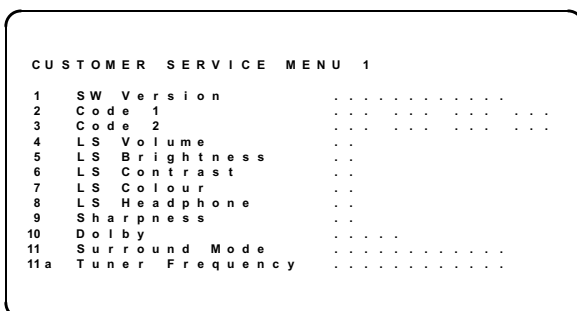
CL16532044\_034.eps  
140501

Figure 5-4 CL

- **Software version.** The build in software version (e.g. MG32E11.0\_XXXXX). You will find details of the software versions in the chapter 'Software Survey' of the 'Product Survey - Colour Television' publication. This publication is issued four times a year.
- **Code 1.** Gives the last five errors of the error buffer. As soon as the built-in diagnose software has detected an error the buffer is adapted (see paragraph 5.5.3 for a description).
- **Code 2.** Gives the first five errors of the error buffer. As soon as the built-in diagnose software has detected an error the buffer is adapted. The last occurred error is displayed on the leftmost position of code 2. Each error code is displayed as a 3 digit number. When less than 10 errors occur, the rest of the line(s) is (are) empty. In case of no errors, the text 'No Errors' is displayed (see paragraph 5.5.3 for a description).
- **LS Volume.** Gives the Last Status of the volume as set by the customer for this selected transmitter. The value can vary from 0 (volume is minimum) to 36 (volume is maximum). Volume values can be changed via the volume key on the RC-transmitter.

- **LS Brightness.** Gives the Last Status of the brightness as set by the customer for this selected transmitter. The value can vary from 0 (brightness is minimum) to 63 (brightness is maximum). Brightness values can be changed via the 'CURSOR LEFT' and 'CURSOR RIGHT' keys on the RC-transmitter after pressing the 'MENU' button and selecting 'PICTURE' and 'BRIGHTNESS'.
- **LS Contrast.** Gives the Last Status of the contrast as set by the customer. The value can vary from 0 (contrast is minimum) to 63 (contrast is maximum). Contrast values can be changed via 'CURSOR LEFT' and 'CURSOR RIGHT' keys on the RC-transmitter after pressing the 'MENU' button and selecting 'PICTURE' and 'CONTRAST'.
- **LS Colour.** Gives the Last Status of the colour saturation, as set by the customer. The value can vary from 0 (colour is minimum) to 63 (colour is maximum). Colour values can be changed via 'CURSOR LEFT' and 'CURSOR RIGHT' keys on the RC-transmitter after pressing the 'MENU' button and selecting 'PICTURE' and 'COLOUR'.
- **LS Headphone.** Gives the Last Status of the headphone volume, as set by the customer. The value can vary from 0 (volume is minimum) to 24 (volume is maximum). Headphone volume values can be changed via the 'CURSOR LEFT' and 'CURSOR RIGHT' keys on the RC-transmitter after pressing the 'MENU' button and selecting 'SOUND' and 'HEADPHONE'.
- **Sharpness.** Gives the sharpness value. The value can vary from 0 (sharpness is minimum) to 7 (sharpness is maximum). In case of bad antenna signals, a too high value of the sharpness can result in a noisy picture. Sharpness values can be changed via the 'CURSOR LEFT' and 'CURSOR RIGHT' keys on the RC-transmitter after pressing the 'MENU' button and selecting 'PICTURE' and 'SHARPNESS'.
- **Dolby.** Indicates whether the received transmitter transmits Dolby sound (present) or not (not present). Attention: The presence of Dolby can only be tested by the software on the Dolby Signalling bit. If a Dolby transmission is therefore received without a Dolby Signalling bit, then this indicator will show 'not present' even though such a Dolby transmission is received.
- **Surround Mode.** Indicates the by the customer selected surround mode (or automatically chosen mode). In case the set is a Non-Dolby set, there will be displayed '0'. If it is a Dolby-set then is displayed: 'Stereo', '3D Surround', 'Dolby Pro Logic', 'Dolby 3 Stereo', or 'Hall'. These settings can be influenced by toggling the surround mode button on remote control (white button). It can also have been selected automatically by signalling bits (internal software).
- **Tuner Frequency.** Indicates the frequency the selected transmitter is tuned to. The tuner frequency can be changed via the 'CURSOR LEFT' and 'CURSOR RIGHT' keys for fine tune or by entering directly with the digit keys 0 to 9 on the RC-transmitter after opening the installation menu and selecting 'MANUAL INSTALLATION'. Pressing 'TIMER' and 'ENLARGE' at the same time can open the installation menu.

By means of the 'CURSOR-DOWN' knob on the RC-transmitter the Customer Service Menu 2 will appear. By means of the 'CURSOR-UP' knob on the RC-transmitter the Customer Service Menu 1 will appear again.

Customer Service Menu 2 represents following information:

#### CSM Menu 2

CUSTOMER SERVICE MENU 2			
13	Centre Volume	..	
14	DNR	...	
15	Noise Figure	...	
16	Digital Option	...	
17	Colour System	.....	
18	TV System	.....	
19	Audio System	.....	
20	Tuned bit	.....	
21	Speaker Config.	.....	
22	Digital Sources	.....	
23	Rear volume left	..	
24	Rear volume right	..	

CL 16532149\_073.eps  
061201

Figure 5-5

- **Centre Volume.** Gives the volume value of the centre loudspeaker. This value can vary from 0 (minimum volume) to 63 (maximum volume). Centre volume can be changed via the 'CURSOR LEFT' and 'CURSOR RIGHT' keys on the RC-transmitter after pressing the 'MENU' button and selecting 'SOUND', 'DOLBY PRO LOGIC' and selecting 'CENTRE VOLUME'. This feature is only available when surround mode is in 'DOLBY PRO LOGIC', 'DOLBY 3 STEREO', or '3D SURROUND'.
- **DNR.** Gives the setting of the Dynamic Noise Reduction for the selected transmitter. The DNR can be changed via the 'DNR' button on the remote control handset. The following selections are possible:
  - 'OFF - MIN - MED - MAX' or,
  - 'OFF - AUTOMATIC' (for sets with 'Automatic Noise Reduction').
- **Noise Figure.** Gives the noise ratio for the selected transmitter. This value can vary from 0 (good signal) to 127 (average signal) and to 255 (bad signal).
- **Digital Option.** Gives the selected digital mode. Change via the 'CURSOR LEFT' and 'CURSOR RIGHT' keys on the RC-transmitter, after pressing the 'MENU' button and selecting 'PICTURE', 'DIGITAL OPTIONS'. Options are:
  - 100 HZ DIG. SCAN.
  - PIXEL PLUS.
  - DOUBLE LINES.
- **Colour System.** Gives information about the colour system of the selected transmitter.
  - Black and white: No colour carrier received
  - PAL: PAL signal received
  - SECAM: SECAM signal received
  - NTSC: NTSC signal received
- **TV System.** Gives information about the video system of the selected transmitter.
  - BG: BG signal received
  - DK: DK signal received
  - I: PAL I signal received
  - L: SECAM L signals received
  - M38.9: NTSC M signal received with video carrier on 38.9 MHz
  - MN: NTSC M signal received
- **Audio System.** Gives information about the audio system of the selected transmitter.
  - Sound Muted: No sound
  - Dolby Pro Logic: Dolby Pro Logic sound received
  - Mono: Mono sound received
  - Stereo: Stereo sound received
  - Dual I: Language I received
  - Dual II: Language II received
  - Digital Mono: Digital mono sound is received
- Digital Stereo: Digital stereo sound is received
- Digital Dual I: Digital language I is received
- Digital Dual II: Digital language II is received
- **Tuned bit.** Gives information about the tuning method of the stored pre-set. If a channel is found via 'automatic installation', you will see the value 'On'. When you change this (automatically found) frequency via 'fine tune' adjustment (installation menu - manual installation), the displayed value will change to 'Off'. Therefore, when you see the value 'Off' in this line, it is an indication that the received channel is a non-standard signal (e.g. of a VCR).
- **Speaker config.** Gives the speaker configuration settings. In case the set is a non-Dolby set, it displays '0'. If it is a Dolby-set, it displays: 'FULL INTERNAL', 'L/R EXTERNAL', 'SURROUND EXTERNAL' or 'FULL EXTERNAL'. Change the speaker configuration (for a Dolby-set), via the 'CURSOR LEFT' and 'CURSOR RIGHT' keys on the RC-handset after opening the 'INSTALLATION' menu and selecting 'SETUP'. Open the 'INSTALLATION' menu by pressing the 'TIMER' and 'ENLARGE' buttons at the same time.
- **Digital Sources.** Gives the configuration setting for the digital source. If one of these is selected, the starting point is a top quality signal on that input and a number of settings are therefore changed automatically. Change the digital source via the 'CURSOR LEFT' and 'CURSOR RIGHT' keys on the RC-transmitter after opening the installation menu and selecting 'SETUP'. Pressing 'TIMER' and 'ENLARGE' at the same time can open the installation menu. It displays:
  - NONE
  - EXT1, 2, 3, or 4
  - EXT1 + DIG. AUDIO
  - EXT1, 2, 3, or 4 + DIG. STB (Digital Set Top Box)
  - FRONT
- **Rear volume Left.** Only valid when Dolby Digital option is 'on'. This gives the volume value of the left surround sound loudspeaker. This value can vary from 0 (minimum volume) to 63 (maximum volume). Rear volume left can be changed via the 'cursor left' and 'cursor right' keys on the remote control handset after pressing the 'menu' button and selecting 'sound', 'Surround settings' and selecting 'Rear volume left'.
- **Rear Volume Right.** Only valid when the Dolby Digital option is 'on'. This gives the volume value of the right surround sound loudspeaker. This value can vary from 0 (minimum volume) to 63 (maximum volume). Rear volume right can be changed via the 'cursor left' and 'cursor right' keys on the remote control handset after pressing the menu button and selecting 'sound', 'Surround settings' and selecting 'Rear volume right'.

#### How to Exit CSM

Use one of the following methods:

- After you press a key on the RC-transmitter (with exception of the 'CHANNEL' and 'VOLUME' keys).
- After you switch the TV-set 'off' with the mains switch.

## 5.3 Problems and Solving Tips (Related to TV-settings)

**Note:** Below described problems are all related to the TV settings. The procedures to change the parameter (or status) of the different settings are described.

### 5.3.1 Picture Problems

#### Worse Picture Quality in Case of Digital Sources (e.g. DVD)

1. Check line 'Digital sources'. This will give the indication 'Front', 'Ext1', 'Ext1 + Dig. Audio', 'Ext2', 'Ext3', 'Ext4' or 'None'.

2. Check if the digital source is really connected to the indicated external input. If not, change the input to the correct one.

#### **Snowy/Noisy Picture**

Check line 'Noise Figure'. In case the value is 127 or higher and also high on other programs, check the aerial cable/aerial system.

#### **Picture too Dark**

1. Press 'Smart Picture' button on the Remote Control handset. In case picture improves, raise the brightness value or raise the contrast value. The new value(s) are automatically stored for all TV channels.
2. After switching on the Customer Service Mode, the picture is OK. Raise the brightness and/or the contrast value. The new value(s) are automatically stored for all TV channels.
3. Check lines 'Brightness' and 'Contrast'. The brightness and/or the contrast value is low (<15). Raise the brightness and/or contrast value.

#### **Picture too Bright**

1. Press 'Smart Picture' button on the Remote Control handset. In case picture improves, reduce the brightness value or reduce the contrast value. The new value(s) are automatically stored for all TV channels.
2. After switching on the Customer Service Mode, the picture is OK. Reduce the brightness value or reduce the contrast value. The new value(s) are automatically stored for all TV channels.
3. Check lines 'Brightness' and 'Contrast'. The brightness and/or the contrast value is high (>70). Reduce the brightness value or raise the contrast value.

#### **Fading Picture**

Digital scan effect. Check line 'DNR'. The status of 'DNR' is a value between 0 and 100. This value has not really a practical explanation. In case you have a fading picture, you could influence the 'DNR'-level by navigating route: 'Menu' - 'Picture' - 'DNR'. There are four different levels selectable.

#### **White Line around Picture Elements and Text**

1. Press 'Smart Picture' button on the Remote Control handset. In case picture improves, reduce the sharpness value. The new value(s) are automatically stored for all TV channels.
2. After switching on the Customer Service Mode, the picture is OK. Reduce the sharpness value. The new value(s) are automatically stored for all TV channels.
3. Check line 'Sharpness'. Reduce the sharpness value. The new value(s) are automatically stored for all TV channels

#### **No Picture**

Check line 'Tuned bit'. In case the value is 'on', install the required program again. Open the installation menu by pressing 'Timer' and 'Enlarge' at the same time, and perform manual installation.

#### **Blue Picture and/or Unstable Picture**

No proper signal is received. Check line 'Noise Figure'. If value is higher than 127, suspect the signal. Check your cable- or aerial signal.

#### **Black and White Picture.**

Check line 'Colour'. In case the value is low (<30), raise the value of colour. The new value(s) are automatically stored for all TV channels.

#### **No Colours/ Colours not Correct / Unstable Picture / Colour Lines around Picture Elements.**

Check lines 'TV System'. Check if system is OK.  
BG stand for PAL B/G, L/La for SECAM L, I for PAL I or L', D/K or SECAM D/K. They correspond with the System selections

made in the 'install' menu, respectively West Europe, France, UK, and East Europe. In case system is wrong, correct this via manual installation.

#### **Menu Text not Sharp Enough.**

1. Press 'Smart Picture' button on the Remote Control handset. In case picture improves, reduce the contrast value. The new value(s) are automatically stored for all TV channels.
2. After switching on the Customer Service Mode, the picture is OK. Reduce the contrast value. The new value(s) are automatically stored for all TV channels.
3. Check line 'Contrast'. If the value is high (>75), reduce it.

### **5.3.2 Sound Problems**

#### **No Sound from Left and Right Speaker.**

1. Press 'Smart Sound' button on the Remote Control handset. In case sound improves, raise the volume value. The new value(s) are automatically stored for all TV channels.
2. After switching on the Customer Service Mode, the volume is OK. Raise the volume value. The new value(s) are automatically stored for all TV channels.
3. Check line 'Volume'. The value is low, so raise it. The new value(s) are automatically stored for all TV channels.

#### **Sound too Loud for Left and Right Speaker.**

1. Press 'Smart Sound' button on the Remote Control handset. In case sound improves, reduce the volume value. The new value(s) are automatically stored for all TV channels.
2. After switching on the Customer Service Mode, the volume is OK. Reduce the volume value. The new value(s) are automatically stored for all TV channels.
3. Check line 'Volume'. The value is high, so reduce it. The new value(s) are automatically stored for all TV channels.

#### **No Sound from Centre Speaker.**

1. Check line 'Centre Volume'. If the value is low, raise it.
2. In case of a Dolby set, check line 'Surround mode'. The centre speaker is only active in the surround modes 3D Surround, ProLogic, Dolby 3 Stereo and DD.

#### **Sound too Loud from Centre Speaker.**

Check line 'Centre Volume'. If the value is high, reduce it.

#### **No Sound from Rear Speakers.**

1. Check line 'Surround mode'. In case this line is 'Off' or 'Hall', change the surround mode into 3D Surround, ProLogic, Dolby 3 Stereo and DD.
2. Check line 'Rear volume'. If the value is low, raise it. The new value(s) are automatically stored for all TV channels.
3. Check lines 'Rear volume left' and 'Rear volume right'. If the value is low, raise them. The new value(s) are automatically stored for all TV channels.
4. Check if the surround boxes receive sound, the green LED should be on.
5. Check if the correct RF-channel is chosen. Look at the bottom of the active box for the RF-channel of the surround speakers. Check the installed RF-channel in the installation menu. If this RF-channel is different, change it to the correct one.

## **5.4 ComPair**

### **5.4.1 Introduction**

ComPair (Computer Aided Repair) is a service tool for Philips Consumer Electronics products. ComPair is a further development on the European DST (service remote control),

which allows faster and more accurate diagnostics. ComPair has three big advantages:

- ComPair helps you to quickly get an understanding on how to repair the chassis in a short time by guiding you systematically through the repair procedures.
- ComPair allows very detailed diagnostics (on I<sup>2</sup>C level) and is therefore capable of accurately indicating problem areas. You do not have to know anything about I<sup>2</sup>C commands yourself because ComPair takes care of this.
- ComPair speeds up the repair time since it can automatically communicate with the chassis (when the microprocessor is working) and all repair information is directly available. When ComPair is installed together with the SearchMan electronic manual of the defective chassis, schematics and PWBs are only a mouse click away.

#### 5.4.2 Specifications

ComPair consists of a Windows based faultfinding program and an interface box between PC and the (defective) product. The ComPair interface box is connected to the PC via a serial or RS232 cable.

In this chassis, the ComPair interface box and the TV communicate via a bi-directional infrared link.

The ComPair faultfinding program is able to determine the problem of the defective television. ComPair can gather diagnostic information in two ways:

- **Automatic** (by communication with the Receiver box): ComPair can automatically read out the contents of the entire error buffer. Diagnosis is done on I<sup>2</sup>C level. ComPair can access the I<sup>2</sup>C bus of the Receiver box. ComPair can send and receive I<sup>2</sup>C commands to the micro controller of the Receiver box. In this way, it is possible for ComPair to communicate (read and write) to devices on the I<sup>2</sup>C busses of the Receiver box.
- **Manually** (by asking questions to you): Automatic diagnosis is only possible if the micro controller of the Receiver box is working correctly and only to a certain extent. When this is not the case, ComPair will guide you through the faultfinding tree by asking you questions (e.g. *Does the screen give a picture? Click on the correct answer: YES / NO*) and showing you examples (e.g. *Measure test-point 17 and click on the correct oscillogram you see on the oscilloscope*). You can answer by clicking on a link (e.g. text or a waveform picture) that will bring you to the next step in the faultfinding process.

By a combination of automatic diagnostics and an interactive question/answer procedure, ComPair will enable you to find most problems in a fast and effective way.

Beside fault finding, ComPair provides some additional features like:

- Up- or downloading of pre-sets.
- Managing of pre-set lists.
- Emulation of the (European) Dealer Service Tool (DST).
- If both ComPair and SearchMan (Electronic Service Manual) are installed, all the schematics and the PWBs of the set are available by clicking on the appropriate hyperlink. **Example:** *Measure the DC-voltage on capacitor C2568 (Schematic/Panel) at the SSP.*
  - Click on the 'Panel' hyperlink to automatically show the PWB with a highlighted capacitor C2568.
  - Click on the 'Schematic' hyperlink to automatically show the position of the highlighted capacitor.

#### Stepwise Start Up / Shut Down

Under normal circumstances, a fault in the power supply, or an error during start-up, will switch the television to protection mode. ComPair can take over the initialisation of the television. In this way it is possible to distinguish which part of the start-up routine (hence which circuitry) is causing the problem.

#### Stepwise start up explanation

This is realised via ComPair and is very helpful when a protection is activated (see also chapter 5.6).

**Table 5-1**

State	Mode description	Display LEDs	Enabled protections
0	- Low power standby - uP in Standby	Red 'on'	None
1	- High power standby - TV-set in standby	Red 0.5 Hz	None
2	- Supply 'on' - Protections 5V2, 8V6, and DC-PROT activated.	Orange/ Green0.25 Hz	67, 68, and 76
3	- Sound ICs initialised - Protections FBX- and TUNER activated.	Orange/ Green0.5 Hz	+ 77 and 80
4	- EHT startup - No black-current stabilisation - Protections VFB, HFB, LDP, and BC-PROT activated (blanked picture).	Orange/ Green2 Hz	+ 70, 71, 73, and 74
5	- TV operates - Unblanked picture.	Orange/ Green10 Hz	

#### Stepwise shut down explanation

In the stepwise shutdown mode, state 2 is skipped (it is not possible to de-initialise ICs).

**Table 5-2**

State	Mode description	Display LEDs(*)	Disabled protections
5	- TV operates - Unblanked picture.	Orange/ Green10 Hz	-
4	- EHT startup - No black-current stabilisation - All protections are enabled.	Orange/ Green2 Hz	-
3	- Sound ICs stay initialised - All protections are 'off'.	Orange/ Green0.5 Hz	74, 73, 71, and 70
1	- High power standby- TV-set in standby	Red 0.5 Hz	80, 77, 76, 68, and 67
0	- Low power standby- uP in Standby	Red 'on'	-

**Note (\*):** When the set is in stepwise mode and, due to stepping-up, a protection is activated; the set will really go into protection (blinking red LED). The set will not leave the stepwise-mode however. By stepping up, the set can be activated again, until state X where the protection was activated. At state (X-1) diagnostic measurements can be performed.

#### 5.4.3 How to Connect

1. First, install the ComPair Browser software on your PC (read the installation instructions carefully).
2. Connect the RS232 interface cable between a free serial (COM) port of your PC and the PC connector (marked with 'PC') of the ComPair interface.
3. Connect the Mains power adapter to the supply connector (marked with 'POWER 9V DC') on the ComPair interface.
4. Switch the ComPair interface 'off'.
5. Switch the Receiver box 'off' (remove the Mains power).

6. Point the ComPair interface to the 'Service send-LED' on the front of the set.
7. Plug the Mains power adapter in a Mains power outlet and switch on the interface. The green and red LEDs light up together. The red LED extinguishes after approximately 1 second, while the green LED remains lit.
8. Start the ComPair program and read the 'introduction' chapter.

#### Interface Connection

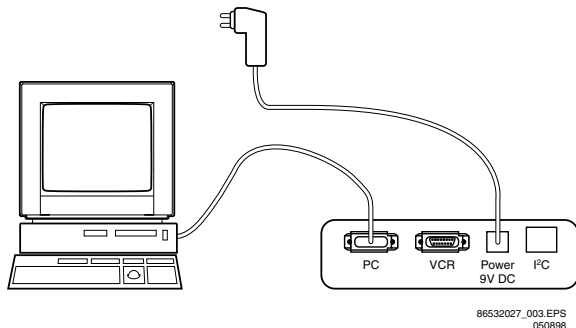


Figure 5-6

#### Interface Arrangement

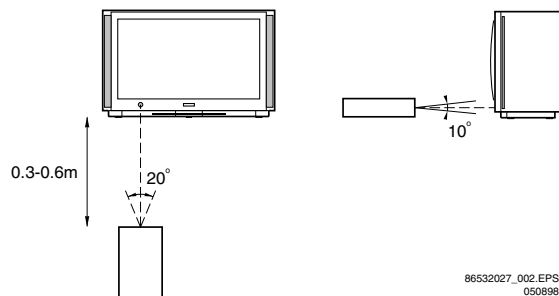


Figure 5-7

#### 5.4.4 How to Order

ComPair order codes:

- Starter kit ComPair, SearchMan software, and ComPair interface (excluding transformer): 4822 727 21629
- ComPair interface (excluding transformer): 4822 727 21631
- Starter kit ComPair software (registration version): 4822 727 21634
- Starter kit SearchMan software: 4822 727 21635
- ComPair CD (update): 4822 727 21637
- SearchMan CD (update): 4822 727 21638

## 5.5 Error Codes

The error code buffer contains all detected errors since the last time the buffer was erased. The buffer is written from left to right. When an error occurs that is not yet in the error code buffer, it is written at the left side and all other errors shift one position to the right.

### 5.5.1 How to Read the Error Buffer

It is possible to read out the error buffer in several ways:

- **On screen via the SAM.**  
In case picture is OK, the error buffer can be read easiest via the SAM. In the main menu of the SAM the last 10 different error codes occurred are displayed. The most recent detected error code is displayed on the left side.  
Examples:
  - **003 000 000 000 000**: error code 3 is the last and only detected error.
  - **002 003 000 000 000**: error code 3 was first detected and error code 2 is the last detected (newest) error.
- **On screen via the CSM.**  
Same explanation as above.
- **Via ComPair (or DST).**  
See ComPair/DST manual.

### 5.5.2 How to Clear the Error Buffer

Use one of the following methods:

- By activation of the 'RESET ERROR BUFFER' command in the SAM menu:
- When you transmit the commands 'DIAGNOSE' - '99' - 'OK' with ComPair (or with a DST). This works in all modes, except SAM.

#### Notes:

- When the error buffer is full (10 codes), no new error can be stored anymore. However, of every error raised is monitored how long it exists in the error buffer. When for any reason a false raised error exists in the buffer, it will be deleted after 50 hours. If this error still is actual after 50 hours, it will be raised again. In this way, it is safeguarded that history of error codes is stored.
- Sometimes it is an option to first write down the error buffer content, reset the buffer, and look again which error codes are generated by the set.
- If the content of the error buffer has not changed for 50 hours, it resets automatically.

## 5.5.3 Error Codes Overview

In case of non-intermittent faults, clear the error buffer before you begin the repair. These to ensure that old error codes are no longer present.

If possible, check the entire contents of the error buffer. In some situations, an error code is only the result of another error code and not the actual cause (e.g., a fault in the protection detection circuitry can also lead to a protection).

Table 5-3

Error	Device	Description	Defective item	Diagram	Defective module indication
2	ST24E32 or M24C32	Non volatile memory	IC7008	K7	Control
3	SAA5801	OTC2.5 microprocessor/TXT	IC7003	K7	Control
5	UV1316	Tuner	U1102	K1	Tuner
10	TEA6415	I/O source select video	IC7208	K8	Source select
11	TEA6422	I/O source select audio	IC7777	K8	Source select
15	TDA9320H	HIP I/O-video processing	IC7501	K1	Chroma IF I/O
20	TDA9330H	HOP video/deflection processor	IC7300	K6	Video Controller
21	TDA9178	LTP Peaking	IC7402	K6	Video Controller
25	MSP3410D	ITT sound processor	IC7751	K3	Audio module
26	SAA7712H	SEDSP Dolby processor	IC7770	K4	Audio module
35	UV1316	FDS Tuner	U1102	M1	Video Dual Screen Panel
36	PCF8574	FDS I/O Expander	IC7860	M2	Video Dual Screen Panel
37	SAB9079	FDS POPOV	IC7700	M4	Video Dual Screen Panel
38	TDA9320	FDS HIP2	IC7501	M1	Video Dual Screen Panel
39	M24C04	FDS NVM	IC7991	M1	Video Dual Screen Panel
40	83C751	Cordless Transmitter processor	IC7105	R	Surround Transmitter Panel
41	TDA7309	FDS Headphone	IC7620	M5	Video Dual Screen Panel
50	SAA4978H	FBX PICNIC	IC7611	L1	Feature Box
53	SAA4992	FBX FALCONIC	IC7626	L3	Feature Box
54	T8F24EF	FBX EAGLE	IC7724	L2	Feature Box
56	83C654	MCS processor	IC7803	N3	Digital Audio Module
57	TDA7438	MCS SOFAC L/R	IC7540	N8	Digital Audio Module
58	TDA7438	MCS SOFAC L/R	IC7600	N9	Digital Audio Module
59	TDA7438	MCS SOFAC L/R	IC7570	N10	Digital Audio Module
61	PCF8574	MCS I/O expander	IC7690	N16	Digital Audio Module
63	TDA8444	Auto Scavem DAC	IC7500	SC1	Auto Scavem
65	Slow I2C bus blocked		See fig 5.8	Slow I2C bus blocked	
66	Fast I2C bus blocked		See fig 5.8	Fast I2C bus blocked	
67	Supply 5V	5V2	See fig 5.8	+5V Supply	
68	Supply 8V	8V6	See fig 5.8	+8V Supply	
70	V fail protection	VFB	See fig 5.11	A3/A1/K6	Vertical Flyback
71	H fail protection	HFB	See fig 5.10	A1/K6	Horizontal Flyback
73	Line Deflection protection	LDP	See fig 5.8	A1/K6	Line Deflection
74	Beam Current Protection	BC-PROT	See fig 5.8	K6/K7	Beam Current
76	DC Sound protection	DC-PROT	See fig 5.8	A4	Sound Output
77	Feature box protection	FBX-PROT	See fig 5.8	L1	+3V (FBX) Supply
80	Tuner protection	Tuner-PROT	See fig 5.8	K1	+8V (Tuner) Supply



## 5.6 Protections

### 5.6.1 Introduction

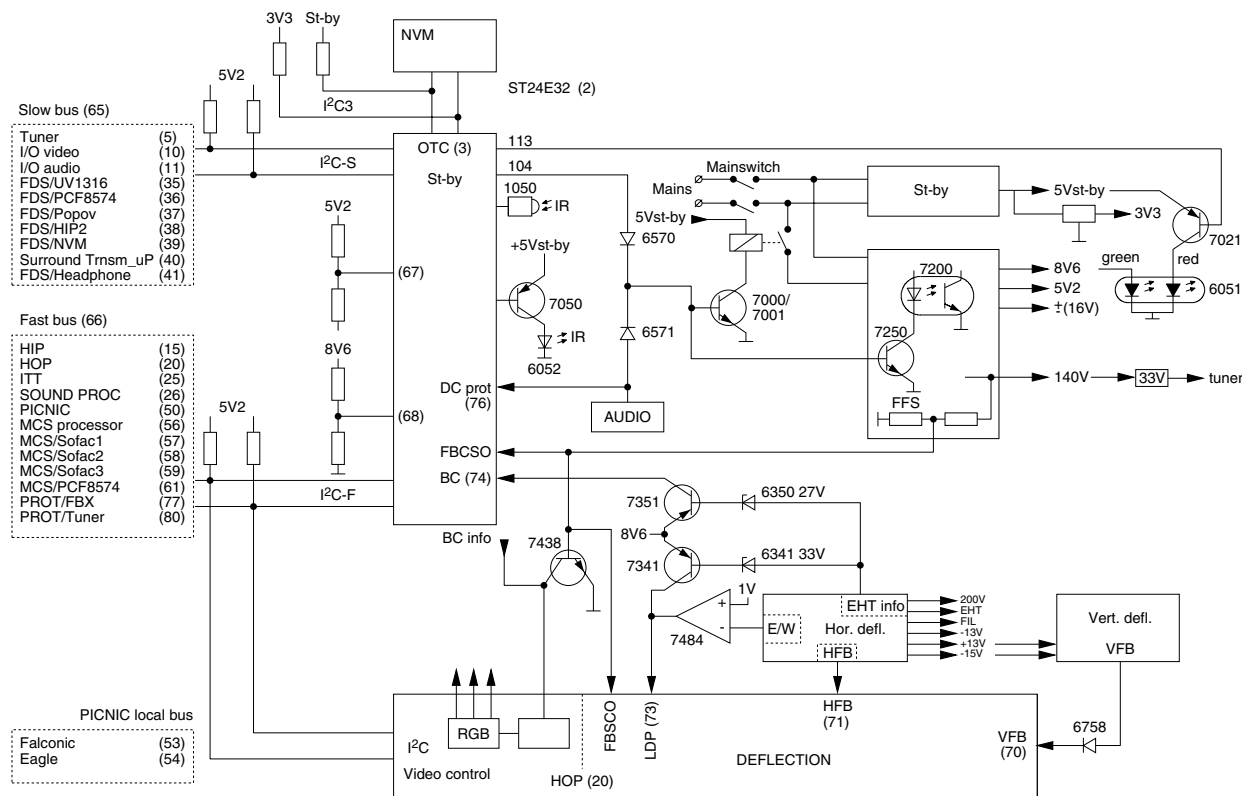
This chassis has only one microprocessor (OTC), which remains active during Standby. This because the power of the microprocessor (and the attached memory chip set) is coming from the 3V3 supply, which is derived from the 5V Standby circuitry.

Therefore, in both 'Power on' as in 'Standby' mode, the microprocessor is connected to this power supply. The

microprocessor controls the Standby line for switching 'on' and 'off' the main supply. In the Standby mode, or in the protection mode, the Standby line will open the contacts of relay 1002 via T7000, which results in switching 'off' the mains input to the main supply. In the mean time, via T7550, the LED-intensity of the opto-coupler will increase, which results in a quick shutdown of the power supply.

If a fault situation is detected, an error code is generated and, if necessary, the set is put in protection mode. This mode is indicated by blinking of the red front LED.

### Protection Structure



CL 16532149\_074.eps  
211201

Figure 5-8

We can divide the protections in four groups:

- Protection from I<sup>2</sup>C-busses (fast and slow) or I<sup>2</sup>C-IC errors (device errors).
- Protection from the inputs on the OTC.
- Protection from the status register of the HOP (communicated via I<sup>2</sup>C-bus).
- DC-protection (from the sound amplifiers) monitored on the OTC.

### 5.6.2 Protection from the I<sup>2</sup>C Bus

In normal operation, some registers of the I<sup>2</sup>C controlled ICs are refreshed every 200 ms. During this sequence, three I<sup>2</sup>C-busses (and the I<sup>2</sup>C-ICs as well) are checked.

Possible protections:

- An I<sup>2</sup>C-bus protection will take place if the SDA and SCL are whether short-circuited to ground or to each other.
- An I<sup>2</sup>C-device protection can occur, when there is malfunction in communication with one specific device, or if the power supply of the device is missing.
- A FBX- and/or Tuner circuitry protection can occur, when one of these circuits do not respond for more than 1 second (measured via I<sup>2</sup>C). The set goes in protection mode.

### 5.6.3 Protection from the Inputs on the OTC

If a protection is detected at an input of the OTC, all protection inputs of the OTC will be scanned every 200 milliseconds for five times. If the protection on one of the inputs is still activated after 1 sec., then the set will be put in the protection-mode. Before the scanning is started, a so-called 'ESD refresh' is carried out. This is done, because the interrupt on one of the inputs might be caused by a Flash or ESD. As both phenomena can harm the settings of some ICs, they are initialised again to ensure the normal picture and sound conditions of the set.

#### 8V6 and 5V2 Protection.

The OTC senses the presence of the 8V6 and 5V2. If the 8V6 and 5V2 is not present, then an error code is stored in the error buffer.

#### BC (Beam Current) Protection.

A circuit on the SSP measures the beam current. If this current exceeds a certain reference level, the BC-input of the OTC is set to 'high' via D6350 and T7351. The error code is stored in the error buffer and the set is put in protection mode.



**VFB: Vertical Flyback**

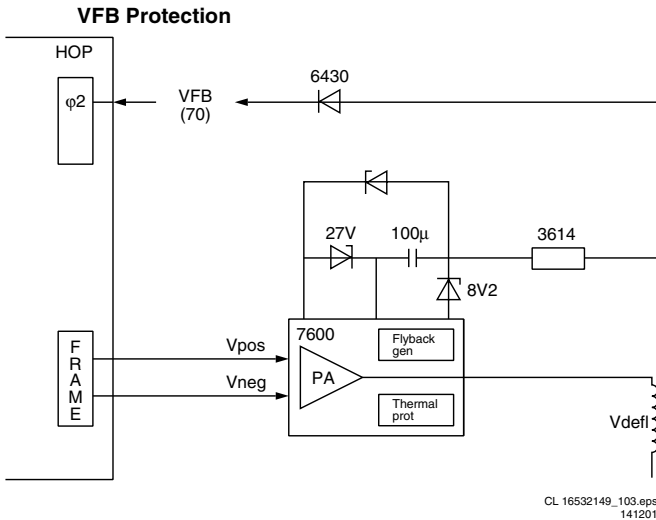


Figure 5-11

The HOP will blank the screen, if the vertical flyback signals are not present at the VFB-guard input. The relevant status bit will be set in the register of the HOP. The error code is stored in the error buffer; in this case, protection is not necessary.

**LDP: Line Deflection Protection**

**LDP Protection**

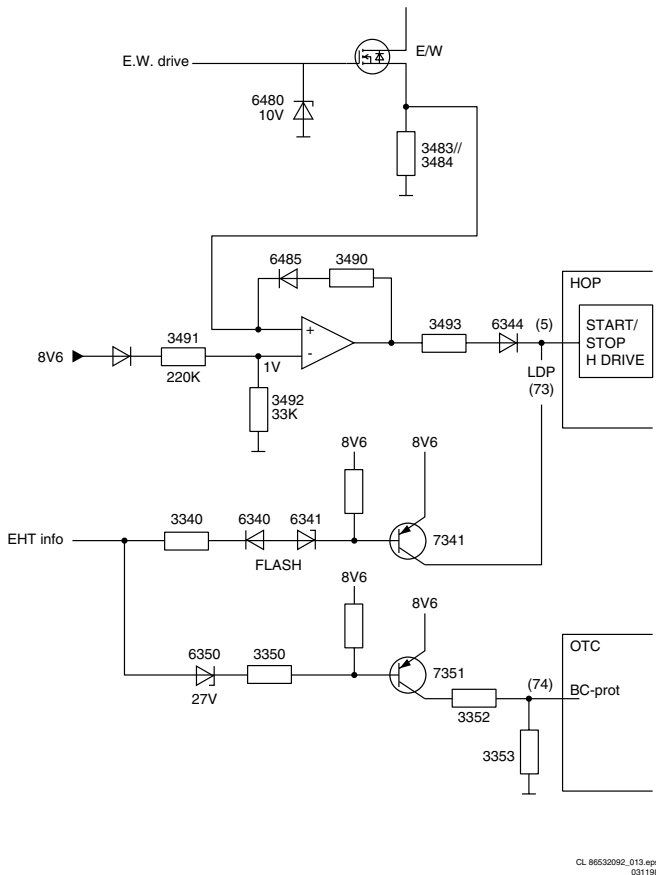


Figure 5-12

Two protection circuits are connected to the LDP-input of the HOP:

- **Flash detection.** From the EHT-info, via D6341 and T7341 a flash will stop the H-drive and line output stage immediately. The FLS-bit in the status register of the HOP is set to 'high'. As the

duration of a flash is very short, the FLS-bit will be reset to 'low' again after the flash refresh, and via a slow start the set will start again.

- **LDP detection.** The EW-protection, coming from the line-output is also connected to the same input as above. The current through the EW-stage is measured by R3483 and R3484 on the LSP. The voltage across these precision resistors will increase in case of a failure at the line output stage. If the voltage becomes higher than 1 V, then the output of IC7484 will become 'high' and remains 'high' via D6485 and R3490. Via D6344 the H-drive will be stopped. The FLS-bit will be set to 'high' and remains 'high' by means of the software filtering even after a flash refresh. The OTC will put the set in Standby-mode. The error code is stored in the error buffer and the set gets into the protection mode.

**5.7 Repair/Service Tips**

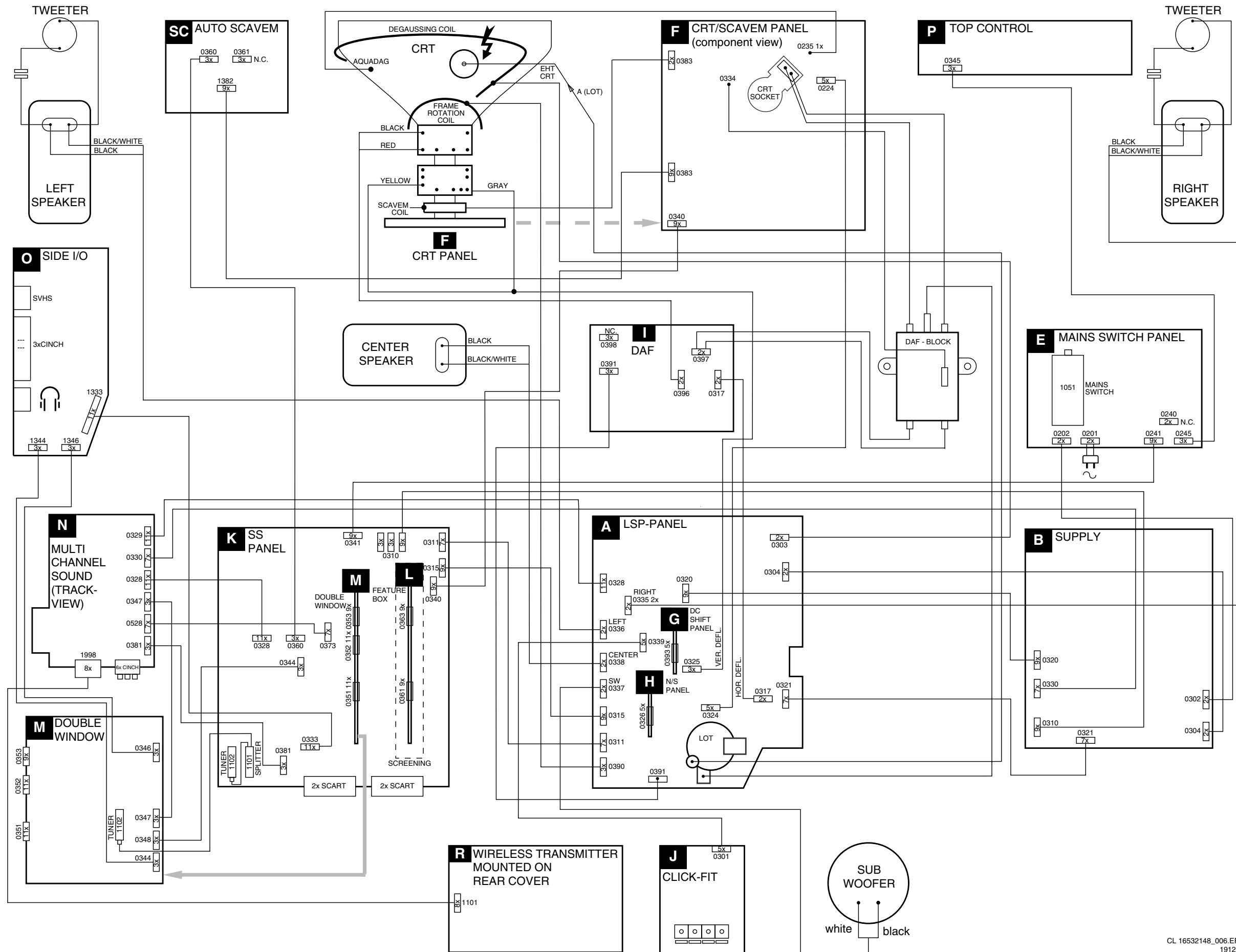
Below, you will find some additional repair/service tips:

- To have a good **service position of the FDS module**, remove the FBX module. As the set will go in protection now, you have to overrule this. Therefore, go to the Service Default Mode via the HW-entry method (short jumpers on SSP). There will be no picture, but as the signal processing of the FDS-module is done **before** the FBX processing, you can measure the necessary waveforms, and check if the module is functioning.
- To have a good **service position of the FBX module**, remove the FDS module. To keep the set functioning, you have to bypass the YUV-path now: short pins 1-7, 2-8, and 3-9 of connector 0352.
- More **User Service Tips** are described in chapter 3 of this manual (page 34 of the DFU).
- Be aware that when you switch 'off' the TV-set, the active surround speaker is going to standby after about 10 minutes.
- In Pixel Plus mode, the **OSD menus** are a little different in size. This is normal.
- When one wants to **store settings of the FDS module**, first one has to make a hardware intervention (see explanation on diagram M1). This is because of the fact that the local NVM has a write protection that is not controlled by the main microprocessor. Be sure to remove the connection after storing.
- When the set has a **'hazy' focus**, this can be related to a bad focus setting, but can also be related to a malfunctioning of the parabola modulation part of the Auto Scavem circuitry (see diagram SC).
- An easy indication if the **'Pixel Plus' feature is functioning correctly**, is via the 'Pixel Plus Demo Mode'. To activate this, press the 'Pixel Plus' button on the RC-transmitter (see also DFU).
- When **no wireless sound** is possible, or when there is too much interference, you can still enjoy Dolby surround sound by connecting the two rear loudspeakers to the TV with a stereo cinch to stereo 3.5 mm jack cable. This cable can be ordered as service part nr. 3104 311 02251 (10 m. backup cable).



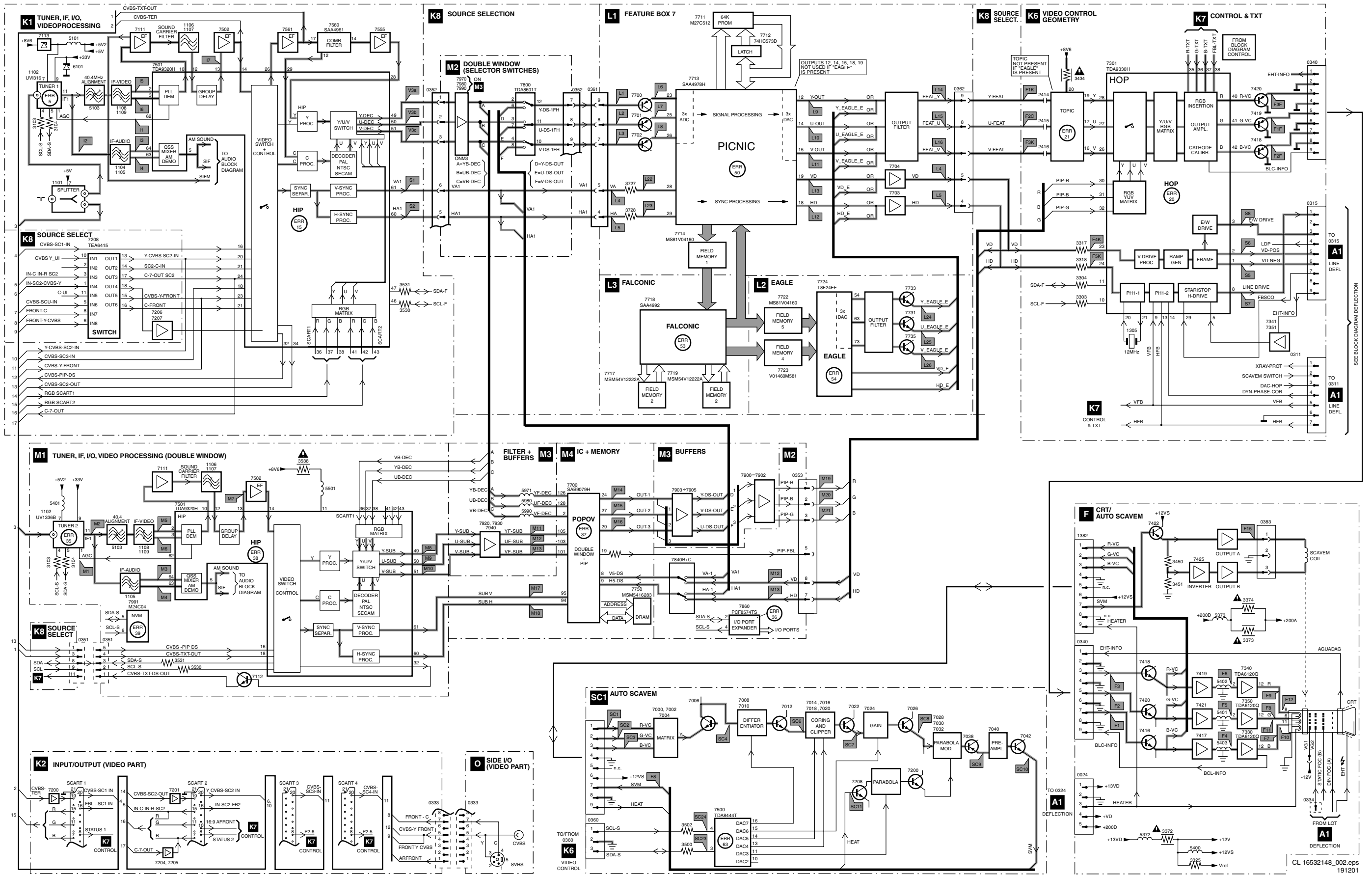
# 6. Wiring Diagram, Block Diagrams and Overviews

## Wiring Diagram

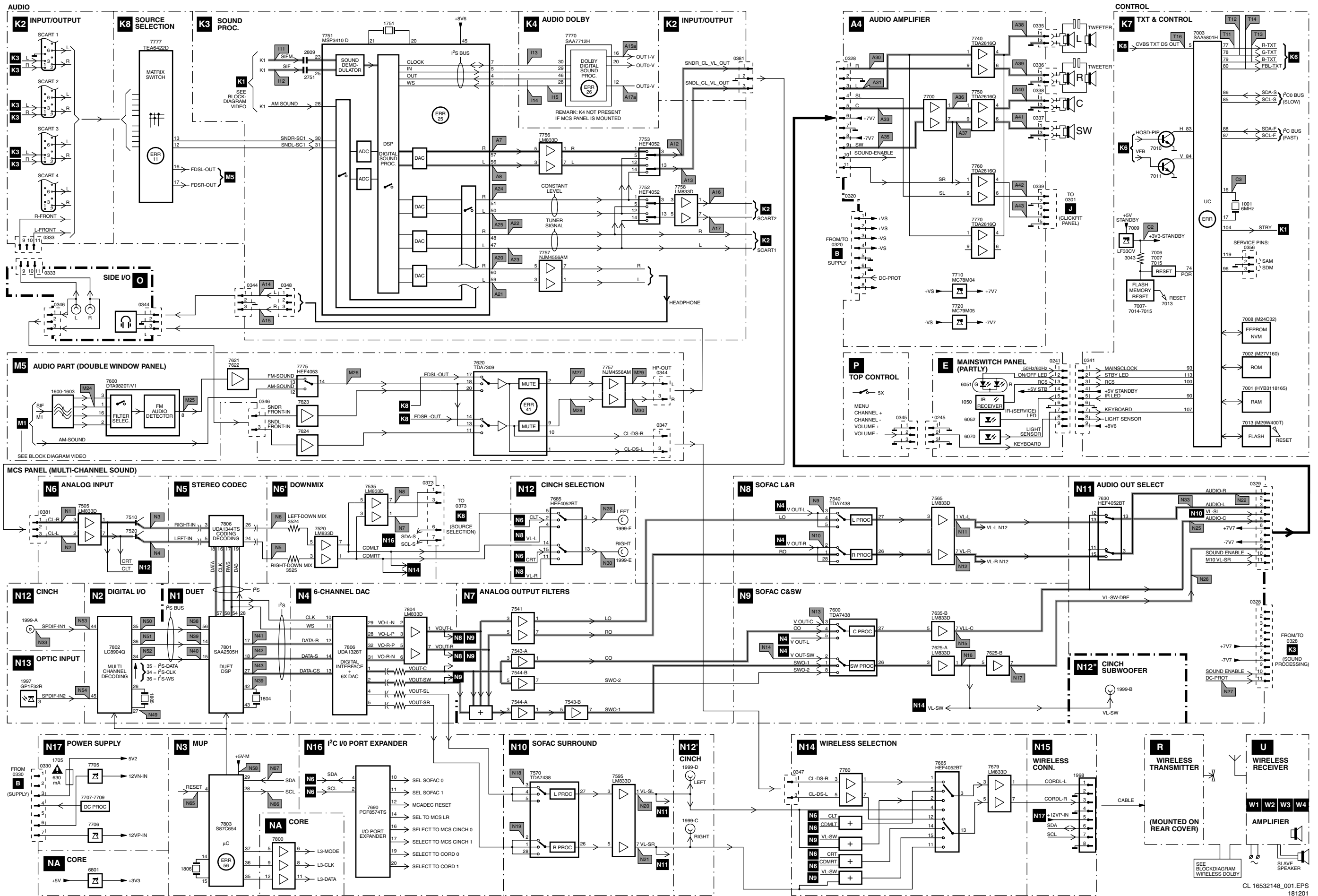




### Block Diagram Video

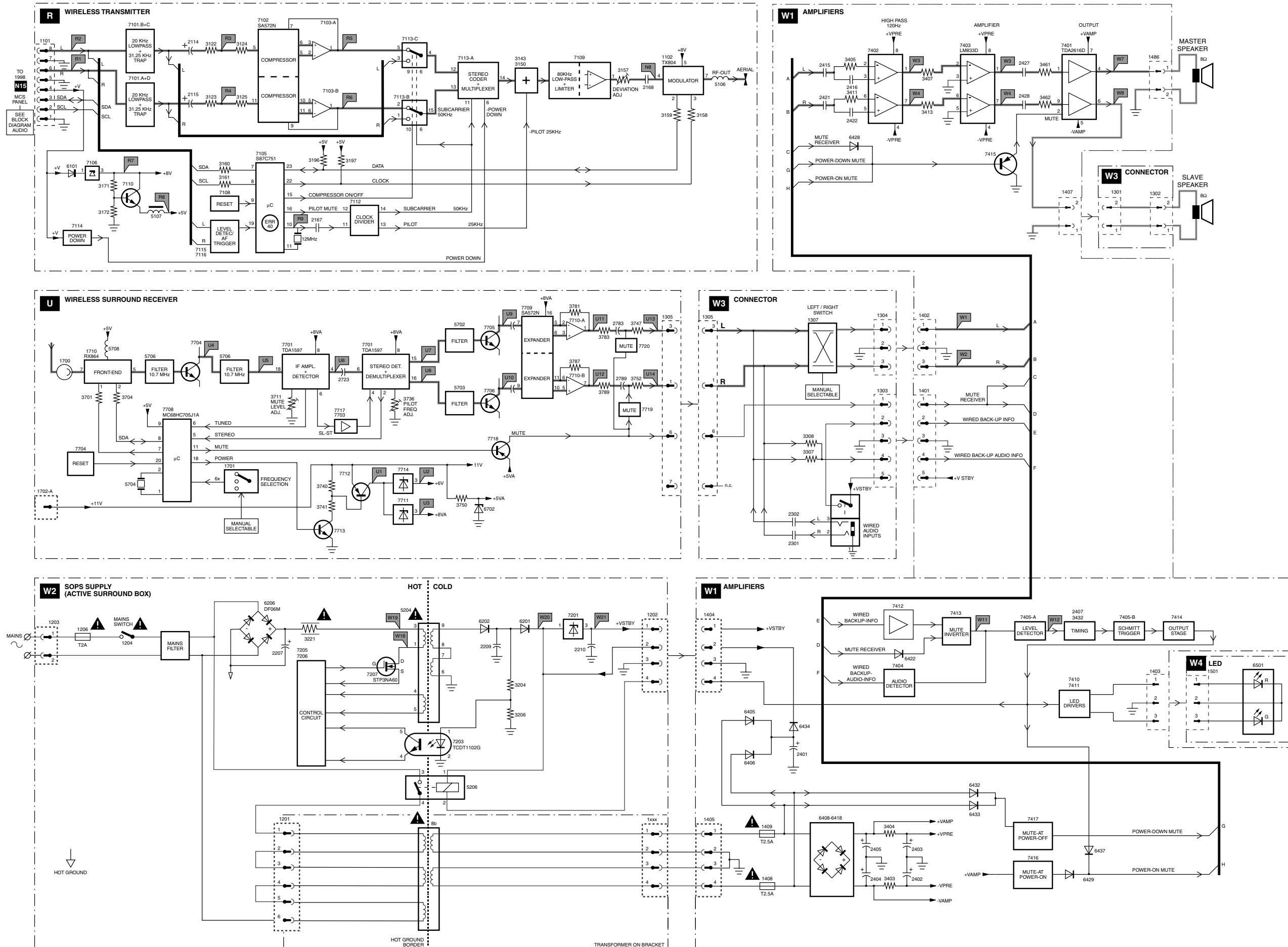


### Block Diagram Audio 1 (Exclusive Wireless Audio Details)

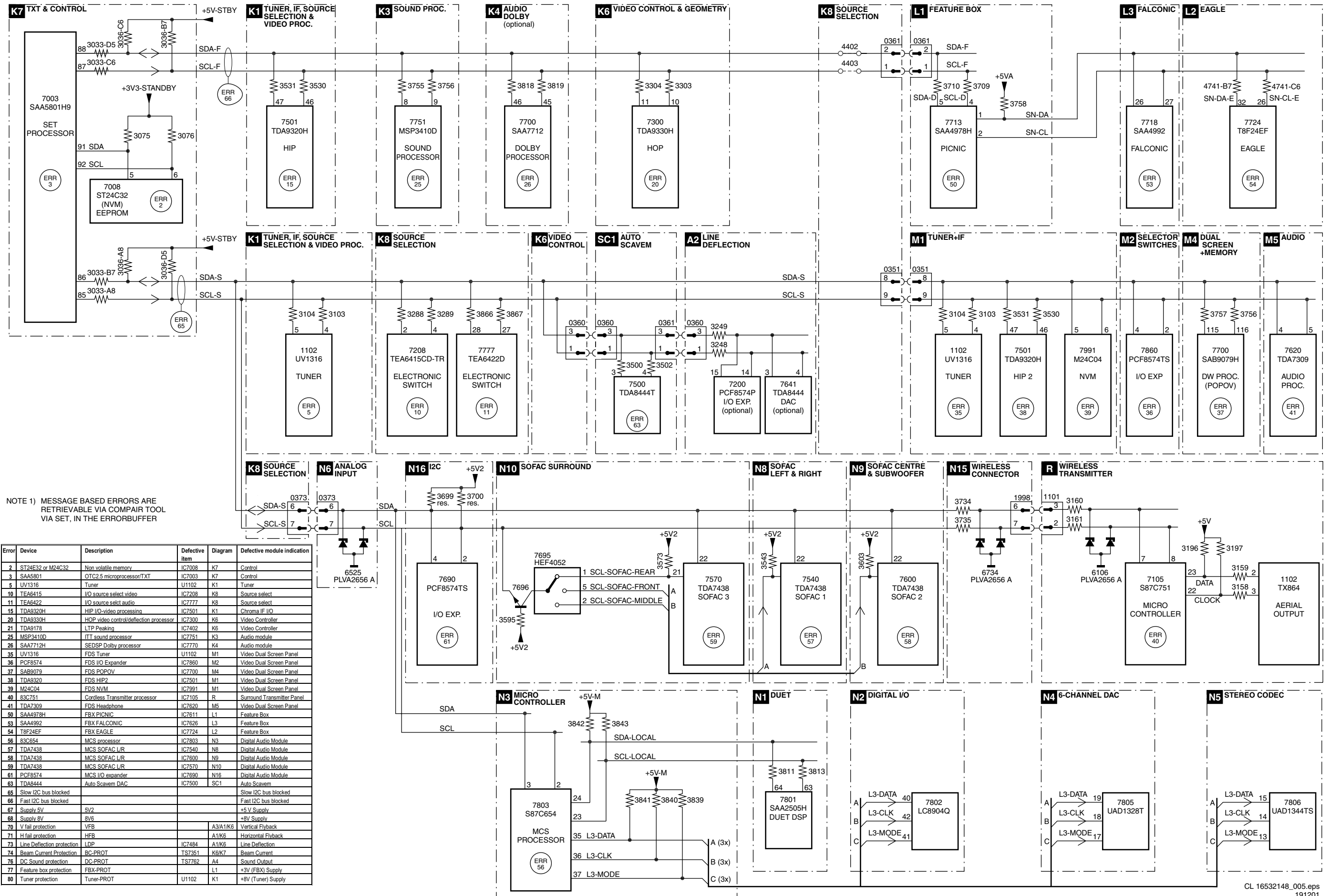




### Block Diagram Audio 2 (Wireless Audio Details)



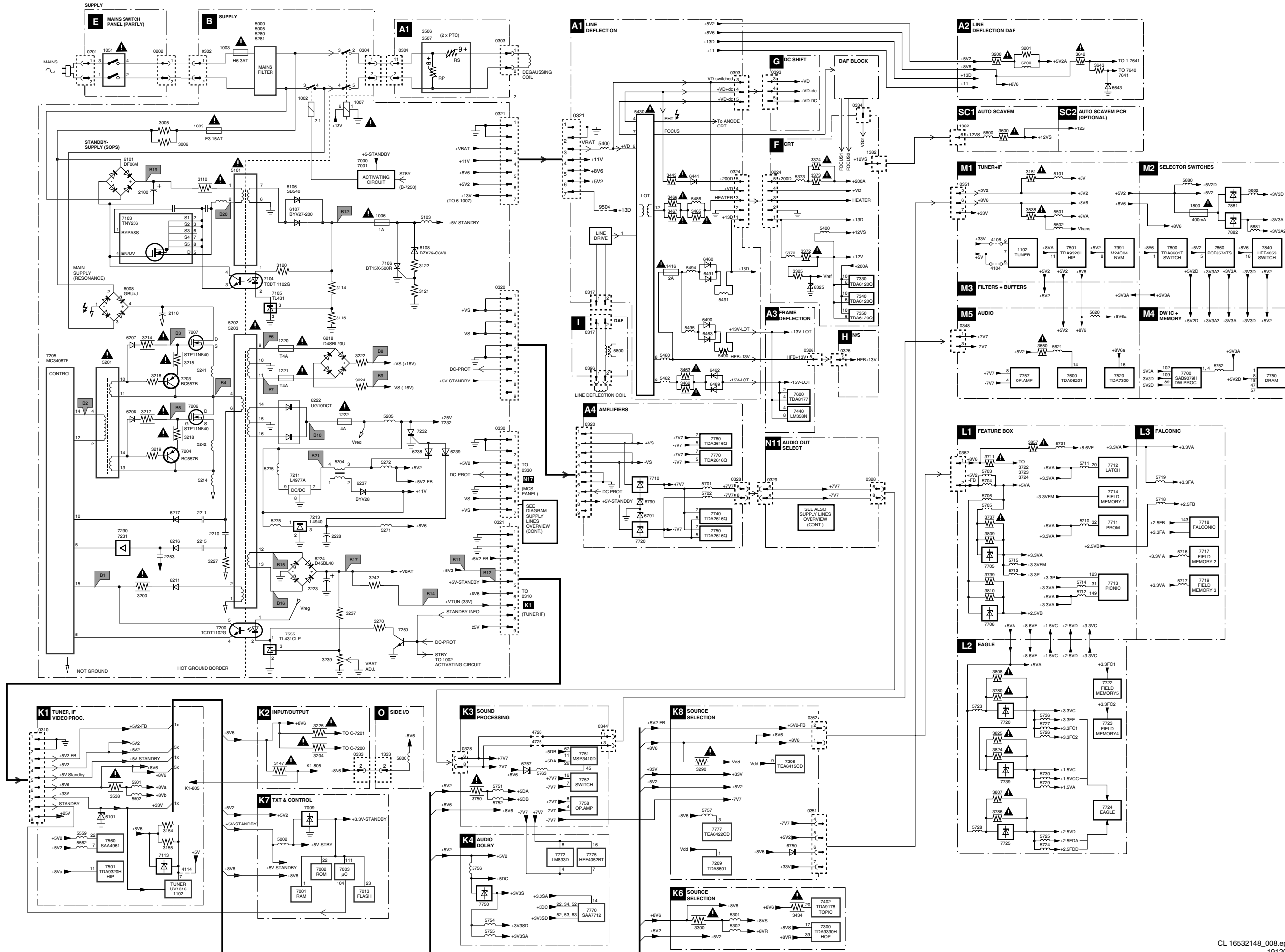
I<sup>2</sup>C IC's overview



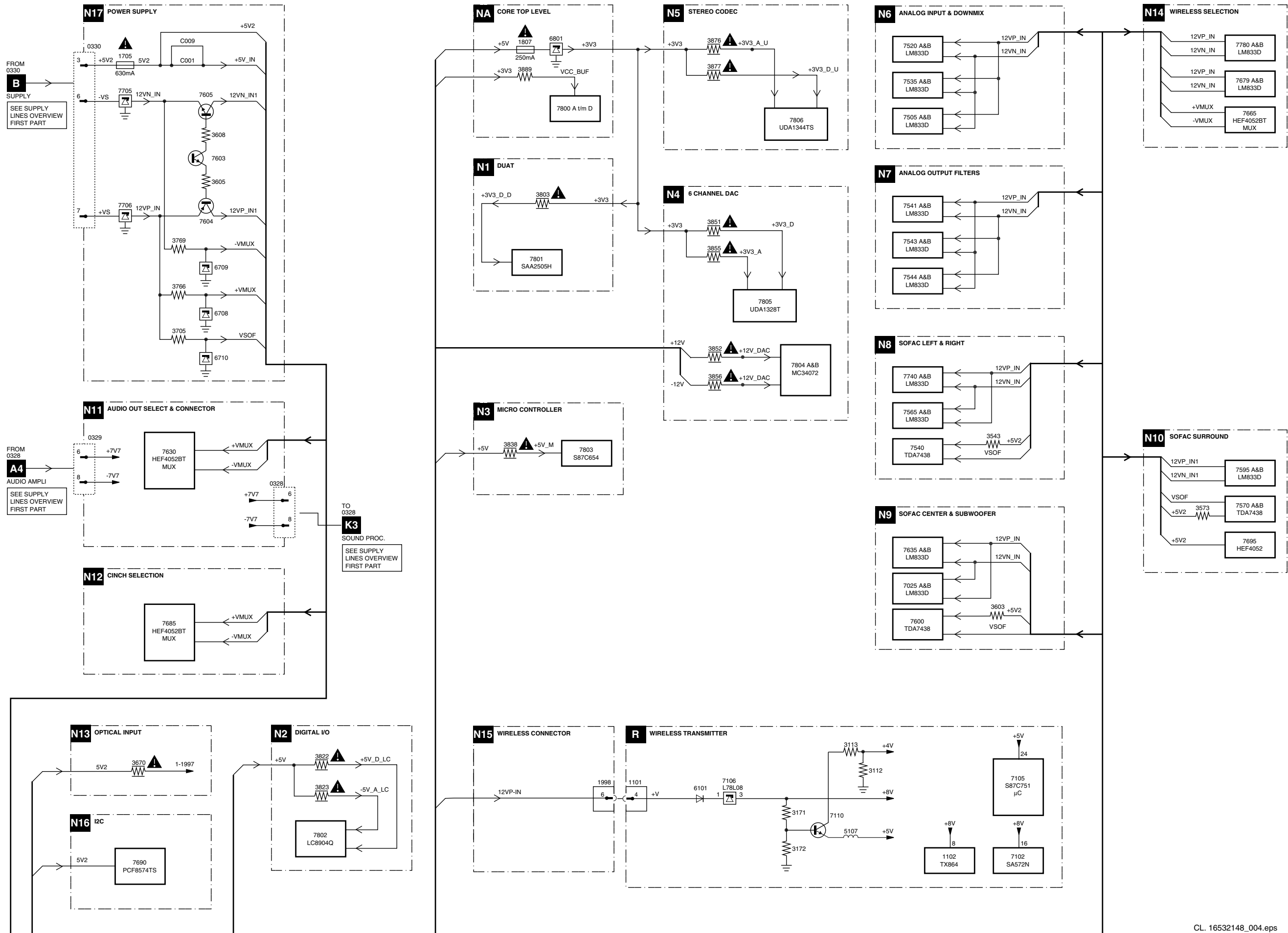
NOTE 1) MESSAGE BASED ERRORS ARE RETRIEVABLE VIA COMPAIR TOOL VIA SET, IN THE ERRORBUFFER

Error	Device	Description	Defective Item	Diagram	Defective module indication
2	ST24E32 or M24C32	Non volatile memory	IC7008	K7	Control
3	SAA5801	OTC2.5 microprocessor/TXT	IC7003	K7	Control
5	UV1316	Tuner	U1102	K1	Tuner
10	TEA6415	I/O source select video	IC7208	K8	Source select
11	TEA6422	I/O source select audio	IC7777	K8	Source select
15	TDA9320H	HIP I/O-video processing	IC7501	K1	Chroma IF I/O
20	TDA9330H	HOP video control/deflection processor	IC7300	K6	Video Controller
21	TDA9178	LTP Peaking	IC7402	K6	Video Controller
25	MSP3410D	ITT sound processor	IC7751	K3	Audio module
26	SAA7712H	SEDSP Dolby processor	IC7770	K4	Audio module
35	UV1316	FDS Tuner	U1102	M1	Video Dual Screen Panel
36	PCF8574	FDS I/O Expander	IC7860	M2	Video Dual Screen Panel
37	SAB9079	FDS POPOV	IC7700	M4	Video Dual Screen Panel
38	TDA9320	FDS HIP2	IC7501	M1	Video Dual Screen Panel
39	M24C04	FDS NVM	IC7991	M1	Video Dual Screen Panel
40	83C751	Wireless Transmitter processor	IC7105	R	Surround Transmitter Panel
41	TDA7309	FDS Headphone	IC7620	M5	Video Dual Screen Panel
50	SAA4978H	FBX PICNIC	IC7611	L1	Feature Box
53	SAA4992	FBX FALCONIC	IC7626	L3	Feature Box
54	T8F24EF	FBX EAGLE	IC7724	L2	Feature Box
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57	TDA7438	MCS SOFAC L/R	IC7540	N8	Digital Audio Module
58	TDA7438	MCS SOFAC L/R	IC7600	N9	Digital Audio Module
59	TDA7438	MCS SOFAC L/R	IC7570	N10	Digital Audio Module
61	PCF8574	MCS I/O expander	IC7690	N16	Digital Audio Module
63	TDA8444	Auto Scavem DAC	IC7500	SC1	Auto Scavem
65	Slow I2C bus blocked				Slow I2C bus blocked
66	Fast I2C bus blocked				Fast I2C bus blocked
67	Supply 5V	5V2			+5 V Supply
68	Supply 8V	8V6			+8V Supply
70	V fail protection	VFB	A3/A1/K6		Vertical Flyback
71	H fail protection	HFB	A1/K6		Horizontal Flyback
73	Line Deflection protection	LDP	IC7484	A1/K6	Line Deflection
74	Beam Current Protection	BC-PROT	TS7351	K6/K7	Beam Current
76	DC Sound protection	DC-PROT	TS7762	A4	Sound Output
77	Feature box protection	FBX-PROT		L1	+3V (FBX) Supply
80	Tuner protection	Tuner-PROT	U1102	K1	+8V (Tuner) Supply

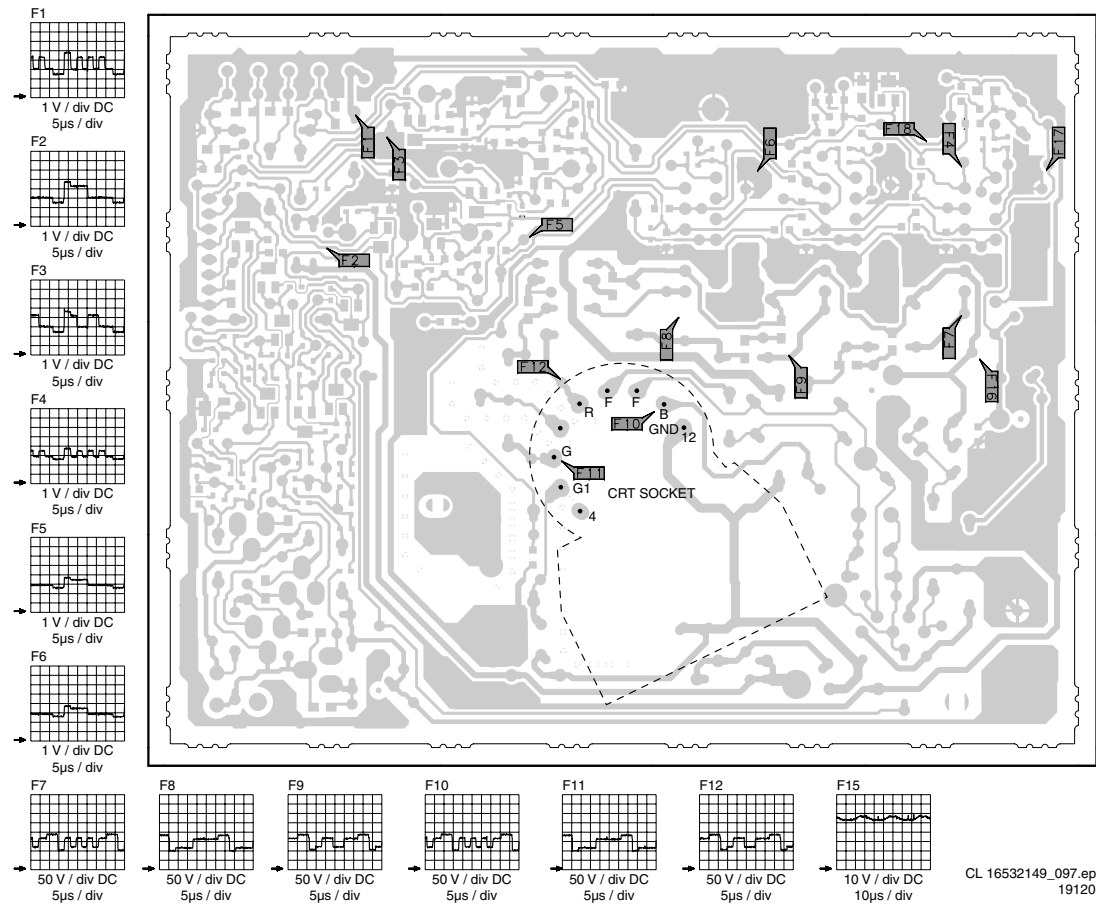
### Supply Lines Overview (Part 1)



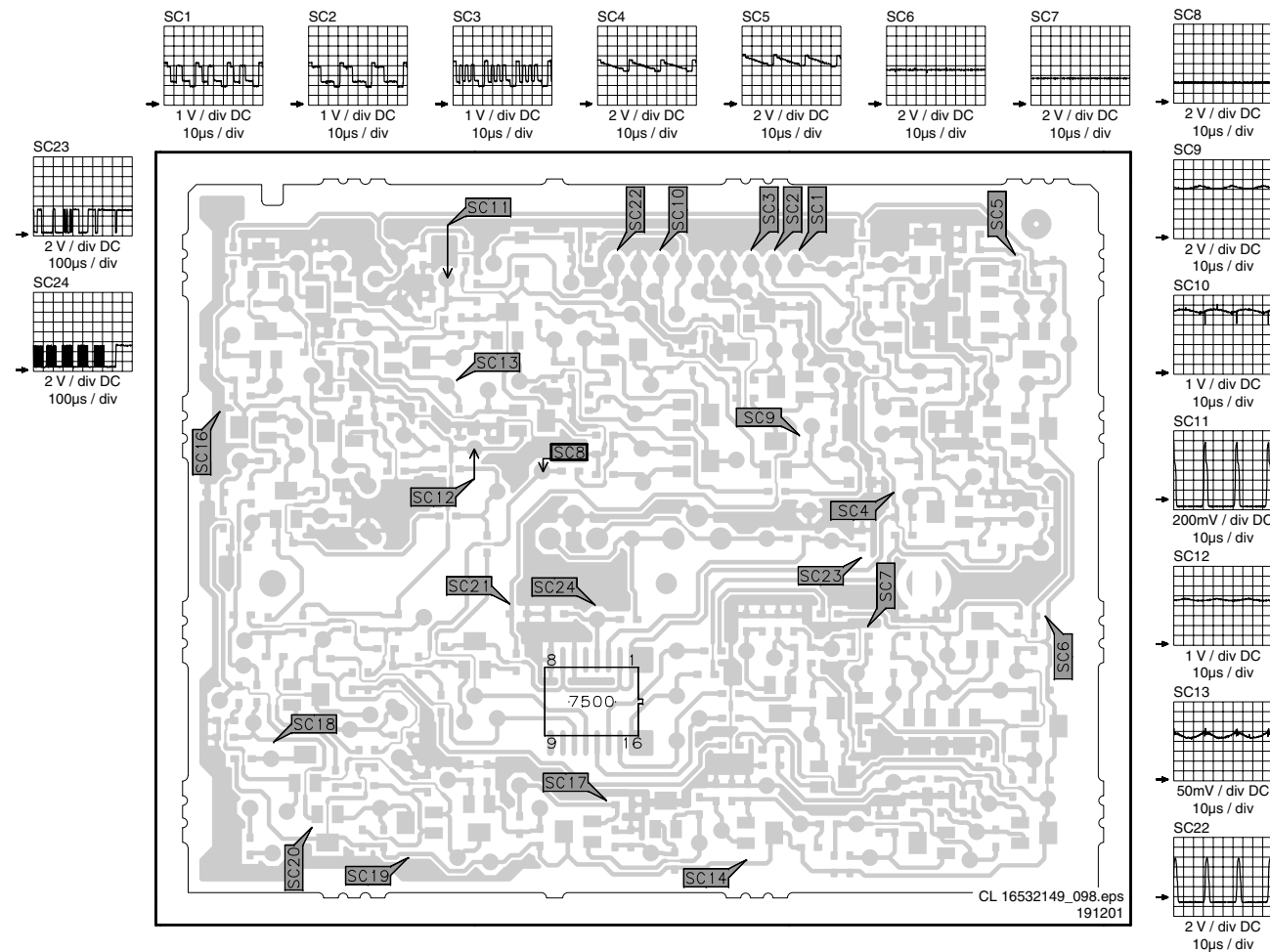
Supply Lines Overview (Part 2)



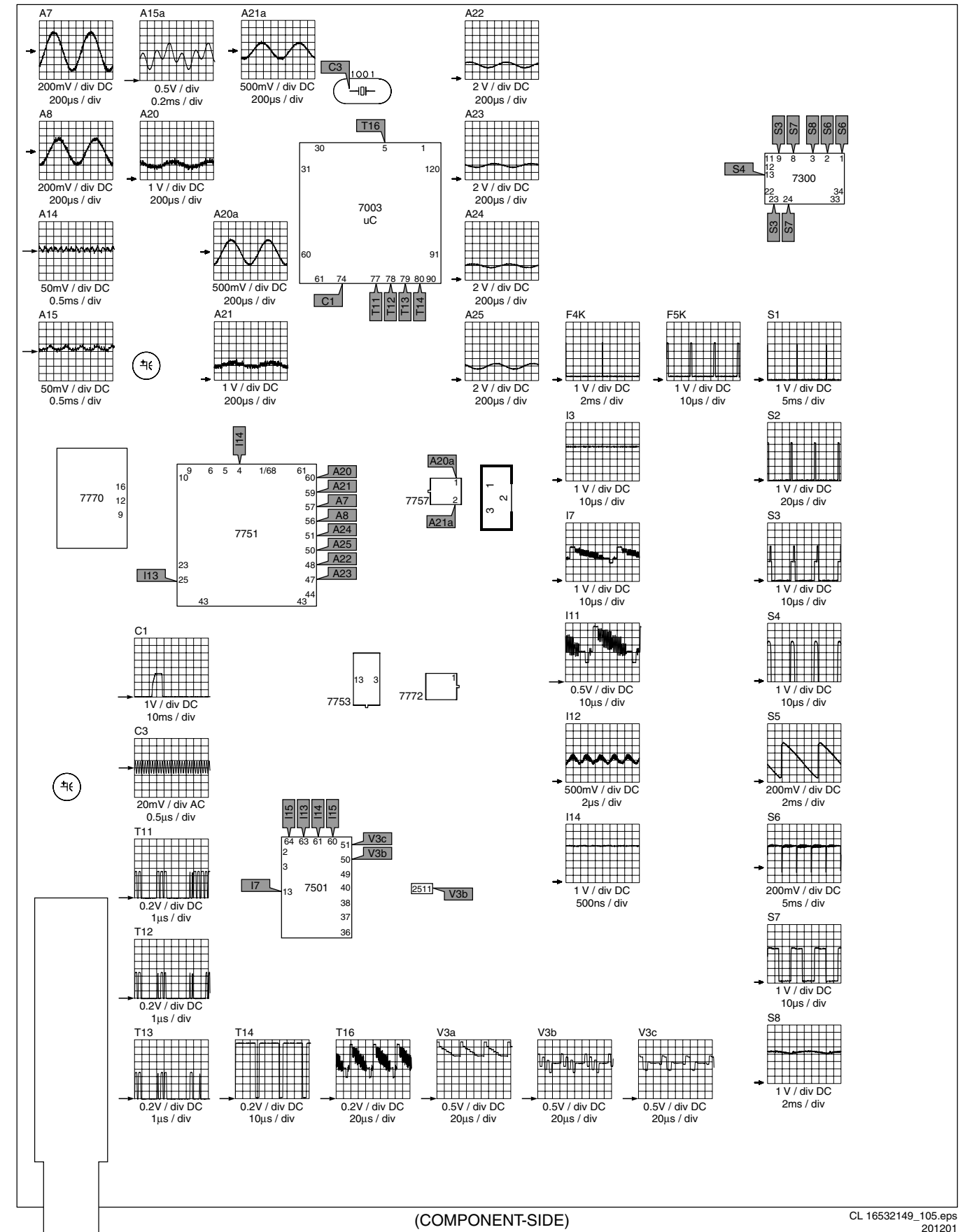
### CRT / SCAVEM panel (F) (Copper Side)



### Auto SCAVEM Panel (SC) (Copper Side)



### Small signal panel (K)

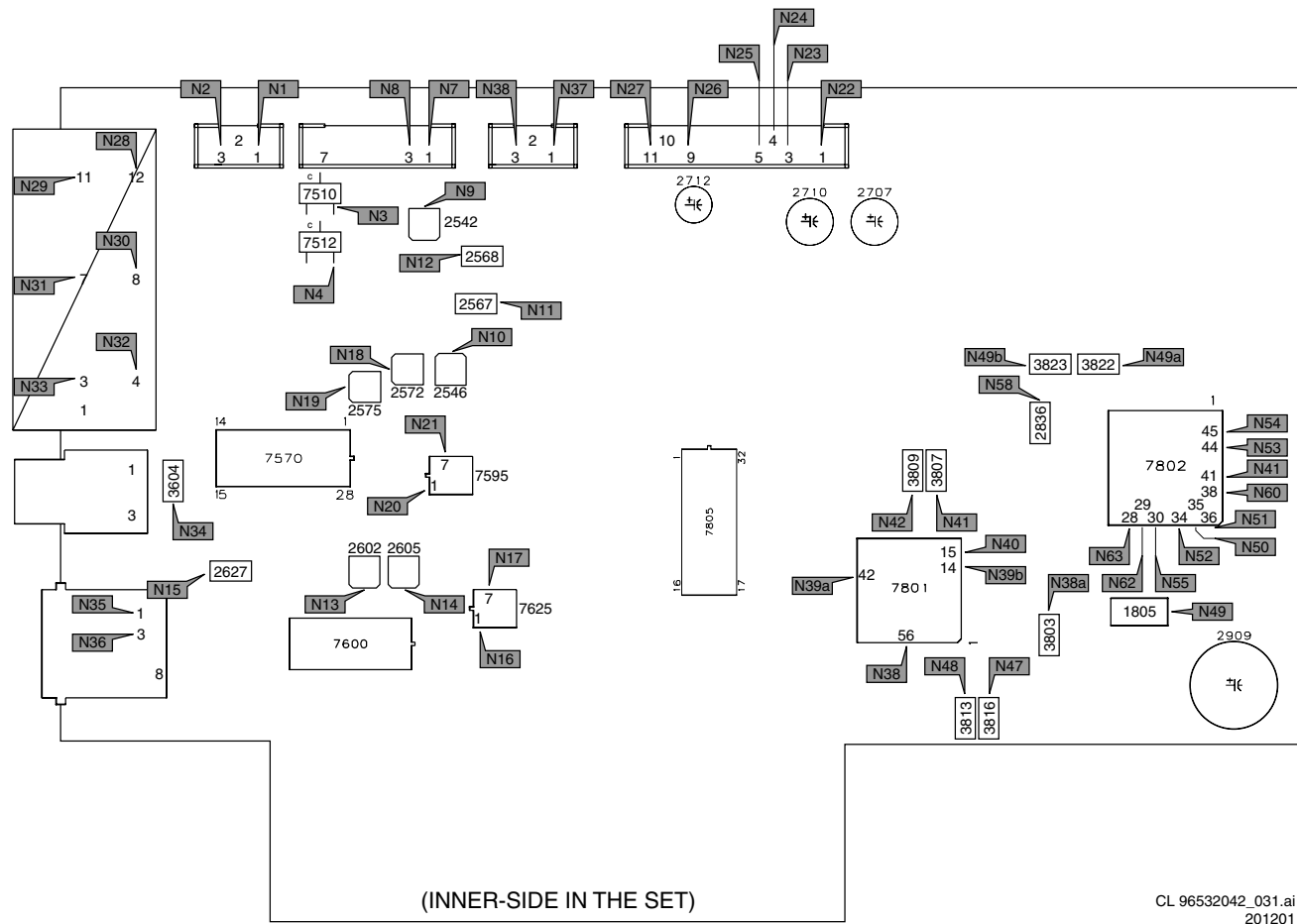


(COMPONENT-SIDE)

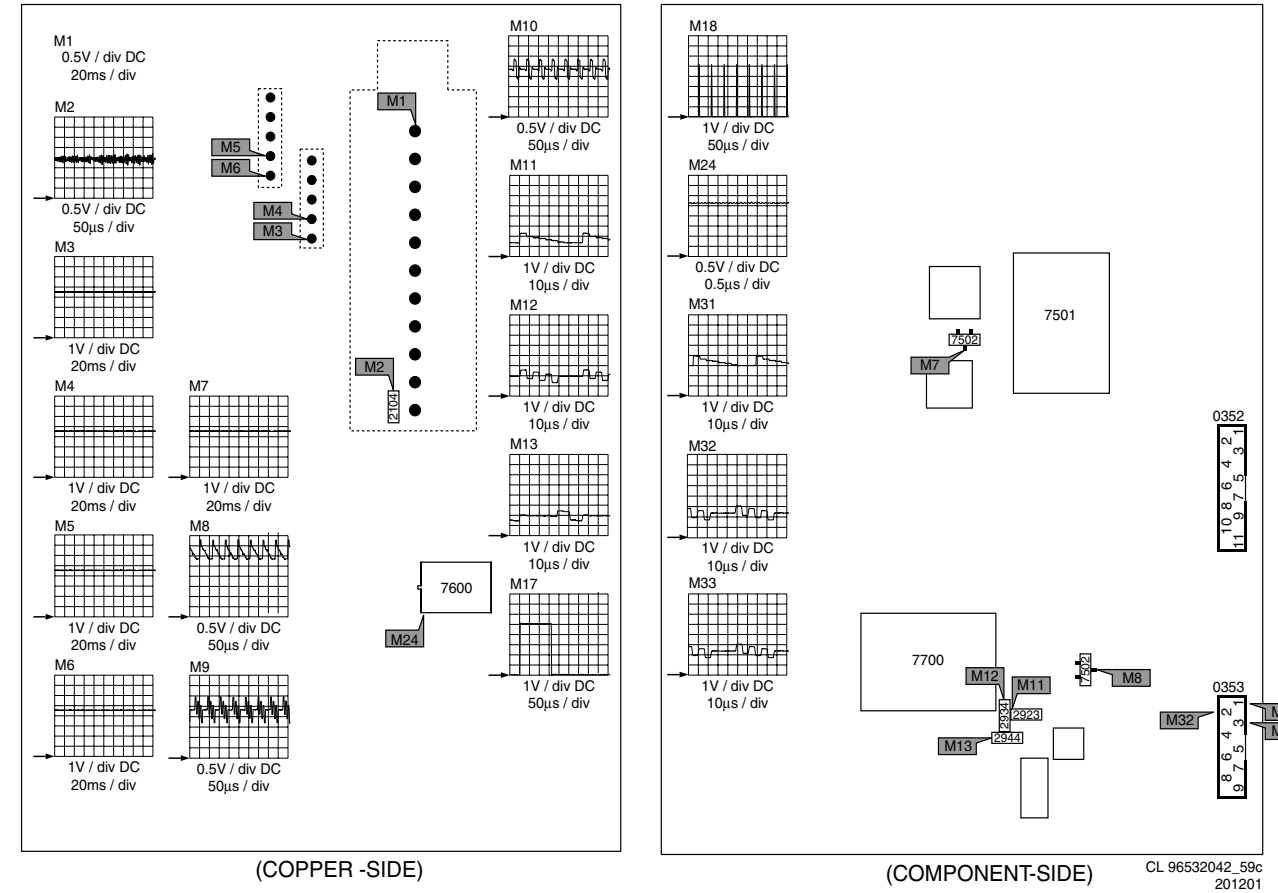
CL 16532149\_105.eps 201201



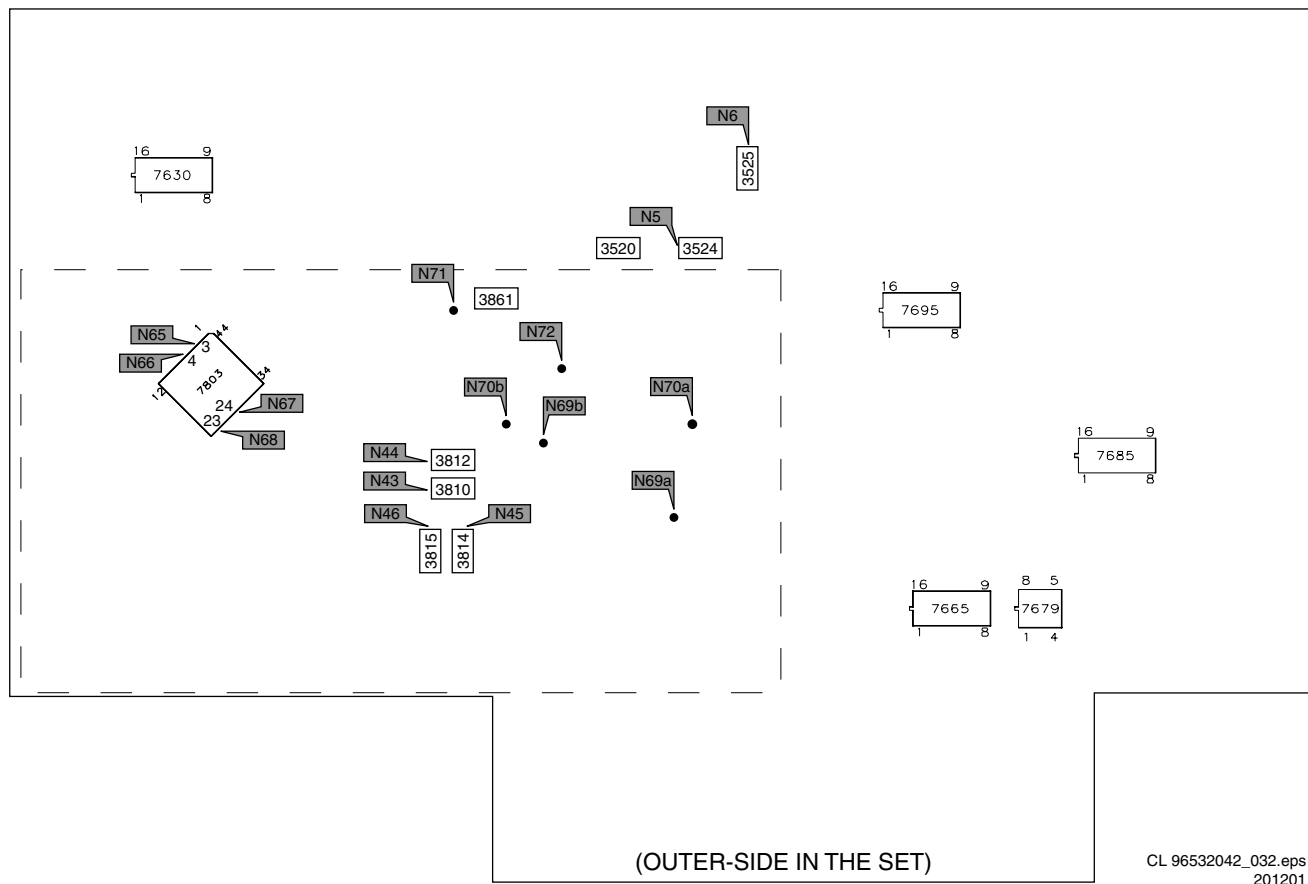
MCS Module (N)



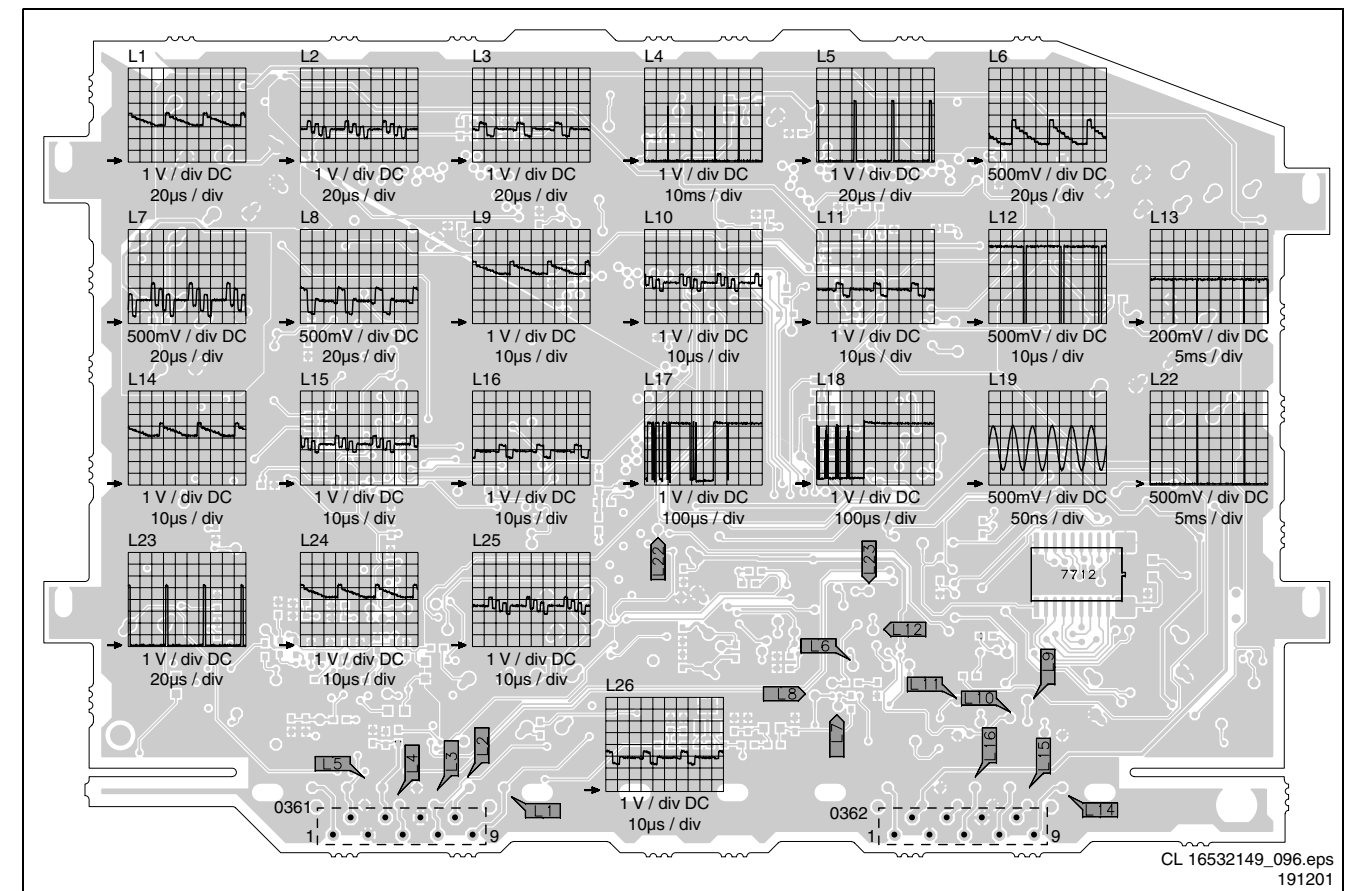
FDS Module (M)



MCS Module (N)



FBX Panel (L) (Copper Side)

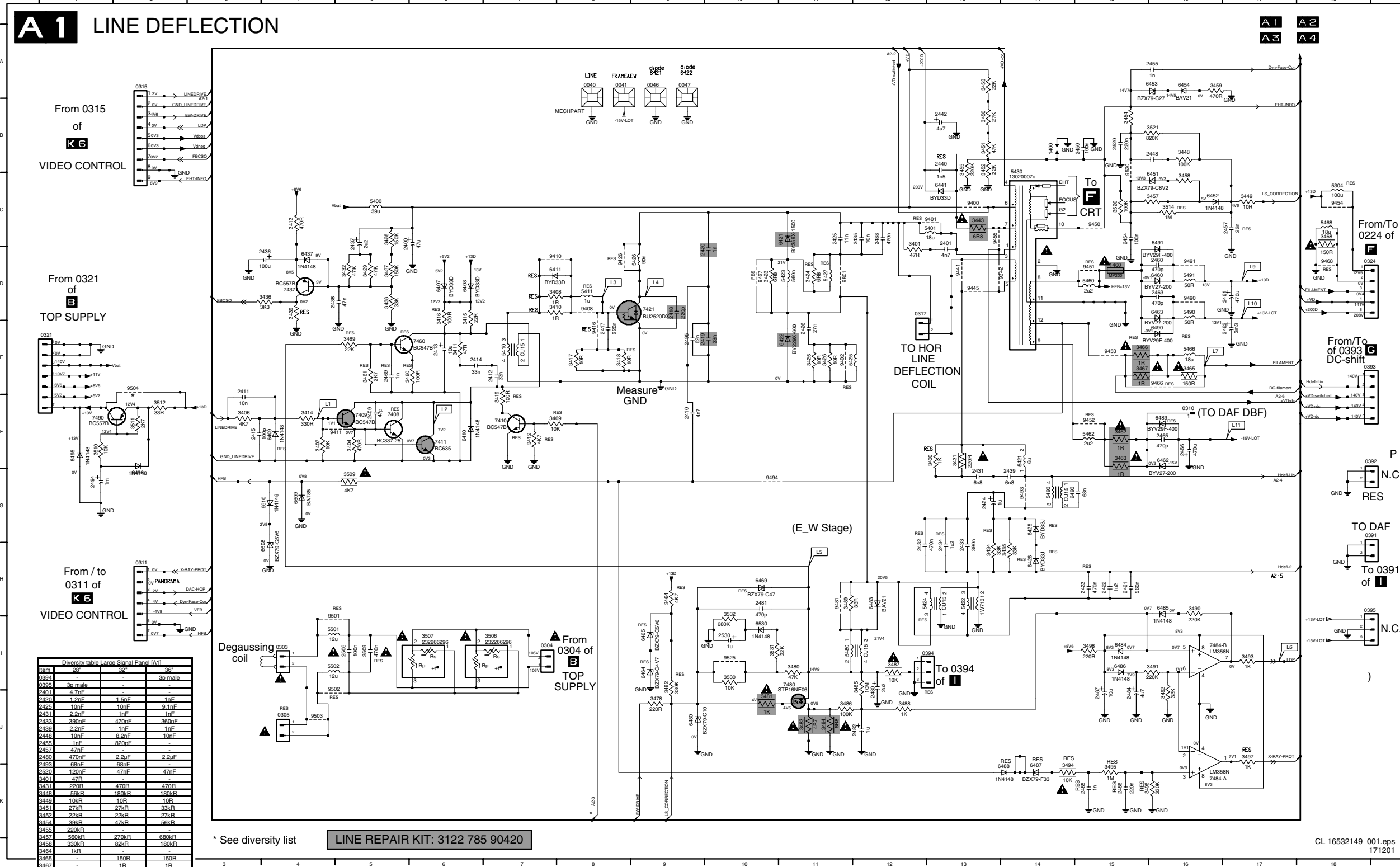






# 7. Circuit Diagrams and PWB Layouts

## Large Signal Panel: Line Deflection



**A1** LINE DEFLECTION

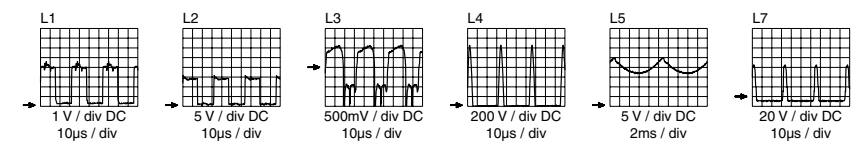
From 0315 of VIDEO CONTROL

From 0321 of TOP SUPPLY

From / to 0311 of VIDEO CONTROL

Item	28"	32"	36"
0394	-	-	3p male
0395	3p male	-	-
2401	4.7nF	-	-
2420	1.2nF	1.5nF	10nF
2425	10nF	10nF	9.1nF
2431	2.2nF	1nF	1nF
2434	390nF	470nF	360nF
2439	2.2nF	1nF	1nF
2444	10nF	8.2nF	10nF
2455	1nF	820nF	-
2457	47nF	-	-
2490	470nF	2.2nF	2.2nF
2493	58nF	68nF	-
2520	120nF	47nF	47nF
3401	47R	-	-
3431	220R	470R	470R
3448	56kR	150kR	150kR
3449	10kR	10R	10R
3451	27kR	27kR	33kR
3452	22kR	22kR	27kR
3454	33kR	47kR	50kR
3455	220kR	-	-
3457	560kR	27kR	680kR
3458	330kR	82kR	150kR
3464	1kR	-	-
3465	150R	150R	-
3467	1R	1R	-
3482	330kR	-	-
3484	33R	4R7	68R
3485	7.5MR	10MR	10MR
3487	-	-	10kR
3489	-	-	33R
3520	75kR	100kR	-
3521	1MΩ	820kR	820kR
3531	47kR	22kR	22kR
3532	680kR	820kR	820kR
3533	100kR	-	-
5421	3128 138 56152	3128 138 57411	3128 138 56611
5430	8204 000 75001	3128 138 20931	3128 138 20931
5466	18uH	15uH	15uH
5468	18uH	10uH	10uH
5490	Resistor	-	-
5493	3128 138 38881	3128 138 38881	-
6483	-	-	RAV21
6491	Jumper	Jumper	Jumper
6491	Jumper	Jumper	Jumper
6490	Jumper	-	-
6493	Jumper	-	-

