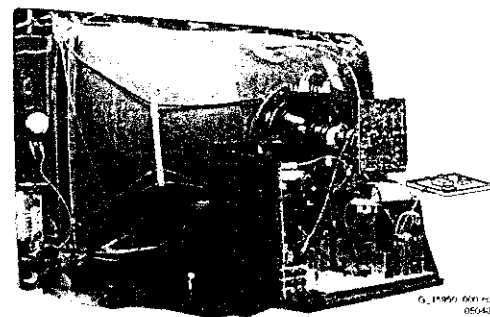


Service
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Service Manual

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1. Technical Specifications, Connections, and Chassis Overview

Index of this chapter:

- 1.1 Technical Specifications
- 1.2 Connection Overview
- 1.3 Chassis Overview

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

1.1 Technical Specifications

1.1.1 Vision

- Display type : CRT, DV, RF
- Screen size : 29" (72 cm), 4.3
- Tuning system : PLL
- TV Colour systems : PAL B/G, D/K, L
- Video playback : SECAM B/G, D/K, L, NTSC M/N 3.58, 4.43
- PAL B/G : PAL B/G
- SECAM L : SECAM L
- 100 presets : 100 presets
- Supported video formats : 640x480 - 11H, 720x576 - 11H, 640x480 - 2H, 720x576 - 2H, 1920x1080 - 2H, 1280x720p - 3H

- UHF : UHF
- VHF : VHF
- S-band : S-band
- Hyper-band : Hyper-band

1.1.2 Sound

- Sound systems : FM-mono, AM-mono, FM-sterio B/G, NICAM B/G, D/K, L, AV Stereo
- Maximum power (W_{RMS}) : 2 x 10

1.1.3 Miscellaneous

- Power supply : 220 - 240
- Main voltage (V_{AC}) : 50 / 60
- Ambient conditions :
 - Temperature range (°C) : -5 to +40
 - Maximum humidity : 95% R.H.
- Power consumption :
 - Normal operation (W) : ~ 110 (29")
 - Stand-by (W) : ~ 115 (32")
- Dimensions (WxHxD cm) : 74.0x58.3x48.4 (29")
- Weight (kg) : 86.2x55.4x52.8 (32")

1.2 Connection Overview

Note: The following connector colour abbreviations are used (acc. to DIN/IEC 757): Bk= Black, Bu= Blue, Gn= Green, Gy= Grey, Rd= Red, Wh= White, and Ye= Yellow.

1.2.1 Front / Side Control

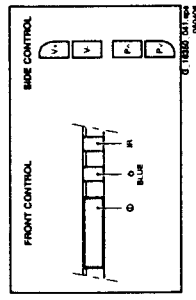


Figure 1-1 Front / side control

1.2.2 Rear / Side Connections

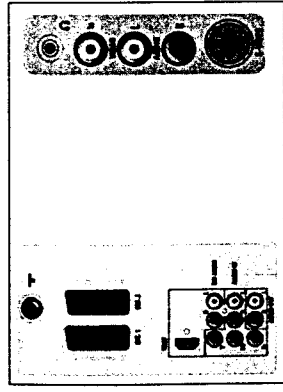


Figure 1-2 Rear and side connections

- Aerial - In** : IEC-type (EU) Coax, 75 ohm
- Cinch: Video CVBS - In, Audio - In** : Video CVBS 1 V_{pp} / 75 ohm, Audio L 0.5 V_{RMS} / 10 kohm, Audio R 0.5 V_{RMS} / 10 kohm
- SVHS (Hosiden): Video Y/C - In** : Ground Y, Ground C, Video Y 1 V_{pp} / 75 ohm, Video C 0.3 V_{pp} / 75 ohm
- Mini Jack: Audio Headphone - Out** : Bk - Headphone 32 - 600 ohm / 10 mW, 1 - SDAS, 2 - SCL-S, 3 - Ground

EXT1: Video RGB - In, CVBS - In/Out, Audio - In/Out

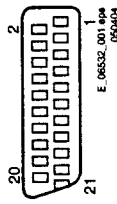


Figure 1-3 SCART connector

- 1 - Audio R 0.5 V_{RMS} / 1 kohm
- 2 - Audio R 0.5 V_{RMS} / 10 kohm
- 3 - Audio L 0.5 V_{RMS} / 1 kohm
- 4 - Ground Audio
- 5 - Ground Blue
- 6 - Audio L 0.5 V_{RMS} / 10 kohm
- 7 - Video Blue/U 0.7 V_{pp} / 75 ohm
- 8 - Function Select 0 - 2 V: INT, 4.5 - 7 V: EXT 16.9, 9.5 - 12 V: EXT 4.3
- 9 - Ground Green
- 10 - n.c.
- 11 - Video Green/Y 0.7 V_{pp} / 75 ohm
- 12 - n.c.
- 13 - Ground Red
- 14 - Ground FBL
- 15 - Video Red/V 0.7 V_{pp} / 75 ohm
- 16 - Status/FBL 1 - 3 V: EXT / 75 ohm, 0 - 0.4 V: INT
- 17 - Ground Video
- 18 - Ground Video
- 19 - Video CVBS 1 V_{pp} / 75 ohm
- 20 - Video CVBS 1 V_{pp} / 75 ohm
- 21 - Shield

EXT2: Video Y/C - In, CVBS - In/Out, Audio - In/Out

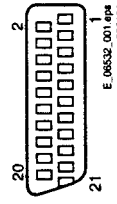


Figure 1-4 SCART connector

- 1 - Audio R 0.5 V_{RMS} / 1 kohm
- 2 - Audio R 0.5 V_{RMS} / 10 kohm
- 3 - Audio L 0.5 V_{RMS} / 1 kohm
- 4 - Ground Audio
- 5 - Ground Blue
- 6 - Audio L 0.5 V_{RMS} / 10 kohm
- 7 - C-FRONT 0.7 V_{pp} / 75 ohm
- 8 - Function Select 0 - 2 V: INT, 4.5 - 7 V: EXT 16.9, 9.5 - 12 V: EXT 4.3
- 9 - Ground Green
- 10 - Easylink P50
- 11 - n.c.
- 12 - n.c.
- 13 - Ground Red
- 14 - Ground Data 0.7 V_{pp} / 75 ohm
- 15 - C
- 16 - n.c.
- 17 - Ground Video
- 18 - Ground FBL
- 19 - Video CVBS 1 V_{pp} / 75 ohm
- 20 - Video CVBSY 1 V_{pp} / 75 ohm
- 21 - Shield

HDMI: Digital Video, Digital Audio - In



Figure 1-5 HDMI (Type A) connector

- 1 - D2+
- 2 - Shield
- 3 - D2+
- 4 - D1+
- 5 - Shield
- 6 - D1+
- 7 - D0+
- 8 - Shield
- 9 - D0+
- 10 - CLK+
- 11 - Shield
- 12 - CLK-
- 13 - n.c.
- 14 - n.c.
- 15 - DDC, SCL
- 16 - DDC, SDA
- 17 - Ground
- 18 - +5V
- 19 - HPD
- 20 - Ground

- Cinch: Video Y/C - In** : Video Y 1 V_{pp} / 75 ohm, Video Pb 0.7 V_{pp} / 75 ohm, Video Pr 0.7 V_{pp} / 75 ohm
- Cinch: DVI Audio - In** : Rd - Audio - R 0.5 V_{RMS} / 10 kohm, Wh - Audio - L 0.5 V_{RMS} / 10 kohm
- Cinch: HD/CI Audio - In** : Rd - Audio - R 0.5 V_{RMS} / 10 kohm, Wh - Audio - L 0.5 V_{RMS} / 10 kohm
- Cinch: Audio - Out** : Rd - Audio - R 0.5 V_{RMS} / 10 kohm, Wh - Audio - L 0.5 V_{RMS} / 10 kohm

- Hot Plug Detect** : Gnd

1.3 Chassis Overview

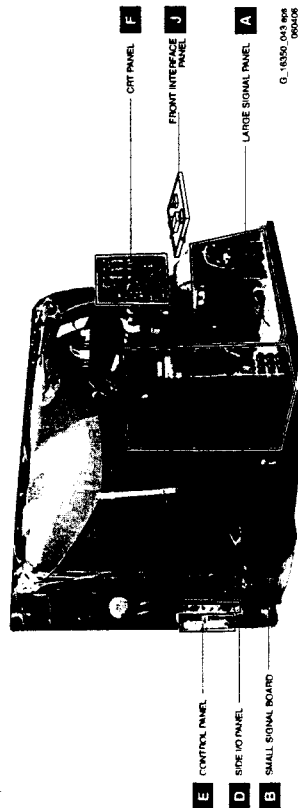


Figure 1-5 PWB location

2. Safety Instructions, Warnings, and Notes

Index of this chapter:

- 2.1 Safety Instructions
- 2.2 Maintenance Instructions
- 2.3 Warnings
- 2.4 Notes

2.1 Safety Instructions

Safety regulations require the following during a repair:

- Connect the set to the Mains/AC Power via an isolation transformer (> 800 VA).
- 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, the set must be returned 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 flows. 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.
- Pins of the connector with wires to the deflection coil.
- 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/AC Power lead for external damage.
- Check the strain relief of the Mains/AC Power 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/AC Power plug and the secondary side (only for sets that have a Mains/AC Power isolated power supply):
 1. Unplug the Mains/AC Power cord and connect a wire between the two pins of the Mains/AC Power plug.
 2. Set the Mains/AC Power switch to the "on" position (keep the Mains/AC Power cord unplugged!).
 3. Measure the resistance value between the pins of the Mains/AC Power plug and the metal shielding of the tuner or the aerial connection on the set. The reading should be between 4.5 Mohm and 12 Mohm.
 4. Switch "off" the set, and remove the wire between the two pins of the Mains/AC Power plug.
- Check the cabinet for defects, to prevent touching of any inner parts by the customer.

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 Figure "Discharge picture tube". To discharge the picture tube, use a high voltage probe and a multi-meter (position V_{AC}). Discharge until the meter reading is 0 V (after approx. 30 s).

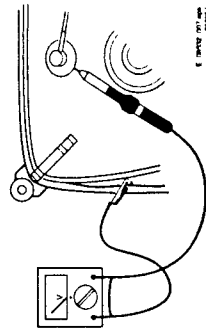


Figure 2-1 Discharge picture tube

- All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD Δ). 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 same potential. Available ESD protection equipment:
 - Complete kit ESD3 (small lab/panel, wristband, connection box, extension cable and earth cable) 4822 310 10671.
 - Wristband tester 4822 344 13999.
- Be careful during measurements in the high voltage section.
- Never replace modules or other components while the unit is switched "on".
- When you align the set, use plastic rather than metal tools. This will prevent any short circuits and prevents circuits from becoming unstable.

2.4 Notes

2.4.1 General

- Measure the voltages and waveforms with regard to the chassis (= tuner) ground (L) or hot ground (N), 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 for PAL, or 61.25 MHz for NTSC (channel 3).
- Where necessary, measure the waveforms and voltages with ("I") and without ("X") aerial signal. Measure the voltages in the power supply section both in normal operation (I) and in stand-by (X). These values are indicated by means of the appropriate symbols.
- 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.

2.4.2 Schematic Notes

- All resistor values are in ohms, and the value multiplier is often used to indicate the decimal point location (e.g. 2K2 indicates 2.2 kohm).
- Resistor values with no multiplier may be indicated with either an "E" or an "R" (e.g. 220E or 220R indicates 220 ohm).
- All capacitor values are given in micro-farads ($\mu = 10^{-6}$), nano-farads ($n = 10^{-9}$), or pico-farads ($p = 10^{-12}$).
- Capacitor values may also use the value multiplier as the decimal point indication (e.g. 2p2 indicates 2.2 pF).
- An "astisk" (*) indicates component usage varies. Refer to the diversity tables for the correct values.
- The correct component values are listed in the Spare Parts List. Therefore, always check this list when there is any doubt.

2.4.3 Rework on BGA (Ball Grid Array) ICs

General

Although (LFBGA) assembly yields are very high, there may still be a requirement for component rework. By rework, we mean the process of removing the component from the PWB and replacing it with a new component. If an (LFBGA) is removed from a PWB, the solder balls of the component are deformed drastically so the removed (LFBGA) has to be discarded.

Device Removal

As is the case with any component that is being removed, it is essential when removing an (LFBGA), that the board, tracks, solder lands, or surrounding components are not damaged. To remove an (LFBGA), the board must be uniformly heated to a temperature close to the reflow soldering temperature. A uniform temperature reduces the risk of warping the PWB. To do this, we recommend that the board is heated until it is certain that all the joints are molten. Then carefully pull the component off the board with a vacuum nozzle. For the appropriate temperature profiles, see the IC data sheet.

Area Preparation

When the component has been removed, the vacant IC area must be cleaned before replacing the (LFBGA). Removing an IC often leaves varying amounts of solder on the mounting lands. This excessive solder can be removed with either a solder sucker or solder wick. The remaining flux can be removed with a brush and cleaning agent. After the board is properly cleaned and inspected, apply flux on the solder lands and on the connection balls of the (LFBGA). Note: Do not apply solder paste, as this has been shown to result in problems during re-soldering.