\* See diversity list **LINE REPAIR KIT: 3122 785 90420**

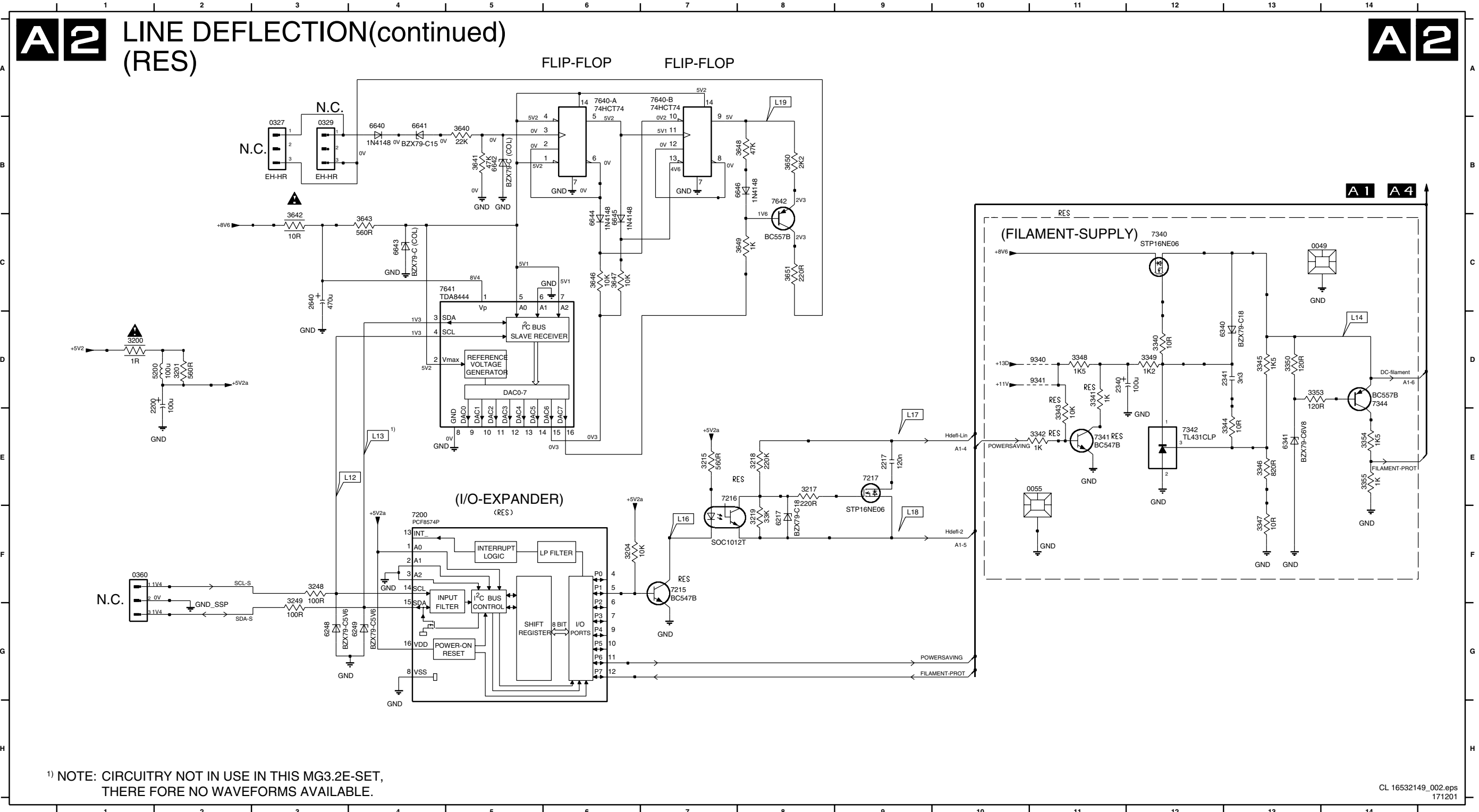


0040 A8	3443 C13	6489 F16
0041 A8	3448 B16	6490 E16
0046 A9	3446 C17	6491 C16
0047 A9	3450 B13	6495 F1
0303 I4	3451 B13	6496 G2
0304 I7	3452 B13	6530 I10
0305 J4	3453 A13	6608 H4
0310 F16	3454 B15	6609 G4
0311 H2	3455 B13	6610 G4
0315 A2	3457 C16	7408 F5
0317 D12	3458 C16	7409 F5
0321 E1	3459 A16	7410 F7
0324 D18	3460 E8	7411 F6
0391 G18	3461 E5	7421 D9
0392 F18	3462 F15	7437 D4
0393 E18	3463 F15	7460 E6
0394 I12	3464 H9	7480 I11
0395 H18	3465 E16	7484-A K16
1400 B14	3466 E15	7484-B I16
1460 D15	3467 E15	7490 F1
2400 C5	3468 C18	9342 D13
2401 C13	3469 E5	9400 C13
2409 F5	3478 J9	9401 C13
2410 F9	3480 I11	9402 E11
2411 E3	3481 J10	9408 D8
2412 E7	3482 I9	9410 D7
2413 E8	3483 J11	9411 F5
2414 E6	3484 J11	9416 E8
2415 F3	3485 I12	9426 D8
2417 E8	3486 J11	9427 D10
2418 D9	3487 I12	9441 D13
2419 E9	3488 J12	9445 D13
2420 D9	3489 H11	9450 C15
2421 H15	3490 H16	9451 D15
2422 H15	3491 I16	9452 F15
2423 H15	3492 J16	9453 E15
2424 G13	3493 I17	9454 C18
2425 C11	3494 K14	9455 C13
2426 E11	3495 K15	9466 E16
2431 G13	3496 K15	9468 D18
2432 H12	3497 J17	9481 H11
2433 H13	3498 I15	9490 D16
2434 H13	3506 I7	9491 D16
2435 C12	3507 I6	9493 G14
2436 D4	3508 D5	9494 G10
2437 C5	3510 F1	9501 I4
2438 D4	3511 F2	9502 J4
2439 G14	3512 F2	9503 J4
2440 B13	3514 C16	9504 E2
2442 B13	3520 C15	9520 B15
2448 B16	3521 B16	9525 E8
2450 B15	3530 I10	9601 D11
2454 C15	3531 I10	-
2455 A16	3532 H10	-
2457 C17	3598 K4	-
2460 D16	5304 C18	-
2461 D17	5400 C5	-
2462 E17	5401 C13	-
2463 D16	5410 E7	-
2465 F16	5411 D8	-
2466 F16	5421 F14	-
2469 E5	5422 H13	-
2480 J12	5423 D11	-
2481 H10	5424 H12	-
2482 J12	5425 E11	-
2484 J15	5426 D9	-
2485 K15	5427 D11	-
2486 K15	5430 C14	-
2487 J15	5460 D15	-
2488 C12	5462 F15	-
2493 G14	5466 E16	-
2494 G1	5468 C18	-
2495 E9	5480 I11	-
2505 I5	5490 D16	-
2509 I5	5491 D16	-
2520 B15	5493 G14	-
2530 I10	5501 I4	-
3401 C12	5502 I4	-
3404 F5	6407 D6	-
3406 F3	6408 D6	-
3407 F4	6409 F4	-
3408 D7	6410 F6	-
3409 F7	6411 D7	-
3410 D7	6421 C10	-
3411 E6	6422 E11	-
3412 F7	6423 D10	-
3413 C4	6424 E10	-
3414 F4	6425 G14	-
3415 D6	6426 H14	-
3416 D6	6437 D4	-
3417 E8	6441 C13	-
3418 E8	6451 C16	-
3419 F7	6452 C16	-
3423 D10	6453 A16	-
3424 D11	6454 A16	-
3425 E11	6460 D16	-
3426 E11	6462 F16	-
3428 C5	6463 D16	-
3429 D5	6464 I9	-
3430 F13	6465 I9	-
3431 F13	6469 H10	-
3432 D5	6480 J9	-
3434 H13	6483 H12	-
3435 H14	6484 I15	-
3436 D4	6485 H16	-
3437 D5	6486 I15	-
3438 D5	6487 K14	-
3439 D4	6488 K14	-

CL 16532149\_001.eps  
171201

Large Signal Panel: Line Deflection (Continued)

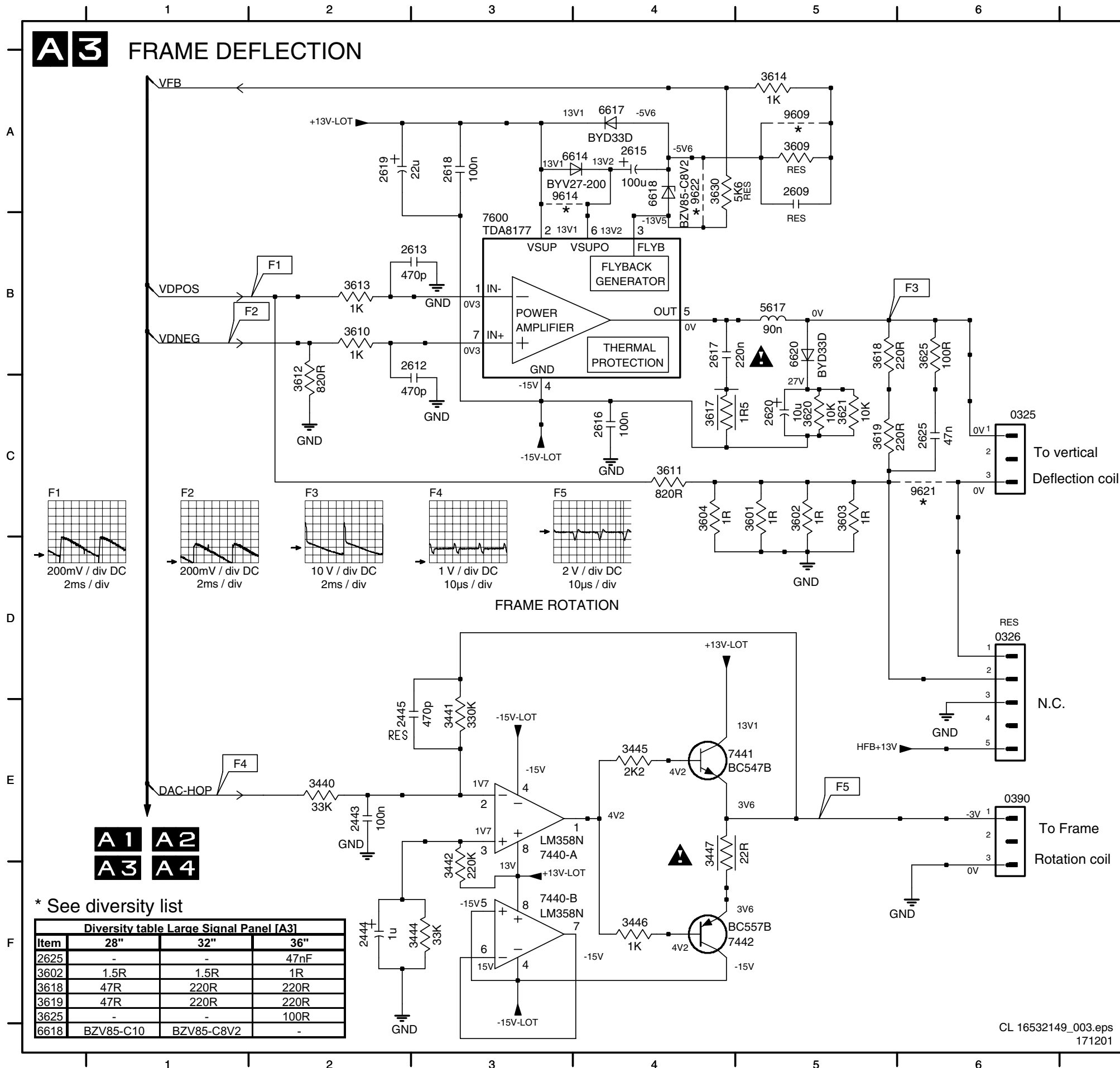
0049 C13	2200 D2	3200 D1	3218 E8	3341 D11	3346 E13	3353 D13	3642 C3	3649 C8	6248 G3	6641 B4	6646 B8	7340 C12	7640-B A7
0055 E10	2217 E9	3201 D2	3219 F8	3342 E11	3347 F13	3354 E14	3643 C4	3650 B8	6249 G4	6642 B5	7200 F4	7341 E11	7641 C4
0327 B3	2340 D11	3204 F6	3248 F3	3343 E11	3348 D11	3355 E14	3646 C6	3651 C8	6340 D13	6643 C4	7215 F7	7342 E12	7642 B8
0329 B3	2341 D13	3215 E7	3249 G3	3344 E13	3349 D12	3640 B5	3647 C6	5200 D2	6341 E13	6644 C6	7216 E7	7344 D14	9340 D11
0360 F1	2640 C3	3217 E8	3340 D12	3345 D13	3350 D13	3641 B5	3648 B8	6217 F8	6640 B4	6645 C6	7217 E9	7640-A A6	9341 D11



1) NOTE: CIRCUITRY NOT IN USE IN THIS MG3.2E-SET, THERE FORE NO WAVEFORMS AVAILABLE.

Large Signal Panel: Frame Deflection

**A3** FRAME DEFLECTION

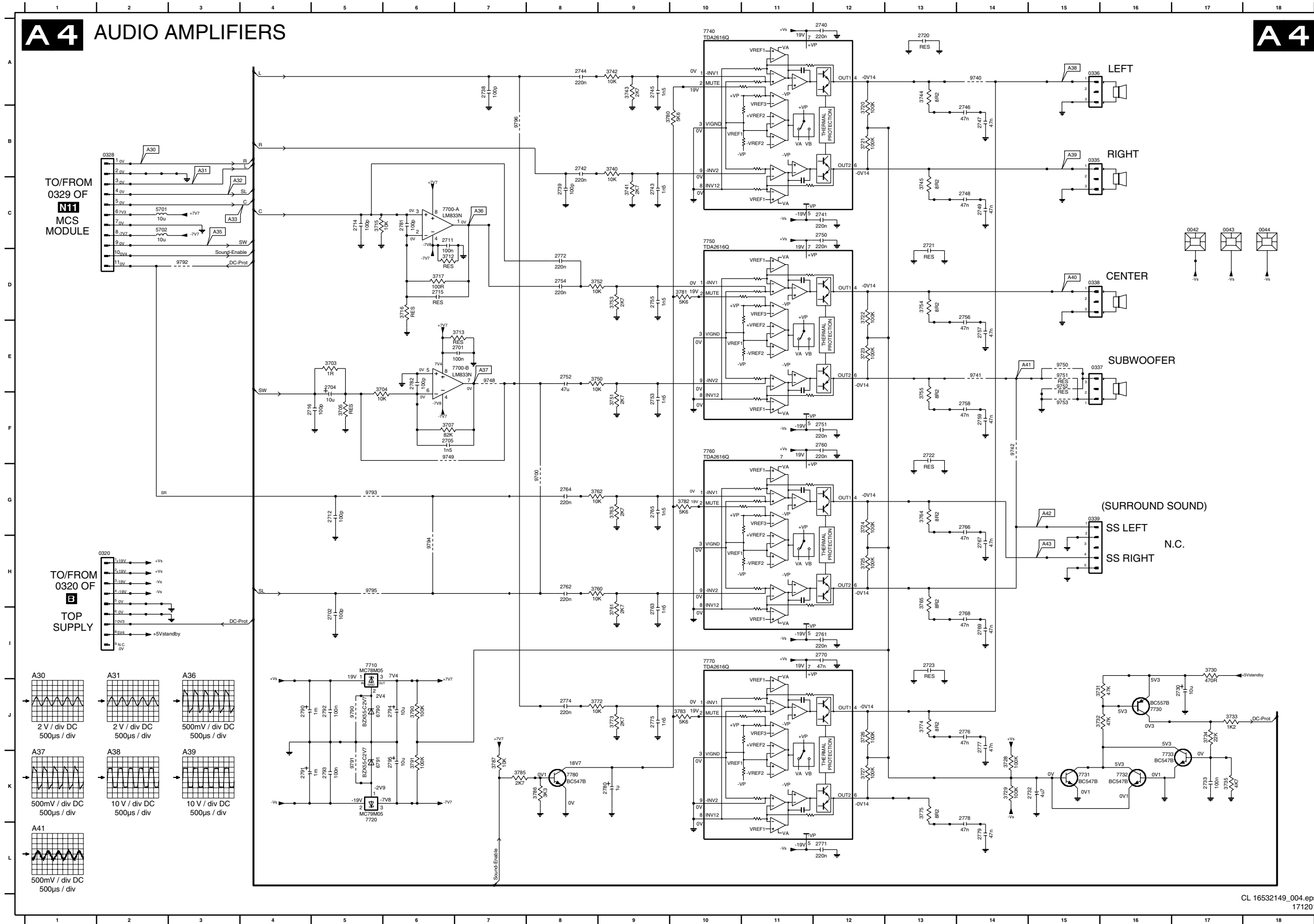


- 0325 C6
- 0326 D6
- 0390 E6
- 2443 E2
- 2444 F2
- 2445 E2
- 2609 A5
- 2612 B3
- 2613 B3
- 2615 A4
- 2616 C4
- 2617 B4
- 2618 A3
- 2619 A2
- 2620 C5
- 2625 C6
- 3440 E2
- 3441 E3
- 3442 F3
- 3444 F3
- 3445 E4
- 3446 F4
- 3447 E4
- 3601 C5
- 3602 C5
- 3603 C5
- 3604 C4
- 3609 A5
- 3610 B2
- 3611 C4
- 3612 C2
- 3613 B2
- 3614 A5
- 3617 C4
- 3618 B5
- 3619 C5
- 3620 C5
- 3621 C5
- 3625 B6
- 3630 A4
- 5617 B5
- 6614 A4
- 6617 A4
- 6618 A4
- 6620 B5
- 7440-A E3
- 7440-B F3
- 7441 E4
- 7442 F4
- 7600 B3
- 9609 A5
- 9614 A3
- 9621 C6
- 9622 A4

\* See diversity list

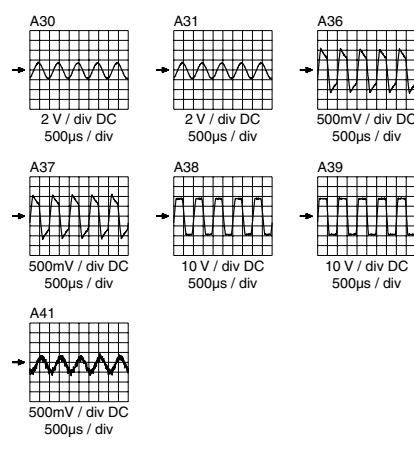
Diversity table Large Signal Panel [A3]			
Item	28"	32"	36"
2625	-	-	47nF
3602	1.5R	1.5R	1R
3618	47R	220R	220R
3619	47R	220R	220R
3625	-	-	100R
6618	BZV85-C10	BZV85-C8V2	-

Large Signal Panel: Audio Amplifiers



TO/FROM  
0329 OF  
N1  
MCS  
MODULE

TO/FROM  
0320 OF  
B  
TOP  
SUPPLY



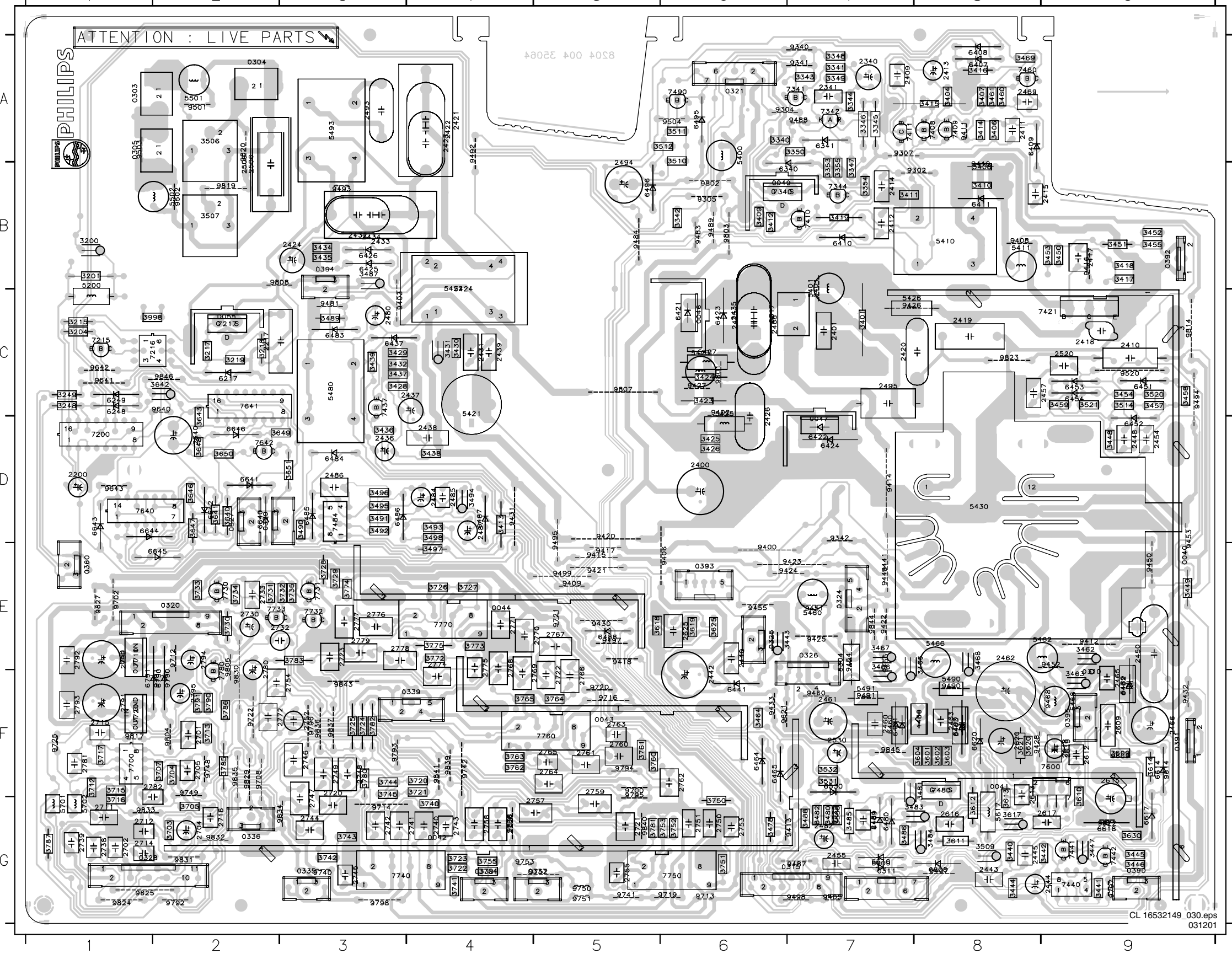
CL 16532149\_004.eps  
171201

Item	Quantity	Part Number	Notes
0042	C17	2768 I14	3755 F13
0043	C17	2769 I14	3760 H8
0044	C18	2770 I12	3761 I9
0320	H2	2771 L12	3762 G8
0328	B2	2772 D8	3763 G9
0335	B15	2774 J8	3764 G13
0338	A15	2775 J9	3765 H13
0337	E15	2776 J14	3772 J8
0338	D15	2777 J14	3773 J9
0339	G15	2778 K14	3774 J13
2701	E7	2779 L14	3775 K13
2702	I5	2780 K9	3780 B10
2704	E5	2781 C6	3781 D10
2705	F6	2782 E5	3782 E10
2711	C6	2790 J4	3783 J10
2712	G5	2791 K4	3785 K7
2714	C5	2792 J5	3786 K8
2715	D6	2793 K5	3787 K7
2716	F4	2794 J6	3790 J6
2720	A13	2795 K6	3791 K5
2721	C13	2796 E5	3791 C2
2722	F13	2797 E5	3798 C2
2723	I13	2798 F5	3799 J5
2730	J17	2797 F6	6791 K5
2732	K15	2712 D6	7700-A C6
2733	K17	3713 E7	7700-B E6
2738	A7	3715 C5	7710 I5
2739	C8	3716 D6	7701 C2
2740	B14	3721 D6	7702 H15
2741	C12	3720 B12	7731 K15
2742	B8	3721 B12	7732 K16
2743	C9	3722 D12	7733 K17
2744	A8	3723 E12	7740 A10
2745	A9	3724 G12	7750 C10
2746	B14	3725 H12	7760 F10
2747	B14	3726 J12	7770 H10
2748	C14	3727 K12	7780 K8
2749	C14	3728 K14	9740 A14
2750	C12	3729 K14	9740 A14
2751	F12	3730 I17	9741 E14
2752	E8	3731 J16	9742 F14
2753	F9	3732 J16	9743 E7
2754	D8	3733 J17	9749 F6
2755	D9	3734 J17	9750 E15
2756	D14	3735 K17	9751 E15
2757	E14	3740 B9	9752 E15
2758	F14	3741 C9	9753 F15
2759	F14	3742 A9	9790 J5
2760	F12	3743 A9	9791 K5
2761	H2	3744 A13	9799 D9
2762	H8	3745 C13	9799 G5
2763	I9	3750 E8	9794 H6
2764	G8	3751 F9	9795 H5
2765	G9	3752 D8	9796 B7
2766	G14	3753 D9	-
2767	H14	3754 D13	-

Large Signal Panel [A4]		
Item	Quantity	Notes
0328	4822 267 10981	4822 267 10982
0330	4822 267 10971	-
2702	4.7nF	-
2705	150nF	100nF
2712	4.7nF	-
2742	4.7nF	220nF
2743	680nF	1.5nF
2744	4.7nF	-
2752	1.1F	-
2753	1.5nF	330nF
2754	150nF	220nF
2755	1.5nF	680nF
2781	240nF	-
2782	1.1F	220nF
2783	1.5nF	1.5nF
2784	1.1F	-
2785	1.5nF	1.5nF
2786	4.7nF	4.7nF
2787	4.7nF	4.7nF
2788	4.7nF	4.7nF
2789	4.7nF	4.7nF
2770	-	4.7nF
2771	-	220nF
2774	-	220nF
2775	-	1.5nF
2776	-	4.7nF
2777	-	4.7nF
2778	-	4.7nF
2779	-	4.7nF
3700	1k	-
3701	330E	-
3702	15k	-
3710	1k	8k2
3711	330E	-
3715	15k	10k
3716	1k	200nF
3717	1k8	100R
3720	100k	-
3723	100k	-
3724	47k	100k
3725	47k	47nF
3726	47k	100k
3741	33k	820R
3742	470R	-
3743	33k	-
3750	3k9	200nF
3751	58k	-
3752	470R	3k3
3753	68k	1k8
3760	470R	22k
3761	68k	3k9
3762	470R	-
3763	68k	-
3764	82k	82k
3765	82k	82k
3772	-	470R
3773	-	820R
3774	-	82k
3775	-	82k
3782	5k6	5k6
3783	-	5k6
7700	-	TDA2616Q/N1
7700	-	TDA2616Q/N1
9700	-	Jumper
9707	-	Jumper
9710	-	Jumper
9716	-	Jumper
9720	-	Jumper
9724	-	Jumper
9740	-	Jumper

Layout Large Signal Panel (Top View)

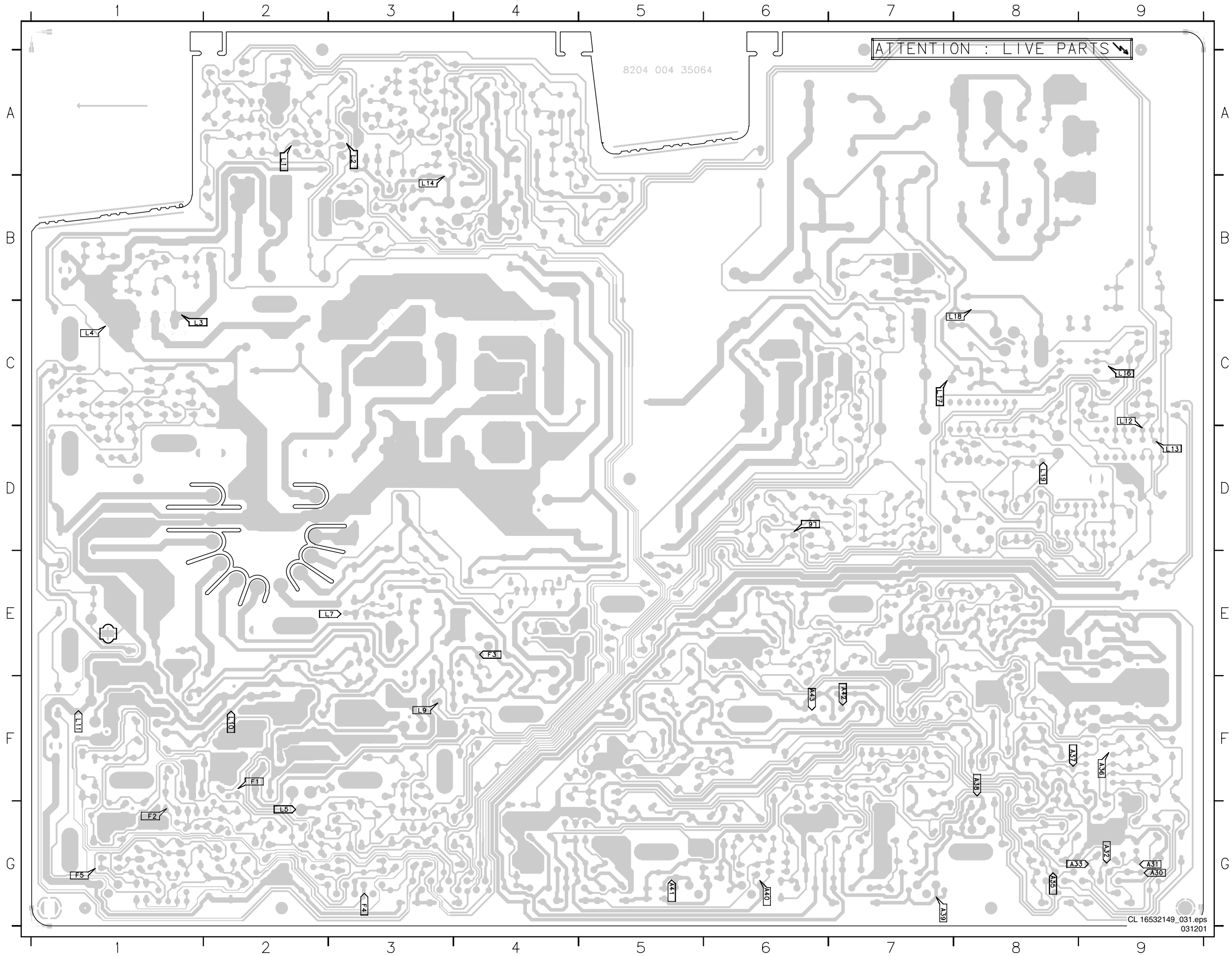
0040	E9	0055	C2	0320	E2	0335	G3	0392	B9	2341	A7	2414	B7	2423	A4	2435	B6	2444	G8	2461	F7	2482	G7	2495	C7	2615	G9	2701	F2	2716	G2	2738	G1	2746	F3	2754	F3	2762	F6	2770	E5	2779	E3	2794	E2	3493	D4	3790	F2	7421	C9	9640	C2		
0041	F7	0303	A1	0321	A6	0336	G2	0393	E6	2400	D6	2415	B8	2424	B2	2436	D3	2445	G8	2462	E8	2484	D4	2506	A2	2616	G8	2702	G1	2720	G3	2739	G1	2747	F3	2755	G5	2763	F5	2771	E4	2780	F2	2795	F2	3494	D4	3791	F2	7437	C3	9641	C1		
0042	G5	0304	A2	0324	E7	0337	G5	0394	C3	2401	C7	2417	B9	2425	C6	2437	C4	2448	D9	2463	F8	2485	D3	2509	B2	2617	G9	2704	G2	2721	G5	2740	G4	2748	F3	2756	G4	2764	F4	2772	F2	2781	F1	2796	F1	3495	D3	3998	C1	7440	G9	9642	C1		
0043	F4	0305	A1	0325	E6	0338	G4	0395	F9	2409	A7	2418	C9	2426	D6	2438	D4	2450	E9	2465	F9	2486	D3	2520	C9	2618	F9	2705	F2	2722	F5	2741	G4	2749	F3	2757	G5	2765	F5	2774	F4	2782	F2	2797	F2	3496	D3	5200	B1	7441	G9	9643	D1		
0044	E4	0310	E9	0326	E7	0339	F4	0396	F8	2410	C9	2419	C8	2431	C4	2439	C4	2454	D9	2466	F9	2487	D4	2530	F7	2619	F9	2711	G1	2723	E3	2742	G3	2750	G6	2758	G4	2766	F5	2775	E4	2790	E1	2804	C1	3497	E4	5304	E7	7442	G9	9700	F5		
0046	B6	0311	G7	0327	E2	0360	E1	0390	D1	2200	D1	2411	A8	2420	C7	2432	B3	2440	E6	2455	G7	2469	A8	2488	C6	2609	F9	2620	F8	2712	G1	2730	E2	2743	G4	2751	G6	2759	F5	2767	E5	2776	E3	2791	F1	3498	E4	5400	A6	7460	A8	9702	E1		
0047	C7	0315	G6	0328	G1	0390	G9	0390	G9	2217	C3	2412	B7	2421	A4	2433	B4	2442	F5	2457	C9	2480	C3	2493	A3	2612	F9	2625	E6	2714	G1	2732	E2	2744	G3	2752	F3	2760	F5	2768	F4	2777	E3	2792	E1	3499	C2	5504	B2	5401	B7	7480	G8	9708	F2
0049	B6	0317	B7	0329	D3	0391	F9	0391	F9	2340	A7	2413	A8	2422	A4	2434	B4	2443	G8	2460	F7	2481	G7	2494	B5	2613	F8	2640	D2	2715	F1	2733	E2	2745	G3	2753	G6	2761	F5	2769	F5	2778	F3	2793	F1	3499	C2	5505	B1	5402	B8	7484	D3	9712	E2



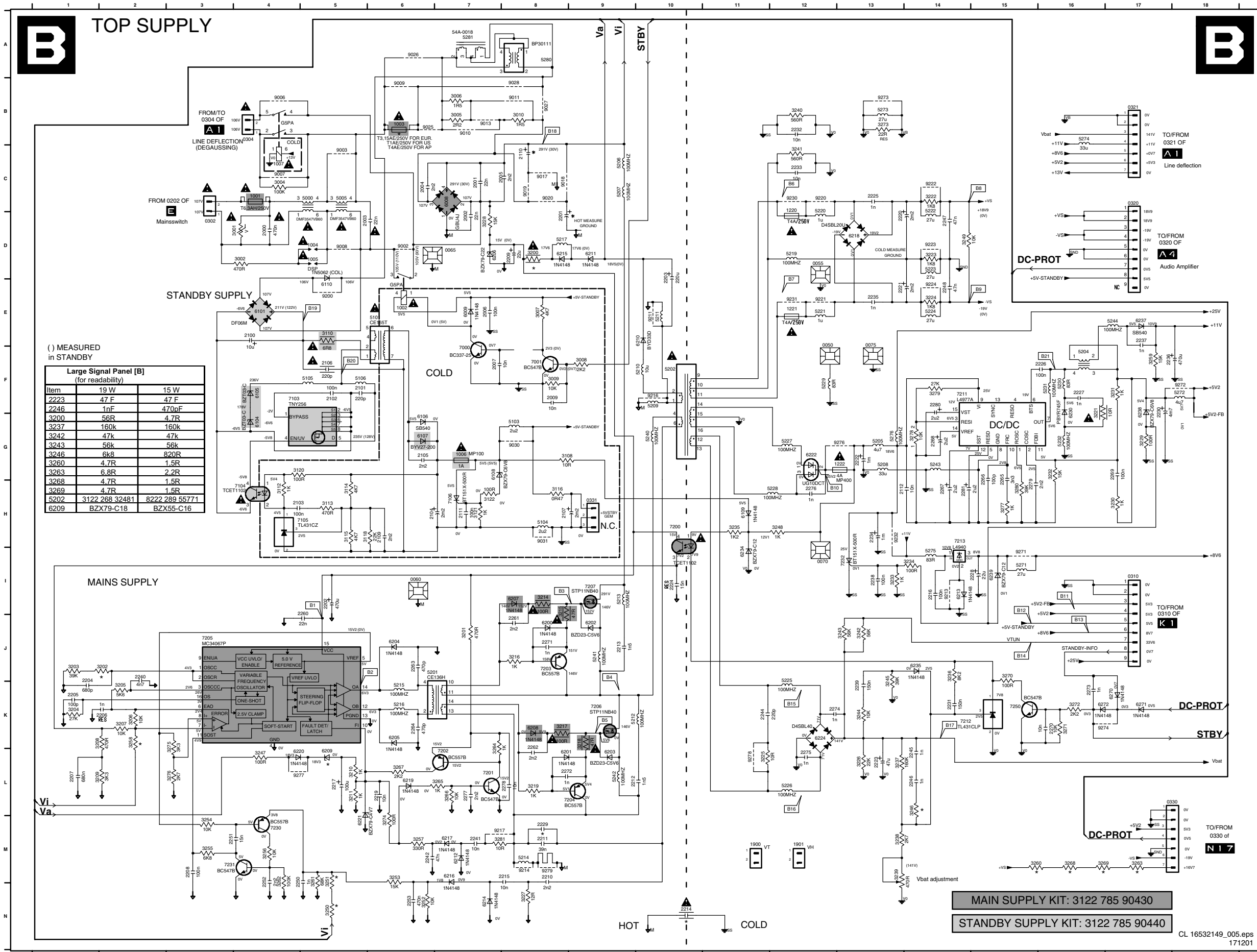
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031201

Layout Large Signal Panel (Bottom View)



Top Supply



( ) MEASURED in STANDBY

Large Signal Panel [B] (for readability)		
Item	19 W	15 W
2223	47 F	47 F
2246	1nF	470pF
3200	56R	4.7R
3237	160k	160k
3242	47k	47k
3243	56k	56k
3246	6k8	820R
3260	4.7R	1.5R
3263	6.8R	2.2R
3268	4.7R	1.5R
3269	4.7R	1.5R
5202	3122 268 32481	8222 289 55771
6209	BZX79-C18	BZX55-C16

- 0050 F12 3114 H5 5274 B16
- 0055 D12 3115 H5 5275 I14
- 0060 I6 3116 H8 5276 G13
- 0065 D7 3118 H5 5280 A8
- 0070 I12 3120 G4 5281 A7
- 0075 D15 3121 H7 6008 C7
- 0302 D3 3122 H7 6009 E7
- 0304 B4 3200 D8 6101 E4
- 0310 I17 3201 J7 6104 G4
- 0320 C17 3202 J2 6105 F4
- 0321 B17 3203 J1 6106 G6
- 0330 L17 3204 K1 6107 G6
- 0331 H9 3205 K2 6108 G7
- 1001 C4 3206 K2 6109 H11
- 1002 E6 3207 K2 6110 E5
- 1003 B6 3208 K1 6200 J8
- 1004 D5 3209 L11 6201 L8
- 1005 D6 3210 L5 6202 J8
- 1006 G7 3211 L5 6203 L8
- 1007 C4 3214 B8 6204 J6
- 1220 C12 3215 B8 6205 K6
- 1221 E12 3216 J8 6206 D7
- 1222 G13 3217 K8 6207 B8
- 1500 M11 3218 K9 6208 K8
- 1901 M12 3219 L8 6209 L5
- 2000 D4 3221 F16 6210 E10
- 2001 C7 3222 C14 6211 D9
- 2002 D7 3223 D14 6212 M7
- 2003 D5 3224 H14 6213 I14
- 2004 C6 3225 L11 6214 N7
- 2005 C8 3226 L13 6215 D8
- 2006 E7 3227 N8 6216 M7
- 2007 F7 3228 D7 6217 M7
- 2008 F8 3229 G17 6218 D13
- 2100 E17 3230 H17 6219 L8
- 2101 F5 3231 F17 6220 L4
- 2102 F5 3232 G16 6221 M5
- 2103 H4 3233 I13 6222 G12
- 2104 H6 3234 I14 6224 K12
- 2105 G6 3235 H14 6230 F16
- 2106 F5 3236 J14 6234 I11
- 2107 H8 3237 L13 6235 J14
- 2109 H6 3238 M13 6237 E17
- 2110 C8 3239 M13 6238 F17
- 2111 H7 3240 B12 6239 B15
- 2112 H5 3241 C12 6240 K17
- 2201 D8 3242 J13 6241 K17
- 2202 I5 3243 J13 6242 K16
- 2203 D10 3244 K13 7000 F7
- 2204 K1 3245 J13 7001 F8
- 2205 K2 3247 L4 7104 H4
- 2207 L1 3248 H12 7105 H4
- 2208 M3 3249 D14 7106 H7
- 2209 D8 3250 N5 7200 H10
- 2210 M8 3251 M5 7201 L7
- 2211 M8 3252 M6 7202 L7
- 2212 J9 3253 M7 7203 J8
- 2213 J9 3254 M3 7204 L8
- 2214 N10 3255 M3 7205 J3
- 2215 M8 3256 M4 7206 K9
- 2216 I14 3257 M6 7207 J9
- 2217 L5 3258 K2 7211 F14
- 2218 L6 3259 F17 7212 K15
- 2220 D13 3260 M15 7213 H14
- 2221 E13 3261 M5 7230 M4
- 2222 G13 3262 M4 7231 M4
- 2223 L10 3263 M17 7232 I13
- 2224 I10 3264 I7 7250 K15
- 2225 C13 3265 L7 9002 D6
- 2226 F16 3266 L7 9003 C5
- 2227 F16 3267 L6 9006 B4
- 2228 I15 3268 M16 9007 C4
- 2229 M8 3269 M16 9008 D5
- 2230 F17 3270 I15 9009 B6
- 2231 K14 3271 K16 9010 B7
- 2232 B12 3272 K16 9011 B8
- 2233 C12 3273 B13 9013 B7
- 2234 H13 3274 M6 9017 C8
- 2235 E13 3275 K3 9018 C8
- 2236 F17 3276 L3 9019 C8
- 2237 E17 3277 H15 9020 C8
- 2238 I13 3278 G14 9025 B6
- 2239 K13 3279 F14 9026 A6
- 2240 J2 3280 H15 9027 B8
- 2241 M7 3281 M7 9028 B8
- 2242 M6 3282 H15 9030 G8
- 2244 K11 5000 C5 9031 H8
- 2245 L14 5005 C5 9200 E5
- 2246 L14 5101 E6 9211 E10
- 2247 D14 5103 G8 9213 I14
- 2248 E14 5104 H8 9214 M8
- 2250 M4 5105 F5 9216 F10
- 2251 M3 5106 F5 9217 M7
- 2252 M4 5201 J6 9220 C12
- 2253 M6 5202 F10 9221 E12
- 2254 J5 5204 F16 9222 C14
- 2255 J8 5205 G13 9223 D14
- 2256 L8 5206 C9 9224 E14
- 2263 J6 5207 C9 9230 C12
- 2264 K6 5208 G13 9231 E12
- 2265 F15 5209 F10 9232 H13
- 2266 G15 5210 F10 9231 I15
- 2267 H14 5211 E10 9272 F18
- 2268 G14 5212 K9 9273 B13
- 2269 G17 5213 J9 9274 K16
- 2270 K16 5214 M8 9276 G13
- 2271 J8 5215 K6 9277 L4
- 2272 L8 5216 K6 9278 L11
- 2273 K6 5217 D8 9279 M8
- 2274 K12 5219 D12
- 2275 L12 5220 D12
- 2276 H12 5221 E12
- 2277 L7 5222 D14
- 2278 L8 5223 D14
- 2279 H15 5224 E14
- 2280 F14 5225 K12
- 2281 H14 5226 L12
- 3002 D4 5227 G12
- 3003 F8 5229 F12
- 3004 C4 5230 F16
- 3005 B7 5231 F16
- 3006 B7 5232 G16
- 3007 E8 5240 G10
- 3008 F9 5241 J9
- 3009 F8 5242 L9
- 3010 B8 5243 G14
- 3108 G8 5244 E17
- 3110 E5 5271 I15
- 3112 H4 5272 F18
- 3113 H5 5273 B13

MAIN SUPPLY KIT: 3122 785 90430  
 STANDBY SUPPLY KIT: 3122 785 90440

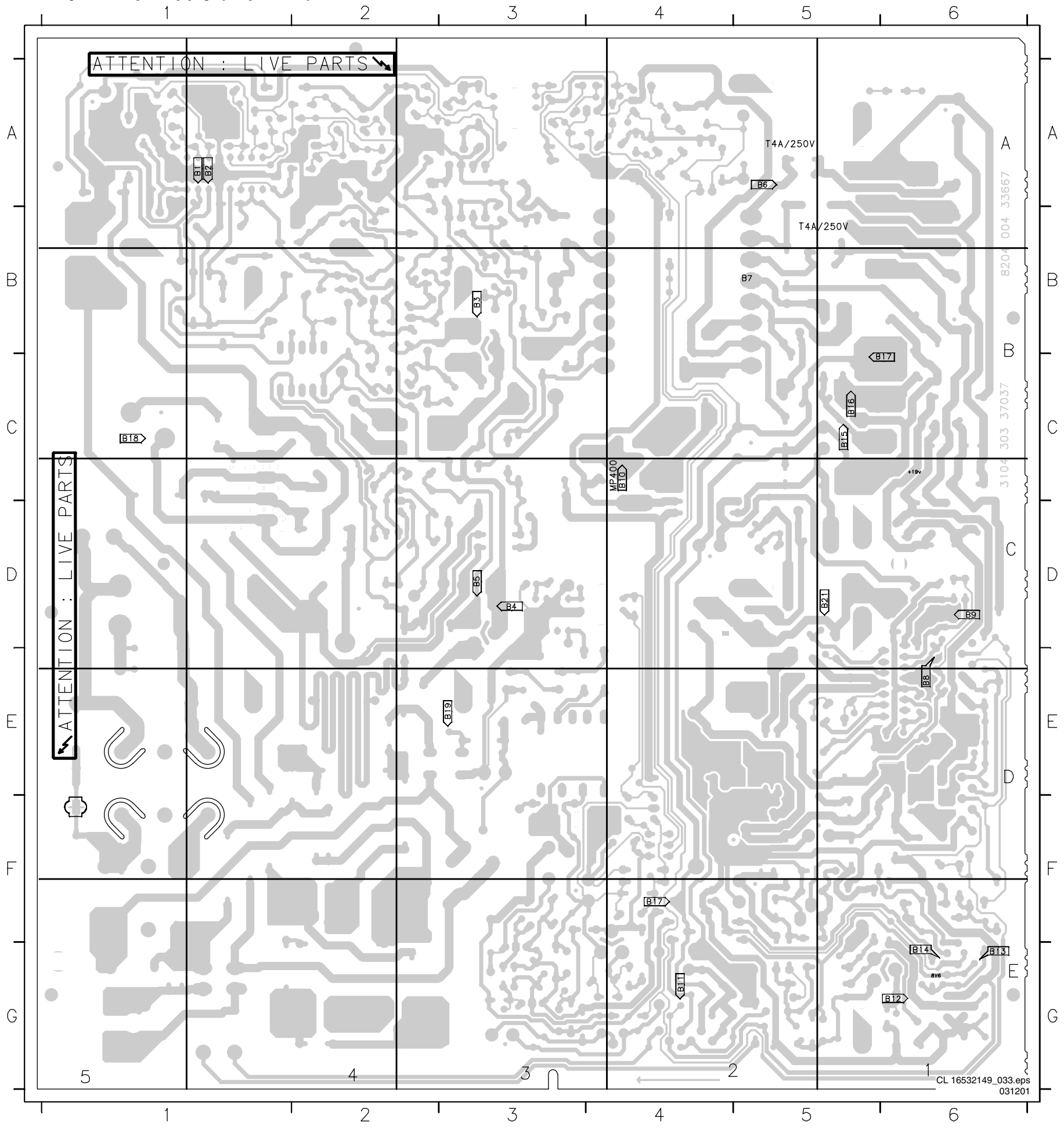
- B1 5 V / div DC 10µs / div
- B2 5 V / div DC 5µs / div
- B3 50 V / div DC 5µs / div
- B4 50 V / div DC 5µs / div
- B5 5 V / div DC 5µs / div
- B6 10 V / div DC 5µs / div
- B15 20 V / div DC 5µs / div
- B16 20 V / div DC 5µs / div
- B19 50 V / div DC 5ms / div
- B20 50 V / div DC 5ms / div





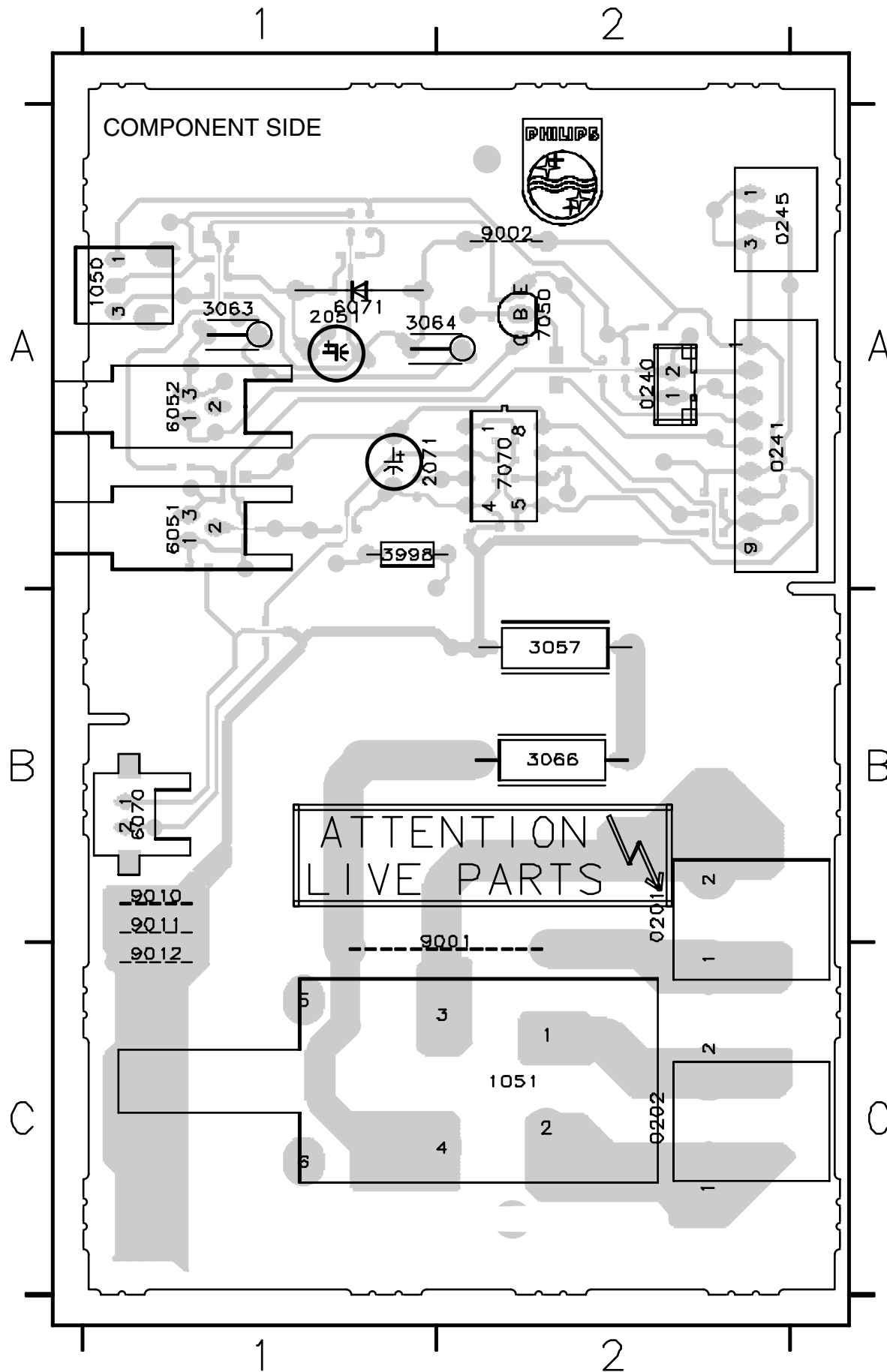


Layout Top Supply (Top View)

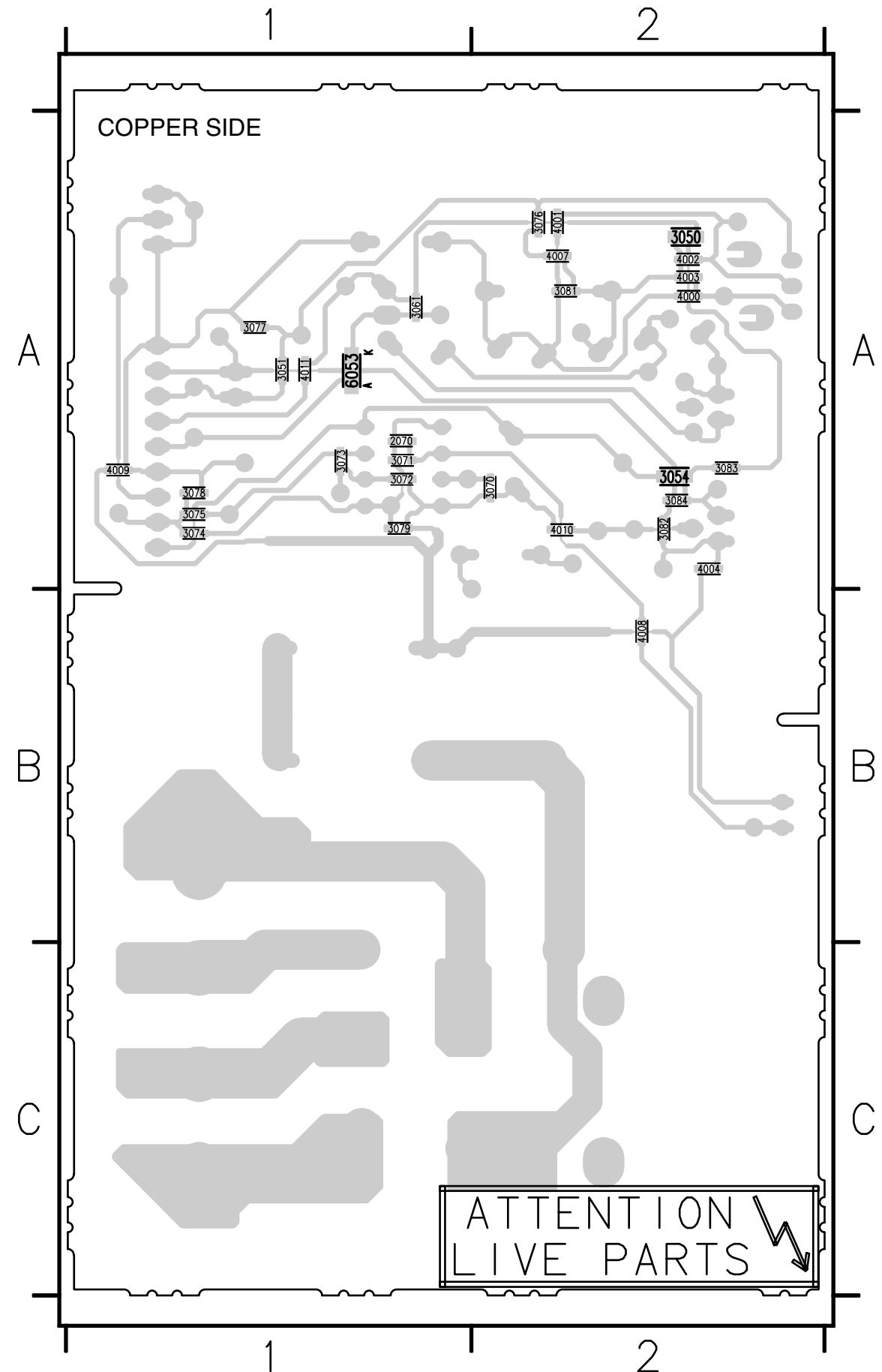




Layout Mains Switch Panel



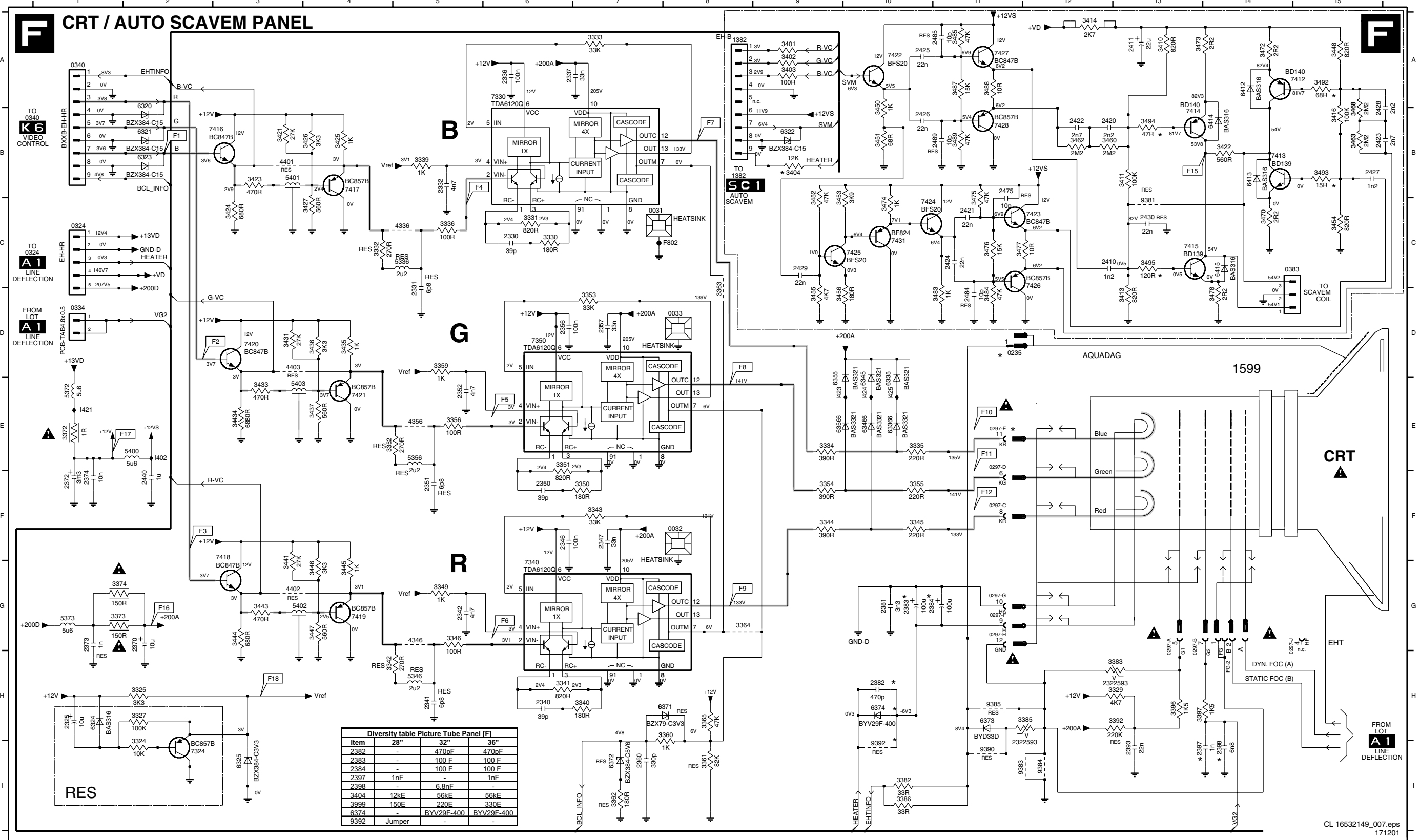
- 0201 B2
- 0202 C2
- 0240 A2
- 0241 A2
- 0245 A2
- 1050 A1
- 1051 C2
- 2051 A1
- 2071 A1
- 3057 B2
- 3063 A1
- 3064 A2
- 3066 B2
- 3998 A1
- 6051 A1
- 6052 A1
- 6070 B1
- 6071 A1
- 7050 A2
- 7070 A2
- 9001 B2
- 9002 A2
- 9010 B1
- 9011 B1
- 9012 C1



- 2070 A1
- 3050 A2
- 3051 A1
- 3054 A2
- 3061 A1
- 3070 A2
- 3071 A1
- 3072 A1
- 3073 A1
- 3074 A1
- 3075 A1
- 3076 A2
- 3077 A1
- 3078 A1
- 3079 A1
- 3081 A2
- 3082 A2
- 3083 A2
- 3084 A2
- 4000 A2
- 4001 A2
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- 4010 A2
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- 6053 A1

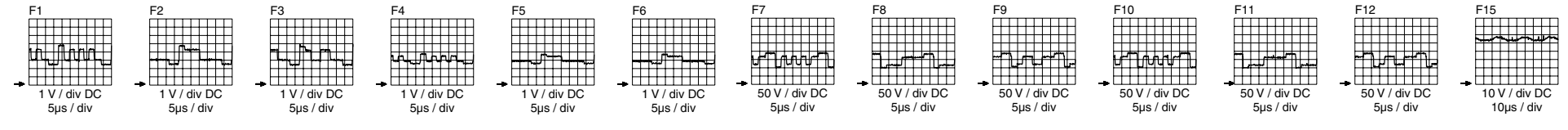
CRT / Auto SCAVEM Panel

0031 C7	0297-D E11	0334 D1	2332 B5	2347 F7	2370 G2	2384 G11	2421 C11	2428 B15	2489 B11	3332 C4	3341 H6	3350 F7	3359 D5	3372 E1	3392 H13	3410 A13	3423 B3	3434 E3	3445 G4	3453 C9	3468 B15	3477 C11	3489 B11	4346 G5	5356 E5	6320 B2	6336 E10	6373 H11	7330 A6	7416 B2	7423 C12	9381 C13
0032 F8	0297-E E11	0340 A1	2336 A6	2350 F6	2372 F1	2383 H3	2422 B12	2429 C9	3325 I2	3333 A7	3342 H4	3351 E6	3360 I8	3373 G1	3396 H13	3411 B13	3424 C3	3435 D4	3446 G4	3454 C15	3470 C14	3478 D14	3492 A15	4356 E5	5372 E1	6321 B2	6345 E10	6374 H10	7340 G6	7417 B4	7424 C10	9383 H12
0033 D8	0297-F G11	0383 C14	2337 A6	2351 F5	2373 G1	2397 H3	2423 B15	2430 C13	3325 H2	3334 E9	3343 F7	3352 E4	3361 I8	3374 G1	3397 H13	3413 D13	3425 B4	3436 D4	3447 G4	3455 D9	3472 A14	3483 D11	3493 B15	4401 B3	5373 G1	6322 B9	6346 E10	6412 A14	7350 D6	7418 F3	7425 C10	9384 H12
0235 D11	0297-G G11	1982 A8	2340 H6	2352 E5	2374 F1	2398 H4	2424 C11	2440 F2	3327 H2	3335 E10	3344 F9	3353 D7	3362 I7	3382 H10	3401 A9	3414 A12	3426 B4	3437 E4	3448 A15	3456 D9	3473 A13	3484 D11	3494 B13	4402 G3	5400 E2	6355 E9	6413 B14	7419 G4	7426 C12	9385 H11		
0297-A G13	0297-H G11	2325 H1	2341 H5	2356 D6	2381 G10	2410 C12	2425 A10	2475 B11	3329 H3	3336 C5	3345 F10	3354 F9	3363 D8	3383 H13	3402 A9	3416 B15	3427 C4	3441 G3	3450 B10	3460 B12	3474 C10	3485 A11	3495 C13	4403 D3	5401 B3	6324 H1	6356 E9	6414 B14	7413 B14	7420 D3	9390 H11	
0297-B G13	0297-J G15	2330 C6	2342 G5	2357 D7	2382 H10	2411 A13	2426 B10	2484 D11	3330 C6	3339 B5	3346 G5	3355 F10	3364 G8	3385 H12	3403 A9	3421 B3	3431 D3	3443 G3	3451 B10	3462 B12	3475 C11	3488 A11	3999 I5	5336 C5	5402 G3	6325 I3	6371 H8	6415 C14	7414 B13	7421 E4	9392 H10	
0297-C F11	0324 C1	2331 D5	2346 F6	2360 I7	2383 G10	2420 B12	2427 B15	2485 A11	3331 C6	3340 H7	3349 G5	3356 E5	3365 H8	3386 I10	3404 B9	3422 B14	3433 E3	3444 G3	3452 C9	3463 B15	3476 C11	3488 A11	4336 C5	5346 H5	5403 E3	6335 E10	6372 I7	7324 I2	7415 C13	7422 A10	9391 H11	

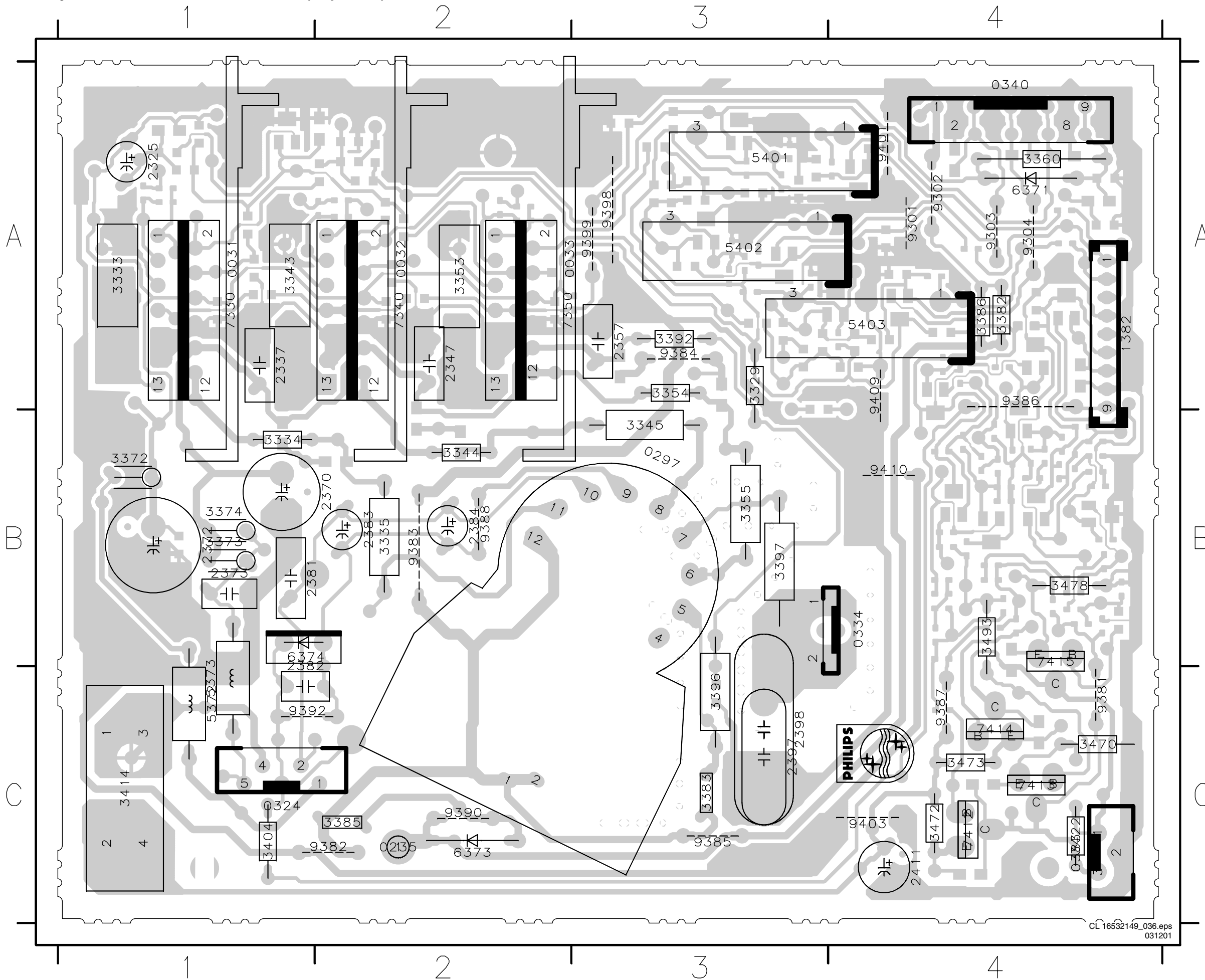


Item	28"	32"	36"
2382	-	470pF	470pF
2383	-	100 F	100 F
2384	-	100 F	100 F
2397	1nF	-	1nF
2398	-	6.8nF	-
3404	12kE	56kE	56kE
3999	150E	220E	330E
6374	-	BYV29F-400	BYV29F-400
9392	Jumper	-	-

USE HEATSINK-GROUND AS MEASUREGROUND

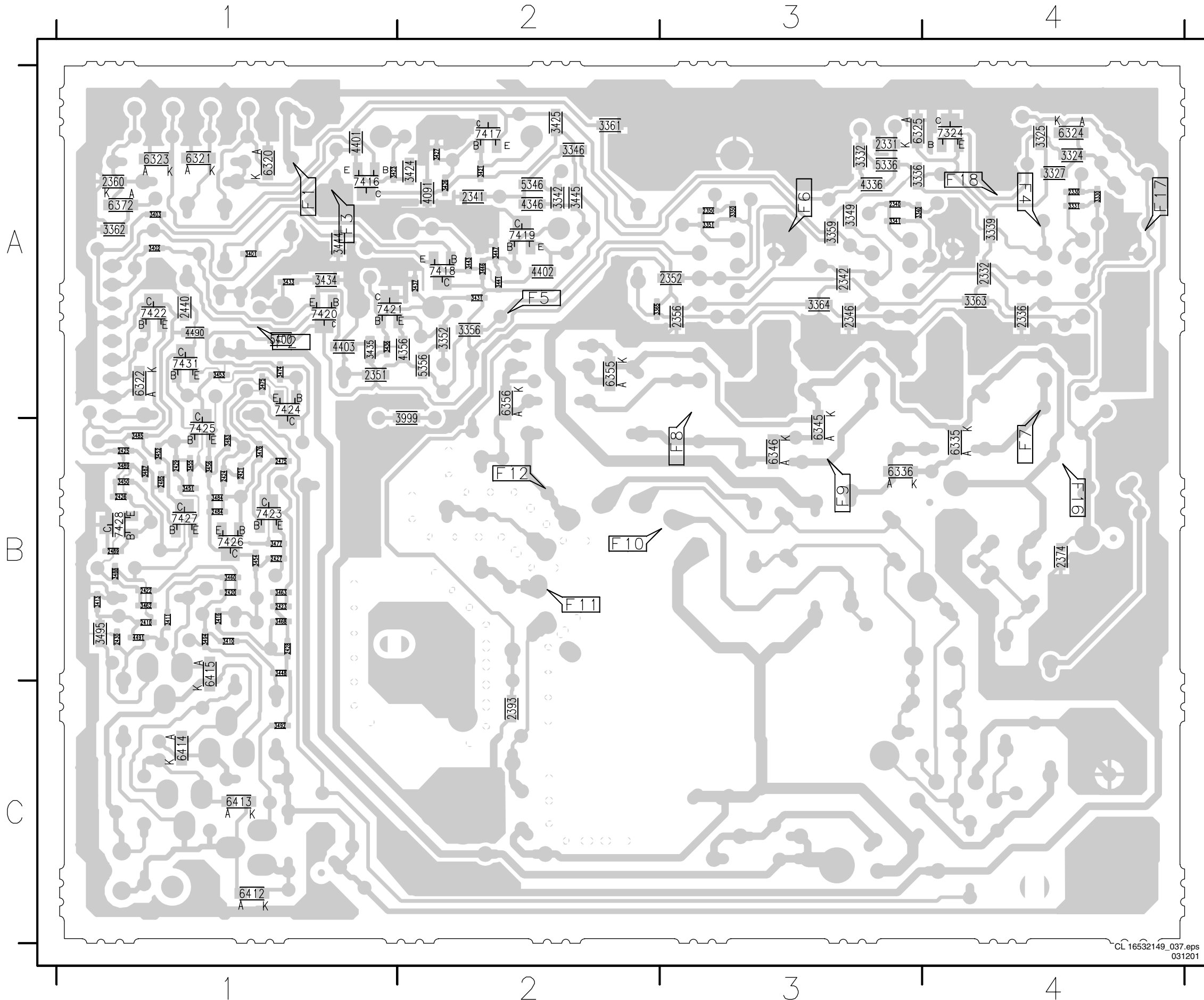


Layout CRT / Auto SCAVEM Panel (Top View)



- |         |         |
|---------|---------|
| 0031 A1 | 9302 A4 |
| 0032 A2 | 9303 A4 |
| 0033 A3 | 9304 A4 |
| 0235 C2 | 9381 C4 |
| 0297 B3 | 9382 C2 |
| 0324 C1 | 9383 B2 |
| 0334 B4 | 9384 A3 |
| 0340 A4 | 9385 C3 |
| 0383 C4 | 9386 A4 |
| 1382 A4 | 9387 C4 |
| 2325 A1 | 9388 B2 |
| 2337 A1 | 9390 C2 |
| 2347 A2 | 9392 C1 |
| 2357 A3 | 9398 A3 |
| 2370 B1 | 9399 A3 |
| 2372 B1 | 9401 A4 |
| 2373 B1 | 9403 C4 |
| 2381 B2 | 9409 A4 |
| 2382 C1 | 9410 B4 |
| 2383 B2 |         |
| 2384 B2 |         |
| 2397 C3 |         |
| 2398 C3 |         |
| 2411 C4 |         |
| 3329 A3 |         |
| 3333 A1 |         |
| 3334 B2 |         |
| 3335 B2 |         |
| 3343 A1 |         |
| 3344 B2 |         |
| 3345 A3 |         |
| 3353 A2 |         |
| 3354 A3 |         |
| 3355 B3 |         |
| 3360 A4 |         |
| 3372 B1 |         |
| 3373 B1 |         |
| 3374 B1 |         |
| 3382 A4 |         |
| 3383 C3 |         |
| 3385 C2 |         |
| 3386 A4 |         |
| 3392 A3 |         |
| 3396 C3 |         |
| 3397 B3 |         |
| 3404 C1 |         |
| 3414 C1 |         |
| 3422 C4 |         |
| 3470 C4 |         |
| 3472 C4 |         |
| 3473 C4 |         |
| 3478 B4 |         |
| 3493 B4 |         |
| 5372 C1 |         |
| 5373 C1 |         |
| 5401 A3 |         |
| 5402 A3 |         |
| 5403 A4 |         |
| 6371 A4 |         |
| 6373 C2 |         |
| 6374 B1 |         |
| 7330 A1 |         |
| 7340 A2 |         |
| 7350 A2 |         |
| 7412 C4 |         |
| 7413 C4 |         |
| 7414 C4 |         |
| 7415 B4 |         |
| 9301 A4 |         |

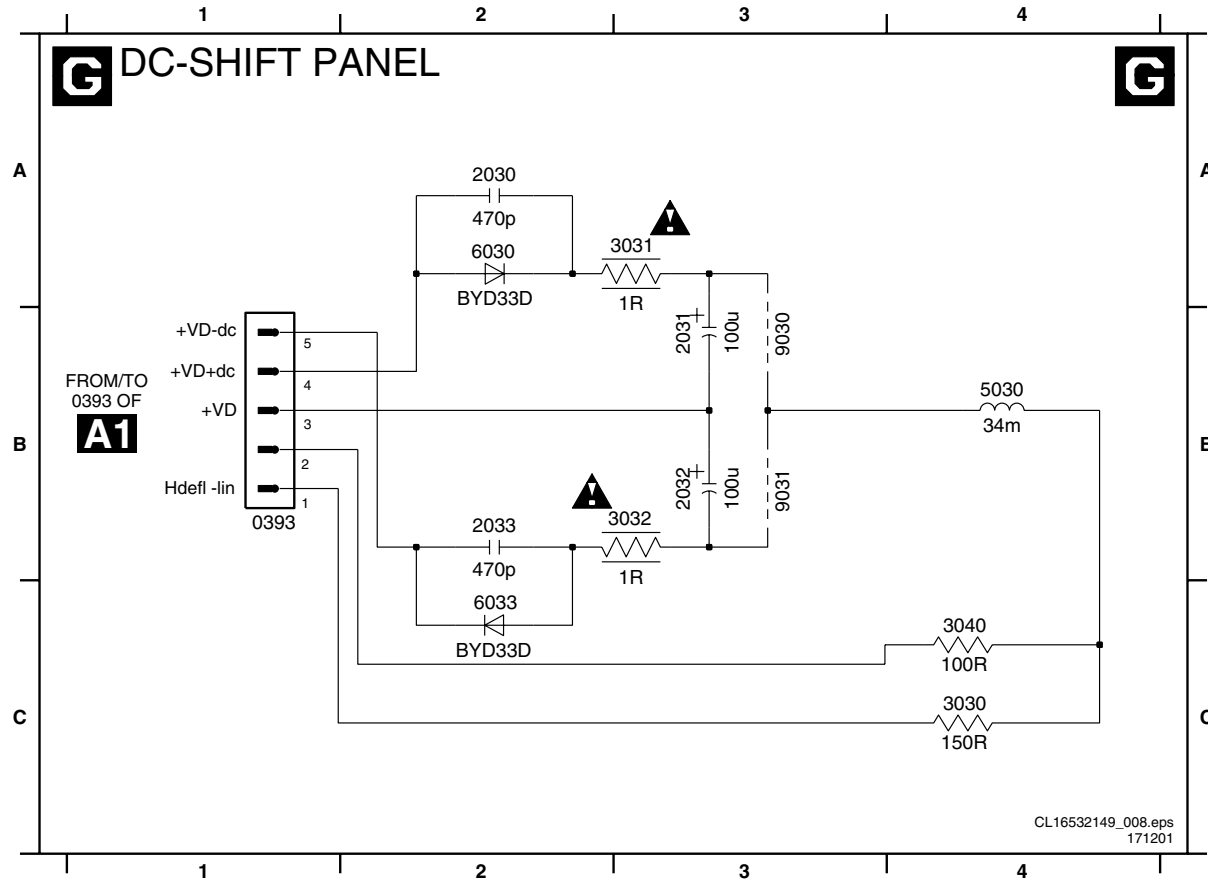
Layout CRT / Auto SCAVEM Panel (Bottom View)



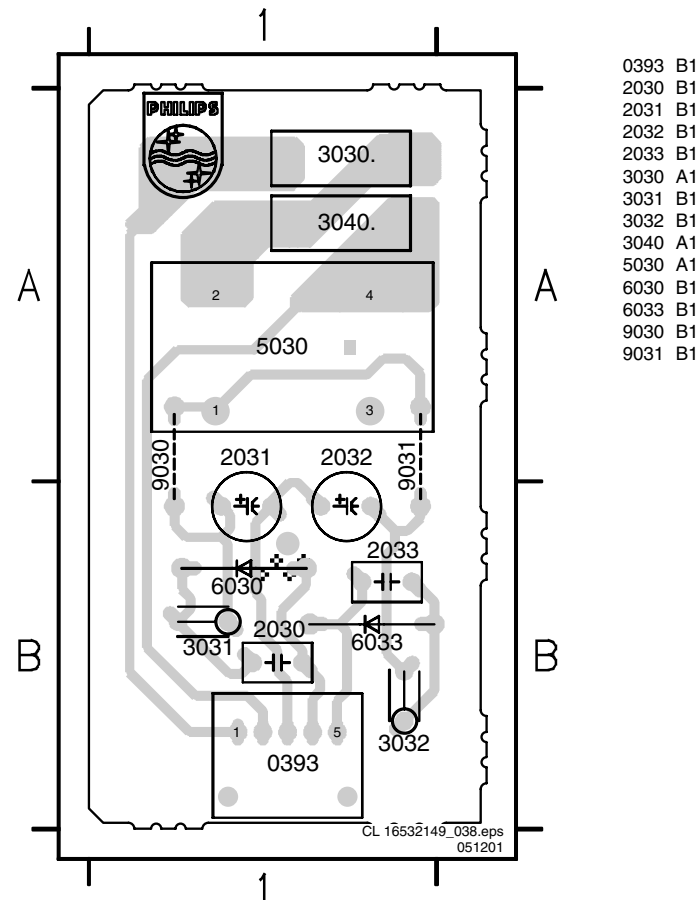
2330 A4	3433 A1	7417 A2
2331 A3	3434 A1	7418 A2
2332 A4	3435 A1	7419 A2
2336 A4	3436 A1	7420 A1
2340 A3	3437 A2	7421 A1
2341 A2	3441 A2	7422 A1
2342 A3	3443 A2	7423 B1
2346 A3	3444 A1	7424 B1
2350 A3	3445 A2	7425 B1
2351 A1	3446 A2	7426 B1
2352 A3	3447 A2	7427 B1
2356 A3	3448 B1	7428 B1
2360 A1	3450 B1	7431 A1
2374 B4	3451 B1	
2393 C2	3452 B1	
2410 B1	3453 A1	
2420 B1	3454 B1	
2421 B1	3455 B1	
2422 B1	3456 B1	
2423 B1	3460 B1	
2424 B1	3462 B1	
2425 B1	3463 B1	
2426 B1	3468 B1	
2427 B1	3474 A1	
2428 B1	3475 A1	
2429 B1	3476 B1	
2430 B1	3477 B1	
2440 A1	3483 B1	
2475 B1	3484 B1	
2484 B1	3485 B1	
2485 B1	3487 B1	
2489 B1	3488 B1	
3324 A4	3489 B1	
3325 A4	3492 C1	
3327 A4	3494 B1	
3330 A4	3495 B1	
3331 A4	3999 A2	
3332 A3	4091 A2	
3336 A3	4336 A3	
3339 A4	4346 A2	
3340 A3	4356 A2	
3341 A3	4401 A1	
3342 A2	4402 A2	
3346 A2	4403 A1	
3349 A3	4490 A1	
3350 A3	4491 B1	
3351 A3	5336 A3	
3352 A2	5346 A2	
3356 A2	5356 A2	
3359 A3	5400 A1	
3361 A2	6320 A1	
3362 A1	6321 A1	
3363 A4	6322 A1	
3364 A3	6323 A1	
3365 A2	6324 A4	
3401 A1	6325 A4	
3402 A1	6335 B4	
3403 A1	6336 B3	
3410 B1	6345 B3	
3411 B1	6346 B3	
3413 B1	6355 A2	
3416 B1	6356 A2	
3421 A2	6372 A1	
3423 A1	6412 C1	
3424 A2	6413 C1	
3425 A2	6414 C1	
3426 A2	6415 B1	
3427 A2	7324 A4	
3431 A2	7416 A1	

DC Shift Panel

0393 A1 2031 B3 2033 B2 3031 A3 3040 C4 6030 A2 9030 B3  
 2030 A2 2032 B3 3030 C4 3032 B3 5030 B4 6033 C2 9031 B3



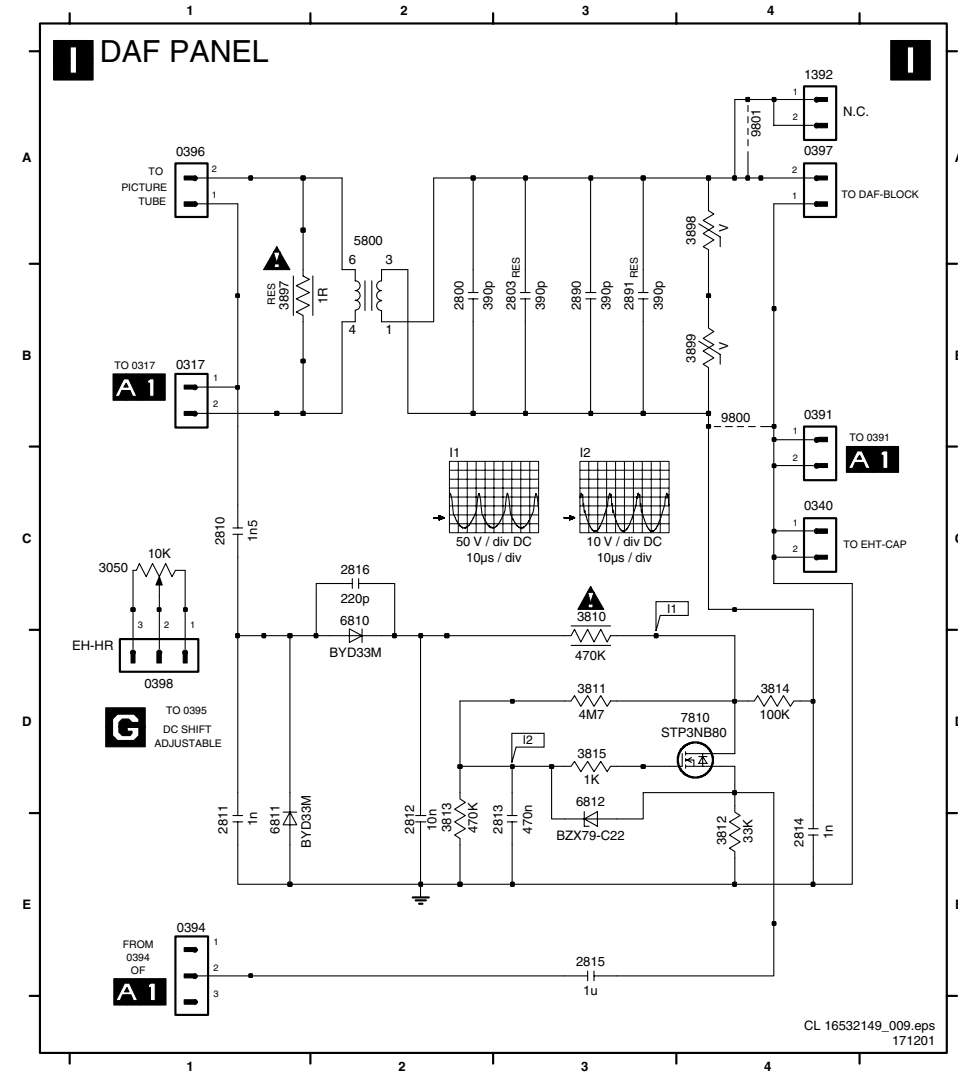
Layout DC Shift Panel



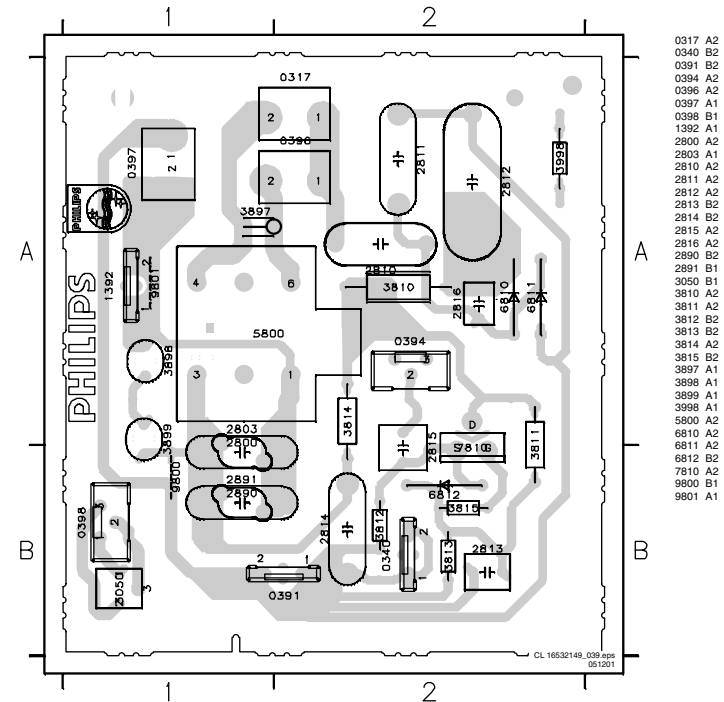
0393 B1  
2030 B1  
2031 B1  
2032 B1  
2033 B1  
3030 A1  
3031 B1  
3040 C4  
3040 A1  
5030 A1  
6030 B1  
6033 B1  
9030 B1  
9031 B1

DAF Panel

0317 B1 0396 A1 2800 B2 2812 E2 2816 C2 3810 C3 3814 D4 3899 B4 6811 E1 9801 A4  
 0340 C4 0397 A4 2803 B3 2813 E3 2890 B3 3811 D3 3815 D3 3998 C3 6812 D3  
 0391 B4 0398 D1 2810 C1 2814 E4 2891 B3 3812 E4 3897 B1 5800 A2 7810 D4  
 0394 E1 1392 A4 2811 E1 2815 E3 3050 C1 3813 E2 3898 A4 6810 C2 9800 B4

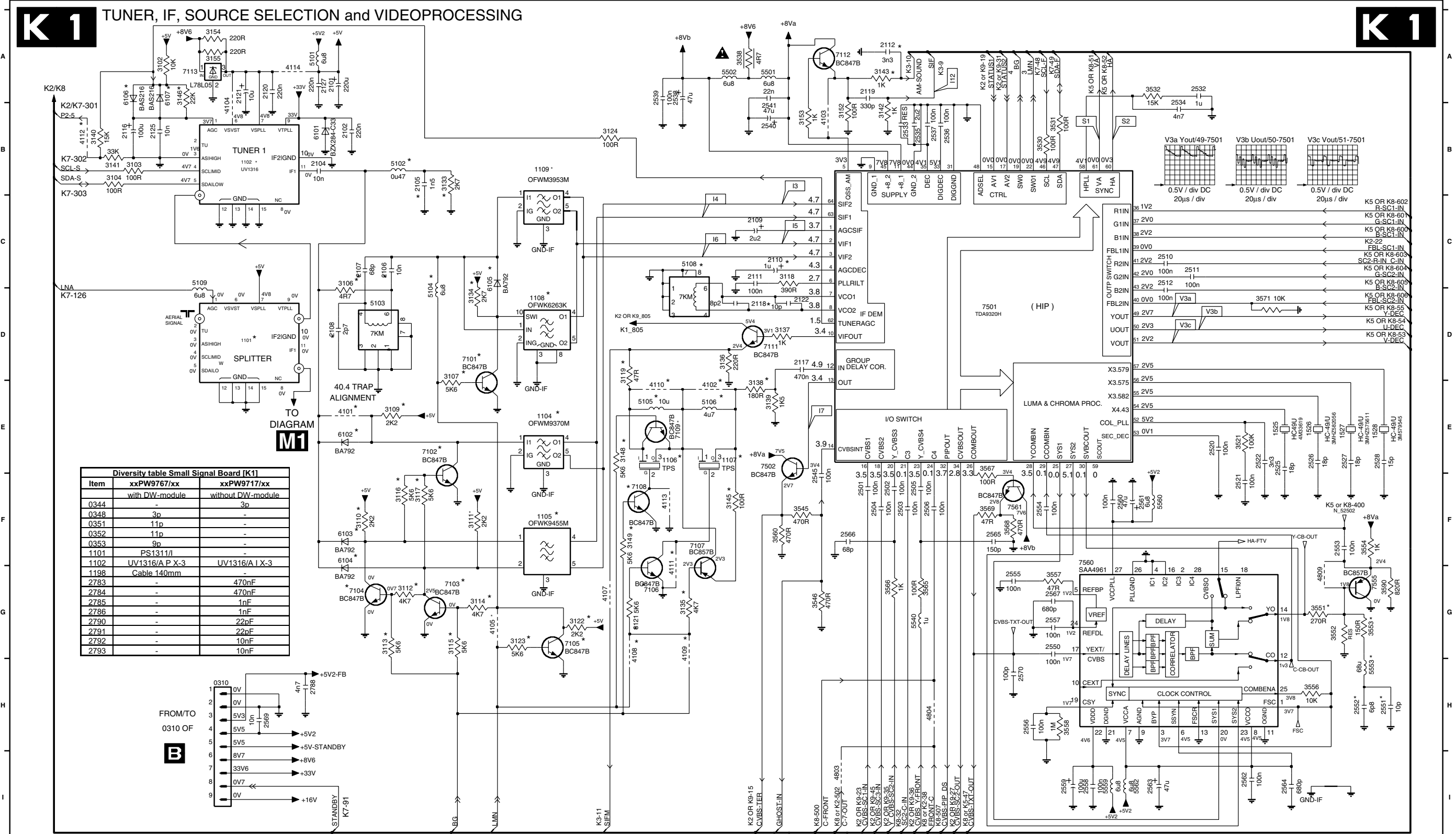
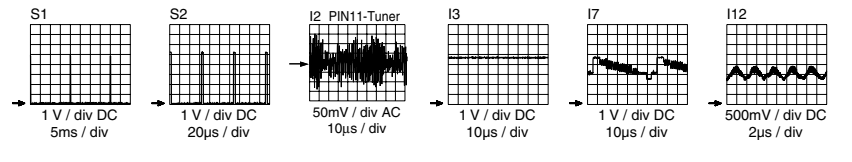


Layout DAF Panel



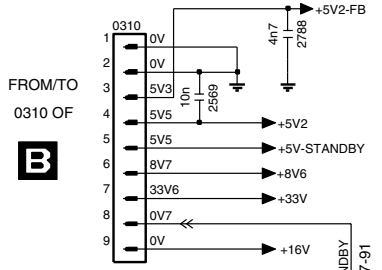
### Small Signal Board: Tuner, IF, Source Selection and Video Processing

0310 H2	1109 B6	2105 B5	2116 B2	2127 A4	2511 C13	2528 E15	2539 A7	2554 F11	2562 I14	2788 H4	3111 F5	3119 D7	3136 D8	3145 F8	3521 E14	3552 G15	3566 G10	4102 E8	4111 G7	5102 B4	5502 A8	6103 F4	7104 G4	7113 A2
1101 D3	1525 E14	2106 C4	2117 D9	2501 F9	2512 C13	2532 A13	2540 B8	2555 G11	2563 I13	3102 A2	3112 G5	3121 G7	3137 D9	3146 A2	3530 B11	3553 G15	3567 E11	4103 B9	4112 B1	5103 D4	5540 G10	6104 F4	7105 G6	7501 D11
1102 B3	1526 E14	2107 C4	2118 D8	2502 F10	2520 E13	2533 B10	2541 B8	2556 H11	2564 I14	3103 B2	3113 G4	3122 G6	3138 E8	3148 E7	3531 B12	3554 F15	3568 F11	4104 B3	4113 F7	5104 D5	5553 H15	6105 C5	7106 G7	7502 E9
1104 E6	1527 E15	2108 D4	2119 A10	2503 F10	2521 F14	2534 A13	2545 F9	2557 G12	2565 F11	3104 B1	3114 G5	3123 G6	3139 E8	3149 F7	3532 A13	3556 H14	3569 F11	4105 G6	4114 A3	5105 E7	5559 I12	6106 A2	7107 F8	7555 G15
1105 F6	1528 E15	2109 C8	2120 A3	2504 F10	2522 E14	2535 B10	2550 G12	2558 I12	2566 F9	3106 C4	3115 G5	3124 B7	3140 B1	3152 B9	3538 A8	3557 G12	3571 D14	4107 G7	4803 I9	5106 E8	5560 F13	6107 A2	7108 F7	7560 F12
1106 E7	2101 A4	2110 C9	2121 A3	2505 F10	2525 E14	2536 B10	2551 H15	2559 I12	2567 G12	3107 D5	3116 F4	3133 B5	3141 B1	3153 B9	3545 F9	3558 H12	3590 G15	4108 G7	4804 H10	5108 C8	5562 I12	7101 D5	7109 E7	7561 F11
1107 E8	2102 B4	2111 C8	2122 D9	2506 F10	2526 E14	2537 B10	2552 H15	2560 F12	2569 H3	3109 E4	3117 F5	3134 D5	3142 B10	3154 A2	3546 G9	3560 F9	3999 A6	4109 G8	4809 G14	5109 C2	6101 B4	7102 E5	7111 D9	
1108 D6	2104 B4	2112 A10	2125 B2	2510 C13	2527 E15	2538 A7	2553 F15	2561 F12	2570 H11	3110 F4	3118 C9	3135 G8	3143 A10	3155 A2	3551 G14	3565 G10	4101 E4	4110 E7	5101 A4	5501 A8	6102 E4	7103 G5	7112 A9	