Device Replacement

The last step in the repair process is to solder the new component on the board. Ideally, the (LFBGA) should be aligned under a microscope or magnifying glass. If this is not possible, try to align the (LFBGA) with any board markers. So as not to damage neighbouring components, it may be necessary to reduce some temperatures and times.

More Information

For more information on how to handle BGA devices, visit this URL: www.anyourservice.ce.philips.com (needs subscription, not available for all regions). After login, select "Magazine", then go to "Repair downloads". Here you will find information on how to deal with BGA-ICs.

- For sets produced before 1.1.2005, containing leaded soldering tin and components, all needed spare parts will be available till the end of the service period. For the repair of such sets nothing changes.

In case of doubt whether the board is lead-free or not (or with mixed technologies), you can use the following method:

- Always use the highest temperature to solder, when using SAC305 (see also instructions below).
- De-solder thoroughly (clean solder joints) to avoid mix of two alloys.

Caution: For BGA-ICs, you must use the correct temperature-profile, which is coupled to the 12NC. For an overview of these profiles, visit the website www.anyourservice.ce.philips.com (needs subscription, but is not available for all regions). You will find this and more technical information within the "Magazine", chapter "Repair downloads".

For additional questions please contact your local repair help desk.

2.4.5 Alternative BOM Identification

In September 2003, Philips CE introduced a change in the way the serial number (or production number, see Figure 2-2) is composed. From this date on, the third digit in the serial number (example: AG2B0335000001) indicates the number of the alternative BOM (Bill of Materials) used for producing the specific model of TV set. It is possible that the same TV model on the market is produced with e.g. two different types of displays, coming from two different O.E.M.s.

By looking at the third digit of the serial number, the service technician can see if there is more than one type of B.O.M. used in the production of the TV set he is working with. He can then consult the AT Your Service Web site, where he can type in the Commercial Type Version Number of the TV set (e.g. 29PT9521/12), after which a screen will appear that gives information about the number of alternative B.O.M.s used. If the third digit of the serial number contains the number 1 (example: AG1B0335000001), then there is only one B.O.M. (version of the TV set on the market; if the third digit is a 2 (example: AG2B0335000001), then there are two different B.O.M.s. **Information about this is important for ordering the correct spare parts!**

For the third digit, the numbers 1...9 and the characters A...Z can be used, so in total: 9 plus 26 = 35 different B.O.M.s can be indicated by the third digit of the serial number.

2.4.6 Practical Service Precautions

- It makes sense to avoid exposure to electrical shock.** While some sources are expected to have a possible dangerous impact, others of quite high potential are of limited current and are sometimes held in less regard.
- Always respect voltages.** While some may not be dangerous in themselves, they can cause unexpected reactions that are best avoided. Before reaching into a powered TV set, it is best to test the high voltage insulation. It is easy to do, and is a good service precaution.

Philips CE is producing lead-free sets (PBF) from 1.1.2005 onwards.

Identification: The bottom line of a type plate gives a 14-digit serial number. Digits 5 and 6 refer to the production year, digits 7 and 8 refer to production week (in example below it is 1991 week 18).

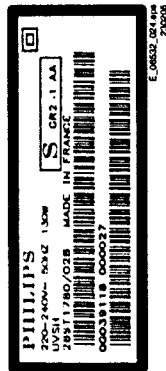


Figure 2-2 Serial number example

Regardless of the special lead-free logo (which is not always indicated), one must treat all sets from this date onwards according to the rules as described below.



Figure 2-3 Lead-free logo

Due to lead-free technology some rules have to be respected by the workshop during a repair:

- Use only lead-free soldering in Philips SAC305 with order code 0622 149 00106. If lead-free solder paste is required, please contact the manufacturer of your soldering equipment. In general, use of solder paste within workshops should be avoided because paste is not easy to store and to handle.
- Use only adequate solder tools applicable for lead-free soldering tin. The solder tool must be able:
 - To reach a solder-into temperature of at least 400°C.
 - To stabilise the adjusted temperature at the solder-clip.
 - To exchange solder-tips for different applications.
- Adjust your solder tool so that a temperature of around 360°C - 380°C is reached and stabilised at the solder joint. Heating time of the solder-joint should not exceed ~ 4 sec. Avoid temperatures above 400°C, otherwise wear-out of tips will increase drastically and flux-fluid will be destroyed. To avoid wear-out of tips, switch "off" unused equipment or reduce heat.
- Mix of lead-free soldering tin/parts with leaded soldering tin/parts is possible but PHILIPS recommends strongly to avoid mixed regimes, if this cannot be avoided, carefully clean the solder-joint from old tin and re-solder with new tin.
- Use only original spare-parts listed in the Service-Manuals. Not listed standard material (commodities) has to be purchased at external companies.
- Special information for lead-free BGA ICs: these ICs will be delivered in so-called "dry-packaging" to protect the IC against moisture. This packaging may only be opened shortly before it is used (soldered). Otherwise the body of the IC gets "wet" inside and during the heating time the structure of the IC will be destroyed due to high (steam-) pressure inside the body. If the packaging was opened before usage, the IC has to be heated up for some hours (around 90°C) for drying (think of ESD-protection!).

Do not re-use BGAs at all!

3. Directions for Use

You can download this information from the following websites:
<http://www.philips.com/support>
<http://www.p4c.philips.com>

4. Mechanical Instructions

Index of this chapter:

- 4.1 Service Connector (for IAP)
- 4.2 Set Disassembly
- 4.3 Service Positions
- 4.4 Assy / Board Removal
- 4.5 Set Re-assembly

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

4.1 Service Connector (for IAP)

For software uploading with the IAP tool (In Application Programming), it is not necessary to remove EEPROMs from the set. You only have to connect the IAP interface circuit to the service connector (on the rear of the set, and start the software uploading (see also chapter 5 'Service Modes, Error Codes, and Fault Finding').

4.2 Set Disassembly

Follow the disassemble instructions in described order.

4.2.1 Rear Cover Removal

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

1. Remove all the fixation screws of the rear cover.
2. Now the rear cover can be removed.

4.3 Service Positions

Only the LSP of this chassis has a service position for better access to the component side of the LSP. For the SSB, there is no specific service position.

4.3.1 Large Signal Panel (LSP)

Component Side LSP

For better accessibility of the LSP, do the following (see Figures 'Service position LSP' and 'Locking handles LSP'):

1. Simultaneously do the following: a) pull the two plastic locking handles at the mid left and mid right side of the bracket gently backwards to unlock the bracket, and b) loosen the bracket from the bottom tray, by pulling it backwards. **N.B.:** You do not need to pull the other two locking handles backwards.
2. Remove the LSP-bracket from the bottom tray by lifting it upwards.
3. Hook the bracket in the first row of fixation holes of the bottom tray. In other words, reposition the bracket from [1] to [2].

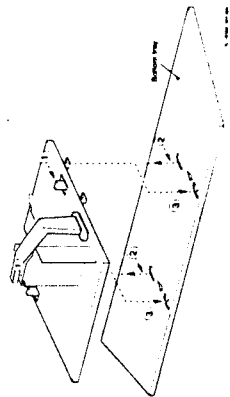
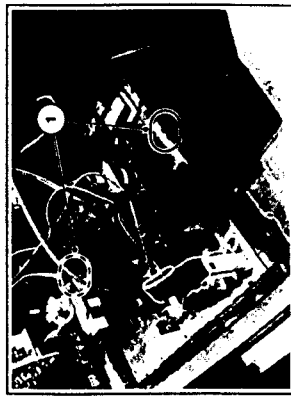


Figure 4-1 Service position LSP



0_16350_0145_FPM
060406

Figure 4-2 Locking handles LSP

Solder Side LSP

To get access to the bottom side (solder side) of the LSP, do the following:

1. Remove all the connectors from the LSP.
2. Remove the LSP, still in its plastic bracket, from the chassis, so the bottom side of the LSP can be reached. If necessary, remove the LSP also from its plastic bracket!

4.3.2 Small Signal Board (SSB)

There is no service position for the SSB. Most test points are located on the component side. If you have to replace ICs, you must remove the complete SSB module from the TV set (see further down in this chapter: Small Signal Board, SSB).

4.4 Assy / Board Removal

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

4.4.1 Top Control & Side I/O Assy/Panel

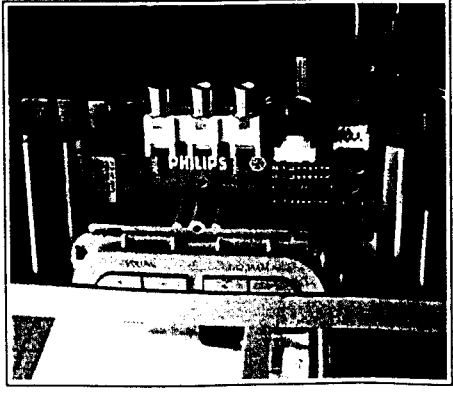


Figure 4-3 Top control & side I/O assy/panel

1. Remove the two fixation screws that hold the panel (see Figure "Top control & side I/O assy/panel").
2. Pull the board backwards and remove it from the TV set.
3. Remove, if necessary, all the connectors from the board.

4.4.2 Mains Switch/LED Panel

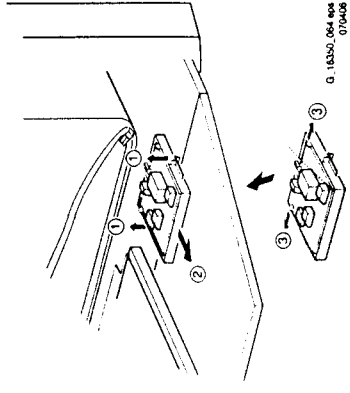


Figure 4-4 Mains Switch / LED panel

1. Release the two fixation clamps [1] by pushing them backwards and upwards (see Figures above).
2. Pull the complete assy backwards [2].
3. If the board has to be removed, release the two clamps at the sides of the bracket and lift the panel out [3].

4.4.3 Small Signal Board (SSB)



Figure 4-5 SSB removal from chassis



Figure 4-6 SSB removal from bracket

1. Release the fixation clamp (see Figure "SSB removal from chassis") by pushing it backwards.
2. Take the complete SSB out.
3. If the board has to be removed, release the two clamps at the sides of the bracket and lift the panel out (see Figure "SSB removal from bracket").

4.4.4 Large Signal Panel (LSP)

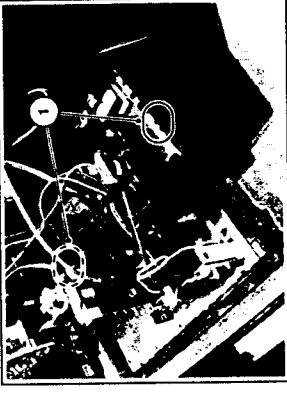


Figure 4-7 LSP locking handles

1. Simultaneously do the following:
 - a. Pull the two plastic locking handles at the mid left and mid right side of the bracket gently backwards to unlock the bracket (see Figure "LSP locking handles"), and
 - b. Loosen the bracket from the bottom tray, by pulling it backwards.

N.B.: You do not need to pull the other two locking handles backwards.
2. Remove the LSP-bracket from the bottom tray by lifting it upwards.
3. Remove all cables from the LSP.
4. Remove the board from the bracket by unhooking it from its fixation clamps.

4.5 Set Re-assembly

To re-assemble the whole set, do all processes in reverse order.
 Be sure that, before the rear cover is mounted:
 • The mains cord is positioned correctly in its guiding brackets (make sure that the strain relief will function correctly!).
 • All wires/cables are returned in their original positions. This is very important, in view of the "hot" and "EHT" areas of the set.
 • Check if no wires are touching the heat sinks that are on the LSP: this may damage the cables!

5. Service Modes, Error Codes, and Fault Finding

Index of this chapter:

- 5.1 Test Points
- 5.2 Service Modes
- 5.3 Problems and Solving Tips Related to CSM
- 5.4 Service Tools
- 5.5 Error Codes
- 5.6 The Blinking LED Procedure
- 5.7 Software Downloading
- 5.8 Fault Finding and Repair Tips

5.1 Test Points

This chassis is equipped with test points in the service printing in the schematics, test points are identified with a rectangle box around Fxxx or Ixxx. These test points are specifically mentioned in the service manual as "test points" with a dot in the centre.

The chassis is equipped with test points (Fxxx) printed on the circuit board assemblies. As most signals are digital, it will be almost impossible to measure waveforms with a standard oscilloscope. Therefore, waveforms are not given in this manual.

Perform measurements under the following conditions:

- Television set in Service Default Alignment Mode.
- Video input: Colour bar signal.
- Audio input: 3 kHz left channel, 1 kHz right channel.

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) and the Digital Customer Service Mode (DCSM, only for TVs with digital reception module) are used for communication between the call centre and the customer.

This chassis offers the option of using the IAP Tool (In Application Programming), a hardware interface between a computer and the TV chassis, for software uploading to the TV set. See also paragraph "Service Tools: IAP Tool".

5.2.1 Service Default Mode (SDM)

Purpose

- To create a predefined setting for measurements to be made.
- To override software protections.
- To start the "Blinking LED Procedure".
- To inspect the error buffer.
- To check the life timer.