**Diversity table Small Signal Board [K1]**

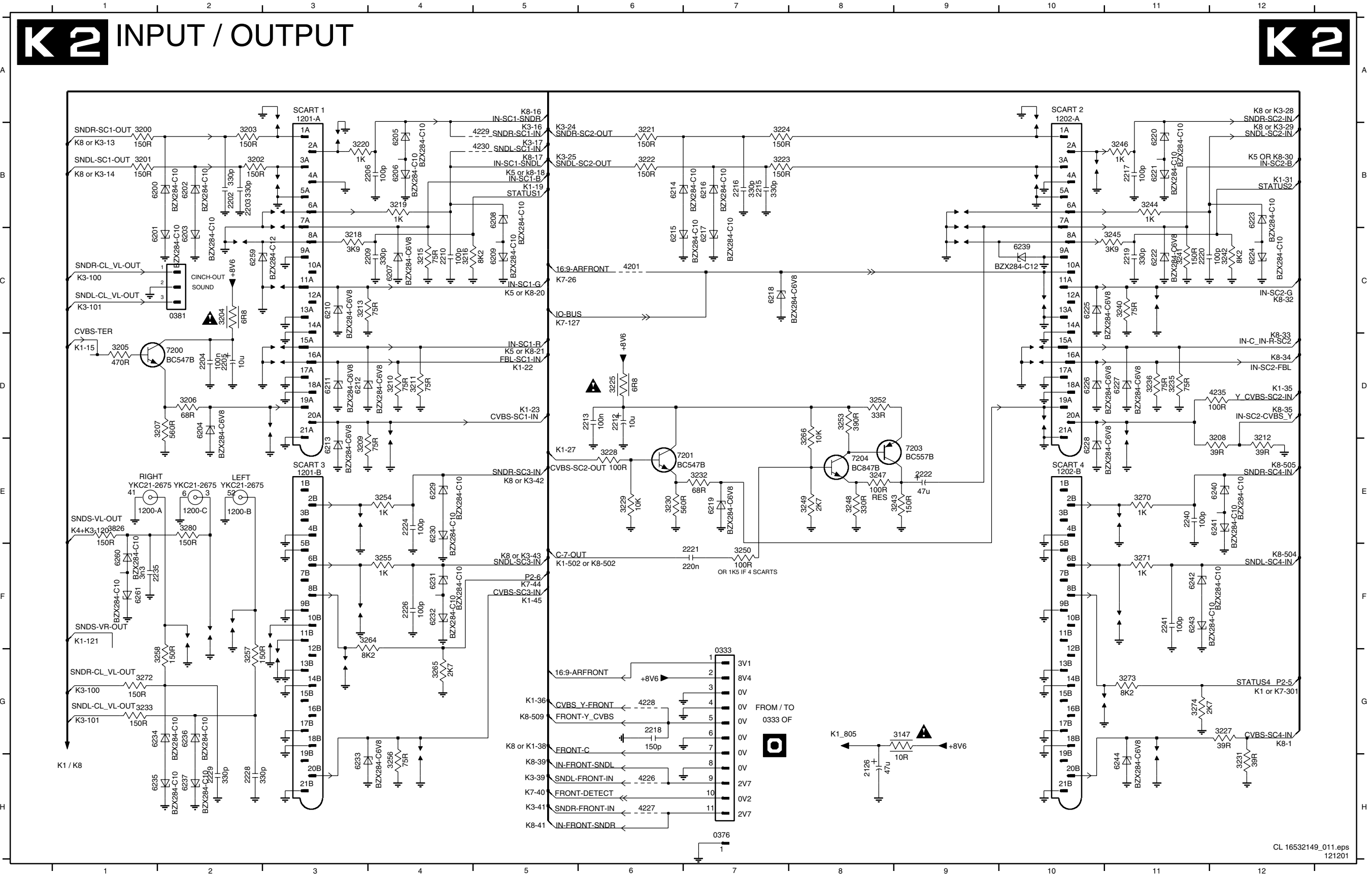
Item	xxPW9767/xx	xxPW9717/xx
0344	with DW-module	without DW-module
0348	3p	-
0351	11p	-
0352	11p	-
0353	9p	-
1101	PS1311/1	-
1102	UV1316/A P X-3	UV1316/A1 X-3
1198	Cable 140mm	-
2783	-	470nF
2784	-	470nF
2785	-	1nF
2786	-	1nF
2790	-	22pF
2791	-	22pF
2792	-	10nF
2793	-	10nF





Small Signal Board: Input / Output

0333 F7	2126 H8	2215 B7	2228 H2	3204 C2	3215 C4	3227 G12	3241 C11	3252 F8	3270 E11	4228 G6	6206 B4	6216 B7	6226 D10	6236 G2	6261 F1
0376 H8	2202 B2	2216 B7	2229 H2	3205 D1	3216 C4	3228 E6	3242 C12	3253 F8	3271 F11	4229 B5	6207 C4	6217 C7	6227 D11	6237 H2	7200 D2
0381 C2	2203 B2	2217 B11	2235 F1	3206 D2	3218 C3	3229 F6	3243 F9	3254 E4	3272 G1	4230 B5	6208 B5	6218 C7	6228 E10	6239 C10	7201 E6
1200-A E1	2204 D2	2218 G6	2240 E11	3207 D2	3219 B4	3230 F6	3244 B11	3255 F4	3273 G11	4235 D12	6209 C5	6219 D7	6229 E4	6240 E12	7203 F9
1200-B E2	2205 D2	2219 C11	2241 F11	3208 E12	3220 B3	3231 H12	3245 C11	3256 H4	3274 G11	6200 B1	6210 C3	6220 B11	6230 E4	6241 E12	7204 F8
1200-C E2	2206 B4	2220 C11	3147 G9	3209 E3	3221 B6	3232 E7	3246 B11	3257 G2	3280 E2	6201 C1	6211 D3	6221 B11	6231 F4	6242 F11	
1201-A A3	2209 C4	2221 F7	3200 B1	3210 D4	3222 B6	3233 G1	3247 F8	3258 G2	3826 E1	6202 B2	6212 D3	6222 C11	6232 F4	6243 F11	
1201-B E3	2210 C4	2222 F9	3201 B1	3211 D4	3223 B7	3235 D11	3248 F8	3264 F4	4201 C6	6203 C2	6213 E3	6223 B12	6233 H3	6244 H11	
1202-A A10	2212 E6	2224 E4	3202 B2	3212 E12	3224 B7	3236 D11	3249 F8	3265 G4	4226 H6	6204 D2	6214 B6	6224 C12	6234 G1	6259 C2	
1202-B E10	2213 E6	2226 F4	3203 B2	3213 C3	3225 D6	3240 C11	3250 F7	3266 F8	4227 H6	6205 B4	6215 C6	6225 C10	6235 H1	6260 F1	



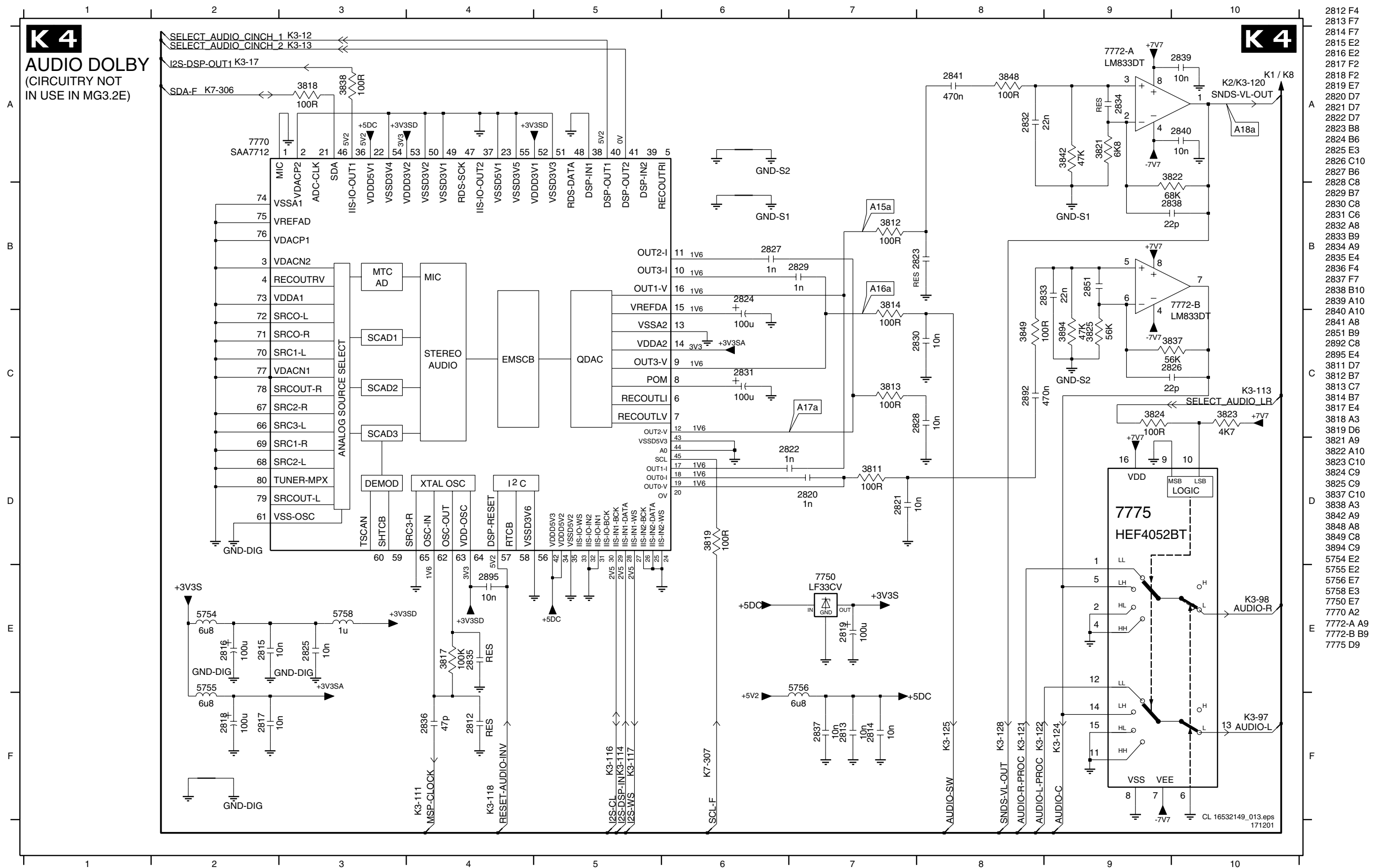


### Small Signal Board: Sound Processing

**K 4**

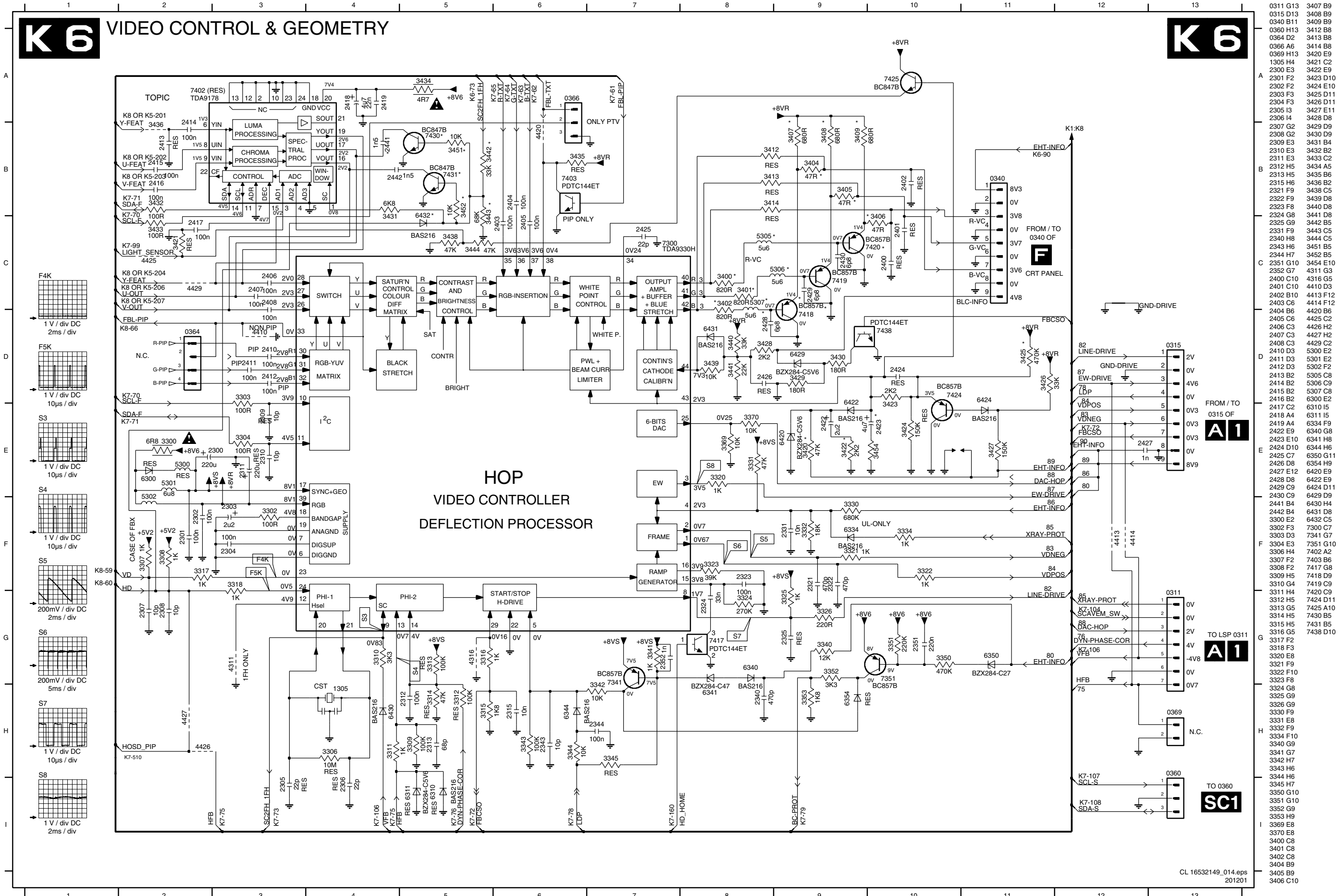
**AUDIO DOLBY**  
(CIRCUITRY NOT  
IN USE IN MG3.2E)

**K 4**



- 2812 F4
- 2813 F7
- 2814 F7
- 2815 E2
- 2816 E2
- 2817 F2
- 2818 F2
- 2819 E7
- 2820 D7
- 2821 D7
- 2822 D7
- 2823 B8
- 2824 B6
- 2825 E3
- 2826 C10
- 2827 B6
- 2828 C8
- 2829 B7
- 2830 C8
- 2831 C6
- 2832 A8
- 2833 B9
- 2834 A9
- 2835 E4
- 2836 F4
- 2837 F7
- 2838 B10
- 2839 A10
- 2840 A10
- 2841 A8
- 2842 B9
- 2843 C8
- 2844 E4
- 2845 D7
- 2846 B7
- 2847 C7
- 2848 B7
- 2849 E4
- 2850 C8
- 2851 B9
- 2852 C8
- 2853 E4
- 2854 D7
- 2855 B7
- 2856 C7
- 2857 B7
- 2858 D6
- 2859 A9
- 2860 A10
- 2861 C9
- 2862 C9
- 2863 C9
- 2864 A3
- 2865 A9
- 2866 A8
- 2867 C8
- 2868 C9
- 2869 E2
- 2870 E2
- 2871 E7
- 2872 E3
- 2873 E7
- 2874 A2
- 2875 A A9
- 2876 B B9
- 2877 D9

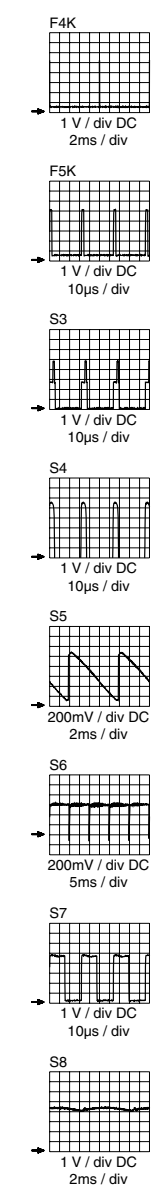
Small Signal Board: Video Control and Geometry



K6

VIDEO CONTROL & GEOMETRY

K6



- 0311 G13
- 0315 D13
- 0340 B11
- 0360 H13
- 0364 D2
- 0366 A6
- 0369 H13
- 1305 H4
- 2300 E3
- 2301 F2
- 2302 F2
- 2303 F3
- 2304 F3
- 2305 I3
- 2306 I4
- 2307 G2
- 2308 G2
- 2309 E3
- 2310 E3
- 2311 E3
- 2312 H5
- 2313 H5
- 2315 H6
- 2321 F9
- 2322 F9
- 2323 F8
- 2324 G8
- 2331 F9
- 2340 H8
- 2343 H6
- 2344 H7
- 2351 G10
- 2352 G7
- 2400 C10
- 2401 C10
- 2402 B10
- 2403 C6
- 2404 B6
- 2405 C6
- 2406 C3
- 2407 C3
- 2408 C3
- 2410 D3
- 2411 D3
- 2412 D3
- 2413 B2
- 2414 B2
- 2415 B2
- 2416 B2
- 2417 C2
- 2418 A4
- 2419 A4
- 2422 E9
- 2423 E10
- 2424 D10
- 2425 C7
- 2426 D8
- 2427 E12
- 2428 D8
- 2429 C9
- 2430 C9
- 2441 B4
- 2442 B4
- 3300 E2
- 3302 F3
- 3303 D3
- 3304 E3
- 3306 H4
- 3307 F2
- 3308 F2
- 3309 H5
- 3310 G4
- 3311 H4
- 3312 H5
- 3313 G5
- 3314 H5
- 3315 H5
- 3316 G5
- 3317 F2
- 3318 F3
- 3320 E8
- 3321 F9
- 3322 F10
- 3323 F8
- 3324 G8
- 3325 G9
- 3326 G9
- 3330 F9
- 3331 F9
- 3332 F9
- 3334 F10
- 3340 G9
- 3341 G7
- 3342 H7
- 3343 H6
- 3344 H6
- 3345 H7
- 3350 G10
- 3352 G9
- 3353 H9
- 3369 E8
- 3370 E8
- 3400 C8
- 3401 C8
- 3402 C8
- 3404 B9
- 3405 B9
- 3406 C10
- 0311 G13
- 0315 D13
- 0340 B11
- 0360 H13
- 0364 D2
- 0366 A6
- 0369 H13
- 1305 H4
- 2300 E3
- 2301 F2
- 2302 F2
- 2303 F3
- 2304 F3
- 2305 I3
- 2306 I4
- 2307 G2
- 2308 G2
- 2309 E3
- 2310 E3
- 2311 E3
- 2312 H5
- 2313 H5
- 2315 H6
- 2321 F9
- 2322 F9
- 2323 F8
- 2324 G8
- 2331 F9
- 2340 H8
- 2343 H6
- 2344 H7
- 2351 G10
- 2352 G7
- 2400 C10
- 2401 C10
- 2402 B10
- 2403 C6
- 2404 B6
- 2405 C6
- 2406 C3
- 2407 C3
- 2408 C3
- 2410 D3
- 2411 D3
- 2412 D3
- 2413 B2
- 2414 B2
- 2415 B2
- 2416 B2
- 2417 C2
- 2418 A4
- 2419 A4
- 2422 E9
- 2423 E10
- 2424 D10
- 2425 C7
- 2426 D8
- 2427 E12
- 2428 D8
- 2429 C9
- 2430 C9
- 2441 B4
- 2442 B4
- 3300 E2
- 3302 F3
- 3303 D3
- 3304 E3
- 3306 H4
- 3307 F2
- 3308 F2
- 3309 H5
- 3310 G4
- 3311 H4
- 3312 H5
- 3313 G5
- 3314 H5
- 3315 H5
- 3316 G5
- 3317 F2
- 3318 F3
- 3320 E8
- 3321 F9
- 3322 F10
- 3323 F8
- 3324 G8
- 3325 G9
- 3326 G9
- 3330 F9
- 3331 F9
- 3332 F9
- 3334 F10
- 3340 G9
- 3341 G7
- 3342 H7
- 3343 H6
- 3344 H6
- 3345 H7
- 3350 G10
- 3352 G9
- 3353 H9
- 3369 E8
- 3370 E8
- 3400 C8
- 3401 C8
- 3402 C8
- 3404 B9
- 3405 B9
- 3406 C10

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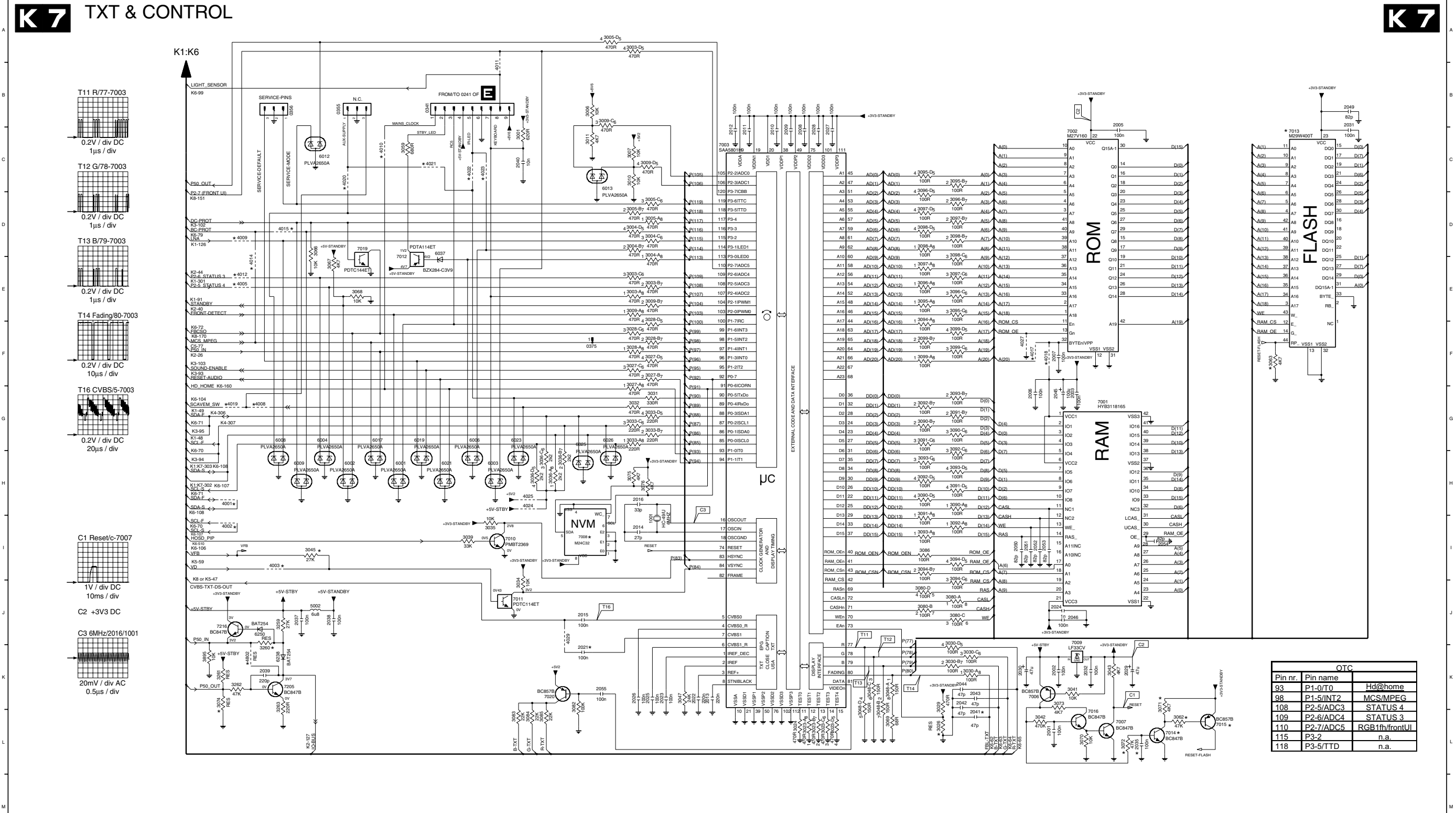
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### Small Signal Board: TXT and Control

0341 B7	2005 B18	2013 K11	2025 K10	2035 L18	2044 K15	2054 H18	3004-B D10	3007 C10	3023-B L13	3027-D F10	3030-C K15	3034 J8	3042 L16	3048-A D2	3051-A E2	3053-A F2	3055-A G2	3057-A H2	3067 E5	3075 H10	3084 L8	3091-B G15	3093-B H15	3095-B I15	3097-B E15	3099-B F15	3895 K3	4011 B8	4021 C7	5002 J5	6012 C5	6037 D7	7008 I9	7016 L17
0356 B6	2006 G16	2014 H10	2026 K10	2037 J5	2045 G17	2055 K10	3004-C D10	3009-A E10	3023-C L13	3028-A F10	3031 G10	3035 I8	3043 K17	3049-B D2	3051-C E2	3053-D F2	3055-E G2	3057-C I2	3069 L14	3076 H10	3085 L9	3091-C G15	3093-C H15	3095-C I15	3097-D E15	3099-D F15	4001 H4	4012 E4	4022 C8	6001 H7	6013 C10	6238 K5	7009 J17	7018 D6
0375 F9	2007 F17	2015 J9	2027 C13	2038 J5	2046 J17	2056 K10	3004-D D10	3009-B E10	3023-D L13	3028-B F10	3031 G10	3035 I8	3043 K17	3049-C D2	3051-D E2	3053-E F2	3055-F G2	3057-D H2	3069 L14	3076 H10	3085 L9	3091-D H15	3093-D I15	3095-D J15	3097-E E15	3099-E F15	4002 H4	4013 E4	4023 C8	6002 H7	6014 C10	6239 J4	7009 J17	7018 D6
1001 H10	2008 C13	2021 K9	2029 K18	2040 C8	2050 H10	2059 K18	3003-B E10	3008-B D10	3024 L15	3029-D F10	3032 G10	3036-B H9	3047 K11	3049-D D2	3051-E E2	3053-D F2	3055-D H2	3057-D H2	3069 L14	3076 H10	3085 L9	3091-E H15	3093-E I15	3095-E J15	3097-F E15	3099-F F15	4003 H4	4014 E4	4024 C8	6003 H7	6015 C10	6240 J4	7010 B8	7020 K9
2001 L16	2010 C12	2022 K11	2030 K16	2041 L15	2051 H16	2060 K16	3003-C E10	3008-C D10	3010 C10	3027-A F10	3029 K15	3033-A G10	3036-C H9	3048-A K14	3050-A D2	3052-B F2	3054-C G2	3056-A H2	3068 L18	3077 L18	3086-D J15	3090-C G15	3092-C H15	3094-C I15	3096-C D15	3098-C D15	3261 K4	4008 G4	4018 F16	4027 F16	6006 G5	6023 G8	7003 C11	7013 C20
2002 K17	2011 C12	2023 K11	2031 B21	2042 K15	2052 H16	2061 K16	3003-D A10	3008-D A10	3011 C9	3027-B F10	3029 K15	3033-D G10	3036-D H9	3048-B K14	3050-B E2	3052-C F2	3054-C G2	3056-B H2	3068 L18	3077 L18	3086-E J15	3090-D H15	3092-D I15	3094-D E15	3096-D E15	3098-D D15	3262 K4	4009 G4	4019 G4	4028 J9	6008 G5	6025 G9	7006 K16	7014 L18
2003 G17	2012 C12	2024 J17	2032 K17	2043 K15	2053 H16	2062 K16	3004-A D10	3009-B E10	3024 L13	3027-C F10	3029 K15	3033-D G10	3036-D H9	3048-C K14	3050-C E2	3052-D F2	3054-D G2	3056-D H2	3068 L18	3077 L18	3086-F K15	3090-E H15	3092-E I15	3094-E I15	3096-E I15	3098-E D15	3263 K5	4010 C6	4020 C6	4029 J9	6009 H5	6026 G10	7007 L18	7015 L19



**K7 TXT & CONTROL**

**T11 R/77-7003**  
0.2V / div DC  
1µs / div

**T12 G/78-7003**  
0.2V / div DC  
1µs / div

**T13 B/79-7003**  
0.2V / div DC  
1µs / div

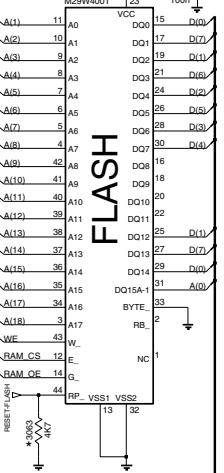
**T14 Fading/80-7003**  
0.2V / div DC  
10µs / div

**T16 CVBS/5-7003**  
0.2V / div DC  
20µs / div

**C1 Reset/c-7007**  
1V / div DC  
10ms / div

**C2 +3V3 DC**

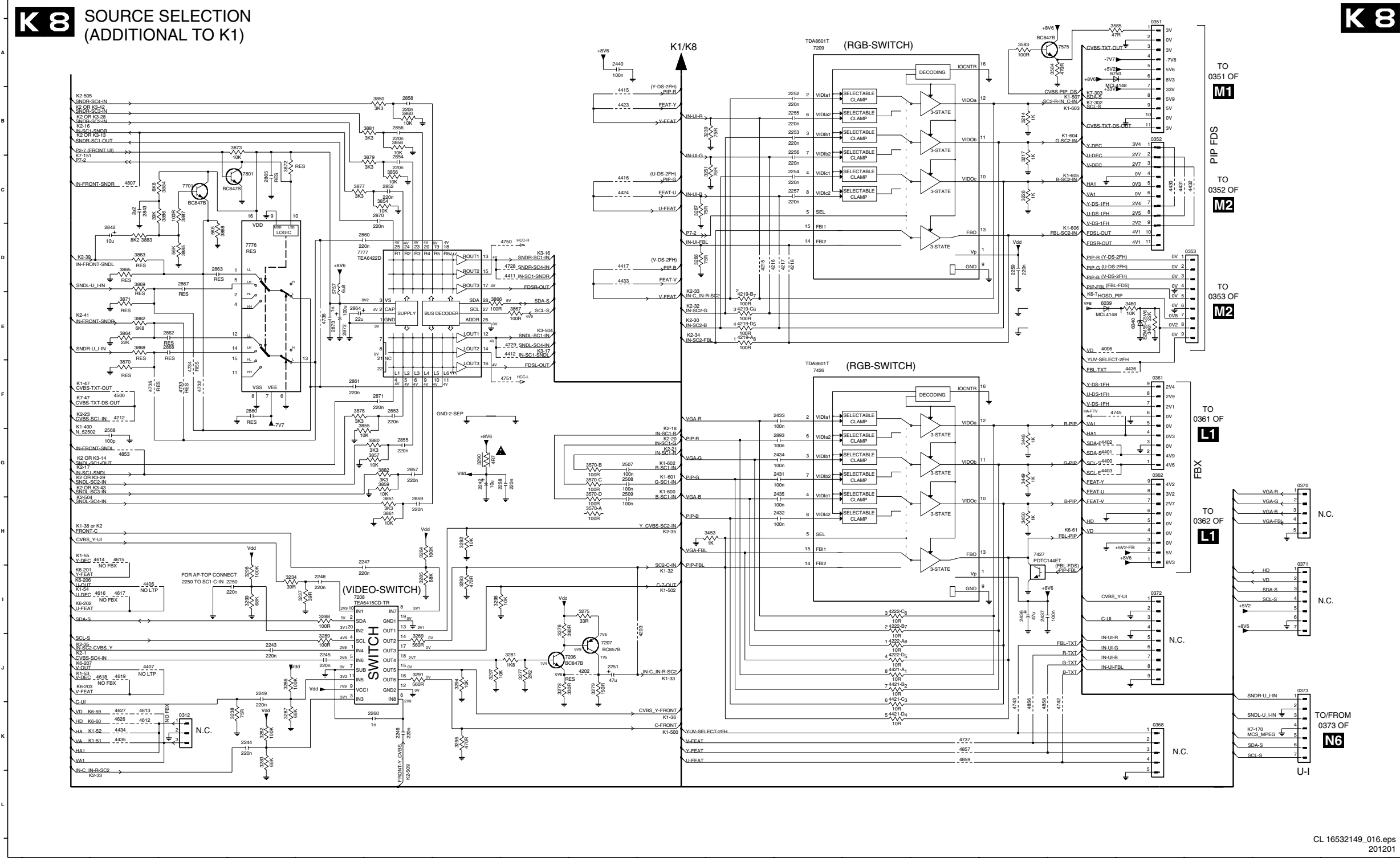
**C3 6MHz/2016/1001**  
20mV / div AC  
0.5µs / div



Pin nr.	Pin name	Hd@home
93	P1-0/T0	Hd@home
98	P1-5/INT2	MCS/MPEG
108	P2-5/ADC3	STATUS 3
110	P2-6/ADC5	RGB1fb/frontUI
115	P3-2	n.a.
118	P3-5/TTC	n.a.

Small Signal Board: Source Selection (Additional to K1)

0312 K3	0372 I17	2249 J4	2258 G8	2437 I15	2853 F6	2862 E3	2873 E5	3239 B11	3279 J9	3289 J5	3298 I4	3570-B G9	3855 F6	3864 E2	3873 B4	3885 D3	4216 D11	4222-C I13	4412 E8	4424 C9	4612 K2	4627 K2	4742 K16	4858 K15	7209 A12
0351 A17	0373 J19	2250 I4	2259 D15	2440 A9	2854 C5	2863 D3	2880 F4	3251 C11	3281 J8	3290 G7	3299 I4	3570-C G9	3856 C6	3865 D2	3877 C5	3887 C3	4217 D12	4222-D J13	4415 B9	4424 C9	4613 K2	4728 D8	4743 K15	4859 K14	7426 H15
0352 B17	2242 G7	2251 J9	2260 K6	2507 G9	2855 G6	2864 E5	2893 G12	3267 C10	3282 K4	3291 J6	3448 G15	3570-D G9	3857 G6	3866 E7	3878 F5	3887 C3	4218 D12	4400 G16	4416 C9	4430 C17	4614 H2	4729 E8	4745 F17	5757 D5	7427 H15
0353 D18	2243 J4	2252 B12	2431 G12	2508 G9	2856 B6	2865 C4	3214 B15	3268 D10	3283 K4	3292 H7	3449 G15	3568 A15	3858 B6	3867 E8	3879 C6	3888 D3	4219-A E11	4401 G16	4417 D9	4432 C18	4615 H2	4732 F3	4750 D8	6039 E16	7575 A16
0361 F17	2244 K4	2253 B12	2432 H12	2509 G9	2857 G6	2867 D3	3217 C15	3269 J6	3284 H6	3293 I7	3450 H15	3568 A16	3859 G6	3868 E2	3880 G6	4006 E16	4219-B E11	4402 G16	4421-A J13	4433 D9	4616 I2	4733 F3	4751 F8	6040 E17	7701 C3
0362 G17	2245 J5	2254 C12	2433 F12	2508 G9	2858 B6	2868 E3	3226 C15	3275 J9	3285 I6	3294 J7	3453 H11	3568 A17	3860 B6	3869 D2	3881 B6	4002 J9	4219-C E11	4403 G16	4421-B J13	4434 K2	4617 I2	4734 F3	4807 C2	6750 A16	7776 D4
0368 K17	2246 K6	2255 B12	2434 G12	2842 D2	2859 H6	2870 C6	3234 I4	3276 I8	3286 J4	3295 K7	3460 E17	3859 B6	3861 H6	3870 F2	3882 G6	4203 I10	4219-D E11	4406 I2	4421-C J13	4435 C2	4618 J2	4735 F2	4853 G2	7206 J8	7777 D5
0370 G19	2247 H6	2256 B12	2435 G12	2843 H6	2860 D6	2871 F6	3237 I5	3277 J8	3287 K4	3296 I7	3461 E17	3851 H6	3862 E2	3871 E2	3883 D2	4212 F2	4222-A J13	4407 J2	4421-D K13	4436 F17	4619 J2	4736 E5	4856 K15	7207 J9	7801 C4
0371 I19	2248 I5	2257 C12	2436 I15	2852 C6	2861 F5	2872 E5	3238 K4	3278 J8	3288 I5	3297 J7	3570-A H9	3854 C6	3863 D2	3872 C4	3884 C3	4215 D11	4222-B I13	4411 D8	4423 B9	4500 F2	4626 K2	4737 K14	4857 K14	7208 I5	



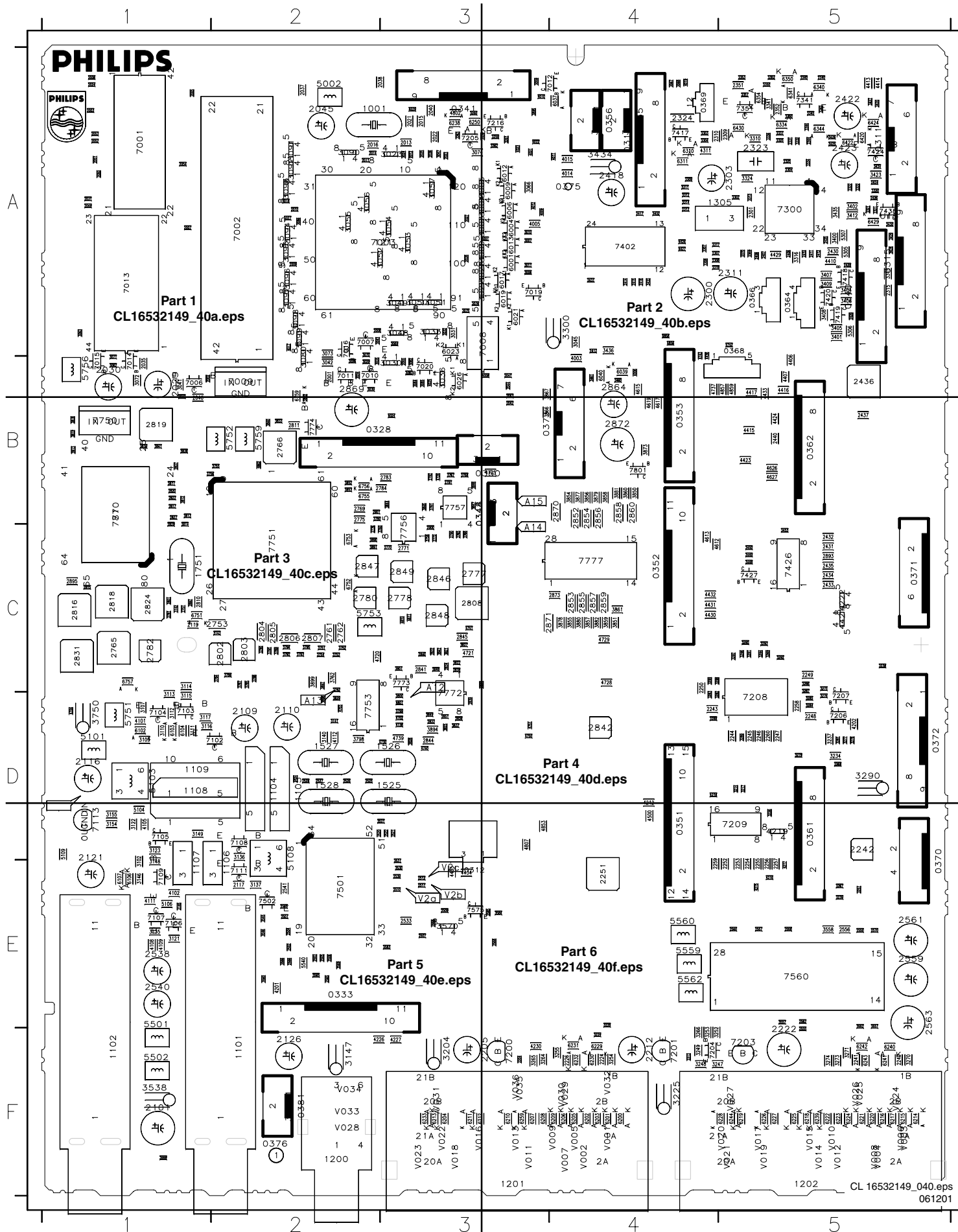
Diversity table Small Signal Board (K8)

Item	no DW-module	DW-module
0351	-	X
0352	-	X
0353	-	X
0370	-	-
0371	-	-
2431	-	-
2432	-	-
2433	-	-
2434	-	-
2435	-	-
2437	-	-
2440	-	-
2893	-	-
3445	-	-
3446	-	-
3447	-	-
3448	-	-
3449	-	-
3450	-	-
3453	-	-
3583	-	100R
3584	-	470R
3585	-	47R
4222	-	-
4421	-	4x10R
4423	Jumper	Jumper
4424	Jumper	Jumper
4430	Jumper	-
4431	Jumper	-
4432	Jumper	-
4433	Jumper	Jumper
4436	-	Jumper
4500	Jumper	Jumper
7426	-	-
7427	-	-
7428	-	-
7429	-	-
7575	-	BC847B

Small Signal Panel (K8) (for readability)

2842	10 F
2843	2.2 F
2852	220nF
2853	220nF
2854	220nF
2855	220nF
2856	220nF
2857	220nF
2858	220nF
2859	220nF
2860	220nF
2861	220nF
2864	22 F
2870	220nF
2871	220nF
2872	100 F
2873	1nF
3850	3k3
3851	3k3
3854	10k
3855	10k
3857	10k
3858	10k
3859	10k
3860	10k
3861	10k
3862	6k8
3864	22k
3866	100R
3867	100R
3877	3k3
3878	3k3
3879	3k3
3880	3k3
3881	3k3
3882	3k3
3883	8k2
3884	6k8
3885	56k
3886	39k
3887	100R
3888	5k6
4411	-
4412	-
4728	-
4729	-
4732	Jumper
4736	Jumper
5757	6.8 H
7701	BC847B
7777	TEA6422D

Layout Small Signal Board (Top Overview)



0310	A4	2037	A2	2407	A5	2772	C3	3006	A3	3121	E1	3299	C4	3551	E5	3852	B2	4421	C5	6009	A3	6755	B2
0311	A5	2038	A2	2408	A5	2775	B2	3007	A3	3122	D1	3300	A3	3552	E5	3853	B2	4423	B5	6012	A3	6756	B2
0312	D3	2039	A3	2410	A5	2776	C2	3009	A3	3123	D1	3302	A5	3557	E5	3854	B4	4424	B5	6013	A3	6757	C1
0315	A5	2040	A3	2411	A5	2777	C3	3010	A3	3124	D2	3303	A4	3558	E5	3855	C4	4426	A4	6017	A3	6759	B2
0328	B2	2041	B3	2412	A5	2778	C3	3011	A3	3135	E1	3304	A4	3560	E2	3856	B4	4427	A4	6019	A3	7001	A1
0333	E2	2042	B3	2413	A4	2780	C2	3023	A3	3136	D2	3307	A4	3565	E2	3857	C4	4429	A5	6021	A3	7002	A1
0340	A5	2043	B3	2414	A4	2782	C1	3024	A3	3137	E2	3308	A4	3566	E2	3858	B4	4430	C4	6023	A3	7003	A2
0341	A3	2044	B3	2415	A4	2783	B3	3026	B2	3140	D2	3309	A4	3569	E2	3859	C4	4431	C4	6026	B3	7006	B1
0344	C3	2045	A2	2416	A4	2784	B3	3027	A3	3141	D2	3310	A5	3570	E3	3860	B4	4432	C4	6037	A4	7007	A2
0348	B3	2046	B1	2417	A4	2790	C3	3028	A3	3142	C1	3311	A4	3583	E3	3861	C4	4433	B5	6039	B4	7008	A3
0351	D4	2049	A1	2418	A4	2791	B3	3029	B2	3143	C2	3312	A4	3584	E3	3866	B3	4434	E3	6040	B4	7009	B2
0352	C4	2050	A1	2422	A5	2792	B3	3030	A3	3145	E1	3313	A5	3585	E3	3867	B3	4435	E3	6102	D1	7010	B3
0353	B4	2051	A1	2423	A5	2801	C1	3031	A3	3146	E1	3314	A4	3570	C1	3873	B4	4436	A4	6103	D1	7011	B2
0355	A4	2052	A1	2424	A5	2802	C1	3032	A3	3147	F2	3315	A5	3751	C2	3877	B4	4500	D4	6104	D1	7012	A4
0356	A4	2053	A1	2425	A5	2803	C2	3033	A3	3148	E1	3316	A5	3752	C2	3878	C4	4612	C4	6106	D1	7013	A1
0360	B3	2054	A1	2426	A5	2804	C2	3034	B2	3149	D1	3317	A4	3753	C2	3879	B4	4613	C4	6107	D1	7014	B1
0361	D5	2055	B3	2428	A5	2805	C2	3035	B2	3154	D1	3318	A4	3754	C2	3880	C4	4615	B4	6200	F4	7015	B1
0362	B5	2101	F1	2429	A5	2806	C2	3036	B3	3155	D1	3320	A5	3755	B2	3881	B4	4617	B4	6201	F4	7016	A2
0364	A5	2109	D2	2430	A5	2807	C2	3039	B2	3204	F3	3321	A5	3756	B1	3882	C4	4619	B4	6202	F4	7019	A3
0366	A5	2110	D2	2431	C5	2808	C3	3041	B1	3214	D5	3322	A5	3758	C3	3890	C2	4626	B5	6203	F4	7020	B3
0368	B5	2116	D1	2432	C5	2810	C1	3042	B2	3217	D5	3324	A5	3760	C2	3891	C2	4627	B5	6204	F3	7102	D2
0369	A4	2117	E2	2433	C5	2811	B2	3043	A2	3225	F4	3325	A5	3761	B3	3894	D3	4702	D3	6205	F4	7103	D1
0370	E5	2119	C1	2434	C5	2813	B1	3045	A4	3226	D5	3326	A5	3762	C2	3895	A3	4703	D2	6206	F4	7104	D1
0371	C5	2121	D1	2435	C5	2815	C1	3047	A3	3228	E4	3330	A5	3765	C3	3897	C2	4704	D1	6207	F3	7105	D1
0372	D5	2126	F2	2436	B5	2816	C1	3048	A3	3229	F4	3331	A5	3766	C3	3898	D2	4720	C2	6208	F3	7106	E1
0373	B4	2204	F3	2437	B5	2817	B1	3049	A3	3234	D5	3332	A5	3767	B3	3899	C2	4721	C3	6209	F4	7107	E1
0375	A4	2205	F3	2440	B5	2818	C1	3050	A3	3237	D5	3334	A5	3768	B3	3999	F1	4725	B3	6210	F3	7108	D2
0376	F2	2212	F4	2501	E2	2819	B1	3051	A3	3238	C5	3340	A5	3780	B2	4003	B4	4726	B3	6211	F3	7109	E1
0381	F2	2213	F4	2502	E2	2820	B1	3052	A3	3239	E5	3341	A5	3781	C1	4005	A3	4728	C4	6212	F3	7111	E2
1001	A2	2222	F5	2503	E2	2822	B1	3053	A3	3247	F4	3342	A5	3782	C2	4006	B4	4729	C4	6213	F3	7113	D1
1101	F1	2224	F4	2504	E2	2824	C1	3054	A2	3248	F4	3344	A5	3784	C2	4008	B3	4730	D3	6214	F5	7200	F3
1102	F1	2226	F4	2505	E2	2826	D3	3055	A2	3249	F4	3345	A5	3785	C2	4009	A3	4737	B4	6215	F5	7201	F4
1104	D2	2240	F5	2506	E2	2827	B1	3056	A2	3251	E5	3350	A5	3786	C2	4010	A3	4738	D3	6216	F5	7203	F5
1105	D2	2241	F5	2507	E3	2829	C1	3057	A3	3252	F4	3351	A5	3787	C2	4011	A4	4739	D3	6217	F5	7204	F5
1106	D2	2242	D5	2508	E3	2831	C1	3059	A3	3253	F4	3352	A5	3788	C2	4012	A3	4740	D3	6218	F5	7205	A3
1107	D1	2243	D4	2509	E3	2832	C3	3062	B1	3254	F4	3353	A5	3789	C2	4014	A4	4741	C3	6219	F5	7206	D5
1108	D1	2244	D5	2510	E3	2833	D3	3063	A1	3255	F4	3369	A5	3790	C2	4015	A4	4742	A5	6220	F5	7207	C5
1109	D1	2245	D5	2511	E3	2834	C3	3066	A3	3259	A3	3370	A5	3791	C2	4017	A2	4743	A4	6221	F5	7208	C5
1200	F2	2246	D5	2512	E3	2837	B1	3067	A4	3260	A3	3400	A5	3792	C2	4018	A2	4750	D3	6222	F5	7209	D4
1201	F3	2247	D5	2520	D2	2838	C3	3068	A4	3261	A3	3401	A5	3793	C2	4019	A4	4751	D3	6223	F5	7216	A3
1202	F5	2248	D5	2521	D3	2839	D3	3069	A3	3262	A3	3402	A5	3794	C2	4021	A3	4801	D3	6224	F5	7300	A5
1305	A4	2249	C5	2522	D3	2840	C3	3070	A2	3263	A3	3404	A5	3795	C2	4022	A3	4802	A3	6225	F5	7341	A5
1525	D3	2250	C4	2525	D2	2841	C3	3071	B1	3264	F3	3405	A5	3798	D2	4023	A3	4807	D3	6226	F5	7351	A5
1526	D2	2251	D4	2526	D2	2842	D4	3072	B1	3265	F3	3406	A5	3799	D3	4024	B3	4810	C3	6227	F5	7402	A4
1527	D2	2252	E5	2527	D2	2844	D3	3073	A2	3266	F4	3407	A5	3800	D3	4025	B3	4811	C3	6228	F4	7417	A4
1528	D2	2253	E5	2528	D2	2845	C3	3074	A3	3267	E5	3408	A5	3801	C3	4027	A2	4853	D3	6229	F4	7418	A5
1751	C1	2254	E5	2533	E3	2846	C3	3075	A3	3268	D5	3409	A5	3802	B2	4029	A3	4854	A4	6230	F4	7419	A5
2001	B2	2255	E5	2538	E1	2847	C2	3076	A3	3269	C5	3412	A5	3811	B1	4101	D1	4857	B5	6231	F4	7420	A5
2002	B1	2256	E5	2539	E3	2848	C3	3080	B2	3270	F5	3420	A5	3812	B1	4102	E1	4858	A4	6232	F4	7424	A5
2003	A1	2257	E5	2540	E1	2849	C3	3082	B3	3271	F5	3423	A5	3813	B1	4105	D1	4859	B5	6233	F3	7426	C5
2005	A1	2258	D5	2541	E2	2851	D3	3083	B3	3273	F5	3424	A5	3814	C1	4108	E1	4862	B2	6238	A3	7427	C5
2006	A1	2259	E4	2545	E2	2852	C4	3084	B3	3274	F5	3425	A5	3818	B1	4109	E1	5002	A2	6239	F5	7438	A5
2007	A1	2260	D5	2550	E5	2853	C4	3085	B3	3275	C5	3426	A5	3819	B1	4111	E1	5101	D1	6240	F5	7501	D2
2008	A2	2300	A4	2555	F5	2854	C4	3086	A2	3276	D5	3427	A5	3820	C3	4112	D2	5103	D1	6241	F5	7502	E2
2009	A2	2301	A5	2556	E5	2855	C4	3090	A2	3277	D5	3428	A5	3821	C3	4201	E2	5104	D1	6242	F5	7560	E5
2010	A2	2303	A5	2557	E5	2856	B4	3091	A2	3278	D5	3429	A5	3822	C3	4202	D5	5106	E1	6243	F5	7575	E3
2011	A2	2304	A5	2558	E5	2857	C4	3092	A2	3279	D5	3430	A5	3825	D3	4212	D4	5108	D2	6244	F5	7750	B1
2012	A3	2307	A4	2559	E5	2858	B4	3093	A2	3281	D5	3431	A4	3827	C3	4215	E5	5109	D1	6250	A3	7751	B2
2013	A3	2308	A4	2560	E5	2859	C4	3094	A2	3282	D4	3432	A4	3828	D3	4216	E5	5305	A5	6259	F3	7753	C2
2014	A2	2309	A5	2561	E5	2860	B4	3095	A2	3283	D4	3433	A4	3829	D2	4217	E5	5306	A5	6310	A4	7756	B3
2015	A3	2310	A4	2562	E5	2864	B4	3096	A2	3284	D5	3434	A4	3833	B2	4218	D4	5307	A5	6311	A4	7757	B3
2016	A2	2311	A5	2563	E5	2869	B2	3097	A2	3285	D5	3435	A5	3837	D3	4219	D5	5501	E1	6334	A5	7770	B1
2021	A3	2312	A4	2565	E2	2870	B3	3098	A2	3286	C5	3436	A4	3838	B1	4222	C5	5502	F1	6340	A5	7772	D3
2022	A3	2315	A5	2566	E2	2871	C3	3099	A2	3287	C5	3448	C5	3839	B1	4226	F2	5540	E2	6341	A5	7773	C3
2023	A3	2321	A5	2568	E3	2872	B4	3102	E1	3288	D4	3449											



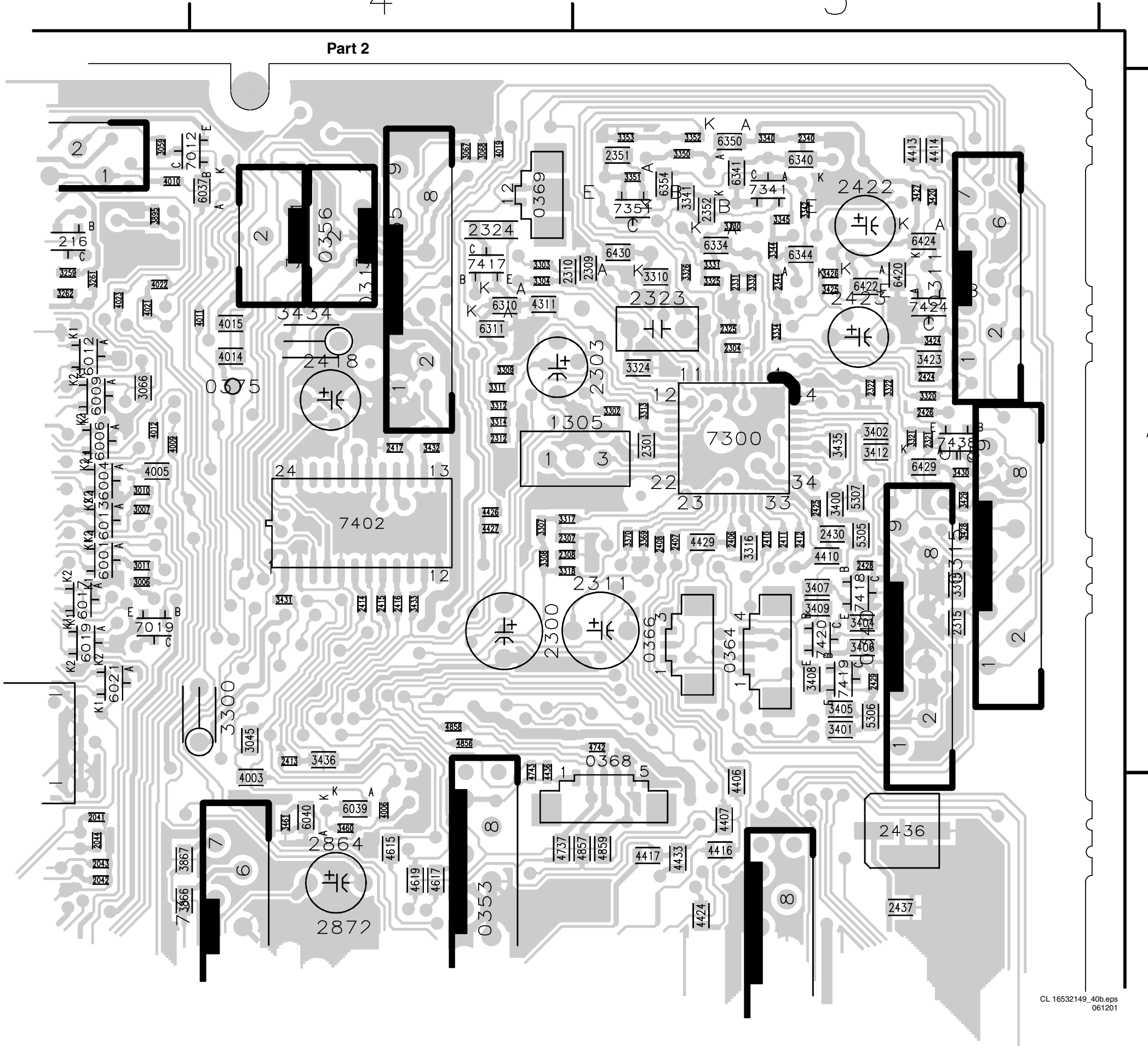


Layout Small Signal Board (Top View Part 2)

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Part 2



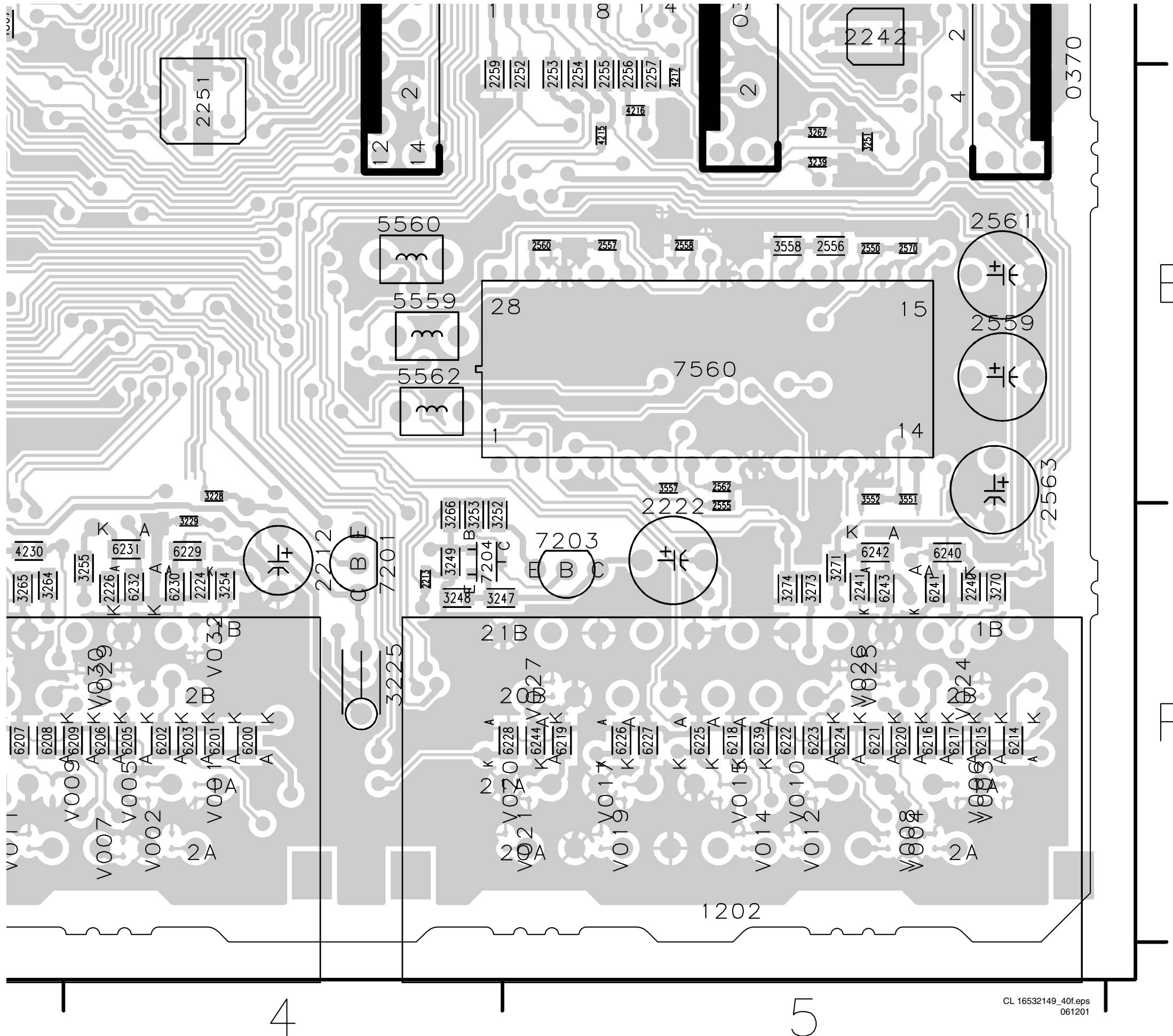
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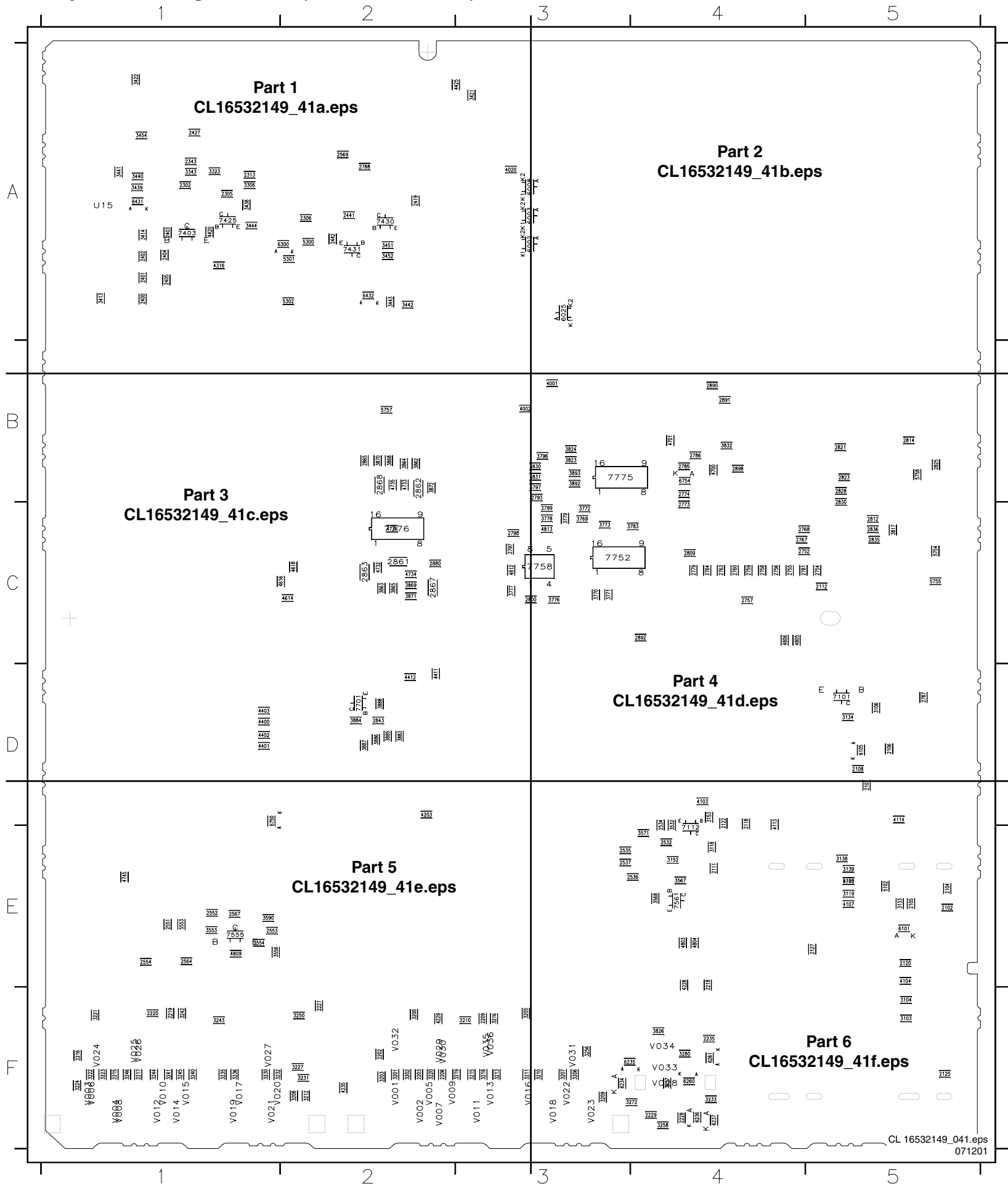




Layout Small Signal Board (Top View Part 6)



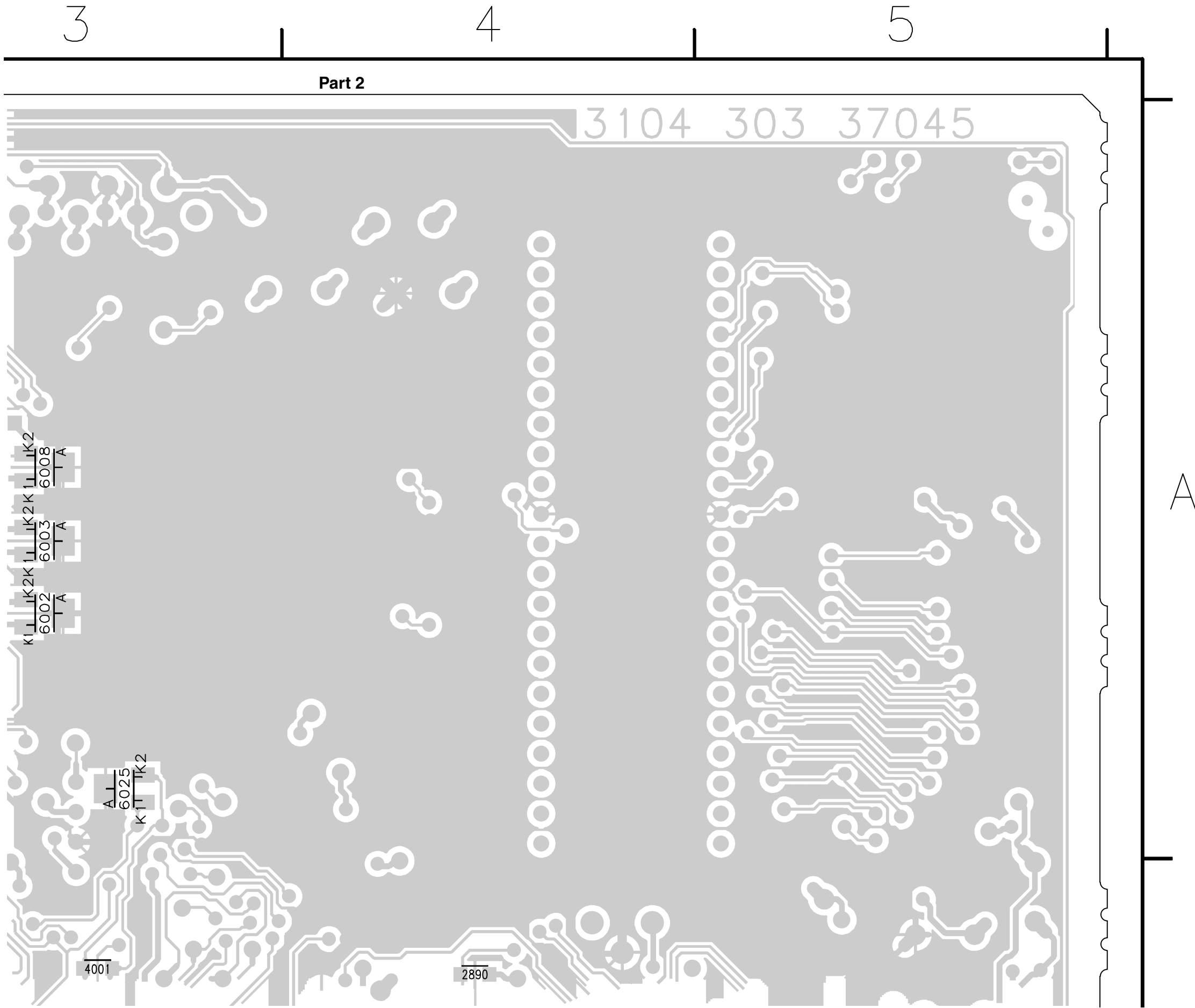
Layout Small Signal Board (Bottom Overview)



2102 E5	2787 D5	3244 F1	4103 D4	7752 C3
2104 E5	2788 A2	3245 F1	4104 E5	7758 C3
2105 E5	2793 B3	3246 F1	4107 E5	7775 B3
2106 D5	2797 C3	3250 F2	4110 E5	7776 C2
2107 D5	2798 C3	3256 F3	4113 D4	
2108 D5	2799 C3	3257 F4	4114 D5	
2111 E4	2800 C3	3258 F4	4203 D2	
2112 C5	2809 C4	3272 F4	4228 E4	
2118 D4	2812 C5	3280 F4	4229 F2	
2120 E5	2814 B5	3306 A1	4235 F2	
2122 D4	2821 B5	3323 A1	4316 A1	
2125 F5	2823 B5	3343 A1	4400 D1	
2127 E5	2825 B5	3413 A1	4401 D1	
2202 F2	2828 B5	3414 A1	4402 D1	
2203 F2	2830 C5	3421 A3	4403 D1	
2206 F2	2835 C5	3422 A1	4411 D2	
2209 F3	2836 C5	3438 A1	4412 D2	
2210 F3	2843 D2	3439 A1	4420 A1	
2215 F1	2861 C2	3440 A1	4425 A3	
2216 F1	2862 B2	3441 A1	4614 C2	
2217 F1	2863 C2	3442 A2	4616 C2	
2218 E4	2865 B2	3443 A2	4618 C2	
2219 F1	2867 C2	3444 A1	4700 B4	
2220 F1	2868 B2	3451 A2	4701 B4	
2221 F2	2880 C2	3452 A2	4732 C2	
2228 F4	2890 B4	3454 A1	4733 B2	
2229 F4	2891 B4	3532 D4	4734 C2	
2235 F4	2892 C4	3553 E1	4735 B2	
2302 A1	2898 B4	3554 E1	4736 C2	
2305 A1	3103 F5	3556 E1	4745 E1	
2306 A2	3104 F5	3567 E4	4803 E4	
2313 A1	3106 D5	3568 E4	4804 E4	
2343 A1	3118 E4	3571 E4	4805 C4	
2400 A1	3119 E5	3590 E1	4806 C4	
2401 A1	3133 E5	3769 C3	4809 E1	
2402 A1	3134 D5	3770 C3	4812 C3	
2403 A1	3138 E5	3771 C3	4813 C3	
2404 A1	3139 E5	3772 C3	5102 E5	
2405 A1	3152 E4	3773 C3	5105 E5	
2419 A2	3153 D4	3776 C3	5300 A2	
2427 A1	3200 F2	3777 C3	5301 A2	
2441 A2	3201 F2	3778 C3	5302 A2	
2442 A2	3202 F2	3779 C3	5553 E1	
2532 E4	3203 F2	3783 C4	5754 C5	
2534 D4	3205 F3	3796 B3	5755 C5	
2535 E3	3206 F3	3797 B3	5757 B2	
2536 E4	3207 F3	3817 C5	5758 B5	
2537 E3	3208 F2	3823 B3	6002 A3	
2551 E1	3209 F3	3824 B3	6003 A3	
2552 E1	3210 F3	3826 F4	6008 A3	
2553 E1	3211 F3	3830 B3	6025 A3	
2554 E1	3212 F2	3831 B3	6101 E5	
2564 E1	3213 F3	3832 B4	6105 D5	
2567 E1	3215 F3	3862 B2	6234 F3	
2569 A2	3216 F3	3863 C2	6235 F3	
2752 C4	3218 F3	3864 B2	6236 F4	
2754 C5	3219 F3	3865 C2	6237 F4	
2755 C4	3220 F2	3868 B2	6260 F4	
2756 C4	3221 F1	3869 C2	6261 F4	
2757 C4	3222 F1	3870 B2	6300 A2	
2758 C4	3223 F1	3871 C2	6431 A1	
2759 C4	3224 F1	3872 B2	6432 A2	
2760 C4	3227 F2	3883 D2	6750 D1	
2763 C4	3230 F1	3884 D2	6754 B4	
2764 C4	3231 F2	3885 D2	7101 D5	
2767 C4	3232 F1	3886 D2	7112 D4	
2768 C4	3233 F4	3887 D2	7403 A1	
2773 C4	3235 F1	3888 D2	7425 A1	
2774 B4	3236 F1	3892 B3	7430 A2	
2779 C4	3240 F1	3893 B3	7431 A2	
2781 C4	3241 F1	4001 B3	7555 E1	
2785 B4	3242 F1	4002 B3	7561 E4	
2786 B4	3243 F1	4020 A3	7701 D2	

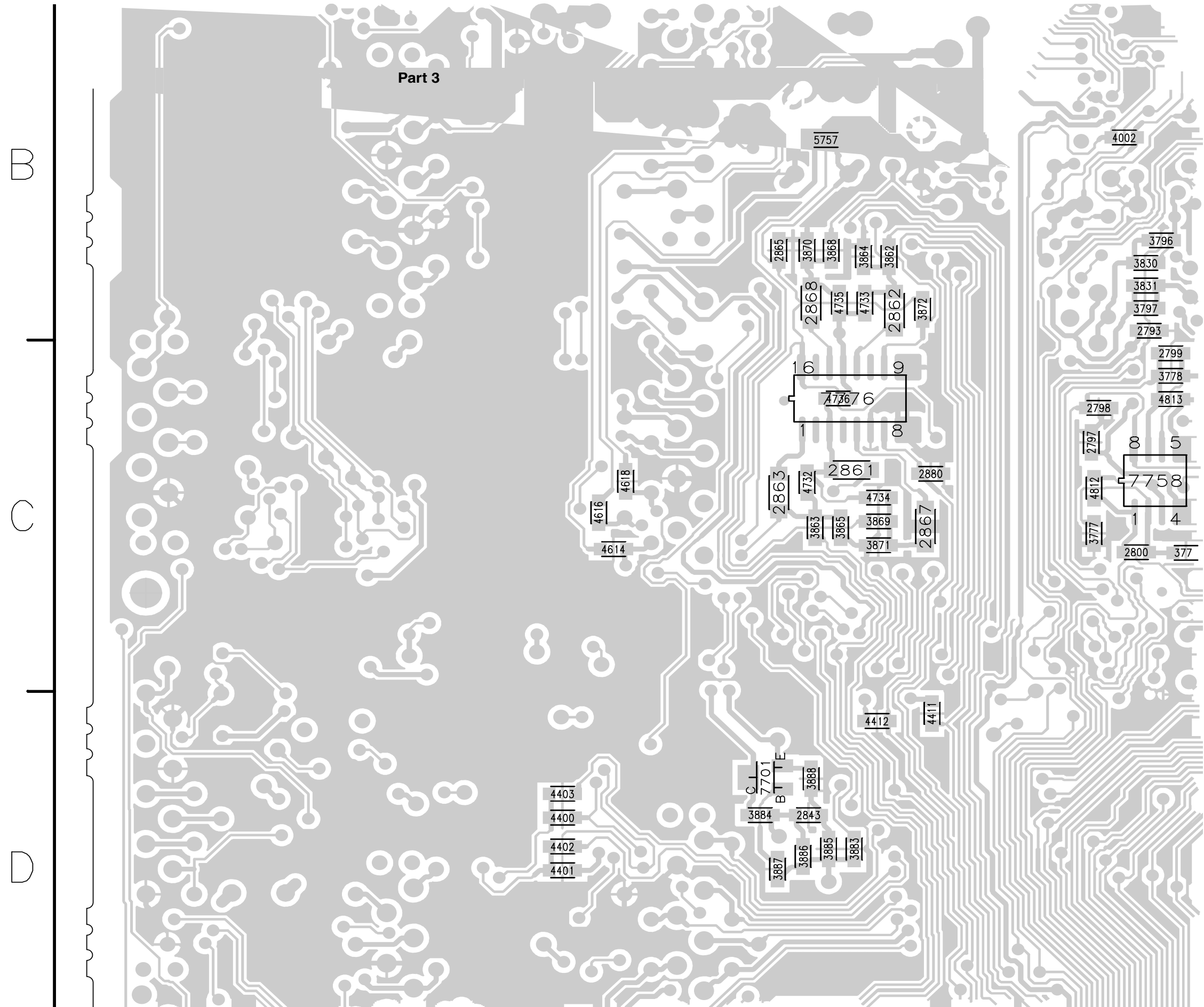


Layout Small Signal Board (Bottom View Part 2)





Layout Small Signal Board (Bottom View Part 3)

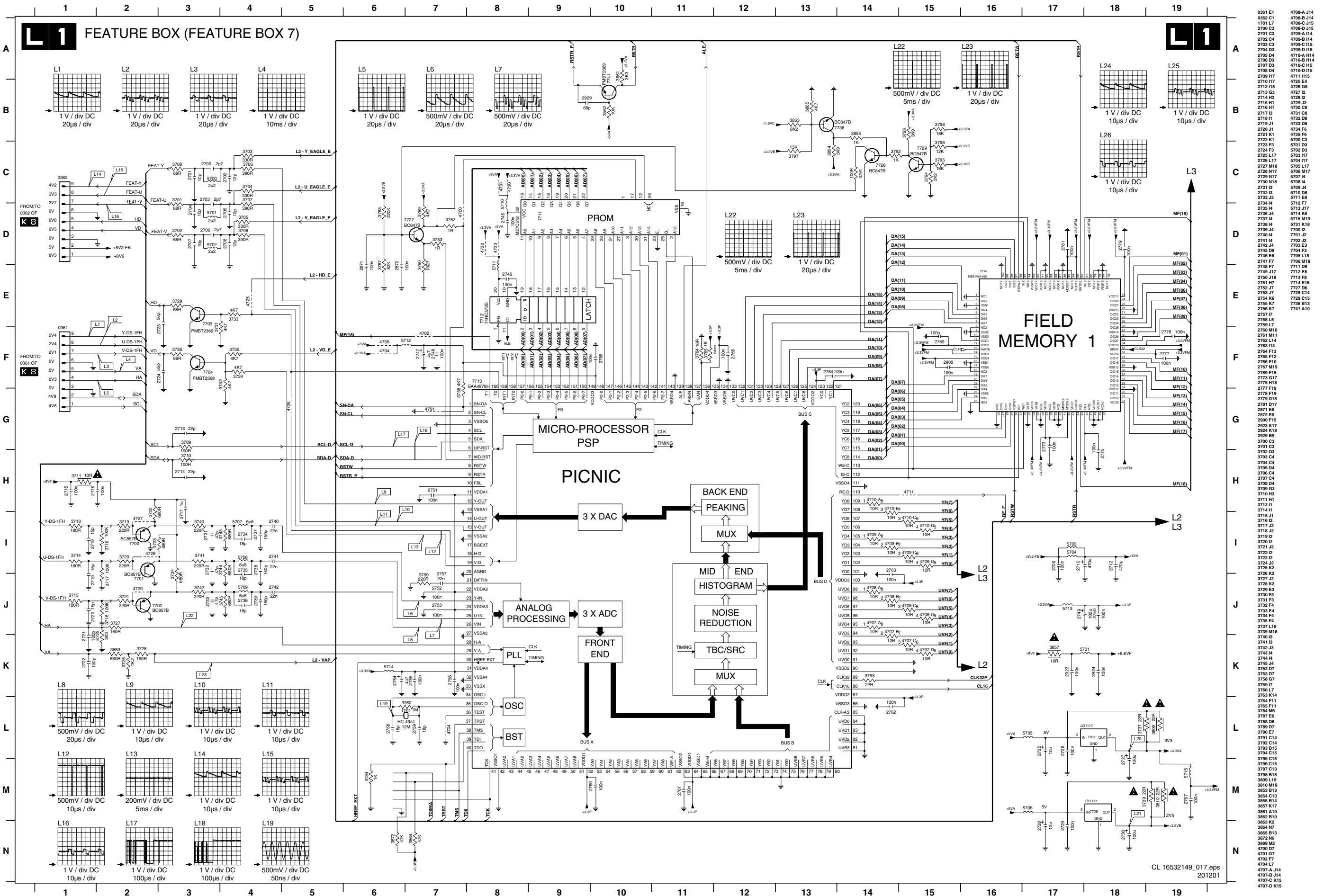




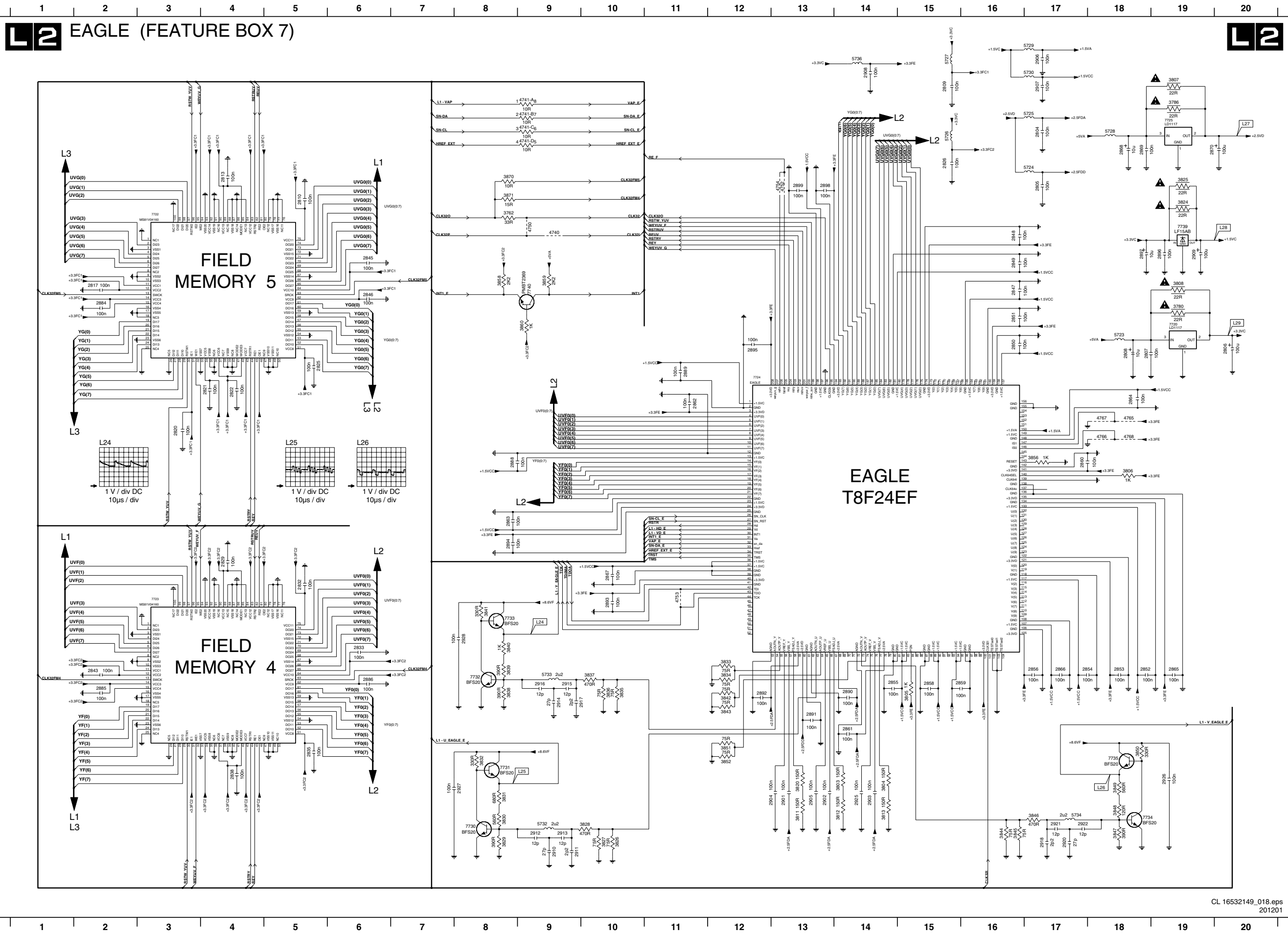




Feature Box 7 Panel: Feature Box

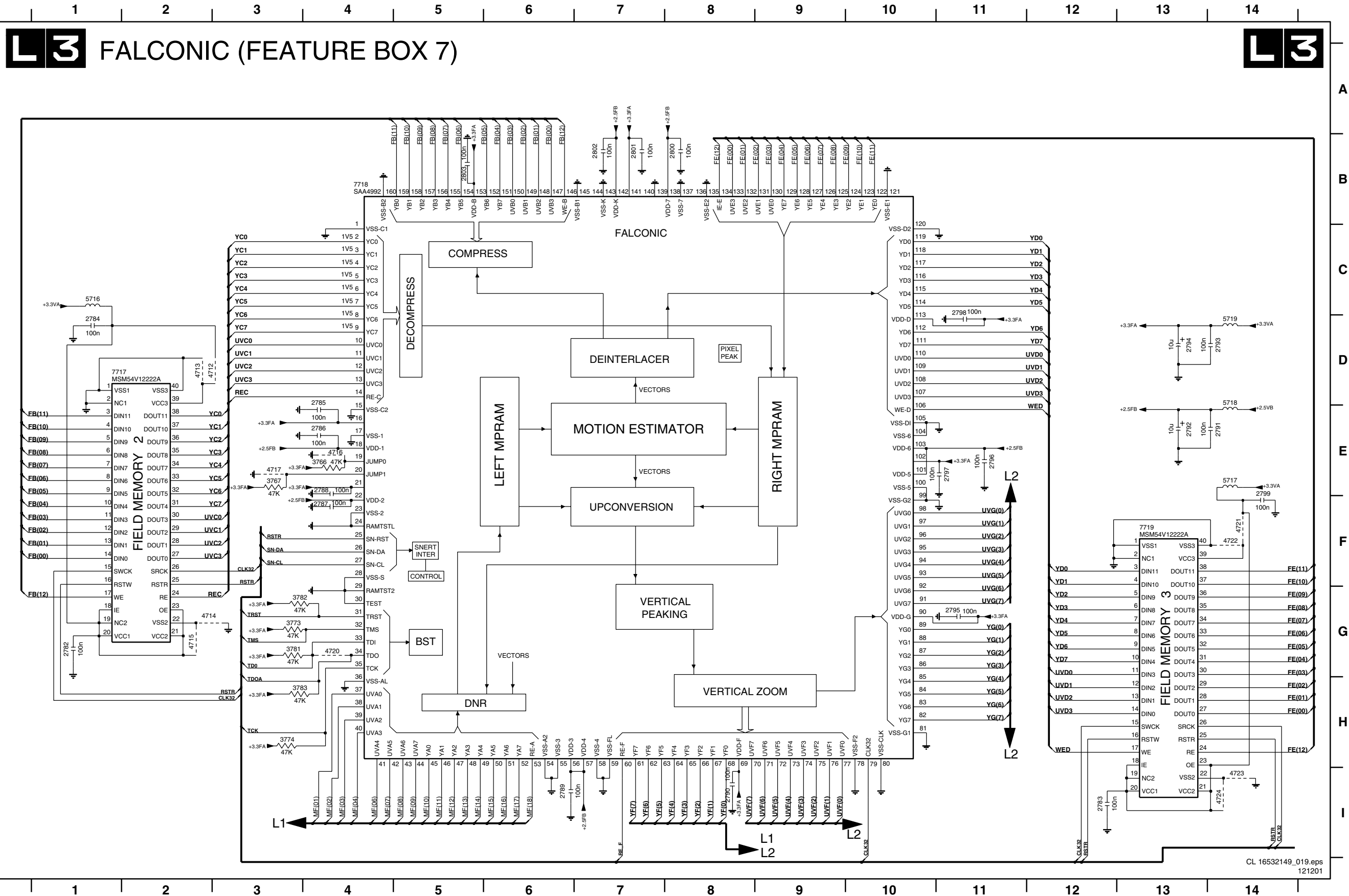


Feature Box 7 Panel: Eagle



2804 B17  
2805 C17  
2806 D20  
2807 F18  
2808 F18  
2809 A15  
2810 C5  
2811 C4  
2812 E2  
2820 G3  
2821 F4  
2822 F4  
2825 F5  
2826 C15  
2829 I4  
2832 I5  
2833 A6  
2835 L5  
2838 L4  
2843 K2  
2845 D6  
2846 E9  
2847 E16  
2848 D16  
2849 D16  
2850 F16  
2851 E16  
2852 K18  
2853 K18  
2854 K17  
2855 C14  
2856 K17  
2858 K15  
2859 I15  
2860 G17  
2861 L14  
2862 F11  
2863 H8  
2864 F18  
2865 I19  
2866 K17  
2867 H0  
2868 B18  
2869 B18  
2870 B19  
2882 C2  
2885 K2  
2886 K6  
2888 G8  
2889 F11  
2890 K14  
2891 K15  
2892 K12  
2893 I10  
2894 I8  
2895 F12  
2896 D19  
2897 D18  
2898 C13  
2899 C13  
2901 M13  
2902 M13  
2903 M14  
2904 M13  
2905 M13  
2906 A17  
2907 A17  
2908 A14  
2909 D19  
2910 N9  
2911 N9  
2912 M9  
2913 M9  
2914 M9  
2917 G9  
2918 K9  
2919 K9  
2918 M17  
2920 M17  
2921 M17  
2922 M17  
2925 M14  
2925 I19  
2927 M8  
2928 J8  
2929 E19  
2932 G8  
2932 H8  
2932 L8  
2933 K12  
2934 I12  
2935 K10  
2936 K10  
2937 I10  
2938 K8  
2939 K8  
2940 J8  
2941 J8  
2942 K12  
2943 I12  
2944 M16  
2945 I16  
2946 M17  
2947 M17  
2948 M18  
2949 M18  
2950 L18  
2951 L12  
2952 L12  
2956 G17  
2958 E9  
2959 E9  
2960 E9  
2961 C8  
2962 C8  
2963 C8  
2964 D9  
2965 D9  
2966 D9  
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2968 D9  
2969 D9  
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2985 D9  
2986 D9  
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2989 D9  
2990 D9  
2991 D9  
2992 D9  
2993 D9  
2994 D9  
2995 D9  
2996 D9  
2997 D9  
2998 D9  
2999 D9  
3000 D9

Feature Box 7 Panel: Falconic



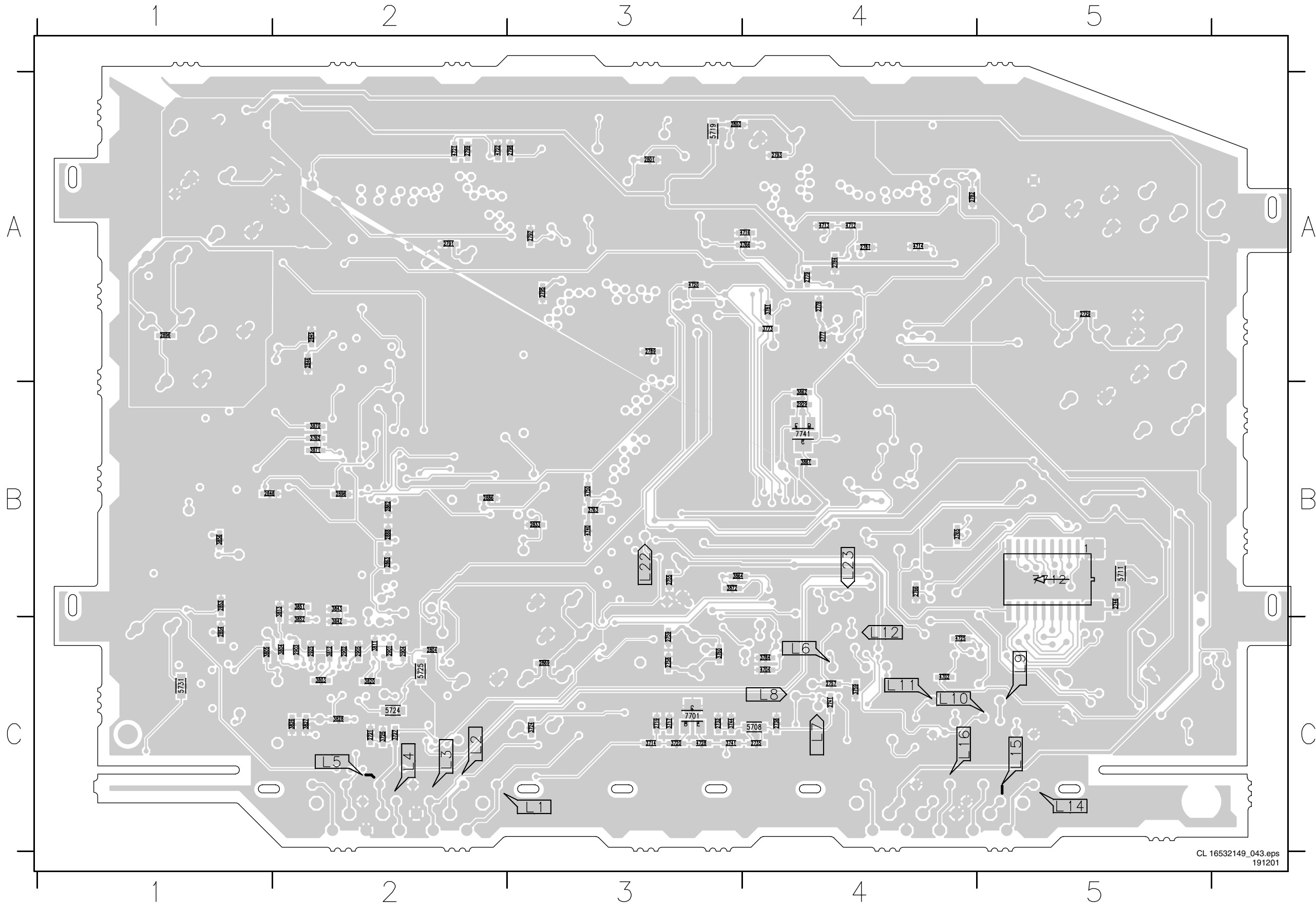
- 2782 G1
- 2783 I12
- 2784 D1
- 2785 D4
- 2786 E4
- 2787 F4
- 2788 E4
- 2789 I6
- 2790 I8
- 2791 E14
- 2792 E13
- 2793 D14
- 2794 D13
- 2795 G11
- 2796 E11
- 2797 E11
- 2798 C11
- 2799 E14
- 2800 B8
- 2801 B7
- 2802 B7
- 2803 B5
- 3766 E4
- 3767 E3
- 3773 G3
- 3774 H3
- 3781 G3
- 3782 G3
- 3783 H3
- 4712 D3
- 4713 D2
- 4714 G2
- 4715 G2
- 4716 E4
- 4717 E3
- 4720 G4
- 4721 F14
- 4722 F14
- 4723 I14
- 4724 I14
- 5716 C1
- 5717 E14
- 5718 D14
- 5719 D14
- 7717 D1
- 7718 B4
- 7719 F13





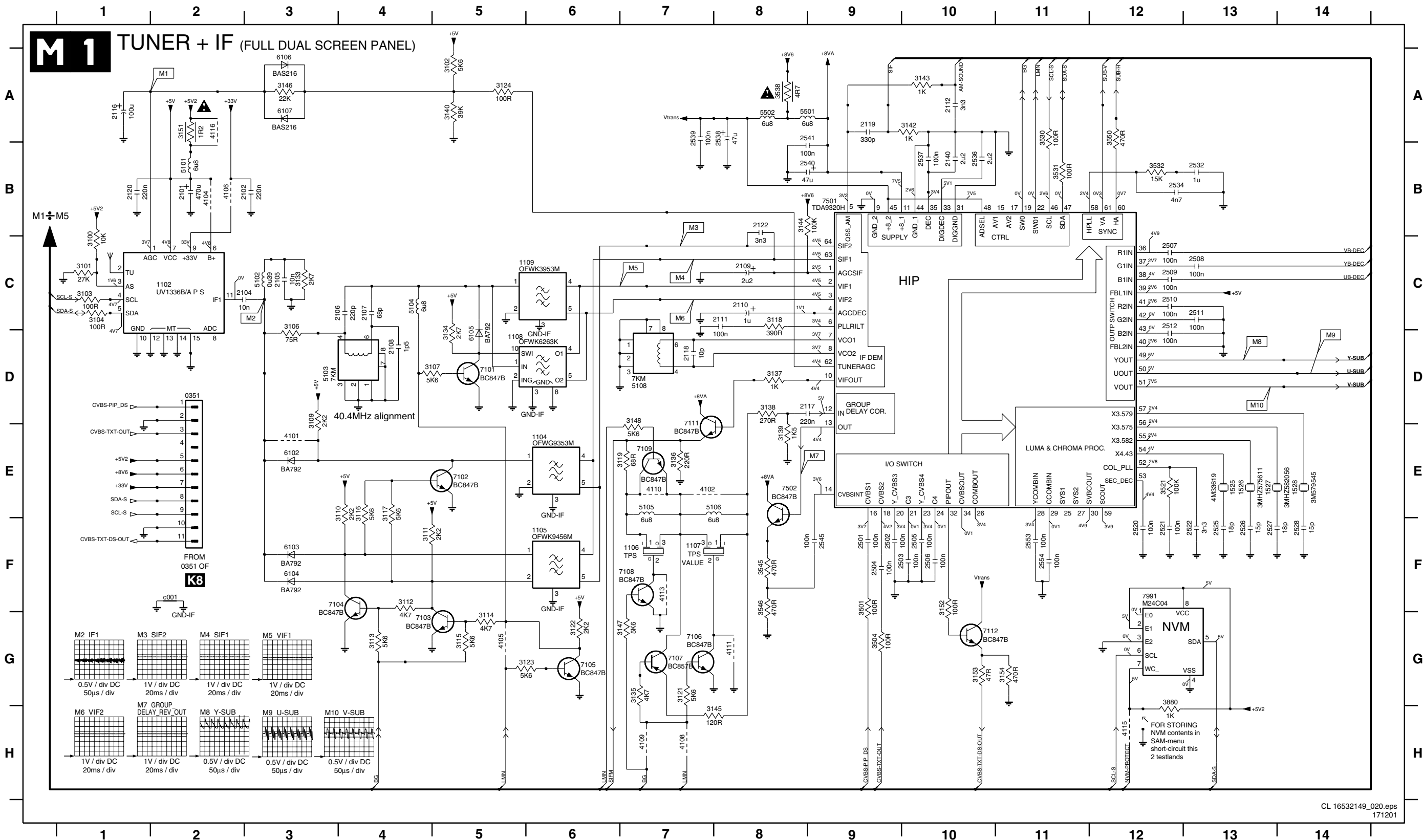
Layout Feature Box 7 Panel (Bottom View)

2719 C3	2738 C4	2758 C3	2779 A4	2791 A2	2799 A2	2845 A2	2862 B2	2896 A1	2904 C2	3717 C3	3741 C3	3763 B3	3784 C4
2721 C2	2741 C4	2759 C3	2781 A4	2793 A4	2801 A3	2846 A2	2863 B2	2898 B2	2905 C2	3720 C3	3744 C3	3765 B4	3803 C2
2729 A5	2746 B5	2766 B4	2782 A4	2795 A3	2803 A3	2848 B1	2869 C3	2901 C2	2925 C2	3724 C3	3759 C4	3766 A4	3804 C2
2732 C3	2755 B3	2777 A4	2784 A4	2797 A3	2804 C2	2853 B1	2886 B2	2902 C2	2929 B4	3725 C2	3760 C3	3773 A4	3805 C1
2735 C4	2757 C4	2778 A4	2789 A3	2798 A3	2833 B3	2854 C1	2888 B2	2903 C2	3714 C3	3727 C2	3762 B2	3781 A4	3811 C2



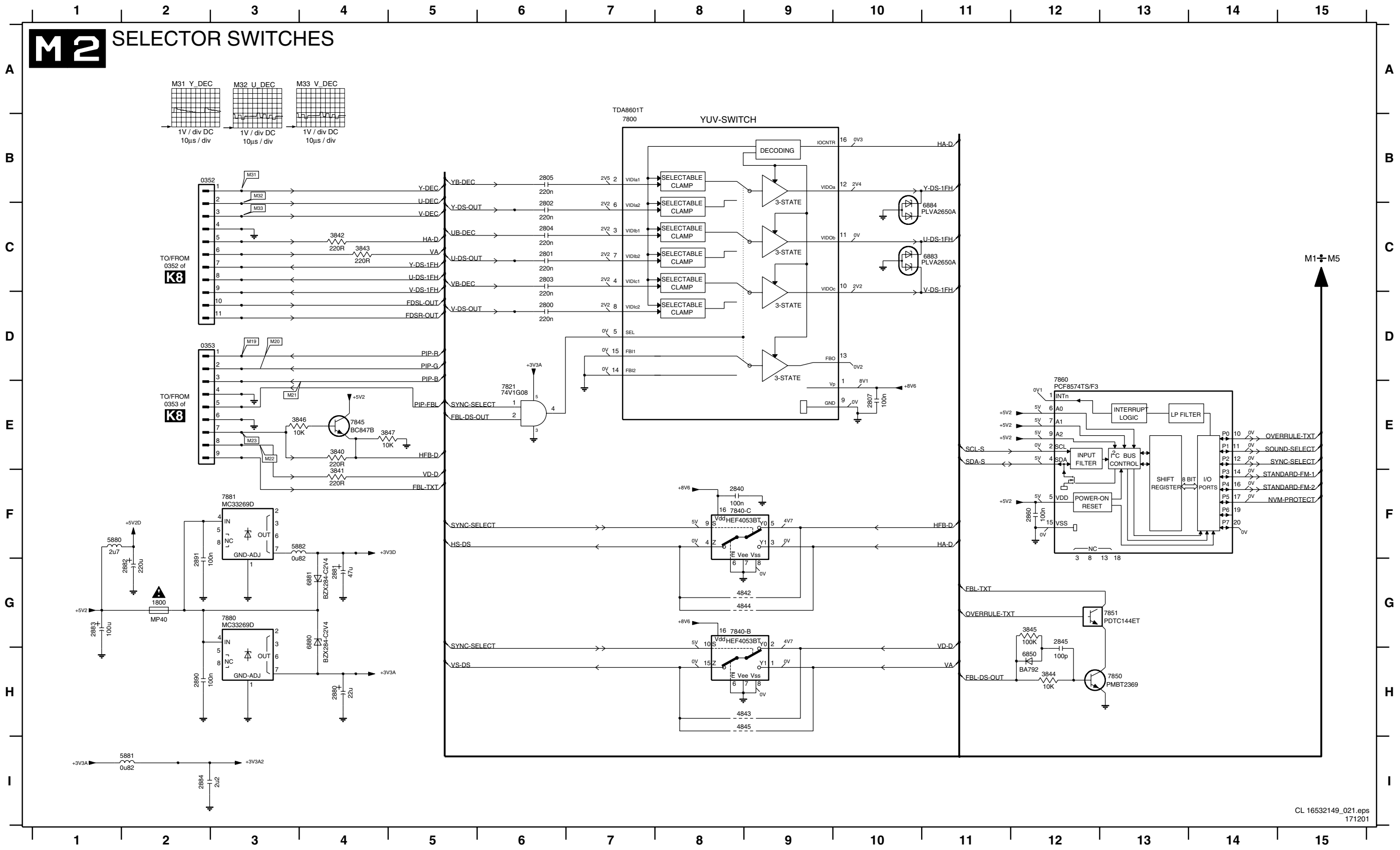
FDS Module: Tuner and IF (Full Dual Screen)

0351 D2	1109 C5	2104 C2	2111 C8	2122 B8	2506 F10	2520 F12	2532 B13	2541 A8	3103 C1	3112 F4	3119 E7	3135 G7	3143 A10	3152 F10	3531 B11	4101 E3	4110 E7	5103 D3	6102 E3	7102 E5	7109 E7
1102 C2	1525 E13	2105 C3	2112 A10	2140 B10	2507 C12	2521 F12	2534 B12	2545 F9	3104 C1	3113 G4	3121 G7	3136 E7	3144 B8	3153 G11	3532 B12	4102 E7	4111 G8	5104 C4	6103 F3	7103 G4	7111 E7
1104 E6	1526 E13	2106 C4	2116 A1	2501 F9	2508 C13	2522 F13	2536 B10	2553 F11	3106 C3	3114 G5	3122 G6	3137 D8	3145 H8	3154 G11	3538 A8	4104 B2	4113 F7	5105 E7	6104 F3	7104 F4	7112 G10
1105 F6	1527 E13	2107 C4	2117 D8	2502 F9	2509 C12	2525 F13	2537 B10	2554 F11	3107 D5	3115 G5	3123 G6	3138 D8	3146 A3	3501 F9	3545 F8	4105 G5	4115 H12	5106 E7	6105 D5	7105 G6	7501 B9
1106 F7	1528 E14	2108 D4	2118 D7	2503 F10	2510 C12	2526 F13	2538 A8	3100 C1	3109 D3	3116 E4	3124 A5	3139 E8	3147 G7	3504 G9	3546 F8	4106 B2	4116 A2	5108 D7	6106 A3	7106 G7	7502 E8
1107 F7	2101 B2	2109 C8	2119 A9	2504 F9	2511 C13	2527 F13	2539 A7	3101 C1	3110 E4	3117 E4	3133 C3	3140 A4	3148 D7	3521 E12	3550 A12	4108 H7	5101 B2	5501 A8	6107 A3	7107 G7	7991 F12
1108 D5	2102 B3	2110 C8	2120 B1	2505 F10	2512 C12	2528 F14	2540 B8	3102 A4	3111 F4	3118 C8	3134 D5	3142 A10	3151 A2	3530 A11	3880 G12	4109 H7	5102 C3	5502 A8	7101 D5	7108 F6	c001 F1



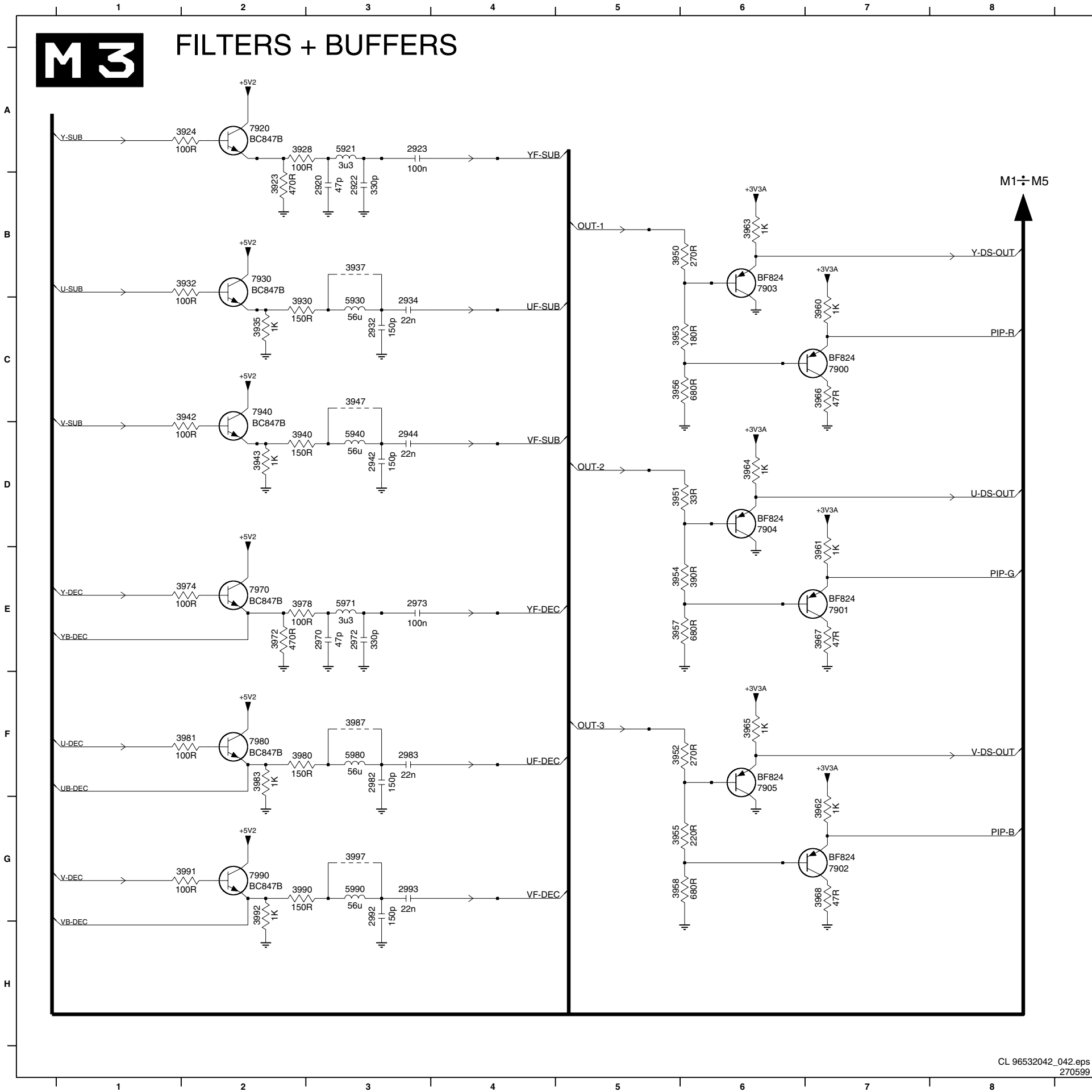
FDS Module: Selector Switches

0352 B3	2800 D6	2803 C6	2807 E10	2860 F12	2882 G2	2890 H2	3841 F4	3844 H12	3847 E4	4843 H8	5880 F1	6850 H12	6883 C11	7821 E6	7845 E4	7860 E12
0353 D3	2801 C6	2804 C6	2840 F8	2880 H4	2883 G1	2891 G2	3842 C4	3845 G12	3999 B2	4844 G8	5881 I2	6880 G4	6884 C11	7840-B G8	7850 H13	7880 G3
1800 G2	2802 C6	2805 B6	2845 G12	2881 G4	2884 I2	3840 E4	3843 C4	3846 E3	4842 G8	4845 H8	5882 F3	6881 G4	7800 B7	7840-C F8	7851 G13	7881 F3



FDS Module: Filters and Buffers

# M3 FILTERS + BUFFERS



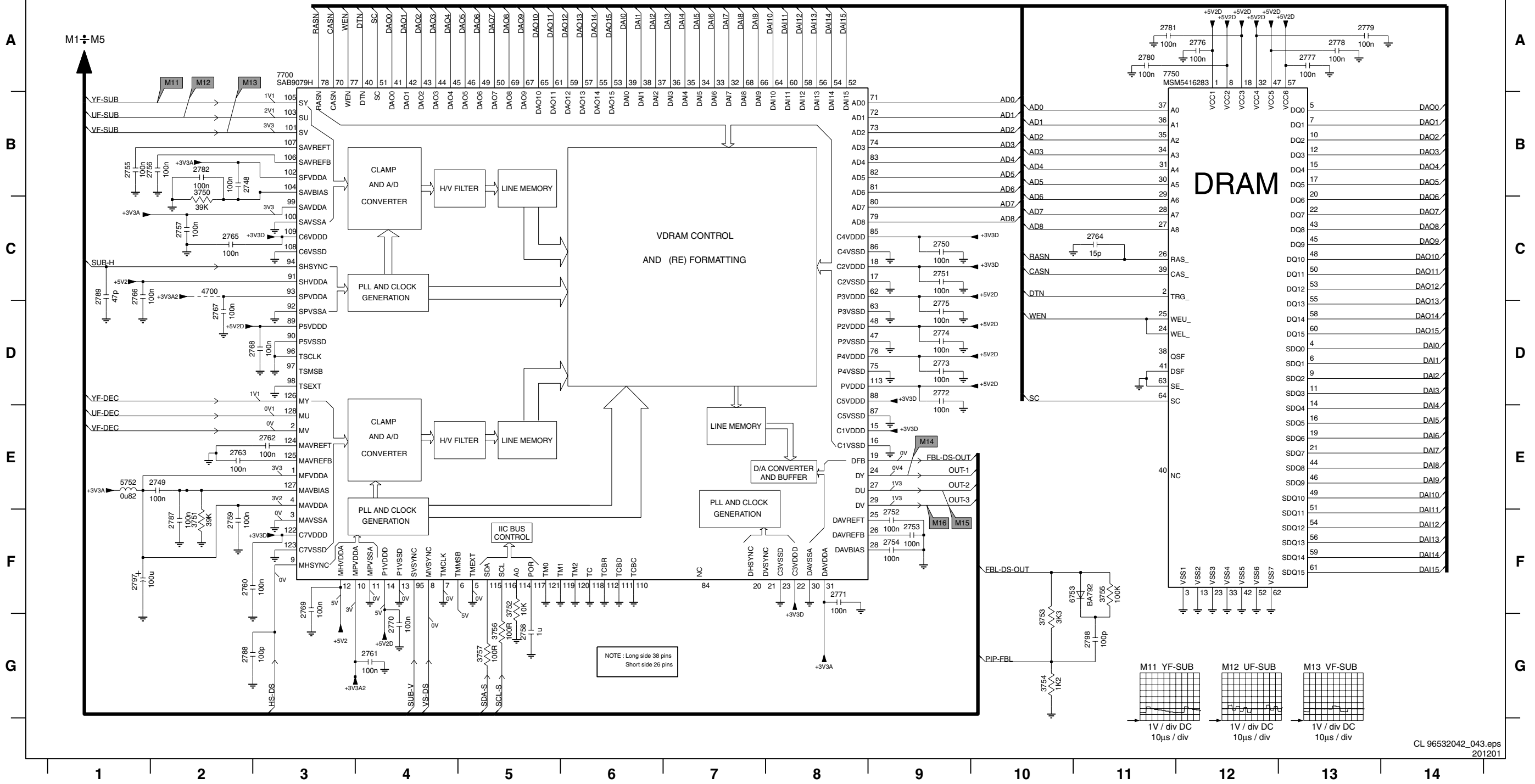
- 2920 B3
- 2922 B3
- 2923 A3
- 2932 C3
- 2934 C3
- 2942 D3
- 2944 D3
- 2970 E3
- 2972 E3
- 2973 E3
- 2982 F3
- 2983 F3
- 2992 G3
- 2993 G3
- 3923 B2
- 3924 A2
- 3928 A2
- 3930 C2
- 3932 B2
- 3935 C2
- 3937 B3
- 3940 D2
- 3942 C2
- 3943 D2
- 3947 C3
- 3950 B5
- 3951 D5
- 3952 F5
- 3953 C5
- 3954 E5
- 3955 G5
- 3956 C5
- 3957 E5
- 3958 G5
- 3960 C7
- 3961 E7
- 3962 G7
- 3963 B6
- 3964 D6
- 3965 F6
- 3966 C7
- 3967 E7
- 3968 G7
- 3972 E2
- 3974 E2
- 3978 E2
- 3980 F2
- 3981 F2
- 3983 F2
- 3987 F3
- 3990 G2
- 3991 G2
- 3992 G2
- 3997 G3
- 5921 A3
- 5930 C3
- 5940 D3
- 5971 E3
- 5980 F3
- 5990 G3
- 7900 C7
- 7901 E7
- 7902 G7
- 7903 B6
- 7904 D6
- 7905 F6
- 7920 A2
- 7930 B2
- 7940 C2
- 7970 E2
- 7980 F2
- 7990 G2

FDS Module: Dual Screen IC and Memory

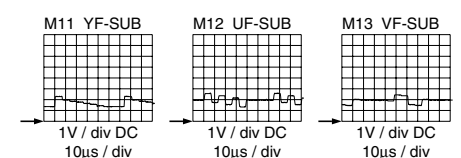
2748 B2 2750 C9 2752 F9 2754 F9 2756 B2 2758 G5 2760 F2 2762 E3 2764 C11 2766 C1 2768 D3 2770 G4 2772 D9 2774 D9 2776 A12 2778 A13 2780 A11 2782 B2 2788 G2 2797 F1 3750 B2 3752 F5 3754 G10 3756 G5 4700 C2 6753 F11 7750 A11  
2749 E2 2751 C9 2753 F9 2755 B1 2757 C2 2759 F2 2761 G4 2763 E2 2765 C2 2767 D2 2769 F3 2771 F8 2773 D9 2775 D9 2777 A13 2779 A13 2781 A11 2787 F2 2789 C1 2798 G11 3751 F2 3753 G10 3755 F11 3757 G5 5752 E1 7700 A3

M4

DUAL SCREEN IC + MEMORY

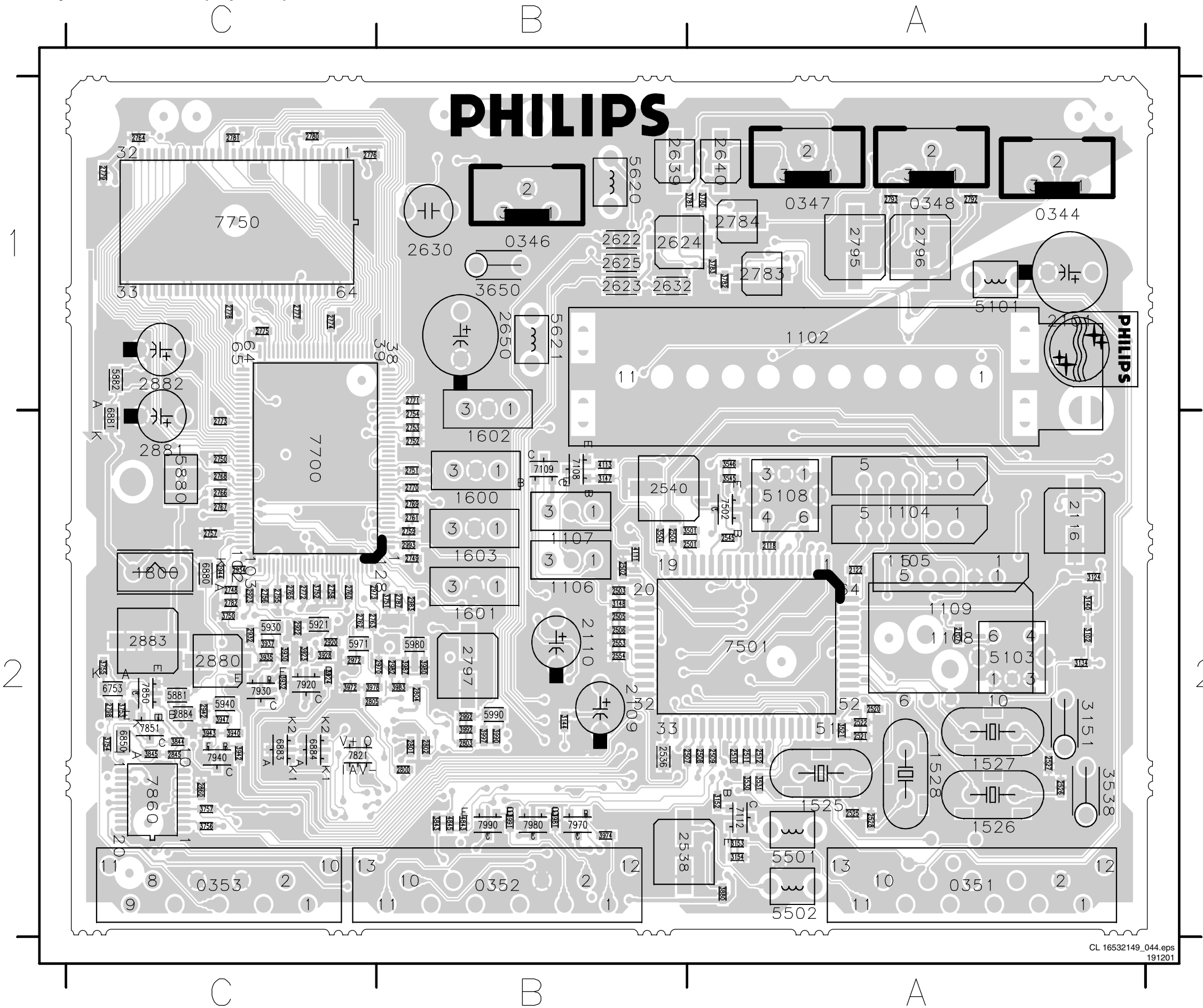


NOTE: Long side 38 pins  
Short side 26 pins



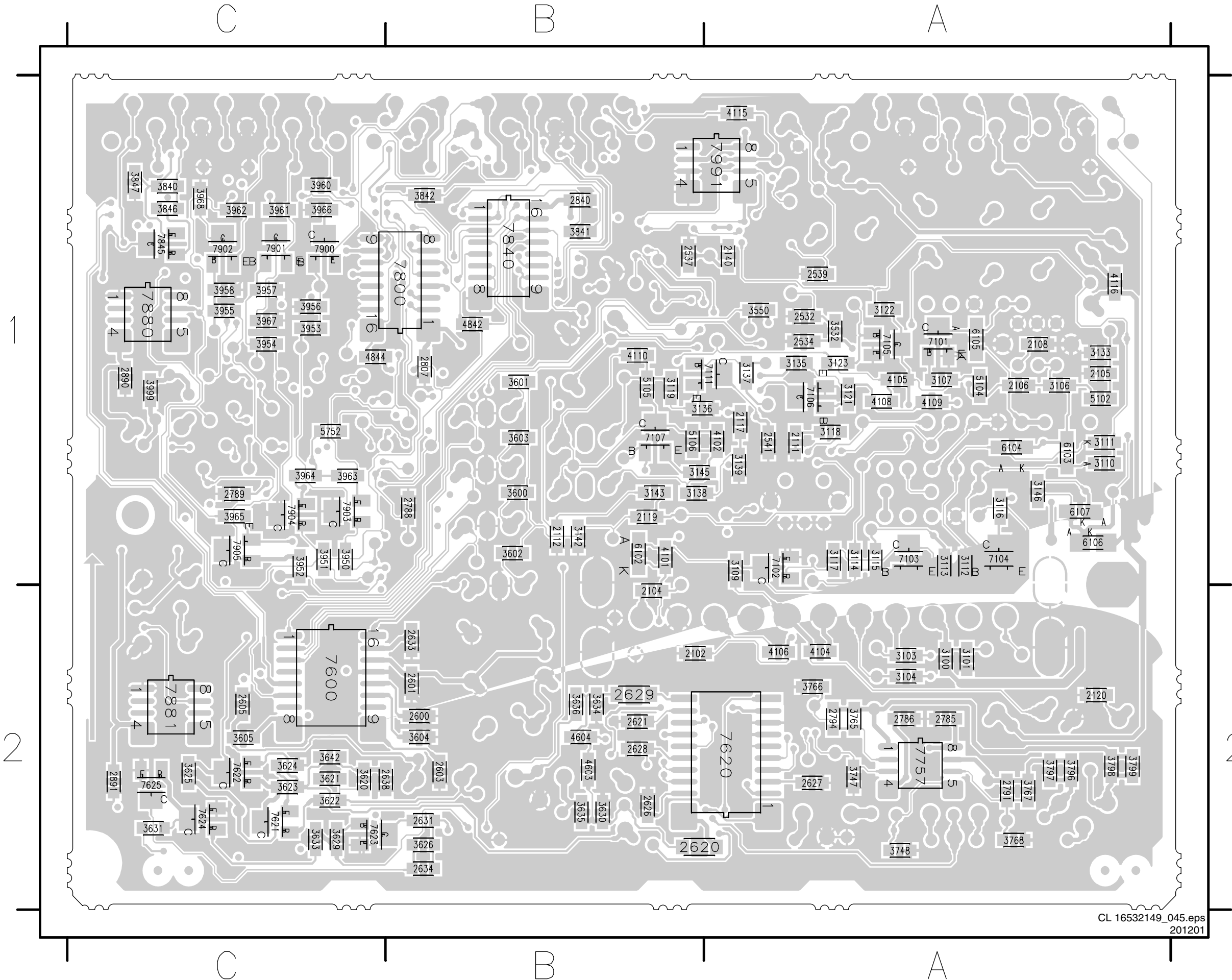


Layout FDS Module (Top View)



0344	A1	2757	C2	3501	A2	7108	B2
0346	B1	2758	C2	3504	B2	7109	B2
0347	A1	2759	B2	3521	A2	7112	A2
0348	A1	2760	C2	3530	A2	7501	B2
0351	A2	2761	B2	3531	A2	7502	A2
0352	B2	2762	C2	3538	A2	7700	C1
0353	C2	2763	C2	3545	A2	7750	C1
1102	A1	2764	C1	3546	A2	7821	C2
1104	A2	2765	C2	3650	B1	7850	C2
1105	A2	2766	C2	3750	C2	7851	C2
1106	B2	2767	C2	3751	B2	7860	C2
1107	B2	2768	C2	3752	C2	7920	C2
1108	A2	2769	B2	3753	C2	7930	C2
1109	A2	2770	B2	3754	C2	7940	C2
1525	A2	2771	B1	3755	C2	7970	B2
1526	A2	2772	C2	3756	C2	7980	B2
1527	A2	2773	C2	3757	C2	7990	B2
1528	A2	2774	C1	3780	A1		
1600	B2	2775	C1	3781	A1		
1601	B2	2776	C1	3782	A1		
1602	B2	2777	C1	3783	A1		
1603	B2	2778	C1	3843	B2		
1800	C2	2779	C1	3844	C2		
2101	A1	2780	C1	3845	C2		
2107	A2	2781	C1	3880	A2		
2109	B2	2782	C2	3923	C2		
2110	B2	2783	A1	3924	C2		
2116	A2	2784	A1	3928	C2		
2118	A2	2787	B2	3930	C2		
2122	A2	2792	A1	3932	C2		
2501	A2	2793	A1	3935	C2		
2502	B2	2795	A1	3937	C2		
2503	B2	2796	A1	3940	C2		
2504	B2	2797	B2	3942	C2		
2505	B2	2798	C2	3943	C2		
2506	B2	2800	B2	3947	C2		
2507	A2	2801	B2	3972	C2		
2508	A2	2802	B2	3974	B2		
2509	A2	2803	B2	3978	C2		
2510	A2	2804	B2	3980	B2		
2511	A2	2805	C2	3981	B2		
2512	A2	2845	C2	3983	B2		
2520	A2	2860	C2	3987	B2		
2521	A2	2880	C2	3990	B2		
2522	A2	2881	C1	3991	B2		
2525	A2	2882	C1	3992	B2		
2526	A2	2883	C2	3997	B2		
2527	A2	2884	C2	4111	B2		
2528	A2	2920	C2	4113	B2		
2536	B2	2922	C2	4843	B2		
2538	B2	2923	C2	4845	B2		
2540	B2	2932	C2	5101	A1		
2545	A2	2934	C2	5103	A2		
2553	B2	2942	C2	5108	A2		
2554	B2	2944	C2	5501	A2		
2622	B1	2970	B2	5502	A2		
2623	B1	2972	C2	5620	B1		
2624	B1	2973	C2	5621	B1		
2625	B1	2982	B2	5880	C2		
2630	B1	2983	B2	5881	C2		
2632	B1	2992	B2	5882	C1		
2639	A1	2993	B2	5921	C2		
2640	A1	3102	A2	5930	C2		
2650	B1	3124	A2	5940	C2		
2748	C2	3134	A2	5971	C2		
2749	B2	3140	A2	5980	B2		
2750	C2	3144	B2	5990	B2		
2751	B2	3147	B2	6753	C2		
2752	B2	3148	B2	6850	C2		
2753	B2	3151	A2	6880	C2		
2754	B2	3152	A2	6881	C2		
2755	C2	3153	A2	6883	C2		
2756	C2	3154	A2	6884	C2		

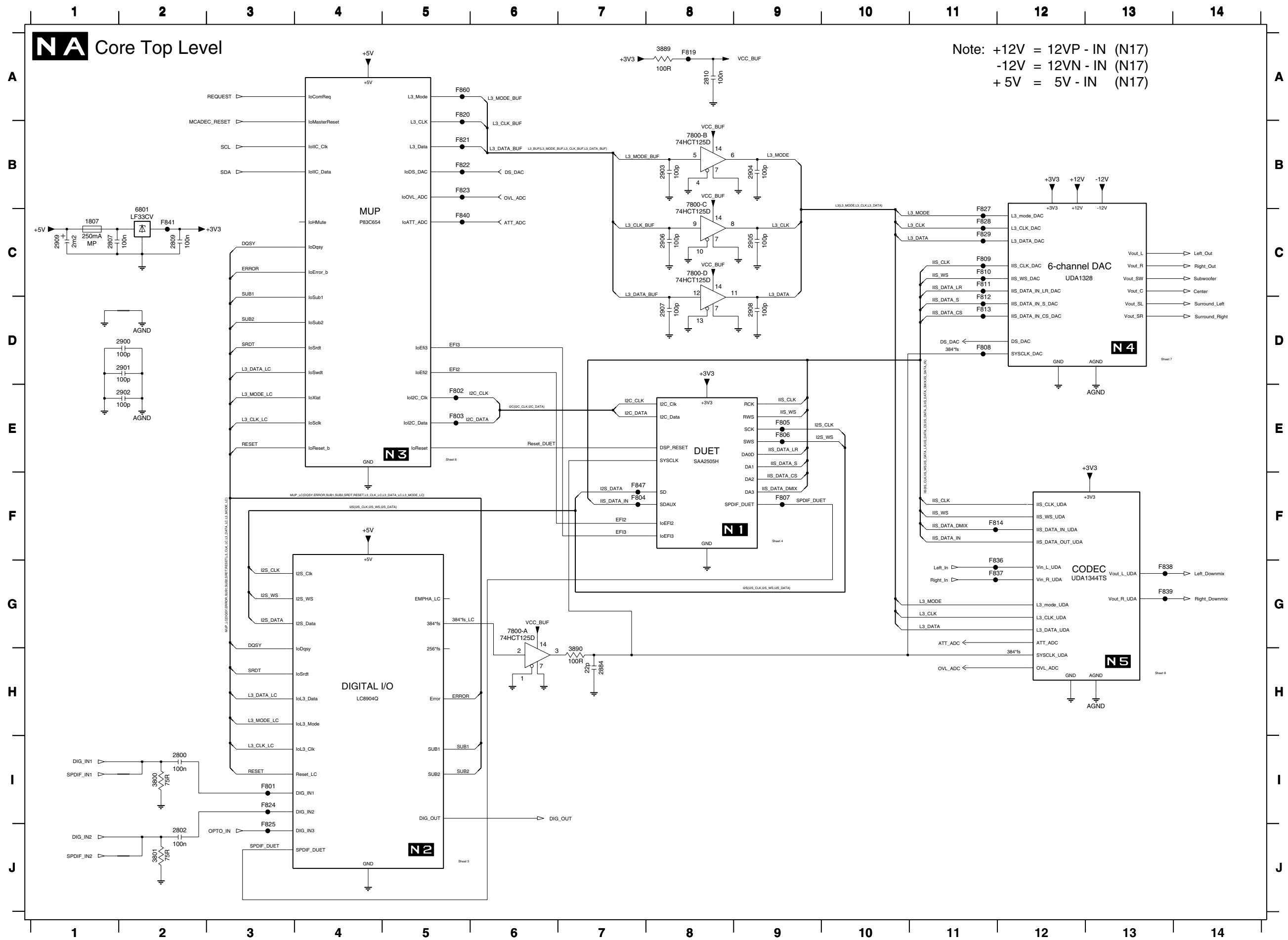
Layout FDS Module (Bottom View)



- 2102 B2 3602 B1 6104 A1
- 2104 B2 3603 B1 6105 A1
- 2105 A1 3604 B2 6106 A1
- 2106 A1 3605 C2 6107 A1
- 2108 A1 3620 C2 7101 A1
- 2111 A1 3621 C2 7102 A1
- 2112 B1 3622 C2 7103 A2
- 2117 A1 3623 C2 7104 A2
- 2119 B1 3624 C2 7105 A1
- 2120 A2 3625 C2 7106 A1
- 2140 A1 3626 B2 7107 B1
- 2532 A1 3629 C2 7111 A1
- 2534 A1 3630 B2 7600 C2
- 2537 B1 3631 C2 7620 A2
- 2539 A1 3633 C2 7621 C2
- 2541 A1 3634 B2 7622 C2
- 2600 B2 3635 B2 7623 C2
- 2601 B2 3636 B2 7624 C2
- 2603 B2 3642 C2 7625 C2
- 2605 C2 3747 A2 7757 A2
- 2620 B2 3748 A2 7800 B1
- 2621 B2 3765 A2 7840 B1
- 2626 B2 3766 A2 7845 C1
- 2627 A2 3767 A2 7880 C1
- 2628 B2 3768 A2 7881 C2
- 2629 B2 3796 A2 7900 C1
- 2631 B2 3797 A2 7901 C1
- 2633 B2 3798 A2 7902 C1
- 2634 B2 3799 A2 7903 C1
- 2638 B2 3840 C1 7904 C1
- 2785 A2 3841 B1 7905 C1
- 2786 A2 3842 B1 7991 A1
- 2788 B1 3846 C1
- 2789 C1 3847 C1
- 2791 A2 3950 C1
- 2794 A2 3951 C1
- 2807 B1 3952 C1
- 2840 B1 3953 C1
- 2890 C1 3954 C1
- 2891 C2 3955 C1
- 3100 A2 3956 C1
- 3101 A2 3957 C1
- 3103 A2 3958 C1
- 3104 A2 3960 C1
- 3106 A1 3961 C1
- 3107 A1 3962 C1
- 3109 A1 3963 C1
- 3110 A1 3964 C1
- 3111 A1 3965 C1
- 3112 A1 3966 C1
- 3113 A1 3967 C1
- 3114 A1 3968 C1
- 3115 A1 3999 C1
- 3116 A1 4101 B1
- 3117 A1 4102 A1
- 3118 A1 4104 A2
- 3119 B1 4105 A1
- 3121 A1 4106 A2
- 3122 A1 4108 A1
- 3123 A1 4109 A1
- 3133 A1 4110 B1
- 3135 A1 4115 A1
- 3136 B1 4116 A1
- 3137 A1 4603 B2
- 3138 B1 4604 B2
- 3139 A1 4842 B1
- 3142 B1 4844 C1
- 3143 B1 5102 A1
- 3145 B1 5104 A1
- 3146 A1 5105 B1
- 3532 A1 5106 B1
- 3550 A1 5752 C1
- 3600 B1 6102 B1
- 3601 B1 6103 A1



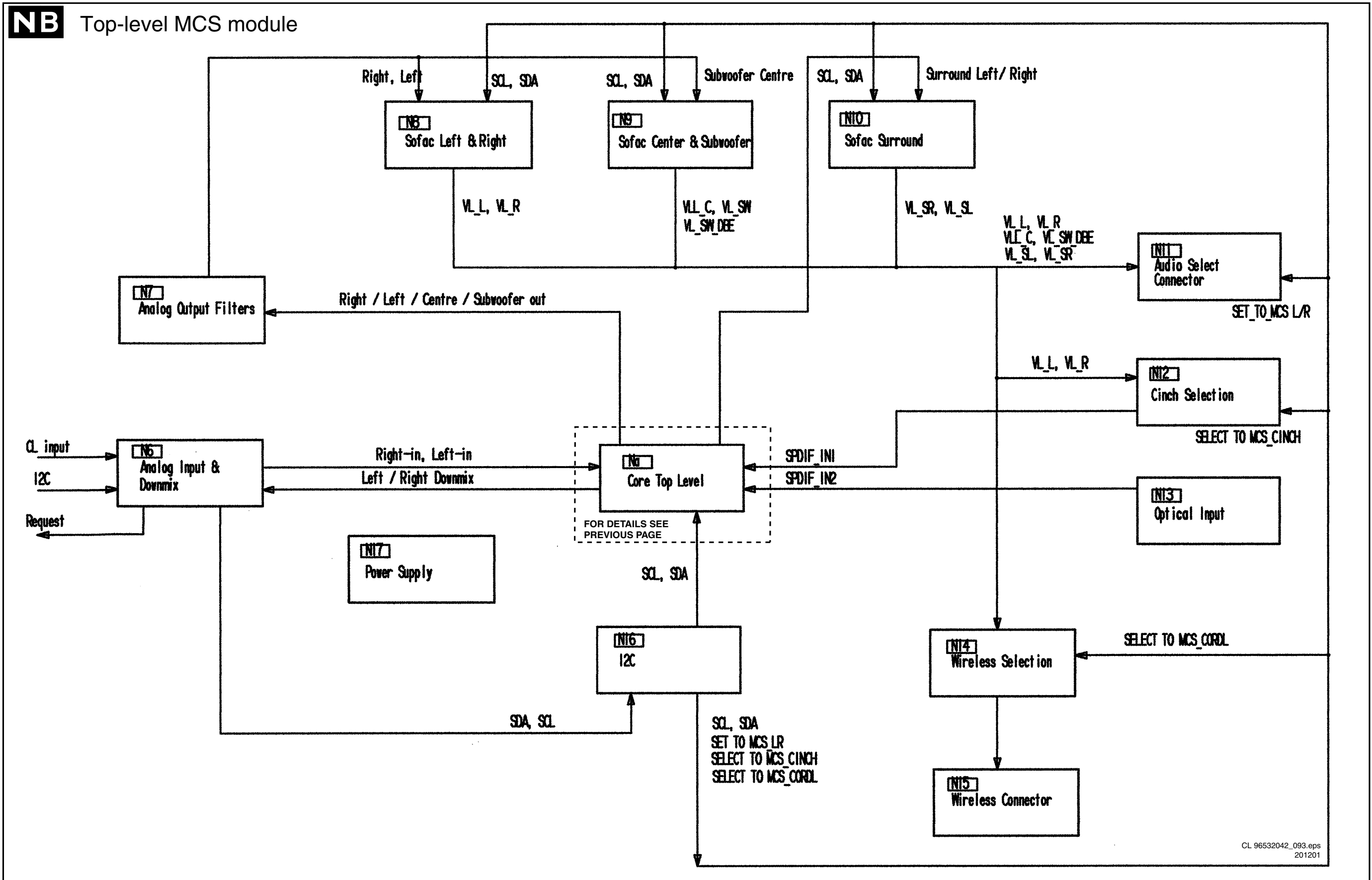
Multi-Channel Sound Module: Core Top Level



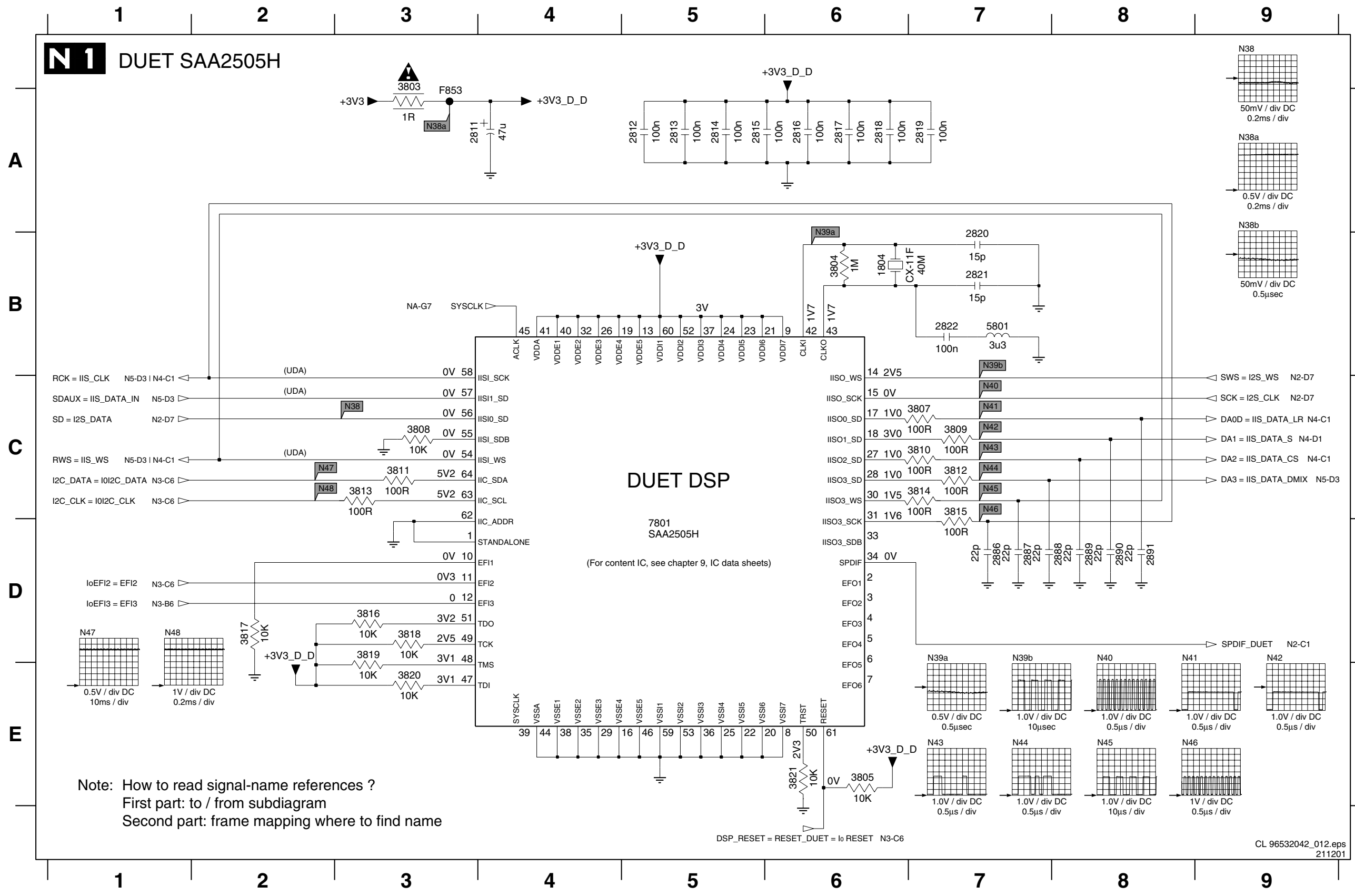
- 2800 I2
- 2802 J2
- 2807 C1
- 2809 C2
- 2810 A8
- 2884 H7
- 2900 D2
- 2901 D2
- 2902 E2
- 2903 B8
- 2904 B9
- 2905 C9
- 2906 C8
- 2907 D8
- 2908 D9
- 2909 C1
- 3800 I2
- 3801 J2
- 3889 A8
- 3890 H7
- 6801 C2
- 7800-A G6
- 7800-B B8
- 7800-C B8
- 7800-D C8
- F801 I3
- F802 E5
- F803 E5
- F804 F7
- F805 E9
- F806 E9
- F807 F9
- F808 D11
- F809 C11
- F810 C11
- F811 C11
- F812 D11
- F813 D11
- F814 F11
- F819 A8
- F820 A5
- F821 B5
- F822 B5
- F823 B5
- F824 I3
- F825 J3
- F827 C11
- F828 C11
- F829 C11
- F836 G11
- F837 G11
- F838 G13
- F839 G13
- F840 C5
- F841 A2
- F847 F7
- F860 A5

Multi-Channel Sound Module: Top Level

**NB** Top-level MCS module



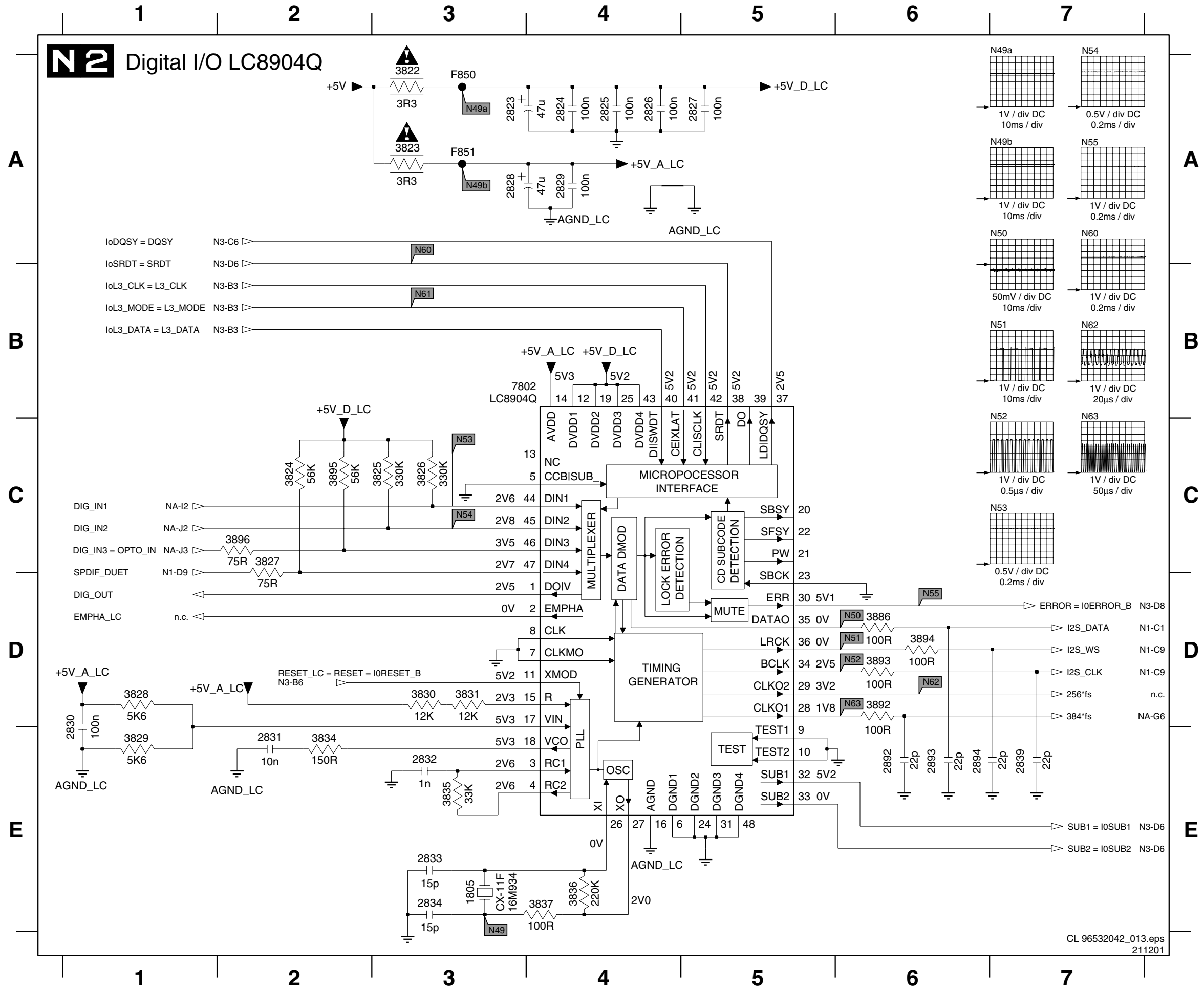
Multi-Channel Sound Module: Duet SAA2505H



- 1804 B6
- 2811 A4
- 2812 A5
- 2813 A5
- 2814 A5
- 2815 A5
- 2816 A6
- 2817 A6
- 2818 A6
- 2819 A7
- 2820 B7
- 2821 B7
- 2822 B7
- 2886 D7
- 2887 D7
- 2888 D8
- 2889 D8
- 2890 D8
- 2891 D8
- 3803 A3
- 3804 B6
- 3805 E6
- 3807 C7
- 3808 C3
- 3809 C7
- 3810 C7
- 3811 C3
- 3812 C7
- 3813 C3
- 3814 C7
- 3815 C7
- 3816 D3
- 3817 D2
- 3818 D3
- 3819 D3
- 3820 E3
- 3821 E6
- 5801 B7
- 7801 D5
- F853 A1

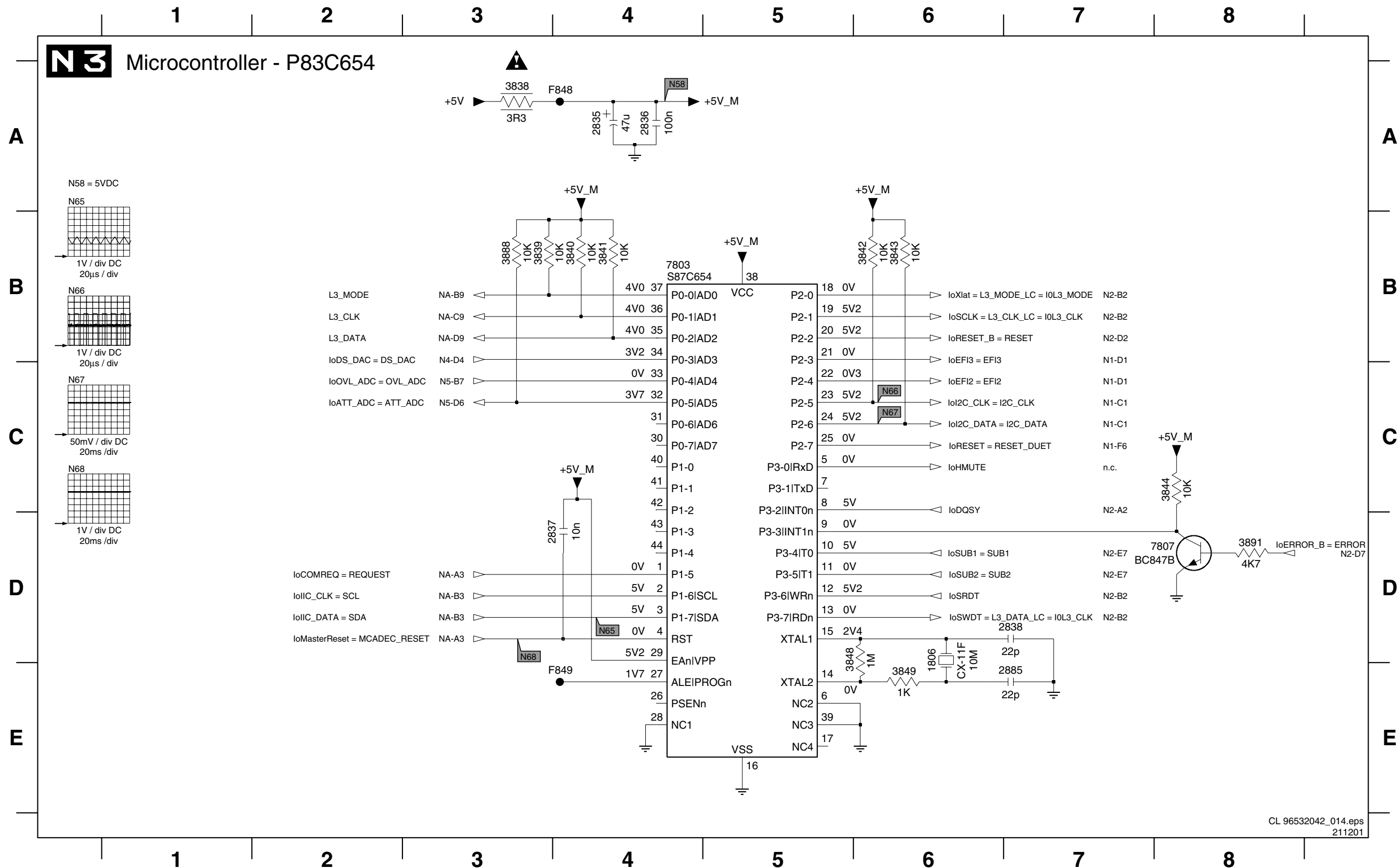
Note: How to read signal-name references ?  
 First part: to / from subdiagram  
 Second part: frame mapping where to find name

Multi-Channel Sound Module: Digital I/O LC8904Q

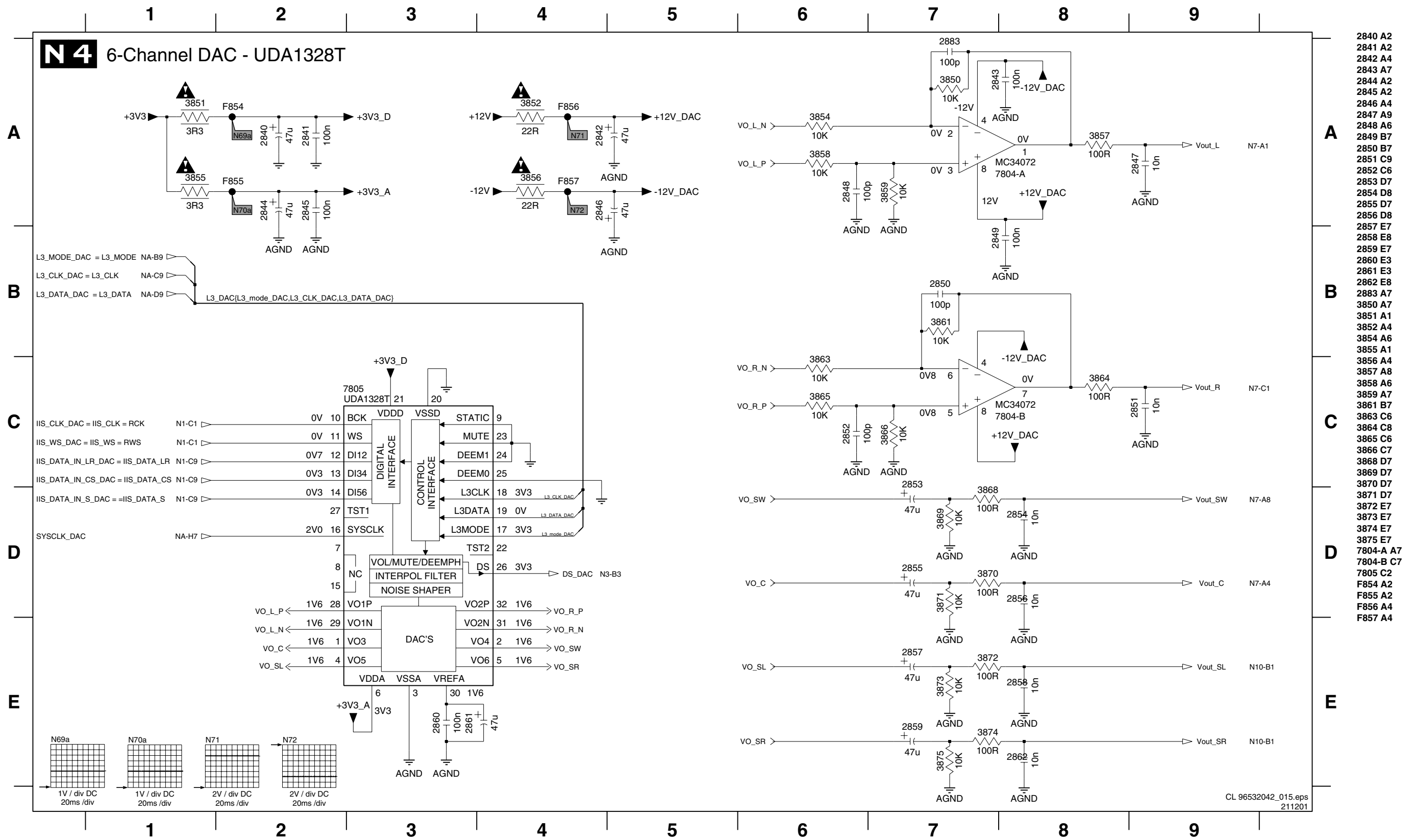


- 1805 E3
- 2823 A3
- 2824 A4
- 2825 A4
- 2826 A4
- 2827 A5
- 2828 A3
- 2829 A4
- 2830 D1
- 2831 E2
- 2832 E3
- 2833 E3
- 2834 E3
- 2839 E7
- 2892 E6
- 2893 E6
- 2894 E6
- 3822 A3
- 3823 A3
- 3824 C2
- 3825 C3
- 3826 C3
- 3827 C2
- 3828 D1
- 3829 E1
- 3830 D3
- 3831 D3
- 3834 E2
- 3835 E3
- 3836 E4
- 3837 E4
- 3886 D6
- 3892 D6
- 3893 D6
- 3894 D6
- 3895 C3
- 3896 C2
- 7802 B3
- F850 A2
- F851 A2

Multi-Channel Sound Module: Micro Controller P83C654

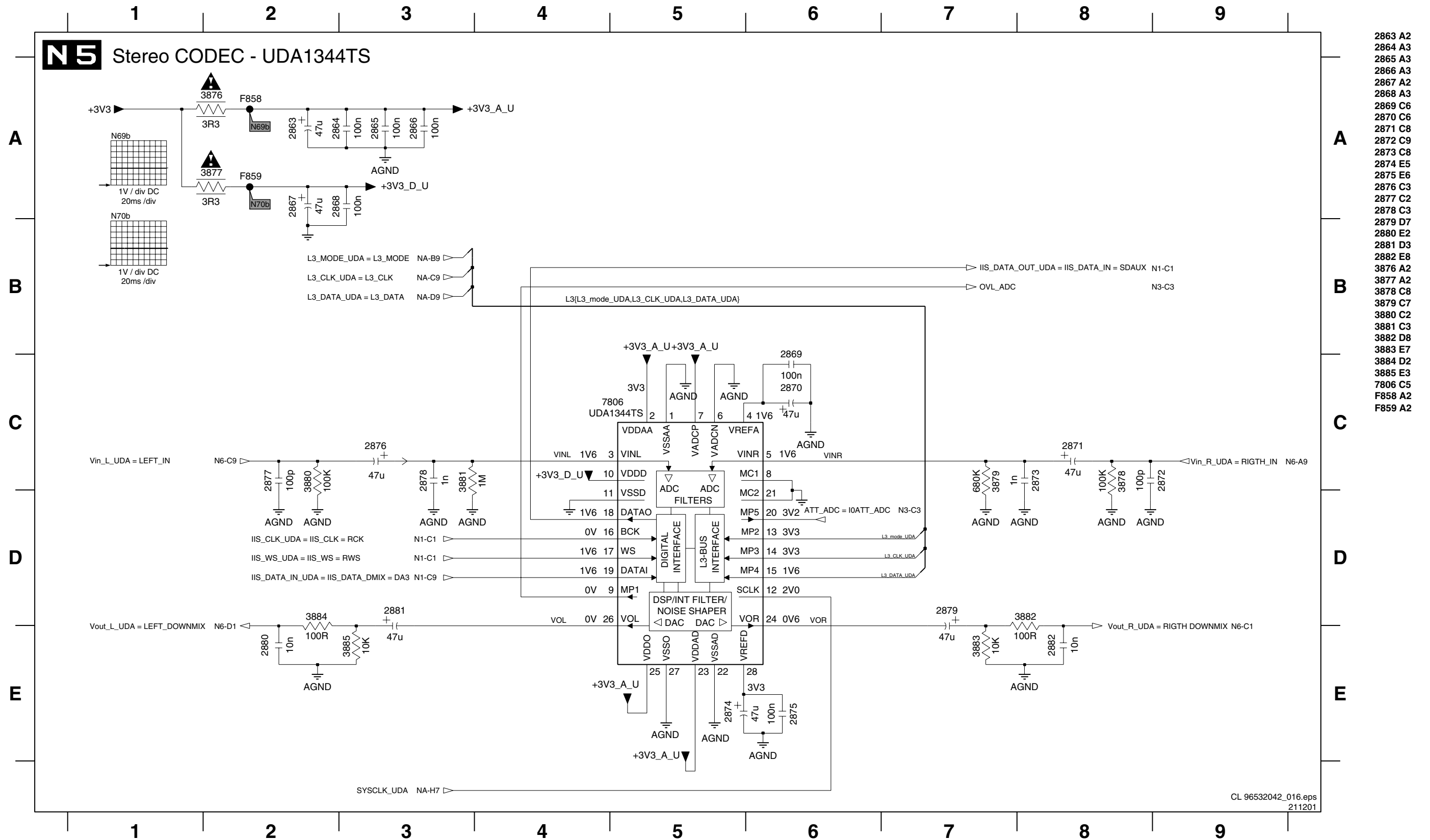


Multi-Channel Sound Module: 6-Channel DAC - UDA1328T



- 2840 A2
- 2841 A2
- 2842 A4
- 2843 A7
- 2844 A2
- 2845 A2
- 2846 A4
- 2847 A9
- 2848 A6
- 2849 B7
- 2850 B7
- 2851 C9
- 2852 C6
- 2853 D7
- 2854 D8
- 2855 D7
- 2856 D8
- 2857 E7
- 2858 E8
- 2859 E7
- 2860 E3
- 2861 E3
- 2862 E8
- 2863 A7
- 3850 A7
- 3851 A1
- 3852 A4
- 3854 A6
- 3855 A1
- 3856 A4
- 3857 A8
- 3858 A6
- 3859 A7
- 3861 B7
- 3863 C6
- 3864 C8
- 3865 C6
- 3866 C7
- 3868 D7
- 3869 D7
- 3870 D7
- 3871 D7
- 3872 E7
- 3873 E7
- 3874 E7
- 3875 E7
- 7804-A A7
- 7804-B C7
- 7805 C2
- F854 A2
- F855 A2
- F856 A4
- F857 A4

Multi-Channel Sound Module: Stereo CODEC - UDA 1344TS

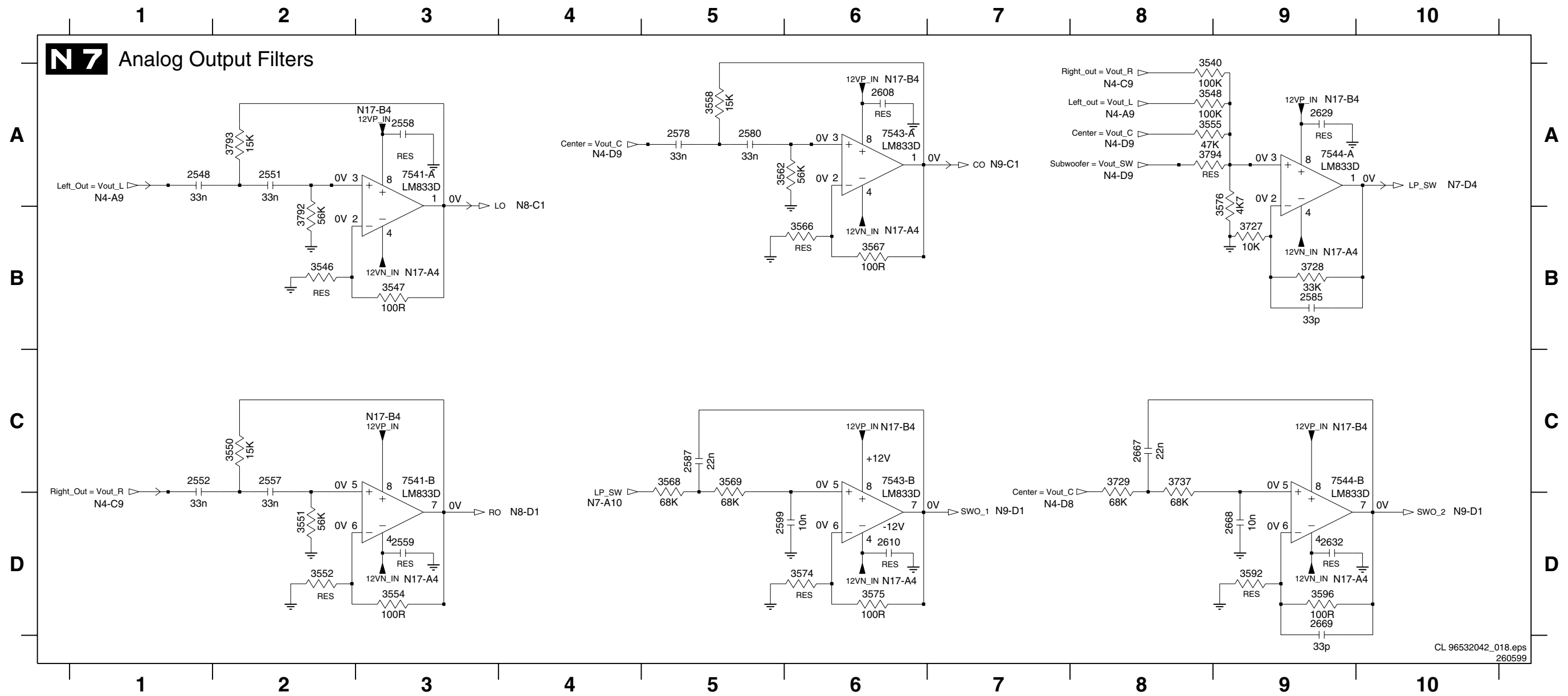






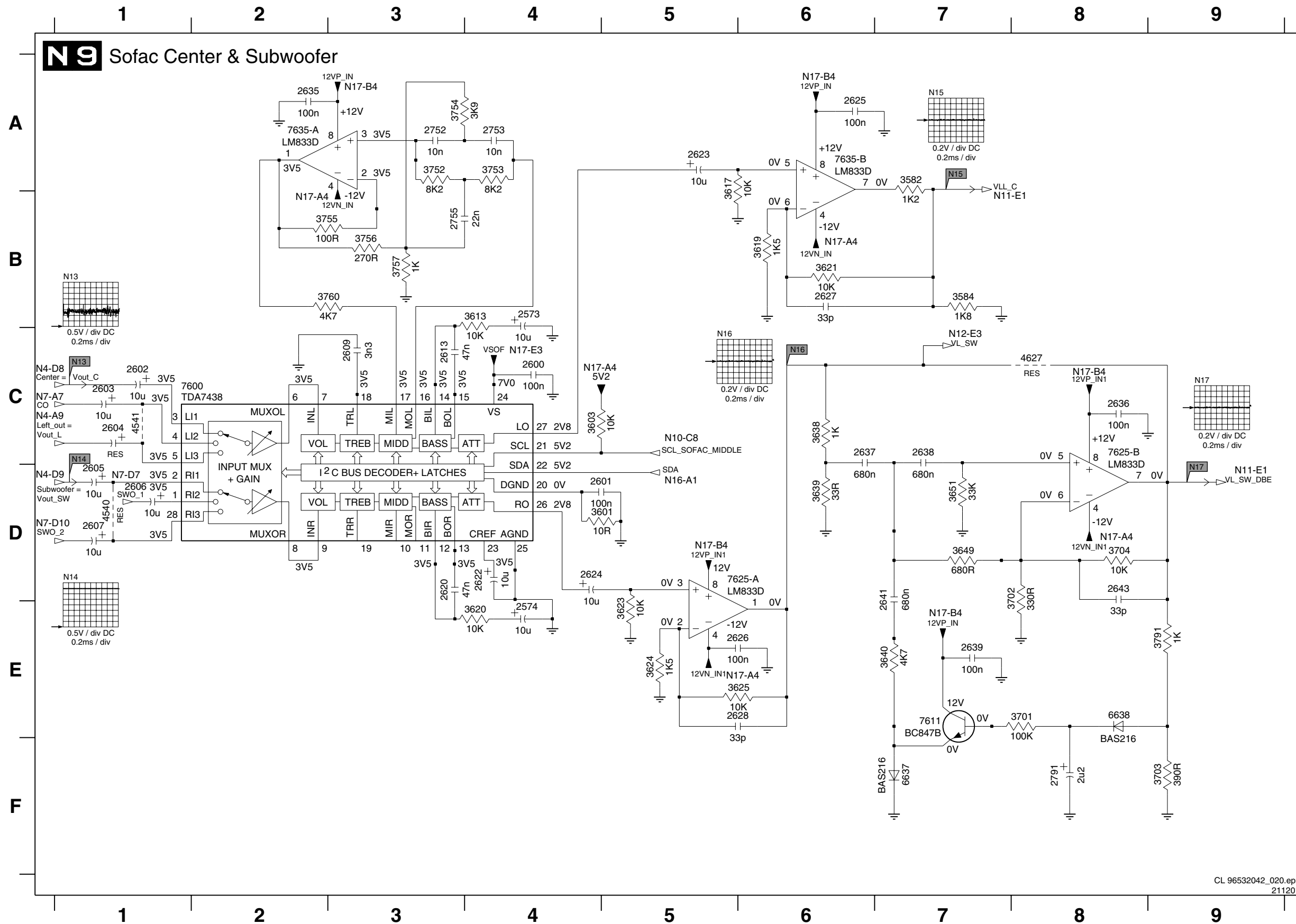
Multi-Channel Sound Module: Analog Output Filters

2548 A1	2557 C2	2578 A5	2587 C5	2610 D6	2667 C8	3540 A8	3548 A8	3552 D2	3558 A5	3567 B6	3574 D6	3592 D9	3728 B9	3792 B2	7541-A A3	7543-B C6
2551 A2	2558 A3	2580 A5	2599 D5	2629 A9	2668 D9	3546 B2	3550 C2	3554 D3	3562 A5	3568 C5	3575 D6	3596 D9	3729 C8	3793 A2	7541-B C3	7544-A A9
2552 C1	2559 D3	2585 B9	2608 A6	2632 D9	2669 D9	3547 B3	3551 D2	3555 A8	3566 B6	3569 C5	3576 A9	3727 B9	3737 C8	3794 A8	7543-A A6	7544-B C9





Multi-Channel Sound Module: Sofac Center and Subwoofer

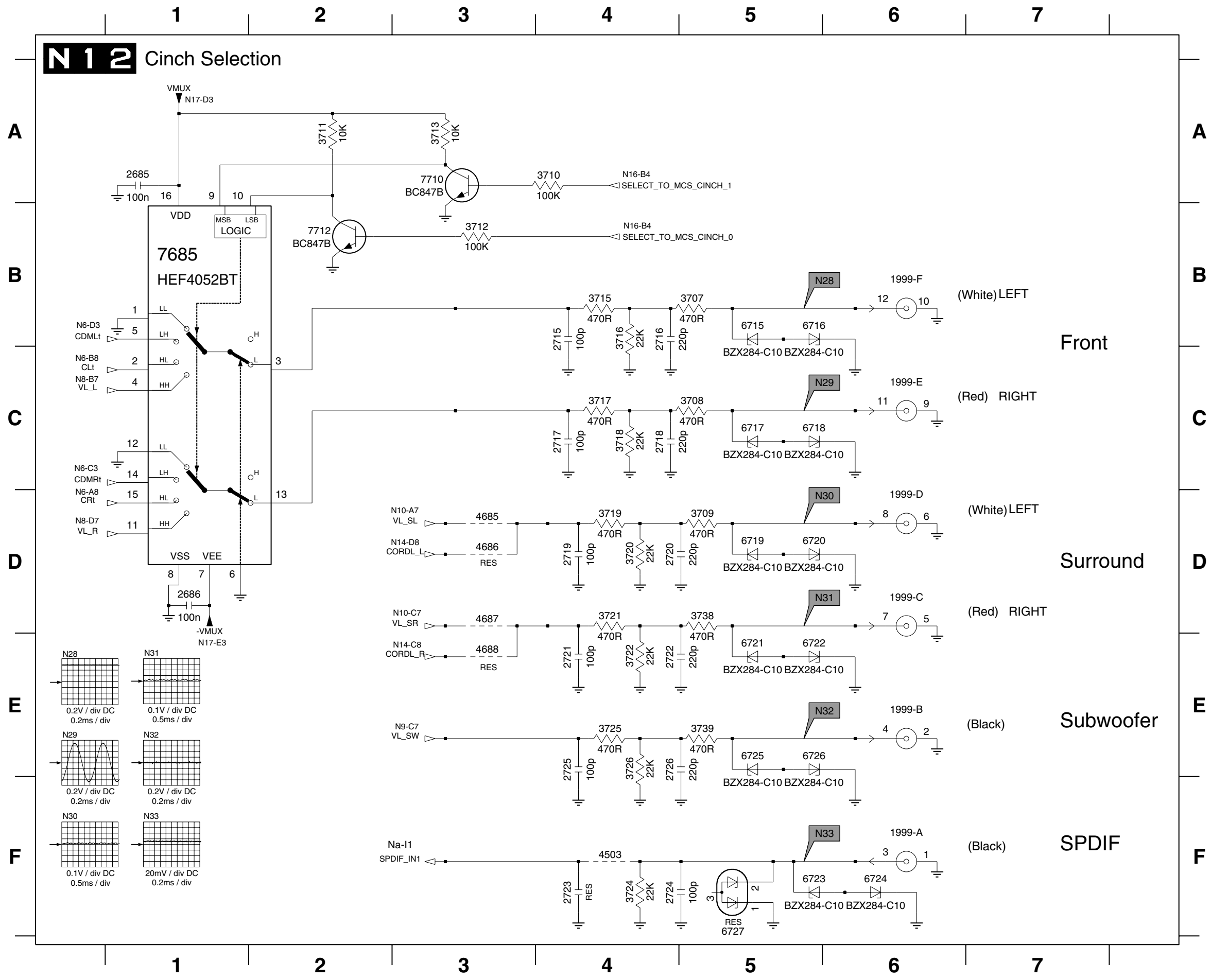


- 2573 B4
- 2574 E4
- 2600 C4
- 2601 D4
- 2602 C1
- 2603 C1
- 2604 C1
- 2605 D1
- 2606 D1
- 2607 D1
- 2609 C3
- 2613 C3
- 2620 D3
- 2622 D4
- 2623 A5
- 2624 D4
- 2625 A6
- 2626 E5
- 2627 B6
- 2628 E5
- 2635 A2
- 2636 C8
- 2637 C6
- 2638 C7
- 2639 E7
- 2641 D7
- 2643 D8
- 2752 A3
- 2753 A4
- 2755 B3
- 2791 F8
- 3582 A7
- 3584 B7
- 3601 D5
- 3603 C4
- 3613 B4
- 3617 A5
- 3619 B6
- 3623 E5
- 3624 E5
- 3625 E6
- 3638 C6
- 3639 D6
- 3640 E7
- 3649 D7
- 3651 D7
- 3701 E8
- 3702 D8
- 3703 F9
- 3704 D8
- 3752 A3
- 3753 A4
- 3754 A3
- 3755 B2
- 3756 B3
- 3757 B3
- 3760 B3
- 3791 E9
- 4540 D1
- 4541 C1
- 4627 C8
- 6637 F7
- 6638 E8
- 7600 C1
- 7611 E7
- 7625-A D5
- 7625-B C8
- 7635-A A2
- 7635-B A6



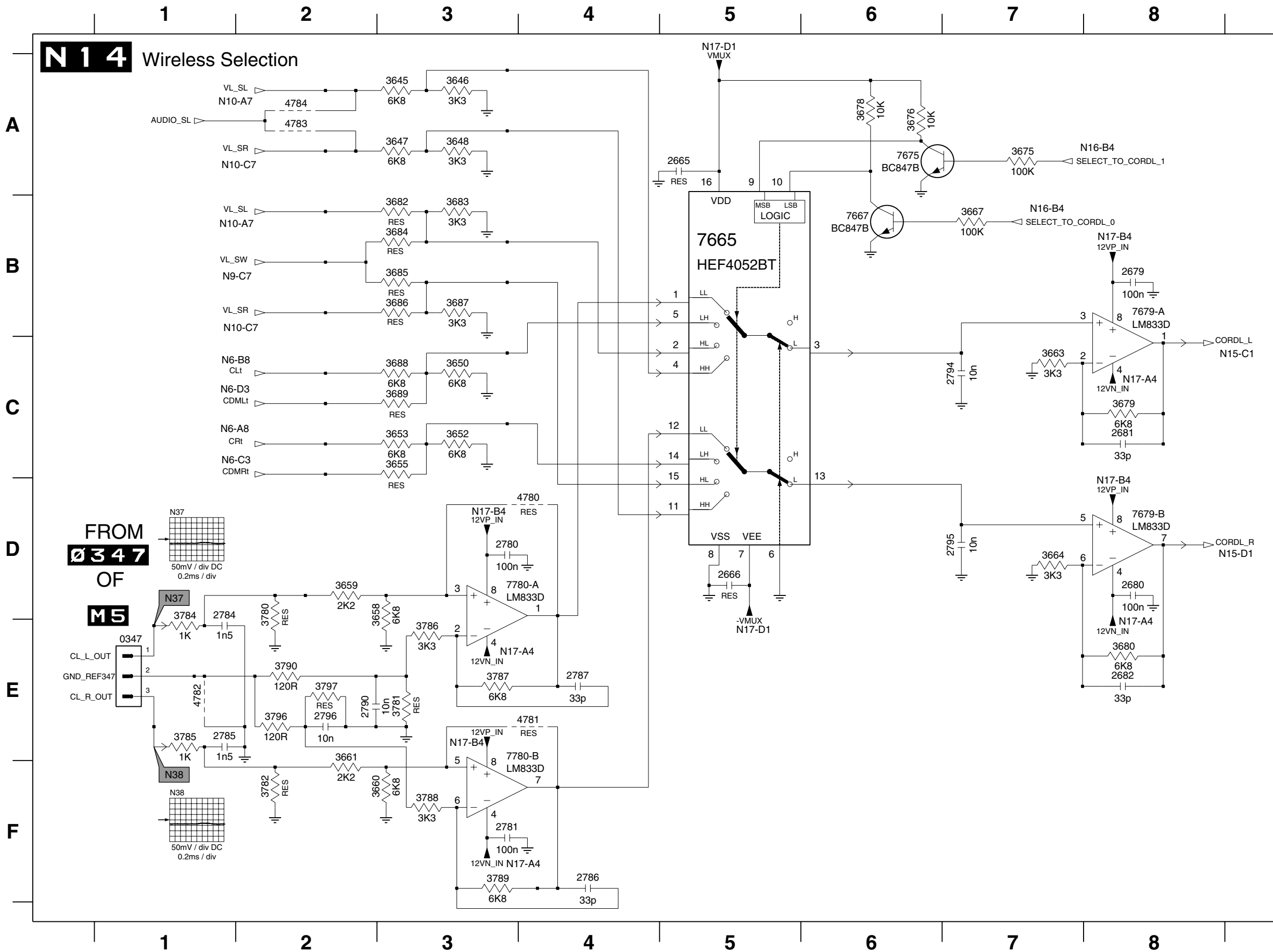


Multi-Channel Sound Module: Cinch Selection



- 1999-A F6
- 1999-B E6
- 1999-C D6
- 1999-D D6
- 1999-E C6
- 1999-F B6
- 2685 A1
- 2686 D1
- 2715 B4
- 2716 B4
- 2717 C4
- 2718 C4
- 2719 D4
- 2720 D4
- 2721 E4
- 2722 E4
- 2723 F4
- 2724 F4
- 2725 E4
- 2726 E4
- 3707 B5
- 3708 C5
- 3709 D5
- 3710 A4
- 3711 A2
- 3712 B3
- 3713 A3
- 3715 B4
- 3716 B4
- 3717 C4
- 3718 C4
- 3719 D4
- 3720 D4
- 3721 D4
- 3722 E4
- 3723 F4
- 3724 F4
- 3725 E4
- 3726 E4
- 3738 D5
- 3739 E5
- 4503 F4
- 4685 D3
- 4686 D3
- 4687 D3
- 4688 E3
- 6715 B5
- 6716 B5
- 6717 C5
- 6718 C5
- 6719 D5
- 6720 D5
- 6721 E5
- 6722 E5
- 6723 F5
- 6724 F6
- 6725 E5
- 6726 E5
- 6727 F5
- 7685 B1
- 7710 A3
- 7712 B2

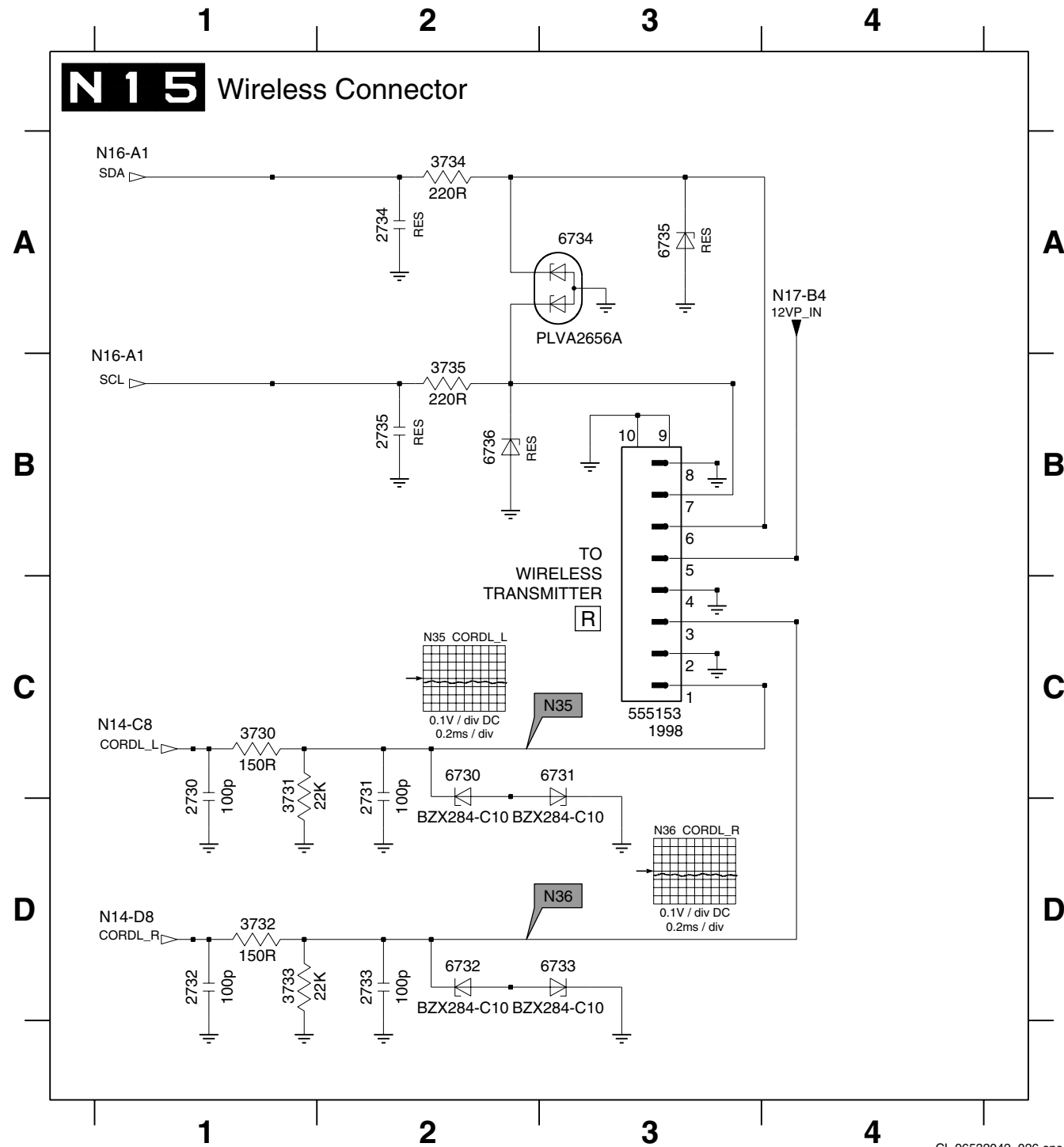
Multi-Channel Sound Module: Wireless Selection



- 0347 E1
- 2665 A5
- 2666 D5
- 2679 B8
- 2680 D8
- 2681 C8
- 2682 E8
- 2780 D3
- 2781 F3
- 2784 D1
- 2785 E1
- 2786 F4
- 2787 E4
- 2790 E2
- 2794 C7
- 2795 D7
- 2796 E2
- 3645 A3
- 3646 A3
- 3647 A3
- 3648 A3
- 3650 C3
- 3652 C3
- 3653 C3
- 3655 C3
- 3658 D3
- 3659 D2
- 3660 F3
- 3661 E2
- 3663 C7
- 3664 D7
- 3667 B7
- 3675 A7
- 3676 A6
- 3678 A6
- 3679 C8
- 3680 E8
- 3682 B3
- 3683 B3
- 3684 B3
- 3685 B3
- 3686 B3
- 3687 B3
- 3688 C3
- 3689 C3
- 3780 D2
- 3781 E3
- 3782 F2
- 3784 D1
- 3785 E1
- 3786 E3
- 3787 E3
- 3788 F3
- 3789 F3
- 3790 E2
- 3796 E2
- 3797 E2
- 4780 D4
- 4781 E4
- 4782 E1
- 4783 A2
- 4784 A2
- 7665 B5
- 7667 B6
- 7675 A6
- 7679-A B8
- 7679-B D8
- 7780-A D3
- 7780-B E3

Multi-Channel Sound Module: Wireless Connector

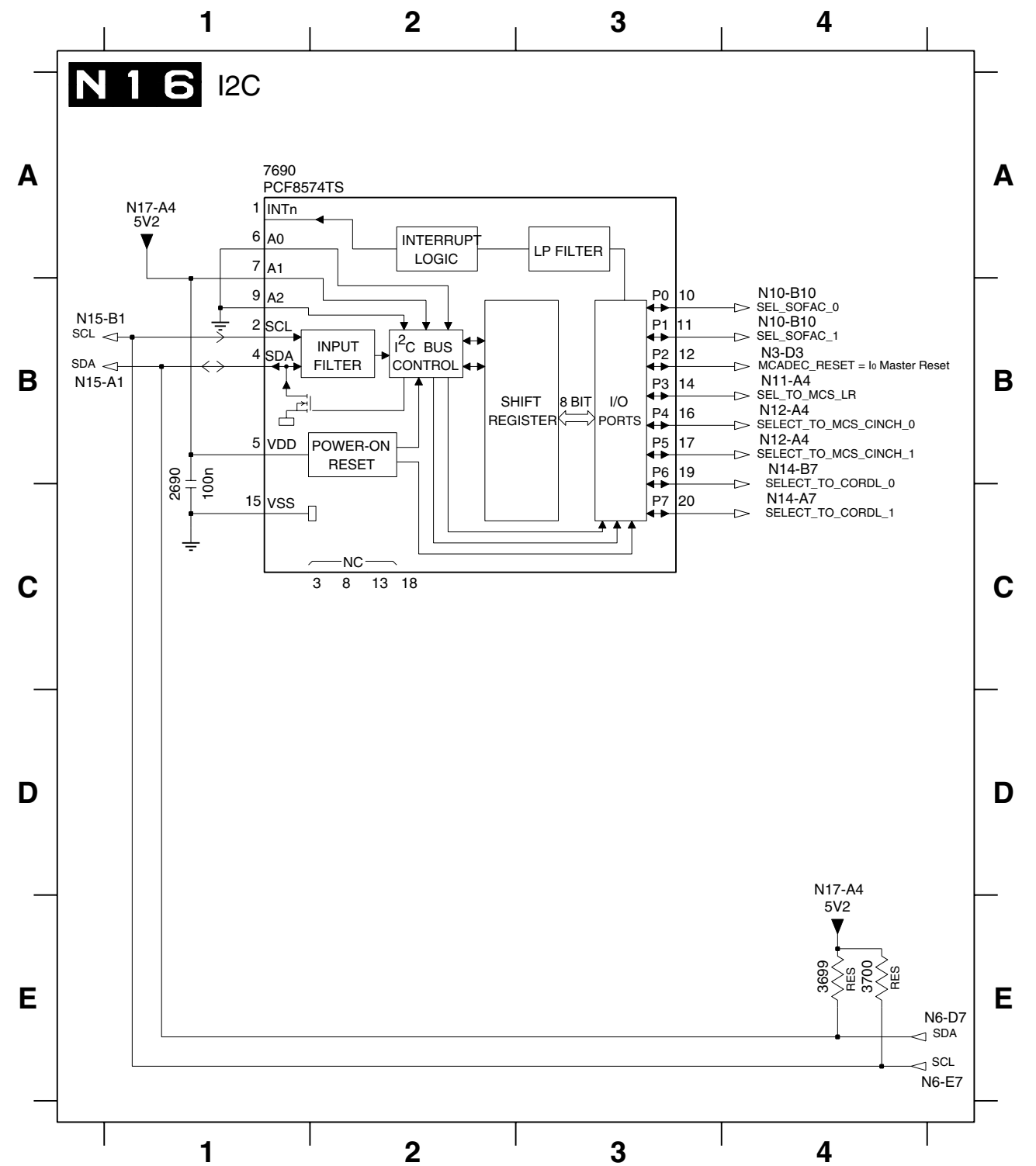
1998 C3 2731 C2 2733 D2 2735 B2 3731 C1 3733 D1 3735 B2 6731 C3 6733 D3 6735 A3  
 2730 C1 2732 D1 2734 A2 3730 C1 3732 D1 3734 A2 6730 C2 6732 D2 6734 A3 6736 B2



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211201

Multi-Channel Sound Module: I<sup>2</sup>C

2690 B1 3699 E4 3700 E4 7690 A1



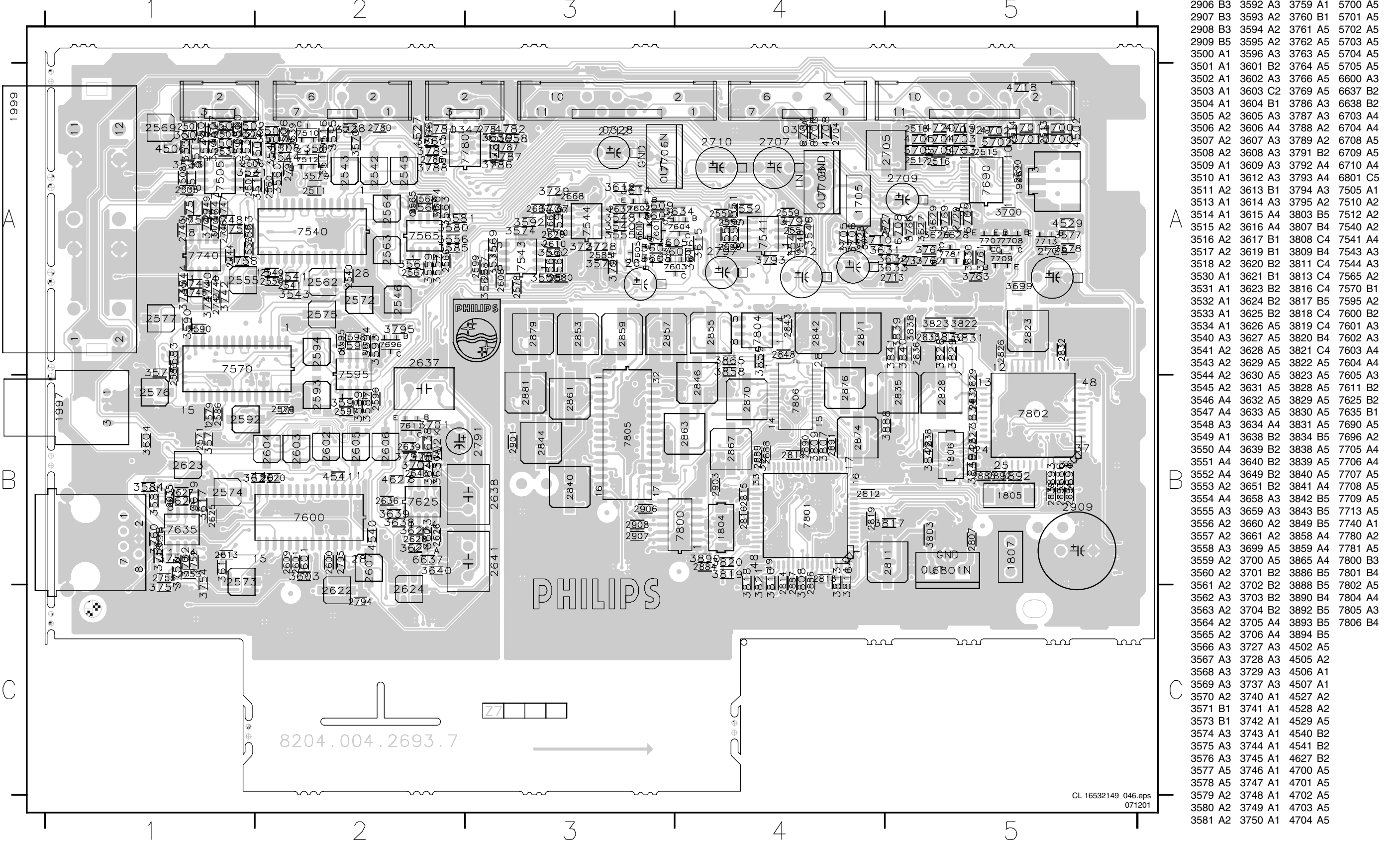
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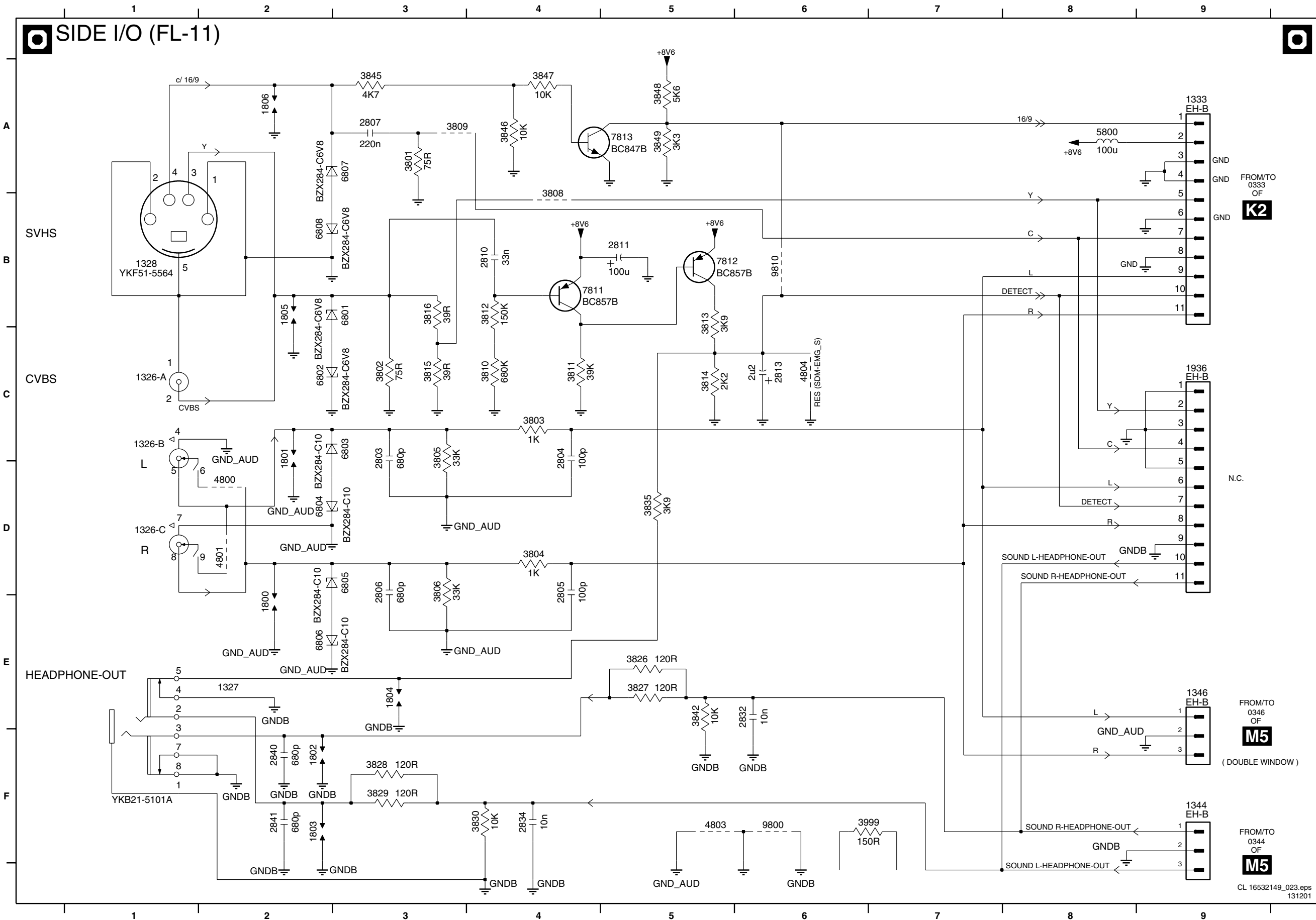
Layout MCS Module (Inner Side)

0328 A3	1805 B5	2504 A1	2515 A5	2542 A2	2553 A1	2563 A2	2571 B1	2579 B1	2593 B2	2601 B2	2609 B2	2624 B2	2636 B2	2669 A3	2713 A5	2741 A1	2753 B1	2794 C2	2815 B4	2829 A5	2840 B3	2857 A3	2876 B4	2889 B4	3582 B1	3751 A1	4705 A5
0329 A5	1806 B5	2505 A1	2516 A5	2543 A2	2555 A1	2564 A2	2572 A2	2580 A3	2594 A2	2602 B2	2610 A3	2625 B1	2637 A2	2690 A5	2727 A4	2743 A1	2755 B1	2795 B2	2816 B4	2830 A5	2842 A4	2859 A3	2879 A3	2890 B4	3583 A1	3752 B1	4708 A4
0330 A4	1807 B5	2506 A1	2517 A5	2545 A2	2556 A2	2565 A2	2573 B1	2583 A1	2595 A2	2603 B2	2611 A3	2626 B2	2638 B3	2704 A4	2728 A4	2744 A1	2780 A2	2797 A4	2818 B4	2831 B5	2843 A4	2861 A3	2881 A3	2891 B4	3584 B1	3753 B1	4718 A5
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0373 A2	1997 B1	2508 A1	2534 A1	2548 A4	2558 A4	2567 A2	2575 A2	2586 B1	2597 B2	2605 B2	2613 B1	2628 B2	2641 B3	2707 A4	2736 A4	2746 A1	2786 A2	2811 C4	2823 A5	2835 B4	2846 A3	2867 B4	2885 B5	2893 B5	3587 B2	3755 B1	4720 A5
0381 A1	1998 B1	2511 A2	2539 A2	2549 A2	2559 A4	2568 A2	2576 B1	2587 A3	2598 A2	2606 B2	2620 B2	2629 A3	2643 B2	2709 A5	2737 A5	2747 A1	2787 A3	2812 B4	2826 A5	2836 A5	2848 A4	2870 B4	2886 C4	2894 B5	3589 B2	3756 B1	4780 A3
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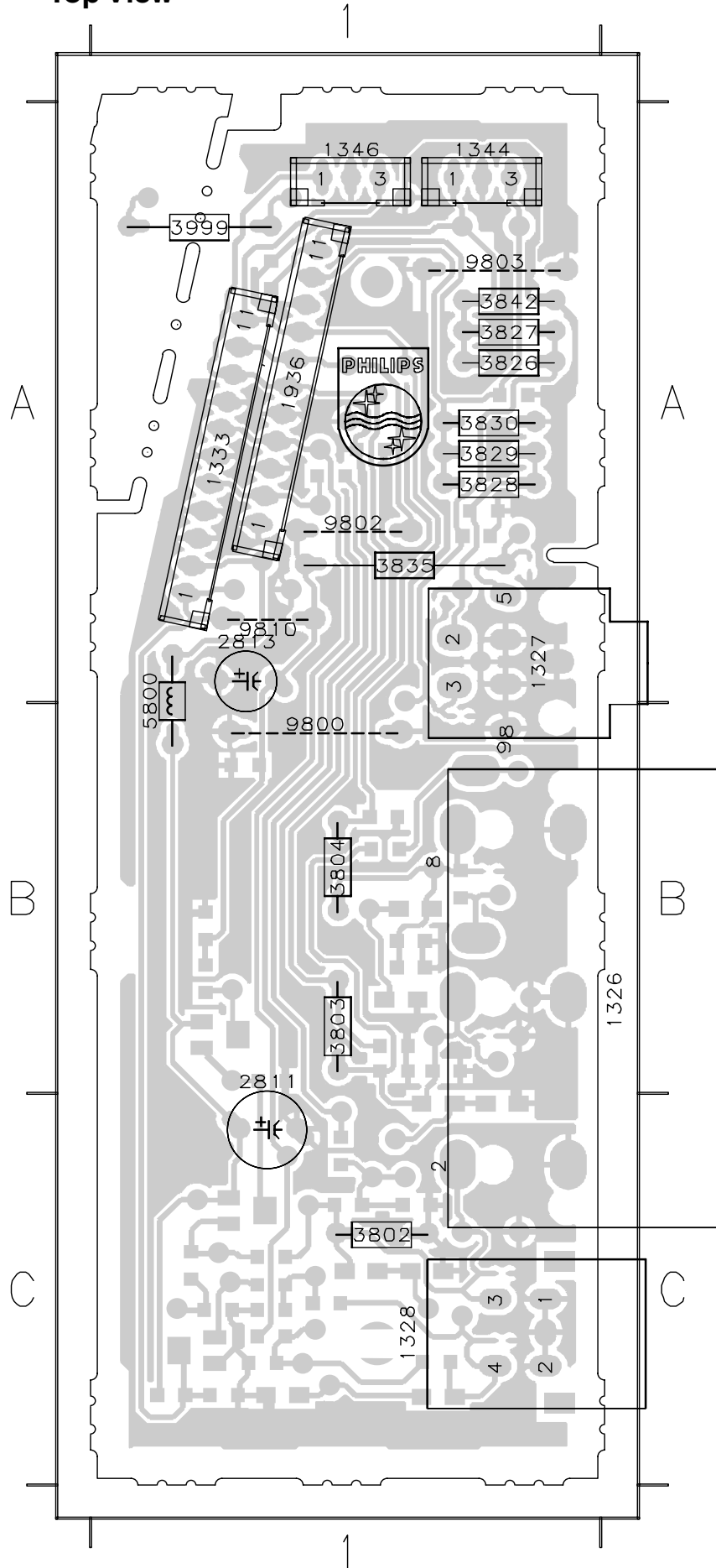
Side I/O Panel: FL11