Specifications

Table 5-1 SDM default settings

Region	Default system
Europe, AP, PAL Multi	475.25 PAL B/G
NAFTA, AP, NTSC, LATAM	61.25 (ch. 3) NTSC M

- All picture settings at 50% (brightness, colour contrast,).
- Bass, treble and balance at 50%, volume at 25%.
- All service-unfriendly modes (if present) are disabled. The service unfriendly modes are:

How to Navigate

When you press the MENU button on the remote control, the set will switch on the normal user menu in the SDM mode.

How to Exit

Switch the set to STANDBY by pressing the POWER button on the remote control transmitter.

If you turn the television set off by removing the mains (i.e., unplugging the television) or by using the POWER button on the TV set, the television set will remain in SDM when mains is re-applied, and the error buffer is not cleared.

5.2.2 Service Alignment Mode (SAM)

Purpose

- To change option settings.
- To display / clear the error code buffer.
- To perform alignments.

Specifications

- Operation hours counter (maximum five digits displayed).
- Software version, Error codes, and Option settings display.
- Error buffer clearing.
- Option settings.
- Software alignments (Tuner, RGB Align, Geometry, and Audio).
- NVM Editor.
- IAP Mode switching (Compair mode not implemented).

How to Enter

Press the following key sequence on the remote control transmitter: "002500" directly followed by the OSD/STATUS/INFO button (do not allow the OSD display to time out between entries while keying the sequence).

After entering SAM, the following screen is visible, with SAM in the upper right corner of the screen to indicate that the television is in Service Alignment Mode.

00020	L06EF1	1.2	
ERR	0	0	0
OP	136	008	006 000 000 002 016
. Clear	▲	Yes	▲
. Options	▲		▲
. Tuner	▲		▲
. RGB Align	▲		▲
. Geometry	▲		▲
. Audio	▲		▲
. NVM Editor	▲		▲
. ComPair	▲		▲

G. 10350, 051 and 06006

Figure 5-3 SAM menu (example)

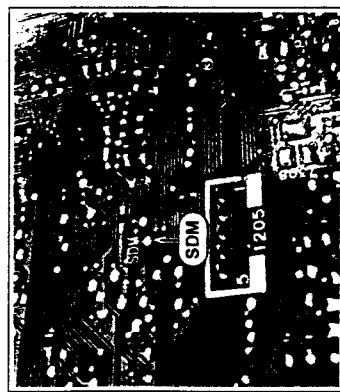
Menu Explanation

1. LLLLLL This represents the run timer. The run timer counts normal operation hours (including "on/off" switching), but does not count stand-by hours.
2. AAA.BC.X.Y. This is the software identification of the MainScaler microprocessor:
 - AAA.B = the chassis name.
 - B = the display indicator.
 - C = the region: E= Europe, A= Asia Pacific, U= NAFTA, L= LATAM, G= Global.

00025	L06EF1	1.2	
ERR	0	0	0
OP	136	008	006 000 000 002 016

m SDM
G. 10350, 051 and 06006

Figure 5-4 SDM menu (example)



G. 10350, 051 and 06006

Figure 5-1 SDM Service contact (for SDM; short to mass)

After entering SDM, the following screen is visible, with SDM in the upper right corner of the screen to indicate that the television is in Service Default Mode.

White Line(s) Around Picture Elements and Text

- If:
- There are white lines around picture elements and text.
- Then:
- Press the MENU button on the remote control transmitter. This brings up the normal user menu (PICTURE is highlighted).
 - Use the CURSOR DOWN key to select SHARPNESS.
 - Press the CURSOR RIGHT key to enter the SHARPNESS adjustment mode.
 - Press the CURSOR UP/DOWN keys to increase or decrease the SHARPNESS value.
 - Press the MENU button on the remote control transmitter twice to exit the user menu.
 - The new PERSONAL preference value is automatically stored.

Snowy Picture

- Check the following:
- Antenna not connected. Connect the antenna.
 - No antenna signal or bad antenna signal. Connect a proper antenna signal.
 - The tuner is faulty (in this case line 2, the Error Buffer line, will contain error number 9). Check the tuner and replace/repair the tuner if necessary.

Black and White Picture

- If:
- The picture is (nearly) in black and white when it should be in colour.

Then:

- Press the MENU button on the remote control transmitter. This brings up the normal user menu (PICTURE is highlighted).
- Press the CURSOR RIGHT key to enter the PICTURE sub menu.
- Use the CURSOR DOWN key to select COLOUR.
- Press the CURSOR UP/DOWN keys to increase the COLOUR value.
- Press the MENU button on the remote control transmitter twice to exit the user menu.
- The new PERSONAL preference value is automatically stored.

5.4 Service Tools

5.4.1 IAP Tool: system requirements

- PC
- The PC used for IAP should meet the following criteria:
 - Parallel Port;
 - Windows XP Operating System;
 - 60 MB free disk space.

5.4.2 IAP Tool: use

Introduction

The IAP Tool (in Application Programming) is a service tool for uploading software to a TV set (see Figure "IAP Interface"). In order to use IAP, the following items should be available:

- PC;
- TV set, to be put in the IAP mode (only when it is connected to the PC via the IAP interface);
- IAP Interface, (parallel to I²C, for the connection between a PC and the TV set);
- IAP Trident EXSDK software package, software will be available via your national service organisation.

1	00025	L06EF1	1.2
2	CODES	0	0
3	OP	136	008
4	CTN	006	000
5	DUAL	1	0
6	PAL	0	0
7	CO	50	CL
8	BR	50	HU
9	AVL	Off	0
10	CSM	0	0

Figure 5-4 CSM menu (example)

Menu Explanation

- Indication of the decimal value of the operation hours counter. MainScaler software version (see "Service Alignment Mode" for an explanation), and service mode (CSM= Customer Service Mode).
- Displays the last five errors detected in the error code buffer.
- Displays the option bytes
- Reserved
- Displays the type number version of the set (option).
- Reserved.
- Displays the detected Colour system (e.g. PAL/NTSC).
- Displays the detected Audio (e.g. stereo/mono)
- Displays the picture setting information.
- Displays the sound setting information.

How to Exit

- Press the MENU, STATUS (or EXIT/INFO+), or POWER button on the remote control transmitter.
- Press the POWER button on the television set.

5.3 Problems and Solving Tips Related to CSM

5.3.1 Picture Problems

Note: The problems described below are all related to the TV settings. The procedures used to change the value (or status) of the different settings are described

Picture Too Dark or Too Bright

- If:
- The picture improves when you enter the Customer Service Mode

Then:

- Press the MENU button on the remote control transmitter. This brings up the normal user menu, the PICTURE sub menu is highlighted.
- Press the CURSOR RIGHT key to enter the PICTURE sub menu.
- Press the CURSOR UP/DOWN keys to increase or decrease the BRIGHTNESS value.
- Press the MENU button on the remote control transmitter twice to exit the user menu.
- The new PERSONAL preference values are automatically stored.

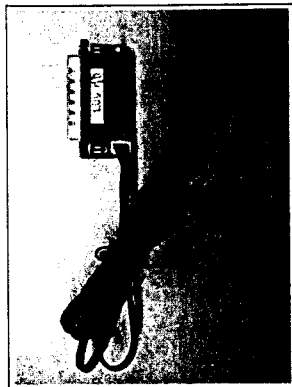


Figure 5-5 IAP interface

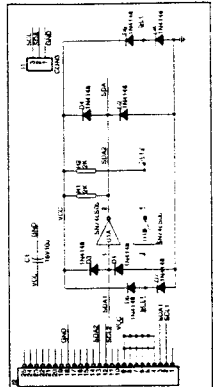


Figure 5-6 IAP interface circuit diagram

Installing the IAP software on a PC

When all the items mentioned above are present, install the software on a PC as follows:

- Extract the Trident EXSDK package (EXSDK.zip) into C:\Trident\Bin.
- The IAPWriter6.exe file is now inside the Bin folder.

Programming the Flash IC

The pre-requisite for flashing the software is that the Flash IC should have a bootloader (this means that there is already software on the TV set). To start the flashing, do as follows:

- Turn on the TV set, enter SAM mode > IAP. The TV is now in the IAP mode.
- Connect the PC to the TV via the Parallel-to-I²C card (IAP interface).
- Double-click on C:\Trident\Bin\IAPWriter6.exe in order to launch the IAP writer. The main interface will appear.
- Check that these parameters are set correctly:
 - DEVICE STM29W400DT
 - MPU Start Address 080000
 - MPU End Address 0FBFFF
 - Buffer Start Address 000000
 - Buffer End Address 07FFFF

Note: The device depends on the Flash IC used

- Select File > Load, and select the .bin file to be programmed to the Flash IC.
- Select File Type "Binary".
- Select "Write Device".

Note: If there are no errors reported, the programming is successful.

Note: Sometimes, an error message may appear. Please try a few times if this happens.

How to Order

Note: If you encounter any problems, contact your local support desk.

5.5 Error Codes

5.5.1 Introduction

The error code buffer contains all detected errors since the last time the buffer was erased. The buffer is written from left to right, new errors are logged at the left side, and all other errors shift one position to the right.

When an error has occurred, the error is added to the list of errors, provided the list is not full or the error is a protection error.

When an error occurs and the error buffer is full, then the new error is not added, and the error buffer stays intact (history is maintained), except when the error is a protection error.

To prevent that an occasional error stays in the list forever, the error is removed from the list after 50+ operation hours.

When multiple errors occur (errors occurred within a short time span), there is a high probability that there is some relation between them.

5.5.2 How to Read the Error Buffer

Use one of the following methods:

- On screen via the SAM (only if you have a picture)
 - Examples:
 - 0 0 0 0 No errors detected
 - 6 0 0 0 Error code 6 is the last and only detected error
 - 9 6 0 0 Error code 6 was first detected and error code 9 is the last detected error
 - Via the blinking LED procedure (when you have no picture). See next paragraph.
 - Via IAP.

5.5.3 How to Clear the Error Buffer

Use one of the following methods:

- By activation of the "CLEAR ERRORS" command in the SAM menu.
- With a normal RC, key in sequence "MUTE" followed by "062599" and "OK".
- If the content of the error buffer has not changed for 50+ hours, it resets automatically.

5.5.4 Error Codes

The function of error codes is to indicate failures in the TV set. In principle a unique error code is available for every:

- I²C device error.
- I²C bus error (for every bus containing two or more I²C devices).
- Protection error (e.g. +8V protection or Horizontal protection)
- Error not related to an I²C device, but of importance (e.g. BC-loop, RAM error)

Table 5-2 Error Table

Error	Description
0	0 - No error
2	High beam (BC) protection
3	Vertical guard protection
4	POR bit / +8 V protection
7	Black current loop instability protection
8	General I ² C error Microprocessor (M30620FCN0GP) (UV1316E)
9	I ² C error while communicating with the PLL tuner (NVM at UP_M24C64)
10	I ² C error while communicating with the EEPROM
11	I ² C error while communicating with the IF demodulator (TDA9886T/V4)
12	I ² C error while communicating with the Tricolor (SVPEX42)
13	I ² C error while communicating with the HQP (TDA9332HN3)
14	I ² C error while communicating with the HDMI (SIL9011 CLU)
15	I ² C error while communicating with the Audio Demodulator (MSP3411G)
16	I ² C error while communicating with the ADC RGB (AD9985KST-110)
19	I ² C error while communicating with the SDRAM IC (K4D263238F)

Service Tips:

- In case of non-intermittent faults, clear the error buffer before you begin the repair. This to ensure that old error codes are no longer present. Before clearing the buffer, write down the content, as this history can give you significant information.
- 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).

5.6 The Blinking LED Procedure**5.6.1****Introduction**

Via this procedure, you can make the contents of the error buffer visible via the front LED. This is especially useful for fault finding, when there is no picture.

When the SDM is activated, the front LED will show (by blinking) the contents of the error buffer. Error codes > 10 are shown as follows:

1. A long blink of 750 ms (which is an indication of the decimal digit).
2. A pause of 1500 ms.
3. "n" short blinks (where "n" = 1 - 9).
4. When all the error-codes are displayed, the sequence finishes with a LED blink of 3000 ms.
5. The sequence starts again

Example: Error 12 9 6 0 0.

After activation of the SDM, the front LED will show:

1. 1 long blink of 750 ms (which is an indication of the decimal digit) followed by a pause of 1500 ms.
2. 2 short blinks of 250 ms, followed by a pause of 3000 ms.
3. 9 short blinks of 250 ms, followed by a pause of 3000 ms.
4. 6 short blinks of 250 ms, followed by a pause of 3000 ms.
5. 1 long blink of 3000 ms to finish the sequence.
6. The sequence starts again.

Use one of the following methods:

- Activate the SDM (only by shorting the soldering pad indicated in Figure "SDM Service contact" on the first page of this chapter to mass). The blinking front LED will show the entire contents of the error buffer (this works in "normal operation" mode and in "protection" mode). In order to avoid confusion with RC5 signal reception blinking, this LED blinking procedure is terminated when an RC5 command is received.
- Transmit the commands "MUTE", "00250x", and "OK" with a normal ITC (where "x" is the position in the error buffer that has to be displayed). With x = 1, the last detected error is shown, x = 2 the second last error, etc.... When x = 0, all errors are shown.
- "DIAGNOSE X" with the DST (where "x" is the position in the error buffer that has to be displayed). With x = 1, the last detected error is shown, x = 2 the second last error, etc.... When x = 0, all errors are shown.