- 1326-A C1
- 1326-B C1
- 1326-C D1
- 1327 E2
- 1328 B1
- 1333 A9
- 1344 F9
- 1346 E9
- 1800 E2
- 1801 C2
- 1802 F2
- 1803 F2
- 1804 E3
- 1805 B2
- 1806 A2
- 1936 C9
- 2803 C3
- 2804 C4
- 2805 D4
- 2806 D3
- 2807 A3
- 2810 B4
- 2811 B5
- 2813 C6
- 2832 E6
- 2834 F4
- 2840 F2
- 2841 F2
- 3801 A3
- 3802 C3
- 3803 C4
- 3804 D4
- 3805 C3
- 3806 D3
- 3808 B4
- 3809 A3
- 3810 C4
- 3811 C4
- 3812 B4
- 3813 B5
- 3814 C5
- 3815 C3
- 3816 B3
- 3826 E5
- 3827 E5
- 3828 F3
- 3829 F3
- 3830 F4
- 3835 D5
- 3842 E5
- 3845 A3
- 3846 A4
- 3847 A4
- 3848 A5
- 3849 A5
- 3999 F7
- 4800 D2
- 4801 D2
- 4803 F5
- 4804 C6
- 5800 A8
- 6801 B3
- 6802 C2
- 6803 C3
- 6804 D2
- 6805 D3
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- 7812 B5
- 7813 A5
- 9800 F6
- 9810 B6

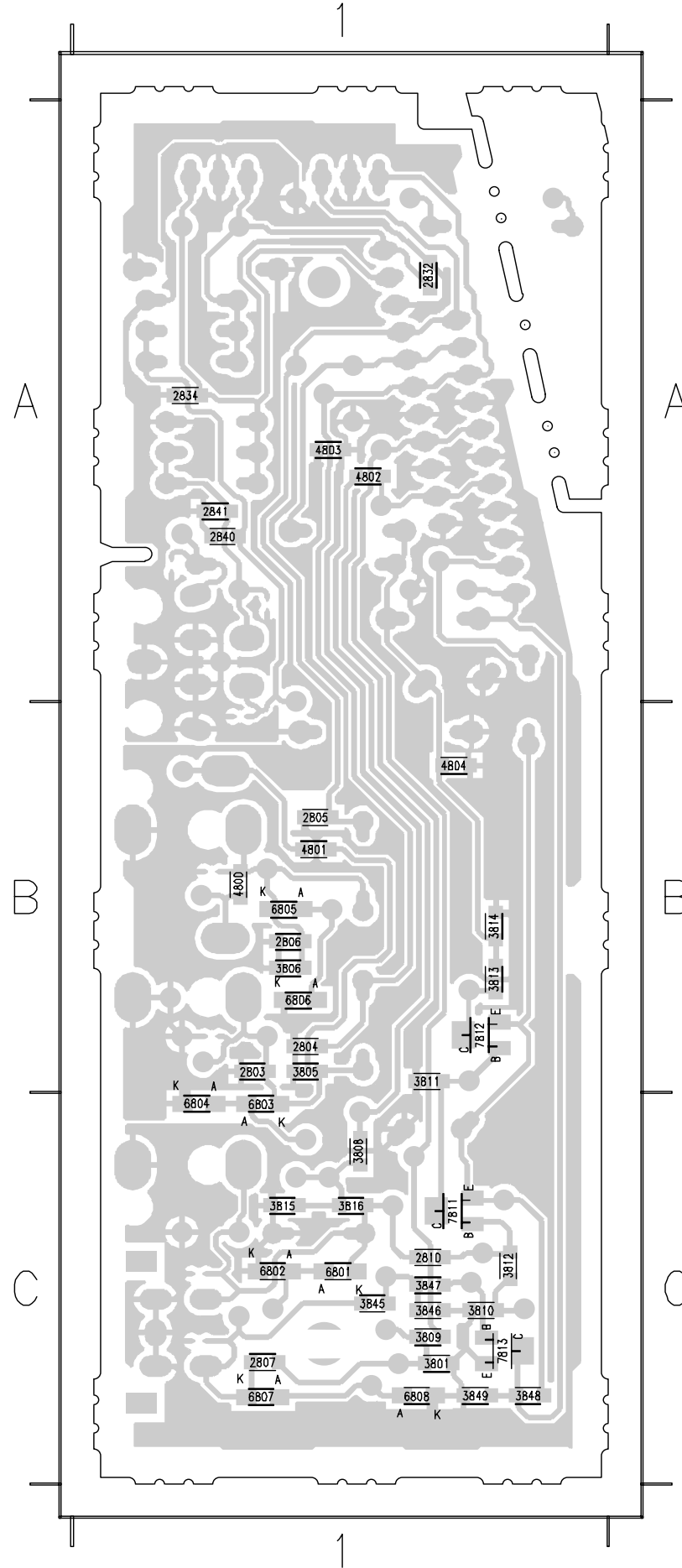
Layout Side I/O Panel

Top View



- 1326 B1
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- 1328 C1
- 1333 A1
- 1344 A1
- 1346 A1
- 1936 A1
- 2811 B1
- 2813 A1
- 3802 C1
- 3803 B1
- 3804 B1
- 3826 A1
- 3827 A1
- 3828 A1
- 3829 A1
- 3830 A1
- 3835 A1
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- 3828 A1
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- 9803 A1
- 9810 A1

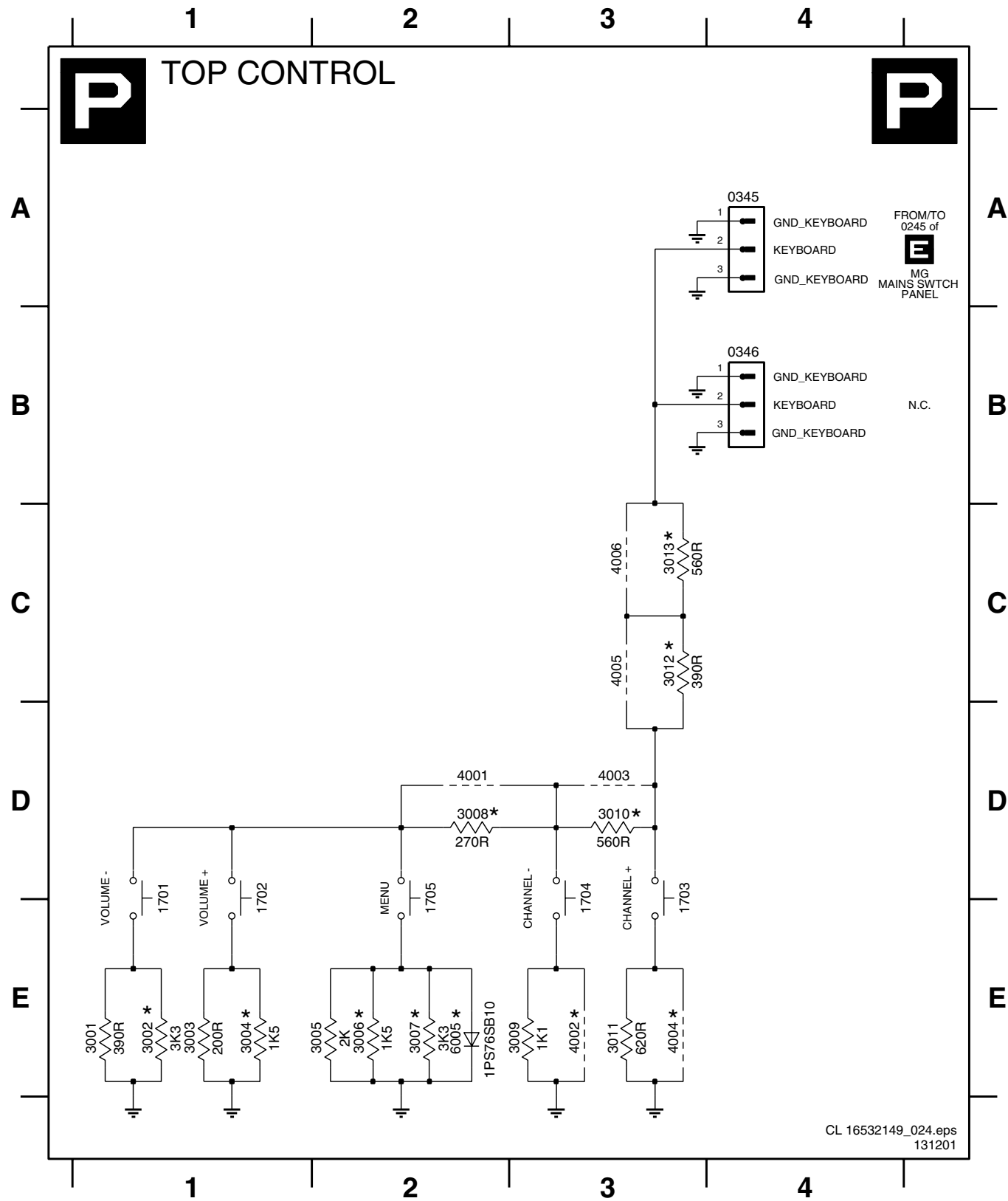
Bottom View



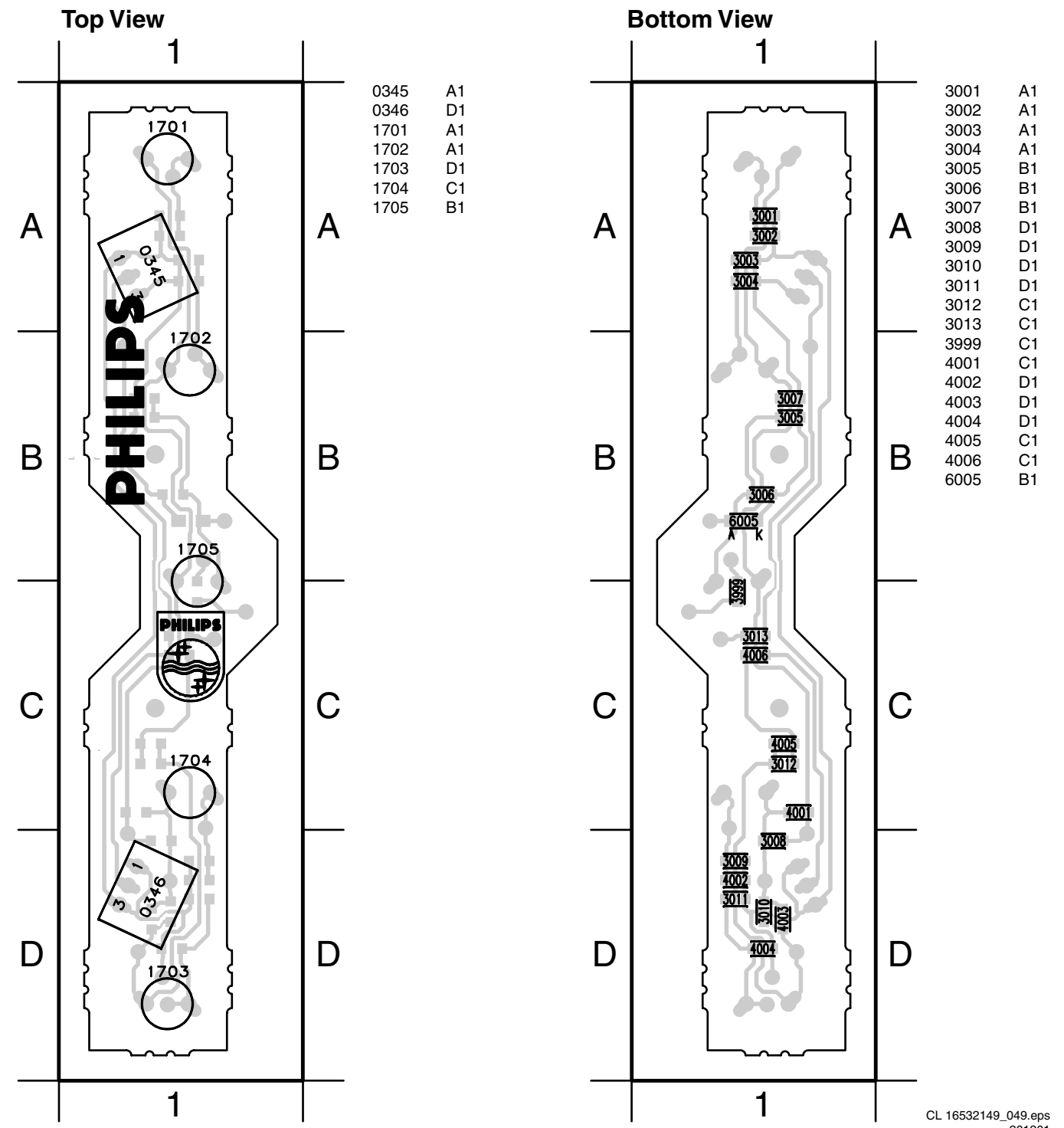
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- 2805 B1
- 2806 B1
- 2807 C1
- 2810 C1
- 2832 A1
- 2834 A1
- 2840 A1
- 2841 A1
- 3801 C1
- 3805 B1
- 3806 B1
- 3808 C1
- 3809 C1
- 3810 C1
- 3811 B1
- 3812 C1
- 3813 B1
- 3814 B1
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- 3816 C1
- 3845 C1
- 3846 C1
- 3847 C1
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- 6801 C1
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- 6807 C1
- 6808 C1
- 7811 C1
- 7812 B1
- 7813 C1

Top Control Panel

0345 A4	1703 D3	3002 E1	3006 E2	3010 D3	3999 D4	4004 E3
0346 B4	1704 D3	3003 E1	3007 E2	3011 E3	4001 D2	4005 C3
1701 D1	1705 D2	3004 E1	3008 D2	3012 C3	4002 E3	4006 C3
1702 D1	3001 E1	3005 E2	3009 E3	3013 C3	4003 D3	6005 E2



Layout Top Control Panel

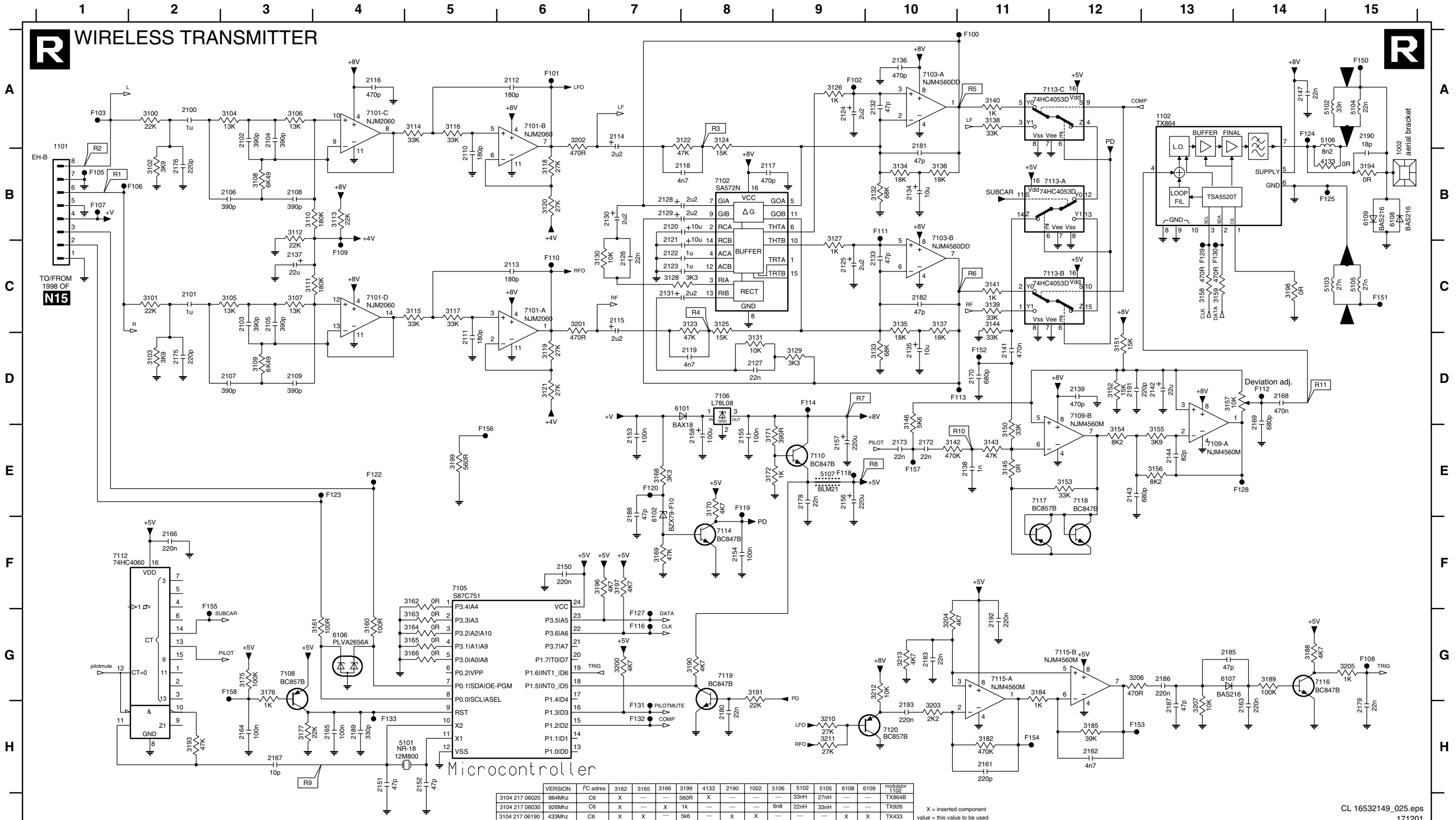


0345	A1
0346	D1
1701	A1
1702	A1
1703	D1
1704	C1
1705	B1

3001	A1
3002	A1
3003	A1
3004	A1
3005	B1
3006	B1
3007	B1
3008	D1
3009	D1
3010	D1
3011	D1
3012	C1
3013	C1
3999	C1
4001	C1
4002	D1
4003	D1
4004	D1
4005	C1
4006	C1
6005	B1

Wireless Transmitter

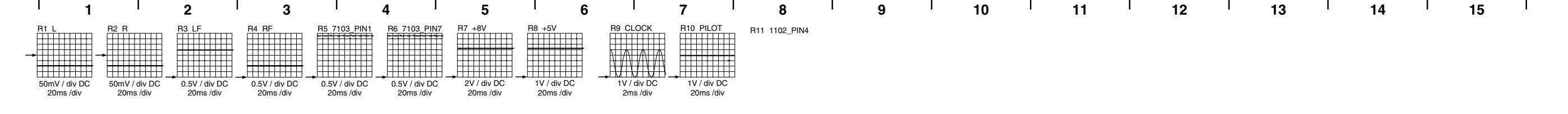
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1101 A1	2107 D3	2116 A4	2125 C9	2134 B10	2144 E13	2157 E9	2168 D14	2180 H8	2190 A15	3105 C3	3114 A5	3123 C8	3132 D10	3141 C11	3153 E12	3162 F5	3172 E8	3190 G8	3201 C6	3212 G10	5107 E9	7101-C A4	7109-B D12	7116 G14	F105 B1	F114 D9	F127 G7	F152 D11
1102 A13	2108 B3	2117 B8	2126 C7	2135 D10	2144 E13	2158 E8	2169 D14	2181 A10	2191 D12	3106 A3	3115 C5	3124 A8	3133 D10	3142 E10	3154 E12	3163 G5	3173 G3	3191 G8	3202 A6	3213 G10	5108 E7	7101-D C4	7109-E D12	7117 E11	F106 B1	F115 G7	F128 E14	F153 H12
2100 A2	2109 D3	2118 B8	2127 D8	2136 A10	2145 F6	2161 H11	2170 D11	2182 C10	2192 G11	3107 C3	3116 A5	3125 C8	3134 B10	3143 E11	3155 E13	3164 G5	3174 H3	3192 H2	3203 H10	4133 B15	6102 E7	7102 B8	7112 F1	7118 E12	F107 B1	F116 G8	F129 C13	F154 H11
2101 C2	2110 B5	2119 D8	2128 B7	2137 C9	2146 H4	2162 H12	2172 E10	2183 G10	2193 H10	3108 B3	3117 C5	3126 A9	3135 C10	3144 C11	3156 E13	3165 G5	3175 H3	3193 H2	3204 G10	5101 H5	6103 G4	7103-A A10	7113-A B12	7119 G8	F108 G15	F117 B12	F130 C13	F155 F2
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VERSION	FC adres	3162	3165	3166	3199	4133	2190	1002	5106	5102	5105	6108	6109	modulator
3104 217 06020	864Mhz	C6	X	-	-	560R	X	-	-	33nH	27nH	-	-	TX864B
3104 217 06030	926Mhz	C6	X	-	X	1k	-	-	6n8	22nH	33nH	-	-	TX926
3104 217 06190	433Mhz	C6	X	X	-	5k6	-	X	-	-	-	X	X	TX433

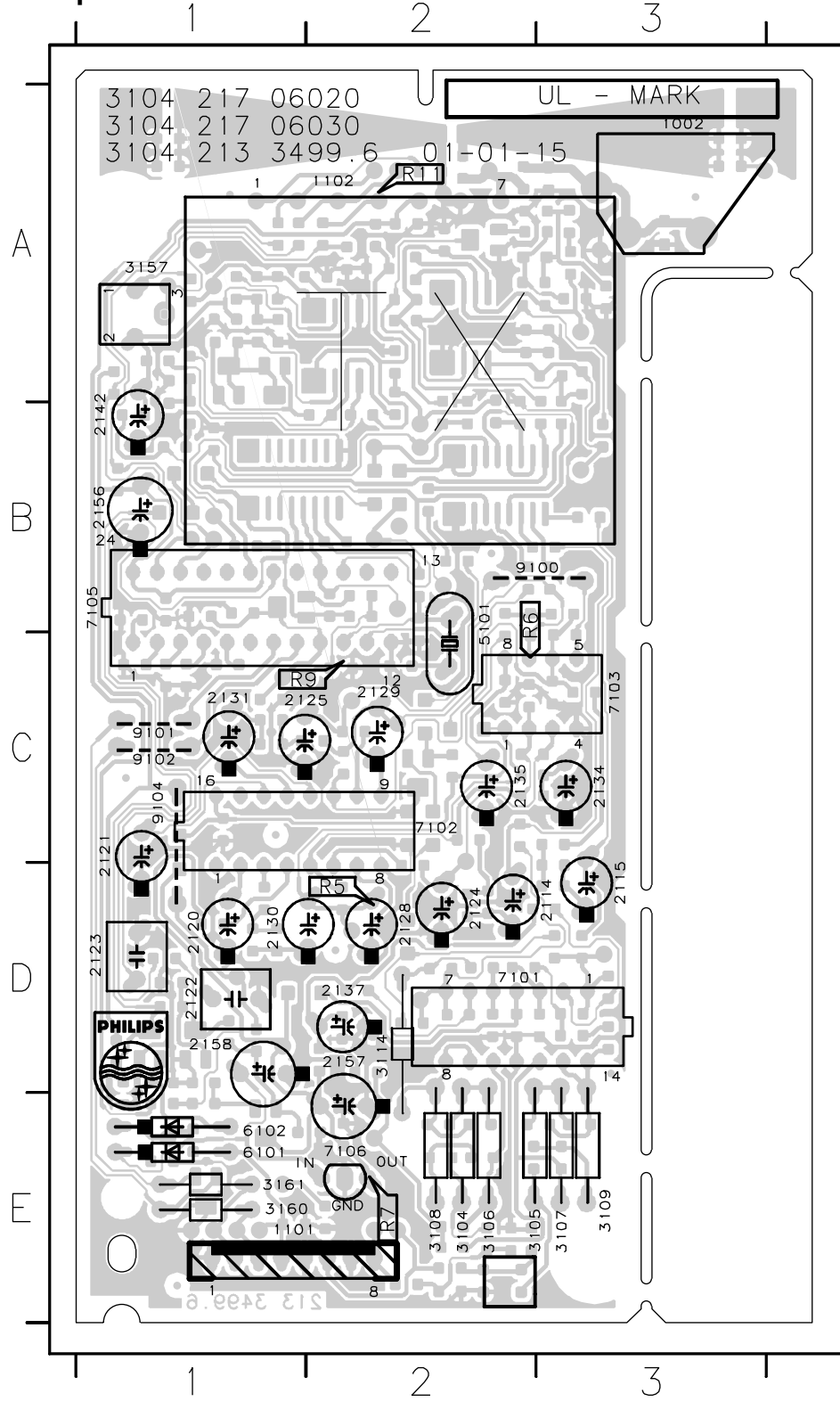
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value = this value to be used

CL 16532149\_025.eps  
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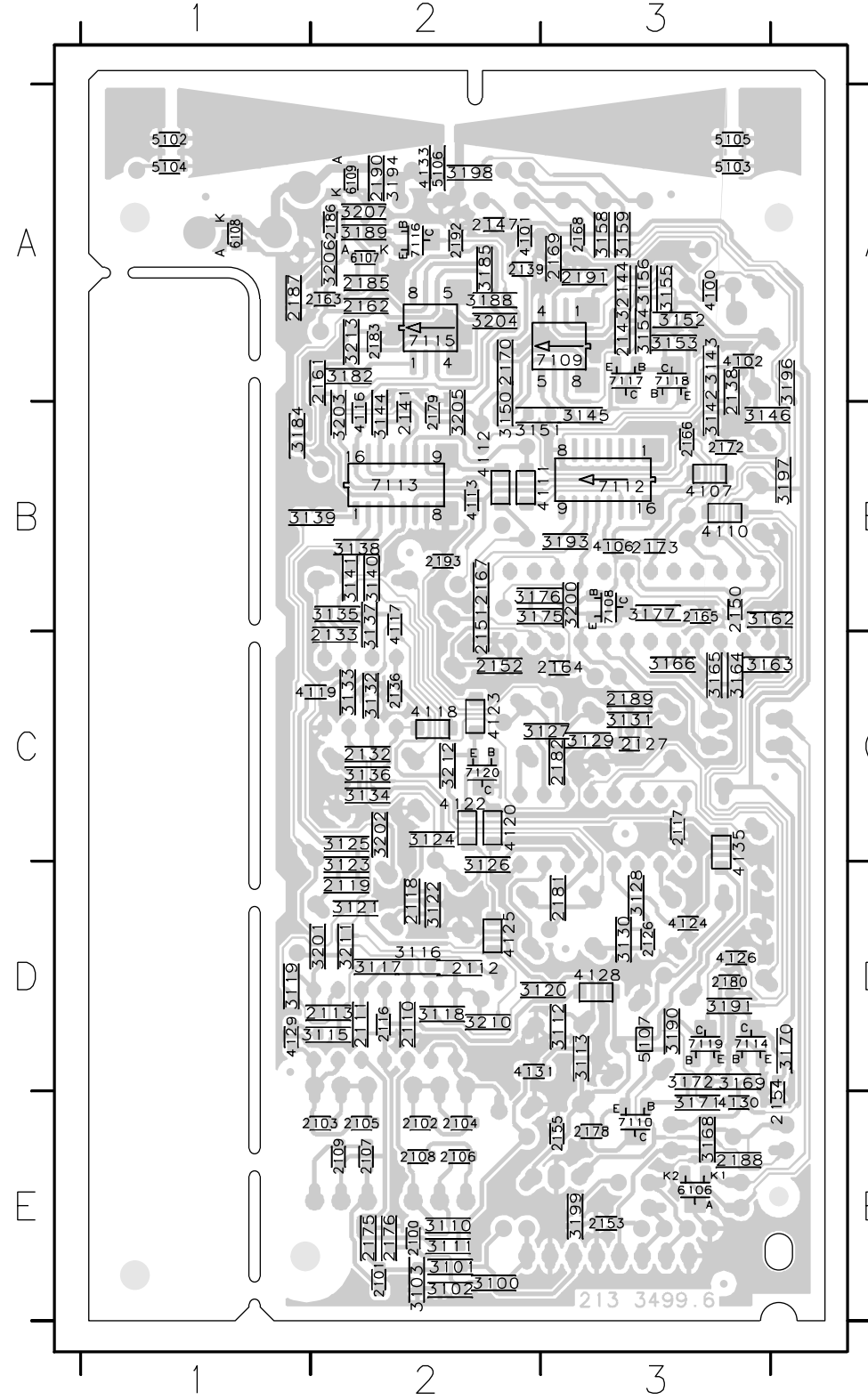
Layout Wireless Transmitter

Top View



- 1002 A3
- 1101 E1
- 1102 A2
- 2114 D3
- 2115 D3
- 2120 D1
- 2121 C1
- 2122 D1
- 2123 D1
- 2124 D2
- 2125 C1
- 2128 D2
- 2129 C2
- 2130 D1
- 2131 C1
- 2134 C3
- 2135 C2
- 2137 D2
- 2142 B1
- 2156 B1
- 2157 D2
- 2158 D1
- 3104 E2
- 3105 E2
- 3106 E2
- 3107 E3
- 3108 E2
- 3109 E3
- 3114 D2
- 3157 A1
- 3160 E1
- 3161 E1
- 5101 B2
- 6101 E1
- 6102 E1
- 7101 D2
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- 9101 C1
- 9102 C1
- 9104 C1

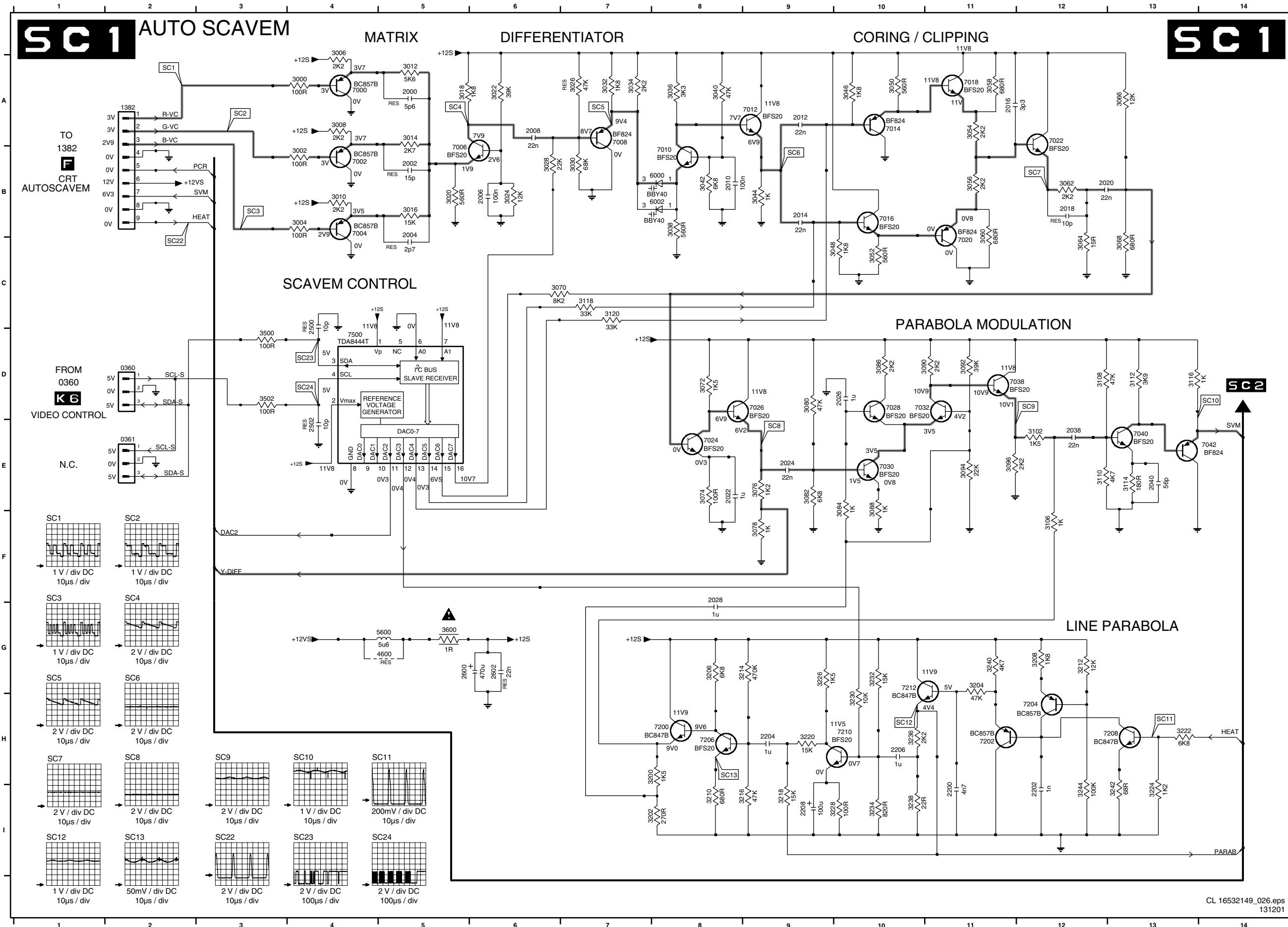
Bottom View



- 2100 E2
- 2101 E2
- 2102 E2
- 2103 E1
- 2104 E2
- 2105 E1
- 2106 E2
- 2107 E2
- 2108 E2
- 2109 E1
- 2110 D2
- 2111 D1
- 2112 D2
- 2113 D1
- 2116 D2
- 2117 C3
- 2118 D2
- 2119 D1
- 2126 D3
- 2127 C3
- 2132 C2
- 2133 C1
- 2136 C2
- 2138 A3
- 2139 A2
- 2141 B2
- 2143 A3
- 2144 A3
- 2147 A2
- 2150 B3
- 2151 B2
- 2152 C2
- 2153 E3
- 2154 E3
- 2155 E2
- 2161 A1
- 2162 A2
- 2163 A1
- 2164 C2
- 2165 B3
- 2166 B3
- 2167 B2
- 2168 A2
- 2169 A2
- 2170 A2
- 2172 B3
- 2173 B3
- 2175 E2
- 2176 E2
- 2178 E2
- 2179 B2
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- 2185 A2
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- 2188 E3
- 2189 C3
- 2190 A2
- 2191 A2
- 2192 A2
- 2193 B2
- 3100 E2
- 3101 E2
- 3102 E2
- 3103 E2
- 3110 E2
- 3111 E2
- 3112 D2
- 3113 D2
- 3115 D1
- 3116 D2
- 3118 D2
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- 4101 A2
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- 7115 A2
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- 7118 A3
- 7119 D3
- 7120 C2
- 7112 B3
- F100 D2
- F101 D2
- F102 C2
- F103 E2
- F105 E3
- F106 E2
- F107 E3
- F108 B2
- F109 E2
- F110 D1
- F111 C2
- F112 A3
- F113 C2
- F114 D3
- F116 B3
- F118 D3
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- F123 E3
- F124 A2
- F125 A2
- F127 B3
- F128 A3
- F129 A2
- F130 A2
- F131 B2
- F132 B2
- F133 C3
- F150 A1
- F151 A3
- F152 B2
- F153 A1
- F154 B1
- F155 B2
- F156 E3
- F157 B3
- F158 C2



Auto SCAVEM



SC1

AUTO SCAVEM

MATRIX

DIFFERENTIATOR

CORING / CLIPPING

SCAVEM CONTROL

PARABOLA MODULATION

LINE PARABOLA

SC1

SC2

TO  
1382  
CRT  
AUTOSCAVEM

3V  
3V  
2V9  
0V  
12V  
6V3  
0V  
9

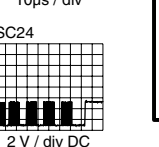
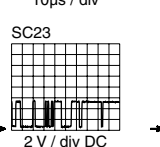
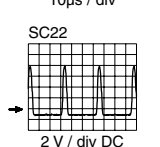
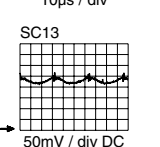
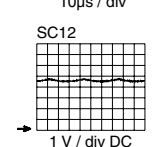
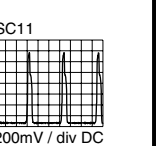
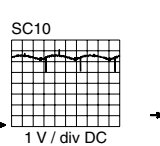
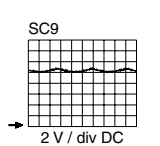
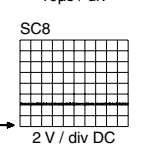
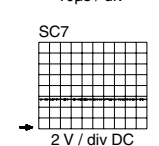
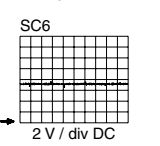
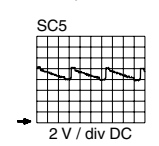
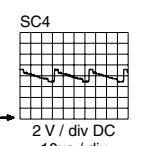
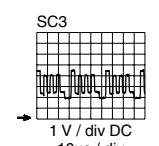
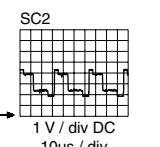
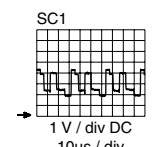
R-VC  
G-VC  
B-VC  
PCR  
+12VS  
SVM  
HEAT

FROM  
0360  
VIDEO CONTROL

5V  
0V  
5V  
3

SCL-S  
SDA-S

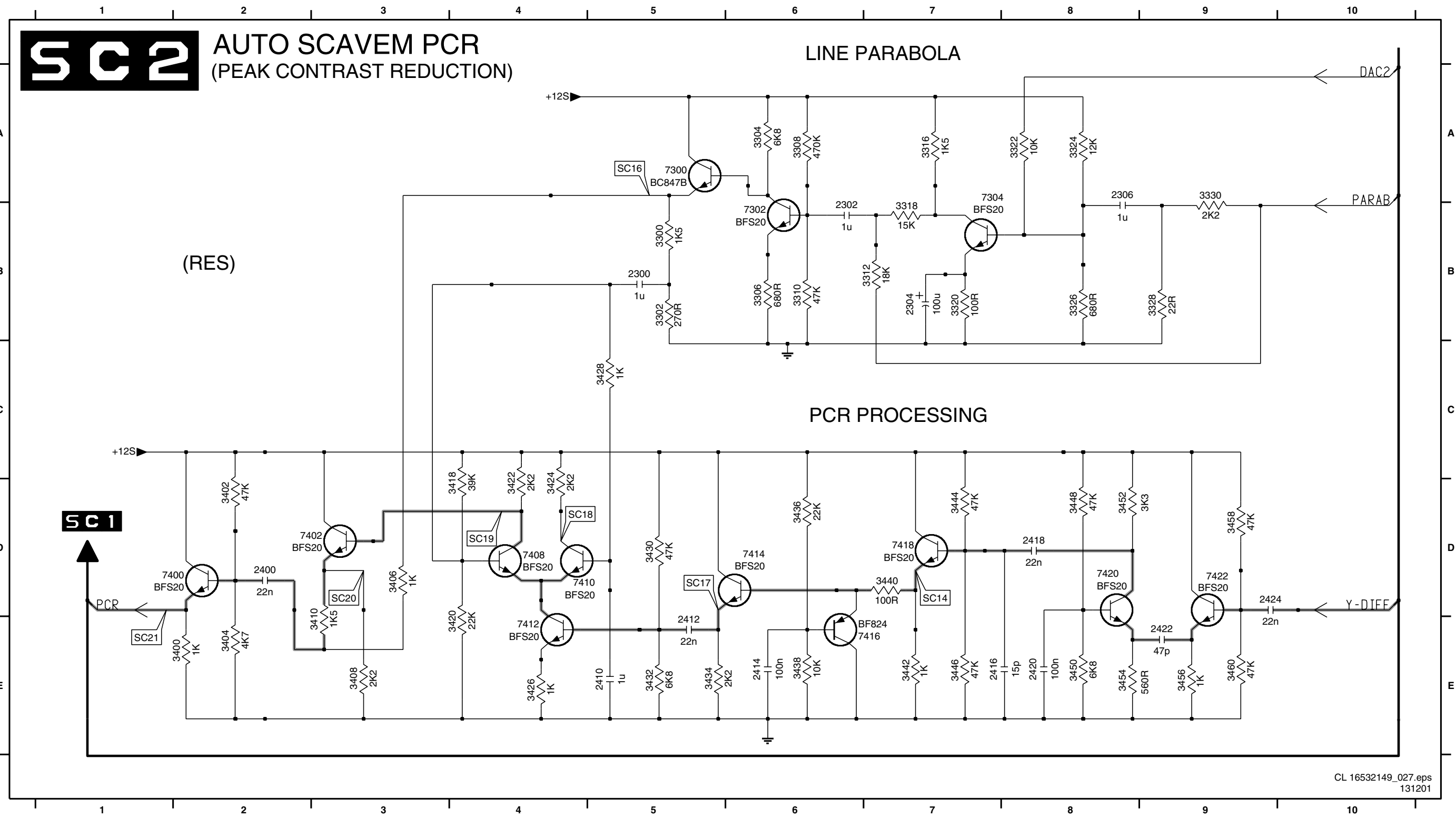
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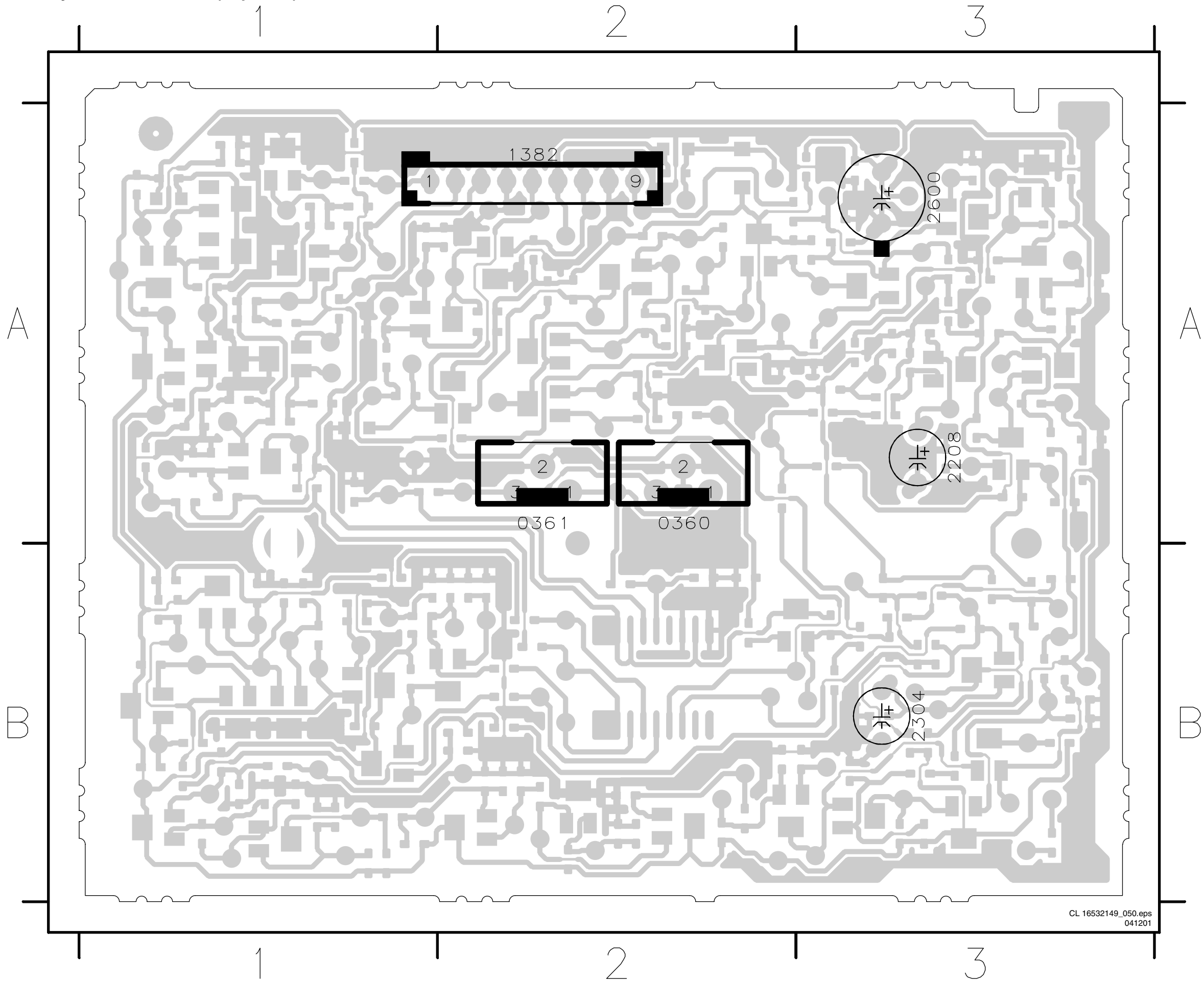
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- 0361 E2
- 1382 A2
- 2000 A5
- 2002 B5
- 2004 B5
- 2006 B6
- 2008 A6
- 2010 B8
- 2012 A9
- 2014 B9
- 2016 A11
- 2018 B12
- 2020 B12
- 2022 E8
- 2024 E9
- 2026 D10
- 2028 F8
- 2038 E12
- 2040 E13
- 2200 I11
- 2202 I12
- 2204 H9
- 2206 H10
- 2208 I9
- 2500 C4
- 2502 E4
- 2600 G5
- 2602 G6
- 3000 A4
- 3002 B4
- 3004 B4
- 3006 A4
- 3008 A4
- 3010 B4
- 3012 A5
- 3014 A5
- 3016 B5
- 3018 A5
- 3020 B5
- 3022 A6
- 3024 B6
- 3026 A7
- 3028 B6
- 3030 B7
- 3032 A7
- 3034 A7
- 3036 A8
- 3038 B8
- 3040 A8
- 3042 B8
- 3044 B9
- 3046 A10
- 3048 C10
- 3050 A10
- 3052 C10
- 3054 A11
- 3056 B11
- 3058 A11
- 3060 B11
- 3062 B12
- 3064 C12
- 3066 A13
- 3068 C13
- 3070 C6
- 3072 D8
- 3074 E8
- 3076 E9
- 3078 F9
- 3080 D9
- 3082 E9
- 3084 E10
- 3086 D10
- 3088 E10
- 3090 D11
- 3092 D11
- 3094 E11
- 3096 E11
- 3102 E12
- 3106 F12
- 3108 D12
- 3110 E12
- 3112 D13
- 3114 E13
- 3116 D13
- 3118 C7
- 3120 C7
- 3200 H8
- 3202 I8
- 3204 G11
- 3206 G8
- 3208 G12
- 3210 I8
- 3212 G12
- 3214 G9
- 3216 I9
- 3218 I9
- 3220 H9
- 3222 H13
- 3224 I13
- 3226 G9
- 3228 I10
- 3230 H10
- 3232 G10
- 3234 I10
- 3236 H10
- 3238 I10
- 3240 G11
- 3242 H13
- 3244 I12
- 3500 D3
- 3502 D3
- 3600 G5
- 3999 H5
- 4600 G5
- 5600 G5
- 6000 B8
- 6002 B8
- 7000 A4
- 7002 B4
- 7004 B4
- 7006 B5
- 7008 A7
- 7010 B8
- 7012 A9
- 7014 A10
- 7016 B10
- 7018 A11
- 7020 B11
- 7022 A12
- 7024 E8
- 7026 D9
- 7028 D10
- 7030 E10
- 7032 D11
- 7038 D11
- 7040 E13
- 7042 E14
- 7200 H8
- 7202 H11
- 7204 H12
- 7206 H8
- 7208 H13
- 7210 H10
- 7212 G10
- 7500 D4

Auto SCAVEM

2300 B5	2410 E5	2420 E8	3304 A6	3316 A7	3326 B8	3404 E2	3420 E4	3430 D5	3440 D7	3450 E8	3460 E9	7402 D3	7416 E6
2302 B6	2412 E5	2422 E9	3306 B6	3318 B7	3328 B9	3406 D3	3422 D4	3432 E5	3442 E7	3452 D8	7300 A5	7408 D4	7418 D7
2304 B7	2414 E6	2424 D9	3308 A6	3320 B7	3330 A9	3408 E3	3424 D4	3434 E5	3444 D7	3454 E8	7302 B6	7410 D5	7420 D8
2306 A8	2416 E7	3300 B5	3310 B6	3322 A8	3400 E2	3410 D3	3426 E4	3436 D6	3446 E7	3456 E9	7304 A8	7412 E4	7422 D9
2400 D2	2418 D8	3302 B5	3312 B7	3324 A8	3402 D2	3418 D4	3428 C5	3438 E6	3448 D8	3458 D9	7400 D2	7414 D6	



Layout Auto SCAVEM (Top View)

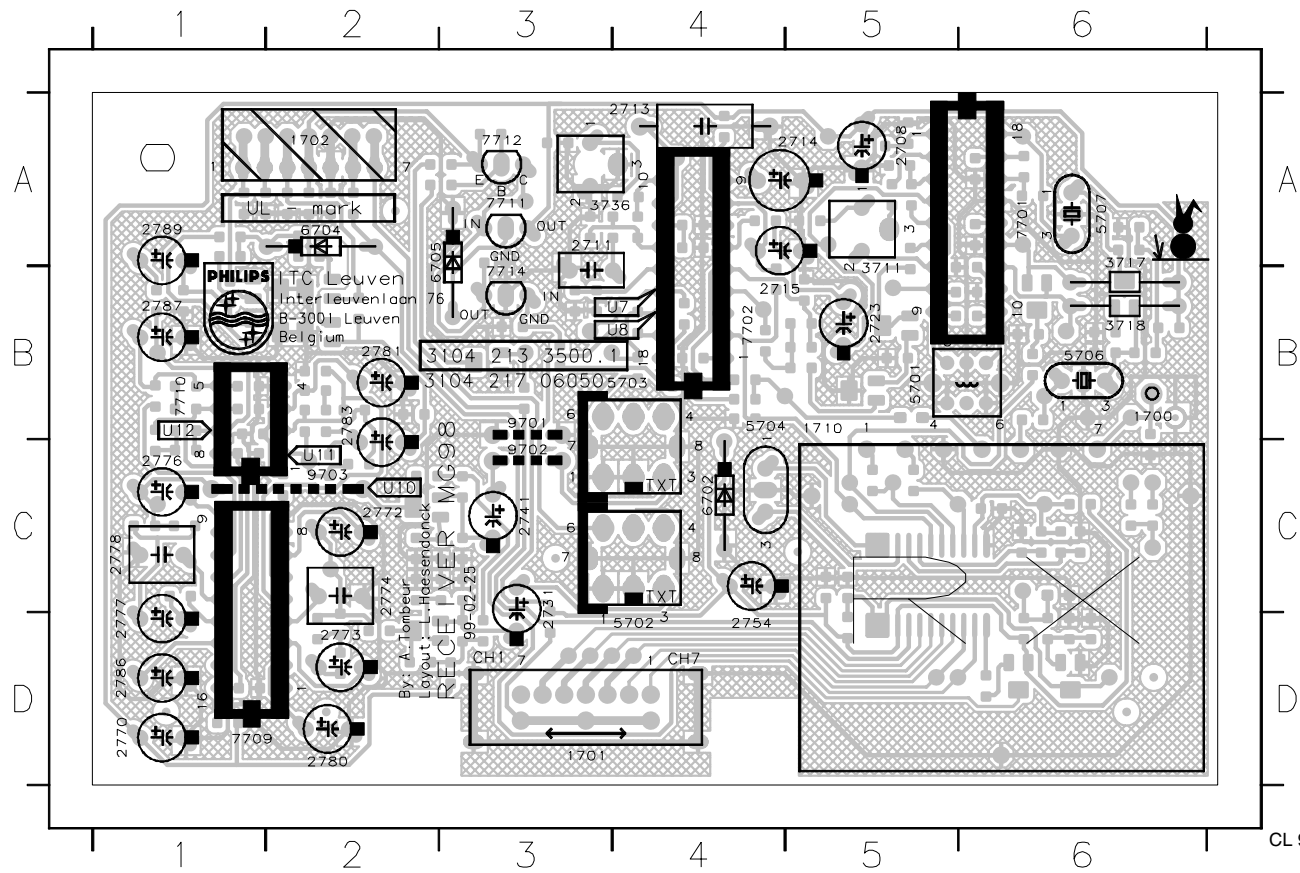


- 0360 A2
- 0361 A2
- 1382 A2
- 2208 A3
- 2304 B3
- 2600 A3





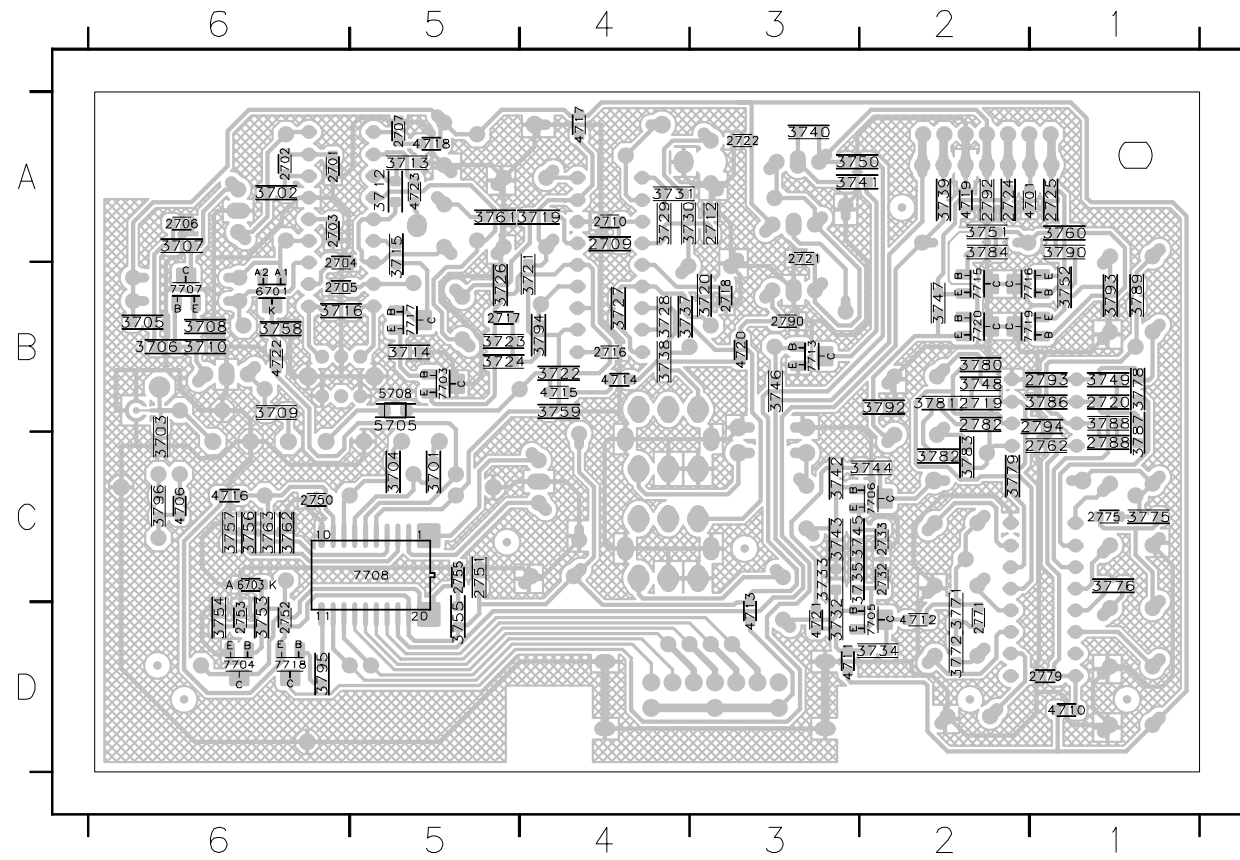
### Layout Wireless Surround Receiver (Top View)



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### Layout Wireless Surround Receiver (Bottom View)

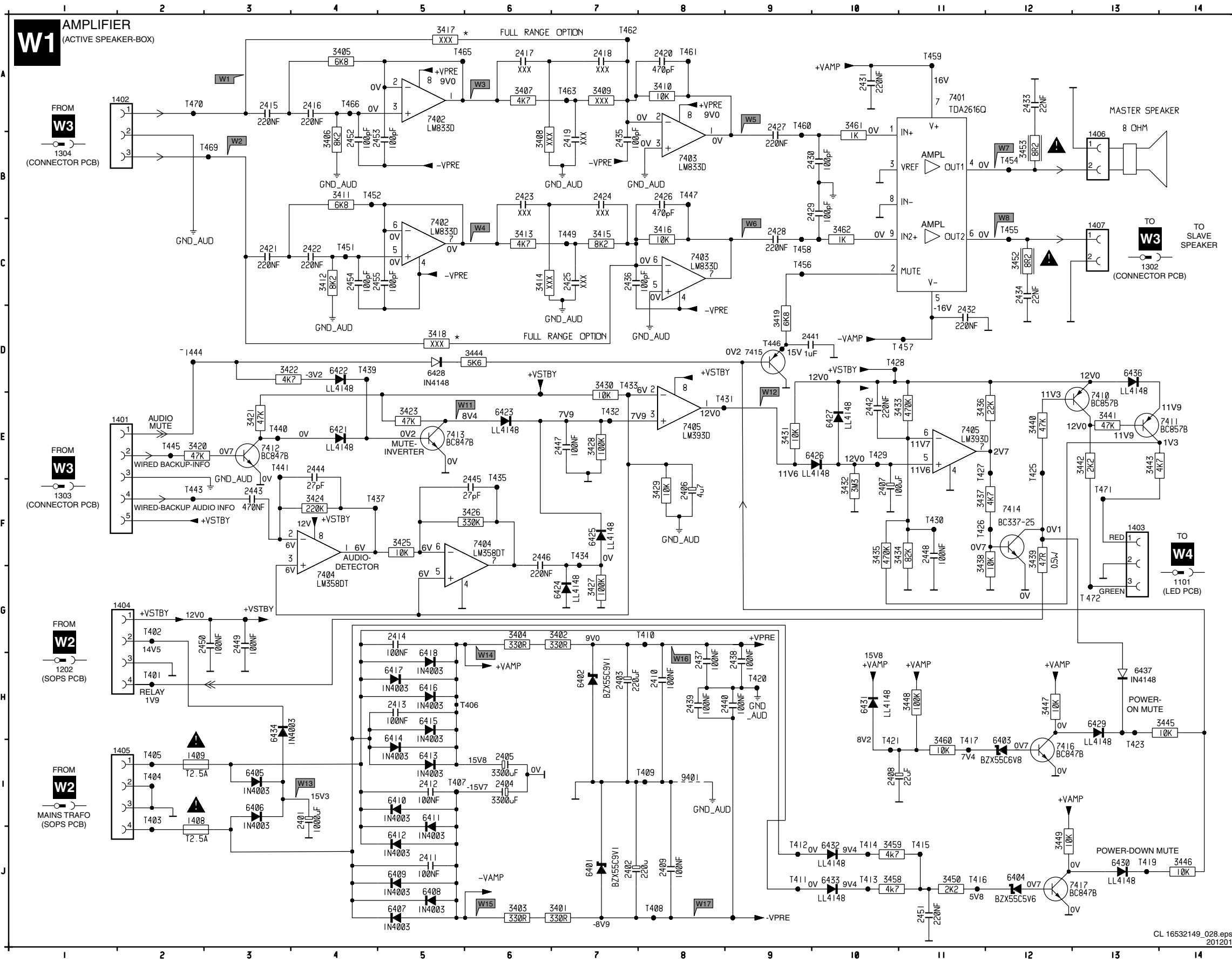


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### Active Speaker Box: Amplifier



1401	E2	6410	I5	W1 1402_PIN1	W15 3403
1402	A2	6411	I5		
1403	F13	6412	I5		
1404	G2	6413	I5		
1405	I2	6414	I5		
1406	B13	6415	H5		
1407	C13	6416	H5		
1408	H7	6417	J2		
1409	I2	6418	H5		
2401	I4	6421	E4		
2402	J6	6422	D4		
2403	H7	6423	E8		
2404	I6	6424	G7		
2405	I6	6425	F7		
2406	F8	6426	E10		
2407	F10	6427	E10		
2408	H11	6429	H13		
2409	J8	6430	J13		
2410	H8	6431	H10		
2411	J5	6432	J10		
2412	I5	6433	J10		
2413	H5	6434	H3		
2414	G5	6436	D13		
2415	A3	7401	A11		
2416	A4	7401	A5		
2417	A6	7403	C8		
2418	A7	7404	F4		
2419	B7	7405	E11		
2420	A8	7410	E13		
2421	C8	7411	E13		
2422	C4	7412	E3		
2423	B6	7413	E5		
2424	B7	7414	E12		
2425	C7	7415	D9		
2426	B8	7416	J12		
2427	B9	7417	J12		
2428	C9	9401	I8		
2429	C10	T401	H2		
2430	B12	T402	G2		
2431	A10	T403	J2		
2432	D11	T404	I2		
2433	A12	T405	I2		
2434	C12	T406	I2		
2435	B7	T407	I5		
2436	C7	T408	J8		
2437	H8	T409	I8		
2438	H9	T410	G8		
2439	H8	T411	J9		
2440	H9	T412	J9		
2441	D10	T413	J10		
2442	E10	T414	J10		
2443	F3	T415	J11		
2444	F3	T416	J11		
2445	F6	T417	I11		
2446	E7	T419	J13		
2447	F7	T420	H9		
2448	F10	T421	H10		
2449	G3	T423	H13		
2450	G3	T425	E12		
2451	J11	T426	F12		
2452	B4	T427	E12		
2453	B4	T428	E12		
2454	C4	T429	E10		
2455	C5	T430	F11		
3401	J7	T431	E7		
3402	C7	T432	E7		
3403	G7	T433	D7		
3404	G6	T434	F7		
3405	A4	T435	F6		
3406	B4	T437	F4		
3407	A4	T439	D4		
3408	B6	T440	E3		
3409	A7	T441	F3		
3410	A8	T443	E2		
3411	B4	T444	D2		
3412	C4	T445	D5		
3413	C6	T446	D9		
3414	C6	T447	B8		
3415	C7	T449	C7		
3416	C8	T451	C4		
3417	A5	T452	B4		
3418	D5	T454	B12		
3420	E2	T455	C12		
3421	E3	T456	C9		
3422	D3	T457	D11		
3423	E5	T458	C9		
3424	F4	T459	A11		
3425	F5	T460	B8		
3426	F6	T461	A8		
3427	G7	T462	A7		
3428	E7	T463	A7		
3429	F8	T465	A5		
3430	D7	T466	A4		
3431	E9	T469	B3		
3432	F10	T470	A2		
3433	E11	T471	F13		
3434	F11	T472	G13		
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3437	F12				
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3441	E13				
3442	E13				
3443	E13				
3444	H14				
3445	J14				
3446	J14				
3447	H12				
3448	H11				
3449	J12				
3450	J11				
3452	C12				
3453	B12				
3458	J11				
3459	J11				
3460	H11				
3461	B10				
6401	J7				
6402	H7				
6403	I12				
6404	I3				
6406	I3				
6407	J5				
6408	J5				
6409	J5				



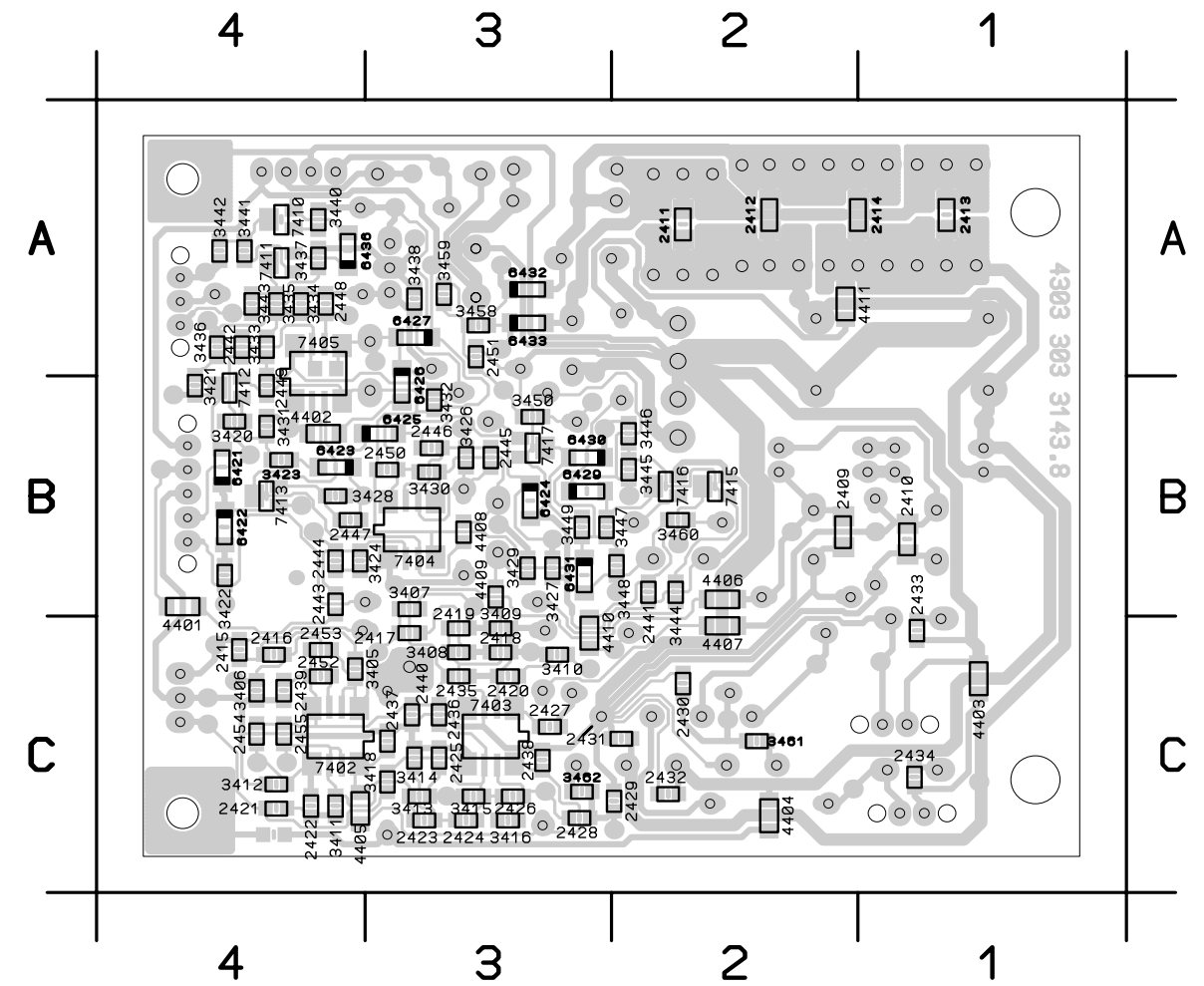
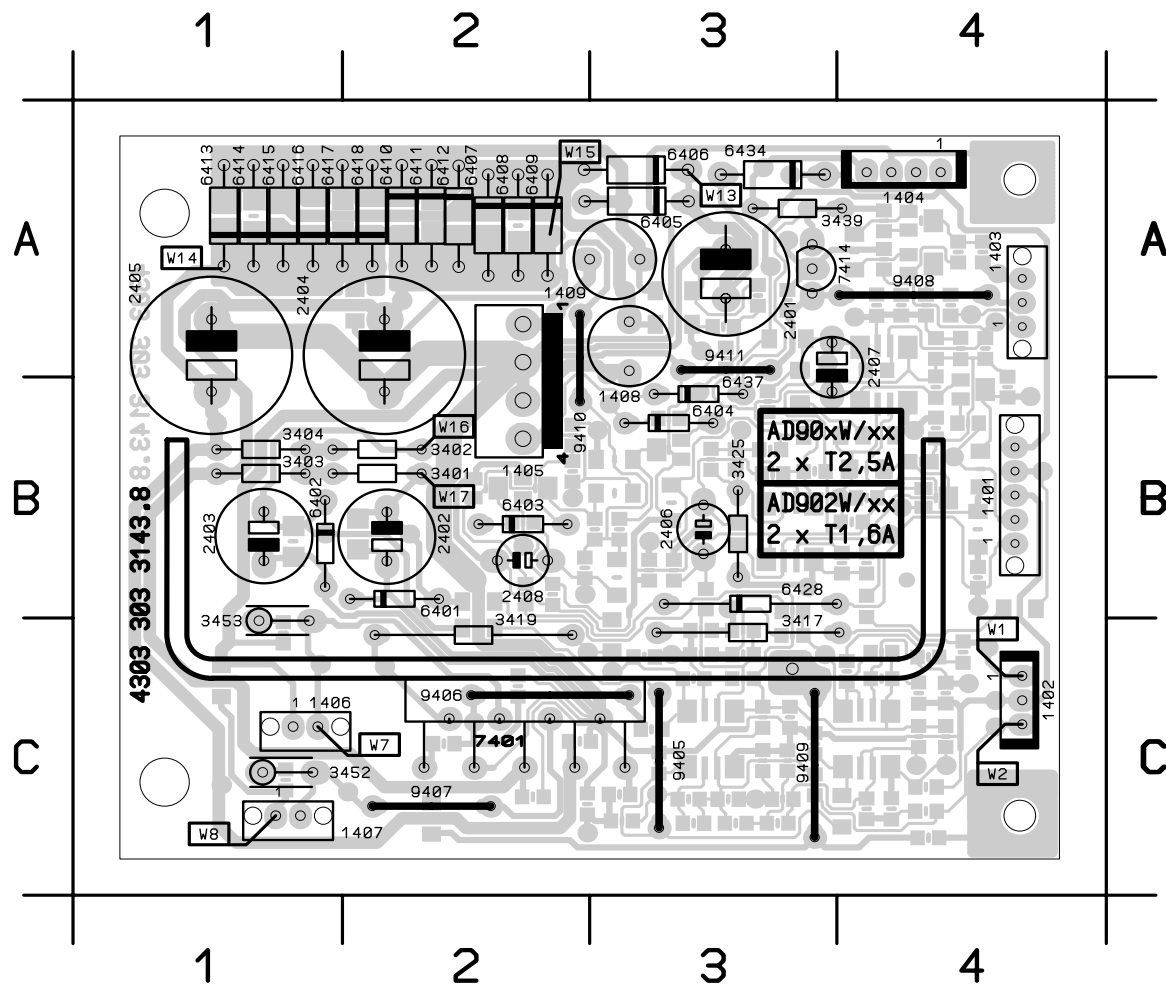
Layout Speaker Box: Amplifier (W1)

Top View

1401 B4	2401 A3	3402 B1	6401 B2	6410 A2	6428 B3	9409 C3
1402 C4	2402 B2	3403 B1	6402 B1	6411 A2	6434 A3	9410 B2
1403 A4	2403 B1	3404 B1	6403 B2	6412 A2	6437 B3	9411 A3
1404 A4	2404 B2	3417 C4	6404 B3	6413 A1	7401 C2	
1405 B2	2405 B1	3419 C2	6405 A2	6414 A1	7414 A3	
1406 C1	2406 B3	3425 B3	6406 A2	6415 A1	9405 C3	
1407 C1	2407 A3	3439 A3	6407 A2	6416 A1	9406 C2	
1408 A3	2408 B2	3452 C1	6408 A2	6417 A1	9407 C2	
1409 A2	3401 B1	3453 C1	6409 A2	6418 A2	9408 A4	

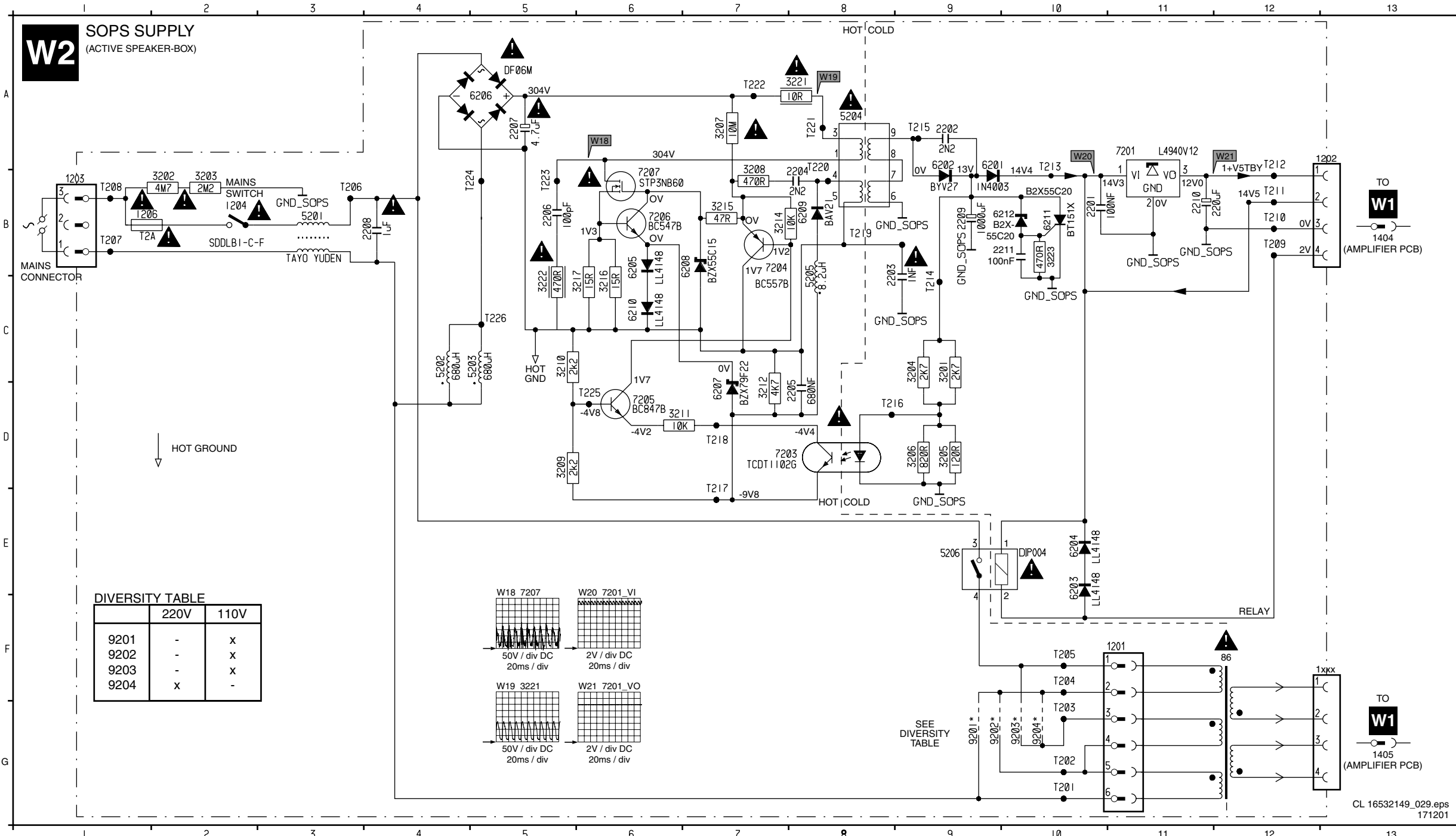
Bottom View

2409 B2	2428 C3	2447 B4	3415 C3	3437 A4	4402 B4	6431 B3
2410 B1	2429 C2	2448 A4	3416 C3	3438 A3	4403 C1	6432 A3
2411 A2	2430 C2	2449 B4	3418 C3	3440 A4	4404 C2	6433 A3
2412 A2	2431 C2	2450 B3	3420 B4	3441 A4	4405 C4	6436 A4
2413 A1	2432 C2	2451 A3	3421 B4	3442 A4	4406 B2	7402 C4
2414 A1	2433 C1	2452 C4	3422 B4	3443 A4	4407 C2	7403 C3
2415 C4	2434 C1	2453 C4	3423 B4	3444 B2	4408 B3	7404 B3
2416 C4	2435 C3	2454 C4	3424 B4	3445 B2	4409 B3	7405 A4
2417 C3	2436 C3	2455 C4	3426 B3	3446 B2	4410 C3	7410 A4
2418 C3	2437 C3	3405 C4	3427 B3	3447 B3	4411 A2	7411 A4
2419 C3	2438 C3	3406 C4	3428 B4	3448 B2	6421 B4	7412 B4
2420 C3	2439 C4	3407 B3	3429 B3	3449 B3	6422 B4	7413 B4
2421 C4	2440 C3	3408 C3	3430 B3	3450 B3	6423 B4	7415 B2
2422 C4	2441 B2	3409 C3	3431 B4	3458 A3	6424 B3	7416 B2
2423 C3	2442 A4	3410 C3	3432 B3	3459 A3	6425 B3	7417 B3
2424 C3	2443 B4	3411 C4	3433 A4	3460 B2	6426 B3	9401 C3
2425 C3	2444 B4	3412 C4	3434 A4	3461 C2	6427 A3	
2426 C3	2445 B3	3413 C3	3435 A4	3462 C3	6429 B3	
2427 C3	2446 B3	3414 C3	3436 A4	4401 B4	6430 B3	



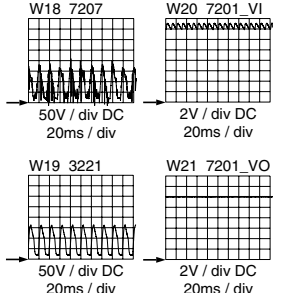
Active Speaker Box: SOPS Supply

1201 F11	2201 B11	2207 A5	3202 B2	3208 B7	3215 B7	3222 C6	5204 A8	6204 E11	6210 C6	7205 D6	9204 G10	T206 A4	T212 B12	T218 T218	T224 B5
1202 B13	2202 A9	2208 B4	3203 B2	3209 D6	3216 C6	3223 B10	5205 B8	6205 B6	6211 B10	7206 B6	T201 G10	T207 A1	T213 B10	T219 B8	T225 D6
1203 A1	2203 B9	2209 B9	3204 C9	3210 C6	3217 C6	0086 F12	5206 E10	6206 A5	6212 B10	7207 B6	T202 G10	T208 A1	T214 C9	T220 B8	T226 C5
1204 B3	2204 B8	2210 B12	3205 D9	3211 D7	3219 B5	5201 B3	6201 A10	6207 D7	7201 A11	9201 G10	T203 G10	T209 B12	T215 A9	T221 A8	
1206 B2	2205 D8	2211 C10	3206 D9	3212 D8	3220 B5	5202 C5	6202 A9	6208 B7	7203 D8	9202 G10	T204 F10	T210 B12	T216 D9	T222 A7	
1209 B10	2206 B6	3201 C9	3207 A7	3214 B8	3221 A8	5203 C5	6203 E11	6209 B8	7204 B8	9203 G10	T205 F10	T211 B12	T217 E7	T223 B6	



DIVERSITY TABLE

	220V	110V
9201	-	x
9202	-	x
9203	-	x
9204	x	-



SEE DIVERSITY TABLE

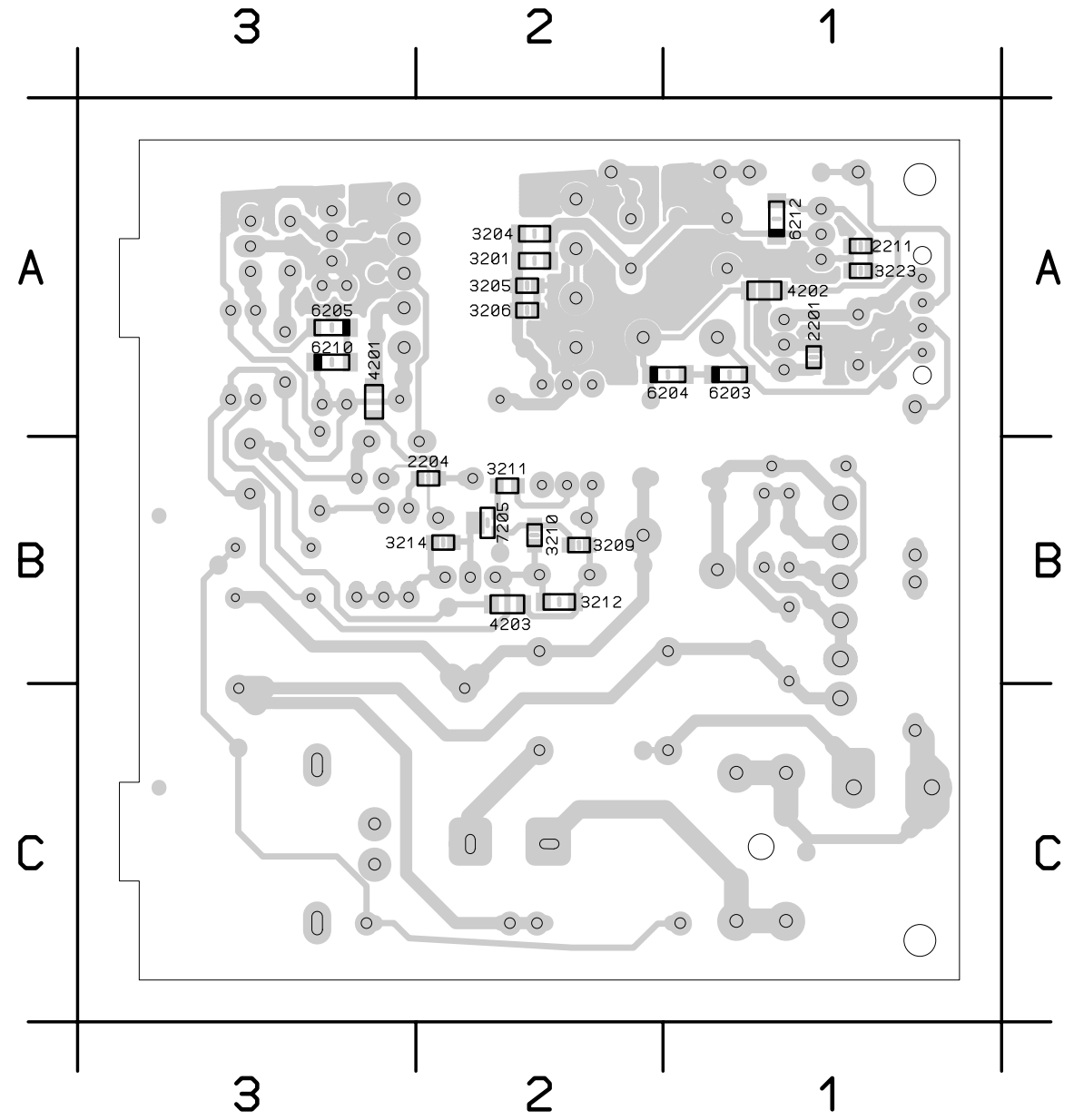
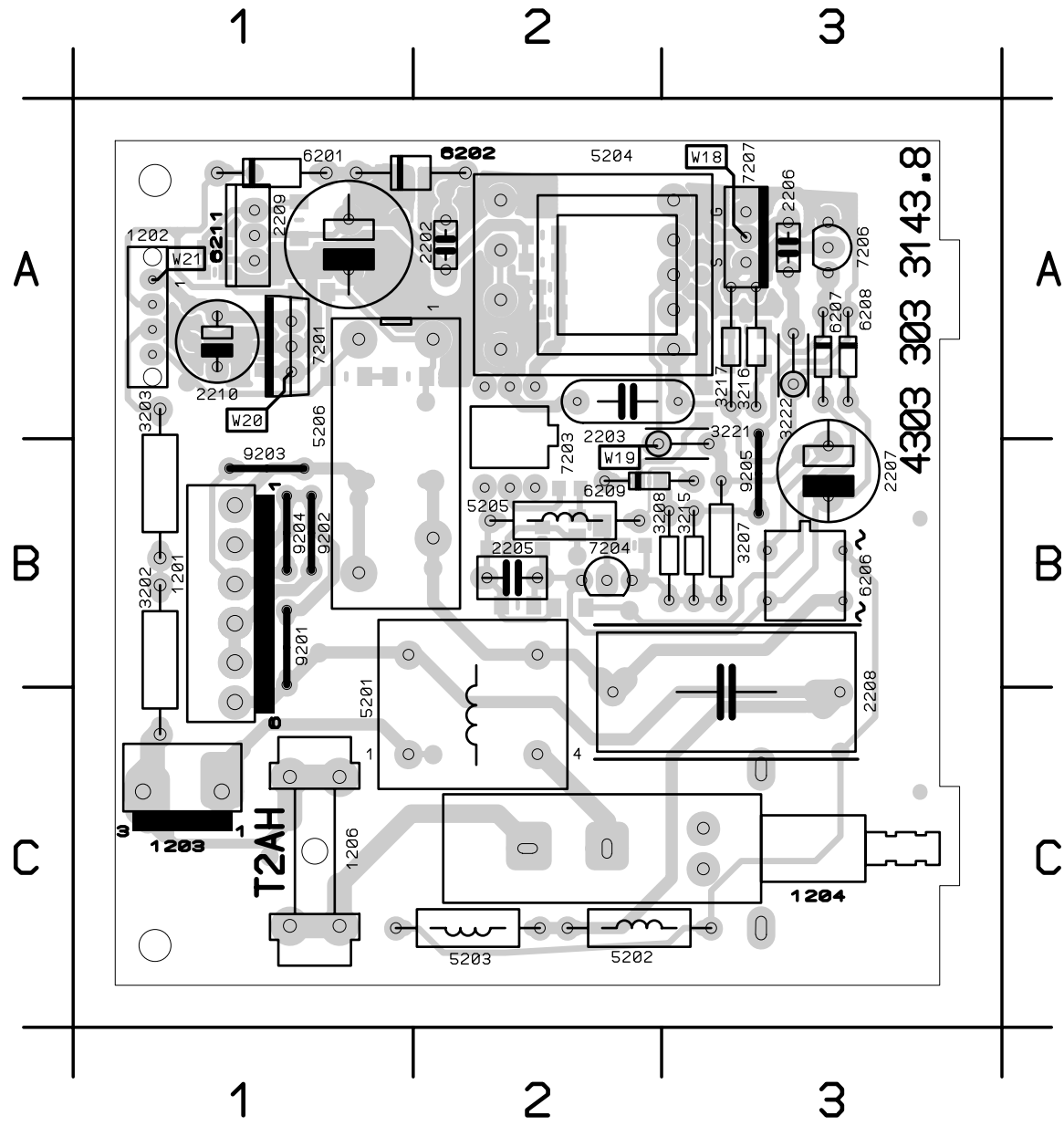
Layout Speaker Box: SOPS Supply (W2)

Top View

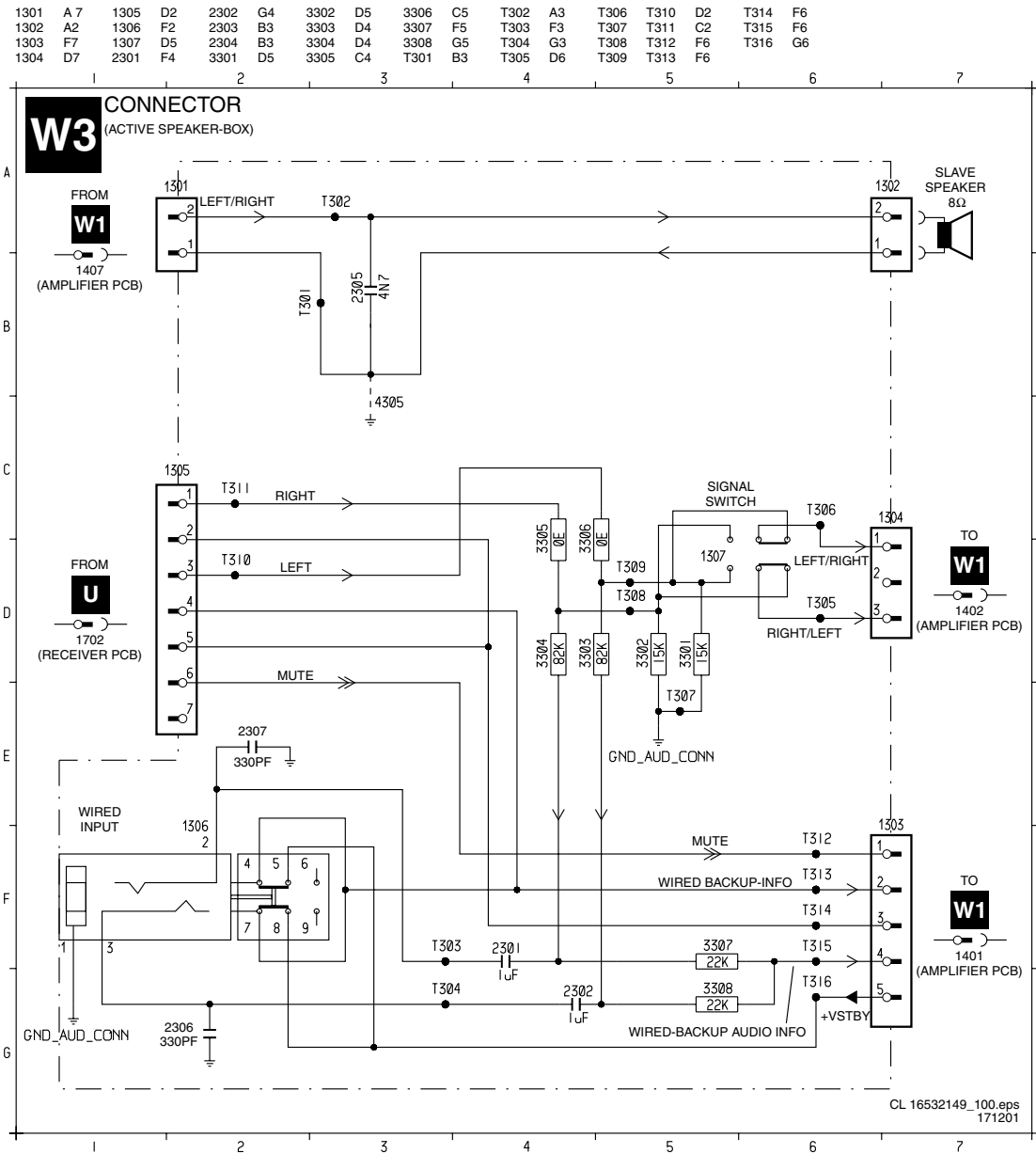
1201 B1	2208 C3	3219 C3	6201 A1	7206 A3
1202 A1	2209 A1	3220 B3	6202 A2	7207 A3
1203 C1	2210 A1	3221 B2	6206 B3	9201 C1
1204 C2	3202 C1	3222 A3	6207 A3	9202 B1
1206 C1	3203 B1	5201 C2	6208 A3	9203 B1
2202 A2	3207 B3	5202 C3	6209 B3	9204 B1
2203 A2	3208 B3	5203 C3	6211 A1	9205 B3
2205 B2	3215 B3	5204 A2	7201 A1	
2206 A3	3216 A3	5205 B2	7203 A2	
2207 B3	3217 A3	5206 B1	7204 B2	

Bottom View

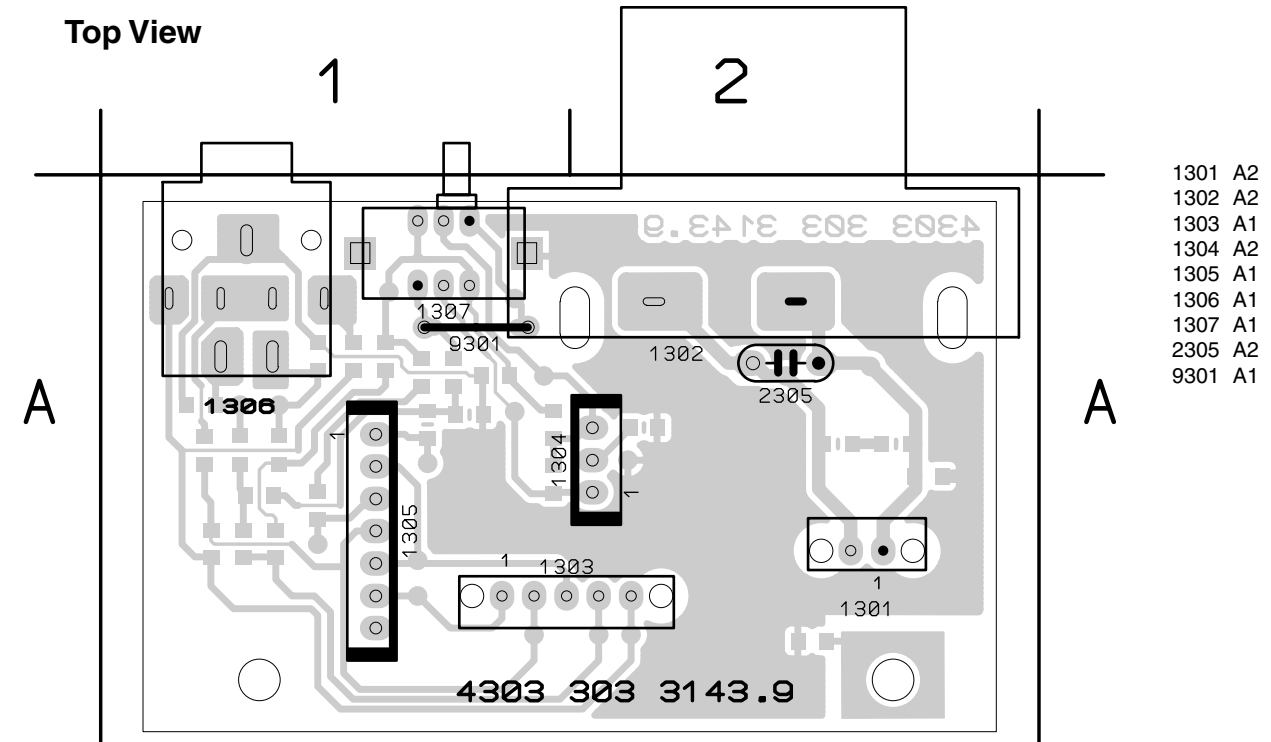
2201 A1	3205 A2	3212 B2	4203 B2	6212 A1
2204 B2	3206 A2	3214 B2	6203 A1	7205 B2
2211 A1	3209 B2	3223 A1	6204 A1	
3201 A2	3210 B2	4201 A3	6205 A3	
3204 A2	3211 B2	4202 A1	6210 A3	



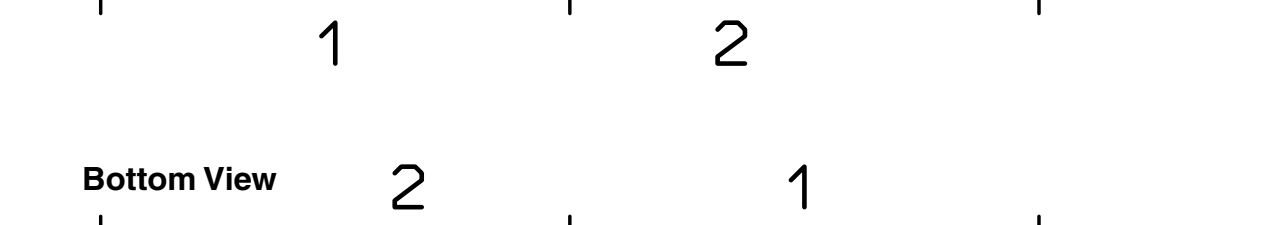
Active Speaker Box: Connector



Layout Active Speaker Box: Connector (W3)

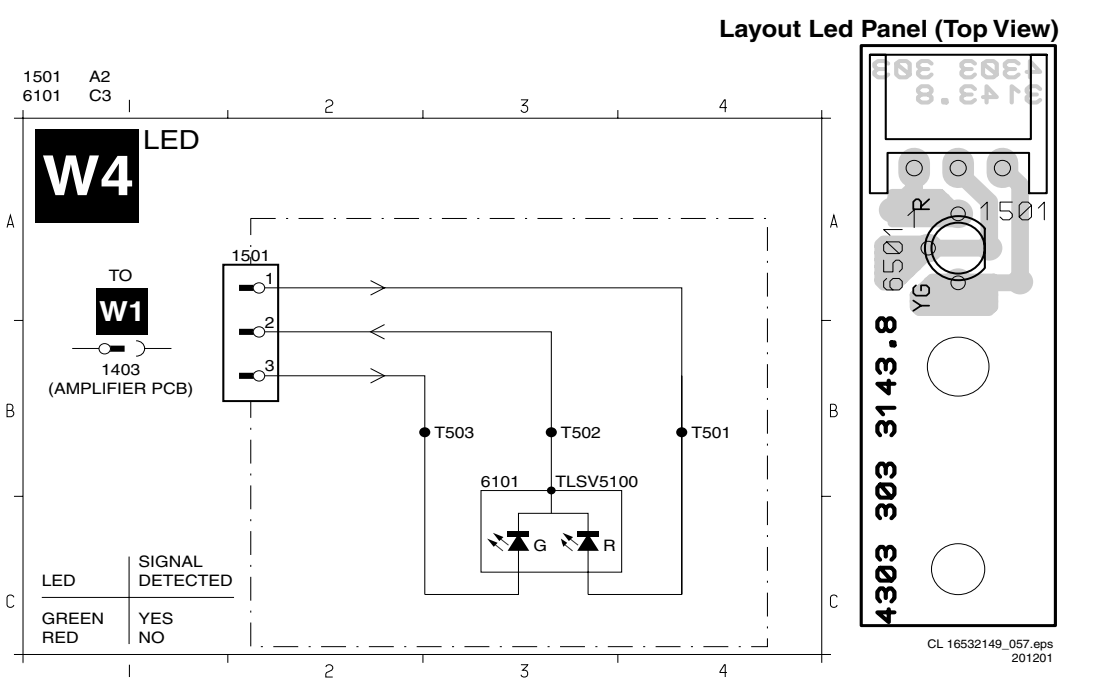


- 1301 A2
- 1302 A2
- 1303 A1
- 1304 A2
- 1305 A1
- 1306 A1
- 1307 A1
- 2305 A2
- 9301 A1

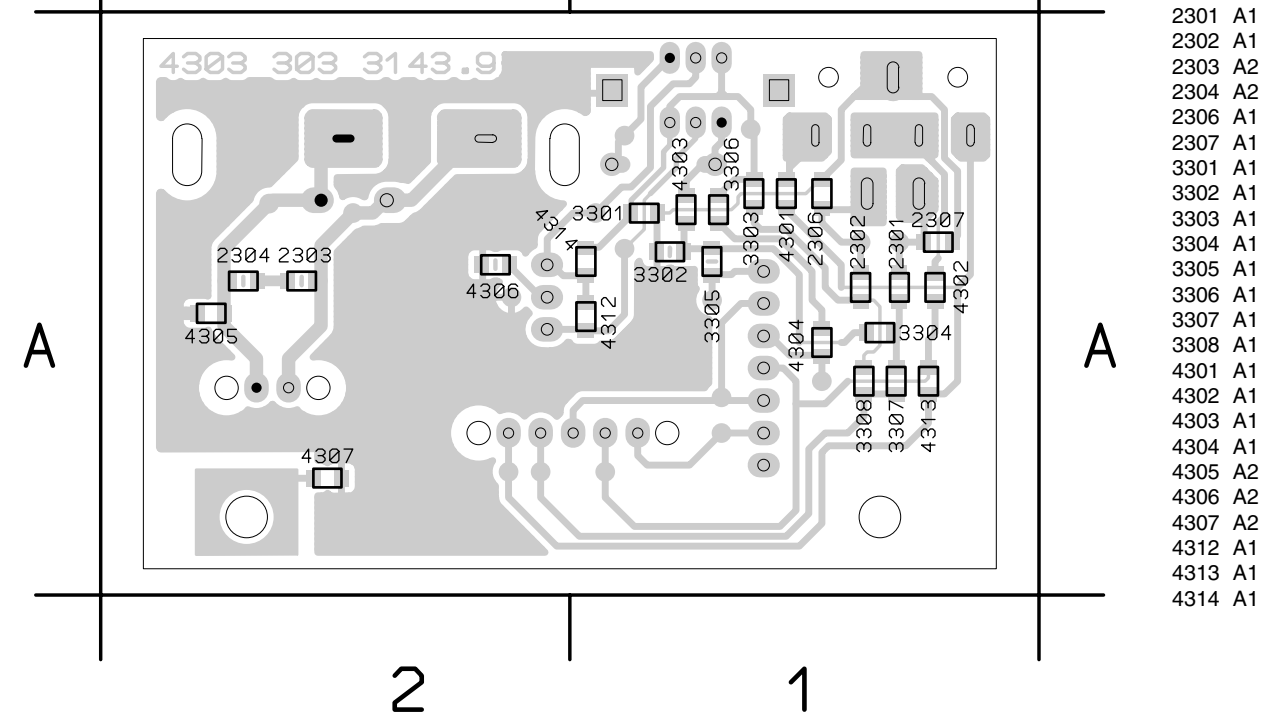


- 2301 A1
- 2302 A1
- 2303 A2
- 2304 A2
- 2306 A1
- 2307 A1
- 3301 A1
- 3302 A1
- 3303 A1
- 3304 A1
- 3305 A1
- 3306 A1
- 3307 A1
- 3308 A1
- 4301 A1
- 4302 A1
- 4303 A1
- 4304 A1
- 4305 A2
- 4306 A2
- 4307 A2
- 4312 A1
- 4313 A1
- 4314 A1

Active Speaker Box: LED



Layout Led Panel (Top View)



## 8. Electrical Alignments

Index of this chapter:

1. Introduction.
2. Option settings.
3. Hardware alignments.
4. Software alignments.

**Notes:** The Service Default Mode (SDM) and Service Alignment Mode (SAM) are described in chapter 5. Menu navigation is done with the 'CURSOR UP, DOWN, LEFT or RIGHT' keys of the remote control transmitter.