Note: It can take some seconds before the blinking LED starts.

5.7 Software Downloading

In this chassis, you can upgrade the software via the IAP Tool (In Application Programming). You can find more information on this in the paragraph "Service Tools" in this chapter.

5.8 Fault Finding and Repair Tips**Notes:**

- It is assumed that the components are mounted correctly with correct values and no bad solder joints.
- Before any fault finding actions, check if the correct options are set.

5.8.1 NVM Editor

In some cases, it can be handy if one directly can change the NVM contents. This can be done with the "NVM Editor" in SAM mode. In the next table, the default NVM values are given.

Table 5-3 NVM default values

Item	Address (dec)	Default values (hex)	Default values (dec)
EW (EW Width)	19	507F7521/12	52F76551/12
PM (EW Parabolic Width)	20	19 19 25 25	
HS (Horizontal Shift)	21	20 20 32 32	
HP (Horizontal Parabolic)	22	07 07 07 07	
HB (Horizontal Bias)	23	07 07 07 07	
UCP (EW Upper Corner Parabolic)	24	20 20 32 32	
LCP (EW Lower Corner Parabolic)	25	20 20 32 32	
TC (TC Image Trim)	26	10 10 28 28	
VS (Vertical Shift)	27	27 27 39 39	
VA (Vertical Amplitude)	28	20 20 32 32	
SC (S Compensation)	29	15 15 21 21	
VSH (Vertical Shift)	30	20 20 32 32	
VZ (Vertical Zoom)	31	19 19 25 25	
VSL (Vertical Scroll)	32	20 20 32 32	
HQP (EW EHT Compensation)	33	20 20 32 32	
BLOF (Black Level Offset - Red)	34	06 06 08 08	
BLOG (Black Level Offset - Green)	35	06 06 08 08	
AGC (AGC Takeover)	36	0E 0E 14 14	
OIF (IF-PLL Offset)	37	20 20 32 32	
AGC10	38	01 01 01 01	
HQD (HQ Horizontal Shift)	39	00 00 00 00	
HO (Horizontal Amplitude)	42	04 04 04 04	
YD & CL	43	04 07 04 07	
ROB Brightness	46	28 28 40 40	
OPTION TABLE VERSION	60	64 64 100 100	
OPTION TABLE VERSION	61	3C 3C 80 80	
TXF Brightness	64	14 14 20 20	
V80 offset (80Hz Vertical Amplitude)	66	04 04 04 04	
CRYSTALIGN	208	00 00 00 00	
VIDEO PP	264	23 23 35 35	
Last Colour	265	36 36 54 54	
Last Contrast	266	64 64 100 100	
Last Sharpness	267	05 05 05 05	
Last Hue	268	32 32 50 50	
Last Colour Temp	269	00 00 00 00	
White-D Cool Red	284	00 00 00 00	
White-D Cool Green	295	00 00 00 00	
White-D Cool Blue	296	04 04 04 04	
White-D Normal Red	297	25 25 37 37	
White-D Normal Green	298	20 20 32 32	
White-D Normal Blue	299	26 26 38 38	
White-D Warm Red	300	04 04 04 04	
White-D Warm Green	301	00 00 00 00	
White-D Warm Blue	302	ED ED 237 237	
Audio Last Smart	342	03 03 03 03	
Last Volume	343	23 23 35 35	
Last Balance	344	0A 0A 10 10	
Last Treble	345	00 00 00 00	
Last Bass	346	00 00 00 00	

Note:

- When aligning a TV set, it is convenient to start with the default settings, and then to change them, if necessary, to customized values.
 - If you suspect a defective TV set is programmed with the wrong settings or options, try to restore the set to its default settings or set the options to their virgin mode (the latter can also be done via the NVM Editor in the SAM menu, see chapter 8 and the table Option codes).
- If the remote control of a TV set is defective or missing, and you can not enter the CSM or SAM menu, it is always possible to return the TV to its virgin mode by simultaneously pressing the Volume+ and Volume- keys on the Top Control/Slide I/O panel of the TV set.

5.6.2 SAM Menu Structure

The SAM Menu structure of the L06.1E AA is different from that of the ES1. Some of the menu items that were in the main menu of the ES1 are now in the submenu. The following table shows the structure of the SAM menu of the L06.1E AA.

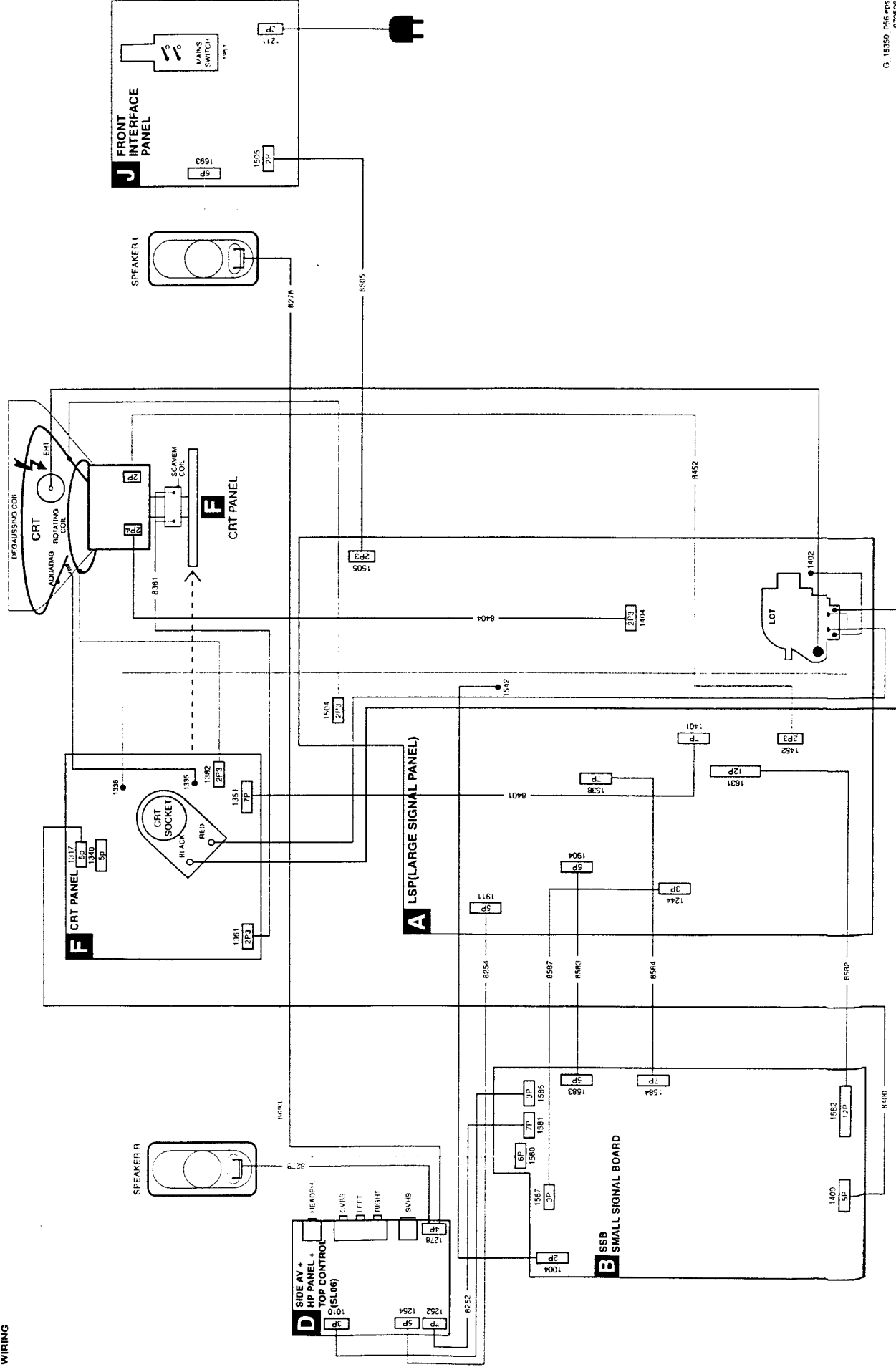
Table 5-4 SAM menu structure

SAM Menu	SAM Submenu level 1	SAM Submenu level 2	Example of SAM Submenu values / settings	Explanation of menu items
Clear			Yes	Clear. Erases the contents of the error buffer. Select the CLEAR menu item and press the CURSOR RIGHT key. The content of the error buffer is cleared.
Options	OP1			Options. Used to set the option bits. See "Options" in the Alignments section for a detailed description.
	OP2			
	OP3			
	OP4			
	OP5			
Tuner	OP6			Tuner. Used to align the tuner. See "Tuner" in the Alignments section for a detailed description.
	OP7			
RGB Align	AKB			RGB Align > White Tone. Used to align the white tone. See "RGB Align > White Tone" in the Alignments section for a detailed description.
	White Tone	Cool		
		Normal		
		Warm		
		Black Offset R		
CL		Black Offset G		
Geometry	Horizontal	HP	8	Geometry. Used to align the Geometry. See "Geometry" in the Alignments section for a detailed description.
		HB	9	
		HSH	33	
		EWV	23	
		EWV	26	
		EWV	31	
		UCP	41	
		LCP	34	
	Vertical	SBL		
		VS	42	
		VSH	26	
		VAM	25	
		VSC	21	
Audio	AF-M		250	Audio. No auto alignment is necessary for the television set.
	AF-T		400	
	AT		2	
NVM Editor	ADR		00001 1	NVM Editor. Can be used to change the NVM data in the television set.
	VALL		00000 0	
	Store			
Compare	Compare			Compare. In other TV sets, this menu item can be used to switch the television to "In-System Programming" (ISP) mode for software updating via ComPair. In the L06.1E AA, however, this menu item is not used. IAP. Caution: When this mode is selected without IAP connected, the TV will be bricked. Remove the AC power cord and wait for 10 seconds to reset the TV.
	IAP			

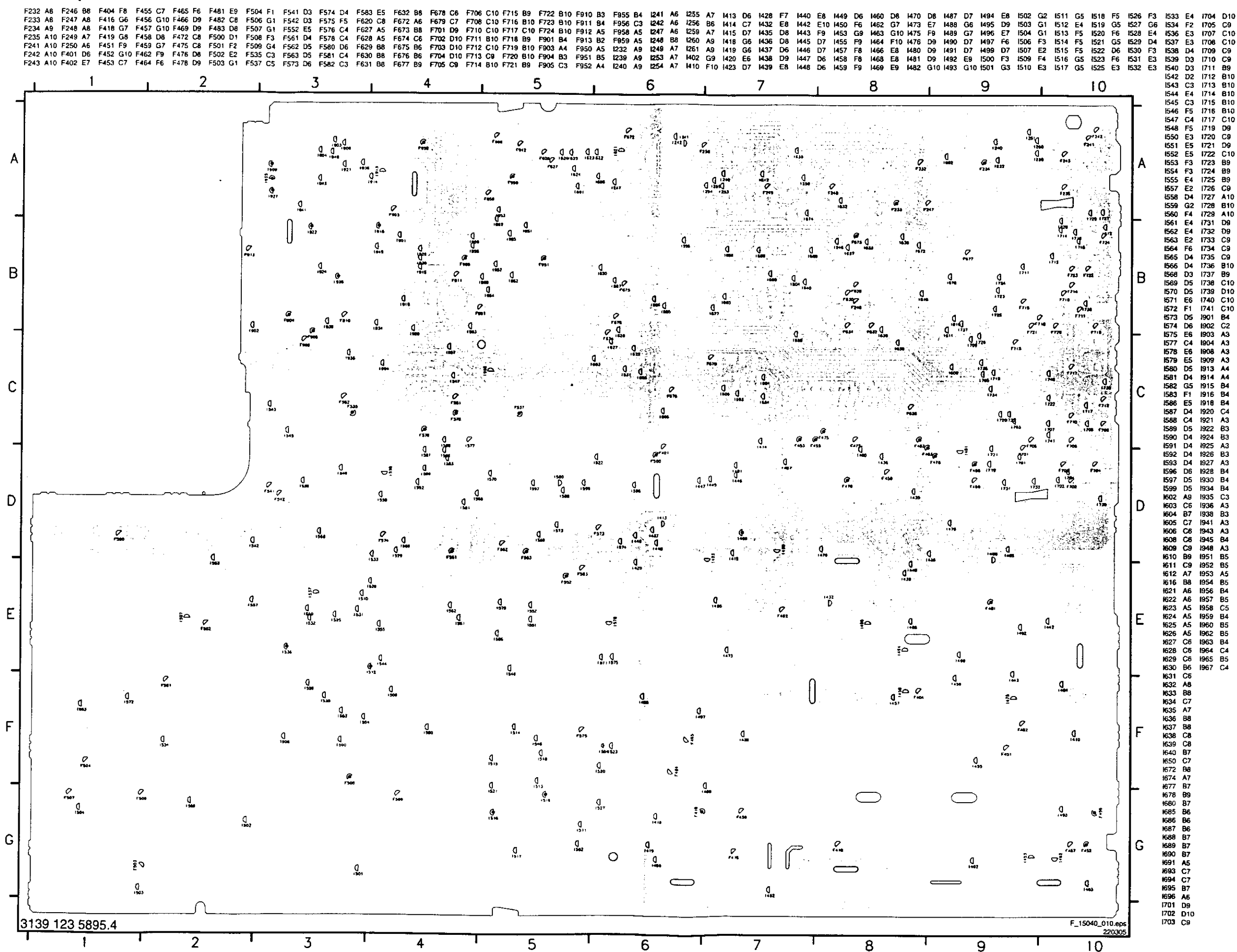
6. Block Diagrams, Testpoint Overviews, and Waveforms

Wiring Diagram

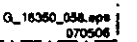
WIRING



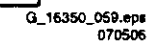
Testpoint Overview LSP



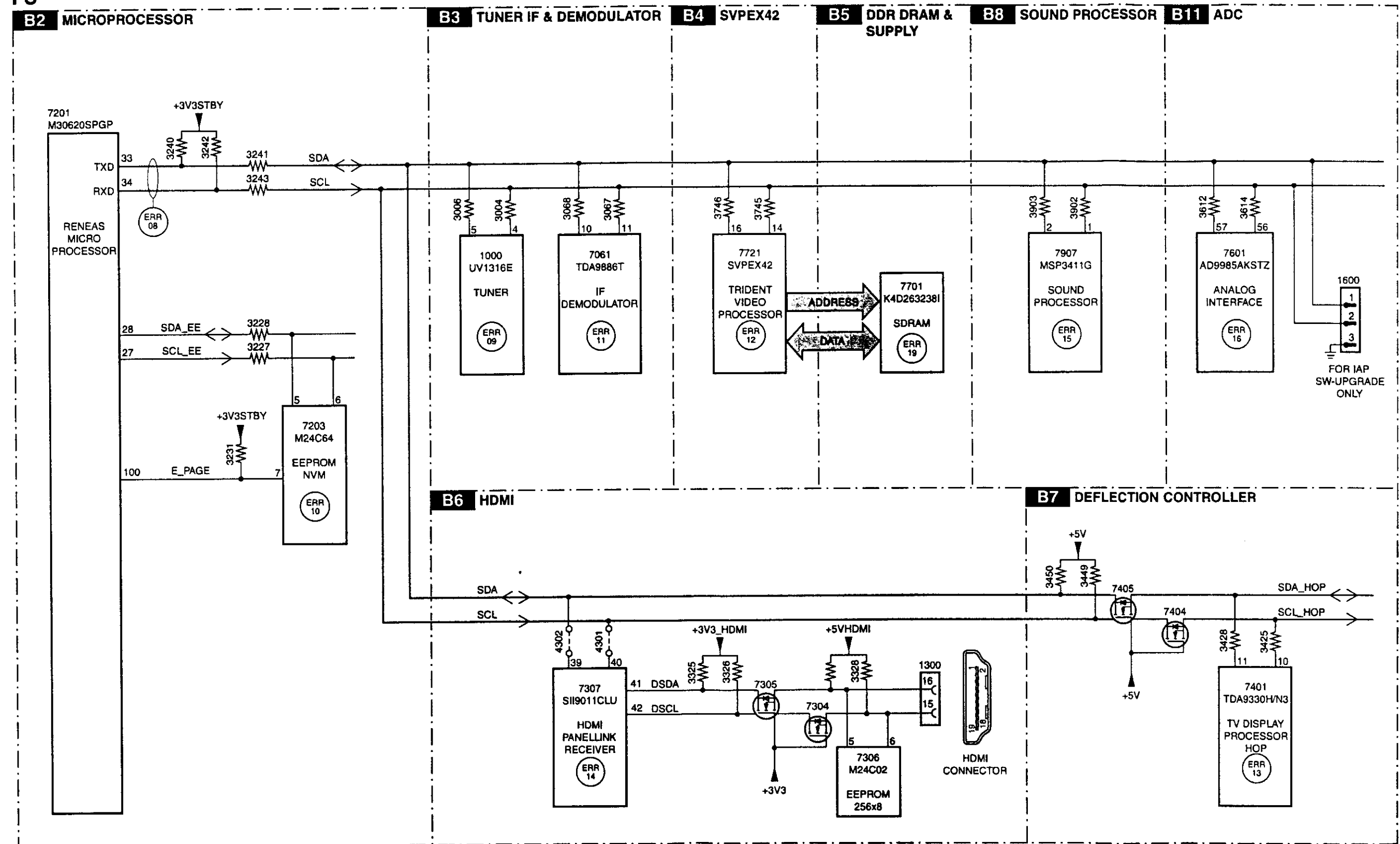
VIDEO



AUDIO

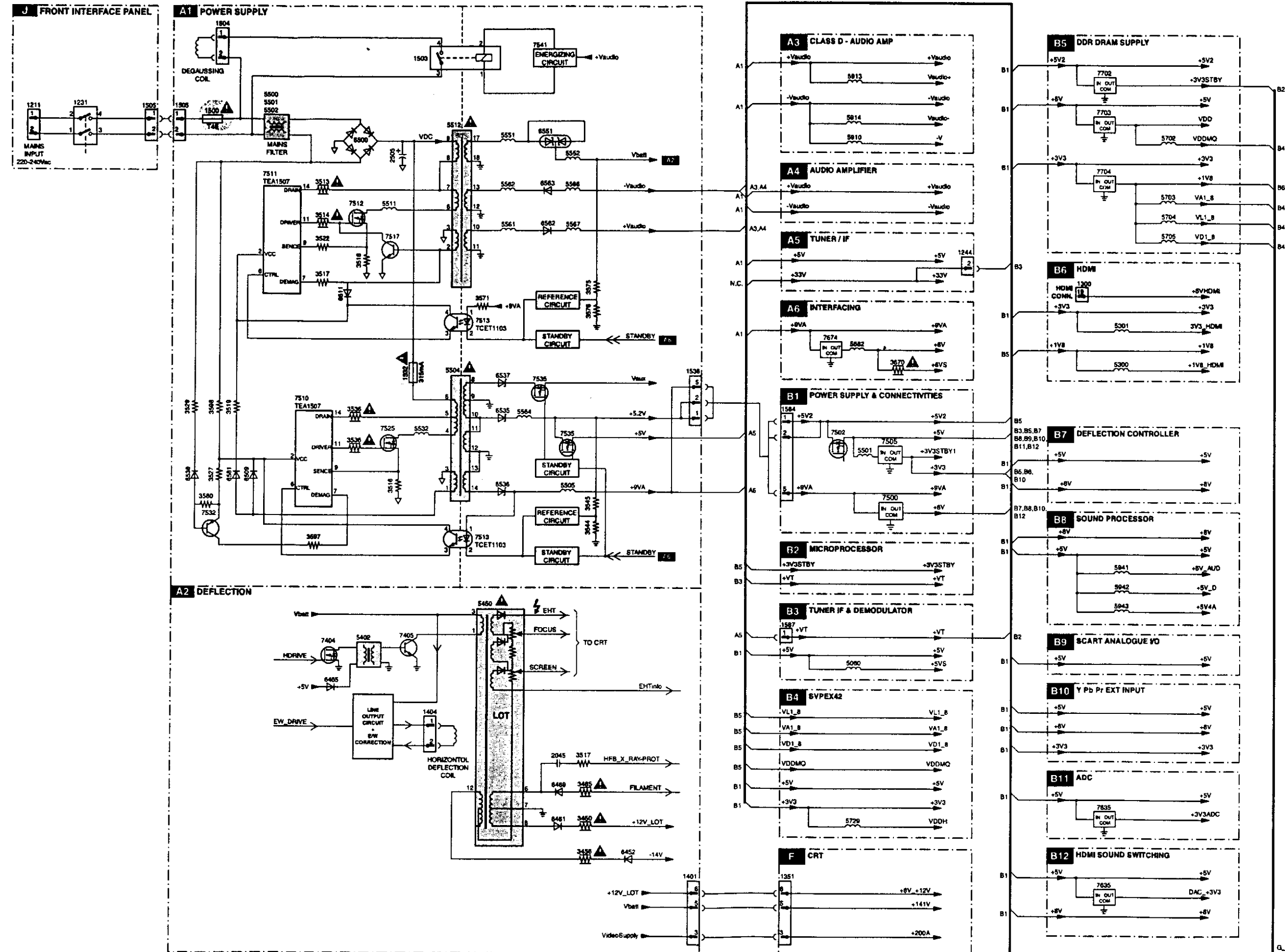


I2C Overview

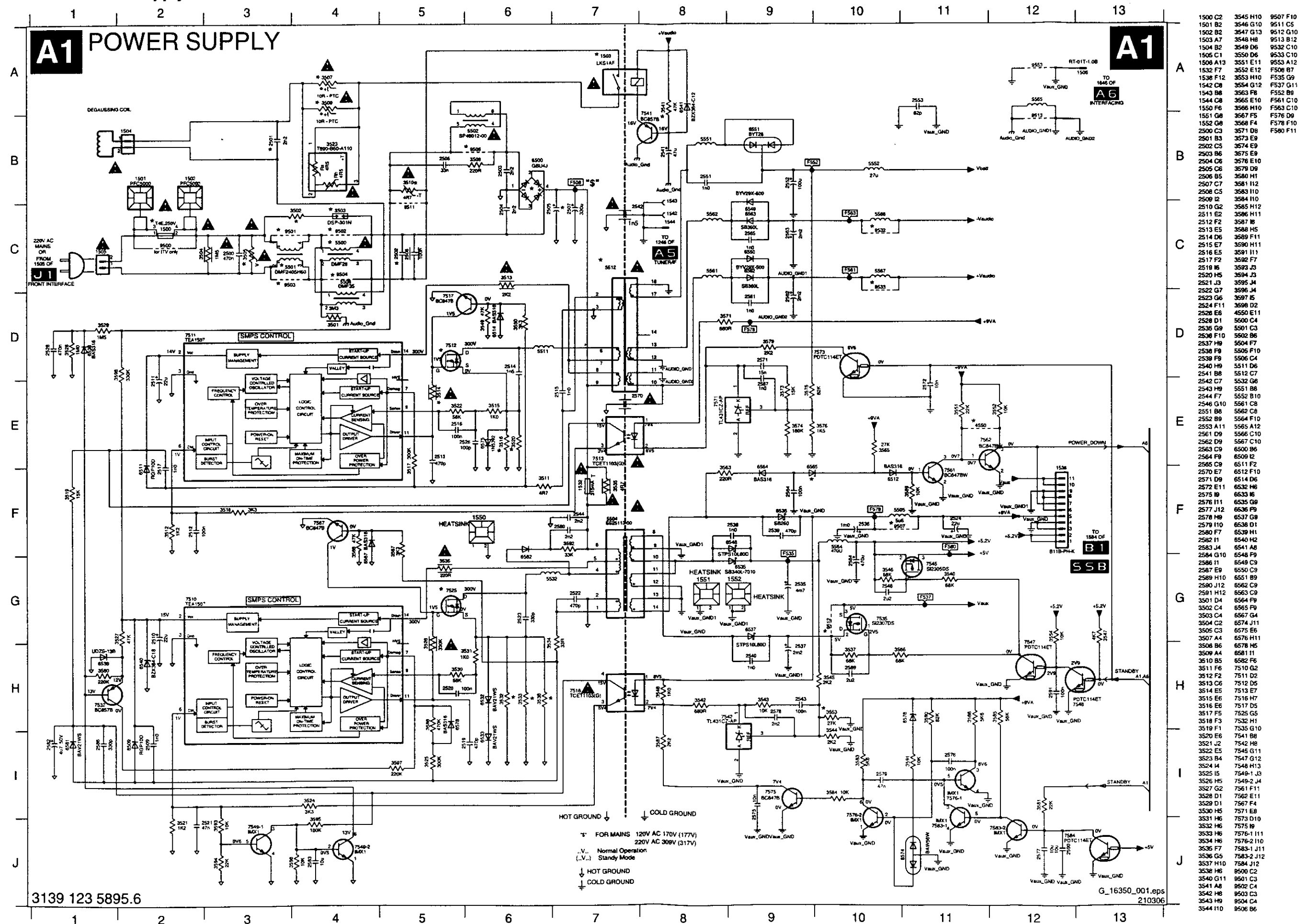
I²C

Supply Lines Overview

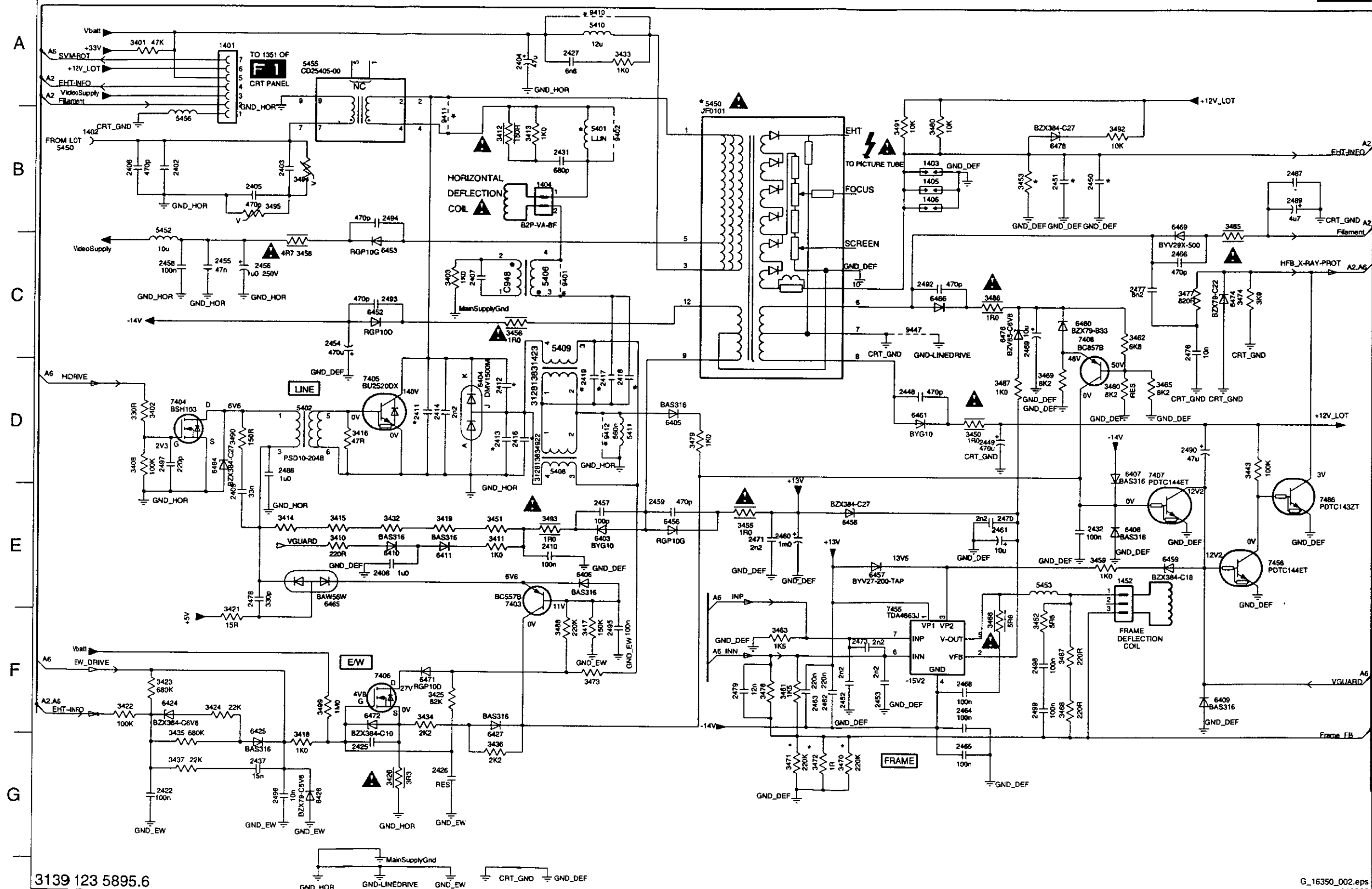
SUPPLY LINE OVERVIEW



LSP: Power Supply



A2 DEFLECTION



3139 123 5895.6

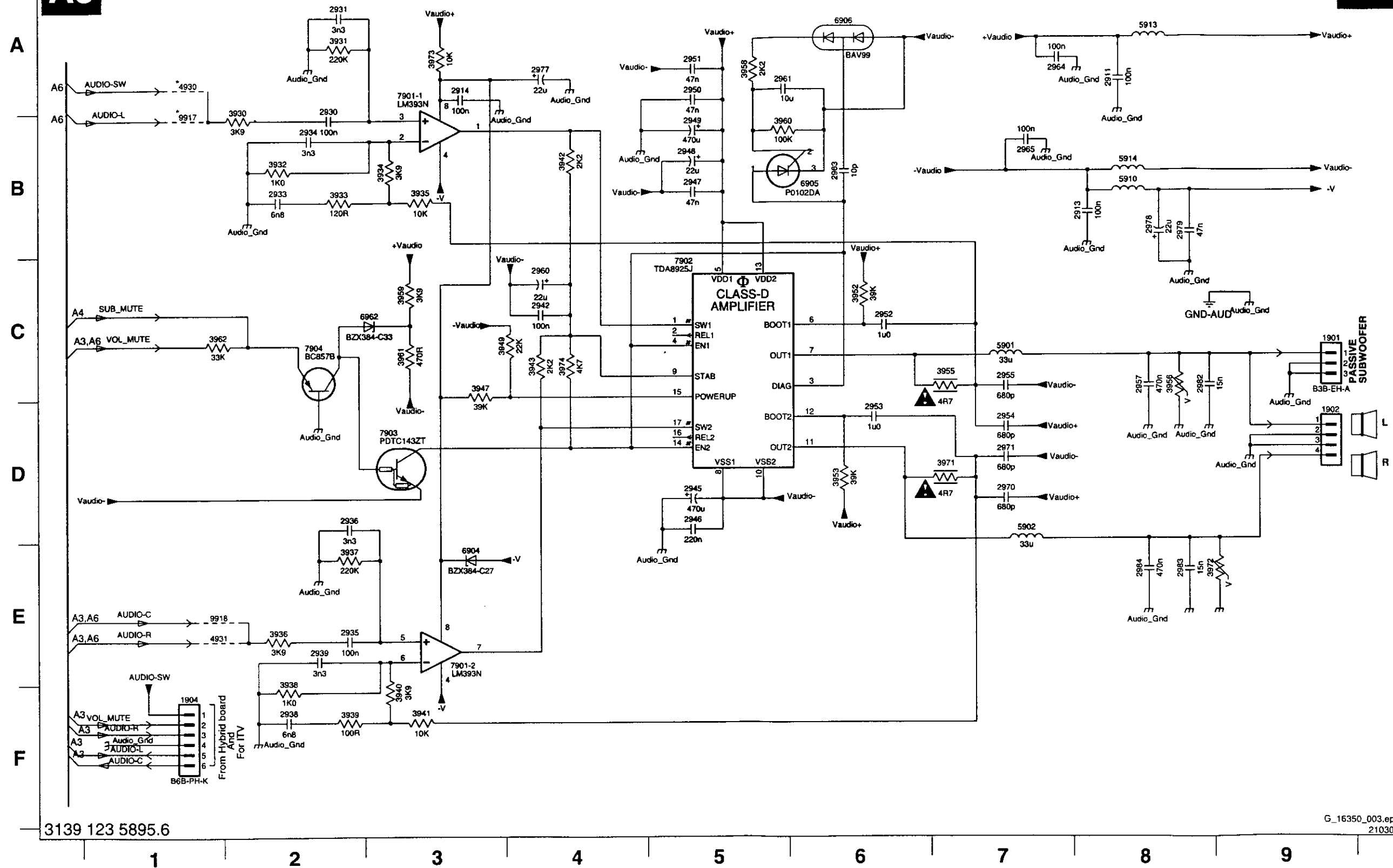
G_16350_002.eps
210306

1401 A2	3426 G3	7406 F3
1402 B1	3432 E3	7407 D9
1403 B7	3433 A5	7408 C9
1404 B4	3434 F3	7455 E7
1405 B7	3435 G1	7456 E10
1406 B7	3436 G4	7486 E10
1452 E9	3437 G1	9401 C4
2402 B1	3443 D10	9402 B5
2403 B2	3450 D8	9410 A5
2404 A4	3451 E4	9411 B3
2405 B2	3452 F8	9412 D5
2406 B1	3453 B8	9447 C7
2407 C4	3455 E6	
2408 E3	3456 C4	
2409 E2	3458 C2	
2410 E4	3459 E9	
2411 D3	3460 D9	
2412 D4	3461 F6	
2413 D4	3462 C9	
2414 D3	3463 F6	
2416 D4	3465 D9	
2417 D5	3466 F8	
2418 D5	3467 F8	
2419 D5	3468 F8	
2422 G1	3469 D8	
2425 G3	3470 G7	
2426 G3	3471 G6	
2427 A4	3472 G6	
2431 B4	3473 F5	
2432 E9	3474 C10	
2437 G2	3476 F6	
2448 D7	3477 C9	
2449 D8	3479 D5	