### 8.1 Introduction

#### 8.1.1 Start Conditions

Perform all electrical adjustments under the following conditions:

- Power supply voltage: 230 V<sub>AC</sub>/50 Hz (± 10 %).
- Connect the set to the mains via an isolation transformer with low internal resistance.
- Allow the set to warm up for approximately 20 minutes.
- Measure the voltages and waveforms in relation to chassis ground (with the exception of the voltages on the primary side of the power supply).
- Caution: never use the cooling fins/plates as ground.
- Test probe: R<sub>i</sub> > 10 MΩ, C<sub>i</sub> < 20 pF.
- Use an isolated trimmer/screwdriver to perform the alignments.

Perform all electrical adjustments with the following start settings (for all CRTs):

- Set LIGHT SENSOR 'off' (set ACTIVE CONTROL to 'off' with the remote control).
- Set BRIGHTNESS to '23' (via PICTURE menu, set indicator somewhat below the centre (= 32) point).
- Set COLOUR ENHANCEMENT to 'off' (via PICTURE menu).
- **Set DIGITAL OPTIONS to 'Pixel Plus' (via PICTURE menu), unless otherwise stated.**
- Set DYNAMIC CONTRAST to 'off' (via PICTURE menu).
- Set CATHODE DRIVE at '15' (via SAM - Alignments - General - Drive - Cathode).

#### 8.1.2 Adjustment Sequence

Use the following adjustment sequence:

1. Modules, units and PWBs.
2. Set the correct TV-set 'options'.
3. Rough adjustment of 'Vg2' and 'Focus'.
4. Rough adjustment of 'Geometry'.
5. Accurate adjustment of 'Vg2' and 'Focus'.
6. Rough adjustment of 'Geometry'.
7. Software alignments (cut-off, cathode drive, peak white, white drive, etc).

#### 8.1.3 Factory Default Settings

In case something goes wrong during the alignments, use the following **factory default** settings:

- Contrast = 48 (≈ 3/4 of scale).
- Colour = 33 (28"), 32 (32"), or 31 (36").
- Sharpness = 3.
- Colour Enhancement = On.
- Tint = Normal.
- Digital Options = Pixel Plus.
- Dynamic Contrast = Medium.

### 8.2 Option settings

The microprocessor communicates with a large number of I<sup>2</sup>C ICs in the set. To ensure good communication and to make digital diagnosis possible, the microprocessor has to know which ICs to address. The presence/absence of these specific ICs (or functions) is made known via the option codes.

You can set the 'hardware related' options via the SAM: 'Alignments - Options' or 'Option Numbers' menu. You can set the 'software related' options via the SAM: 'Dealer Options' menu .

#### Important:

- After you have changed the option(s), save them via the 'Store' command.
- The new option setting is only active after the TV is switched 'off' and 'on' again via the mains switch (the NVM is then read out again).

#### 8.2.1 Options

Select this sub-menu to set the initialisation codes (= options) of the TV via text menu's.

Table 8-1

Menu-item	Subjects	Options	Physically in the set
Dual screen/PIP	Aux type	None	Dual Screen/PIP module not present.
		Video Dual Screen	Dual Screen module present
		PIP	PIP module present
	Text Dual Screen	Yes	Text Dual Screen present (only for 16:9 sets)
		No	Text Dual Screen not present
	Aux Headph. Sound(optional)	Yes	
	No		
Teletext/EPG	TXT	Yes	Feature enabled
		No	Feature disabled
	NextView present	Yes	Feature enabled
		No	Feature disabled
	NextView type	Flashram	Flash-RAM (IC7013 on SSP) present
		No Flashram	Flash-RAM (IC7013 on SSP) not present
Communication	Easylink Plus	Yes	Feature enabled
		No	Feature disabled
Picture Tube	CRT Type	4:3	4:3 picture tube
		16:9	16:9 picture tube
	CRT size	28 / 32 / 36 / 29 / 34	Screen size in inches
	Picture Rotation(only for 16:9)	Yes	Frame rotation circuitry (IC7440 on LSP) present
		No	Frame rotation circuitry (IC7440 on LSP) not present
	Dynamic focus	Yes	Dynamic focus picture tube present
		No	Dynamic focus picture tube not present
	One point control	Yes	Feature enabled
		No	Feature disabled
	Anti-moirE filter	Yes	Not used
		No	Not used
Video repro	Featurebox type	Eco	PROZONIC not present
		Prozonic	PROZONIC present
		Falcons	FALCONIC present
		1050i/1250i	Progressive scan mode
		Eagle	Pixel plus mode
	Split Screen	Yes	
		No	
	Field memories	2	
		3	
	Lightsensor	Yes	Feature enabled
		No	Feature disabled
	Combfiler	Yes	Feature enabled
		No	Feature disabled
	Auto scavem	Yes	Feature enabled
		No	Feature disabled
	Picnic AGC	Yes	In 'Normal' operation: Yes
		No	During 'Drive' alignments: No
	Signalling bits	Yes	Format recognised
		No	Format not recognised
	Audio Repro	Dolby	None
Pro Logic			
Digital			MCS panel present
Rear speakers		Corded	Not valid
		Virtual	Not valid
		Cordless	Active surroundbox present
Acoustic system		FL7	Not valid
		FL8	Not valid
		FL9 Monitor	Not valid
		FL9 DAS	Not valid
		FL11	Soft design with full range speakers at both sides
Miscellaneous	Heatsink Present	Yes	Heatsink present on CRT panel (diagram F)
		No	Heatsink not present on CRT panel (diagram F)

## 8.2.2 Option numbers

Select this sub-menu to set all options at once (expressed in two long numbers).

An option number (or 'option byte') represents several options. When you change these numbers directly, you can set all options very fast. All options are controlled via eight option numbers.

**Example:** Option numbers 32PW9767/12:

1. **05984 12568 03840 00016**
2. **12326 00001 00000 04358**

The first line indicates the hardware related options 1 to 4, the second line is reserved for the software related options. Every 5-digit number represents 16 bits (so maximum number is 65536, if all options are set).

Table 8-2

Option Byte	Bit	Option name	Settings (given in decimal values)		Option number		
Hardware Option 1	0	Feature Box	0 = Eco	1 = PROZONIC	Sum of HW Option 1		
	1		3 = FALCONIC (bit 0+1)	2 = 1050i/1250i			
	2			4 = Eagle			
	3		Comb Filter	0 = Off		8 = On	
	4	Auto Scavem	0 = Off	16 = On			
	5	Field Memory	0 = 2 Memories	32 = 3 Memories			
	6	Light Sensor	0 = Off	64 = On			
	8	PICNIC	0 = Off	256 = On			
	9	PICNIC AGC	0 = Off	512 = On			
	10	FALCONIC	0 = FALCONIC v1	1024 = FALCONIC v2			
	11	LNA	0 = Off	2048 = On			
	12	WSS	0 = Off	4096 = On			
	13	Time Constant	0 = Normal	8192 = Fast			
	Hardware Option 2	1	Dolby ProLogic	0 = Off		2 = On	Sum of HW Option 2
2		Virtual Rear Speakers	0 = Off	4 = On			
3		Cordless Rear Speakers	0 = Off	8 = On			
4		Dolby Digital	0 = Off	16 = On			
8		P50 (Easylink +)	0 = Off	256 = On			
12		EPG	0 = Off	4096 = On			
13		EPG type	0 = Type 2	8192 = Type 2C3			
Hardware Option 3	0	EXT3	0 = Off	1 = On	Sum of HW Option 3		
	1	EXT4	0 = Off	2 = On			
	4	Dual Screen	0 = Off	16 = PIP			
	5			32 = Dual Screen			
	6	TXT/EPG Dual Screen	0 = Off	64 = On			
	7	AUX Headph. Sound	0 = Off	128 = On			
	8	Aspect Ratio	0 = 4:3	256 = 16:9			
	9	Tilt	0 = Off	512 = On			
	10	DAF	0 = Off	1024 = On			
	11	One Point Control	0 = Off	2048 = On			
	12	Heat Sink	0 = Off	4096 = On			
	14	Home Cinema	0 = Off	16384 = On			
	Hardware Option 4	2	China IF	0 = Off		4 = On	Sum of HW Option 4
		4	Teletext	0 = Off		16 = On	
5		China Text	0 = Off	32 = On			
Software Option 1	0	Auto TV	0 = Off	1 = On	Sum of SW Option 1		
	1	Auto Store Mode	0 = None	2 = PDC/VPS			
	2		6 = PDC/VPS/TXT Page	4 = TXT Page			
	4	Picture Mute	0 = Off	16 = On			
	5	Demo Mode	0 = Off	32 = On			
	6	Virgin Mode	0 = Off	64 = On			
	12	TXT Preference	0 = TOP	4096 = FLOF			
	13	TXT Region	0 = East	8192 = West			
Software Option 2	0	CTI	0 = Off	1 = On	Sum of SW Option 2		
Software Option 3					Sum of SW Option 3		
Software Option 4	0	Cabinet		1 = FL7	Sum of SW Option 4		
	1		3 = FL9 DAS (bit 0+1)	2 = FL8			
	2		6 = FL11 (bit 1+2)	4 = FL9 Monitor			
	3						
	8	Picture Tube Size	0 = 28"	256 = 32"			
	9		768 = 29" (bit 8+9)	512 = 36"			
	10			1024 = 34"			
	11						

When all the correct options are set, the sum of the decimal values of each Option Byte (OB) will give the option number.

**Note:** When the EAROM is replaced, all options will require a re-setting. To be certain that the factory settings are reproduced exactly, you must set both option number lines. You can find the correct option numbers on a CRT sticker inside the TV set.

### 8.2.3 Dealer Options

Table 8-3

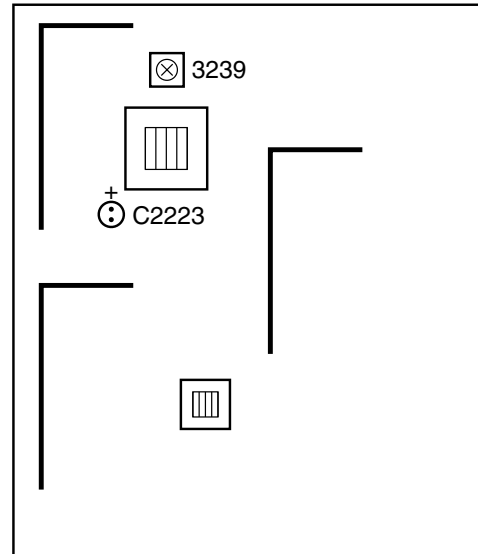
Name	Subjects	Options	Physically in set
Picture	CTI	Yes	CTI enabled
		No	CTI disabled
Personal	Blue Mute	Yes	Blue mute active, in case no picture detected
		No	Noise, in case of no picture detected
	Virgin Mode	Yes	TV starts up once with language selection menu, after mains switch on for the first time (virgin mode)
		No	TV does not starts up once with language selection menu, after mains switch on for the first time (virgin mode)
	Auto Store Mode	None	Autostore mode disabled (not in installation menu)
		PDC-VPS	Autostore mode via ATS (PDC/VPS) enabled
		TXT page	Autostore mode via ACI enabled
		PDC-VPS-TXT	Autostore mode via ACI or ATS enabled
Demo Menu Enable	Yes	Demo menu enable	
	No	Demo menu disable	
Auto TV	Yes	Auto TV mode enabled	
	No	Auto TV mode disabled	
Teletext	TXT Preference	TOP	Preference to TOP Teletext
		FLOF	Preference to FLOF Teletext
	East/West TXT	West	TXT characters for non -/58 sets
		East	TXT characters for -/58 sets

## 8.3 Hardware Alignments

### 8.3.1 Alignments on the Top Supply Panel (TSP)

#### +141 V ( $V_{BAT}$ ) Supply Voltage

#### TSP (component side)



CL 16532149\_075.eps  
061201

Figure 8-1

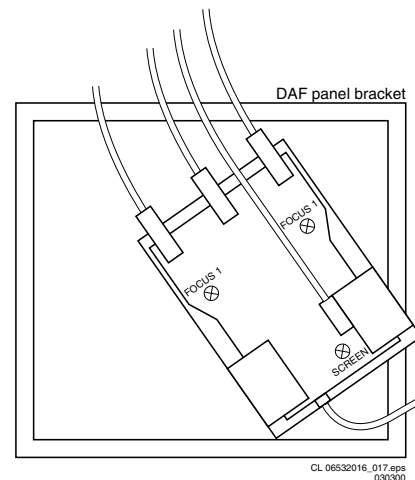
1. Switch the set 'off'.
2. Connect a voltmeter across C2223 (see also diagram B, + $V_{BAT}$ ).
3. Switch the set 'on'.
4. Use potentiometer R3239 (see figure above) to adjust the  $V_{BAT}$  supply voltage to  $+141 \pm 0.5$  V.

### 8.3.2 Alignments on the Large Signal Panel (LSP)

For the Focus and Vg2 alignment, see paragraph 8.3.3.

### 8.3.3 Alignments on the Double Astigmatic Focus (DAF) Panel

#### DAF Module



CL 06532016\_017.eps  
030300

Figure 8-2

#### Vg2 Adjustment

*Method 1 (without oscilloscope)*

1. Activate the SAM.
2. Select 'Alignments'.



3. Select the 'General' sub-menu.
4. Set 'Vg2 Test Pattern' to 'On'.
5. You will now get OSD feedback during Vg2 alignment.
6. First turn the Vg2 (= SCREEN) potmeter on the DAF-module (or LOT) to the left (see figure above)
7. OSD feedback will show 'Out high'.
8. Turn the Vg2 potmeter slowly clockwise until you read 'In low'. This is the correct value.

Method 2 (with oscilloscope)

#### Waveform Vg2 alignment

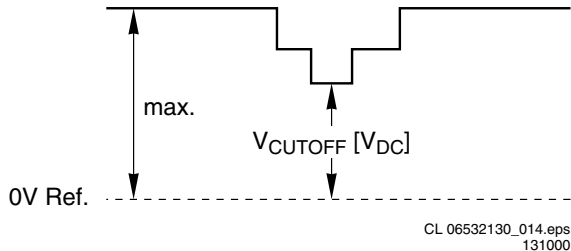


Figure 8-3

In the frame-blanking period of the R, G and B signals (applied to the CRT), the 'HOP' video processor (IC7300) inserts a measuring pulse as reference for the Vg2 adjustment. See figure above.

Measure all three signals, and use the pulse with the highest DC-level for the Vg2 adjustment.

1. Go, via the MENU key, to the PICTURE menu, and set CONTRAST and BRIGHTNESS to '0'
  - Service tip:** First, write down the actual values so you can restore them after the alignment.
2. Activate the SDM (see chapter 5).
3. Connect the RF output of a pattern generator to the antenna input. Test pattern is a 'black' picture (blank screen on CRT without any OSD info) with a carrier frequency of 425.25 MHz.
4. Set the channel of the oscilloscope to 50 V/div and the time base to 0.2 ms. Trigger the scope external via a CVBS signal (e.g. via pin 19 of the SCART1 connection).
5. Ground the scope at the CRT panel ('cold' side) and connect a 10:1 probe to one of the cathodes of the picture tube socket (see diagram F).
6. Measure the 'cut off' pulse during the first full line after the frame blanking (see figure above). You will see two pulses, one being the 'cut off' pulse and the other being the 'white drive' pulse (measure the pulse with the lowest value, this is the cut-off pulse).
7. Measure all three cathodes, and select the one with the highest  $V_{DC}$  value for the alignment. Adjust the  $V_{CUT\ OFF}$  of this gun with the SCREEN potentiometer on the LOT (see figure 8-5) to the correct value:
  - for 28" CRTs:  $160 \pm 3 V_{DC}$ .
  - for 32" CRTs:  $170 \pm 5 V_{DC}$ .
  - for 36" CRTs:  $170 \pm 3 V_{DC}$ .
8. Restore CONTRAST and BRIGHTNESS to the normal settings (see point 1).

#### Focus Alignment

Tune the set to a 'circle' or 'crosshatch' test pattern (use an external video pattern generator), and set BRIGHTNESS, COLOUR and SHARPNESS to nominal, and CONTRAST to maximum.

Now there are three set executions:

1. **For picture tubes with potmeters on the DAF module.** Align the focus, by means of the 2 focus potentiometers on the DAF-module (above the LOT, see figure 8.2) until the horizontal and vertical lines at 1/4 from east and west, at the height of the centre line, are of minimum width without introducing a visible haze. First, align the FOCUS1 (green) and then the FOCUS2 (black) potentiometer.

2. **For picture tubes with potmeters in the LOT.** Adjustment is identical.
  3. **For 32" Real Flat picture tubes.** First, align the 'static' focus potmeter (black) until the vertical lines, at the height of the centre line, are of minimum width without introducing a visible haze. Then, align the 'dynamic' focus potmeter (green) until the vertical lines, at the height of the centre line, are of minimum width without introducing a visible haze.
- Repeat steps if necessary.

#### 8.3.4 Alignments on the Small Signal Panel (SSP)

##### 40.4 MHz Neighbour-channel Sound Trap

##### SSP (component side)

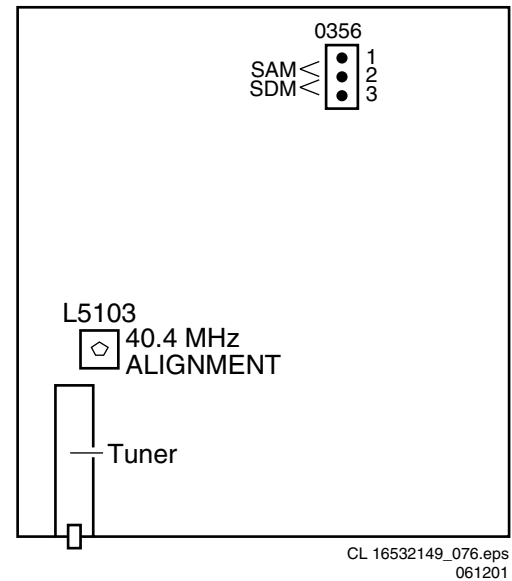
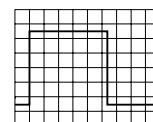
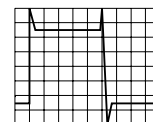


Figure 8-4

1. Tune to a checker board test-pattern (system BG - and with a carrier frequency of 475.25 MHz).
2. Connect an oscilloscope (trigger line frequent) to pin 19 (CVBS out) of the SCART1 connection.
3. Align coil L5103 (on SSP, diagram K1) completely downwards (see figure above).
4. Align the coil upwards till under- and overshoot arise at the black/white and white/black transitions in the video signal (see figure below).
5. Align the coil downwards again until above mentioned under- and overshoot is just disappeared.

##### Waveform 40.4 MHz Alignment



CL 86532057\_006.AI  
170798

Figure 8-5

### 8.3.5 Alignments on the Full Dual Screen (FDS) Panel

These alignments are of interest when ICs, e.g. HIP (IC7501-TDA9320H) or EAROM (IC7991-M24C04), are exchanged on the FDS-module, or if the FDS Tuner (UV1316) has been exchanged.

#### 40.4 MHz Neighbour-Channel Sound Trap

1. Tune the FDS-module to a checker board test-pattern (system BG - and with a carrier frequency of 475.25 MHz). See to it that the main program of the set is tuned to another channel.
2. Connect an oscilloscope (trigger line frequent) to pin 19 (CVBS out) of the SCART2 connection. This output is WYSIWYR (what you see is what you record)
3. Align the coil L5103 (on FDS, just below the tuner) completely downwards.
4. Align the coil upwards till under- and overshoot arise at the black/white and white/black transitions in the video signal (see figure above).
5. Align the coil downwards again till above mentioned under- and overshoot is just disappeared.

#### IF AFC

See paragraph 'Software Alignments - General - VDS/PIP - IF AFC' below.

#### Tuner AGC

See paragraph 'Software Alignments - General - VDS/PIP - Tuner AGC' below.

### 8.3.6 Alignments on the Surround Transmitter Module (diagr. R)

This alignment can only be performed when having mentioned (in alignment instructions) equipment. Limited repair can be exercised if defective circuit is in the area that no alignment is needed.

If defective part is in circuitry where alignments are necessary, two things can be done:

- Swap panel by a new one.
- If alignment equipment is available, module can be aligned according described alignment-instructions.

#### Frequency Deviation Level of Transmitter

1. Insert on test points R1 (= F103) and R2 (=F106) a sine wave signal of 400 Hz with a amplitude of  $3 V_{RMS}$ .
2. Align potmeter 3157 such, that the frequency-deviation is 75 kHz (+/- 5 kHz). This corresponds with a amplitude of 80 mV<sub>RMS</sub> (230 mV<sub>PP</sub>) on testpoint R11 (=F112).

### 8.3.7 Alignments on the Surround Receiver Module (diagram U)

#### Surround Receiver Component Side

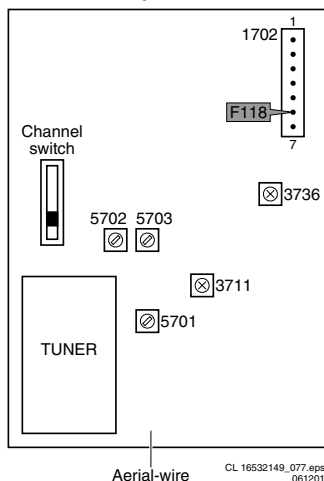


Figure 8-6

This alignment can only be performed when having mentioned (in alignment instructions) equipment.

Limited repair can be exercised if defective circuit is in the area that no alignment is needed.

If defective part is in circuitry where alignments are necessary, two things can be done:

- Swap panel by a new one.
- If alignment equipment is available, module can be aligned according described alignment-instructions.

**Note:** the aligned components are lacquered, so clean them first.

#### Alignment of FM-Detection Coil

Use a RF-generator as source: 1 mV, modulation 75 kHz.

1. Dependent of the receiver-version, place receiver on channel 4 (433, 926, or 864 MHz).
2. Align coil 5701 such, that a maximal audio frequency is detected at test point U6 (= F114).
3. Now swap the generator from frequency -150 kHz to +150 kHz, with the same amplitude and modulation.
4. Align 5107 such, that the 'stop' pulse (at F104, cathode of 6701) is symmetrical around 10.7 MHz (low value is < 0.3 V, high value is > 3.5 V).

#### Alignment of Tuned/Mute Level

Use a RF-generator as source: 3 to 7  $\mu$ V, modulation 75 kHz.

1. Dependent of the receiver-version, place receiver on channel 4 (433, 926, or 864 MHz)
2. Align potmeter 3711 such, that mute-level is down at 3  $\mu$ V and high at 7  $\mu$ V at pin 6 of connector 1702 (=F118).

#### Alignment of VCO-Demodulator

Use a RF-generator as source: 1 mV, unmodulated.

1. Dependent of the receiver-version, place receiver on channel 4 (433, 926, or 864 MHz).
2. Align potmeter 3736 such, that you measure 100 kHz (+/- 300 Hz) at test point F131 (pin 11 of TDA1578A).

## 8.4 Software Alignments

Put the set in the SAM mode (see chapter 5). The Service Alignment Menu will now appear on the screen.

Via 'Alignments' the following submenu's can be selected:

1. **General:** all non-geometry related adjustments.
2. **Normal Geometry:** General geometry alignments.
3. **Super Wide Geometry:** Geometry alignments for the 'Panorama' position in 16:9 sets.
4. **Options:** Setting the initialisation codes in the TV via menu's.
5. **Option Numbers:** All options together, expressed in two long numbers. The original factory setting for these numbers can be found on the picture tube sticker on the inside of the set.
6. **Store:** Store all alignments.

#### Notes:

- **Important:** Once you have completed the alignments/settings, select the item 'Store' (in main Alignment menu) to save all the values in the permanent memory of the set.
- If you changed and stored the Option codes, switch the set 'off' and 'on' with the mains switch. This, to activate the new settings. When switching via Stand-by, the option code settings are NOT read by the microprocessor.
- If an empty EAROM (permanent memory) is detected, all settings are set to pre-programmed default values.
- A built-in test pattern can be called up in some sub-menus. You can activate this pattern via the 'Test pattern on/off' item. The test pattern only appears AFTER the specific alignment is selected. The test patterns are generated by the Teletext-IC (OTC).

The alignments are explained now in the sequence of the sub-menu.

## 8.4.1 General

**Drive***Method 1 (with colour analyser)*

1. Go to the SAM 'Alignments - General - Drive' menu
2. Switch the 'Test pattern' to 'on' (you get a white block in middle of the image now).
3. Set 'Tint' to 'Normal'.
4. First, align the 'Cathode parameter'. This value is dependent of the picture tube size (see table 'Cathode parameter' for the colour-analyser readings).
5. Now, set the white levels for the three Tint-settings 'Normal', 'Warm' and 'Cool'. Align to the next values (see table 'White levels').

**Table 8-4**

CRT size/type	Light output (cd/m <sup>2</sup> )
28" RF WS	390
32" RF WS	370
36" RF WS	330

**Table 8-5**

	Cool	Normal	Warm
X	280	289	314
Y	287	299	329
Temp. (K)	10200	8700	6500

*Method 2 (without colour analyser)*

1. Even without having a colour-analyser you can set some parameters. This is the next best solution. These parameters are average values coming from production (statistics).
2. Set 'Tint' to 'Normal'.
3. First, set the 'Cathode parameter' to the value '5'.
4. Now set the R-, G- and B-parameters for the three tint-settings 'Cool', 'Normal' and 'Warm'. See table 'Tint-settings' below for the values.  
**Note:** These values are only for the 32" CRT. At the moment of writing, the information for the 28 and 36" CRTs was not yet available. As soon as they are available, we will publish a 'Service Information'.
5. **Red BL offset:** herewith the Black Level can be aligned very precise. Default value is '7'.
6. **Green BL offset:** herewith the Black Level can be aligned very precise. Default value is '7'.

**Table 8-6**

32" CRT	δ Cool	Normal	δ Warm
R	-1	40	+ 2
G	0	29	0
B	+ 4	34	- 10

**Luminance Delays**

With the 'Luminance delays' alignment the luminance information is placed on the chrominance information (brightness is pushed onto the colour). Use a colour bar/grey scale pattern as test signal.

- **Lum. Delay PAL:** Apply a PAL colour bar/grey scale pattern as a test signal. Adjust 'Lum. Delay PAL' until the transients of the colour part and black and white part of the test pattern are at the same position.
- **Lum. Delay SECAM:** Apply a SECAM colour bar/grey scale pattern as a test signal. Adjust 'Lum. Delay SECAM' until the transients of the colour part and black and white part of the test pattern are at the same position.

- **Lum. Delay Bypass:** apply a NTSC colour bar/grey scale pattern as a test signal. Adjust value until the transients of the colour and black & white part of the test area are at the same position.

**EHT Compensation**

Fixed setting: 0

**Soft Clipper**

Fixed setting: Pwl + 0%

**Luma Gain**

Fixed setting: 1

**IF AFC**

The SAM-mode is needed to make alignment, a test generator to make signal and the Installation-menu to check the 'Fine Tune' value.

Supply, via a video generator (e.g. PM5518), a TV-signal with a signal-strength of at least 1 mV and a frequency of 475.25 MHz. Use BG if possible, otherwise match the system of your generator with the received signal in the set.

Alignment procedure:

1. Go to the 'Installation' menu.
2. Select 'Manual installation'.
3. Tune the TV-set to the system and frequency described above via 'Search - 475 - OK'.
4. If the frequency showed in the line 'Fine tune' is between 475.18 MHz and 475.31 MHz, you don't need to re-adjust the IF-AFC.
5. If not, adjust the frequency in the 'Fine tune' line to 475.25 MHz and 'Store' the program (this is very important because this will disable the AFC algorithm).
6. Now go to the SAM and select 'Alignments - General - IF AFC'.
7. During the 'IF AFC'-parameter adjustment, one can see OSD feedback in the top of the screen. The OSD feedback can give 4 kind of messages:

**Table 8-7**

AFC-window	AFC-frequency vs. reference
Out	High
In	High
In	Low
Out	Low

The first item ('In' or 'Out') informs you whether you are in or out the AFC-window.

The second item ('High' or 'Low') informs you about whether the AFC-frequency is too high or too low.

1. First you must align the 'IF AFC'-parameter such that you come into the AFC-window (= 'In')
2. Then you must look for the point where the 'IF AFC'-parameter changes from High to Low. This level is the value you are looking for.
3. After adjustment 'Store' the value.
4. Now return to the 'Installation' menu.
5. Select 'Manual Installation - Search - 475 - OK' and 'Store'. This will set the AFC 'on' again.

**Service-Tip:** If you do not trust the accuracy of the frequency of your Service-generator, first 'measure' with 'Fine tune'-line (manual install-menu) of a good set your video generator.

**Tuner AGC**

1. Supply a TV-signal, with a frequency of 475.25 MHz and a signal-strength of about 2 mV.
2. Measure the DC-voltage on pin 1 of the Tuner (position 1200). With the 'Tuner AGC'-alignment in the SAM-menu, this voltage can be aligned.

- Alignment is correct when the DC-voltage is just below 3.8 V.

**Blend Intensity**

Use this alignment when the micro controller or HOP-IC has been replaced. It aligns the level of transparency of the menu-picture blended into the main-picture.

- Position the BRIGHTNESS-, CONTRAST- and COLOUR setting in the middle position (picture-menu).
- Apply a signal with a 100 % white video-pattern.
- Connect an oscilloscope to pin 7 of connector 0340 of the CRT panel and measure the Red output level.
- Align 'blending intensity'-parameter such, that the blended signal is 65 % of the black-white amplitude. Practically this will be about 1.3 V (blended signal) versus 2 V (full white signal). The parameter is adjustable between 0 and 31.

**Adjust Peak White Limiter**

Enter for all picture tubes the value '4'.

**Vg2 Test Pattern**

Here, you can activate the Vg2 Test pattern. See paragraph 'Hardware Alignments' for a description.

**VDS/PIP (optional)**

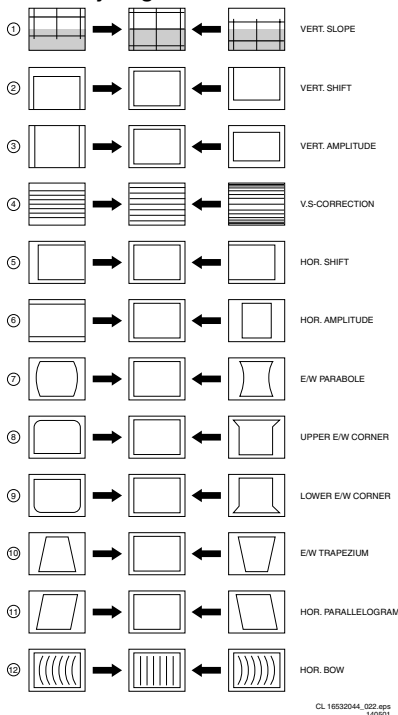
With this adjustment, you can set the following parameters (which are stored in the local memory IC7991):

- IF AFC.** This alignment is identical to the one described above.
- Tuner AGC.** See description below:
  - Supply a video signal, with a frequency of 475.25 MHz and a signal-strength of about 2 mV to the set.
  - Measure the DC-voltage on pin 1 of the tuner 1102 (easiest way is to measure on SMD capacitor C2116, just underneath the tuner).
  - Align the voltage via the menu. The alignment is correct when the DC-voltage is just below 3.8 V

**8.4.2 Normal Geometry**

**Note:** Use for all geometry alignments an **external** pattern generator with a geometry pattern (e.g. crosshatch).

**Geometry Alignments**



**Figure 8-7**

**Vertical Slope**

This alignment is meant to align the zero crossing of the frame-deflection to the mechanical middle of the picture tube.

- First set the start conditions for 16:9 sets: '**V. S-correction**' value on '0' for the 28" sets, and '9' for the 32" and 36" sets. Position the boundary-stripes of the test pattern on the edges of the picture tube.
- Align '**V. slope**' (during alignment the below-half of the picture is blanked). Match the middle line of the test pattern with the upper edge of this blanking picture. Push the MENU button again, to return to the previous menu.

**Service tip:** When the set is equipped with a rotation coil, use this menu item to check its correct alignment. If alignment is not correct, go to the INSTALLATION menu, choose SETUP, press OK, and choose PICTURE TILT. With the use of a crosshatch test pattern, align it to a correct horizontal picture.

**Vertical Amplitude and Centring**

- Use '**V. amplitude**' to align the vertical amplitude so that the entire test pattern is visible.
- Use '**V. shift**' to align the picture vertically in the middle.
- Repeat the '**V. amplitude**' alignment if necessary.

**Vertical S-correction**

Align '**V. S-correction**' such that a block at the top of the picture has the same height as a block in the middle of the picture.

**Horizontal amplitude and centring**

- Use '**H. amplitude**' to align the horizontal amplitude so that the entire test pattern is visible.
- Use '**H. shift**' to align the picture horizontally in the middle.
- Repeat the '**H amplitude**' alignment if necessary.

**Note:** If you cannot compensate the drift in the horizontal shift, go to the next subject 'DC-shift'.

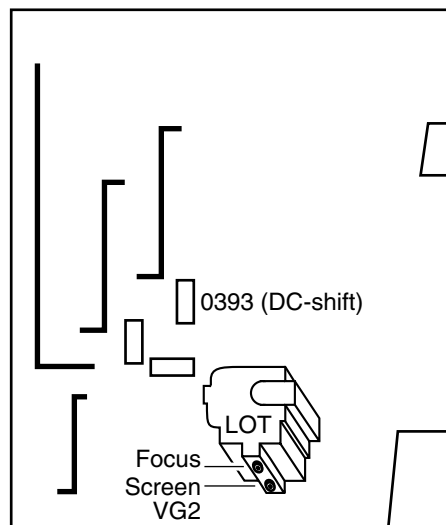
**DC-shift**

In case the horizontal linearity in wide-screen mode is out of tolerance, add a 'DC-shift correction' panel (3104 328 00641) to connector 0393 on the LSP (see figure below).

**Caution:** Be sure to switch 'off' the set first. On this DC-shift panel, cut position 9031 for correction to the right or cut position 9030 for correction to the left.

**Caution:** never plug in a not pre-aligned module in a set !!!

**DC-shift Connector**



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201201

**Figure 8-8**

In 32" and 36" sets, an **adjustable** DC-shift feature is always present. This is located on the DAF panel (potentiometer 3050). How to align:

1. Increase BRIGHTNESS to '45' (3/4 of scale).
2. Set DC-shift potmeter (item 3050 on DAF module) at midway. Maybe it is necessary to unhook the DAF module first, in order to access this potmeter (see chapter 4).
3. Apply a circle as test pattern.
4. Enter the SAM, choose ALIGNMENTS, and NORMAL GEOMETRY.
5. Write down the H. AMPLITUDE value.
6. Reduce H. AMPLITUDE until overscan and grey zones at the left and right are well visible.
7. Adjust H. SHIFT until picture is positioned symmetrically in the grey zone.
8. Recall the H. AMPLITUDE value.
9. Turn potmeter 3050 on the DAF module, until the picture edges are just visible.
10. Store the new value for H. SHIFT into the NVM (via the main Alignment menu).

#### ***East/west alignment***

1. Use '**East/West Parabola**' to align the vertical lines until straight.
2. Use '**Upper East/West corner**' to align the vertical lines in the upper corners until straight.
3. Use '**Lower East/West corner**' to align the vertical lines in the lower corners until straight.
4. Use '**East/West Trapezium**' to align for a rectangular.
5. Use '**Horizontal Parallelogram**' to align for straight vertical lines if necessary.
6. Use '**Horizontal Bow**' to correct the E/W parabola such that it becomes symmetrical.

Repeat steps 1 to 6 if necessary.

#### **8.4.3 Super wide geometry**

You only need to set the following values (if the normal geometry alignment has been performed correctly):

- **V. shift:** enter here the value of the 'normal geometry' alignment.
- **V. amplitude:** adjust image such that the outer vertical lines are just visible.
- **V. S-Correction:** enter here the value of the 'normal geometry' alignment.
- **H. amplitude:** enter here the value of the 'normal geometry' alignment subtracted by 2.
- **E/W Parabola:** enter here the value of the 'normal geometry' alignment.

#### **8.4.4 100Hz Geometry**

As all alignments are done in Pixel Plus mode @ 75 Hz, the 100 Hz mode needs an extra alignment:

- Select '**100Hz Geometry**'. The set automatically switches to 100 Hz mode.
- **V. slope:** Match the middle line of the test pattern with the upper edge of this blanking picture. Push the MENU button again, to return to the previous menu.
- After the alignment, return to the previous menu. The set automatically returns to 'Pixel Plus' mode.

## 9. Circuit Descriptions, Abbreviation List and Data Sheets

Index of this chapter:

1. Introduction
2. Power Supply
3. Video Path
4. Feature Box 7
5. Auto Scavem
6. Wireless Surround Amplifier
7. Abbreviation List
8. IC Data Sheets

### Note:

- Only **new** circuits (compared to the MG3.1E) are described. For the other circuit descriptions, see the training manual of the MG3.1E. This manual is available in different languages:
  - 3122 785 10007 = English (GB)
  - 3122 785 10008 = Dutch (NL)
  - 3122 785 10009 = German (D)
  - 3122 785 10011 = French (F)
  - 3122 785 10012 = Italian (I)
  - 3122 785 10013 = Spanish (E)
- Figures can deviate slightly from the actual situation, due to different set executions.
- For a good understanding of the following circuit descriptions, please use the diagrams in chapter 6 and 7. Where necessary, you will find a separate drawing for clarification.

### 9.1 Introduction

In the MG3.2E, a high-resolution mode is introduced, in order to obtain a sharper picture. This feature is called 'Pixel Plus'. It includes the following changes:

- A new 'Feature Box version 7' (FBX7), which contains the 'Eagle' IC. This IC is responsible for the definition improvement.
- With 'Pixel Plus', the pixels in horizontal direction are doubled.
- The number of vertical lines per picture is increased to 833, which improves the vertical definition.
- The frame deflection works on 75 Hz (which is the best compromise without introducing flicker).
- The signal bandwidth from FBX7 to picture tube is increased, in order to be able to cope with these high definition signals.
- A new Scavem circuit is necessary for the higher definition. This Scavem is dependent of the used picture tube and the picture content, and is controlled by the AutoTV algorithm. That is why it is called 'Auto Scavem'.

In addition, the Top Power Supply is adapted, so it can deliver more power.

In the 'Digital Options' menu, you now have three options:

- Digital Scan (100 Hz)
- Pixel Plus (75 Hz)
- Double Lines (50 Hz).

In all modes, the line frequency is 31250 Hz. Pixel Plus is the preferred mode. That is why the optimal geometry of this chassis is set for 75 Hz.

Standard OSD is developed for 625 lines. Therefore, in 833 lines mode, this will give smaller fonts and a different screen position. To solve this, larger fonts are used.

In 'TXT' and 'TXT Double Window' mode, the set is switched to 'Natural Motion'. For subtitles 'Pixel Plus' is used, this will result however in somewhat smaller fonts. In 'Full Double Window' mode, the set is in 'Pixel Plus' mode.

### 9.2 Power Supply (Diagram B)

There are two important changes on the Top Supply Panel (TSP):

The mains harmonic coil (item 5280) is now mounted directly on the supply board, i.s.o. using an external 'Mains Harmonic' unit.

The 8V6 and 5V2 supplies have to deliver more power. This is accomplished in the following way. The existing DC/DC converter MC34167 was not able to deliver a higher output current and had a rather high working temperature. Therefore, it is replaced by another type, the L4977A (item IC7211). This IC uses the same working principle, but has a higher maximum output current, and works at a lower temperature. However, it needs a higher supply voltage of 24 V<sub>DC</sub> (i.s.o. 16 V<sub>DC</sub>). This higher supply voltage is achieved by changing transformer T5202. The output voltage of the converter is determined by the value of R3230 and 3231. A disadvantage of the new DC/DC converter is that it needs more external components, and therefore needs more space. This extra space is found by changing the Standby Supply circuitry. This change involves the replacement of items TS7100 to 7103 by a single TNY256 IC (pos. 7103). This IC generates drive-pulses for transformer T5101. The maximum frequency is 132 kHz at full load, and decreases with smaller loads. The working principle of this IC is called 'cycle skipping'. It implies that the IC supplies a pulse train, to which cycles are removed or added, hereby changing the output frequency. One disadvantage of using this IC is the increased chance of introducing picture spook. Therefore, capacitors 2101 and 2106 are added, to minimise this effect. Regulation of the 5 V Standby voltage happens as before (via opto-coupler 7104). If this feedback circuit is interrupted, the IC starts to work in an open loop configuration, and the output voltage will rise rapidly to 12 V. To prevent this, an Over Voltage Protection (OVP) circuit is added (thyristor T106 and zener 6108). If the 5 V Standby voltage exceeds the zener voltage (6.8 V), the thyristor is triggered, and will limit the output voltage.

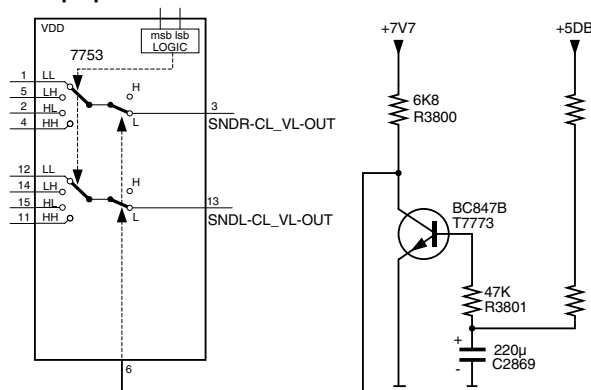
### 9.3 Video Path

#### 9.3.1 Power Supply Tuner (Diagram K1)

The power supply of the Tuner is now controlled with a voltage stabiliser (item IC7113). This is done, to assure a more accurate power supply to the tuner.

#### 9.3.2 Anti-Plop Circuit (Diagram K3)

##### Anti-plop



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131201

Figure 9-1

As capacitor C2869 is not charged at power start-up, transistor TS7773 will block and pin 6 of audio switch IC7753 is 'high'. This means that the sound is muted. After charge-up, TS7773 will conduct and the audio signals are passed.

### 9.3.3 RGB Path (Diagram F)

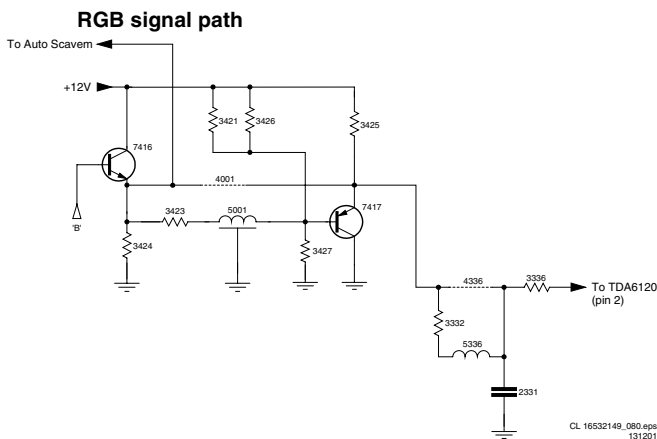


Figure 9-2

The RGB signals from the HOP are fed to three identical amplifiers (TDA6120). We take one of them (B, item 7330) as example for the description. After emitter follower TS7416, the signal is tapped for the Auto Scavem circuitry, and is fed to TS7417. This emitter follower sends the signal, with the same DC-voltage, to the amplifier. In order to cope with the higher definition, this IC has a larger bandwidth (20 MHz) as the one used in the MG3.1E.

## 9.4 Feature Box 7 (Diagram L)

The objective for this chassis is was, to reach a sharper picture by means of a higher definition. This is achieved via the so-called 'Pixel Plus' feature. So, what is Pixel Plus?

### 9.4.1 Introduction

In the Feature Box 7 (FBX7), a new IC is used, called the 'Eagle'. This IC does the following picture improvements:

- Horizontal: increases from 840 to 1680 pixels per line (the number of pixels is doubled per line). This, by itself, does not mean an improvement in definition however. To achieve that, the new pixels are digitally processed inside the Eagle with Luminance Transient Improvement (LTI) and Peaking. This will give the new pixels extra picture information, which results in steeper slopes and contrast improvement at details.
- Vertical: increases from 625 lines (PAL) to 833 lines. Also, those new lines are processed inside the Eagle with LTI and Peaking, again resulting in lines with extra picture information.
- The line frequency is fixed on 31250 Hz and the frame frequency at 75 Hz (this will give no frame-flicker). Also, other modes, like 'Digital Scan' are still possible.
- The colour enhancement features of the TOPIC are done by the Eagle.

### 9.4.2 Block diagram

#### FBX7

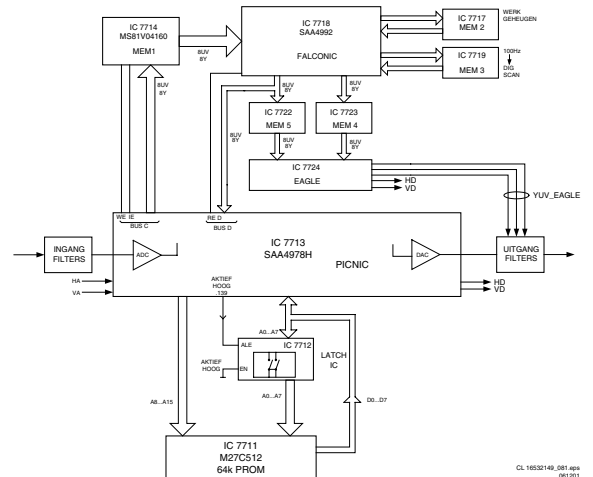


Figure 9-3

The 50 Hz YUV signals, coming from the HIP, are fed to the PICNIC via an anti-aliasing filter.

The (AABB) frame frequency doubling is done by the PICNIC (SAA4978, 160 pins QFP) together with a field memory (MEM1). This IC can handle most 100 Hz functions (except Progressive Scan).

This PICNIC has an internal CPU and a (small) integrated ROM. The actual FBX7 software is located in an external ROM (item 7711). In order to limit the number of connections between the PICNIC and the external ROM, a number of lines are used twice. The lines A8 to A15 are fixed lines, while the lines A0 to A7 are made switchable with the eight data lines of the ROM. This is done via a Latch (item 7712), which is controlled by pin 139 of the PICNIC (the ALE signal). Via bus 'C', a digitalised signal is presented to MEM1, which is used for the 50 to 100 Hz conversion. The signal goes further via the data-bus to the FALCONIC. This IC has the following functions:

- Line flicker reduction.
- Digital Noise Reduction (DNR).
- Progressive scan (262.5 - 525 or 312.5 - 625 lines per frame).

At the end, the digital YUV signals enter, via MEM4 and MEM5, the Eagle IC.

This IC has the following functions:

- Luminance Transient Improvement (LTI).
- Peaking.
- Programmable number of lines.
- Programmable number of pixels per line.
- Demo mode (split screen).
- Improved colour transients (CTI) and colour enhancement (TOPIC).
- Improved vertical zoom.

The digital YUV-signals from the Eagle go, via a passive output filter, to the HOP.

As only the Eagle IC is new, it is described below in more detail. For a detailed description of the other ICs, please check the training manual of the MG3.1E.

### 9.4.3 Eagle (Diagram L2)

#### Introduction

Some strong picture improvements are carried out inside the Eagle, which all contribute to the excellent picture quality. These improvements are:

- LTI (both horizontal and vertical).
- CTI (only horizontal).

- Peaking (both horizontal and vertical).
- More pixels per line.
- More lines per frame.
- Better colour transitions.

By means of over sampling, the video signals get a sample frequency of 64 MHz, a bandwidth of 20 MHz, and 1680 pixels per line (was 32 MHz, 10 MHz and 840 pixels/line). This requires two extra field memories (MEM4 and MEM5).

The Eagle can handle four different modes:

- **Digital Natural Motion (PAL):**  
100 Hz, 2fH, 2:1 Interlace (1680 pixels x 625 lines)
- **Pixel Plus (PAL):**  
75 Hz, 2fH, 2:1 Interlace (1680 pixels x 833 lines)
- **Double Lines (PAL):**  
50 Hz, 2fH, 2:1 Interlace (1680 pixels x 1250 lines)
- **Pixel Plus (NTSC):**  
60 Hz, 2fH, 2:1 Interlace (1680 pixels x 1050 lines)

### LTI (Luminance Transient Improvement)

The main objective of LTI is a steeper slope at contrast transitions (e.g. from 10 mV to 900 mV within 3 pixels i.s.o. 5 pixels for one detail). It is based on waveform altering around a signal jump.

**Important:** The LTI, as used in the Eagle, is designed for interpolated picture contents. This means that for pixel/line doubling, one of the two pixels/lines is an interpolated value. When a picture jump is interpolated, you will get extra room to make it steeper (you get extra pixels to describe the slope).

Without interpolation, you cannot use this kind of LTI.

- LTI can add 'ears' to the waveform at the jump (a kind of controlled overshoot).
- LTI 'estimates' the frequency of the jump and will adapt the amplification to this frequency.
- LTI is applied both horizontal as vertical.
- LTI is amplitude dependent. This means that only 'big' jumps are processed. It works with a threshold, which is coupled to the noise meter via the Auto TV software.
- LTI is also frequency dependent. This means that it is distributed over the slopes. When there are many steep slopes in the signal, LTI will only process the steepest ones. If there are only a few slopes, LTI will process all of them. This is fully hardware implemented.

### Horizontal LTI

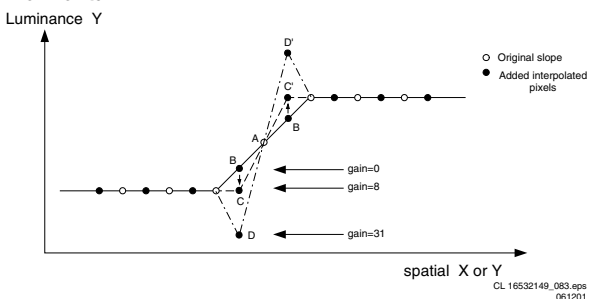


Figure 9-4

For horizontal LTI, the number of pixels is doubled (64 MHz) by means of interpolation. Pixel A at the transition will keep its luminance value, while the (new) pixels B can have a luminance value of zero to max. 31. For example:

- Pixels B can keep the same value (gain = 0)
- Pixels B can get the value of C and C' (gain = 8), which will give a steeper slope.
- Pixels B can also get the value of D and D' (gain = 31), which will give an even steeper slope with the so-called 'ears'. These 'ears' will give a **contrast** improvement.

For CTI, the same principle is used, in order to get better **colour** transitions.

### Vertical LTI

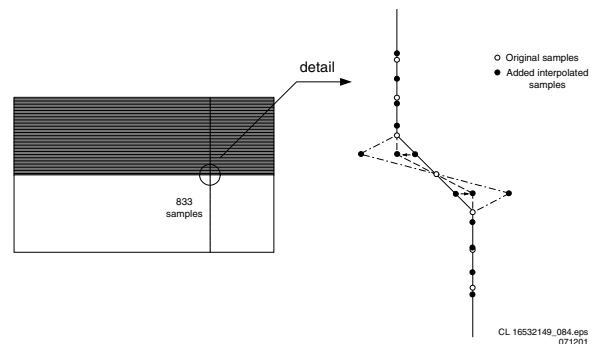


Figure 9-5

The principle for vertical LTI is the same as for horizontal LTI. The shift from 625 to 833 lines is done by means of a scaler. With these extra interpolated samples, it is possible to create steeper slopes, possibly with 'ears'.

### Peaking/Coring

The objective of 'peaking' is contrast improvement (e.g. from 50 to 70 mV<sub>PP</sub> for one detail).

It uses a noise threshold (coring = non-linear filtering around zero-level), thus it works everywhere in the picture (except below the threshold level).

The added difference signal is frequency dependent, which results in frequency dependent contrast improvement. When the difference signal becomes too large, the peaking is reduced (smartness).

### Peaking

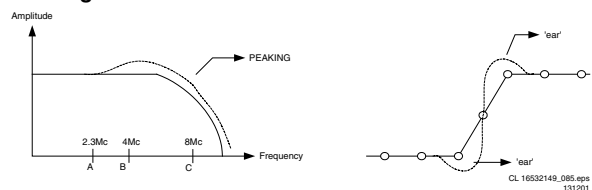


Figure 9-6

To obtain above shown filter characteristic, filters are set at three parameters (A, B, and C). In this way, only the higher frequencies are 'lifted'. After sending the luminance signal through these filters, the filter output is added to the original signal. In this way, the so-called 'ears' are created, together with the steeper slopes. These 'ears' will give a **contrast** improvement at details.

Both horizontal and vertical peaking is **amplitude dependent**: the higher the signal jump, the lower the peaking. This is done to avoid that high jumps get big 'ears', because this will introduce nasty contouring. To avoid peaking on noise levels, coring is used. The coring threshold is set via the Auto TV software, by means of the noise meter.

Therefore, the result is that **only details** are processed by the peaking.

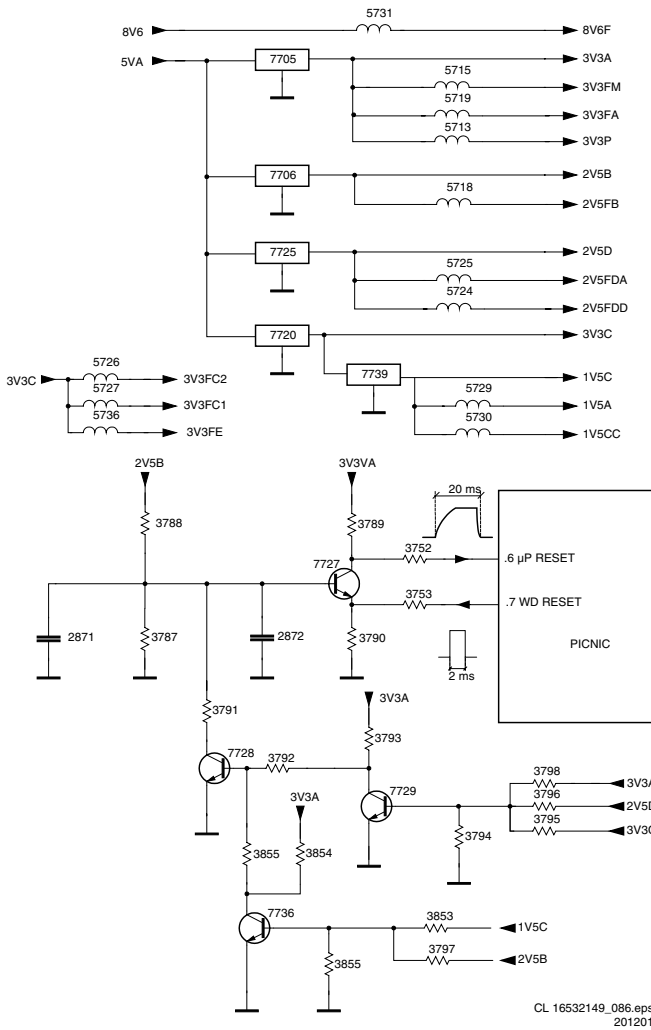
The horizontal peaking is also **frequency dependent**: it is possible to perform peaking around three frequencies (when combined, it is even possible to peak at variable frequencies). In Auto TV, this feature is software coupled to the sharpness meter, in order to get the most optimal filter characteristic. The vertical peaking works on a fixed frequency.

### Colour Enhancements

In the FBX6 (as used in the MG3.1E), the TOPIC handled the colour enhancement features, such as: 'skin tone correction', 'blue stretch', and 'green enhancement'. In the new FBX7, all this is done by the Eagle IC.



**Power Supply and POR**



**Figure 9-7**

Besides the two incoming voltages 8V6 and 5V2, also five voltage stabilisers are used to derive the necessary voltages. This is done for power consumption reasons.

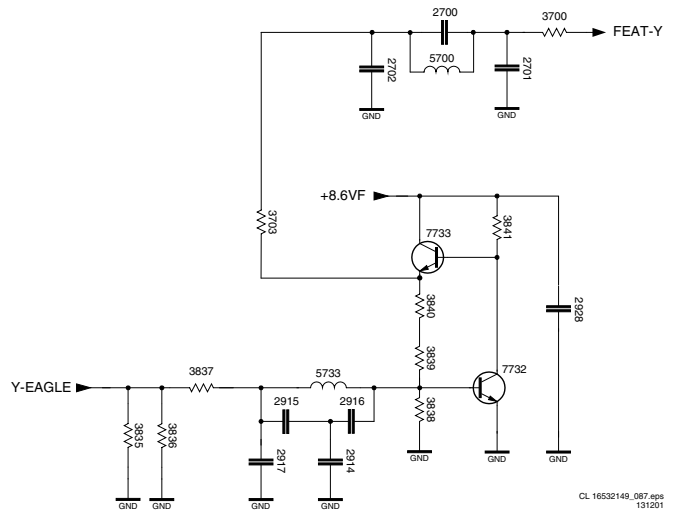
Via a reset circuit (TS7727) a reset pulse (POR) of 20 ms is generated for the  $\mu$ P inside the PICNIC and for the ROM. After 'power on', the 3V3 is built up (derived from the 5V2). Transistor TS7727 blocks and pin 6 of the PICNIC will follow the rising slope of the power supply. As soon as the power supply is stabilised, capacitor C2872 will charge (via R3788). When this voltage reaches 0.6 V (after 20 ms), TS7727 starts to conduct, and the voltage at pin 6 goes low again. The  $\mu$ P is reset now. If the PICNIC cannot communicate with the ROM, the 'watchdog' will generate a reset pulse (on pin 7), which will re-start the cycle again.

If one of the power supplies is absent (or too low), then a safety problem can occur in some cases (e.g. a too high temperature of the stabiliser). To prevent this from happening, the voltage dividers at the bases of the transistors TS7729 and TS7736, are calculated such that they will block when above described situations occurs. In this case, the base of TS7727 is kept 'low' by the conducting TS7728, until the problem is solved. The  $\mu$ P receives no POR pulse, and cannot be reset.

**Output**

The YUV signals presented to the HOP come from the Eagle. These three signals have all the same circuitry so it is explained once (for Y).

**YUV Output Filter**



**Figure 9-8**

The YUV signals are first filtered by a 64 MHz passive filter (L5733 and C2914-2917). Because the output signals from the Eagle are too small to drive the HOP directly, they are amplified by the circuit around TS7732 and TS7733. The gain is determined by R3839, R3840, and R3837. For the Y-signal the gain is 2, for the U-signal it is 1.33, and for the V-signal it is 1.05.

**9.5 Auto Scavem**

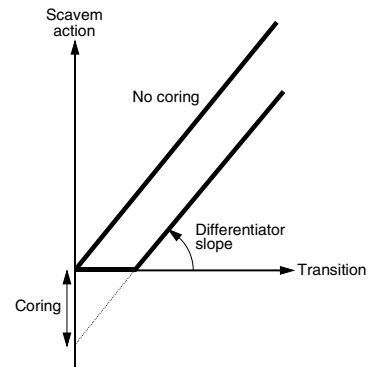
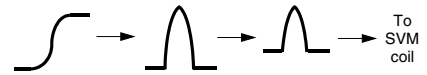
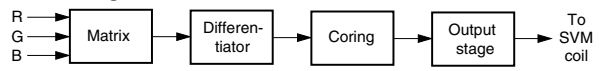
**9.5.1 Introduction**

To improve the sharpness, the Scan Velocity Modulation (Scavem) circuit modulates the deflection speed as a function of the picture contents. This feature uses a separate Scavem deflection coil.

Auto Scavem is introduced, to be able to display the high definition signal from the FBX7. As the Scavem circuit is now controlled by the Auto TV software, it is called Auto Scavem. The circuit, with the Scavem amplifier, is located on a separate PWB (in front of the SSP), and is connected to the picture tube panel.

**9.5.2 Normal Scavem**

**Block diagram**



**Figure 9-9**

With normal Scavem (as used in the MG3.1E), the RGB signals are added together and differentiated before they drive the Scavem coil. The coring block prevents that Scavem processing is done on low signal levels.

9.5.3 Auto Scavem (Diagram SC)

Block diagram

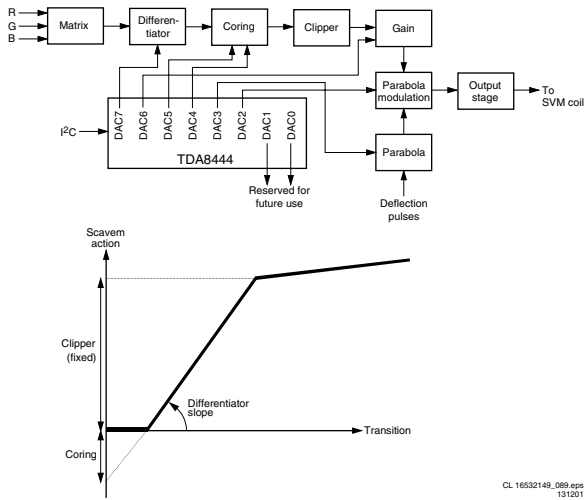


Figure 9-10

This new Auto Scavem circuit include some extra blocks:

- Clipper
- Parabola modulation

Auto Scavem is fully software controlled, by means of I<sup>2</sup>C. The speed, at which Auto Scavem is adapted, is controlled by the Auto TV algorithm. This adaptation takes place together with the FBX initialisation, and takes about 1 second. The different circuit stages are controlled via a DAC (item 7500, TDA8444). The new Auto Scavem circuitry also produces higher Scavem currents, which results in sharper pictures. For the circuit description, we splitted the circuit in eight stages.

Matrix and Differentiator

Stage 1 and 2

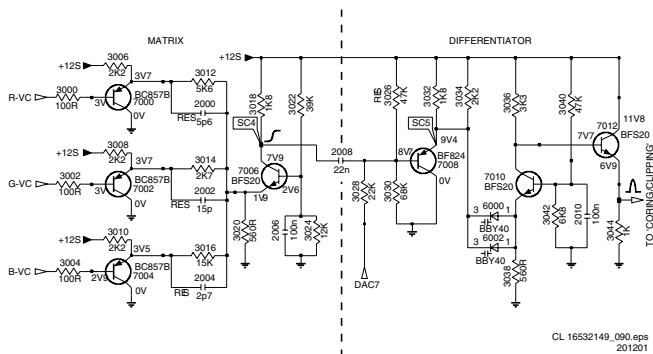


Figure 9-11

The RGB signals are added via transistors 7000, 7002 and 7004, on the emitter of transistor 7006. This is done via resistors 3012, 3014, and 3016, which have a different 'weight' factor. This, to regain the luminance signal.

The next circuit is the differentiator. The combined signal enters this circuit at the base of transistor 7008. The DC-level of this transistor is controlled by the DAC7 line, which is dependent of the 'sharpness meter' reading in the Auto TV algorithm. By means of this control signal, the voltage and capacity of varicap diode 6000 is altered, which will adapt the differentiator.

The slope of the differentiator is controlled by this DC-level. The differentiation itself is done by varicap diode 6000. Output signal goes from the collector of transistor 7010 via emitter follower (= buffer) 7012, to the next stage.

Coring/Clipping and Gain

Stage 3 and 4

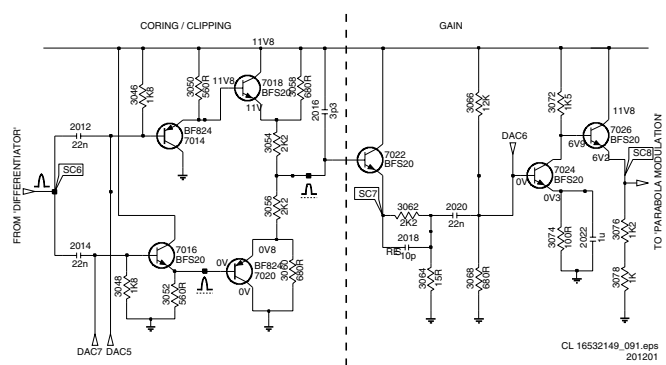


Figure 9-12

The coring circuit (items 7014 and 7016) prevent Auto Scavem on the lowest signal levels (= noise), while the clipper circuit (items 7018 and 7020) always give the same amount of Scavem above a certain level.

The levels at which this must happen, are controlled by the DAC4 and DAC5 lines, and are dependent of the 'noise meter' reading in the Auto TV program.

The input signal enters this circuit at emitter follower 7022, and is strongly attenuated via voltage divider R3062 and R3064. This, because the gain of transistor 7024 is set with the adjustable voltage divider of R3066, R3068 and R3070. The level at which this happen, is controlled by the DAC6 line, and is dependent of the 'sharpness meter' reading in the Auto TV program, the picture tube size, and the sharpness setting by the customer.

Parabola Generation

Stage 5

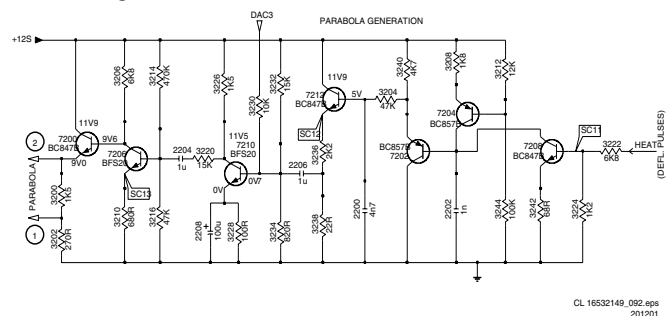


Figure 9-13

In addition, the Scavem signal is modulated with a parabola. This is necessary, because the picture tube is less sensitive for Scavem in the centre as on both sides.

On the CRT-panel, the 'heater' pulses are used to create a parabola on line frequency. This parabola is made with transistors 7204 and 7206. The DC-level of these transistors is controlled via the DAC3 line. In this way, you can control the parabola via software. The level is dependent of the 'sharpness meter' reading in the Auto TV program, the picture tube size, and the sharpness setting by the customer.



**Timing**

When the transmission of AC3 surround signals is ended (e.g. television 'off'), the mute line from the receiver becomes 'high' and mutes the amplifier via TS7415. At the same moment, the output of 7405 becomes 'low'. Now, capacitor 2407 starts discharging into R3432. When the voltage on the positive input of the comparator becomes lower than the voltage on the negative input, the output of the comparator turns from 'high' to 'low' and the relay is switched 'off' by 7414. The established time is 11 until 15 minutes (RC-time R3432/C2407). If the mute line turns 'low' during this discharge period, the capacitor 2407 is charged again and the complete timing is reset.

**Wired Backup**

When there is no possibility to use the **wireless** link (due to perturbations or interferences), it is possible to use a 'wired' backup solution. On the rear of the box is a backup input. By plugging in a cable with 3.5 mm stereo jack (order under nr. 3104 311 02251), the power supply for the receiver is interrupted. The audio signal enters the amplifier now via this backup input. An audio detector (7404) is added on the amplifier board, to obtain the same functionality when we use the wired backup.

The level detector (7405) is then triggered by the output of the audio detector, i.s.o. the mute line coming from the receiver.

**LED control**

TS7410 and 7411 control the red or green part of a bicolour LED, according to the voltage on the collector of TS7414.

**9.6.3 Power Supply (Diagram W2)**

The box can operate in two different modes: 'standby' and 'active' mode.

- In the standby mode all power is delivered by a so-called standby SOPS. This is a self-oscillating power supply, which can deliver 12 V<sub>DC</sub> for the receiver board and the timing circuitry. The delivered current in the standby mode is rather low, mainly because the receiver board has a 'sleep' period of 3 seconds, and a 'listen' period of 0.2 s.
- In active mode (relay 'on'), the main transformer bypasses the standby supply, and all the needed power is now delivered by this transformer (via diodes 6405-6406 and capacitor 2401). This is done to reduce dissipation in standby mode.

SOPS standby supply: a stable output voltage of 12 V<sub>DC</sub> is obtained by use of a low-drop voltage regulator L4940V12. The feedback is formed with components R3201, 3204, 3205, 3206, and an optocoupler.

At primary side, there is a rectifier part that produces 350 V<sub>DC</sub> (items 6206 and 2207). The SOPS is formed by the FET 7207, transformer 5204, current-limiter 7206, 6205, and 6210, a control circuit (7204, 7205, and 6207) and an optocoupler (7203). The whole system works always in 'burst' mode. When a higher current is necessary, the burst period becomes larger, and the burst-repeat frequency increases. The SOPS can operate on mains voltages between 90 and 264V<sub>AC</sub>. When the output voltage rises above 20 V<sub>DC</sub>, (e.g. caused by a fault in the feedback system of the SOPS), the circuit around thyristor 6211 short-circuits the SOPS output. This gives a reliable protection for the whole circuit.

**9.7 Abbreviation List**

16:9-ARFRONT	16:9 aspect ratio input from side I/O
50Hz/60Hz	50Hz/60Hz mains frequency
6-CHANNEL DAC	6- Channel DAC
ADC	Analogue to Digital Converter
AFC	Automatic Frequency Control
AGC	Automatic Gain Control
AM/FM	Amplitude Modulation/Frequency Modulation
AM-SOUND	Amplitude modulated sound signal
AUDIO_C	Audio Centre
AUDIO_L	Audio Left
AUDIO_R	Audio Right
AUDIO_SL	Audio Surround Left
AUDIO_SW	Audio Subwoofer
AUDIO-L-PROC	Audio Left Processed
AUDIO-R-PROC	Audio Right Processed
AUDIO-SR	Audio Surround Right
AUX-SUPPLY	Auxiliary supply
BC-PROT	Beam Current Protection
BG	System B and G
BLC-INFO	Black Current Information
B-SC1-IN	Blue SCART1 in
B-SC2-IN	Blue SCART2 in
B-TXT	Blue teletext
B-vc	Blue from video-controller
C	Centre
C/16/9	Chrominance input
C-7-OUT	Chrominance on pin 7 SCART (variant)
CENTER	Centre speaker
C-FRONT	Chrominance front input
CL_DS_L	Constant Level Dual Screen Left
CL_DS_R	Constant Level Dual Screen Right
CL_L	Constant Level Left
CL_L_OUT	Constant Level Left out
CL_R	Constant Level Right
CL-R-OUT	Constant Level Right out
CODEC	Coding/Decoding
COMP	Comander ON/OFF
ComPair	Computer aided rePair
CORDL_L	Cordless Left
CORDL_R	Cordless Right
CORE TOP LEVEL	Core Top Level
CRT	Cathode ray tube
CSM	Customer Service Mode
C-UI	Chrominance UI
CVBS	Composite Video Blanking and Synchronisation
CVBS_Y-UI	CVBS Y UI
CVBS-PIP-DS	CVBS Picture In Picture dual Screen
CVBS-SC1-IN	CVBS SCART1 in
CVBS-SC2 OUT	CVBS SCART2 out
CVBS-SC2-IN	CVBS SCART2 in
CVBS-SC3-IN	CVBS SCART3 in
CVBS-SC4-IN	CVBS SCART4 IN
CVBS-TER	CVBS terrestrial
CVBS-TXT-DS-OUT	CBVBS Teletext Dual Screen out
CVBS-TXT-OUT	CVBS Teletext out
CVBS-Y-FRONT	CVBS Luminance front input
D/K	Monochrome TV system. Sound carrier distance is 6.5 MHz
DAC	Digital Analogue Converter
DAC-HOP	Digital Analogue Converter HOP IC
DC_PROT/	
AUDIO_SR	DC protection (for supply)
DC-filament	Filament supply voltage
DC-PROT	DC protection
DETECT	Detect signal side I/O input
DFU	Directions For Use: description for the end user
DIG_IN1	Digital In 1
DIG_IN2	Digital In 2

DIGITAL I/O	Digital In/Out	IN-SC2-B	In SCART2 Blue
DIG-OUT	Digital Out	IN-SC2-CVBS_Y	In SCART2 CVBS or Luminance (SVHS)
DNR	Dynamic Noise Reduction	IN-SC2-FBL	In SCART2 Fast Blanking
DS-AUDIO-L	Dual Sound Audio Left	IN-SC2-G	In SCART2 Green
DS-AUDIO-R	Dual Sound Audio Right	IN-UI-B	B input from UI
DSP	Digital Signal Processing	IN-UI-FBL	Fast Blanking input from UI
DST	Dealer Service Tool	IN-UI-G	G input from UI
DUET	SAA2505H DUET IC	IN-UI-R	R input from UI
DVD	Digital Versatile Disc	IO-BUS	In/Out bus
DYN-FASE-COR	Dynamic phase correction	IR-LED	Drive signal for the Service Infra Red LED
EHT-INFO	Extra High Tension information	IRQ	Interrupt ReQuest
EPG	Electronic Programme Guide (= NextView)	KEYBOARD	Top Control
EW-DRIVE	East-West drive signal	L	Left Audio
FALCONIC	Field And Line rate CONvertor IC	L/L'	Monochrome TV system. Sound carrier distance is 6.5 MHz. L' is Band I, L' are all other Bands
FBCSO	Fixed Beam Current Switch Off	LDP	Line Deflection Protection
FBL-DS-OUT	Fast Blanking Dual Screen out	LED	Light Emitting Diode
FBL-FDS	Fast Blanking Full Dual Screen	LEFT	Left
FBL-PIP	Fast Blanking PIP	LEFT_DOWNMIX	LEFT Down mix
FBL-SC1-IN	Fast Blanking signal for SCART1 in	LEFT_IN	Left In
FBL-SC2-IN	Fast Blanking signal for SCART2 in	LEFT_OUT	Left out
FBL-TXT	Fast Blanking Teletext	LF	Left output
FDSL-OUT	Full Dual Screen - Left out	LIGHT SENSOR	Light sensor
FDSR-OUT	Full Dual Screen - Right out	LINE-DRIVE	Line drive signal
FEAT-U	U from Feature Box	LMN	System L, M, N
FEAT-V	V from Feature Box	LNA	Low Noise Adapter
FEAT-Y	Y from Feature Box	LS CORRECTION	Picture with corrections
FILAMENT	Filament of CRT	LSP	Large Signal Panel
FILAMENT-PROT	Filament protection	LV-	Frame coil sink signal to the N/S correction circuitry
FLASH	Flash memory	LV+	Frame coil drive signal from the frame output stage
FM SOUND	Frequency Modulation Sound	MCADDEC_RESET	Reset signal (Master reset)
FRAME ROTATION	Frame rotation	MCS-MPEG	Multi channel sound - MPEG
FRAME-ROT +	Frame rotation +	MSP-CLOCK	Clock signal Multi-standard Sound Processor
FRONT-C	Front input chrominance (SVHS)	MUP	Micro Processor
FRONT-DETECT	Front input detection	MUTE	Mute line
FRONT-Y_CVBS	Front input luminance or CVBS (SVHS)	M/N	Monochrome TV system. Sound carrier distance is 4.5 MHz
GHOST-IN	Signal Ghost cancellation in	N52502	CAD-naming referring to other sub-schedule
G-SC1-IN	Green SCART1 in	NC	Not Connected
G-SC2-IN	Green SCART2 in	NTSC	National Television Standard Committee. Colour system mainly used in the USA and Japan. Colour carrier is at 3.579545 MHz
G-TXT	Green Teletext	NVM	Non Volatile Memory
G-vc	Green from video-controller	O/C	Open Circuit
HA	Horizontal Acquisition	ON/OFF LED	On/Off control signal for the LED
HA1	Horizontal Sync (diversity)	OSD	On Screen Display
HA-D	Horizontal Sync from HIP-IC to FDS	OTC	OSD, Teletext, and Controller
HD	Horizontal drive coming from PICNIC	OUT-1	Y-output POPOV IC
Hdefl-1in	Horizontal deflection signal needed for DC-shift circuitry	OUT-2	V-output POPOV IC
Hdefl-1in	Horizontal deflection linearity	OUT-3	U-output POPOV IC
HEATER	Heater (Filament)	OVERRULE-TXT	Overrule Teletext
HFB	Horizontal flyback	P2-5	For MG3.1E, status 4 (SCART 4)
HFB+13V	Non-rectified output 13V-winding LOT	P2-6	For MG3.1E, status 3 (SCART 3)
HFB-D	Horizontal Fly Back to FDS	P2-7	In MG3.1E, RGB 1FH/Front UI
HIP	High-end Input Processor	P50_OUT	Easy link (= Project 50) data line from SCART2
HOP	High-end Output Processor	PAL	Phase Alternating Line. Colour system mainly used in West Europe (colour carrier = 4.433619 MHz) and South America (colour carrier PAL M = 3.575612 MHz and PAL N = 3.582056 MHz)
HOSD PIP	Horizontal OSD PIP	PCB	Printed Circuit Board
HP	Headphone	PD	Power Down
HS-DS	Main, Horizontal sync input POPOV IC	PICNIC	Picture Improved Combined Network IC
I2C	Integrated IC bus	PILOT	Pilot Signal
I2S	Integrated IC Sound bus		
I2S-CL	I2S bus clock		
I2S-DSP-IN	I2S digital signal processor in		
I2S-DSP-OUT	I2S digital signal processor out		
I2S-DSP-OUT1	Serial-DSP-bus-out1		
I2S-WS	I2S bus Word Stroke		
IF	Intermediate Frequency		
IN-C_IN-R-SC2	Either Chrominance-in SCART2 or Red-in SCART pin 15		
IN-FRONT-SNDL	Sound Left front in		
IN-FRONT-SNDR	Sound Right front in		
IN-SC1-B	In SCART1 Blue		
IN-SC1-G	In SCART1 Green		
IN-SC1-R	In SCART1 Red		
IN-SC1-SNDL	In SCART1 Sound Left		
IN-SC1-SNDR	In SCART1 Sound Right		

PILOTMUTE	Pilot Mute signal	SL	Surround Left
PIP	Picture In Picture	SL-ST	Sliding stereo of the Stereo Demodulator IC TDA1578A
PIP-B	Picture In picture Blue		
PIP-FBL	PIP Fast Blanking	SNDL-CL-VL-OUT	Sound Left constant level, variable level out
PIP-G	Picture In Picture Green	SNDL-FRONT-IN	Sound Left front in
PIP-R	Picture In Picture Red	SNDL-HEADPH-OUT	Sound Left headphone out
PLL	Phase Locked Loop. Used for e.g. FST tuning systems.	SNDL-SC1-IN	Sound L SCART1 in
POPOV	Double Window/PIP IC	SNDL-SC1-OUT	Sound Left SCART1 out
POR	Power On Reset, signal to reset the uP	SNDL-SC2-IN	Sound Left SCART2 in
POWER-DOWN MUTE	Power Down Mute	SNDL-SC2-OUT	Sound Left SCART2 out
POWER-ON MUTE	Power On Mute	SNDL-SC3-IN	Sound Left SCART3 in
R	Right Audio	SNDL-SC4-IN	Sound Left SCART4 in
RAM	Random Access Memory	SNDL-UI-IN	Sound Left UI IN
RC5	RC5 signal from the remote control	SNDR-CL-VL-OUT	Sound Right constant level, variable level out
RESET	Reset signal	SNDR-FRONT-IN	Sound Right front in
RESET-AUDIO	Reset signal for Audio IC MSP3410	SNDR-HEADPH-OUT	Sound Right headphone out
RESET-AUDIO-INV	Inverted Reset signal for Audio IC MSP3410	SNDR-SC1-IN	Sound Right SCART1 in
RESET-FLASH	Reset signal flash memory	SNDR-SC1-OUT	Sound Right SCART1 out
RF	Right output (no companding)	SNDR-SC2-IN	Sound Right SCART2 in
RGB	Red Green Blue colour signals	SNDR-SC2-OUT	Sound Right SCART2 out
RIGHT	Right	SNDR-SC3-IN	Sound Right SCART3 in
RIGHT_DOWNMIX	Right Down mix	SNDR-SC4-IN	Sound Right SCART4 in
RIGHT_IN	Right In	SNDS-CL-VL-OUT	Sound surround constant level, variable level out
RIGHT_OUT	Right out	SNDS-VL-OUT	Surround sound Left variable level out
ROM	Read Only Memory	SNDS-VR-OUT	Surround sound Right variable level out
R-SC1-IN	Red SCART1 in		
R-TXT	Red Teletext	SOFAC	Sound and Fading Control
R-vc	Red from video-controller	SOUND L-HEADPHONE-OUT	Sound Left headphone out
S/C	Short Circuit	SOUND R-HEADPHONE-OUT	Sound Right headphone out
SAM	Service Alignment Mode	SOUND-ENABLE	Sound Enable
SC2-B-IN	SCART2 Blue in	SOUND-SELECT	Sound signal Selection
SC2-C-IN	SCART2 Chrominance in	SOPS	Self Oscillating Power Supply
SC2FH_IFH	Sand-castle 1fH/2fH	SPDIF	Sony Philips Digital Interface Format
SC2-G-IN	SCART2 Green in	SPDIF_IN1	SPDIF In 1
SC2-R-IN C-IN	Red in SCART2 or Chrominance in	SPDIF_IN2	SPDIF In 2
SCART	Syndicat des Constructeurs d'Appareils Radiorecepteurs et Televisieurs	SS LEFT	Surround Left
Scavem	Scan Velocity Modulation	SS RIGHT	Surround Right
SCAVEM-SW	Scavem- switch	SSP	Small Signal Panel
SCL	Serial clock line of the I2C bus	STANDARD-FM-1	Standard Frequency Modulation 1
SCL-F	Clock line of the I2C-bus fast (for TXT)	STANDARD-FM-2	Standard Frequency Modulation 2
SCL-S	Clock line of the I2C-bus slow	STANDBY	Standby
SDA	Serial Data line of the I2C bus	STATUS1/2/3	Status signal from Euro-connector 1, 2, or 3 to the P (1.29 - 3.31 V is 16:9 signal, 3.32 - 5 V is 4:3 signal)
SDA-F	Data line of the I2C-bus fast (for TXT)	STBY	Standby
SDA-S	Data line of the I2C-bus slow	STEREO	Stereo
SDM	Service Default Mode	SUBCAR	Sub Carrier
SECAM	Sequence Couleur Avec Memoire. Colour system mainly used in France and East Europe. Colour carriers are 4.406250 MHz and 4.250000 MHz	SUB-H	Horizontal Sync Sub-TV-Program (via FDS)
SEL_SOFAC_0	Selection-signal for SOFAC 0	SUB-V	Vertical Sync Sub-TV-Program (via FDS)
SEL_SOFAC_1	Selection-signal for SOFAC 1	SUBWOOFER	Subwoofer speaker
SEL_TO-MCS_LR	Selection switch MCS Left Right	SURROUND-LEFT	Surround Left
SELECT TO EXT2	Selection of Extern 2 input	SURROUND-RIGHT	Surround Right
SELECT_TO_CORDL_1	Selection signal for Cordless 1	SW	Subwoofer
SELECT_TO_MCS_CINCH_0	Selection signal for MCS Cinch 0	SYNC-SELECT	Synchronisation selection
SELECT_TO_MCS_CINCH_1	Selection signal for MCS Cinch 1	TOPIC	The Outmost Picture Improvement IC
SELECT-AUDIO CINCH1	Selection of audio via cinch input 1	TRIG	Triggering
SELECT-AUDIO-CINCH2	Selection of audio via cinch input 2	TUNED	Tuned-flag coming from the IF-IC TDA1597
SELECT-AUDIO-LR	Selection of Audio Left and Right	UB-DEC	U-input for FDS
SELECT-TO_CORDL_0	Selection signal for Cordless 0	U-DEC	U-dec (input signal for PICNIC)
SERVICE-DEFAULT	Service pin to activate SDM	U-DS-1FH	U Dual Screen 1 x Horizontal Frequency
SERVICE-MODE	Service pin to activate SAM	U-DS-2FH	U Dual Sound 2 x Horizontal Frequency
SIF	Sound Intermediate Frequency	U-DS-OUT	U Dual Screen out
SIFM	Sound Intermediate Frequency Mono	UF-DEC	U-MAIN input POPOV IC

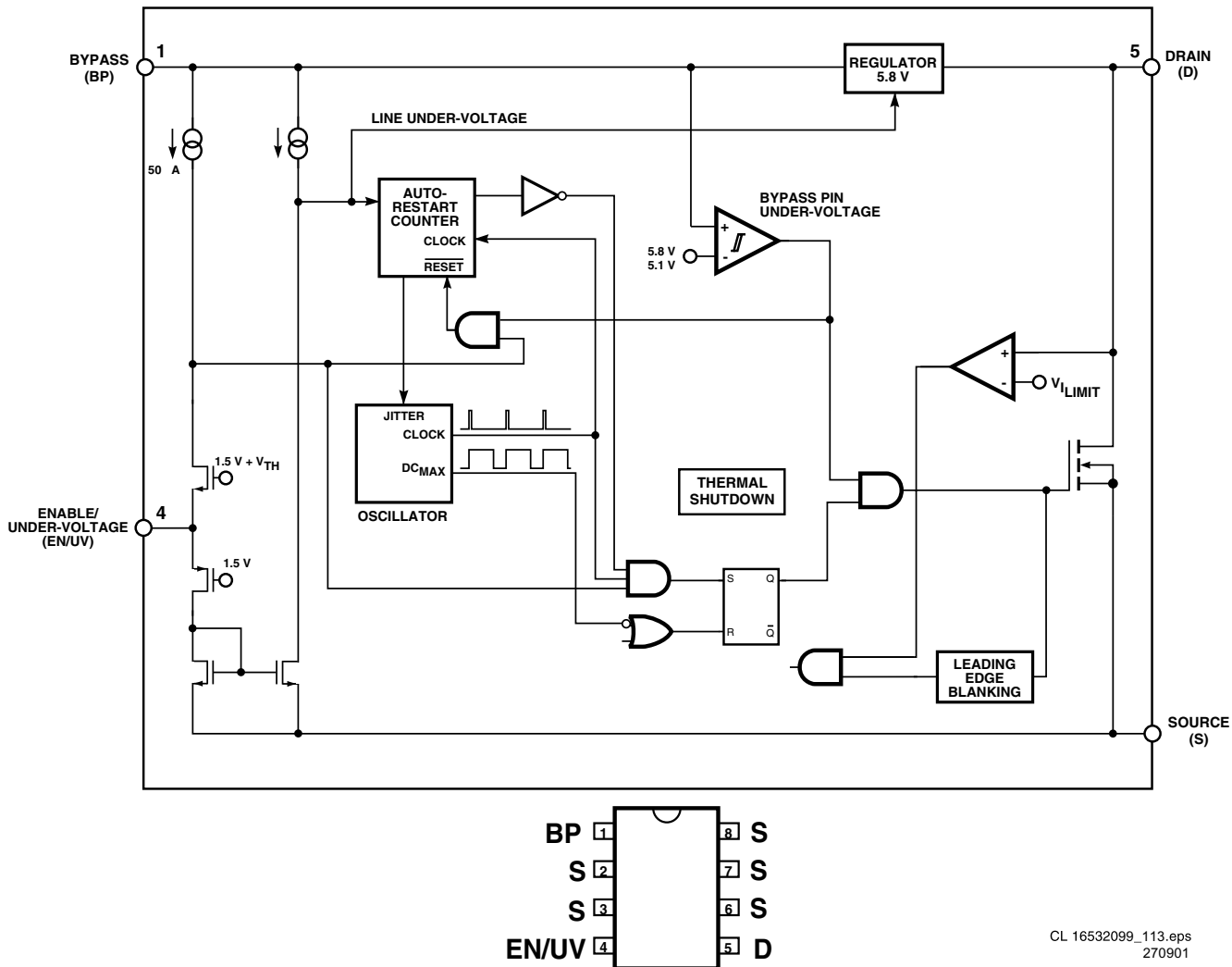
U-FEAT	U-feature-box (output signal from PICNIC)	YF-SUB	Y-SUB input POPOV IC
UF-SUB	U-SUB input POPOV IC	Y-OUT	Luminance-signal to HOP-IC
UI	Universal Interface	Y-SUB	Y-output of HIP-IC on FDS
U-OUT	U-signal to HOP IC	YUV	Component video
U-SUB	U-output of HIP-IC on FDS	YUV-SELECT-2FH	YUV selection 2 x Horizontal Frequency
VA	Vertical Acquisition	uP	Micro Processor
VA1	Vertical Sync (diversity)		
VB-DEC	V input for FDS		
VD	Vertical Drive coming from PICNIC		
VD-D	Vertical sync to FDS		
V-DEC	V-dec (input signal for PICNIC)		
VDEFL-1	Vertical deflection connection 1		
VDEFL-2	Vertical deflection connection 2		
VDNEG	Negative vertical drive signal		
VDPOS	Positive vertical drive signal		
+VD-switched	Only for VGA sets (VD switched i.s.o. V_bat).		
V-DS-1FH	V Dual Screen 1 x Horizontal Frequency		
V-DS-2FH	V Dual Screen 2 x Horizontal Frequency		
V-DS-OUT	V Dual Screen out		
VFB	Vertical Flyback Pulse		
VF-DEC	V-MAIN input POPOV IC		
V-FEAT	V-Feature box (output signal from PICNIC)		
VF-SUB	V-SUB input POPOV IC		
VGA-B	VGA Blue		
VGA-FBL	VGA Fast-blanking		
VGA-G	VGA Green		
VGA-R	VGA Red		
VL_L	Variable level Left		
VL_R	Variable level Right		
VL_SL	Variable level Surround Left		
VL_SR	Variable level Surround Right		
VL_SW	Variable Level Sub-Woofer		
VL_SW_DBE	Variable Level Subwoofer Dynamic Bass Enhancement		
VLL_C	Variable level Centre		
V-OUT	V-signal to HOP-IC		
VOUT_C	V-out Centre		
VOUT_L	V-out Left		
VOUT_R	V-out Right		
VOUT_SL	V-out Surround Left		
VOUT_SR	V-out Surround Right		
VOUT-SW	V-out Subwoofer		
VREG	Opto-coupler feedback signal		
VS-DS	Main, vertical sync input POPOV IC		
V-SUB	V-output of HIP-IC on FDS		
WIRED BACKUP-INFO	Wired back up information		
WIRED-BACKUP AUDIO INFO	Audio signal (surround)		
WIRELESS SURROUND RECEIVER	Wireless Surround receiver		
WIRELESS TRANSMITTER	Wireless Transmitter		
X-RAY-PROT	X-Ray Protection		
X-tal	Quartz crystal		
Y/C	Luminance (Y) / Chrominance (C) signal		
Y_CVBS-SC2-IN	Luminance or CVBS SCART2 in		
YB-DEC	Y input for FDS		
Y-DEC	Luminance-dec (input signal for PICNIC)		
Y-DS-1FH	Y Dual Screen 1 x Horizontal Frequency		
Y-DS-2FH	Y-Dual Screen 2 x Horizontal Frequency		
Y-DS-OUT	Y Dual Screen out		
YF-DEC	Y-Main input POPOV IC		
Y-FEAT	Luminance Feature box (output signal from PICNIC)		

9.8 IC Data Sheets

In this paragraph, the internal block diagrams and pinning are given of ICs that are drawn as a 'black box' in the electrical diagrams (with the exception of 'memory' and 'logic' ICs).