2450 B9	3480 B7	
2451 B8	3485 B10	
2452 F7	3486 C8	
2453 F7	3487 D8	
2454 C2	3488 F4	
2455 C2	3490 D2	
2456 C2	3491 B7	
2457 E5	3492 B9	
2458 C1	3493 E4	
2459 E5	3494 B2	
2460 E6	3495 B2	
2461 E8	3499 F2	
2462 F7	5401 B5	
2463 F6	5402 D2	
2464 F8	5406 C4	
2465 G8	5408 D4	
2466 C9	5409 C4	
2468 F8	5410 A5	
2469 C8	5411 D5	
2470 E8	5450 A6	
2471 E6	5452 C1	
2473 F7	5453 E8	
2476 C9	5455 A2	
2477 C9	5456 B1	
2478 E2	6403 E5	
2479 F6	6404 D4	
2487 B10	6405 D5	
2488 D2	6406 E5	
2489 B10	6407 D9	
2490 D9	6408 E9	
2492 C7	6409 F10	
2493 C3	6410 E3	
2494 B3	6411 E3	
2495 F5	6424 F1	
2496 G2	6425 F2	
2497 D1	6426 G2	
2498 F8	6427 F4	
2499 F8	6452 C3	
3401 A1	6453 C3	
3402 D1	6456 E5	
3403 C3	6457 E7	
3408 D1	6458 E7	
3410 E3	6459 E9	
3411 E4	6461 D7	
3412 B4	6464 D2	
3413 B4	6465 C3	
3414 E2	6466 C7	
3415 E3	6469 B9	
3416 D3	6471 F3	
3417 F5	6472 F3	
3418 G2	6474 C10	
3419 E3	6476 C8	
3421 F2	6478 B8	
3422 F1	6480 C9	
3423 F1	7403 E4	
3424 F2	7404 D1	
3425 F3	7405 D3	

LSP: Class D Audio Amplifier (Res)

A3 CLASS D - AUDIO AMP(RES)

A3



3139 123 5895.6

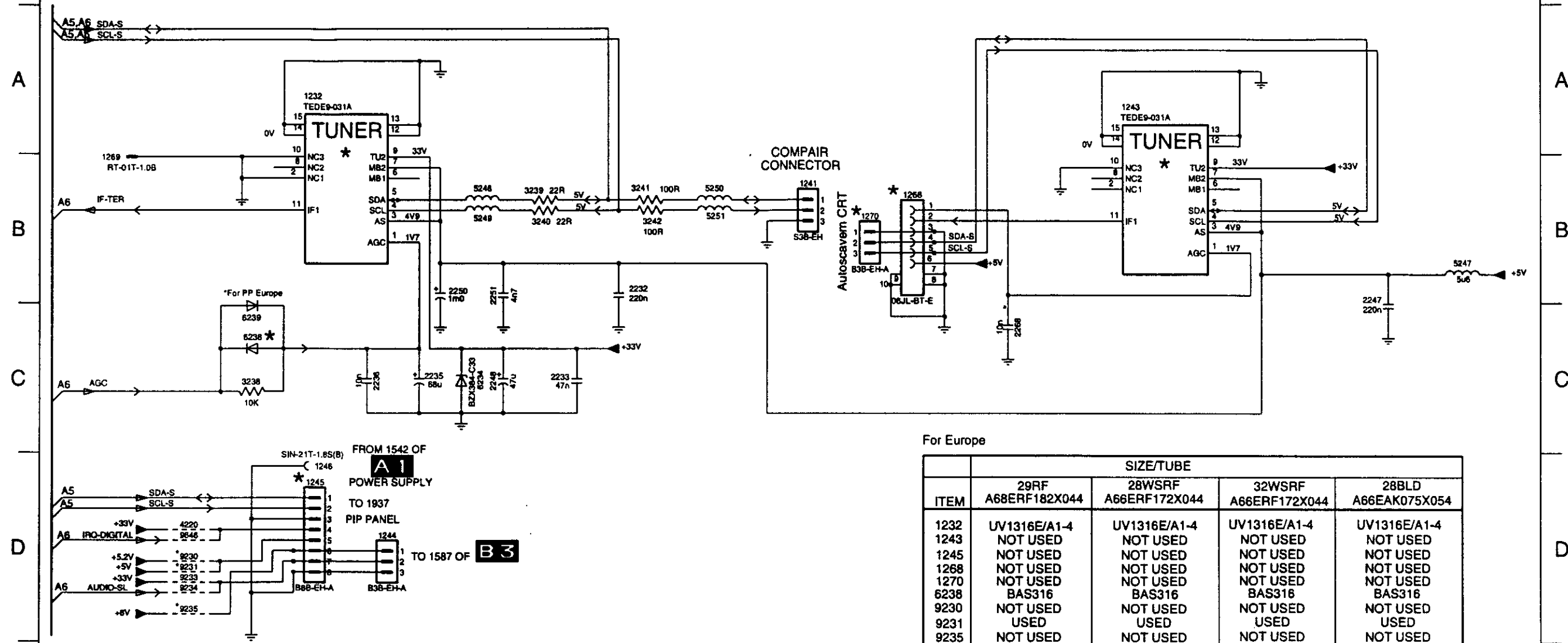
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210306

LSP: Tuner IF (Res)

1232 A2 1243 A8 1245 D2 1268 B6 1270 B6 2233 C4 2236 C3 2248 C4 2251 B4 3238 C2 3240 B4 3242 B5 5247 B10 5249 B3 5251 B5 6238 C2 9230 D1 9233 D1 9235 D1
1241 B6 1244 D3 1246 D2 1269 B1 2232 B4 2235 C3 2247 B9 2250 B3 2268 C7 3239 B4 3241 B4 4220 D1 5248 B3 5250 B5 6234 C3 6239 C2 9231 D1 9234 D1 9646 D1

A5 TUNER / IF (RES)

A5



For Europe

ITEM	SIZE/TUBE			
	29RF A68ERF182X044	28WSRF A66ERF172X044	32WSRF A66ERF172X044	28BLD A66EAK075X054
1232	UV1316E/A1-4	UV1316E/A1-4	UV1316E/A1-4	UV1316E/A1-4
1243	NOT USED	NOT USED	NOT USED	NOT USED
1245	NOT USED	NOT USED	NOT USED	NOT USED
1268	NOT USED	NOT USED	NOT USED	NOT USED
1270	NOT USED	NOT USED	NOT USED	NOT USED
6238	BAS316	BAS316	BAS316	BAS316
9230	NOT USED	NOT USED	NOT USED	NOT USED
9231	USED	USED	USED	USED
9235	NOT USED	NOT USED	NOT USED	NOT USED

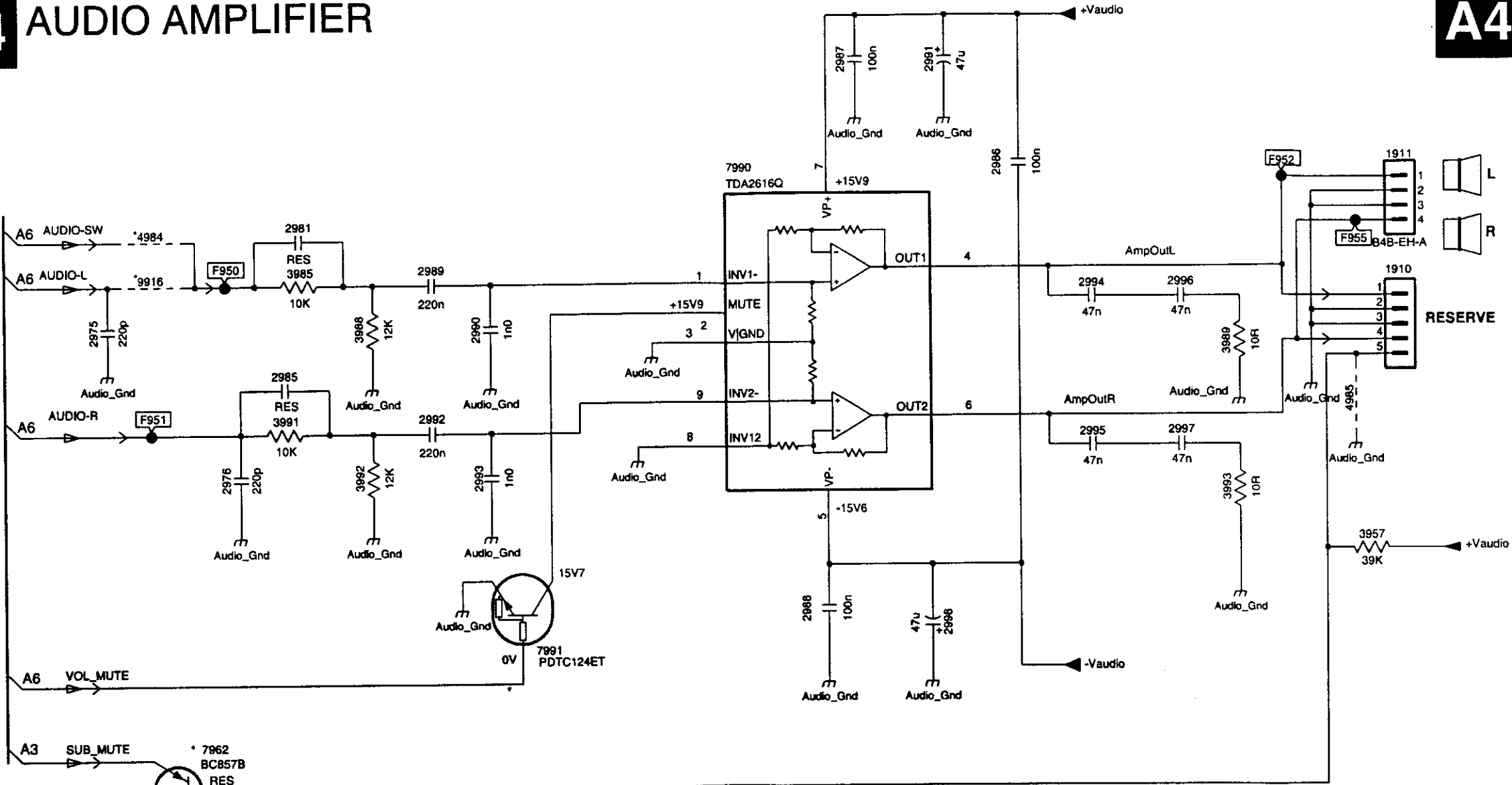
3139 123 5895.6

G_16350_005.eps
210306

LSP: Audio Amplifier

A4 AUDIO AMPLIFIER

A4



For Europe

ITEM	SIZE/TUBE			
	29RF A68ERF182X044	28WSRF A66ERF172X044	32WSRF A66ERF172X044	28BLD A66EAK075X054
1910	NOT USED	NOT USED	NOT USED	NOT USED
1911	USED	USED	USED	USED
4984	NOT USED	NOT USED	NOT USED	NOT USED
7962	NOT USED	NOT USED	NOT USED	NOT USED
9916	USED	USED	USED	USED

3139 123 5895.6

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210306

LSP: Interfacing

A6 INTERFACING

A6

TO 1936 OF
SIDE AV PANELTO 1582 OF
B1TO A10
2T PIP DW
PANELFROM 1506 OF
POWER SUPPLY

TO SSB PANEL

For Europe

ITEM	SIZE/TUBE			
	29RF A68ERF182X044	28WSRF A66ERF172X044	32WSRF A66ERF172X044	28BLD A66EAK075X054
1620	USED	USED	USED	USED
1623	NOT USED	NOT USED	NOT USED	NOT USED
1624	USED	USED	USED	USED
1625	NOT USED	NOT USED	NOT USED	NOT USED
1645	USED	USED	USED	USED
4683	USED	USED	USED	USED
4694	NOT USED	NOT USED	NOT USED	NOT USED
9620	NOT USED	NOT USED	NOT USED	NOT USED
9621	USED	USED	USED	USED
9626	USED	USED	USED	USED

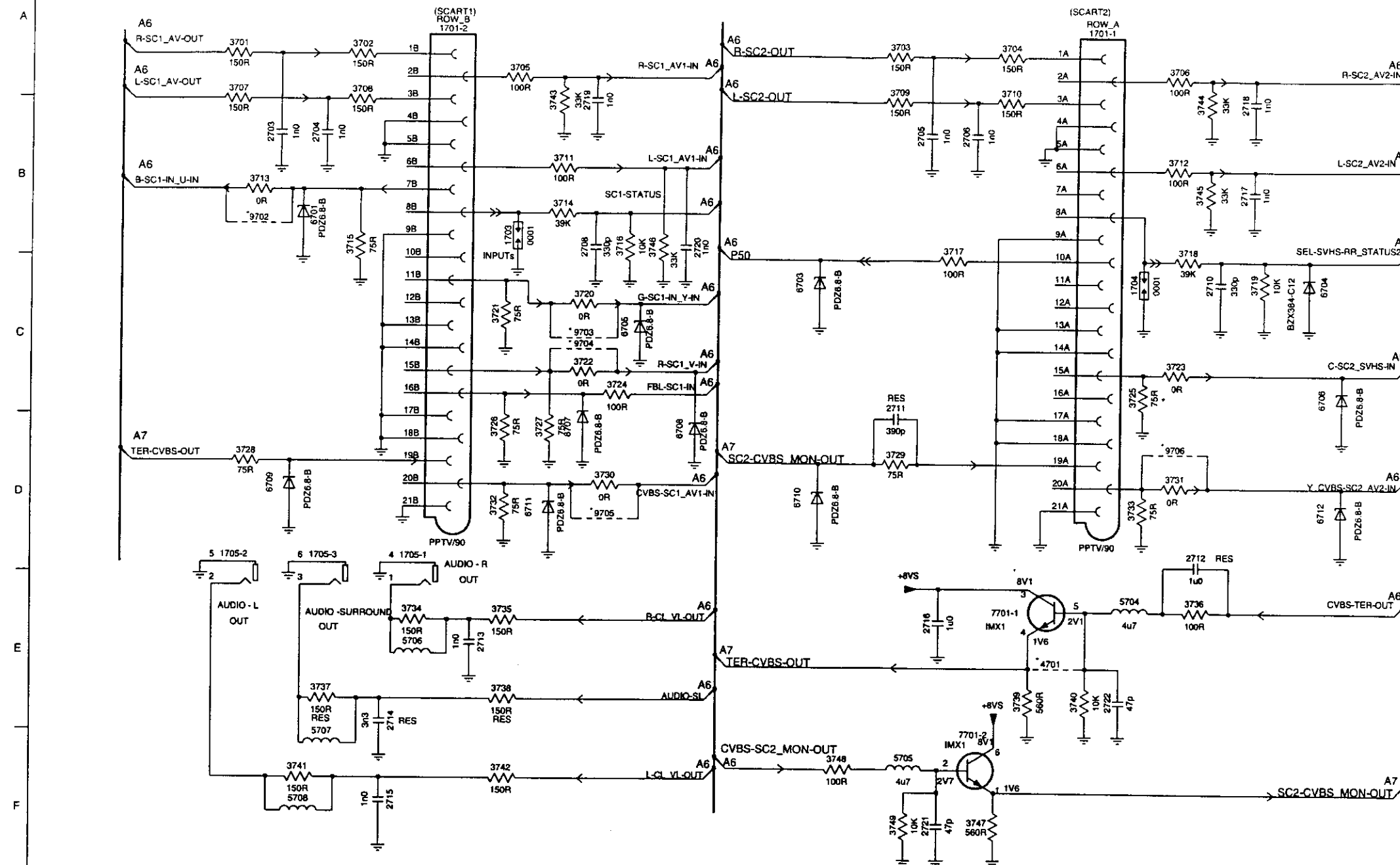
PNEL PLUS	9674	9664	4624	4625	9675	9686
GALSA	JMP	JMP	JMP	JMP	JMP	JMP

1607 G1
1608 H1
1620 A13
1621 A9
1623 B2
1624 B2
1625 C2
1629 B12
1630 D13
1631 C12
1635 D12
1645 E12
1646 F12
1669 H3
1670 H1
1680 E12
1684 E2
2663 H11
2666 B11
2667 B11
2669 B12
2670 B12
2671 B12
2672 B12
2673 B12
2674 B7
2675 D11
2676 H6
2677 H7
2678 H7
2679 H6
2680 G7
2681 H7
2682 G6
2688 E5
2689 E7
2690 E8
2691 B7
2692 B5
2693 H9
2694 H6
2695 H9
2696 H10
2697 H10
2698 H6
3623 B2
3624 B2
3625 B2
3626 C2
3627 H5
3628 H5
3629 A5
3630 A5
3670 C5
3677 H6
3683 C5
3685 C6
3686 G6
3687 G5
3688 G6
4624 D2
4625 D2
4664 B3
4683 H12
4684 F8
4685 F8
4694 A11
5680 G7
5681 E7
5682 B7
5683 H12
5684 H12
5685 H10
5686 G10
5687 H2
5688 H2
6681 G8
6682 H8
6683 C5
6684 H6
6685 H6
7673 E8
7674 B6
7675 A5
7676 A5
9620 A10
9621 A10
9626 A11
9669 E2
9670 E2
9671 E2
9672 E2
9674 C2
9675 E6
9686 E6
9691 H3

LSP: SCART I/O (Res)

A7 SCART I/O (RES)