9.8.1 Diagram B, TNY256 (IC7103)

Internal Block Diagram and Pinning



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270901

Figure 9-17

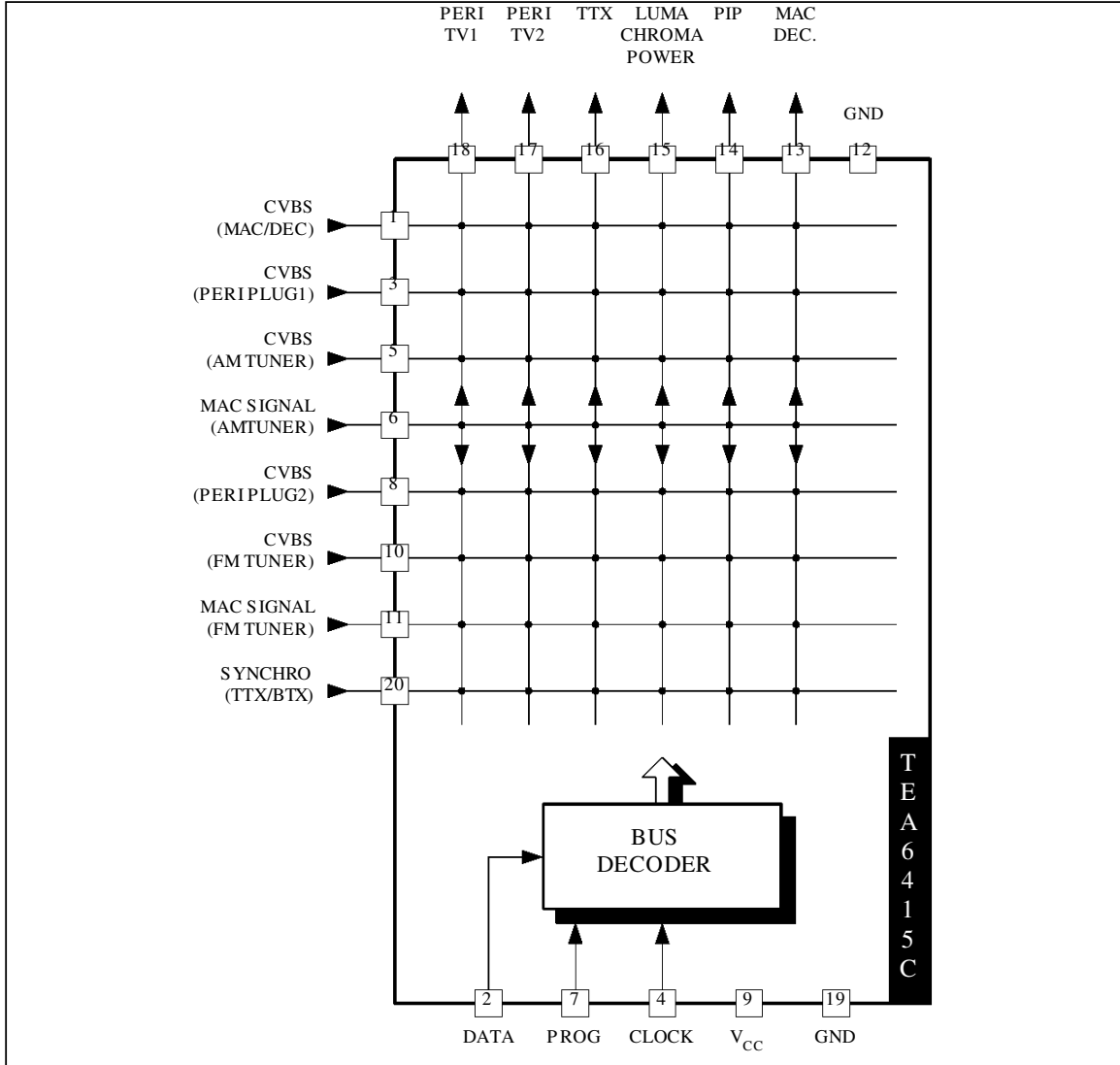


9.8.2 Diagram K8, TEA6415 (IC7208)

Internal Block Diagram and Pinning

TEA6415C

BLOCK DIAGRAM



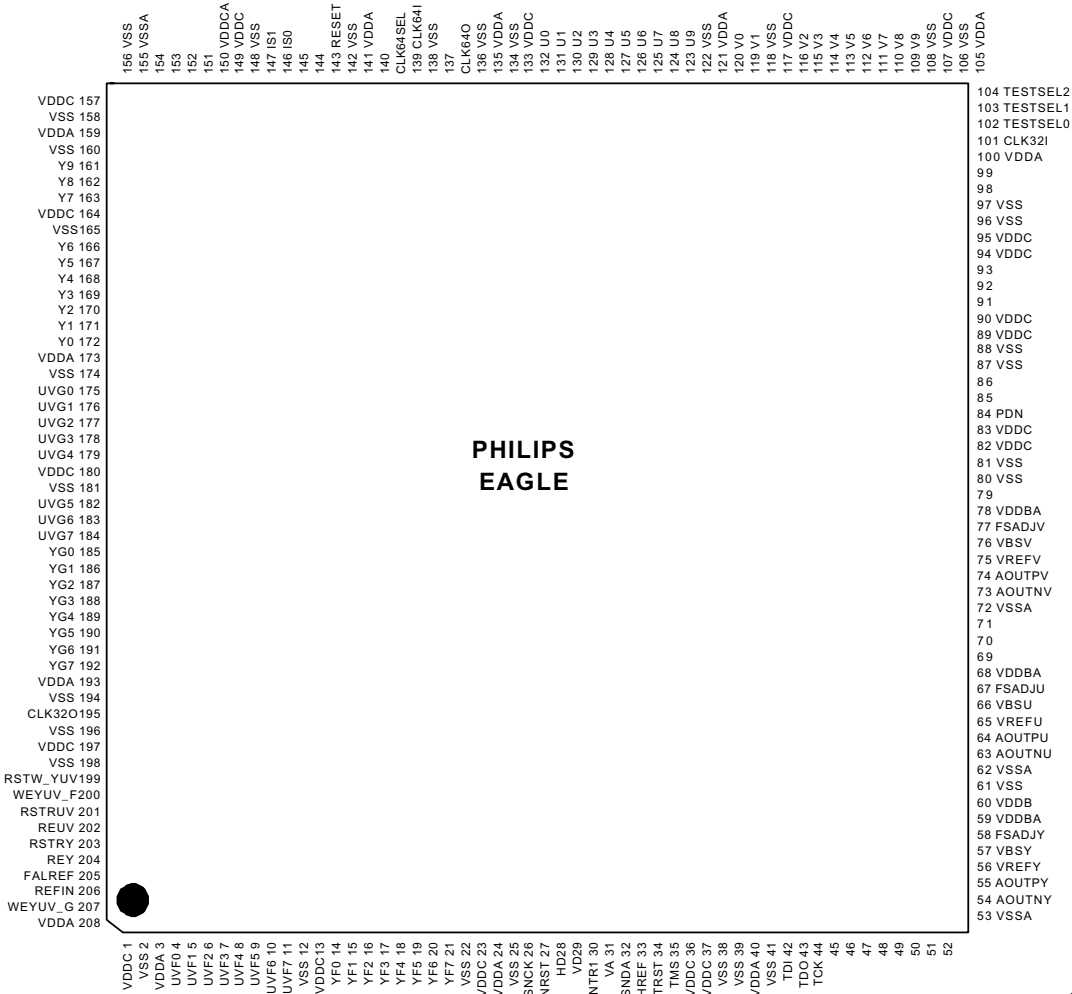
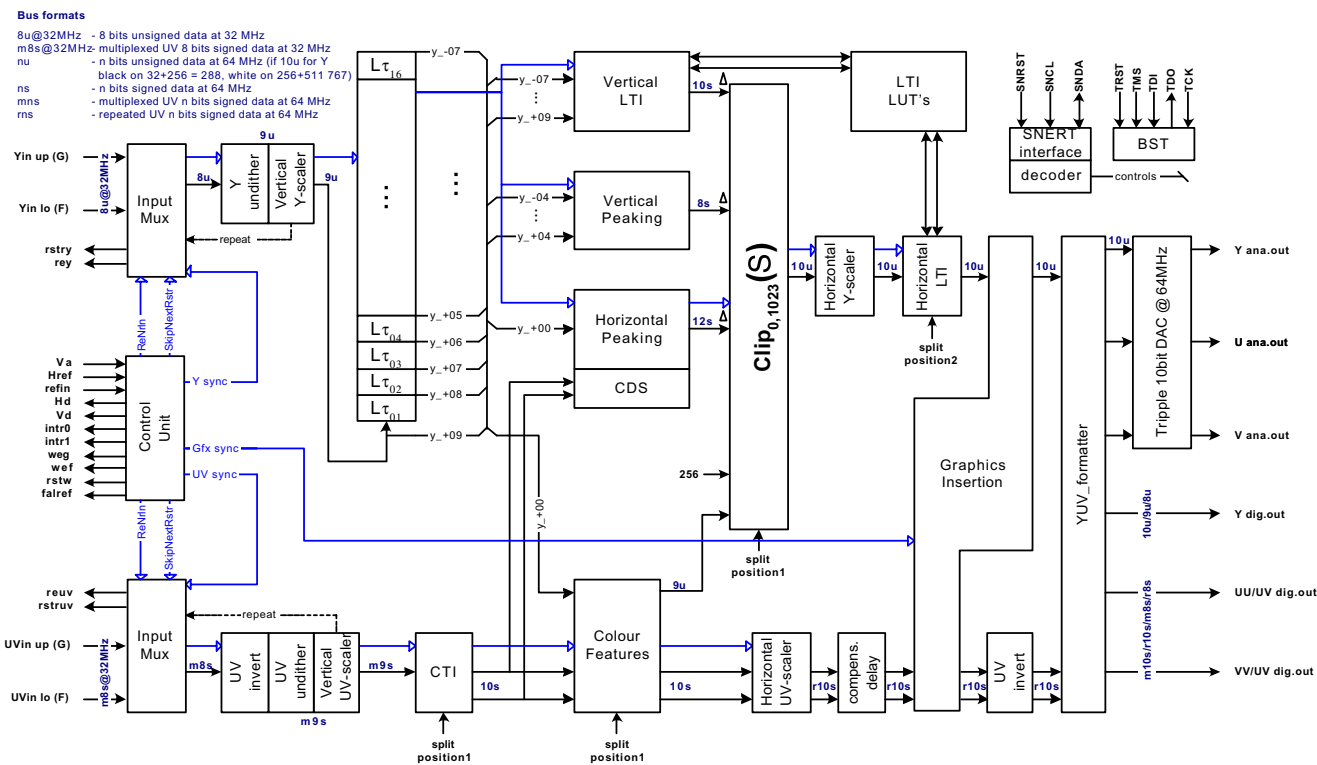
PIN CONNECTIONS

INPUT	1	20	INPUT
DATA	2	19	GROUND
INPUT	3	18	OUTPUT
CLOCK	4	17	OUTPUT
INPUT	5	16	OUTPUT
INPUT	6	15	OUTPUT
PROG	7	14	OUTPUT
INPUT	8	13	OUTPUT
VCC	9	12	GROUND
INPUT	10	11	INPUT

Figure 9-18

9.8.3 Diagram L2, T8F24EF (IC7724)

Internal Block Diagram and Pinning

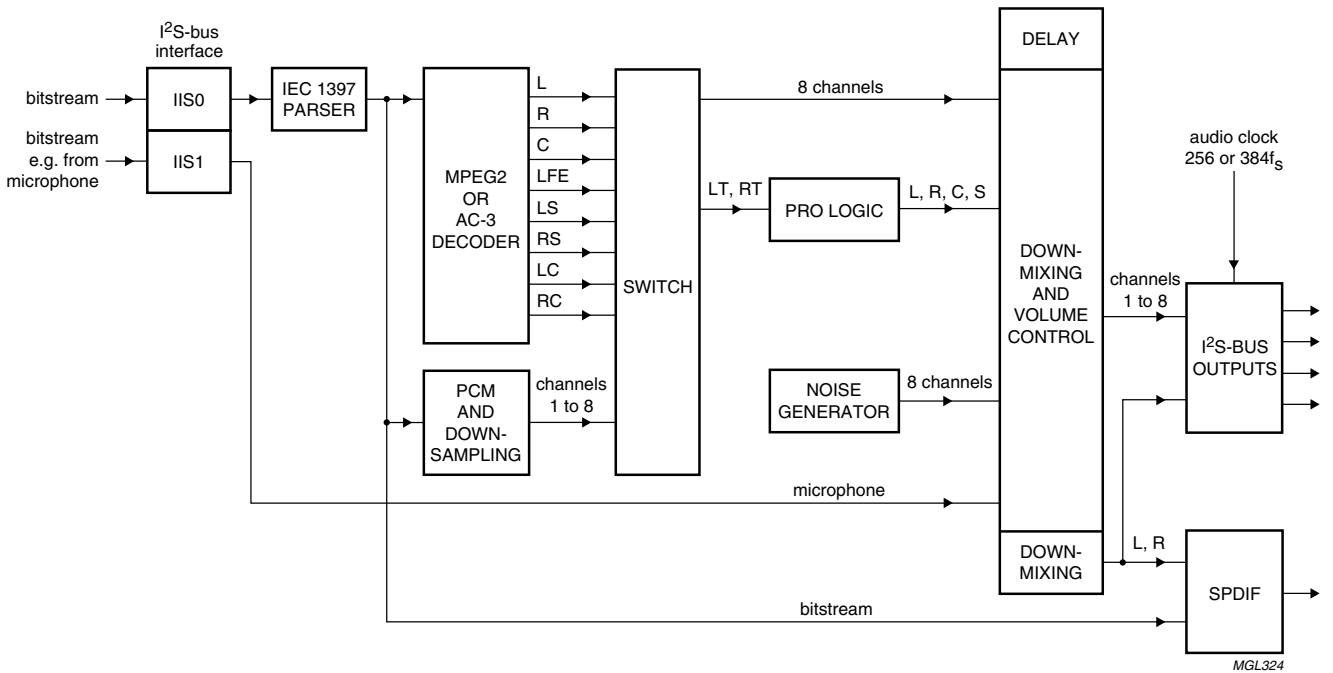


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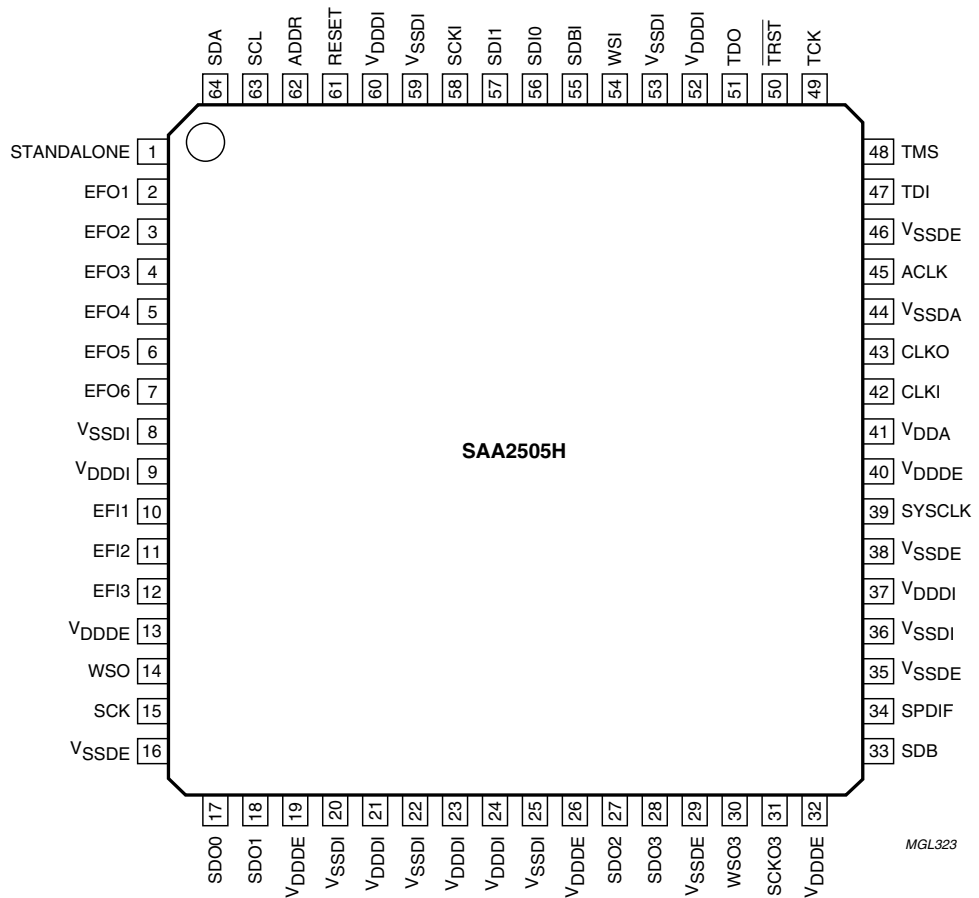
Figure 9-19

9.8.4 Diagram N1, SAA2505 (IC7801)

Internal Block Diagram and Pinning



Simplified block diagram.



Pin configuration.

Figure 9-20

9.8.5 Diagram U, MC68HC705J1A (IC7708)

Internal Block Diagram and Pinning

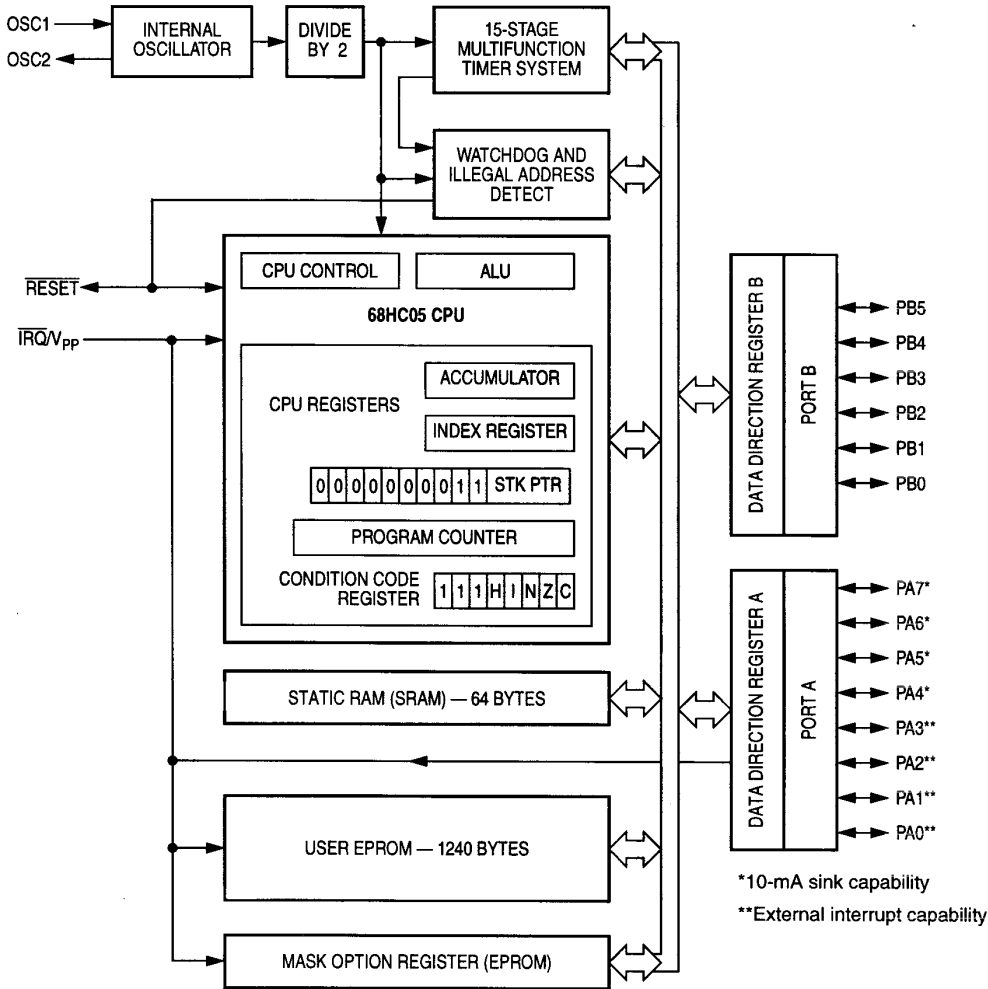


Figure 1-1. Block Diagram

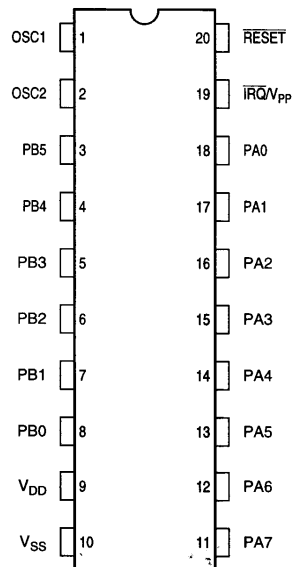


Figure 1-2. Pin Assignments

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# 10. Spare Parts List

## Large Signal Panel [A]

### Various

S001	3122 785 90420	28"/32"/36" line repair kit
0030	3104 304 19583	LSP Bracket
0037	3104 304 20264	LOT support bracket
0050	4822 255 41371	Spring line deflection
0051	4822 492 70789	Spring fix transistor
0052	4822 492 70789	Spring fix transistor
0053	3122 121 24785	Spring fix transistor
0054	3122 121 24785	Spring fix transistor
0061	4822 492 70789	Spring fix transistor
0062	4822 492 70789	Spring fix transistor
0065	3104 304 24821	Spacer LOT bracket
0303	4822 267 10774	2P male red
0304	4822 265 20723	2P male black
0311	4822 267 10978	7P male black
0315	4822 267 10979	9P male black
0317	4822 265 20723	2P male
0320	4822 267 10974	9P male
0321	4822 267 10978	7P male black
0324	4822 267 10972	5P male black
0325	4822 267 10967	3P male black
0328	4822 267 10962	11P male v
0335	4822 267 10969	3P male red
0336	4822 267 10967	3P male black
0337	4822 267 10967	3P male black
0338	4822 267 11043	3P male yellow
0390	4822 267 10963	3P male
0391	4822 267 10973	1P male
0393	2422 025 16583	5P female
0394	4822 267 10969	3P male
0395	4822 267 11043	3P male yellow
1460	4822 252 51186	Fuse 2A
8000	3104 311 03272	Eht cable 640 mm
8000	3104 311 03721	Eht cable 820 mm
8015	3104 308 77981	Focus cable 360mm
8300	4822 320 20216	Focus cable 364mm
8301	4822 320 20216	Focus cable 364mm
8304	3104 301 08671	Cable 3P 220 mm
8311	3104 301 08332	Cable 7P 340 mm
8315	3104 301 09611	Cable 9P 340 mm
8317	3104 311 00331	Cable 3P 340 mm
8320	3104 301 08752	Cable 9P 560 mm
8321	3104 301 08682	Cable 7P 180 mm
8324	3104 301 08762	Cable 5P 400 mm
8325	3104 311 00131	Cable 3P 560 mm
8325	3104 311 01971	Cable 3P 140 mm
8328	3104 311 01161	Cable 11P 340 mm
8337	4822 320 12671	Cable 3P 560 mm
8394	3104 311 00421	Cable 3P 480 mm
8395	3104 311 01991	Cable 3P 560 mm
8400	2422 025 16691	3P male

### —||—

2400	4822 124 11575	47µF 20% 160V
2401	4822 121 43343	4.7nF 10% 400V
2409	4822 126 12726	47pF 5% 50V
2410	2222 462 90009	4.7nF 2% 250V
2412	5322 121 42489	33nF 5% 250V
2413	4822 124 12255	10µF 20% 50V
2414	5322 121 42489	33nF 5% 250V
2415	5322 122 32334	220pF 10% 100V
2417	4822 121 42408	220nF 5% 63V
2418	4822 126 12263	220pF 10% 1kV
2419	5322 121 44151	33nF 10% 400V
2420	4822 121 70581	1.5nF 5% 2kV
2420	4822 121 70594	1nF 5% 2kV
2420	4822 121 70595	1.2nF 5% 2kV
2422	2038 301 00312	1.2µF 5% 250V
2425	4822 121 10526	9.1nF 5% 2kV
2425	4822 121 70435	10nF 5% 2kV
2426	4822 121 10551	27nF 5% 1600V
2431	5322 122 32331	1nF 10% 100V
2431	5322 122 32818	2.2nF 10% 100V
2433	2022 333 00086	470nF 5% 250V
2433	2022 333 00163	360nF 5% 250V
2433	4822 121 10518	390nF 5% 250V
2436	4822 124 41584	100µF 20% 10V
2437	4822 124 41741	2.2µF 20% 350V
2438	4822 122 33449	47nF 30% 50V
2439	5322 122 32331	1nF 10% 100V
2439	5322 122 32818	2.2nF 10% 100V
2442	4822 124 12297	4.7µF 20% 350V
2448	2020 300 90572	8.2nF 10% 50V
2448	4822 121 41857	10nF 5% 250V

2450	4822 121 40518	100nF 10% 250V
2454	4822 121 42408	220nF 5% 63V
2455	4822 121 43897	1nF 5% 400V
2455	4822 126 12451	820pF 10% 50V
2457	4822 121 70386	47nF 10% 250V
2460	4822 126 13185	680pF 10% 500V
2461	4822 124 11767	470pF 10% 25V
2462	4822 124 81039	3300µF 20% 25V
2463	4822 126 13185	680pF 10% 500V
2465	4822 122 31177	470pF 10% 500V
2466	4822 124 11767	470µF 20% 25V
2480	4822 121 43913	470nF 10% 100V
2480	4822 124 40763	2.2µF 100V
2481	5322 122 32311	470pF 10% 100V
2482	4822 124 22466	1µF 20% 50V
2484	4822 124 40769	4.7µF 10% 100V
2487	4822 124 40248	10µF 20% 63V
2493	2222 479 90166	68nF 5% 400V
2494	4822 124 81144	1000µF 16V
2506	4822 121 10711	100nF 20% 275V
2520	4822 121 43396	120nF 5% 63V
2520	4822 121 43526	47nF 5% 250V
2530	4822 124 21913	1µF 20% 63V
2612	5322 122 32311	470pF 10% 100V
2613	5322 122 32311	470pF 10% 100V
2615	2020 021 91513	100µF 20% 50V
2616	5322 121 42386	100nF 5% 63V
2617	4822 121 42408	220nF 5% 63V
2618	4822 121 51252	470nF 5% 63V
2620	5322 124 40641	10µF 20% 100V
2625	4822 121 43526	47nF 5% 250V
2714	4822 122 10182	100pF 5% 50V
2716	4822 122 10182	100pF 5% 50V
2730	4822 124 40248	10µF 20% 63V
2732	4822 124 12392	47µF 20% 16V
2733	5322 121 42386	100nF 5% 63V
2738	4822 122 10182	100pF 5% 50V
2739	4822 122 10182	100pF 5% 50V
2740	4822 122 30103	22nF 80% 63V
2741	4822 122 30103	22nF 80% 63V
2742	5322 121 42386	100nF 5% 63V
2743	4822 126 12638	6.8nF 10% 50V
2748	4822 121 43526	47nF 5% 250V
2749	4822 121 43526	47nF 5% 250V
2750	4822 122 30103	22nF 80% 63V
2751	4822 122 30103	22nF 80% 63V
2755	4822 126 12638	6.8nF 10% 50V
2756	4822 121 43526	47nF 5% 250V
2757	4822 121 43526	47nF 5% 250V
2760	4822 122 30103	22nF 80% 63V
2761	4822 122 30103	22nF 80% 63V
2762	4822 124 12392	47µF 20% 16V
2763	4822 124 80408	4.7µF 20% 50V
2768	4822 121 43526	47nF 5% 250V
2769	4822 121 43526	47nF 5% 250V
2770	4822 122 30103	22nF 80% 63V
2771	4822 122 30103	22nF 80% 63V
2772	5322 121 42386	100nF 5% 63V
2774	5322 121 42386	100nF 5% 63V
2775	4822 126 12638	6.8nF 10% 50V
2776	4822 121 43526	47nF 5% 250V
2777	4822 121 43526	47nF 5% 250V
2780	4822 124 21913	1µF 20% 63V
2790	4822 124 80061	1000µF 20% 25V
2791	4822 124 80061	1000µF 20% 25V
2792	5322 121 42386	100nF 5% 63V
2793	5322 121 42386	100nF 5% 63V
2794	4822 124 40248	10µF 20% 63V
2795	4822 124 40248	10µF 20% 63V

### □

3401	4822 053 12479	47Ω 5% 3W
3404	4822 116 83883	470Ω 5% 0.5W
3406	4822 116 52175	100Ω 5% 0.5W
3407	4822 050 21003	10k 1% 0.6W
3411	4822 116 52195	47Ω 5% 0.5W
3413	4822 116 83883	470Ω 5% 0.5W
3414	4822 116 52226	560Ω 5% 0.5W
3415	4822 053 12229	22Ω 5% 3W
3417	4822 116 52176	10Ω 5% 0.5W
3423	4822 053 10688	608Ω 5% 1W
3425	4822 116 52176	10Ω 5% 0.5W
3426	4822 116 52176	10Ω 5% 0.5W
3428	4822 116 52245	150k 5% 0.5W
3429	4822 116 83884	47k 5% 0.5W
3431	4822 052 10221	220Ω 5% 0.33W
3431	4822 052 11471	470Ω 5% 0.5W
3432	4822 116 83884	47k 5% 0.5W

3436	4822 116 52269	3k3 5% 0.5W
3437	4822 116 52245	150k 5% 0.5W
3438	4822 050 23303	33k 1% 0.6W
3440	4822 050 23303	33k 1% 0.6W
3441	4822 116 52272	330k 5% 0.5W
3442	4822 116 83874	220k 5% 0.5W
3443	4822 052 11688	608Ω 5% 0.5W
3444	4822 050 23303	33k 1% 0.6W
3445	4822 116 52256	2k2 5% 0.5W
3446	4822 050 11002	1k 1% 0.4W
3447	4822 052 10229	22Ω 5% 0.33W
3448	4822 116 52252	180k 5% 0.5W
3448	4822 116 52291	56k 5% 0.5W
3449	4822 050 21003	10k 1% 0.6W
3449	4822 116 52176	10Ω 5% 0.5W
3450	4822 116 83884	47k 5% 0.5W
3451	4822 050 23303	33k 1% 0.6W
3451	4822 116 52264	27k 5% 0.5W
3452	4822 116 52257	22k 5% 0.5W
3452	4822 116 52264	27k 5% 0.5W
3453	4822 116 80176	1Ω 5% 0.5W
3454	4822 116 52291	56k 5% 0.5W
3454	4822 116 83882	39k 5% 0.5W
3454	4822 116 83884	47k 5% 0.5W
3455	4822 116 83874	220k 5% 0.5W
3457	4822 050 12704	270k 1% 0.4W
3457	4822 116 52292	560k 5% 0.5W
3457	4822 116 52298	680k 5% 0.5W
3458	4822 116 52252	180k 5% 0.5W
3458	4822 116 52272	330k 5% 0.5W
3458	4822 116 52304	82k 5% 0.5W
3459	4822 116 83883	470Ω 5% 0.5W
3462	4822 052 11108	1Ω 5% 0.5W
3463	4822 052 11108	1Ω 5% 0.5W
3464	4822 050 11002	1k 1% 0.4W
3465	4822 052 10151	150Ω 5% 0.33W
3466	4822 052 11108	1Ω 5% 0.5W
3467	4822 052 11108	1Ω 5% 0.5W
3468	4822 052 10151	150Ω 5% 0.33W
3478	4822 116 83872	220Ω 5% 0.5W
3480	4822 116 52291	56k 5% 0.5W
3481	4822 052 10102	1k 5% 0.33W
3482	4822 116 52272	330k 5% 0.5W
3483	4822 052 10478	407Ω 5% 0.33W
3484	4822 052 10338	303Ω 5% 0.33W
3484	4822 052 10478	407Ω 5% 0.33W
3484	4822 052 10688	608Ω 5% 0.33W
3485	4822 050 21006	10M 1% 0.6W
3485	4822 050 27505	7M5 1% 0.6W
3486	4822 116 52234	100k 5% 0.5W
3487	4822 052 10133	13k 5% 0.33W
3488	4822 050 11002	1k 1% 0.4W
3489	4822 116 52191	33Ω 5% 0.5W
3490	4822 116 83874	220k 5% 0.5W
3491	4822 116 83874	220k 5% 0.5W
3492	4822 050 23303	33k 1% 0.6W
3493	4822 050 11002	1k 1% 0.4W
3498	4822 116 83872	220Ω 5% 0.5W
3506	4822 117 12027	PTC 18Ω-3k 25%
3507	4822 117 12027	PTC 18Ω-3k 25%
3509	4822 052 10472	4k7 5% 0.33W
3510	4822 050 21003	10k 1% 0.6W
3511	4822 116 52263	2k7 5% 0.5W
3512	4822 116 52191	33Ω 5% 0.5W
3520	2138 101 13753	75k 5% 0.5W
3520	4822 116 52234	100k 5% 0.5W
3521	4822 050 18204	820k 1% 0.4W
3521	4822 116 83866	1M 5% 0.5W
3530	4822 050 21003	10k 1% 0.6W
3531	4822 116 52257	22k 5% 0.5W
3531	4822 116 83884	47k 5% 0.5W
3532	4822 050 18204	820k 1% 0.4W
3532	4822 116 52298	680k 5% 0.5W
3601	4822 116 80676	1Ω 5% 0.5W
3602	4822 116 80176	1Ω 5% 0.5W
3602	4822 116 80676	1Ω 5% 0.5W
3603	4822 116 80176	1Ω 5% 0.5W
3610	4822 050 11002	

3630	4822 116 52289	5k6 5% 0.5W
3703	4822 116 80176	1Ω 5% 0.5W
3721	4822 116 52234	100k 5% 0.5W
3722	4822 116 52234	100k 5% 0.5W
3725	4822 116 52234	100k 5% 0.5W
3726	4822 116 52234	100k 5% 0.5W
3728	4822 116 52234	100k 5% 0.5W
3729	4822 116 52234	100k 5% 0.5W
3730	4822 116 83883	470Ω 5% 0.5W
3731	4822 116 83884	47k 5% 0.5W
3732	4822 116 83884	47k 5% 0.5W
3733	4822 116 52207	1k2 5% 0.5W
3734	4822 116 52257	22k 5% 0.5W
3735	4822 116 83961	6k8 5%
3740	4822 116 52256	2k2 5% 0.5W
3741	4822 116 52226	560Ω 5% 0.5W
3743	4822 116 80176	1Ω 5% 0.5W
3745	4822 117 12798	8Ω 5% 0.25W
3751	4822 116 80176	1Ω 5% 0.5W
3752	4822 116 52256	2k2 5% 0.5W
3753	4822 116 52226	560Ω 5% 0.5W
3754	4822 117 12798	8Ω 5% 0.25W
3760	4822 116 52256	2k2 5% 0.5W
3761	4822 116 52226	560Ω 5% 0.5W
3763	4822 116 80176	1Ω 5% 0.5W
3765	4822 117 12798	8Ω 5% 0.25W
3772	4822 116 52256	2k2 5% 0.5W
3773	4822 116 52226	560Ω 5% 0.5W
3774	4822 117 12798	8Ω 5% 0.25W
3780	4822 116 52289	5k6 5% 0.5W
3781	4822 116 52289	5k6 5% 0.5W
3782	4822 116 52289	5k6 5% 0.5W
3783	4822 116 52289	5k6 5% 0.5W
3785	4822 116 52263	2k7 5% 0.5W
3786	4822 116 52269	3k3 5% 0.5W
3787	4822 050 21003	10k 1% 0.6W
3790	4822 116 52234	100k 5% 0.5W
3791	4822 116 52234	100k 5% 0.5W

5400	4822 157 71467	39μH 10%
5401	4822 157 71452	18μH 10%
5410	4822 146 11066	Line driver transf.
5421	3128 138 55611	Linearity coil (36")
5421	3128 138 56152	Linearity coil (28")
5421	3128 138 57411	Linearity coil (32")
5422	4822 146 11137	Bridge coil
5423	4822 157 71097	0.56μH
5425	4822 157 11411	Bead 100mHz
5426	4822 157 11771	0.09μH 10%
5430	3128 138 20931	LOT CML16 (32"/36")
5430	8204 000 75001	LOT (28")
5460	4822 157 71466	2.2μH 20%
5462	4822 157 71466	2.2μH 20%
5466	4822 157 71441	15μH 10%
5466	4822 157 71452	18μH 10%
5468	4822 157 10452	10μH 10%
5468	4822 157 71452	18μH 10%
5480	4822 157 63253	Choke
5490	4822 526 10704	Bead 100mHz
5491	4822 526 10704	Bead 100mHz
5493	8228 001 34391	Driver Transformer CU15
5501	4822 157 11422	12μH 10%
5502	4822 157 11422	12μH 10%
5617	4822 157 11771	0.09μH 10%
5701	4822 157 11299	10μH 5%
5702	4822 157 11299	10μH 5%



6407	4822 130 42488	BYD33D
6408	4822 130 42488	BYD33D
6410	4822 130 30621	1N4148
6421	9322 165 72687	DTV1500MFP
6422	4822 130 10218	BY229X-800
6437	4822 130 30621	1N4148
6441	4822 130 42488	BYD33D
6451	4822 130 34382	BZX79-B8V2
6452	4822 130 30621	1N4148
6453	4822 130 34142	BZX79-B33
6454	4822 130 30842	BAV21
6480	4822 130 61219	BZX79-B10
6483	4822 130 30842	BAV21
6484	4822 130 30621	1N4148
6485	4822 130 30621	1N4148
6486	4822 130 30621	1N4148
6489	3139 120 52021	BYV29X-500
6490	3139 120 52021	BYV29X-500
6491	3139 120 52021	BYV29X-500
6495	4822 130 30621	1N4148
6496	4822 130 30621	1N4148

6530	4822 130 30621	1N4148
6608	4822 130 34174	BZX79-B4V7
6609	4822 130 31983	BAT85
6610	4822 130 30621	1N4148
6614	5322 130 31938	BYV27-200
6617	4822 130 42488	BYD33D
6618	5322 130 32296	BZV85-C10
6618	5322 130 33635	BZV85-C8V2
6620	4822 130 42488	BYD33D
6790	5322 130 34563	BZX79-C2V7
6791	5322 130 34563	BZX79-C2V7



7409	4822 130 40959	BC547B
7411	5322 130 44349	BC635
7421	9340 210 30127	BU2520DX
7437	4822 130 44568	BC557B
7440	4822 209 70672	LM358N Selected
7441	4822 130 40959	BC547B
7442	4822 130 44568	BC557B
7480	4822 130 11336	STP16NE06FP
7484	4822 209 70672	LM358N Selected
7490	4822 130 44568	BC557B
7600	4822 209 90009	TDA8177
7710	5322 209 86445	LM7805CT
7720	4822 209 11079	LM79M05CT
7730	4822 130 44568	BC557B
7731	4822 130 40959	BC547B
7732	4822 130 40959	BC547B
7733	4822 130 40959	BC547B
7740	4822 209 32641	TDA2616Q
7750	4822 209 32641	TDA2616Q
7760	4822 209 32641	TDA2616Q
7770	4822 209 32641	TDA2616Q
7780	4822 130 40959	BC547B

## Top Supply Panel [B]

### Various

S002	3122 785 90440	Standby supply repair kit
S003	3122 785 90430	Main supply repair kit
0001	3104 304 19652	Power supply frame
0052	3122 121 24785	Spring fix transistor
0053	3122 121 24785	Spring fix transistor
0056	3122 121 24785	Spring fix transistor
0057	3122 121 24785	Spring fix transistor
0066	3122 121 24785	Spring fix transistor
0067	3122 121 24785	Spring fix transistor
0072	4822 466 93461	Insulator 20 X 25
0150	4822 265 11253	Fuse holder
0151	4822 265 11253	Fuse holder
0302	2422 025 16374	2P Male
0304	4822 265 20723	3P Male
0310	4822 267 10964	9P Male red
0320	4822 267 10974	9P Male
0321	4822 267 10978	7P Male black
0330	2422 025 14904	7P Male
1001	4822 253 30467	Fuse 6,3A
1002	2422 132 07411	Relay 1P 5V 5A
1003	4822 070 33152	Fuse 3,15A
1005	4822 252 60151	Surge Protect
1006	4822 252 51173	Fuse 1,0A
1007	2422 132 07409	Relay 2P 12V 5A



2000	4822 126 13589	470nF 275V
2001	4822 124 11913	22nF 20% 275V
2002	4822 124 11913	22nF 20% 275V
2007	4822 121 41857	10nF 5% 250V
2009	4822 121 41857	10nF 5% 250V
2100	2020 024 90718	10μF 20% 450V
2101	2252 561 55609	68pF 5% 1kV
2102	5322 121 42386	100nF 5% 63V
2103	5322 121 42386	100nF 5% 63V
2104	2020 012 93057	2200μF 20% 16V
2105	5322 122 32818	2.2nF 10% 100V
2106	4822 126 14208	220pF 20% 250V
2111	5322 121 42386	100nF 5% 63V
2201	4822 124 42159	330μF 20% 400V
2202	4822 124 11767	470μF 20% 25V
2203	4822 124 80144	220μF 20% 25V
2204	5322 121 51214	680pF 1% 400V
2205	4822 121 51288	100pF 630V
2207	4822 121 41854	150nF 5% 63V
2208	5322 121 42386	100nF 5% 63V
2210	4822 126 13451	2.2nF 10% 2kV
2211	2222 375 90224	39nF 5% 1kV
2212	4822 126 13862	1.5nF 10% 2kV

2213	4822 126 13862	1.5nF 10% 2kV
2214	4822 126 14504	3.3nF 20% 250V
2215	4822 122 30043	10nF 80% 63V
2216	5322 121 42386	100nF 5% 63V
2217	4822 124 40207	100μF 20% 25V
2219	4822 122 30043	10nF 80% 63V
2220	4822 124 12417	2200μF 20% 25V
2221	4822 124 12417	2200μF 20% 25V
2222	2020 021 91503	1000μF 5% 35V
2223	4822 124 11572	47μF 20% 160V
2225	5322 122 32331	1nF 10% 100V
2226	5322 121 42386	100nF 5% 63V
2227	4822 121 43897	1nF 5% 400V
2228	4822 124 81151	22μF 50V
2230	4822 124 11878	4700μF 16V
2231	4822 121 41854	150nF 5% 63V
2232	4822 122 30043	10nF 80% 63V
2233	4822 122 30043	10nF 80% 63V
2234	2020 021 91503	1000μF 5% 35V
2235	5322 122 32331	1nF 10% 100V
2236	4822 124 11767	470μF 20% 25V
2237	4822 122 31175	1nF 10% 500V
2238	5322 121 42386	100nF 5% 63V
2239	4822 121 42062	150 nF 10% 400V
2240	5322 122 32261	4.7nF 10% 100V
2241	4822 122 30043	10nF 80% 63V
2242	4822 122 33449	47nF 30% 50V
2244	4822 126 12263	220pF 10% 1kV
2245	4822 126 10206	2.2nF 10% 500V
2246	4822 126 10206	2.2nF 10% 500V
2250	5322 122 32331	1nF 10% 100V
2251	4822 121 51305	15nF 10% 50V
2252	5322 122 32818	2.2nF 10% 100V
2253	4822 121 51252	470nF 5% 63V
2260	4822 122 30103	22nF 80% 63V
2261	4822 126 10206	2.2nF 10% 500V
2262	4822 126 10206	2.2nF 10% 500V
2263	5322 122 32311	470pF 10% 100V
2264	5322 122 32311	470pF 10% 100V
2265	2020 300 90565	2.7nF 10% 50V
2266	4822 121 10766	390pF 1% 630V
2267	4822 124 22652	2.2μF 20% 50V
2268	4822 124 22652	2.2μF 20% 50V
2269	5322 121 42386	100nF 5% 63V
2271	5322 122 32331	1nF 10% 100V
2272	5322 122 32331	1nF 10% 100V
2274	4822 122 33799	1nF 10% 1kV
2275	4822 122 31175	1nF 10% 500V
2276	5322 122 32331	1nF 10% 100V
2277	5322 122 32818	2.2nF 10% 100V
2279	4822 121 70654	2.2nF 10% 50V
2280	4822 124 22652	2.2μF 20% 50V
2281	4822 124 22652	2.2μF 20% 50V



3001	2322 595 90022	VDR 1mA/612V max 1120V
3002	3198 013 04710	470Ω 20% 0.5W
3003	4822 116 52256	2k2 5% 0.5W
3004	4822 116 52234	100k 5% 0.5W
3007	4822 116 52283	4k7 5% 0.5W
3008	4822 116 52256	2k2 5% 0.5W
3009	4822 050 21003	10k 1% 0.6W
3108	4822 116 52176	10Ω 5% 0.5W
3110	4822 052 10688	6Ω 5% 0.33W
3112	4822 050 11002	1k 1% 0.4W
3113	4822 116 52256	2k2 5% 0.5W
3114	4822 050 24702	4k7 1% 0.6W
3115	4822 050 24702	4k7 1% 0.6W
3118	4822 116 52257	22k 5% 0.5W
3120	4822 116 52175	100Ω 5% 0.5W
3121	4822 050 11002	1k 1% 0.4W
3122	4822 116 52175	100Ω 5% 0.5W
3200	4822 052 10569	56Ω 5% 0.33W
3201	4822 116 52175	100Ω 5% 0.5W
3202	4822 116 52303	8k2 5% 0.5W
3203	4822 050 23903	39k 1% 0.6W
3204	4822 116 52264	27k 5% 0.5W
3205	4822 116 52289	5k6 5% 0.5W
3206	4822 050 21003	10k 1% 0.6W
3207	4822 050 21003	10k 1% 0.6W
3208	4822 116 83883	470Ω 5% 0.5W
3209	4822 116 52269	3k3 5% 0.5W

3223	4822 116 52249	1k8 5% 0.5W
3224	4822 116 52249	1k8 5% 0.5W
3227	4822 052 10129	12Ω 5% 0.33W
3228	2322 257 41123	12k 5% 5W
3229	4822 116 52175	100Ω 5% 0.5W
3230	4822 050 11002	1k 1% 0.4W
3231	4822 050 21002	1k 1% 0.6W
3232	4822 050 21503	15k 1% 0.6W
3233	4822 050 11002	1k 1% 0.4W
3234	4822 116 52175	100Ω 5% 0.5W
3235	4822 116 52207	1k2 5% 0.5W
3236	4822 116 52303	8k2 5% 0.5W
3237	4822 050 21604	160k 1% 0.6W
3238	4822 050 22702	2k7 1% 0.6W
3239	4822 101 11186	470Ω 30% 0.1W
3240	4822 116 52226	560Ω 5% 0.5W
3241	4822 116 52226	560Ω 5% 0.5W
3242	4822 050 25603	56k 1% 0.6W
3243	4822 050 25603	56k 1% 0.6W
3244	4822 050 21003	10k 1% 0.6W
3245	4822 116 83882	39k 5% 0.5W
3246	4822 116 83961	6k8 5%
3247	4822 116 52175	100Ω 5% 0.5W
3248	4822 050 21002	1k 1% 0.6W
3249	4822 050 21003	10k 1% 0.6W
3250	4822 050 28204	820k 1% 0.6W
3251	4822 050 26804	680k 1% 0.6W
3252	4822 050 21003	10k 1% 0.6W
3253	4822 116 52244	15k 5% 0.5W
3254	4822 050 21003	10k 1% 0.6W
3255	4822 116 83961	6k8 5%
3256	4822 050 21003	10k 1% 0.6W
3257	4822 116 52213	180Ω 5% 0.5W
3258	4822 053 20565	5M6 5% 0.25W
3259	4822 116 52244	15k 5% 0.5W
3260	4822 050 24708	4Ω7 1% 0.6W
3261	4822 116 52297	68k 5% 0.5W
3262	4822 116 52234	100k 5% 0.5W
3263	4822 050 26808	6Ω8 1% 0.6W
3264	4822 050 11002	1k 1% 0.4W
3265	4822 050 11002	1k 1% 0.4W
3266	4822 050 21003	10k 1% 0.6W
3267	4822 116 52256	2k2 5% 0.5W
3268	4822 050 24708	4Ω7 1% 0.6W
3269	4822 050 24708	4Ω7 1% 0.6W
3274	4822 116 52195	47Ω 5% 0.5W
3275	4822 116 80176	1Ω 5% 0.5W
3277	4822 050 11002	1k 1% 0.4W
3278	4822 050 21003	10k 1% 0.6W
3279	4822 116 52264	27k 5% 0.5W
3280	4822 116 83884	47k 5% 0.5W
3998	4822 050 21003	10k 1% 0.6W

5000	2422 549 44911	Mainsfilter
5101	8228 001 37422	Standby transf. CE165T
5103	4822 157 71466	2.2μH 20%
5104	4822 157 71466	2.2μH 20%
5105	4822 526 10704	Bead 100mHz
5106	4822 526 10704	Bead 100mHz
5201	8222 289 53691	Driver transf. CE136H
5202	8228 001 37502	Transformer CE423D
5204	8228 001 37404	DC-DC convertor transf.
5205	2422 535 94637	4.7μH 20%
5206	4822 157 11411	Bead 100mHz
5207	4822 157 11411	Bead 100mHz
5208	4822 157 63985	33μH 5%
5209	4822 157 11411	Bead 100mHz
5210	4822 157 51462	10μH 10%
5212	4822 157 11411	Bead 100mHz
5213	4822 157 11411	Bead 100mHz
5215	4822 157 11411	Bead 100mHz
5216	4822 157 11411	Bead 100mHz
5217	4822 526 10704	Bead 100mHz
5219	4822 157 11411	Bead 100mHz
5222	4822 157 71453	27μH 10%
5223	4822 157 71453	27μH 10%
5224	4822 157 71453	27μH 10%
5225	4822 157 11411	Bead 100mHz
5226	4822 157 11411	Bead 100mHz
5227	4822 157 11411	Bead 100mHz
5228	4822 157 11411	Bead 100mHz
5229	4822 157 11411	Bead 100mHz
5230	4822 157 11411	Bead 100mHz
5231	4822 157 11411	Bead 100mHz
5232	4822 157 11771	0.09μH 10%
5240	4822 157 11411	Bead 100mHz
5241	4822 526 10704	Bead 100mHz
5242	4822 526 10704	Bead 100mHz
5243	4822 157 11411	Bead 100mHz
5244	4822 157 11411	Bead 100mHz
5271	4822 157 71453	27μH 10%

5272	2422 535 94637	4.7μH 20%
5273	4822 157 71453	27μH 10%
5274	4822 157 11869	33μH 10%
5275	4822 157 11411	Bead 100mHz
5280	2422 549 44872	Mainsfilter



6008	3198 010 10640	Bridge cell GBU4K
6009	4822 130 30621	1N4148
6101	4822 130 83147	DF06M
6104	9336 018 60133	BZT03-C300
6105	9336 018 60133	BZT03-C300
6106	9322 161 77682	SB540L-7024
6108	4822 130 34278	BZX79-B6V8
6200	4822 130 30621	1N4148
6201	4822 130 30621	1N4148
6202	9337 534 30133	BZD23-C15
6203	9337 534 30133	BZD23-C15
6204	4822 130 30621	1N4148
6205	4822 130 30621	1N4148
6206	4822 130 34441	BZX79-B22
6207	4822 130 30621	1N4148
6208	4822 130 30621	1N4148
6209	4822 130 31024	BZX79-B18
6210	4822 130 42488	BYD33D
6211	4822 130 30621	1N4148
6212	4822 130 30621	1N4148
6213	4822 130 31983	BAT85
6214	4822 130 30621	1N4148
6216	4822 130 30621	1N4148
6217	4822 130 30621	1N4148
6218	9322 131 78682	D4SBL20
6219	4822 130 30621	1N4148
6220	4822 130 30621	1N4148
6221	4822 130 34174	BZX79-B4V7
6222	9322 129 53687	G10DCT
6224	9322 131 78682	D4SBL20
6230	4822 130 83801	PBYR745F
6234	4822 130 34197	BZX79-B12
6235	4822 130 30621	1N4148
6237	9322 161 77682	SB540L-7024
6238	4822 130 34278	BZX79-B6V8
6239	4822 130 34197	BZX79-B12
6270	4822 130 30621	1N4148
6271	4822 130 30621	1N4148



7000	4822 130 40981	BC337-25
7001	4822 130 40959	BC547B
7103	9322 037 99682	TNY256P
7104	9322 149 04682	TCET1102
7105	4822 209 81397	TL431CLPST
7106	4822 130 11421	BT151X-500R
7200	9322 149 04682	TCET1102
7201	4822 130 40959	BC547B
7202	4822 130 44568	BC557B
7203	4822 130 44568	BC557B
7204	4822 130 44568	BC557B
7205	9322 108 21682	MC34067P
7206	9322 132 14687	STP11NB40FP
7207	9322 132 14687	STP11NB40FP
7211	9322 129 22687	L4977A
7212	4822 209 81397	TL431CLPST
7213	4822 209 12334	L4940V85
7230	4822 130 44568	BC557B
7231	4822 130 40959	BC547B
7232	4822 130 11421	BT151X-500R

### Mains Switch Panel [E]

#### Various

0040	3104 307 97621	Mainsknob FL11
0046	3104 304 23471	Bracket mains unit FL11
0151	4822 256 91766	Led holder
0152	4822 256 91766	Led holder
0170	4822 256 10562	Photo diode holder
0201	2422 025 16268	7P Male
0202	2422 025 16268	2P Male
0241	2422 025 06354	9P Male
0245	4822 267 10748	3P Male
1050	9322 154 48667	IR Receiver TSOP2236
1051	2422 128 02972	Mains switch 2P 8/128A
8202	3104 301 08291	Cable 2P3 560mm black
8241	3104 301 09381	Cable 9P 680mm white



2051	4822 124 41584	100μF 20% 10V
2070	4822 126 13879	220nF 20% 16V
2071	4822 124 40248	10μF 20% 63V



3050	4822 117 13577	330Ω 1% 1.25W
3051	4822 051 30471	470Ω 5% 0.062W
3054	4822 051 20471	470Ω 5% 0.1W
3057	4822 053 21335	3M3 5% 0.5W
3061	4822 051 30332	3k3 5% 0.062W
3063	4822 052 10478	4Ω7 5% 0.33W
3064	4822 052 10478	4Ω7 5% 0.33W
3066	4822 053 21335	3M3 5% 0.5W
3070	4822 051 30334	330k 5% 0.062W
3071	4822 051 30334	330k 5% 0.062W
3072	4822 051 30102	1k 5% 0.062W
3073	4822 051 30103	10k 5% 0.062W
3074	4822 051 30472	4k7 5% 0.062W
3075	4822 051 30472	4k7 5% 0.062W
3076	4822 051 30682	6k8 5% 0.062W
3077	4822 051 30103	10k 5% 0.062W
3078	4822 051 30102	1k 5% 0.062W
3079	4822 051 30332	3k3 5% 0.062W
3082	4822 051 30008	Jumper 0603
3998	4822 116 52206	120Ω 5% 0.5W



6051	4822 209 72895	TLUV5320
6052	9322 150 78676	LED IR TSAL6400
6053	4822 130 10838	UDZ3.3B
6070	4822 130 11595	BPW46



7050	4822 130 41246	BC327-25
7070	4822 209 70672	LM358N Selected

### Picture Tube Panel [F]

#### Various

0041	3122 121 24785	SPRING fix IC
0042	3122 121 24785	SPRING fix IC
0043	3122 121 24785	SPRING fix IC
0297	2422 500 80036	CRT socket 9P
0324	4822 267 10972	5P
0334	4822 267 10973	1P
0340	4822 267 10974	9P
0383	4822 267 10967	3P
1382	2422 025 17408	9P male



2330	2020 552 93645	39pF 5% 50V
2332	5322 126 10223	4.7nF 10% 63V
2336	4822 126 14585	100nF 10% 50V
2337	5322 121 42489	33nF 5% 250V
2340	2020 552 93645	39pF 5% 50V
2342	5322 126 10223	4.7nF 10% 63V
2346	4822 126 14585	100nF 10% 50V
2347	5322 121 42489	33nF 5% 250V
2350	2020 552 93645	39pF 5% 50V
2352	5322 126 10223	4.7nF 10% 63V
2356	4822 126 14585	100nF 10% 50V
2357	5322 121 42489	33nF 5% 250V
2360	5322 122 31863	330pF 5% 63V
2370	4822 124 11565	10μF 20% 250V
2372	4822 124 40784	3300μF 20% 16V
2374	5322 122 34098	10nF 10% 63V
2381	4822 126 13599	3.3nF 10% 500V
2382	4822 122 31177	470pF 10% 500V
2383	4822 124 41584	100μF 20% 10V
2384	4822 124 41584	100μF 20% 10V
2393	5322 122 32654	22nF 10% 63V
2397	4822 121 70594	1nF 5% 2kV
2398	4822 121 70383	6.8nF 5% 2kV
2410	2020 552 93683	1.2nF 10% 50V
2411	4822 124 40764	22μF 100V
2420	4822 126 14238	2.2nF 50V
2421	4822 126 14494	22nF 10% 25V
2422	2238 586 15628	2.7nF 10% 50V
2423	2238 586 15628	2.7nF 10% 50V
2424	4822 126 14494	22nF 10% 25V
2425	4822 126 14494	22nF 10% 25V
2426	4822 126 14494	22nF 10% 25V



2427	2020 552 93683	1.2nF 10% 50V
2428	4822 126 14238	2.2nF 50V
2429	4822 126 14494	22nF 10% 25V
2440	4822 126 14043	1µF 20% 16V
2475	4822 122 33761	22pF 5% 50V
2484	4822 122 33761	22pF 5% 50V
2485	4822 122 33761	22pF 5% 50V
2489	4822 122 33761	22pF 5% 50V



3325	4822 051 20332	3k3 5% 0.1W
3329	4822 116 52283	4k7 5% 0.5W
3330	4822 051 30181	180Ω 5% 0.062W
3331	4822 117 12968	820Ω 5% 0.62W
3333	2120 105 93438	33k 2W
3334	4822 116 83881	390Ω 5% 0.5W
3335	4822 116 83872	220Ω 5% 0.5W
3336	4822 117 11373	100Ω 1%
3339	4822 051 10102	1k 2% 0.25W
3340	4822 051 30181	180Ω 5% 0.062W
3341	4822 117 12968	820Ω 5% 0.62W
3343	2120 105 93438	33k 2W
3344	4822 116 83881	390Ω 5% 0.5W
3345	4822 116 83872	220Ω 5% 0.5W
3346	4822 117 11373	100Ω 1%
3349	4822 051 10102	1k 2% 0.25W
3350	4822 051 30181	180Ω 5% 0.062W
3351	4822 117 12968	820Ω 5% 0.62W
3353	2120 105 93438	33k 2W
3354	4822 116 83881	390Ω 5% 0.5W
3355	4822 116 83872	220Ω 5% 0.5W
3356	4822 117 11373	100Ω 1%
3359	4822 051 10102	1k 2% 0.25W
3360	4822 050 11002	1k 1% 0.4W
3363	4822 051 20008	Jumper 0805
3364	4822 051 20008	Jumper 0805
3365	4822 117 12925	47k 1% 0.063W
3372	4822 052 10108	1Ω 5% 0.33W
3373	4822 052 10151	150Ω 5% 0.33W
3374	4822 052 10151	150Ω 5% 0.33W
3382	4822 116 52191	33Ω 5% 0.5W
3383	4822 117 13016	VDR 1mA/50V MAX 115V
3385	4822 117 13016	VDR 1mA/50V MAX 115V
3386	4822 116 52191	33Ω 5% 0.5W
3396	3198 013 01520	1k5 2% 0.5W
3397	3198 013 01520	1k5 2% 0.5W
3401	4822 051 30101	100Ω 5% 0.062W
3402	4822 051 30101	100Ω 5% 0.062W
3403	4822 051 30101	100Ω 5% 0.062W
3404	4822 116 52238	12k 5% 0.5W
3404	4822 116 52291	56k 5% 0.5W
3410	4822 117 12968	820Ω 5% 0.62W
3411	4822 117 13632	100k 1% 0.62W 0603
3413	4822 117 12968	820Ω 5% 0.62W
3414	4822 117 12077	2k7 5% 5W
3416	4822 117 13632	100k 1% 0.62W
3421	4822 051 30273	27k 5% 0.062W
3422	4822 116 52226	560Ω 5% 0.5W
3423	4822 051 30471	470Ω 5% 0.062W
3424	4822 117 10361	680Ω 1% 0.1W
3425	4822 051 10102	1k 2% 0.25W
3426	4822 051 30332	3k3 5% 0.062W
3427	4822 051 30561	560Ω 5% 0.062W
3431	4822 051 30273	27k 5% 0.062W
3433	4822 051 30471	470Ω 5% 0.062W
3434	4822 117 10361	680Ω 1% 0.1W
3435	4822 051 30102	1k 5% 0.062W
3436	4822 051 30332	3k3 5% 0.062W
3437	4822 051 30561	560Ω 5% 0.062W
3441	4822 051 30273	27k 5% 0.062W
3443	4822 051 30471	470Ω 5% 0.062W
3444	4822 117 10361	680Ω 1% 0.1W
3445	4822 051 10102	1k 2% 0.25W
3446	4822 051 30332	3k3 5% 0.062W
3447	4822 051 30561	560Ω 5% 0.062W
3448	4822 117 12968	820Ω 5% 0.62W
3450	4822 051 30102	1k 5% 0.062W
3451	4822 051 30689	68Ω 5% 0.063W
3452	4822 117 12925	47k 1% 0.063W
3453	4822 051 30392	3k9 5% 0.063W
3454	4822 117 12968	820Ω 5% 0.62W
3455	4822 051 30472	4k7 5% 0.062W
3456	4822 051 30181	180Ω 5% 0.062W
3460	3198 021 32250	2M2 5%
3462	3198 021 32250	2M2 5%
3463	3198 021 32250	2M2 5%
3468	3198 021 32250	2M2 5%
3470	4822 116 81154	2Ω 5% 0.5W
3472	4822 116 81154	2Ω 5% 0.5W
3473	4822 116 81154	2Ω 5% 0.5W
3474	4822 051 30102	1k 5% 0.062W
3475	4822 117 12925	47k 1% 0.063W

3476	4822 051 30103	10k 5% 0.062W
3477	4822 051 30109	10Ω 5% 0.062W
3478	4822 116 81154	2Ω 5% 0.5W
3483	4822 051 30102	1k 5% 0.062W
3484	4822 117 12925	47k 1% 0.063W
3485	4822 117 12925	47k 1% 0.063W
3487	4822 051 30103	10k 5% 0.062W
3488	4822 051 30109	10Ω 5% 0.062W
3489	4822 117 12925	47k 1% 0.063W
3492	4822 051 30101	100Ω 5% 0.062W
3493	4822 116 52191	33Ω 5% 0.5W
3494	4822 051 30101	100Ω 5% 0.062W
3495	4822 051 20479	47Ω 5% 0.1W
3999	4822 117 10353	150Ω 1% 0.1W
3999	4822 117 11503	220Ω 1% 0.1W
3999	4822 117 13577	330Ω 1% 1.25W
4xxx	4822 051 10008	Jumper 1206
4xxx	4822 051 20008	Jumper 0805

5372	4822 157 51216	5.6µH 10%
5373	4822 157 51216	5.6µH 10%
5400	4822 157 11778	5.6µH 10%
5401	2722 122 00334	Del line 90nS SDL-5127
5402	2722 122 00334	Del line 90nS SDL-5127
5403	2722 122 00334	Del line 90nS SDL-5127

6325	4822 130 10838	UDZ3.3B
6335	9340 553 52115	BAS321
6336	9340 553 52115	BAS321
6345	9340 553 52115	BAS321
6346	9340 553 52115	BAS321
6355	9340 553 52115	BAS321
6356	9340 553 52115	BAS321
6373	4822 130 42488	BYD33D
6374	4822 130 82512	BYV29F-400
6412	4822 130 11397	BAS316
6413	4822 130 11397	BAS316
6414	4822 130 11397	BAS316
6415	4822 130 11397	BAS316



7330	9352 626 34112	TDA6120Q/N2
7340	9352 626 34112	TDA6120Q/N2
7350	9352 626 34112	TDA6120Q/N2
7412	4822 130 40824	BD140
7413	4822 130 40823	BD139
7414	4822 130 40824	BD140
7415	4822 130 40823	BD139
7416	4822 130 60511	BC847B
7417	4822 130 60373	BC856B
7418	4822 130 60511	BC847B
7419	4822 130 60373	BC856B
7420	4822 130 60511	BC847B
7421	4822 130 60373	BC856B
7422	5322 130 42718	BFS20
7423	4822 130 60511	BC847B
7424	5322 130 42718	BFS20
7425	5322 130 42718	BFS20
7426	4822 130 60373	BC856B
7427	4822 130 60511	BC847B
7428	4822 130 60373	BC856B
7431	4822 130 60383	BF824

### DC-shift Panel [G]

#### Various

0393	2422 025 16218	5P male
0398	4822 267 11043	3P male



2030	4822 122 31177	470pF 10% 500V
2031	4822 124 40207	100µF 20% 25V
2032	4822 124 40207	100µF 20% 25V
2033	4822 122 31177	470pF 10% 500V
2034	4822 121 42408	220nF 10% 50V



3030	4822 117 12159	150Ω 5% 2W
3030	4822 053 11159	15Ω 5% 2W
3031	4822 052 10108	1Ω 5% 0.33W
3032	4822 052 10108	1Ω 5% 0.33W

3033	4822 053 11159	15Ω 5% 2W
3034	4822 116 83872	220Ω 5% 0.33W
3040	4822 053 11101	100Ω 5% 2W

5030	4822 157 70006	DC-shift coil
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6030	4822 130 42488	BYD33D
6033	4822 130 42488	BYD33D



7030	4822 130 41109	BD135-16
7031	4822 130 41194	BD136-16

### DAF Panel [I]

#### Various

0001	3104 304 20301	DAF bracket
0317	4822 265 20723	3P male
0391	4822 267 10973	1P
0396	2422 025 16374	2P male
0397	4822 267 10774	2P male red
0398	4822 267 11043	3P male
1010	2322 460 91631	DAF potmeter 36" RF
1016	2322 460 91641	DAF potmeter 32" RF
8300	4822 320 20216	Focus cable 364 mm
8301	4822 320 20216	Focus cable 364 mm
8396	3104 311 01951	CableH 2P3/560mm/2P4



2800	2222 375 90188	390pF 5% 2kV
2800	2222 375 90498	470pF 5% 2kV
2890	2222 375 90188	390pF 5% 2kV
2890	2222 375 90276	220pF 5% 2kV



3050	4822 101 11191	10k 30% LIN 0.1W
3898	4822 116 21211	VDR 420V
3899	4822 116 21211	VDR 420V
3998	4822 116 52219	330Ω 5% 0.5W



5800	4822 148 81242	Coil CU20C2
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### Small Signal Panel [K]

#### Various

0002	2422 486 80873	IC socket 42P DIL
0008	2422 486 80928	IC socket 8P DIL
0031	3104 304 22851	SSP bracket
0032	3104 304 19646	Module support bracket
0310	4822 267 10964	9P male red
0311	4822 267 10978	7P male black
0315	4822 267 10979	9P male black
0328	4822 267 10981	11P male black
0333	4822 267 10962	11P
0340	4822 267 10974	9P male
0341	4822 267 10974	9P male
0344	4822 267 10963	3P male
0348	4822 267 11043	3P
0351	4822 267 10962	11P male
0352	4822 267 10962	11P male
0353	4822 267 10974	9P male
0356	4822 267 10963	3P male
0360	4822 267 10967	3P male
0361	4822 267 10974	9P male
0362	4822 267 10974	9P male
0373	4822 267 10978	7P male
0375	4822 267 10676	1P
0381	4822 267 10963	3P male
1001	4822 242 10972	Crystal 6MHz
1101	3139 147 14591	Splitter PS1311/I
1102	3139 147 18831	Tuner UV1316/A I X-3
1102	3139 147 18841	Tuner UV1316/A P X-3
1105	4822 242 10688	Filter OFWK9456M
1107	4822 242 72211	Filter 5.5MHz
1109	4822 242 81436	Filter OFWK3953M
1198	3104 301 08351	Cable phono-phono 120mm

1201	4822 267 10771	Socket 2 x scart
1202	4822 267 10771	Socket 2 x scart
1305	5322 242 73686	Crystal 12 MHz
1525	4822 242 10695	Crystal 4.433 619 MHz
1528	4822 242 10697	Crystal 3.579 545 MHz
1751	4822 242 10434	Crystal 18.432 MHz
8310	3104 301 08303	Cable 9P 680m red
8340	4822 320 12508	Cable 9P 400mm White
8360	3119 107 17071	Cable 3P 220mm Black
8382	3104 311 00340	Service cable 9P SSP-PTP

—II—

2001	4822 126 14585	100nF 10% 50V
2002	4822 126 14305	100nF 10% 16V 0603
2003	4822 126 14305	100nF 10% 16V 0603
2005	4822 126 14305	100nF 10% 16V 0603
2006	4822 126 14305	100nF 10% 16V 0603
2007	4822 126 14305	100nF 10% 16V 0603
2008	4822 126 14305	100nF 10% 16V 0603
2009	4822 126 14305	100nF 10% 16V 0603
2010	4822 126 14305	100nF 10% 16V 0603
2011	4822 126 14305	100nF 10% 16V 0603
2012	4822 126 14305	100nF 10% 16V 0603
2013	4822 126 14076	220nF 20-80% 25V
2014	4822 126 11669	27pF
2015	4822 126 14585	100nF 10% 50V
2016	5322 122 32659	33pF 5% 50V
2021	4822 126 14585	100nF 10% 50V
2022	4822 126 14076	220nF 20-80% 25V
2023	4822 126 14305	100nF 10% 16V 0603
2024	5322 126 11578	1nF 10% 50V 0603
2025	4822 126 14305	100nF 10% 16V 0603
2026	4822 126 14305	100nF 10% 16V 0603
2027	4822 126 14305	100nF 10% 16V 0603
2028	4822 126 14305	100nF 10% 16V 0603
2029	4822 124 40433	47µF 20% 25V
2030	4822 124 40433	47µF 20% 25V
2031	4822 126 14305	100nF 10% 16V 0603
2032	4822 126 14305	100nF 10% 16V 0603
2035	4822 126 14585	100nF 10% 50V
2037	4822 126 14585	100nF 10% 50V
2038	4822 126 14585	100nF 10% 50V
2039	4822 126 13883	220pF 5% 50V
2040	4822 122 33177	10nF 20% 50V
2042	4822 122 33777	47pF 5% 63V
2043	4822 122 33777	47pF 5% 63V
2044	4822 122 33777	47pF 5% 63V
2045	4822 124 41584	100µF 20% 10V
2046	4822 126 14585	100nF 10% 50V
2049	4822 126 14226	82pF 5% 50V 0603
2050	4822 126 14226	82pF 5% 50V 0603
2051	4822 126 14226	82pF 5% 50V 0603
2052	4822 126 14226	82pF 5% 50V 0603
2053	4822 126 14226	82pF 5% 50V 0603
2054	4822 126 14226	82pF 5% 50V 0603
2101	4822 124 40196	220µF 20% 16V
2102	4822 126 13473	220nF 80-20% 50V
2104	4822 122 33177	10nF 20% 50V
2105	4822 122 33177	10nF 20% 50V
2106	4822 122 33575	220pF 5% 63V
2107	4822 126 13694	68pF 1% 63V
2108	5322 122 31873	2.7pF 5% 100V
2109	4822 124 22652	2.2µF 20% 50V
2110	4822 124 21913	1µF 20% 63V
2111	4822 126 14585	100nF 10% 50V
2112	4822 122 33891	3.3nF 10% 63V
2116	4822 124 81044	470µF 20% 6.3V
2117	4822 126 13482	470nF 80/20% 16V
2118	5322 122 32967	5.6pF 10% 63V
2119	5322 122 31863	330pF 5% 63V
2120	4822 126 14076	220nF 20-80% 25V
2121	4822 124 40248	10µF 20% 63V
2125	4822 122 33177	10nF 20% 50V
2126	4822 124 40433	47µF 20% 25V
2127	4822 126 14076	220nF 20-80% 25V
2202	5322 122 31863	330pF 5% 63V
2203	5322 122 31863	330pF 5% 63V
2204	4822 126 14305	100nF 10% 16V 0603
2205	4822 124 40248	10µF 20% 63V
2206	5322 122 32531	100pF 5% 50V
2209	5322 122 31863	330pF 5% 63V
2210	5322 122 32531	100pF 5% 50V
2212	4822 124 40248	10µF 20% 63V
2213	4822 126 14305	100nF 10% 16V 0603
2215	5322 122 31863	330pF 5% 63V
2216	5322 122 31863	330pF 5% 63V
2217	5322 122 32531	100pF 5% 50V
2218	5322 122 31647	1nF 10% 63V
2219	5322 122 31863	330pF 5% 63V
2220	5322 122 32531	100pF 5% 50V
2221	4822 126 14076	220nF 20-80% 25V
2222	4822 124 81286	47µF 20% 16V

2224	5322 122 32531	100pF 5% 50V
2226	5322 122 32531	100pF 5% 50V
2240	5322 122 32531	100pF 5% 50V
2241	5322 122 32531	100pF 5% 50V
2242	4822 124 23002	10µF 16V
2243	4822 126 14076	220nF 20-80% 25V
2244	4822 126 14076	220nF 20-80% 25V
2245	4822 126 14076	220nF 20-80% 25V
2246	4822 126 14076	220nF 20-80% 25V
2247	4822 126 14076	220nF 20-80% 25V
2248	4822 126 14076	220nF 20-80% 25V
2249	4822 126 14076	220nF 20-80% 25V
2250	4822 126 14076	220nF 20-80% 25V
2251	4822 124 80151	47µF 16V
2258	4822 126 14076	220nF 20-80% 25V
2300	4822 124 40196	220µF 20% 16V
2301	4822 126 14585	100nF 10% 50V
2302	4822 126 14585	100nF 10% 50V
2303	4822 124 22652	2.2µF 20% 50V
2304	4822 126 14305	100nF 10% 16V 0603
2307	4822 122 33741	10pF 10% 50V
2308	4822 122 33741	10pF 10% 50V
2311	4822 124 40196	220µF 20% 16V
2312	4822 126 14305	100nF 10% 16V 0603
2313	4822 126 13694	68pF 1% 63V
2315	5322 122 34098	10nF 10% 63V
2321	4822 126 13881	470pF 5% 50V
2322	4822 126 13881	470pF 5% 50V
2323	4822 121 70661	100nF 5% 63V
2324	2222 396 05333	33nF 5% 50V
2331	5322 126 11583	10nF 10% 50V 0603
2340	4822 126 13881	470pF 5% 50V
2343	5322 122 32448	10pF 5% 63V
2344	4822 126 14305	100nF 10% 16V 0603
2351	2020 552 96326	220nF 10% 16V
2403	4822 126 14585	100nF 10% 50V
2404	4822 126 14585	100nF 10% 50V
2405	4822 126 14585	100nF 10% 50V
2406	4822 126 14305	100nF 10% 16V 0603
2407	4822 126 14305	100nF 10% 16V 0603
2408	4822 126 14305	100nF 10% 16V 0603
2422	4822 124 22652	2.2µF 20% 50V
2423	4822 124 40769	4.7µF 20% 100V
2425	4822 122 33761	22pF 5% 50V
2427	5322 126 10511	1nF 5% 50V
2436	4822 124 80151	47µF 16V
2501	4822 126 14305	100nF 10% 16V 0603
2502	4822 126 14305	100nF 10% 16V 0603
2503	4822 126 14305	100nF 10% 16V 0603
2504	4822 126 14305	100nF 10% 16V 0603
2505	4822 126 14305	100nF 10% 16V 0603
2506	4822 126 14305	100nF 10% 16V 0603
2507	4822 126 14305	100nF 10% 16V 0603
2508	4822 126 14305	100nF 10% 16V 0603
2509	4822 126 14305	100nF 10% 16V 0603
2510	4822 126 14305	100nF 10% 16V 0603
2511	4822 126 14305	100nF 10% 16V 0603
2512	4822 126 14305	100nF 10% 16V 0603
2520	4822 126 14305	100nF 10% 16V 0603
2521	4822 126 14305	100nF 10% 16V 0603
2522	5322 126 11579	3.3nF 10% 63V
2525	4822 126 14507	18pF 5% 50V 0603
2528	4822 122 33752	15pF 5% 50V
2532	4822 126 14043	1µF 20% 16V
2534	5322 126 10223	4.7nF 10% 63V
2535	4822 126 14491	2.2µF 10V
2536	4822 126 14585	100nF 10% 50V
2537	4822 126 14585	100nF 10% 50V
2538	4822 124 40433	47µF 20% 25V
2539	4822 126 14305	100nF 10% 16V 0603
2540	4822 124 40433	47µF 20% 25V
2541	5322 122 32654	22nF 10% 63V
2545	4822 126 14305	100nF 10% 16V 0603
2550	4822 126 14305	100nF 10% 16V 0603
2553	4822 126 14585	100nF 10% 50V
2554	4822 126 14585	100nF 10% 50V
2555	4822 126 14305	100nF 10% 16V 0603
2556	4822 126 14305	100nF 10% 16V 0603
2557	4822 126 14305	100nF 10% 16V 0603
2558	4822 126 14305	100nF 10% 16V 0603
2559	4822 124 40207	100µF 20% 25V
2560	4822 126 14305	100nF 10% 16V 0603
2561	4822 124 81286	47µF 20% 16V
2562	4822 126 14305	100nF 10% 16V 0603
2564	4822 122 33177	10nF 20% 50V
2567	5322 126 10733	680pF 5% 50V
2568	4822 122 31765	100pF 2% 63V
2569	4822 122 33177	10nF 20% 50V
2570	4822 122 31765	100pF 2% 63V
2751	4822 126 14305	100nF 10% 16V 0603
2752	4822 126 13692	47pF 1% 63V
2753	4822 122 32927	220nF 20% 50V
2754	5322 122 32268	470pF 5% 63V
2755	5322 122 32268	470pF 5% 63V

2756	5322 122 32268	470pF 5% 63V
2757	5322 122 32268	470pF 5% 63V
2758	5322 122 32268	470pF 5% 63V
2759	5322 122 32268	470pF 5% 63V
2760	5322 122 32268	470pF 5% 63V
2761	4822 122 32927	220nF 20% 50V
2762	4822 122 32927	220nF 20% 50V
2763	5322 122 32268	470pF 5% 63V
2764	5322 122 32268	470pF 5% 63V
2765	4822 124 12095	100µF 20% 16V
2766	4822 124 12095	100µF 20% 16V
2767	5322 122 32286	3.3pF 5% 50V
2768	5322 122 32286	3.3pF 5% 50V
2773	5322 122 31647	1nF 10% 63V
2774	5322 122 31647	1nF 10% 63V
2777	4822 124 23002	10µF 16V
2778	4822 124 23002	10µF 16V
2779	4822 126 14585	100nF 10% 50V
2780	4822 124 23002	10µF 16V
2781	4822 126 14585	100nF 10% 50V
2782	4822 124 23002	10µF 16V
2783	4822 126 13482	470nF 80/20% 16V
2784	4822 126 13482	470nF 80/20% 16V
2785	5322 122 31647	1nF 10% 63V
2786	5322 122 31647	1nF 10% 63V
2787	5322 126 10223	4.7nF 10% 63V
2788	5322 126 10223	4.7nF 10% 63V
2790	4822 122 33761	22pF 5% 50V
2791	4822 122 33761	22pF 5% 50V
2792	5322 126 11583	10nF 10% 50V 0603
2793	4822 122 33177	10nF 20% 50V
2801	4822 122 33761	22pF 5% 50V
2802	4822 124 12398	4.7µF 20% 25V
2803	4822 124 12398	4.7µF 20% 25V
2804	4822 122 32927	220nF 20% 50V
2805	4822 122 32927	220nF 20% 50V
2808	4822 124 12095	100µF 20% 16V
2809	5322 126 10511	1nF 5% 50V
2810	5322 126 10511	1nF 5% 50V
2811	5322 126 10511	1nF 5% 50V
2842	4822 124 23002	10µF 16V
2843	4822 126 14491	2.2µF 10V
2846	4822 124 23002	10µF 16V
2847	4822 124 23002	10µF 16V
2848	4822 124 23002	10µF 16V
2849	4822 124 23002	10µF 16V
2852	4822 122 32927	220nF 20% 50V
2853	4822 122 32927	220nF 20% 50V
2854	4822 122 32927	220nF 20% 50V
2855	4822 122 32927	220nF 20% 50V
2856	4822 122 32927	220nF 20% 50V
2857</		

3045	4822 051 20273	27k 5% 0.1W	3246	4822 051 10102	1k 2% 0.25W	3439	4822 117 10833	10k 1% 0.1W
3047	4822 117 13525	24k 1% 0.62W 0603	3248	4822 117 13577	330Ω 1% 1.25W	3440	4822 051 20393	39k 5% 0.1W
3048	4822 117 13526	150Ω 5% 0.63W	3249	4822 117 12955	2k7 1% 0.1W 0805	3441	4822 117 10833	10k 1% 0.1W
3059	4822 051 30331	330Ω 5% 0.062W	3250	4822 117 11139	1k5 1% 0.1W	3454	4822 051 20008	Jumper 0805
3062	4822 117 12925	47k 1% 0.063W 0603	3252	4822 051 20339	33Ω 5% 0.1W	3460	4822 051 30103	10k 5% 0.062W
3063	4822 051 30472	4k7 5% 0.062W	3253	4822 051 20391	390Ω 5% 0.1W	3461	4822 051 30223	22k 5% 0.062W
3066	4822 117 10833	10k 1% 0.1W	3254	4822 051 10102	1k 2% 0.25W	3521	4822 117 13632	100k 1% 0.62W 0603
3067	4822 051 30472	4k7 5% 0.062W	3255	4822 051 10102	1k 2% 0.25W	3530	4822 051 30101	100Ω 5% 0.062W
3068	4822 051 30103	10k 5% 0.062W	3256	4822 117 11927	75Ω 1% 0.1W	3531	4822 051 30101	100Ω 5% 0.062W
3069	4822 051 30689	68Ω 5% 0.063W 0603	3259	4822 051 30273	27k 5% 0.062W	3532	4822 116 83933	15k 1% 0.1W
3070	4822 051 30103	10k 5% 0.062W	3262	4822 117 12925	47k 1% 0.063W 0603	3538	4822 052 10228	2Ω 5% 0.33W
3071	4822 051 30472	4k7 5% 0.062W	3263	4822 051 30221	220Ω 5% 0.062W	3545	4822 051 30471	470Ω 5% 0.062W
3072	4822 117 10834	47k 1% 0.1W	3264	4822 051 20822	8k2 5% 0.1W	3546	4822 051 30471	470Ω 5% 0.062W
3073	4822 051 20472	4k7 5% 0.1W	3265	4822 117 12955	2k7 1% 0.1W 0805	3551	4822 051 30271	270Ω 5% 0.062W
3075	4822 051 30472	4k7 5% 0.062W	3266	4822 117 10833	10k 1% 0.1W	3554	4822 051 10102	1k 2% 0.25W
3076	4822 051 30472	4k7 5% 0.062W	3269	4822 051 30561	560Ω 5% 0.062W	3556	4822 117 10833	10k 1% 0.1W
3080	3198 031 11010	4X100Ω 5% 0.63W network	3270	4822 051 10102	1k 2% 0.25W	3557	4822 051 30479	47Ω 5% 0.062W
3086	4822 051 30101	100Ω 5% 0.062W	3271	4822 051 10102	1k 2% 0.25W	3558	4822 051 20105	1M 5% 0.1W
3090	3198 031 11010	4X100Ω 5% 0.63W network	3273	4822 051 20822	8k2 5% 0.1W	3565	4822 051 30101	100Ω 5% 0.062W
3091	3198 031 11010	4X100Ω 5% 0.63W network	3274	4822 117 12955	2k7 1% 0.1W 0805	3566	4822 051 30101	100Ω 5% 0.062W
3092	3198 031 11010	4X100Ω 5% 0.63W network	3275	4822 051 30339	33Ω 5% 0.062W	3567	4822 117 11373	100Ω 1% 0805
3093	3198 031 11010	4X100Ω 5% 0.63W network	3276	4822 051 30391	390Ω 5% 0.062W	3568	4822 051 20471	470Ω 5% 0.1W
3094	3198 031 11010	4X100Ω 5% 0.63W network	3277	4822 051 30222	2k2 5% 0.062W	3569	4822 051 30479	47Ω 5% 0.062W
3095	3198 031 11010	4X100Ω 5% 0.63W network	3278	4822 051 30331	330Ω 5% 0.062W	3570	3198 031 11010	4X100Ω 5% 0.63W network
3096	3198 031 11010	4X100Ω 5% 0.63W network	3279	4822 051 30151	150Ω 5% 0.062W	3583	4822 051 30101	100Ω 5% 0.062W
3097	3198 031 11010	4X100Ω 5% 0.63W network	3281	4822 117 12903	1k8 1% 0.063W 0603	3584	4822 051 30471	470Ω 5% 0.062W
3098	3198 031 11010	4X100Ω 5% 0.63W network	3282	4822 117 13632	100k 1% 0.62W 0603	3585	4822 051 30479	47Ω 5% 0.062W
3099	3198 031 11010	4X100Ω 5% 0.63W network	3283	4822 051 30683	68k 5% 0.062W	3590	4822 117 11454	820Ω 1% 0.1W
3102	4822 117 10833	10k 1% 0.1W	3284	4822 117 13632	100k 1% 0.62W 0603	3750	4822 052 10228	2Ω 5% 0.33W
3103	4822 051 20008	Jumper 0805	3285	4822 051 30683	68k 5% 0.062W	3751	4822 051 30223	22k 5% 0.062W
3104	4822 051 20008	Jumper 0805	3286	4822 117 13632	100k 1% 0.62W 0603	3752	4822 051 30223	22k 5% 0.062W
3106	4822 051 20479	47Ω 5% 0.1W	3287	4822 051 30683	68k 5% 0.062W	3753	4822 051 30682	6k8 5% 0.062W
3110	4822 117 11449	2k2 5% 0.1W 0805	3288	4822 051 30101	100Ω 5% 0.062W	3754	4822 051 30682	6k8 5% 0.062W
3111	4822 117 11449	2k2 5% 0.1W 0805	3289	4822 051 30101	100Ω 5% 0.062W	3755	4822 051 30101	100Ω 5% 0.062W
3112	4822 051 20472	4k7 5% 0.1W	3290	4822 052 10478	4Ω 7 5% 0.33W	3756	4822 051 30101	100Ω 5% 0.062W
3114	4822 051 20472	4k7 5% 0.1W	3291	4822 051 30561	560Ω 5% 0.062W	3762	4822 051 20472	4k7 5% 0.1W
3118	4822 051 20391	390Ω 5% 0.1W	3292	4822 051 30103	10k 5% 0.062W	3765	4822 051 30683	68k 5% 0.062W
3119	4822 051 20479	47Ω 5% 0.1W	3293	4822 051 30471	470Ω 5% 0.062W	3766	4822 051 30103	10k 5% 0.062W
3124	4822 051 30101	100Ω 5% 0.062W	3294	4822 051 30103	10k 5% 0.062W	3767	4822 051 30683	68k 5% 0.062W
3133	4822 117 12955	4k7 1% 0.1W 0805	3295	4822 051 30471	470Ω 5% 0.062W	3768	4822 051 30103	10k 5% 0.062W
3135	4822 051 20472	4k7 5% 0.1W	3296	4822 051 30103	10k 5% 0.062W	3769	4822 117 11507	6k8 1% 0.1W
3136	4822 117 11503	220Ω 1% 0.1W	3297	4822 051 30103	10k 5% 0.062W	3770	4822 117 11507	6k8 1% 0.1W
3137	4822 051 10102	1k 2% 0.25W	3298	4822 117 13632	100k 1% 0.62W 0603	3771	4822 116 83933	15k 1% 0.1W
3138	4822 117 11448	180Ω 1% 0.1W	3299	4822 051 30683	68k 5% 0.062W	3772	4822 116 83933	15k 1% 0.1W
3139	4822 117 11139	1k5 1% 0.1W	3300	4822 052 10688	6Ω 8 5% 0.33W	3773	4822 051 20472	4k7 5% 0.1W
3140	4822 116 83933	15k 1% 0.1W	3302	4822 051 30101	100Ω 5% 0.062W	3781	4822 051 30561	560Ω 5% 0.062W
3141	4822 051 30333	33k 5% 0.062W	3303	4822 051 30101	100Ω 5% 0.062W	3783	4822 117 11373	100Ω 1% 0805
3142	4822 051 30102	1k 5% 0.062W	3304	4822 051 30101	100Ω 5% 0.062W	3784	4822 051 30008	Jumper 0603
3143	4822 051 30102	1k 5% 0.062W	3307	4822 051 30102	1k 5% 0.062W	3785	4822 051 30008	Jumper 0603
3145	4822 051 30101	100Ω 5% 0.062W	3308	4822 051 30102	1k 5% 0.062W	3796	4822 051 20121	120Ω 5% 0.1W
3146	4822 051 20223	22k 5% 0.1W	3309	4822 051 30333	33k 5% 0.062W	3797	4822 051 20121	120Ω 5% 0.1W
3147	4822 052 10109	10Ω 5% 0.33W	3310	4822 051 20332	3k3 5% 0.1W	3798	4822 117 10834	47k 1% 0.1W
3152	4822 051 20471	470Ω 5% 0.1W	3311	4822 051 30102	1k 5% 0.062W	3799	4822 117 12925	47k 1% 0.063W 0603
3153	4822 051 10102	1k 2% 0.25W	3312	4822 117 13632	100k 1% 0.62W 0603	3800	4822 051 30682	6k8 5% 0.062W
3154	4822 117 11503	220Ω 1% 0.1W	3315	4822 051 20182	1k8 5% 0.1W	3801	4822 051 30103	10k 5% 0.062W
3155	4822 117 11503	220Ω 1% 0.1W	3316	4822 051 10102	1k 2% 0.25W	3802	4822 117 12891	220k 1%
3200	4822 117 10353	150Ω 1% 0.1W	3317	4822 051 30102	1k 5% 0.062W	3828	4822 051 30008	Jumper 0603
3201	4822 117 10353	150Ω 1% 0.1W	3318	4822 051 30102	1k 5% 0.062W	3829	4822 051 30008	Jumper 0603
3202	4822 117 10353	150Ω 1% 0.1W	3320	4822 051 30102	1k 5% 0.062W	3830	4822 051 20121	120Ω 5% 0.1W
3203	4822 117 10353	150Ω 1% 0.1W	3321	4822 051 30102	1k 5% 0.062W	3831	4822 051 20121	120Ω 5% 0.1W
3204	4822 052 10688	6Ω 8 5% 0.33W	3322	4822 051 30102	1k 5% 0.062W	3832	4822 051 10102	1k 2% 0.25W
3205	4822 051 20471	470Ω 5% 0.1W	3323	4822 051 20393	39k 5% 0.1W	3833	4822 051 30103	10k 5% 0.062W
3206	4822 117 12521	68Ω 1% 0.1W	3325	4822 051 30102	1k 5% 0.062W	3840	4822 051 30103	10k 5% 0.062W
3207	4822 051 20561	560Ω 5% 0.1W	3326	4822 051 30221	220Ω 5% 0.062W	3846	4822 117 12925	47k 1% 0.063W 0603
3208	4822 051 20399	39Ω 5% 0.1W	3330	4822 051 30684	680k 5% 0.062W	3847	4822 117 12925	47k 1% 0.063W 0603
3209	4822 117 11927	75Ω 1% 0.1W	3331	4822 117 12925	47k 1% 0.063W 0603	3850	4822 051 20332	3k3 5% 0.1W
3210	4822 117 11927	75Ω 1% 0.1W	3332	4822 051 30183	18k 5% 0.062W	3851	4822 051 20332	3k3 5% 0.1W
3211	4822 117 11927	75Ω 1% 0.1W	3340	4822 051 30123	12k 5% 0.062W	3852	4822 051 30223	22k 5% 0.062W
3212	4822 051 20399	39Ω 5% 0.1W	3341	4822 051 10102	1k 2% 0.25W	3853	4822 051 30223	22k 5% 0.062W
3213	4822 117 11927	75Ω 1% 0.1W	3342	4822 051 30103	10k 5% 0.062W	3854	4822 117 10833	10k 1% 0.1W
3215	4822 117 11927	75Ω 1% 0.1W	3343	4822 117 10837	100k 1% 0.1W	3855	4822 117 10833	10k 1% 0.1W
3216	4822 051 20822	8k2 5% 0.1W	3344	4822 051 30103	10k 5% 0.062W	3856	4822 117 10833	10k 1% 0.1W
3218	4822 051 20392	3k9 5% 0.1W	3350	4822 051 30474	470k 5% 0.062W	3857	4822 117 10833	10k 1% 0.1W
3219	4822 051 10102	1k 2% 0.25W	3351	4822 117 12891	220k 1%	3858	4822 117 10833	10k 1% 0.1W
3220	4822 051 10102	1k 2% 0.25W	3352	4822 051 30332	3k3 5% 0.062W	3859	4822 117 10833	10k 1% 0.1W
3221	4822 117 10353	150Ω 1% 0.1W	3353	4822 117 12903	1k8 1% 0.063W 0603	3860	4822 117 10833	10k 1% 0.1W
3222	4822 117 10353	150Ω 1% 0.1W	3369	4822 051 30103	10k 5% 0.062W	3861	4822 117 10833	10k 1% 0.1W
3223	4822 117 10353	150Ω 1% 0.1W	3370	4822 051 30103	10k 5% 0.062W	3862	4822 117 11507	6k8 1% 0.1W
3224	4822 117 10353	150Ω 1% 0.1W	3400	4822 117 11454	820Ω 1% 0.1W	3864	4822 051 20223	22k 5% 0.1W
3225	4822 052 10688	6Ω 8 5% 0.33W	3401	4822 117 11454	820Ω 1% 0.1W	3865	4822 051 20223	22k 5% 0.1W
3227	4822 051 20399	39Ω 5% 0.1W	3402	4822 117 11454	820Ω 1% 0.1W	3866	4822 117 11373	100Ω 1% 0805
3228	4822 051 30101	100Ω 5% 0.062W	3404	4822 051 20479	47Ω 5% 0.1W	3867	4822 117 11373	100Ω 1% 0805
3229	4822 051 30103	10k 5% 0.062W	3405	4822 051 20479	47Ω 5% 0.1W	3877	4822 051 20332	3k3 5% 0.1W
3230	4822 051 20561	560Ω 5% 0.1W	3406	4822 051 20479	47Ω 5% 0.1W	3878	4822 051 20332	3k3 5% 0.1W
3231	4822 051 20399	39Ω 5% 0.1W	3407	4822 117 10361	680Ω 1% 0.1W	3879	4822 051 20332	3k3 5% 0.1W
3232	4822 117 12521	68Ω 1% 0.1W	3408	4822 117 10361	680Ω 1% 0.1W	3880	4822 051 20332	3k3 5% 0.1W
3235	4822 117							

3895	4822 051 30103	10k 5% 0.062W
3899	4822 051 20008	Jumper 0805
4xxx	4822 051 10008	Jumper 1206
4xxx	4822 051 20008	Jumper 0805

5002	4822 157 11775	6.8µH 5%
5101	4822 157 11775	6.8µH 5%
5102	4822 157 71303	0.39µH 10%
5103	4822 157 11776	Coil var. 40.4MHz
5106	4822 157 10977	4.7µH 10%
5108	2422 549 44811	Coil var.78MHz
5301	4822 157 11876	6.8µH 10% 0805
5302	4822 157 11876	6.8µH 10% 0805
5305	4822 051 20008	Jumper 0805
5306	4822 051 20008	Jumper 0805
5307	4822 051 20008	Jumper 0805
5501	4822 157 11775	6.8µH 5% 5X3
5502	4822 157 11775	6.8µH 5% 5X3
5540	4822 157 71304	1µH
5559	4822 157 11775	6.8µH 5% 5X3
5560	4822 157 11775	6.8µH 5% 5X3
5562	4822 157 11775	6.8µH 5% 5X3
5751	4822 157 11775	6.8µH 5% 5X3
5752	4822 157 11775	6.8µH 5% 5X3
5753	4822 157 11775	6.8µH 5% 5X3
5757	4822 157 11876	6.8µH 10% 0805
5759	4822 157 70503	4.7µH

6001	4822 130 11422	PLVA2650A
6002	4822 130 11422	PLVA2650A
6003	4822 130 11422	PLVA2650A
6004	4822 130 11422	PLVA2650A
6006	4822 130 11422	PLVA2650A
6008	4822 130 11422	PLVA2650A
6009	4822 130 11422	PLVA2650A
6012	4822 130 11422	PLVA2650A
6013	4822 130 11422	PLVA2650A
6017	4822 130 11422	PLVA2650A
6019	4822 130 11422	PLVA2650A
6021	4822 130 11422	PLVA2650A
6023	4822 130 11422	PLVA2650A
6025	4822 130 11423	PLVA2656A
6026	4822 130 11423	PLVA2656A
6037	9322 129 34685	BZM55-C3V9
6039	4822 130 83757	MCL4148
6040	9322 129 37685	BZM55-C5V6
6101	9322 149 10685	BZM55-C33
6103	4822 130 11525	1SS356
6104	4822 130 11525	1SS356
6106	4822 130 83757	MCL4148
6107	4822 130 83757	MCL4148
6200	9322 129 40685	BZM55-C10
6201	9322 129 38685	BZM55-C6V8
6202	9322 129 40685	BZM55-C10
6203	9322 129 40685	BZM55-C10
6204	9322 129 38685	BZM55-C6V8
6205	9322 129 40685	BZM55-C10
6206	9322 129 40685	BZM55-C10
6207	9322 129 38685	BZM55-C6V8
6208	9322 129 40685	BZM55-C10
6209	9322 129 40685	BZM55-C10
6210	9322 129 38685	BZM55-C6V8
6211	9322 129 38685	BZM55-C6V8
6212	9322 129 38685	BZM55-C6V8
6213	9322 129 38685	BZM55-C6V8
6214	9322 129 40685	BZM55-C10
6215	9322 129 40685	BZM55-C10
6216	9322 129 40685	BZM55-C10
6217	9322 129 40685	BZM55-C10
6218	9340 548 61115	PDZ12B
6219	9322 129 38685	BZM55-C6V8
6220	9322 129 40685	BZM55-C10
6221	9322 129 40685	BZM55-C10
6222	9322 129 38685	BZM55-C6V8
6223	9322 129 40685	BZM55-C10
6224	9322 129 40685	BZM55-C10
6225	9322 129 38685	BZM55-C6V8
6226	9322 129 38685	BZM55-C6V8
6227	9322 129 38685	BZM55-C6V8
6228	9322 129 38685	BZM55-C6V8
6229	9322 129 40685	BZM55-C10
6230	9322 129 40685	BZM55-C10
6231	9322 129 40685	BZM55-C10
6232	9322 129 40685	BZM55-C10
6233	9322 129 38685	BZM55-C6V8
6238	4822 130 11528	1PS76SB10
6240	9322 129 40685	BZM55-C10
6241	9322 129 40685	BZM55-C10

6242	9322 129 40685	BZM55-C10
6243	9322 129 40685	BZM55-C10
6244	9322 129 38685	BZM55-C6V8
6250	4822 130 11528	1PS76SB10
6340	4822 130 83757	MCL4148
6341	4822 130 11594	BZX284-C47
6344	4822 130 83757	MCL4148
6350	4822 130 82346	BZV55-C27
6420	9322 129 37685	BZM55-C5V6
6422	4822 130 83757	MCL4148
6424	4822 130 83757	MCL4148
6429	9322 129 37685	BZM55-C5V6
6430	4822 130 83757	MCL4148
6431	4822 130 83757	MCL4148
6750	4822 051 20008	Jumper 0805
6751	9322 129 40685	BZM55-C10
6752	9322 129 40685	BZM55-C10
6755	9322 129 40685	BZM55-C10
6756	9322 129 40685	BZM55-C10
6757	4822 051 20008	Jumper 0805
6759	4822 130 83757	MCL4148



7001	9322 157 20668	MSM51V18165F-60J
7002	4822 816 11247	M27V160-100B1
7003	9352 629 88557	SAA5801H/011
7006	4822 130 60373	BC856B
7007	4822 130 60511	BC847B
7008	4822 209 16977	M24C32-WBN6
7009	4822 209 16978	LF33CV
7010	4822 209 73852	PMBT2369
7011	4822 130 11155	PDTC114ET
7012	3198 010 44010	PDTA114ET
7013	9322 149 03668	M29W400BT-90M1
7014	4822 130 60511	BC847B
7015	4822 130 60373	BC856B
7016	4822 130 60511	BC847B
7019	4822 130 10255	MUN2213
7103	4822 130 60511	BC847B
7104	4822 130 60511	BC847B
7107	4822 130 60373	BC856B
7111	4822 130 60511	BC847B
7112	4822 130 60511	BC847B
7113	4822 209 72042	L78L05ACZ
7200	4822 130 40959	BC547B
7201	4822 130 40959	BC547B
7203	4822 130 44568	BC557B
7204	4822 130 60511	BC847B
7205	4822 130 60511	BC847B
7206	4822 130 60511	BC847B
7207	4822 130 60373	BC856B
7208	9322 105 08668	TEA6415CD
7216	4822 130 60511	BC847B
7300	9352 625 23518	TDA9330H/N2
7341	4822 130 60373	BC856B
7351	4822 130 60373	BC856B
7417	4822 130 10255	MUN2213
7418	4822 130 60373	BC856B
7419	4822 130 60373	BC856B
7420	4822 130 60373	BC856B
7424	4822 130 60373	BC856B
7501	9352 625 24518	TDA9321H/N2
7502	4822 130 60511	BC847B
7555	4822 130 60373	BC856B
7560	4822 209 12998	SAA4961/V3/S1
7561	4822 130 60511	BC847B
7575	4822 130 60511	BC847B
7701	4822 130 60511	BC847B
7751	9322 148 35668	MSP3410D-PS-C5
7752	5322 209 11102	HEF4052BT
7753	5322 209 11102	HEF4052BT
7757	4822 209 31378	NJM4556MB
7773	4822 130 60511	BC847B
7774	4822 130 60511	BC847B
7777	9322 116 87668	TEA6422D

Feature Box [L]

Various

0025	3104 301 23824	FBX-shield top
0026	3104 301 23834	FBX-shield botom
0361	2422 025 15389	9P male
0362	2422 025 15389	9P male
1701	4822 242 10685	Crystal 12MHz



2701	4822 126 11663	12pF
2704	4822 126 11663	12pF

2707	4822 126 11663	12pF
2709	4822 126 14305	100nF 10% 16V 0603
2710	4822 124 80791	470µF 16V 20%
2712	4822 126 13881	470pF 5% 50V
2713	4822 122 33761	22pF 5% 50V
2714	4822 122 33761	22pF 5% 50V
2718	4822 122 33752	15pF 5% 50V
2719	4822 122 33752	15pF 5% 50V
2720	4822 122 33752	15pF 5% 50V
2721	4822 122 31765	100pF 2% 63V
2722	4822 122 31765	100pF 2% 63V
2723	4822 126 14225	56pF 5% 50V 0603
2724	4822 126 14225	56pF 5% 50V 0603
2725	4822 124 40248	10µF 20% 63V
2726	4822 126 14305	100nF 10% 16V 0603
2727	4822 124 40255	100µF 20% 63V
2728	4822 124 40248	10µF 20% 63V
2729	4822 126 14305	100nF 10% 16V 0603
2730	4822 124 40255	100µF 20% 63V
2740	4822 126 14494	22nF 10% 25V 0603
2741	4822 126 14494	22nF 10% 25V 0603
2742	4822 126 14494	22nF 10% 25V 0603
2745	4822 126 14305	100nF 10% 16V 0603
2746	4822 126 14305	100nF 10% 16V 0603
2747	4822 124 40769	4.7µF 20% 100V
2748	4822 126 14305	100nF 10% 16V 0603
2749	4822 124 40255	100µF 20% 63V
2750	4822 126 14305	100nF 10% 16V 0603
2751	4822 126 14305	100nF 10% 16V 0603
2752	4822 126 14305	100nF 10% 16V 0603
2753	4822 126 14305	100nF 10% 16V 0603
2754	4822 124 40769	4.7µF 20% 100V
2755	4822 126 14305	100nF 10% 16V 0603
2756	4822 126 14305	100nF 10% 16V 0603
2757	4822 126 14494	22nF 10% 25V 0603
2758	4822 126 14507	18pF 5% 50V 0603
2759	4822 126 14507	18pF 5% 50V 0603
2760	4822 126 14305	100nF 10% 16V 0603
2761	4822 126 14305	100nF 10% 16V 0603
2762	4822 126 14305	100nF 10% 16V 0603
2763	4822 126 14305	100nF 10% 16V 0603
2764	4822 126 14305	100nF 10% 16V 0603
2765	4822 126 14305	100nF 10% 16V 0603
2766	4822 126 14305	100nF 10% 16V 0603
2767	4822 126 14305	100nF 10% 16V 0603
2769	4822 126 14305	100nF 10% 16V 0603
2773	4822 126 14305	100nF 10% 16V 0603
2775	4822 126 14305	100nF 10% 16V 0603
2777	4822 126 14305	100nF 10% 16V 0603
2779	4822 126 14305	100nF 10% 16V 0603
2781	4822 126 14305	100nF 10% 16V 0603
2782	4822 126 14305	100nF 10% 16V 0603
2783	4822 126 14305	100nF 10% 16V 0603
2784	4822 126 14305	100nF 10% 16V 0603
2785	4822 126 14305	100nF 10% 16V 0603
2786	4822 126 14305	100nF 10% 16V 0603
2787	4822 126 14305	100nF 10% 16V 0603
2788	4822 126 14305	100nF 10% 16V 0603
2789	4822 126 14305	100nF 10% 16V 0603
2790	4822 126 14305	100nF 10% 16V 0603
2791	4822 126 14305	100nF 10% 16V 0603
2792	4822 124 40248	10µF 20% 63V
2793	4822 126 14305	100nF 10% 16V 0603
2794	4822 124 40248	10µF 20% 63V
2795	4822 126 14305	100nF 10% 16V 0603
2796	4822 126 14305	100nF 10% 16V 0603
2797	4822 126 14305	100nF 10% 16V 0603
2798	4822 126 14305	100nF 10% 16V 0603
2799	4822 126 14305	100nF 10% 16V 0603
2800	4822 126 14305	100nF 10% 16V 0603
2801	4822 126 14305	100nF 10% 16V 0603
2802	4822 126 14305	100nF 10% 16V 0603
2803	4822 126 14305	100nF 10% 16V 0603
2804	4822 126 14305	100nF 10% 16V 0603
2805	4822 126 14305	100nF 10% 16V 0603
2806	4822 124 40255	100µF 20% 63V
2807	4822 126 14305	100nF 10% 16V 0603
2808	4822 124 40248	10µF 20% 63V
2809	4822 126 14305	100nF 10% 16V 0603
2813	4822 126 14305	100nF 10% 16V 0603
2817	4822 126	

2851	4822 126 14305	100nF 10% 16V 0603
2852	4822 126 14305	100nF 10% 16V 0603
2853	4822 126 14305	100nF 10% 16V 0603
2854	4822 126 14305	100nF 10% 16V 0603
2855	4822 126 14305	100nF 10% 16V 0603
2856	4822 126 14305	100nF 10% 16V 0603
2858	4822 126 14305	100nF 10% 16V 0603
2859	4822 126 14305	100nF 10% 16V 0603
2860	4822 126 14305	100nF 10% 16V 0603
2861	4822 126 14305	100nF 10% 16V 0603
2862	4822 126 14305	100nF 10% 16V 0603
2863	4822 126 14305	100nF 10% 16V 0603
2864	4822 126 14305	100nF 10% 16V 0603
2865	4822 126 14305	100nF 10% 16V 0603
2866	4822 126 14305	100nF 10% 16V 0603
2867	4822 126 14305	100nF 10% 16V 0603
2868	4822 124 40248	10µF 20% 63V
2869	4822 126 14305	100nF 10% 16V 0603
2870	4822 124 40255	100µF 20% 63V
2871	4822 126 14305	100nF 10% 16V 0603
2872	4822 126 14305	100nF 10% 16V 0603
2885	4822 126 14305	100nF 10% 16V 0603
2888	4822 126 14305	100nF 10% 16V 0603
2889	4822 126 14305	100nF 10% 16V 0603
2890	4822 126 14305	100nF 10% 16V 0603
2891	4822 126 14305	100nF 10% 16V 0603
2892	4822 126 14305	100nF 10% 16V 0603
2893	4822 126 14305	100nF 10% 16V 0603
2894	4822 126 14305	100nF 10% 16V 0603
2895	4822 126 14305	100nF 10% 16V 0603
2896	4822 126 14305	100nF 10% 16V 0603
2897	4822 124 40248	10µF 20% 63V
2898	4822 126 14305	100nF 10% 16V 0603
2899	4822 126 14305	100nF 10% 16V 0603
2901	4822 126 14305	100nF 10% 16V 0603
2902	4822 126 14305	100nF 10% 16V 0603
2903	4822 126 14305	100nF 10% 16V 0603
2904	4822 126 14305	100nF 10% 16V 0603
2905	4822 126 14305	100nF 10% 16V 0603
2906	4822 126 14305	100nF 10% 16V 0603
2907	4822 126 14305	100nF 10% 16V 0603
2908	4822 126 14305	100nF 10% 16V 0603
2909	4822 124 40255	100µF 20% 63V
2910	4822 126 11669	27pF
2911	4822 126 14223	2.2pF +-0.25pF 50V 0603
2912	4822 126 11663	12pF
2913	4822 126 11663	12pF
2914	4822 126 11669	27pF
2915	4822 126 11663	12pF
2916	4822 126 11663	12pF
2917	4822 126 14223	2.2pF +-0.25pF 50V 0603
2918	4822 126 14223	2.2pF +-0.25pF 50V 0603
2920	4822 126 11669	27pF
2921	4822 126 11663	12pF
2922	4822 126 11663	12pF
2923	4822 126 14305	100nF 10% 16V 0603
2924	4822 126 14305	100nF 10% 16V 0603
2925	4822 126 14305	100nF 10% 16V 0603
2926	4822 126 14305	100nF 10% 16V 0603
2927	4822 126 14305	100nF 10% 16V 0603
2928	4822 126 14305	100nF 10% 16V 0603
2929	4822 126 13956	68pF 5% 63V 0603



3700	4822 051 30008	Jumper 0603
3701	4822 051 30008	Jumper 0603
3702	4822 051 30008	Jumper 0603
3703	4822 051 30221	220Ω 5% 0.062W
3704	4822 051 30221	220Ω 5% 0.062W
3705	4822 051 30221	220Ω 5% 0.062W
3709	4822 051 30101	100Ω 5% 0.062W
3710	4822 051 30101	100Ω 5% 0.062W
3713	4822 051 30181	180Ω 5% 0.062W
3714	4822 051 30181	180Ω 5% 0.062W
3715	4822 051 30181	180Ω 5% 0.062W
3716	4822 117 13632	100k 1% 0.62W 0603
3717	4822 117 13632	100k 1% 0.62W 0603
3718	4822 117 13632	100k 1% 0.62W 0603
3719	4822 051 30008	Jumper 0603
3720	4822 051 30008	Jumper 0603
3721	4822 051 30008	Jumper 0603
3725	4822 051 30332	3k3 5% 0.062W
3726	4822 117 11817	1k2 1% 1/16W
3727	4822 051 30151	150Ω 5% 0.062W
3728	4822 051 30151	150Ω 5% 0.062W
3729	4822 051 30689	68Ω 5% 0.063W 0603
3730	4822 051 30689	68Ω 5% 0.063W 0603
3731	4822 051 30472	4k7 5% 0.062W
3732	4822 051 30472	4k7 5% 0.062W
3733	4822 051 30472	4k7 5% 0.062W
3735	4822 051 30472	4k7 5% 0.062W
3740	4822 051 30008	Jumper 0603

3741	4822 051 30008	Jumper 0603
3742	4822 051 30008	Jumper 0603
3752	4822 117 12917	1Ω 5% 0.062W 0603
3753	4822 117 12917	1Ω 5% 0.062W 0603
3758	4822 051 30472	4k7 5% 0.062W
3759	4822 051 30221	220Ω 5% 0.062W
3760	4822 051 30105	1M 5% 0.062W
3762	4822 051 30339	33Ω 5% 0.062W
3763	4822 117 12139	22Ω 5% 0.062W
3764	4822 051 30109	10Ω 5% 0.062W
3773	4822 117 12925	47k 1% 0.063W 0603
3774	4822 117 12925	47k 1% 0.063W 0603
3781	4822 117 12925	47k 1% 0.063W 0603
3782	4822 117 12925	47k 1% 0.063W 0603
3783	4822 117 12925	47k 1% 0.063W 0603
3784	4822 051 30102	1k 5% 0.062W
3787	4822 051 30154	150k 5% 0.062W
3788	4822 117 12891	220k 1%
3789	4822 051 30472	4k7 5% 0.062W
3790	4822 051 30101	100Ω 5% 0.062W
3791	4822 051 30101	100Ω 5% 0.062W
3792	4822 051 30102	1k 5% 0.062W
3793	4822 051 30392	3k9 5% 0.063W 0603
3794	4822 117 12903	1k8 1% 0.063W 0603
3795	4822 051 30183	18k 5% 0.062W
3796	4822 051 30123	12k 5% 0.062W
3797	4822 051 30153	15k 5% 0.062W
3798	4822 051 30183	18k 5% 0.062W
3803	5322 117 13058	150Ω 1% 0.063W 0603
3804	5322 117 13058	150Ω 1% 0.063W 0603
3805	4822 051 30102	1k 5% 0.062W
3806	4822 051 30102	1k 5% 0.062W
3811	5322 117 13058	150Ω 1% 0.063W 0603
3812	5322 117 13058	150Ω 1% 0.063W 0603
3813	5322 117 13058	150Ω 1% 0.063W 0603
3820	5322 117 13058	150Ω 1% 0.063W 0603
3826	4822 051 30759	75Ω 5% 0.062W
3827	4822 051 30759	75Ω 5% 0.062W
3828	4822 051 30471	470Ω 5% 0.062W
3829	4822 051 30391	390Ω 5% 0.062W
3830	4822 051 30271	270Ω 5% 0.062W
3831	4822 051 30681	680Ω 5% 0.062W
3832	4822 117 13577	330Ω 1% 1.25W 0805
3833	4822 051 30759	75Ω 5% 0.062W
3834	4822 051 30759	75Ω 5% 0.062W
3835	4822 051 30759	75Ω 5% 0.062W
3836	4822 051 30759	75Ω 5% 0.062W
3837	4822 051 30471	470Ω 5% 0.062W
3838	4822 051 30391	390Ω 5% 0.062W
3839	4822 051 30471	470Ω 5% 0.062W
3840	4822 051 30102	1k 5% 0.062W
3841	4822 117 13577	330Ω 1% 1.25W 0805
3842	4822 051 30759	75Ω 5% 0.062W
3843	4822 051 30759	75Ω 5% 0.062W
3844	4822 051 30759	75Ω 5% 0.062W
3845	4822 051 30759	75Ω 5% 0.062W
3846	4822 051 30471	470Ω 5% 0.062W
3847	4822 051 30391	390Ω 5% 0.062W
3848	4822 051 30391	390Ω 5% 0.062W
3849	4822 051 30331	330Ω 5% 0.062W
3850	4822 117 13577	330Ω 1% 1.25W 0805
3851	4822 051 30759	75Ω 5% 0.062W
3852	4822 051 30759	75Ω 5% 0.062W
3853	4822 117 12902	8k2 1% 0.063W 0603
3854	4822 051 30392	3k9 5% 0.063W 0603
3855	4822 051 30102	1k 5% 0.062W
3856	4822 051 30102	1k 5% 0.062W
3857	4822 052 10109	10Ω 5% 0.33W
3858	4822 051 30222	2k2 5% 0.062W
3859	4822 051 30222	2k2 5% 0.062W
3860	4822 051 30102	1k 5% 0.062W
3861	4822 051 30332	3k3 5% 0.062W
3862	4822 051 30103	10k 5% 0.062W
3863	4822 051 30681	680Ω 5% 0.062W
3864	4822 117 12925	47k 1% 0.063W 0603
3865	4822 051 30472	4k7 5% 0.062W
3870	4822 051 30109	10Ω 5% 0.062W
3871	4822 117 12971	15Ω 5% 0.62W 0603
3872	4822 117 12925	47k 1% 0.063W 0603
3999	4822 051 30102	1k 5% 0.062W



5700	4822 157 71304	1µH 10%
5701	4822 157 71304	1µH 10%
5702	4822 157 71304	1µH 10%
5703	4822 157 11716	Bead 100MHz 30Ω
5704	4822 157 11716	Bead 100MHz 30Ω
5705	4822 157 11716	Bead 100MHz 30Ω
5706	4822 157 11716	Bead 100MHz 30Ω
5707	4822 051 20008	Jumper 0805
5708	4822 051 20008	Jumper 0805
5709	4822 051 20008	Jumper 0805

5710	4822 156 21729	Bead 100MHz 1k
5711	4822 156 21729	Bead 100MHz 1k
5712	4822 156 21729	Bead 100MHz 1k
5713	4822 157 11716	Bead 100MHz 30Ω
5714	4822 157 71206	Bead 100MHz 600Ω
5715	4822 156 21729	Bead 100MHz 1k
5716	4822 156 21729	Bead 100MHz 1k
5717	4822 156 21729	Bead 100MHz 1k
5718	4822 157 11716	Bead 100MHz 30Ω
5719	4822 156 21729	Bead 100MHz 1k
5723	4822 157 11716	Bead 100MHz 30Ω
5724	4822 157 71206	Bead 100MHz 600Ω
5725	4822 157 71206	Bead 100MHz 600Ω
5726	4822 156 21729	Bead 100MHz 1k
5727	4822 156 21729	Bead 100MHz 1k
5728	4822 157 71206	Bead 100MHz 600Ω
5729	4822 156 21729	Bead 100MHz 1k
5730	4822 157 11716	Bead 100MHz 30Ω
5731	4822 156 21729	Bead 100MHz 1k
5732	4822 157 10586	2.2µH 10% 0805
5733	4822 157 10586	2.2µH 10% 0805
5734	4822 157 10586	2.2µH 10% 0805
5736	4822 156 21729	Bead 100MHz 1k



7703	4822 209 73852	PMBT2369
7704	4822 209 73852	PMBT2369
7705	4822 209 17398	LD1117DT33
7706	9322 160 50668	LD1117DT25
7711	3104 317 43531	Software RE1F2_04
7712	5322 209 60424	74HC573D
7713	9352 688 09557	SAA4978H/V204
7714	9965 000 02179	MS81V04160-25TB
7717	9322 146 01668	MSM54V12222A-23JS
7718	9352 695 58557	SAA4993H/V1
7719	9322 146 01668	MSM54V12222A-23JS
7720	4822 209 17398	LD1117DT33
7722	9965 000 02179	MS81V04160-25TB
7723	9965 000 02179	MS81V04160-25TB
7724	9322 174 33702	T8F24EF EAGLE
7725	9322 160 50668	LD1117DT25
7727	4822 130 60511	BC847B
7728	4822 130 60511	BC847B
7729	4822 130 60511	BC847B
7730	5322 130 42718	BFS20
7731	5322 130 42718	BFS20
7732	5322 130 42718	BFS20
7733	5322 130 42718	BFS20
7734	5322 130 42718	BFS20
7735	5322 130 42718	BFS20
7736	4822 130 60511	BC847B
7739	9322 170 14668	LF15ABDT
7740	4822 209 73852	PMBT2369
7741	4822 209 73852	PMBT2369

## Full Dual Screen Panel [M]

## Various

2111	4822 126 14585	100nF 10% 50V
2112	4822 122 33891	3.3nF 10% 63V
2116	4822 124 12095	100µF 20% 16V
2117	4822 126 14076	220nF 20-80% 25V
2118	4822 126 14487	8.2pF 0.5% 50V 0603
2119	5322 122 31863	330pF 5% 63V
2120	4822 126 14076	220nF 20-80% 25V
2140	4822 126 14491	2.2µF 10V
2501	4822 126 14305	100nF 10% 16V 0603
2504	4822 126 14305	100nF 10% 16V 0603
2520	4822 126 14305	100nF 10% 16V 0603
2521	4822 126 14305	100nF 10% 16V 0603
2522	5322 126 11579	3.3nF 10% 63V
2525	4822 126 14507	18pF 5% 50V 0603
2528	4822 122 33752	15pF 5% 50V
2532	4822 126 14043	1µF 20% 16V
2534	5322 126 10223	4.7nF 10% 63V
2536	4822 126 14491	2.2µF 10V
2537	4822 126 14585	100nF 10% 50V
2538	4822 124 80151	47µF 16V
2539	4822 126 14585	100nF 10% 50V
2540	4822 124 80151	47µF 16V
2541	4822 126 14585	100nF 10% 50V
2545	4822 126 14305	100nF 10% 16V 0603
2600	4822 126 14491	2.2µF 10V
2601	4822 126 14585	100nF 10% 50V
2603	4822 126 14491	2.2µF 10V
2605	4822 126 14585	100nF 10% 50V
2620	4822 122 32927	220nF 20% 50V
2621	4822 126 14585	100nF 10% 50V
2622	4822 122 32927	220nF 20% 50V
2623	4822 122 32927	220nF 20% 50V
2624	5322 124 41945	22µF 20% 35V
2625	4822 122 32927	220nF 20% 50V
2626	4822 126 14585	100nF 10% 50V
2627	5322 122 32654	22nF 10% 63V
2628	4822 126 14585	100nF 10% 50V
2629	4822 122 32927	220nF 20% 50V
2630	4822 124 80408	4.7µF 20% 50V
2632	4822 122 32927	220nF 20% 50V
2633	4822 126 14585	100nF 10% 50V
2638	4822 126 14491	2.2µF 10V
2639	4822 124 23002	10µF 16V
2640	4822 124 23002	10µF 16V
2650	4822 124 80195	470µF 20% 10V
2748	4822 126 14305	100nF 10% 16V 0603
2749	4822 126 14305	100nF 10% 16V 0603
2752	4822 126 14305	100nF 10% 16V 0603
2753	4822 126 14305	100nF 10% 16V 0603
2754	4822 126 14305	100nF 10% 16V 0603
2755	4822 126 14305	100nF 10% 16V 0603
2756	4822 126 14305	100nF 10% 16V 0603
2757	4822 126 14305	100nF 10% 16V 0603
2758	3198 017 41050	1µF 10V 0603
2759	4822 126 14305	100nF 10% 16V 0603
2761	4822 126 14305	100nF 10% 16V 0603
2762	4822 126 14305	100nF 10% 16V 0603
2763	4822 126 14305	100nF 10% 16V 0603
2766	4822 126 14305	100nF 10% 16V 0603
2767	4822 126 14305	100nF 10% 16V 0603
2768	4822 126 14305	100nF 10% 16V 0603
2769	4822 126 14305	100nF 10% 16V 0603
2770	4822 126 14305	100nF 10% 16V 0603
2771	4822 126 14305	100nF 10% 16V 0603
2772	4822 126 14305	100nF 10% 16V 0603
2773	4822 126 14305	100nF 10% 16V 0603
2774	4822 126 14305	100nF 10% 16V 0603
2775	4822 126 14305	100nF 10% 16V 0603
2776	4822 126 14305	100nF 10% 16V 0603
2777	4822 126 14305	100nF 10% 16V 0603
2778	4822 126 14305	100nF 10% 16V 0603
2779	4822 126 14305	100nF 10% 16V 0603
2780	4822 126 14305	100nF 10% 16V 0603
2781	4822 126 14305	100nF 10% 16V 0603
2782	4822 126 14305	100nF 10% 16V 0603
2783	4822 124 23002	10µF 16V
2784	4822 124 23002	10µF 16V
2785	4822 122 33177	10nF 20% 50V
2786	4822 122 33177	10nF 20% 50V
2787	4822 126 14305	100nF 10% 16V 0603
2788	5322 122 32531	100pF 5% 50V
2789	4822 126 13692	47pF 1% 63V
2791	5322 122 32658	22pF 5% 50V
2794	5322 122 32658	22pF 5% 50V
2795	4822 124 12095	100µF 20% 16V
2796	4822 124 12095	100µF 20% 16V
2797	4822 124 12095	100µF 20% 16V
2800	4822 126 13879	220nF 20% 16V
2801	4822 126 13879	220nF 20% 16V
2802	4822 126 13879	220nF 20% 16V
2803	4822 126 13879	220nF 20% 16V
2804	4822 126 13879	220nF 20% 16V
2805	4822 126 13879	220nF 20% 16V
2807	4822 126 14585	100nF 10% 50V

2840	4822 126 14585	100nF 10% 50V
2860	4822 126 14305	100nF 10% 16V 0603
2880	5322 124 41945	22µF 20% 35V
2881	4822 124 40433	47µF 20% 25V
2882	4822 124 11912	220µF 20% 6.3V
2883	4822 124 12095	100µF 20% 16V
2884	4822 126 14491	2.2µF 10V
2890	4822 126 14585	100nF 10% 50V
2891	4822 126 14585	100nF 10% 50V
2922	4822 126 14241	330pF 50V 0603
2923	4822 126 14305	100nF 10% 16V 0603
2932	4822 122 33753	150pF 5% 50V
2934	4822 126 14305	100nF 10% 16V 0603
2942	4822 122 33753	150pF 5% 50V
2944	4822 126 14305	100nF 10% 16V 0603
2972	4822 126 14241	330pF 50V 0603
2973	4822 126 14305	100nF 10% 16V 0603
2982	4822 122 33753	150pF 5% 50V
2983	4822 126 14305	100nF 10% 16V 0603
2992	4822 122 33753	150pF 5% 50V
2993	4822 126 14305	100nF 10% 16V 0603



3100	4822 051 20273	27k 5% 0.1W
3101	4822 051 20273	27k 5% 0.1W
3102	4822 051 30562	5k6 5% 0.063W 0603
3103	4822 051 20008	Jumper 0805
3104	4822 051 20008	Jumper 0805
3106	4822 117 11927	75Ω 1% 0.1W
3110	4822 117 11449	2k2 5% 0.1W 0805
3111	4822 117 11449	2k2 5% 0.1W 0805
3112	4822 051 20472	4k7 5% 0.1W
3114	4822 051 20472	4k7 5% 0.1W
3118	4822 051 20391	390Ω 5% 0.1W
3119	4822 117 12521	68Ω 1% 0.1W
3124	4822 051 30101	100Ω 5% 0.062W
3133	4822 117 12955	2k7 1% 0.1W 0805
3135	4822 051 20472	4k7 5% 0.1W
3136	4822 117 11503	220Ω 1% 0.1W
3137	4822 051 10102	1k 2% 0.25W
3138	4822 117 11448	180Ω 1% 0.1W
3139	4822 117 11139	1k5 1% 0.1W
3140	4822 051 30393	39k 5% 0.062W
3142	4822 051 10102	1k 2% 0.25W
3143	4822 051 10102	1k 2% 0.25W
3145	4822 051 20121	120Ω 5% 0.1W
3146	4822 051 20223	22k 5% 0.1W
3151	4822 052 10128	1Ω 2% 0.33W
3501	4822 051 30101	100Ω 5% 0.062W
3504	4822 051 30101	100Ω 5% 0.062W
3521	4822 117 13632	100k 1% 0.62W 0603
3530	4822 051 30101	100Ω 5% 0.062W
3531	4822 051 30101	100Ω 5% 0.062W
3532	4822 116 83933	15k 1% 0.1W
3538	4822 052 10228	2Ω 5% 0.33W
3545	4822 051 30471	470Ω 5% 0.062W
3546	4822 051 30471	470Ω 5% 0.062W
3550	4822 051 20471	470Ω 5% 0.1W
3601	4822 117 10361	680Ω 1% 0.1W
3602	4822 051 20471	470Ω 5% 0.1W
3603	4822 051 20471	470Ω 5% 0.1W
3604	4822 051 20273	27k 5% 0.1W
3605	4822 051 20391	390Ω 5% 0.1W
3620	4822 117 11507	6k8 1% 0.1W
3621	4822 117 11507	6k8 1% 0.1W
3622	4822 117 11373	100Ω 1% 0.0805
3623	4822 117 10361	680Ω 1% 0.1W
3624	4822 117 11454	820Ω 1% 0.1W
3625	4822 117 11454	820Ω 1% 0.1W
3630	4822 051 20273	27k 5% 0.1W
3634	4822 051 20273	27k 5% 0.1W
3635	4822 051 20822	8k2 5% 0.1W
3636	4822 051 20822	8k2 5% 0.1W
3642	4822 051 20562	5k6 5% 0.1W 0805
3650	4822 052 10688	628 5% 0.33W
3747	4822 051 20223	22k 5% 0.1W
3748	4822 051 20223	22k 5% 0.1W
3750	4822 051 30393	39k 5% 0.062W
3751	4822 051 30393	39k 5% 0.062W
3752	4822 051 30103	10k 5% 0.062W
3756	4822 051 30101	100Ω 5% 0.062W
3757	4822 051 30101	100Ω 5% 0.062W
3765	4822 051 20683	68k 5% 0.1W
3766	4822 117 11139	1k5 1% 0.1W
3767	4822 051 20683	68k 5% 0.1W
3768	4822 117 11139	1k5 1% 0.1W
3780	4822 051 30222	2k2 5% 0.062W
3781	4822 117 13632	100k 1% 0.62W 0603
3782	4822 051 30222	2k2 5% 0.062W
3783	4822 117 13632	100k 1% 0.62W 0603
3796	4822 051 20121	120Ω 5% 0.1W
3797	4822 051 20121	120Ω 5% 0.1W

3798	4822 051 20121	120Ω 5% 0.1W
3799	4822 051 20121	120Ω 5% 0.1W
3842	4822 117 11503	220Ω 1% 0.1W
3843	4822 051 30221	220Ω 5% 0.062W
3880	4822 051 30102	1k 5% 0.062W
3923	4822 051 30471	470Ω 5% 0.062W
3924	4822 051 30101	100Ω 5% 0.062W
3928	4822 051 30101	100Ω 5% 0.062W
3932	4822 051 30101	100Ω 5% 0.062W
3935	4822 051 30102	1k 5% 0.062W
3937	4822 051 30151	150Ω 5% 0.062W
3942	4822 051 30101	100Ω 5% 0.062W
3943	4822 051 30102	1k 5% 0.062W
3947	4822 051 30151	150Ω 5% 0.062W
3950	4822 117 11504	270Ω 1% 0.1W
3951	4822 051 20339	330Ω 5% 0.1W
3952	4822 117 11504	270Ω 1% 0.1W
3953	4822 117 11448	180Ω 1% 0.1W
3954	4822 051 20391	390Ω 5% 0.1W
3955	4822 117 11503	220Ω 1% 0.1W
3956	4822 117 10361	680Ω 1% 0.1W
3957	4822 117 10361	680Ω 1% 0.1W
3958	4822 117 10361	680Ω 1% 0.1W
3963	4822 051 10102	1k 2% 0.25W
3964	4822 051 10102	1k 2% 0.25W
3965	4822 051 10102	1k 2% 0.25W
3972	4822 051 30471	470Ω 5% 0.062W
3974	4822 051 30101	100Ω 5% 0.062W
3978	4822 051 30101	100Ω 5% 0.062W
3981	4822 051 30101	100Ω 5% 0.062W
3983	4822 051 30102	1k 5% 0.062W
3987	4822 051 30151	150Ω 5% 0.062W
3991	4822 051 30101	100Ω 5% 0.062W
3992	4822 051 30102	1k 5% 0.062W
3997	4822 051 30151	150Ω 5% 0.062W
3999	4822 051 10102	1k 2% 0.25W
4xxx	4822 051 10008	Jumper 1206
4xxx	4822 051 20008	Jumper 0805



5101	4822 157 11775	6.8µH 5% 5X3
5102	4822 157 71303	0.39µH 10% 0805
5103	4822 157 11776	Coil var. 40.4MHz
5106	4822 157 10977	4.7µH 10%
5108	4822 157 11534	Coil var. 78MHz
5501	4822 157 11775	6.8µH 5% 5X3
5502	4822 157 11775	6.8µH 5% 5X3
5620	4822 157 11775	6.8µH 5% 5X3
5621	4822 157 11775	6.8µH 5% 5X3
5752	4822 157 71694	0.82µH 10%
5880	2422 535 94406	2.7µH 10%
5881	4822 157 71694	0.82µH 10%
5882	4822 157 71694	0

7920	4822 130 60511	BC847B
7930	4822 130 60511	BC847B
7940	4822 130 60511	BC847B
7970	4822 130 60511	BC847B
7980	4822 130 60511	BC847B
7990	4822 130 60511	BC847B
7991	4822 209 16868	M24C04-WMN6

**Multi Channel Sound Panel [N]****Various**

0328	4822 267 10981	11P male black
0329	4822 267 10962	11P male white
0330	2422 025 14904	7P male white
0347	4822 267 10969	3P male red
0373	4822 267 10978	7P male black
0381	4822 267 10963	3P male white
1705	2422 086 10581	Prot dev 65V 400mA
1804	2422 543 01217	Crystal 40 MHz
1805	2422 543 01025	Crystal 16.93 MHz
1806	2422 543 01015	Crystal 10 MHz
1807	4822 252 51169	Fuse 0,25A
1998	2422 025 16194	Socket 8P for transmitter
1999	2422 026 04961	Socket cinch 6P white/red/black
8328	3104 301 08912	Cable 11P 220mm black
8330	3104 301 08952	Cable 7P 820mm white
8373	3104 301 08922	Cable 7P 280mm black
8381	3104 301 08932	Cable 3P 140mm white

**-II-**

2500	4822 126 14315	390pF 5% 50V 0603
2501	4822 126 14315	390pF 5% 50V 0603
2504	5322 126 11583	10nF 10% 50V 0603
2505	4822 126 14305	100nF 10% 16V 0603
2506	4822 126 14305	100nF 10% 16V 0603
2507	2222 867 15339	33pF 5% 50V 0603
2508	2222 867 15339	33pF 5% 50V 0603
2511	4822 126 12105	33nF 5% 50V
2516	4822 122 31765	100pF 2% 63V
2517	4822 122 31765	100pF 2% 63V
2534	5322 126 11583	10nF 10% 50V 0603
2539	4822 126 14506	270pF 5% 50V 0603
2540	4822 126 14305	100nF 10% 16V 0603
2541	4822 126 14305	100nF 10% 16V 0603
2542	4822 124 23002	10µF 16V
2543	4822 124 23002	10µF 16V
2545	4822 124 23002	10µF 16V
2546	4822 124 23002	10µF 16V
2548	4822 126 14549	33nF 16V O6O3
2549	5322 126 11579	3.3nF 10% 63V
2551	4822 126 14549	33nF 16V O6O3
2552	4822 126 14549	33nF 16V O6O3
2553	3198 017 34730	47nF 16V 0603
2555	4822 124 23002	10µF 16V
2556	5322 126 11579	3.3nF 10% 63V
2557	4822 126 14549	33nF 16V O6O3
2560	3198 017 34730	47nF 16V 0603
2562	4822 124 23002	10µF 16V
2563	4822 124 23002	10µF 16V
2564	4822 124 23002	10µF 16V
2565	4822 126 14305	100nF 10% 16V 0603
2566	4822 126 14305	100nF 10% 16V 0603
2567	2222 867 15339	33pF 5% 50V 0603
2568	2222 867 15339	33pF 5% 50V 0603
2569	4822 124 23002	10µF 16V
2570	4822 126 14305	100nF 10% 16V 0603
2571	4822 126 14305	100nF 10% 16V 0603
2572	4822 124 23002	10µF 16V
2573	4822 124 23002	10µF 16V
2574	4822 124 23002	10µF 16V
2575	4822 124 23002	10µF 16V
2576	4822 124 23002	10µF 16V
2577	4822 124 23002	10µF 16V
2578	4822 126 14549	33nF 16V O6O3
2579	5322 126 11579	3.3nF 10% 63V
2580	4822 126 14549	33nF 16V O6O3
2583	3198 017 34730	47nF 16V 0603
2585	2222 867 15339	33pF 5% 50V 0603
2586	5322 126 11579	3.3nF 10% 63V
2587	4822 126 14494	22nF 10% 25V 0603
2590	3198 017 34730	47nF 16V 0603
2592	4822 124 23002	10µF 16V
2593	4822 124 23002	10µF 16V
2594	4822 124 23002	10µF 16V
2595	4822 126 14305	100nF 10% 16V 0603
2596	4822 126 14305	100nF 10% 16V 0603
2597	2222 867 15339	33pF 5% 50V 0603
2598	2222 867 15339	33pF 5% 50V 0603

2599	5322 126 11582	6.8nF 10% 63V
2600	4822 126 14305	100nF 10% 16V 0603
2601	4822 126 14305	100nF 10% 16V 0603
2602	4822 124 23002	10µF 16V
2603	4822 124 23002	10µF 16V
2605	4822 124 23002	10µF 16V
2606	4822 124 23002	10µF 16V
2607	4822 124 23002	10µF 16V
2609	5322 126 11579	3.3nF 10% 63V
2612	4822 124 40207	100µF 20% 25V
2613	3198 017 34730	47nF 16V 0603
2620	3198 017 34730	47nF 16V 0603
2622	4822 124 23002	10µF 16V
2623	4822 124 23002	10µF 16V
2624	4822 124 23002	10µF 16V
2625	4822 126 14305	100nF 10% 16V 0603
2626	4822 126 14305	100nF 10% 16V 0603
2627	2222 867 15339	33pF 5% 50V 0603
2628	2222 867 15339	33pF 5% 50V 0603
2635	4822 126 14305	100nF 10% 16V 0603
2636	4822 126 14305	100nF 10% 16V 0603
2637	5322 121 42498	680nF 5% 63V
2638	5322 121 42498	680nF 5% 63V
2639	4822 126 14305	100nF 10% 16V 0603
2641	5322 121 42498	680nF 5% 63V
2643	2222 867 15339	33pF 5% 50V 0603
2667	4822 126 14494	22nF 10% 25V 0603
2668	5322 126 11582	6.8nF 10% 63V
2669	2222 867 15339	33pF 5% 50V 0603
2679	4822 126 14585	100nF 10% 50V
2680	4822 126 14585	100nF 10% 50V
2681	5322 122 32659	33pF 5% 50V
2682	5322 122 32659	33pF 5% 50V
2690	4822 126 14305	100nF 10% 16V 0603
2704	4822 126 14305	100nF 10% 16V 0603
2705	4822 124 12095	100µF 20% 16V
2706	4822 126 14585	100nF 10% 50V
2707	4822 124 40248	10µF 20% 63V
2708	4822 126 14585	100nF 10% 50V
2709	4822 124 21913	1µF 20% 63V
2710	4822 124 40248	10µF 20% 63V
2711	4822 126 14585	100nF 10% 50V
2712	4822 124 21913	1µF 20% 63V
2713	4822 126 14585	100nF 10% 50V
2715	5322 122 32531	100pF 5% 50V
2716	4822 122 33575	220pF 5% 63V
2717	5322 122 32531	100pF 5% 50V
2718	4822 122 33575	220pF 5% 63V
2719	5322 122 32531	100pF 5% 50V
2720	4822 122 33575	220pF 5% 63V
2721	5322 122 32531	100pF 5% 50V
2722	4822 122 33575	220pF 5% 63V
2724	5322 122 32531	100pF 5% 50V
2725	5322 122 32531	100pF 5% 50V
2726	4822 122 33575	220pF 5% 63V
2727	4822 126 14585	100nF 10% 50V
2728	4822 126 14305	100nF 10% 16V 0603
2729	4822 126 14585	100nF 10% 50V
2730	5322 122 32531	100pF 5% 50V
2731	5322 122 32531	100pF 5% 50V
2732	5322 122 32531	100pF 5% 50V
2733	5322 122 32531	100pF 5% 50V
2736	4822 124 81151	22µF 50V
2737	4822 126 14585	100nF 10% 50V
2738	4822 124 40207	100µF 20% 25V
2740	5322 126 11583	10nF 10% 50V 0603
2741	5322 126 11583	10nF 10% 50V 0603
2745	4822 126 14494	22nF 10% 25V 0603
2746	5322 126 11583	10nF 10% 50V 0603
2747	5322 126 11583	10nF 10% 50V 0603
2749	4822 126 14494	22nF 10% 25V 0603
2752	5322 126 11583	10nF 10% 50V 0603
2753	5322 126 11583	10nF 10% 50V 0603
2755	4822 126 14494	22nF 10% 25V 0603
2780	4822 126 14305	100nF 10% 16V 0603
2781	4822 126 14305	100nF 10% 16V 0603
2784	4822 126 13344	1.5nF 5% 63V
2785	4822 126 13344	1.5nF 5% 63V
2786	2222 867 15339	33pF 5% 50V 0603
2787	2222 867 15339	33pF 5% 50V 0603
2790	4822 122 33177	10nF 20% 50V
2791	4822 124 22652	2.2µF 20% 50V
2793	4822 126 14506	270pF 5% 50V 0603
2794	5322 126 11583	10nF 10% 50V 0603
2795	5322 126 11583	10nF 10% 50V 0603
2796	4822 122 33177	10nF 20% 50V
2800	4822 126 14585	100nF 10% 50V
2802	4822 126 14585	100nF 10% 50V
2807	4822 126 14585	100nF 10% 50V
2809	4822 126 14585	100nF 10% 50V
2810	4822 126 14585	100nF 10% 50V
2811	4822 124 80151	47µF 16V
2812	4822 126 14305	100nF 10% 16V 0603
2813	4822 126 14305	100nF 10% 16V 0603

2814	4822 126 14305	100nF 10% 16V 0603
2815	4822 126 14305	100nF 10% 16V 0603
2816	4822 126 14305	100nF 10% 16V 0603
2817	4822 126 14585	100nF 10% 50V
2818	4822 126 14305	100nF 10% 16V 0603
2819	4822 126 14305	100nF 10% 16V 0603
2820	4822 126 13486	15pF 2% 63V
2821	4822 126 13486	15pF 2% 63V
2822	4822 126 14585	100nF 10% 50V
2823	4822 124 80151	47µF 16V
2824	4822 126 14585	100nF 10% 50V
2825	4822 126 14585	100nF 10% 50V
2826	4822 126 14305	100nF 10% 16V 0603
2827	4822 126 14305	100nF 10% 16V 0603
2828	4822 124 80151	47µF 16V
2829	4822 126 14305	100nF 10% 16V 0603
2830	4822 126 14305	100nF 10% 16V 0603
2831	5322 126 11583	10nF 10% 50V 0603
2832	3198 016 31020	0603 25V 1nF
2833	4822 126 13486	15pF 2% 63V
2834	4822 126 13486	15pF 2% 63V
2835	4822 124 80151	47µF 16V
2836	4822 126 14305	100nF 10% 16V 0603
2837	4822 122 33177	10nF 20% 50V
2838	4822 122 33761	22pF 5% 50V
2839	4822 122 33761	22pF 5% 50V
2840	4822 124 80151	47µF 16V
2841	4822 126 14585	100nF 10% 50V
2842	4822 124 80151	47µF 16V
2843	4822 126 14305	100nF 10% 16V 0603
2844	4822 124 80151	47µF 16V
2845	4822 126 14585	100nF 10% 50V
2846	4822 124 80151	47µF 16V
2847	5322 126 10511	1nF 5% 50V
2848	4822 122 31765	100pF 2% 63V
2849	4822 126 14585	100nF 10% 50V
2850	5322 122 32531	100pF 5% 50V
2851	5322 126 10511	1nF 5% 50V
2852	5322 122 32531	100pF 5% 50V
2853	4822 124 80151	47µF 16V
2854	5322 126 10511	1nF 5% 50V
2855	4822 124 80151	47µF 16V
2856	5322 126 10511	1nF 5% 50V
2857	4822 124 80151	47µF 16V
2858	5322 126 10511	1nF 5% 50V
2859	4822 124 80151	47µF 16V
2860	4822 126 14585	100nF 10% 50V
2861	4822 124 80151	47µF 16V
2862	5322 126 10511	1nF 5% 50V
2863	4822 124 80151	47µF 16V
2864	4822 126 14585	100nF 10% 50V
2865	4822 126 14585	100nF 10% 50V
2866	4822 126 14585	100nF 10% 50V
2867	4822 124 80151	47µF 16V
2868	4822 126 14585	100nF 10% 50V
2869	4822 126 14585	100nF 10% 50V
2870	4822 124 80151	47µF 16V
2871	4822 124 80151	47µF 16V
2872	5322 122 32531	100pF 5% 50V
2873	5322 126 10511	1nF 5% 50V
2874	4822 124 80151	47µF 16V
2875	4822 126	



3510	4822 051 30103	10k 5% 0.062W	3650	4822 117 11507	6k8 1% 0.1W	3788	4822 051 30332	3k3 5% 0.062W
3511	4822 051 30103	10k 5% 0.062W	3651	4822 051 30333	33k 5% 0.062W	3789	4822 051 30682	6k8 5% 0.062W
3513	4822 051 30103	10k 5% 0.062W	3652	4822 117 11507	6k8 1% 0.1W	3790	4822 051 20121	120Ω 5% 0.1W
3514	4822 051 30103	10k 5% 0.062W	3653	4822 117 11507	6k8 1% 0.1W	3791	4822 051 30102	1k 5% 0.062W
3515	4822 051 30562	5k6 5% 0.063W 0603	3658	4822 051 30682	6k8 5% 0.062W	3792	4822 051 30393	39k 5% 0.062W
3516	4822 051 30123	12k 5% 0.062W	3659	4822 051 30222	2k2 5% 0.062W	3793	4822 051 30103	10k 5% 0.062W
3517	4822 051 30562	5k6 5% 0.063W 0603	3660	4822 051 30682	6k8 5% 0.062W	3795	4822 051 30223	22k 5% 0.062W
3518	4822 051 30123	12k 5% 0.062W	3661	4822 051 30222	2k2 5% 0.062W	3796	4822 051 20121	120Ω 5% 0.1W
3530	4822 051 30682	6k8 5% 0.062W	3663	4822 051 20332	3k3 5% 0.1W	3799	4822 051 20223	22k 5% 0.1W
3531	4822 051 30103	10k 5% 0.062W	3664	4822 051 20332	3k3 5% 0.1W	3800	4822 117 11927	75Ω 1% 0.1W
3532	4822 051 30682	6k8 5% 0.062W	3667	4822 117 10837	100k 1% 0.1W	3801	4822 117 11927	75Ω 1% 0.1W
3533	4822 051 30103	10k 5% 0.062W	3671	4822 117 10833	10k 1% 0.1W	3803	4822 117 11151	1Ω 5%
3534	4822 051 30121	120Ω 5% 0.062W	3673	4822 117 10833	10k 1% 0.1W	3804	4822 051 20105	1M 5% 0.1W
3540	4822 117 13632	100k 1% 0.62W 0603	3675	4822 117 10837	100k 1% 0.1W	3805	4822 117 10833	10k 1% 0.1W
3541	4822 051 30109	10Ω 5% 0.062W	3676	4822 117 10833	10k 1% 0.1W	3807	4822 051 30101	100Ω 5% 0.062W
3543	4822 051 30103	10k 5% 0.062W	3678	4822 117 10833	10k 1% 0.1W	3808	4822 051 30103	10k 5% 0.062W
3547	4822 051 30101	100Ω 5% 0.062W	3679	4822 117 11507	6k8 1% 0.1W	3809	4822 051 30101	100Ω 5% 0.062W
3548	4822 117 13632	100k 1% 0.62W 0603	3680	4822 117 11507	6k8 1% 0.1W	3810	4822 117 11373	100Ω 1% 0805
3550	4822 051 30103	10k 5% 0.062W	3682	4822 117 10837	100k 1% 0.1W	3811	4822 051 30101	100Ω 5% 0.062W
3551	4822 051 30393	39k 5% 0.062W	3683	4822 051 20332	3k3 5% 0.1W	3812	4822 117 11373	100Ω 1% 0805
3553	4822 051 30103	10k 5% 0.062W	3684	4822 117 10837	100k 1% 0.1W	3813	4822 051 30101	100Ω 5% 0.062W
3554	4822 051 30101	100Ω 5% 0.062W	3685	4822 117 10837	100k 1% 0.1W	3814	4822 117 11373	100Ω 1% 0805
3555	4822 117 12925	47k 1% 0.063W 0603	3686	4822 117 10837	100k 1% 0.1W	3815	4822 117 11373	100Ω 1% 0805
3556	4822 117 12903	1k8 1% 0.063W 0603	3687	4822 051 20332	3k3 5% 0.1W	3816	4822 051 30103	10k 5% 0.062W
3557	4822 051 30103	10k 5% 0.062W	3688	4822 117 11507	6k8 1% 0.1W	3817	4822 051 30103	10k 5% 0.062W
3558	4822 051 30103	10k 5% 0.062W	3699	4822 117 10833	10k 1% 0.1W	3818	4822 051 30103	10k 5% 0.062W
3559	4822 051 30152	1k5 5% 0.062W	3700	4822 117 10833	10k 1% 0.1W	3819	4822 051 30103	10k 5% 0.062W
3560	4822 051 30103	10k 5% 0.062W	3701	4822 117 13632	100k 1% 0.62W 0603	3820	4822 051 30103	10k 5% 0.062W
3561	4822 051 30103	10k 5% 0.062W	3702	4822 051 30331	330Ω 5% 0.062W	3821	4822 051 30103	10k 5% 0.062W
3562	4822 051 30393	39k 5% 0.062W	3703	4822 051 30391	390Ω 5% 0.062W	3822	4822 117 12984	3Ω 5% 0.125W 1206
3563	4822 051 30103	10k 5% 0.062W	3704	4822 117 12902	8k2 1% 0.063W 0603	3823	4822 117 12984	3Ω 5% 0.125W 1206
3564	4822 051 30152	1k5 5% 0.062W	3705	4822 051 30221	220Ω 5% 0.062W	3824	4822 117 11148	56k 1% 0.1W
3565	4822 051 30103	10k 5% 0.062W	3706	4822 051 30221	220Ω 5% 0.062W	3825	4822 051 20334	330k 5% 0.1W
3567	4822 051 30101	100Ω 5% 0.062W	3707	4822 051 20471	470Ω 5% 0.1W	3826	4822 051 20334	330k 5% 0.1W
3568	4822 051 30683	68k 5% 0.062W	3708	4822 051 20471	470Ω 5% 0.1W	3827	4822 117 11927	75Ω 1% 0.1W
3569	4822 051 30683	68k 5% 0.062W	3709	4822 051 20471	470Ω 5% 0.1W	3828	4822 051 30562	5k6 5% 0.063W 0603
3571	4822 051 30109	10Ω 5% 0.062W	3710	4822 117 10837	100k 1% 0.1W	3829	4822 051 30562	5k6 5% 0.063W 0603
3573	4822 051 30103	10k 5% 0.062W	3711	4822 117 10833	10k 1% 0.1W	3830	4822 051 30123	12k 5% 0.062W
3575	4822 051 30101	100Ω 5% 0.062W	3712	4822 117 10837	100k 1% 0.1W	3831	4822 051 30123	12k 5% 0.062W
3576	4822 051 30472	4k7 5% 0.062W	3713	4822 117 10833	10k 1% 0.1W	3834	4822 051 30151	150Ω 5% 0.062W
3577	4822 117 10834	47k 1% 0.1W	3715	4822 051 20471	470Ω 5% 0.1W	3835	4822 051 20333	33k 5% 0.1W
3578	4822 117 11373	100Ω 1% 0805	3716	4822 051 20223	22k 5% 0.1W	3836	3198 021 52240	220k 5% 0805
3580	4822 117 11817	1k2 1% 1/16W	3717	4822 051 20471	470Ω 5% 0.1W	3837	4822 117 11373	100Ω 1% 0805
3581	4822 117 12903	1k8 1% 0.063W 0603	3718	4822 051 20223	22k 5% 0.1W	3838	4822 117 12984	3Ω 5% 0.125W 1206
3582	4822 117 11817	1k2 1% 1/16W	3719	4822 051 20471	470Ω 5% 0.1W	3839	4822 051 30103	10k 5% 0.062W
3583	4822 051 30103	10k 5% 0.062W	3720	4822 051 20223	22k 5% 0.1W	3840	4822 051 30103	10k 5% 0.062W
3584	4822 117 12903	1k8 1% 0.063W 0603	3721	4822 051 20471	470Ω 5% 0.1W	3841	4822 051 30103	10k 5% 0.062W
3585	4822 117 11817	1k2 1% 1/16W	3722	4822 051 20223	22k 5% 0.1W	3842	4822 051 30103	10k 5% 0.062W
3587	4822 051 30103	10k 5% 0.062W	3724	4822 051 20223	22k 5% 0.1W	3843	4822 051 30103	10k 5% 0.062W
3589	4822 051 30152	1k5 5% 0.062W	3725	4822 051 20471	470Ω 5% 0.1W	3844	4822 117 10833	10k 1% 0.1W
3590	4822 051 30103	10k 5% 0.062W	3726	4822 051 20223	22k 5% 0.1W	3848	4822 051 20105	1M 5% 0.1W
3591	4822 051 30103	10k 5% 0.062W	3727	4822 051 30103	10k 5% 0.062W	3849	4822 051 30102	1k 5% 0.062W
3593	4822 051 30103	10k 5% 0.062W	3728	4822 051 30333	33k 5% 0.062W	3850	4822 117 10833	10k 1% 0.1W
3594	4822 051 30152	1k5 5% 0.062W	3729	4822 051 30683	68k 5% 0.062W	3851	4822 117 12984	3Ω 5% 0.125W 1206
3595	4822 051 30103	10k 5% 0.062W	3730	4822 117 10353	150Ω 1% 0.1W	3852	4822 117 13572	22Ω 5% 1206
3596	4822 051 30101	100Ω 5% 0.062W	3731	4822 051 20223	22k 5% 0.1W	3854	4822 117 10833	10k 1% 0.1W
3601	4822 051 30109	10Ω 5% 0.062W	3732	4822 117 10353	150Ω 1% 0.1W	3855	4822 117 12984	3Ω 5% 0.125W 1206
3602	4822 117 13632	100k 1% 0.62W 0603	3733	4822 051 20223	22k 5% 0.1W	3856	4822 117 13572	22Ω 5% 1206
3603	4822 051 30103	10k 5% 0.062W	3734	4822 117 11503	220Ω 1% 0.1W	3857	4822 117 11373	100Ω 1% 0805
3605	4822 051 30333	33k 5% 0.062W	3735	4822 117 11503	220Ω 1% 0.1W	3858	4822 051 30103	10k 5% 0.062W
3606	4822 117 13632	100k 1% 0.62W 0603	3737	4822 051 30683	68k 5% 0.062W	3859	4822 051 30103	10k 5% 0.062W
3608	4822 051 30331	330Ω 5% 0.062W	3738	4822 051 20471	470Ω 5% 0.1W	3861	4822 117 10833	10k 1% 0.1W
3609	4822 051 30153	15k 5% 0.062W	3739	4822 051 20471	470Ω 5% 0.1W	3863	4822 117 10833	10k 1% 0.1W
3610	4822 117 10837	100k 1% 0.1W	3740	4822 117 12902	8k2 1% 0.063W 0603	3864	4822 117 11373	100Ω 1% 0805
3611	4822 117 10833	10k 1% 0.1W	3741	4822 117 12902	8k2 1% 0.063W 0603	3865	4822 051 30103	10k 5% 0.062W
3612	4822 051 30152	1k5 5% 0.062W	3742	4822 051 30392	3k9 5% 0.063W 0603	3866	4822 117 10833	10k 1% 0.1W
3613	4822 051 30103	10k 5% 0.062W	3743	4822 051 30101	100Ω 5% 0.062W	3868	4822 117 11373	100Ω 1% 0805
3614	4822 051 30153	15k 5% 0.062W	3744	4822 051 30271	270Ω 5% 0.062W	3869	4822 117 10833	10k 1% 0.1W
3615	4822 117 13632	100k 1% 0.62W 0603	3745	4822 051 30102	1k 5% 0.062W	3870	4822 117 11373	100Ω 1% 0805
3616	4822 117 13632	100k 1% 0.62W 0603	3746	4822 117 12902	8k2 1% 0.063W 0603	3871	4822 117 10833	10k 1% 0.1W
3617	4822 051 30103	10k 5% 0.062W	3747	4822 117 12902	8k2 1% 0.063W 0603	3872	4822 117 11373	100Ω 1% 0805
3619	4822 051 30152	1k5 5% 0.062W	3748	4822 051 30392	3k9 5% 0.063W 0603	3873	4822 117 10833	10k 1% 0.1W
3620	4822 051 30103	10k 5% 0.062W	3749	4822 051 30101	100Ω 5% 0.062W	3874	4822 117 11373	100Ω 1% 0805
3621	4822 051 30103	10k 5% 0.062W	3750	4822 051 30271	270Ω 5% 0.062W	3875	4822 117 10833	10k 1% 0.1W
3623	4822 051 30472	4k7 5% 0.062W	3751	4822 051 30102	1k 5% 0.062W	3876	4822 117 12984	3Ω 5% 0.125W 1206
3624	4822 051 30391	390Ω 5% 0.062W	3752	4822 117 12902	8k2 1% 0.063W 0603	3877	4822 117 12984	3Ω 5% 0.125W 1206
3625	4822 117 12902	8k2 1% 0.063W 0603	3753	4822 117 12902	8k2 1% 0.063W 0603	3878	4822 117 10837	100k 1% 0.1W
3626	4822 117 10837	100k 1% 0.1W	3754	4822 051 30392	3k9 5% 0.063W 0603	3879	4822 051 20684	680k 5% 0.1W
3627	4822 117 10837	100k 1% 0.1W	3755	4822 051 30101	100Ω 5% 0.062W	3880	4822 117 10837	100k 1% 0.1W
3628	4822 117 10837	100k 1% 0.1W	3756	4822 051 30271	270Ω 5% 0.062W	3881	4822 051 20105	1M 5% 0.1W
3629	4822 117 10837	100k 1% 0.1W	3757	4822 051 30102	1k 5% 0.062W	3882	4822 117 11373	100Ω 1% 0805
3630	4822 051 20223	22k 5% 0.1W	3758	4822 051 30472	4k7 5% 0.062W	3883	4822 117 10833	10k 1% 0.1W
3631	4822 117 13632	100k 1% 0.62W 0603	3759	4822 051 30472	4k7 5% 0.062W	3884	4822 117 11373	100Ω 1% 0805
3632	4822 117 12925	47k 1% 0.063W 0603	3760	4822 051 30472	4k7 5% 0.062W	3885	4822 117 10833	10k 1% 0.1W
3633	4822 117 13632	100k 1% 0.62W 0603	3761	4822 117 10837	100k 1% 0.1W	3886	4822 051 30101	100Ω 5% 0.062W
3634	4822 051 30474	470k 5% 0.062W	3762	4822 051 20223	2			



5703	4822 157 11876	6.8μH 10% 0805
5704	4822 157 11876	6.8μH 10% 0805
5801	4822 157 71411	3.3μH 10%



6525	4822 130 11423	PLVA2656A
6600	4822 130 83757	MCL4148
6637	4822 130 83757	MCL4148
6638	4822 130 83757	MCL4148
6708	9322 129 38685	BZM55-C6V8
6709	9322 129 38685	BZM55-C6V8
6710	9322 129 39685	BZM55-C8V2
6715	9322 129 40685	BZM55-C10
6716	9322 129 40685	BZM55-C10
6717	9322 129 40685	BZM55-C10
6718	9322 129 40685	BZM55-C10
6719	9322 129 40685	BZM55-C10
6720	9322 129 40685	BZM55-C10
6721	9322 129 40685	BZM55-C10
6722	9322 129 40685	BZM55-C10
6723	9322 129 40685	BZM55-C10
6724	9322 129 40685	BZM55-C10
6725	9322 129 40685	BZM55-C10
6726	9322 129 40685	BZM55-C10
6730	9322 129 40685	BZM55-C10
6731	9322 129 40685	BZM55-C10
6732	9322 129 40685	BZM55-C10
6733	9322 129 40685	BZM55-C10
6734	4822 130 11423	PLVA2656A
6801	4822 209 16978	LF33CV



7505	4822 209 30095	LM833D
7510	4822 130 60511	BC847B
7512	4822 130 60511	BC847B
7540	9322 127 49668	TDA7438D
7541	4822 209 30095	LM833D
7543	4822 209 30095	LM833D
7544	4822 209 30095	LM833D
7565	4822 209 30095	LM833D
7570	9322 127 49668	TDA7438D
7595	4822 209 30095	LM833D
7600	9322 127 49668	TDA7438D
7601	4822 130 60511	BC847B
7602	4822 130 60511	BC847B
7603	4822 130 60511	BC847B
7604	4822 130 60373	BC856B
7605	4822 130 60511	BC847B
7610	4822 130 60511	BC847B
7611	4822 130 60511	BC847B
7625	4822 209 30095	LM833D
7630	5322 209 11102	HEF4052BT
7635	4822 209 30095	LM833D
7665	5322 209 11102	HEF4052BT
7667	4822 130 60511	BC847B
7675	4822 130 60511	BC847B
7679	4822 209 30095	LM833D
7685	5322 209 11102	HEF4052BT
7690	4822 209 13252	PCF8574TS/F3
7695	5322 209 11102	HEF4052BT
7696	4822 130 60511	BC847B
7705	5322 209 81856	LM7912CT
7706	4822 209 81726	MC7812CT
7707	4822 130 60511	BC847B
7708	4822 130 60511	BC847B
7709	4822 130 60511	BC847B
7710	4822 130 60511	BC847B
7712	4822 130 60511	BC847B
7713	4822 130 60511	BC847B
7740	4822 209 30095	LM833D
7780	4822 209 30095	LM833D
7781	4822 130 60373	BC856B
7800	9352 317 00118	74LVC125AD
7801	9352 629 51557	SAA2505H/M1 (PHSE)
7802	4822 209 14863	LC8904Q
7804	4822 209 30095	LM833D
7805	4822 209 17423	UAD1328T
7806	9352 617 90118	UDA1344TS
7807	4822 130 60511	BC847B

## Side I/O Panel [O]

## Various

0044	3104 304 23481	Bracket side I/O FL11
1326	4822 267 10975	3P male

1327	4822 267 31014	Socket headphone 3.5mm
1328	2422 026 05133	Socket SVHS
1333	2422 025 12485	11P male
1344	4822 267 10735	3P male
1346	2422 025 16382	03P male black
8333	4822 320 12505	Cable 11P 820mm
8344	3104 301 09451	Cable 3P 560mm white
8346	3104 311 00131	Cable 3P 560mm black



2804	5322 122 32531	100pF 5% 50V
2805	5322 122 32531	100pF 5% 50V
2807	4822 126 14076	220nF 20-80% 25V
2810	4822 126 12105	33nF 5% 50V
2811	4822 124 40207	100μF 20% 25V
2813	4822 124 22652	2.2μF 20% 50V
2832	4822 122 33177	10nF 20% 50V
2834	4822 122 33177	10nF 20% 50V



3801	4822 117 11927	75Ω 1% 0.1W
3803	4822 050 11002	1k 1% 0.4W
3804	4822 050 11002	1k 1% 0.4W
3808	4822 051 20008	Jumper 0805
3809	4822 051 20008	Jumper 0805
3810	4822 051 20684	680k 5% 0.1W
3811	4822 051 20393	39k 5% 0.1W
3812	4822 051 20154	150k 5% 0.1W
3813	4822 051 20392	3k9 5% 0.1W
3814	4822 117 11449	2k2 5% 0.1W 0805
3815	4822 051 20399	39Ω 5% 0.1W
3816	4822 051 20399	39Ω 5% 0.1W
3826	4822 116 52206	120Ω 5% 0.5W
3827	4822 116 52206	120Ω 5% 0.5W
3828	4822 116 52206	120Ω 5% 0.5W
3829	4822 116 52206	120Ω 5% 0.5W
3830	4822 050 21003	10k 1% 0.6W
3842	4822 050 21003	10k 1% 0.6W
3845	4822 051 20472	4k7 5% 0.1W
3846	4822 117 10833	10k 1% 0.1W
3847	4822 117 10833	10k 1% 0.1W
3848	4822 051 20562	5k6 5% 0.1W 0805
3849	4822 051 20332	3k3 5% 0.1W
4xxx	4822 051 10008	Jumper 1206
4xxx	4822 051 20008	Jumper 0805



5800	4822 157 11228	100μH 5%
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6801	9322 129 38685	BZM55-C6V8
6802	9322 129 38685	BZM55-C6V8
6803	9322 129 40685	BZM55-C10
6804	9322 129 40685	BZM55-C10
6805	9322 129 40685	BZM55-C10
6806	9322 129 40685	BZM55-C10
6807	9322 129 38685	BZM55-C6V8
6808	9322 129 38685	BZM55-C6V8



7811	4822 130 60373	BC856B
7812	4822 130 60373	BC856B
7813	4822 130 60511	BC847B

## Top Control Panel [P]

## Various

0055	3104 307 98241	Top control keypad FL11
0057	3104 304 23431	Topcontrol bottom FL11
0111	3104 304 24851	Topcontrol ESD foil
8345	3104 301 07771	Cable 3P 1200mm white
8345	3104 311 01101	Cable 3P 1000mm

## Autoscaven Panel [SC]

## Various

0360	4822 267 10967	3P
0361	4822 267 10967	3P
1382	2422 025 17408	9P male



2006	4822 126 14305	100nF 10% 16V 0603
2008	4822 126 14494	22nF 10% 25V 0603
2010	4822 126 14305	100nF 10% 16V 0603
2012	4822 126 14494	22nF 10% 25V 0603
2014	4822 126 14494	22nF 10% 25V 0603
2016	3198 016 33380	3.3pF 50V 0603
2020	4822 126 14494	22nF 10% 25V 0603
2022	3198 017 41050	1μF 10V 0603
2024	4822 126 14494	22nF 10% 25V 0603
2026	3198 017 41050	1μF 10V 0603
2028	3198 017 41050	1μF 10V 0603
2038	4822 126 14494	22nF 10% 25V 0603
2040	4822 126 14225	56pF 5% 50V 0603
2200	4822 126 13193	4.7nF 10% 63V
2202	5322 126 11578	1nF 10% 50V 0603
2204	3198 017 41050	1μF 10V 0603
2206	3198 017 41050	1μF 10V 0603
2208	4822 124 41584	100μF 20% 10V
2600	4822 124 80791	470μF 20% 16V



3000	4822 051 30101	100Ω 5% 0.062W
3002	4822 051 30101	100Ω 5% 0.062W
3004	4822 051 30101	100Ω 5% 0.062W
3006	4822 051 30222	2k2 5% 0.062W
3008	4822 051 30222	2k2 5% 0.062W
3010	4822 051 30222	2k2 5% 0.062W
3012	4822 051 30562	5k6 5% 0.063W 0603
3014	4822 051 30272	2k7 5% 0.062W
3016	4822 051 30153	15k 5% 0.062W
3018	4822 117 12903	1k8 1% 0.063W 0603
3020	4822 051 30561	560Ω 5% 0.062W
3022	4822 051 30393	39k 5% 0.062W
3024	4822 051 30123	12k 5% 0.062W
3028	4822 051 30223	22k 5% 0.062W
3030	4822 051 30683	68k 5% 0.062W
3032	4822 051 20182	1k8 5% 0.1W
3034	4822 051 30222	2k2 5% 0.062W
3036	4822 051 30332	3k3 5% 0.062W
3038	4822 051 30561	560Ω 5% 0.062W
3040	4822 117 12925	47k 1% 0.063W 0603
3042	4822 051 30682	6k8 5% 0.062W
3044	4822 051 10102	1k 2% 0.25W
3046	4822 117 12903	1k8 1% 0.063W 0603
3048	4822 117 12903	1k8 1% 0.063W 0603
3050	4822 051 30561	560Ω 5% 0.062W
3052	4822 051 30561	560Ω 5% 0.062W
3054	4822 051 30222	2k2 5% 0.062W
3056	4822 051 30222	2k2 5% 0.062W
3058	4822 051 30681	680Ω 5% 0.062W
3060	4822 051 30681	680Ω 5% 0.062W
3062	4822 051 30222	2k2 5% 0.062W
3064	4822 117 12971	15Ω 5% 0.62W 0603
3066	4822 051 30123	12k 5% 0.062W
3068	4822 051 30681	680Ω 5% 0.062W
3070	4822 117 12902	8k2 1% 0.063W 0603
3072	4822 051 30152	1k5 5% 0.062W
3074	4822 051 30101	100Ω 5% 0.062W
3076	4822 117 11817	1k2 1% 1/16W
3078	4822 051 30102	1k 5% 0.062W
3080	4822 117 12925	47k 1% 0.063W 0603
3082	4822 051 30682	6k8 5% 0.062W
3084	4822 051 30102	1k 5% 0.062W
3086	4822 051 30222	2k2 5% 0.062W
3088	4822 051 30102	1k 5% 0.062W
3090	4822 051 30222	2k2 5% 0.062W
3092	4822 051 30393	39k 5% 0.062W
3094	4822 051 30223	22k 5% 0.062W
3096	4822 117 11449	2k2 5% 0.1W 0805
3102	4822 051 30152	1k5 5% 0.062W
3106	4822 051 30102	1k 5% 0.062W
3108	4822 117 12925	47k 1% 0.063W 0603
3110	4822 051 30472	4k7 5% 0.062W
3112	4822 051 30392	3k9 5% 0.063W 0603
3114	4822 051 30181	180Ω 5% 0.062W
3116	4822 051 30102	1k 5% 0.062W
3118	4822 051 30333	33k 5% 0.062W
3120	4822 051 30333	33k 5% 0.062W
3200	4822 051 30152	1k5 5% 0.062W
3202	4822 051 30271	270Ω 5% 0.062W
3204	4822 117 12925	47k 1% 0.063W 0603
3206	4822 051 30682	6k8 5% 0.062W
3208	4822 117 12903	1k8 1% 0.063W 0603
3210	4822 051 30681	680Ω 5% 0.062W
3212	4822 051 30123	12k 5% 0.062W
3214	4822 051 30474	470k 5% 0.062W
3216	4822 117 12925	47k 1% 0.063W 0603
3218	4822 051 30153	15k 5% 0.062W
3220	4822 051 30153	15k 5% 0.062W

3222	4822 051 30682	6k8 5% 0.062W
3224	4822 117 11817	1k2 1% 1/16W
3226	4822 051 30152	1k5 5% 0.062W
3228	4822 051 30101	100Ω 5% 0.062W
3230	4822 051 30103	10k 5% 0.062W
3232	4822 051 30153	15k 5% 0.062W
3234	4822 117 12968	820Ω 5% 0.62W
3236	4822 051 30222	2k2 5% 0.062W
3238	4822 117 12139	22Ω 5% 0.062W
3240	4822 051 30472	4k7 5% 0.062W
3242	4822 051 30689	68Ω 5% 0.063W 0603
3244	4822 117 13632	100k 1% 0.62W 0603
3500	4822 051 30101	100Ω 5% 0.062W
3502	4822 051 30101	100Ω 5% 0.062W
3600	4822 117 11151	1Ω 5%

5600	4822 157 11778	5μH 6 10%
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6000	5322 130 80119	BBY40
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7000	4822 130 60373	BC856B
7002	4822 130 60373	BC856B
7004	4822 130 60373	BC856B
7006	5322 130 42718	BFS20
7008	4822 130 60383	BF824
7010	5322 130 42718	BFS20
7012	5322 130 42718	BFS20
7014	4822 130 60383	BF824
7016	5322 130 42718	BFS20
7018	5322 130 42718	BFS20
7020	4822 130 60383	BF824
7022	5322 130 42718	BFS20
7024	5322 130 42718	BFS20
7026	5322 130 42718	BFS20
7028	5322 130 42718	BFS20
7030	5322 130 42718	BFS20
7032	5322 130 42718	BFS20
7038	5322 130 42718	BFS20
7040	5322 130 42718	BFS20
7042	4822 130 60383	BF824
7200	4822 130 60511	BC847B
7202	4822 130 60373	BC856B
7204	4822 130 60373	BC856B
7206	5322 130 42718	BFS20
7208	4822 130 60511	BC847B
7210	5322 130 42718	BFS20
7212	4822 130 60511	BC847B
7500	5322 209 90559	TDA8444T/N4

Wireless Transmitter [R]

Various

0320	4304 078 89100	Transmitter 433MHz
0320	4304 078 89110	Transmitter 864MHz

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2100	4822 126 14043	1μF 20% 16V
2101	4822 126 14043	1μF 20% 16V
2102	4822 126 13222	390pF 2% 63V
2103	4822 126 13222	390pF 2% 63V
2104	4822 126 13222	390pF 2% 63V
2105	4822 126 13222	390pF 2% 63V
2106	4822 126 13222	390pF 2% 63V
2107	4822 126 13222	390pF 2% 63V
2108	4822 126 13222	390pF 2% 63V
2109	4822 126 13222	390pF 2% 63V
2110	4822 126 10326	180pF 5% 63V
2111	4822 126 10326	180pF 5% 63V
2112	4822 126 10326	180pF 5% 63V
2113	4822 126 10326	180pF 5% 63V
2114	4822 124 22652	2.2μF 20% 50V
2115	4822 124 22652	2.2μF 20% 50V
2116	5322 122 32268	470pF 10% 50V
2117	5322 122 32268	470pF 10% 50V
2118	5322 126 10223	4.7nF 10% 63V
2119	5322 126 10223	4.7nF 10% 63V
2120	4822 124 40248	10μF 20% 63V
2121	4822 124 40248	10μF 20% 63V
2122	4822 121 51319	1μF 10% 63V
2123	4822 121 51319	1μF 10% 63V
2124	4822 124 22652	2.2μF 20% 50V
2125	4822 124 22652	2.2μF 20% 50V

2126	5322 122 32654	22nF 10% 63V
2127	5322 122 32654	22nF 10% 63V
2128	4822 124 22652	2.2μF 20% 50V
2129	4822 124 22652	2.2μF 20% 50V
2130	4822 124 22652	2.2μF 20% 50V
2131	4822 124 22652	2.2μF 20% 50V
2132	4822 126 13692	47pF 1% 63V
2133	4822 126 13692	47pF 1% 63V
2134	4822 124 40248	10μF 20% 63V
2135	4822 124 40248	10μF 20% 63V
2136	5322 122 32268	470pF 10% 50V
2137	4822 124 81151	22μF 50V
2138	5322 122 31647	1nF 10% 63V
2139	5322 122 32268	470pF 10% 50V
2141	4822 126 13482	470nF 80/20% 16V
2142	4822 124 81151	22μF 50V
2143	4822 122 32535	680pF 10% 63V
2144	4822 126 13695	82pF 1% 63V
2147	5322 122 32654	22nF 10% 63V
2150	4822 126 13473	220nF 80-20% 50V
2151	4822 126 13692	47pF 1% 63V
2152	4822 126 13692	47pF 1% 63V
2153	4822 126 14585	100nF 10% 50V
2154	4822 126 14585	100nF 10% 50V
2155	4822 126 14585	100nF 10% 50V
2156	4822 124 40196	220μF 20% 16V
2157	4822 124 40196	220μF 20% 16V
2158	4822 124 40207	100μF 20% 25V
2162	5322 122 32654	22nF 10% 63V
2163	4822 126 13473	220nF 80-20% 50V
2164	4822 126 14585	100nF 10% 50V
2165	4822 126 14585	100nF 10% 50V
2166	5322 122 32654	22nF 10% 63V
2167	5322 122 32654	10pF 5% 63V
2168	4822 126 13482	470nF 80/20% 16V
2169	4822 122 32535	680pF 10% 63V
2170	4822 122 32535	680pF 10% 63V
2173	4822 122 33177	10nF 20% 50V
2174	4822 126 13473	220nF 80-20% 50V
2175	4822 122 33575	220pF 5% 63V
2176	4822 122 33575	220pF 5% 63V
2178	5322 122 32654	22nF 10% 63V
2179	5322 122 32654	22nF 10% 63V
2180	5322 122 32654	22nF 10% 63V
2181	4822 126 13692	47pF 1% 63V
2182	4822 126 13692	47pF 1% 63V
2183	5322 122 32654	22nF 10% 63V
2185	4822 126 13692	47pF 1% 63V
2186	4822 126 13473	220nF 80-20% 50V
2188	4822 126 13692	47pF 1% 63V
2189	5322 122 31863	330pF 5% 63V

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3100	4822 117 10837	100k 1% 0.1W
3101	4822 117 10837	100k 1% 0.1W
3102	4822 051 20392	3k9 5% 0.1W
3103	4822 051 20392	3k9 5% 0.1W
3104	4822 050 21303	13k 1% 0.6W
3105	4822 050 21303	13k 1% 0.6W
3106	4822 050 21303	13k 1% 0.6W
3107	4822 050 21303	13k 1% 0.6W
3108	4822 050 26492	6k49 1% 0.6W
3109	4822 050 26492	6k49 1% 0.6W
3110	4822 051 20184	180k 5% 0.1W
3111	4822 051 20184	180k 5% 0.1W
3112	4822 051 20223	22k 5% 0.1W
3113	4822 051 20223	22k 5% 0.1W
3114	4822 050 23303	33k 1% 0.6W
3115	4822 051 20333	33k 5% 0.1W
3116	4822 051 20333	33k 5% 0.1W
3117	4822 051 20333	33k 5% 0.1W
3118	4822 051 20273	27k 5% 0.1W
3119	4822 051 20273	27k 5% 0.1W
3120	4822 051 20273	27k 5% 0.1W
3121	4822 051 20273	27k 5% 0.1W
3122	4822 117 10834	47k 1% 0.1W
3123	4822 117 10834	47k 1% 0.1W
3124	4822 116 83933	15k 1% 0.1W
3125	4822 116 83933	15k 1% 0.1W
3126	4822 051 10102	1k 2% 0.25W
3127	4822 051 10102	1k 2% 0.25W
3128	4822 051 20332	3k3 5% 0.1W
3129	4822 051 20332	3k3 5% 0.1W
3130	4822 117 10833	10k 1% 0.1W
3131	4822 117 10833	10k 1% 0.1W
3132	4822 051 20683	68k 5% 0.1W
3133	4822 051 20683	68k 5% 0.1W
3134	4822 117 10965	18k 1% 0.1W
3135	4822 117 10965	18k 1% 0.1W
3136	4822 117 10965	18k 1% 0.1W
3137	4822 117 10965	18k 1% 0.1W
3138	4822 117 11507	6k8 1% 0.1W

3139	4822 117 11507	6k8 1% 0.1W
3140	4822 051 10102	1k 2% 0.25W
3141	4822 051 10102	1k 2% 0.25W
3142	4822 051 20474	470k 5% 0.1W
3143	4822 117 10837	100k 1% 0.1W
3144	4822 051 20333	33k 5% 0.1W
3145	4822 116 83933	15k 1% 0.1W
3150	4822 051 20333	33k 5% 0.1W
3151	4822 116 83933	15k 1% 0.1W
3152	4822 116 83933	15k 1% 0.1W
3153	4822 051 20333	33k 5% 0.1W
3154	4822 051 20822	8k2 5% 0.1W
3155	4822 051 20392	3k9 5% 0.1W
3156	4822 051 20822	8k2 5% 0.1W
3157	4822 100 11676	10k 30% 0.2W
3158	4822 051 20471	470Ω 5% 0.1W
3159	4822 051 20471	470Ω 5% 0.1W
3160	4822 116 52175	100Ω 5% 0.5W
3161	4822 116 52175	100Ω 5% 0.5W
3162	4822 051 20008	jumper 0805
3165	4822 051 20008	jumper 0805
3168	4822 051 20332	3k3 5% 0.1W
3169	4822 117 10834	47k 1% 0.1W
3170	4822 051 20472	4k7 5% 0.1W
3171	4822 051 20391	390Ω 5% 0.1W
3172	4822 051 10102	1k 2% 0.25W
3175	4822 117 10837	100k 1% 0.1W
3176	4822 051 10102	1k 2% 0.25W
3177	4822 051 20223	22k 5% 0.1W
3180	4822 117 13579	220k 1% 0.1W
3181	4822 117 13579	220k 1% 0.1W
3182	4822 051 20474	470k 5% 0.1W
3184	4822 051 10102	1k 2% 0.25W
3185	4822 117 10833	10k 1% 0.1W
3188	4822 051 20472	4k7 5% 0.1W
3189	4822 117 10837	100k 1% 0.1W
3190	4822 051 20472	4k7 5% 0.1W
3191	4822 051 20223	22k 5% 0.1W
3193	4822 117 10834	47k 1% 0.1W
3194	4822 051 20008	Jumper 0805
3196	4822 051 20472	4k7 5% 0.1W
3197	4822 051 20472	4k7 5% 0.1W
3198	4822 051 20008	jumper 1206
3199	4822 051 20561	560Ω 5% 0.1W
3199	4822 051 20562	5k6 5% 0.1W
3200	4822 051 20472	4k7 5% 0.1W
3201	4822 051 20471	470Ω 5% 0.1W
3202	4822 051 20471	470Ω 5% 0.1W
3203	4822 051 10102	1k 2% 0.25W
3204	4822 051 10102	1k 2% 0.25W
3205	4822 051 10102	1k 2% 0.25W
3206	4822 051 20471	470Ω 5% 0.1W
3207	4822 117 10833	10k 1% 0.1W
4xxx	4822 051 10008	jumper 1206
4xxx	4822 051 20008	jumper 0805

5101	2422 543 01048	Crystal 12.8MHz
5102	2422 535 94915	33nH 5%
5105	2422 535 94828	27nH 5%
5107	4822 157 71206	Bead 100MHz 600Ω

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6101	4822 130 34121	BAX18
6102	4822 130 61219	BZX79-B10
6106	4822 130 11423	PLVA2656A
6107	4822 130 83757	BAS216

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7101	9322 137 78682	NJM2060D
7102	9338 436 90602	SA572N
7103	4822 209 70157	NJM4560DD
7105	3104 218 80310	μP S83C751-4N24
7106	4822 209 17338	L78L08ACZ
7108	4822 130 60373	BC856B
7109	4822 209 83357	NJM4560M
7110	4822 130 60511	BC847B
7112	9337 140 10653	74HC4060D
7113	4822 209 60792	74HC4053D
7114	4822 130 60511	BC847B
7115	4822 209 83357	NJM4560M
7116	4822 130 60511	BC847B
7117	4822 130 60373	BC856B

**Wireless Receiver [U]****Various**

0438	3104 217 06200	Receiver panel 433MHz
0438	3104 217 06050	Receiver panel 864MHz
1701	4822 277 11671	Slide switch 1P 7pos

**-II-**

2701	5322 122 32654	22nF 10% 63V
2702	5322 122 32654	22nF 10% 63V
2703	4822 126 13751	47nF 10% 63V
2704	4822 126 13473	220nF 80-20% 50V
2705	4822 126 14585	100nF 10% 50V
2706	5322 122 32654	22nF 10% 63V
2707	4822 126 14585	100nF 10% 50V
2708	4822 124 40769	4.7µF 20% 100V
2709	5322 122 32531	100pF 5% 50V
2710	4822 126 13473	220nF 80-20% 50V
2711	4822 121 41854	150nF 5% 63V
2712	4822 126 13188	15nF 5% 63V
2713	2222 464 90014	180pF 2% 630V
2714	4822 124 41751	47µF 20% 50V
2715	4822 124 40769	4.7µF 20% 100V
2716	4822 126 13473	220nF 80-20% 50V
2717	5322 122 32654	22nF 10% 63V
2718	4822 126 13473	220nF 80-20% 50V
2719	4822 122 33216	270pF 5% 50V
2720	4822 122 33216	270pF 5% 50V
2721	4822 126 13473	220nF 80-20% 50V
2722	4822 126 14585	100nF 10% 50V
2723	4822 124 22652	2.2µF 20% 50V
2731	4822 124 22652	2.2µF 20% 50V
2741	4822 124 22652	2.2µF 20% 50V
2750	4822 126 13473	220nF 80-20% 50V
2751	5322 122 32531	100pF 5% 50V
2752	4822 126 13473	220nF 80-20% 50V
2753	5322 122 32654	22nF 10% 63V
2754	4822 124 40769	4.7µF 20% 100V
2755	5322 122 32654	22nF 10% 63V
2762	4822 126 13692	47pF 1% 63V
2770	4822 124 40769	4.7µF 20% 100V
2771	5322 122 32654	22nF 10% 63V
2772	4822 124 22652	2.2µF 20% 50V
2773	4822 124 22652	2.2µF 20% 50V
2774	4822 121 51319	1µF 10% 63V
2775	5322 122 32654	22nF 10% 63V
2776	4822 124 22652	2.2µF 20% 50V
2777	4822 124 22652	2.2µF 20% 50V
2778	4822 121 51319	1µF 10% 63V
2779	5322 122 32654	22nF 10% 63V
2780	4822 124 40248	10µF 20% 63V
2781	4822 124 40769	4.7µF 20% 100V
2782	5322 126 10223	4.7nF 10% 63V
2783	4822 124 22652	2.2µF 20% 50V
2786	4822 124 40248	10µF 20% 63V
2787	4822 124 40769	4.7µF 20% 100V
2788	5322 126 10223	4.7nF 10% 63V
2789	4822 124 22652	2.2µF 20% 50V
2790	4822 126 14585	100nF 10% 50V
2792	4822 122 33575	220pF 5% 63V
2793	4822 122 33575	220pF 5% 63V
2794	4822 122 33575	220pF 5% 63V

**□**

3701	4822 051 20471	470Ω 5% 0.1W
3702	4822 117 13577	330Ω 1% 1.25W
3703	4822 117 11449	2k2 1% 0.1W
3704	4822 051 20471	470Ω 5% 0.1W
3705	4822 051 20101	100Ω 5% 0.1W
3706	4822 051 20332	3k3 5% 0.1W
3707	4822 117 13577	330Ω 1% 1.25W
3708	4822 051 20478	407 5% 0.1W
3709	4822 117 11448	180Ω 1% 0.1W
3710	4822 051 20391	390Ω 5% 0.1W
3711	4822 100 12159	100k 30%
3712	4822 117 10833	10k 1% 0.1W
3713	4822 117 10833	10k 1% 0.1W
3714	4822 051 20223	22k 5% 0.1W
3715	4822 117 11148	56k 1% 0.1W
3716	4822 051 20332	3k3 5% 0.1W
3717	4822 116 52264	27k 5% 0.5W
3718	4822 116 52264	27k 5% 0.5W
3719	4822 117 10837	100k 1% 0.1W
3720	4822 117 10837	100k 1% 0.1W
3721	4822 051 20273	27k 5% 0.1W
3722	4822 051 20472	4k7 5% 0.1W
3723	4822 051 20273	27k 5% 0.1W
3723	4822 117 10965	18k 1% 0.1W

3724	4822 051 20393	39k 5% 0.1W
3724	4822 117 10837	100k 1% 0.1W
3726	4822 117 11449	2k2 1% 0.1W
3727	4822 051 20562	5k6 5% 0.1W
3728	4822 051 20562	5k6 5% 0.1W
3729	4822 051 20474	470k 5% 0.1W
3730	4822 051 20223	22k 5% 0.1W
3731	4822 051 20683	68k 5% 0.1W
3732	4822 051 20562	5k6 5% 0.1W
3733	4822 051 20392	3k9 5% 0.1W
3734	4822 051 20561	560Ω 5% 0.1W
3735	4822 051 20391	390Ω 5% 0.1W
3736	2120 363 90145	22K 30%
3737	4822 051 20472	4k7 5% 0.1W
3738	4822 051 20472	4k7 5% 0.1W
3739	4822 117 11449	2k2 1% 0.1W
3740	4822 051 20223	22k 5% 0.1W
3741	4822 117 11449	2k2 1% 0.1W
3742	4822 051 20562	5k6 5% 0.1W
3743	4822 051 20392	3k9 5% 0.1W
3744	4822 051 20561	560Ω 5% 0.1W
3745	4822 051 20391	390Ω 5% 0.1W
3746	4822 051 20472	4k7 5% 0.1W
3747	4822 051 20101	100Ω 5% 0.1W
3748	4822 117 11449	2k2 1% 0.1W
3749	4822 117 11449	2k2 1% 0.1W
3750	4822 051 10102	1k 2% 0.25W
3751	4822 051 20472	4k7 5% 0.1W
3752	4822 051 20101	100Ω 5% 0.1W
3753	4822 117 10833	10k 1% 0.1W
3754	4822 117 10837	100k 1% 0.1W
3755	4822 117 10833	10k 1% 0.1W
3756	4822 117 10833	10k 1% 0.1W
3757	4822 117 10833	10k 1% 0.1W
3758	4822 117 10834	47k 1% 0.1W
3759	4822 117 10834	47k 1% 0.1W
3760	4822 051 20472	4k7 5% 0.1W
3761	4822 051 20101	100Ω 5% 0.1W
3762	4822 117 10833	10k 1% 0.1W
3763	4822 117 10833	10k 1% 0.1W
3771	4822 117 10833	10k 1% 0.1W
3772	4822 051 20332	3k3 5% 0.1W
3775	4822 117 10833	10k 1% 0.1W
3776	4822 051 20332	3k3 5% 0.1W
3778	4822 051 10102	1k 2% 0.25W
3779	4822 051 10102	1k 2% 0.25W
3780	4822 117 10837	100k 1% 0.1W
3781	4822 117 10965	18k 1% 0.1W
3782	4822 117 10834	47k 1% 0.1W
3783	4822 117 11449	2k2 1% 0.1W
3786	4822 117 10837	100k 1% 0.1W
3787	4822 117 10965	18k 1% 0.1W
3788	4822 117 10834	47k 1% 0.1W
3789	4822 117 11449	2k2 1% 0.1W
3792	4822 117 10837	100k 1% 0.1W
3793	4822 117 10837	100k 1% 0.1W
3794	4822 051 20472	4k7 5% 0.1W
3795	4822 117 10833	10k 1% 0.1W
3796	4822 051 20561	560Ω 5% 0.1W
3796	4822 051 20562	5k6 5% 0.1W
42xx	4822 051 10008	Jumper 1206
43xx	4822 051 20008	Jumper 0805

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5701	2422 549 43868	Coil var. 10.7MHz
5702	4822 157 11668	Filter MPX 20KHZ
5703	4822 157 11668	Filter MPX 20KHZ
5704	4822 242 72527	Crystal 4 MHz
5705	4822 157 71206	Bead 100MHz 600Ω
5706	4822 242 70665	Filter 10.7M
5707	4822 242 70665	Filter 10.7M
5708	4822 157 11172	68nH 10%

**→**

6701	5322 130 34331	BAV70
6702	4822 130 34233	BZX79-B5V1
6703	4822 130 83757	BAS216
6704	4822 130 30621	1N4148
6705	4822 130 30621	1N4148

**⊗**

7702	9350 394 00112	TDA1578A/V6
7703	4822 130 60373	BC856B
7704	4822 130 60511	BC847B
7705	4822 130 60511	BC847B
7706	4822 130 60511	BC847B
7707	5322 130 42718	BFS20
7708	3104 218 80290	µProcessor
7709	9338 436 90602	SA572N

7710	4822 209 70157	NJM4560DD
7711	4822 209 17338	L78L08ACZ
7712	4822 130 41327	BC327-40
7713	4822 130 60511	BC847B
7714	4822 209 15263	L78L06ACZ
7717	4822 130 60511	BC847B
7718	4822 130 60373	BC856B
7719	4822 130 60511	BC847B
7720	4822 130 60511	BC847B

**Surround Sound Supply + Amplifier [W1] [W2] [W3] [W4]****Various**

0440	4303 308 35230	Amplifier board
0011	4303 308 76220	Led holder LU53-080
0012	9390 288 60112	Spring
0013	3104 214 34571	Power button
1101	4822 267 10748	3P Male
1201	2422 025 14044	3P Male
1202	4822 265 30734	4P
1203	4303 308 99380	2P
1204	3143 008 90671	Mains switch
1205	4822 265 11253	Fuse holder
1206	4822 070 32002	Fuse 2A
1301	2422 025 04849	2P Male
1302	4822 265 10872	2P Male
1303	4822 265 30735	5P Male
1304	4822 267 10735	3P Male
1305	4822 265 41392	7P Male
1306	4822 267 31014	Headphone socket
1307	4303 308 94460	Slide switch 2P
1401	4822 265 30735	5P Male
1402	4822 267 10735	3P Male
1403	2422 025 04851	3P Male
1404	4822 267 10565	4P Male
1405	2422 025 10647	1P Male
1406	2422 025 04849	2P Male
1407	2422 025 04849	2P Male
1408	4822 071 52502	Fuse 2.5A
1409	4822 071 52502	Fuse 2.5A
8000	3139 110 30840	Cable 180mm/description>
8002	4303 301 91570	Cable 7P shielded
8003	4303 301 91580	Cable 3P shielded
8004	4303 301 00380	Cable 2P shielded
8005	3139 110 30730	Cable 3P shielded

**-II-**

2201	4822 126 13838	100nF 80-20% 50V
2202	4822 126 11958	2.2nF 10% 500V
2203	4822 126 13841	1nF 20% 250V
2204	4822 122 33127	2.2nF 10% 63V
2205	5322 121 42498	680nF 5% 63V
2206	3143 018 90900	100pF 10% 1kV
2207	2222 044 36478	4.7µF 20% 400V
2208	2222 336 20105	1µF 20 275V
2209	4822 124 12056	1000µF 20% 35V
2210	4822 124 40196	220µF 20% 16V
2211	4822 126 13838	100nF 80-20% 50V
2301	4822 126 14043	1µF +80-20% 16V
2302	4822 126 14043	1µF +80-20% 16V
2303	4822 126 13751	47nF 10% 63V
2304	4822 126 13751	47nF 10% 63V
2401	4822 124 12056	1000µF 20% 35V
2402	4822 124 11912	220µF 20% 6,3V
2403	4822 124 11912	220µF 20% 6,3V
2404	4822 124 42367	3300µF 20% 35V
2405	4822 124 42367	3300µF 20% 35V
2406	4822 124 40769	4.7µF 20% 100V
2407	4822 124 40207	100µF 20% 25V
2408	4822 124 81151	22µF 50V
2409	4822 122 31947	100nF 20% 63V
2410	4822 122 31947	100nF 20% 63V
2411	4822 122 31947	100nF 20% 63V
2412	4822 122 31947	100nF 20% 63V
2413	4822 122 31947	100nF 20% 63V
2414	4822 122 31947	100nF 20% 63V
2415	4822 126 13473	220nF 80-20% 50V
2416	4822 126 13473	220nF 80-20% 50V
2420	5322 122 32268	470pF 10% 50V
2421	4822 126 13473	220nF 80-20% 50V
2422		

2433	5322 122 32654	22nF 10% 63V
2434	5322 122 32654	22nF 10% 63V
2435	5322 122 32531	100pF 5% 50V
2436	5322 122 32531	100pF 5% 50V
2437	4822 126 13838	100nF 80-20% 50V
2438	4822 126 13838	100nF 80-20% 50V
2439	4822 126 13838	100nF 80-20% 50V
2440	4822 126 13838	100nF 80-20% 50V
2441	4822 126 14043	1µF +80-20% 16V
2442	4822 126 13473	220nF 80-20% 50V
2443	4822 126 13482	470nF 80/20% 16V
2444	4822 126 13691	27pF 1% 63V
2445	4822 126 13691	27pF 1% 63V
2446	4822 126 13473	220nF 80-20% 50V
2447	4822 126 13838	100nF 80-20% 50V
2448	4822 126 13838	100nF 80-20% 50V
2449	4822 126 13838	100nF 80-20% 50V
2450	4822 126 13838	100nF 80-20% 50V
2451	4822 126 13473	220nF 80-20% 50V
2452	5322 122 32531	100pF 5% 50V
2453	5322 122 32531	100pF 5% 50V
2454	5322 122 32531	100pF 5% 50V
2455	5322 122 32531	100pF 5% 50V
2456	4822 122 33127	2,2nF 10% 63V



3201	4822 051 52702	2k7 1% 0,125W
3202	4822 053 21475	4M7 5% 0,5W
3203	4822 053 21225	2M2 5% 0,5W
3204	4822 051 52702	2k7 1% 0,125W
3205	4822 051 20121	120Ω 5% 0,1W
3206	4822 117 11454	820Ω 1% 0,1W
3207	4822 053 20106	10M 5% 0,25W
3208	4822 116 83883	470Ω 5% 0,5W
3209	4822 117 11449	2k2 1% 0,1W
3210	4822 117 11449	2k2 1% 0,1W
3211	4822 117 10833	10k 1% 0,1W
3212	4822 051 10472	4k7 2% 0,25W
3214	4822 117 10833	10k 1% 0,1W
3215	4822 116 52195	47Ω 5% 0,5W
3216	4822 116 52182	15Ω 5% 0,5W
3217	4822 116 52182	15Ω 5% 0,5W
3219	4822 052 10108	1Ω 5% 0,33W
3220	4822 052 10108	1Ω 5% 0,33W
3221	4822 052 10109	10Ω 5% 0,33W
3222	4822 052 10471	470Ω 5% 0,33W
3223	4822 051 20471	470Ω 5% 0,1W
3301	4822 116 83933	15k 1% 0,1W
3302	4822 116 83933	15k 1% 0,1W
3303	4822 117 11149	82k 1% 0,1W
3304	4822 117 11149	82k 1% 0,1W
3305	4822 051 20008	Jumper 0805
3306	4822 051 20008	Jumper 0805
3307	4822 051 20223	22k 5% 0,1W
3308	4822 051 20223	22k 5% 0,1W
3401	4822 050 23301	330Ω 1% 0,6W
3402	4822 050 23301	330Ω 1% 0,6W
3403	4822 050 23301	330Ω 1% 0,6W
3404	4822 050 23301	330Ω 1% 0,6W
3405	4822 117 11507	6k8 1% 0,1W
3406	4822 051 20822	8k2 5% 0,1W
3407	4822 051 20472	4k7 5% 0,1W
3409	4822 051 20008	Jumper 0805
3410	4822 117 10833	10k 1% 0,1W
3411	4822 117 11507	6k8 1% 0,1W
3412	4822 051 20822	8k2 5% 0,1W
3413	4822 051 20472	4k7 5% 0,1W
3415	4822 051 20008	Jumper 0805
3416	4822 117 10833	10k 1% 0,1W
3419	4822 116 83961	6k8 5%
3420	4822 117 10834	47k 1% 0,1W
3421	4822 117 10834	47k 1% 0,1W
3422	4822 051 20472	4k7 5% 0,1W
3423	4822 117 10834	47k 1% 0,1W
3424	4822 117 13579	220k 1% 0,1W
3425	4822 050 21003	10k 1% 0,6W
3426	4822 051 20334	330k 5% 0,1W
3427	4822 117 10837	100k 1% 0,1W
3428	4822 117 10837	100k 1% 0,1W
3429	4822 117 10833	10k 1% 0,1W
3430	4822 117 10833	10k 1% 0,1W
3431	4822 117 10833	10k 1% 0,1W
3432	4822 051 20335	3M3 5% 0,1W
3433	4822 051 20474	470k 5% 0,1W
3434	4822 117 11149	82k 1% 0,1W
3435	4822 051 20474	470k 5% 0,1W
3436	4822 051 20223	22k 5% 0,1W
3437	4822 051 20472	4k7 5% 0,1W
3438	4822 117 10833	10k 1% 0,1W
3439	4822 116 52195	47Ω 5% 0,5W
3440	4822 117 10834	47k 1% 0,1W
3441	4822 117 10834	47k 1% 0,1W

3442	4822 117 11449	2k2 1% 0,1W
3443	4822 051 20472	4k7 5% 0,1W
3444	4822 051 20562	5k6 5% 0,1W
3445	4822 117 10833	10k 1% 0,1W
3446	4822 117 10833	10k 1% 0,1W
3447	4822 117 10833	10k 1% 0,1W
3448	4822 117 10837	100k 1% 0,1W
3449	4822 117 10833	10k 1% 0,1W
3450	4822 117 11449	2k2 1% 0,1W
3452	4822 052 10828	8,2Ω 5% 0,33W
3453	4822 052 10828	8,2Ω 5% 0,33W
3458	4822 051 20472	4k7 5% 0,1W
3459	4822 051 20472	4k7 5% 0,1W
3460	4822 117 10833	10k 1% 0,1W
3461	4822 051 20102	1k 5% 0,1W
3462	4822 051 20102	1k 5% 0,1W
42xx	4822 051 10008	Jumper 1206
43xx	4822 051 20008	Jumper 0805
44xx	4822 051 20008	Jumper 1206 (except see next line)
4408	4822 051 20008	Jumper 0805
4409	4822 051 20008	Jumper 0805

5201	4303 308 75810	Coil
5202	2422 535 97353	680µH 10%
5203	2422 535 97353	680µH 10%
5204	3128 138 38610	Standby transformer
5205	4822 157 70436	8,2µH
5206	4303 308 75820	Relay DC 12V



6501	9337 175 71682	TLSV5100
6201	4822 130 31878	1N4003G
6202	5322 130 31938	BYV27-200
6203	4822 130 83338	LL4148
6204	4822 130 83338	LL4148
6205	4822 130 83338	LL4148
6206	4822 130 83147	DF06M
6207	9338 872 80673	BZX55-F22
6208	4822 130 34281	BZX79-B15
6209	4822 130 30842	BAV21
6210	4822 130 83338	LL4148
6211	4822 130 11421	BT151X-500R
6212	9339 530 90685	TZM-C20
6401	4822 130 30862	BZX79-B9V1
6402	4822 130 30862	BZX79-B9V1
6403	4822 130 34278	BZX79-B6V8
6404	4822 130 34173	BZX79-B5V6
6405	4822 130 31878	1N4003G
6406	4822 130 31878	1N4003G
6407	4822 130 31878	1N4003G
6408	4822 130 31878	1N4003G
6409	4822 130 31878	1N4003G
6410	4822 130 31878	1N4003G
6411	4822 130 31878	1N4003G
6412	4822 130 31878	1N4003G
6413	4822 130 31878	1N4003G
6414	4822 130 31878	1N4003G
6415	4822 130 31878	1N4003G
6416	4822 130 31878	1N4003G
6417	4822 130 31878	1N4003G
6418	4822 130 31878	1N4003G
6421	4822 130 83338	LL4148
6422	4822 130 83338	LL4148
6423	4822 130 83338	LL4148
6424	4822 130 83338	LL4148
6425	4822 130 83338	LL4148
6426	4822 130 83338	LL4148
6427	4822 130 83338	LL4148
6428	4822 130 30621	1N4148
6429	4822 130 83338	LL4148
6430	4822 130 83338	LL4148
6431	4822 130 83338	LL4148
6432	4822 130 83338	LL4148
6433	4822 130 83338	LL4148
6434	4822 130 31878	1N4003G
6436	4822 130 31878	1N4003G
6437	4822 130 30621	1N4148
6501	9337 175 71682	TLSV5100



7201	4822 209 15867	L4940V12
7203	4822 130 11418	TCDT1102G
7204	4822 130 44568	BC557B
7205	4822 130 60511	BC847B
7206	4822 130 44503	BC547C
7207	4822 130 11417	STP3NB60FP
7401	4822 209 32641	TDA2616Q

7402	4822 209 30095	LM833D
7403	4822 209 30095	LM833D
7404	5322 209 82941	LM358D
7405	5322 209 70225	LM393D
7410	4822 130 60373	BC857B
7411	4822 130 60373	BC857B
7412	4822 130 60511	BC847B
7413	4822 130 60511	BC847B
7414	4822 130 40981	BC337-25
7415	4822 130 60511	BC847B
7416	4822 130 60511	BC847B
7417	4822 130 60511	BC847B