A7



For Europe

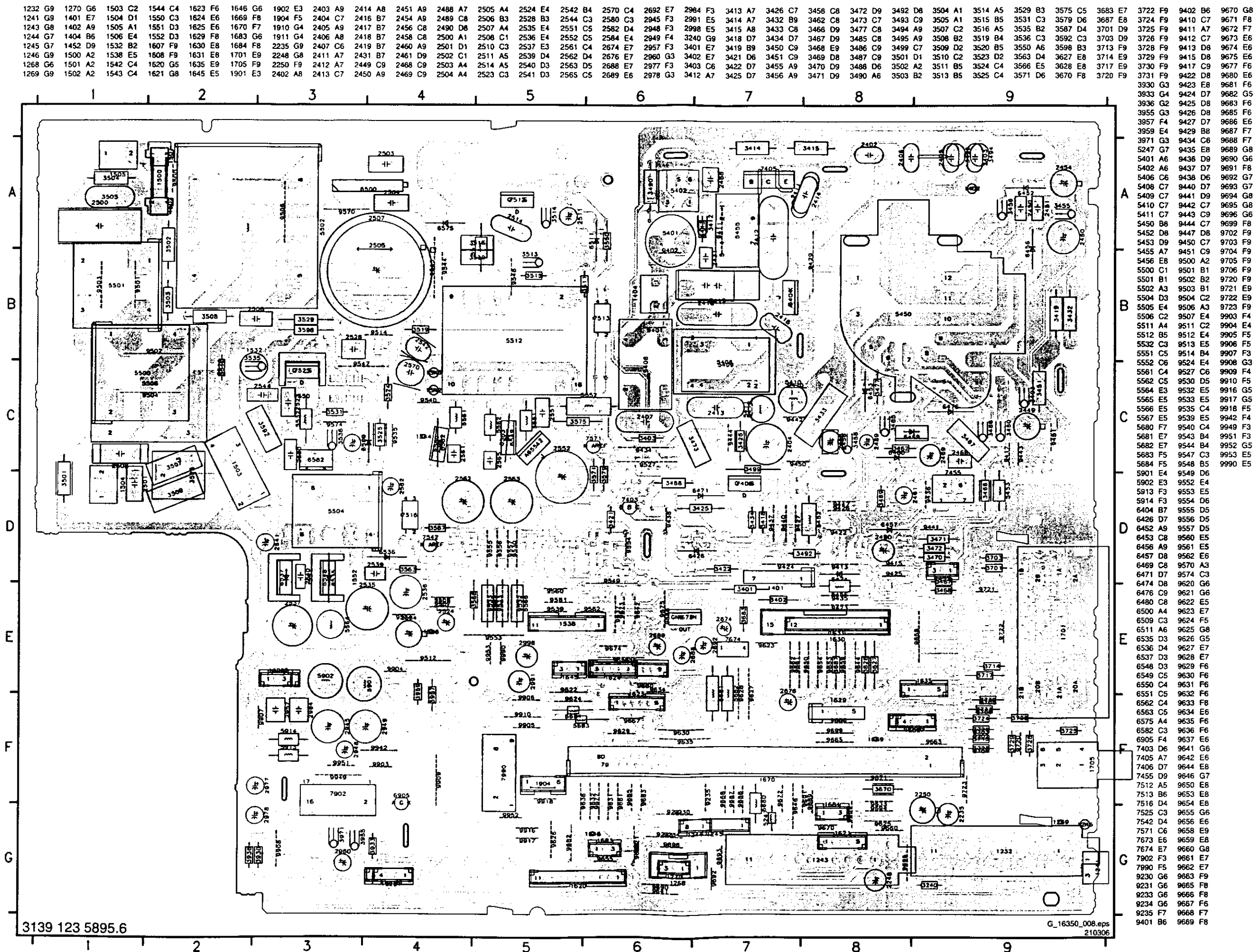
ITEM	SIZE/TUBE			
	29RF A68ERF182X044	28WSRF A66ERF172X044	32WSRF A66ERF172X044	28BLD A66EAK075X054
3725	USED	USED	USED	USED
9702	USED	USED	USED	USED
9703	USED	USED	USED	USED
9704	USED	USED	USED	USED
9705	USED	USED	USED	USED
9706	USED	USED	USED	USED

3139 123 5895.6

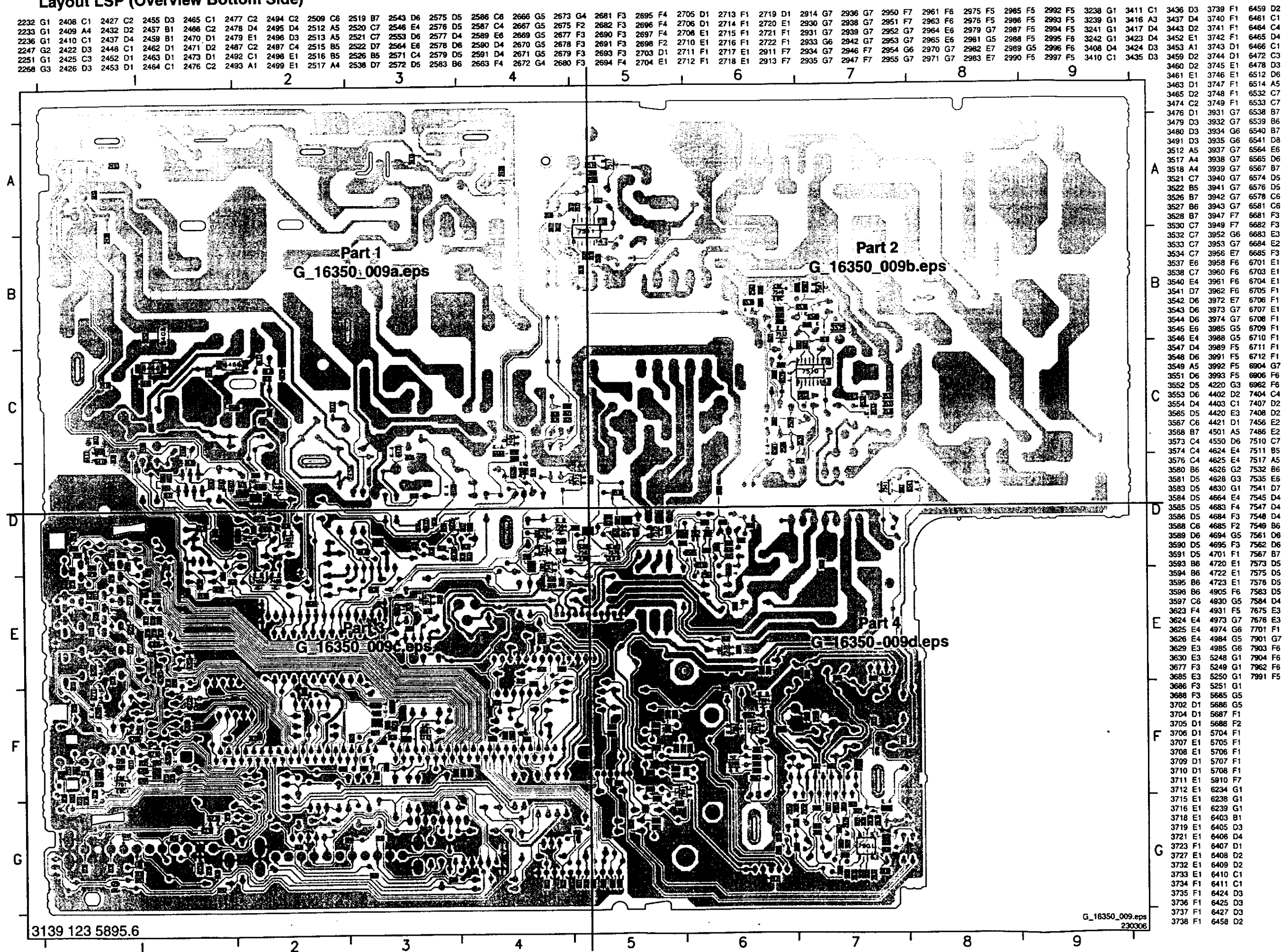
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210306

1701-1 A7 3736 E8
 1701-2 A3 3737 E2
 1703 B3 3738 E3
 1704 C7 3739 E7
 1705-1 D3 3740 E7
 1705-2 D2 3741 F2
 1705-3 D2 3742 F3
 A 2703 B2 3743 B4
 2704 B2 3744 B8
 2705 B6 3745 B8
 2706 B6 3746 B4
 2708 B4 3747 F6
 2710 C8 3748 F6
 2711 C6 3749 F6
 B 2712 D8 4701 E7
 2713 E3 5704 E7
 2714 E3 5705 F6
 2715 F3 5706 E3
 2716 E6 5707 F2
 2717 B8 5708 F2
 2718 B8 6701 B2
 2719 B4 6703 C5
 C 2720 B5 6704 C9
 2721 F6 6705 C4
 2722 E7 6706 C9
 3701 A2 6707 D4
 3702 A3 6708 D5
 3703 A6 6709 D2
 3704 A7 6710 D5
 3705 A4 6711 D4
 D 3706 A8 6712 D9
 3707 A2 7701-1 E7
 3708 A3 7701-2 F6
 3709 A6 9702 B2
 3710 A7 9703 C4
 3711 B4 9704 C4
 3712 B8 9705 D4
 3713 B2 9706 D8
 E 3714 B4
 3715 B2
 3716 B4
 3717 B6
 3718 B8
 3719 C8
 3720 C4
 3721 C3
 F 3722 C4
 3723 C8
 3724 C4
 3725 C7
 3726 D3
 3727 D4
 3728 D2
 3729 D6
 G 3730 D4
 3731 D8
 3732 D3
 3733 D7
 3734 E3
 3735 E3

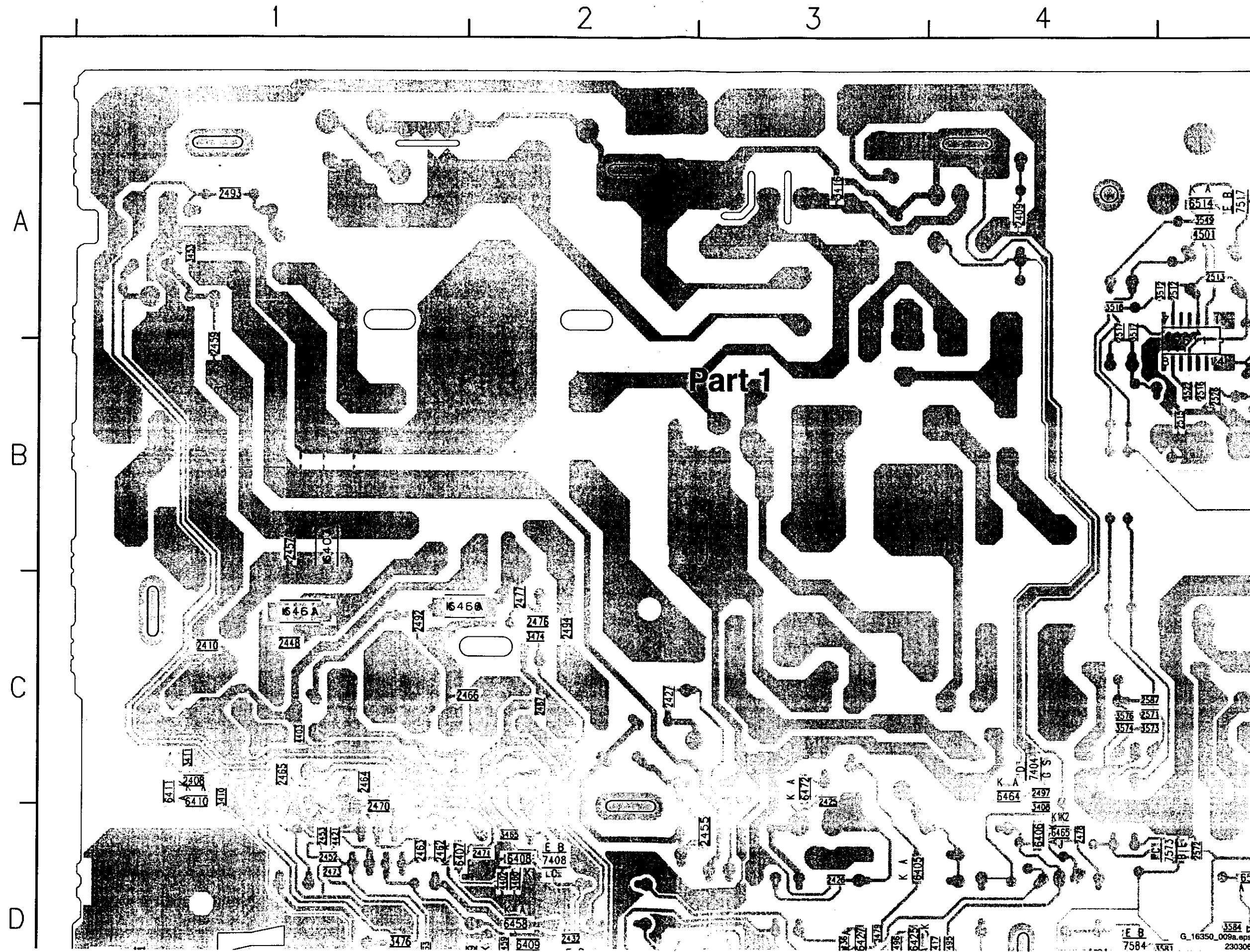
Layout LSP (Top Side)



Layout LSP (Overview Bottom Side)



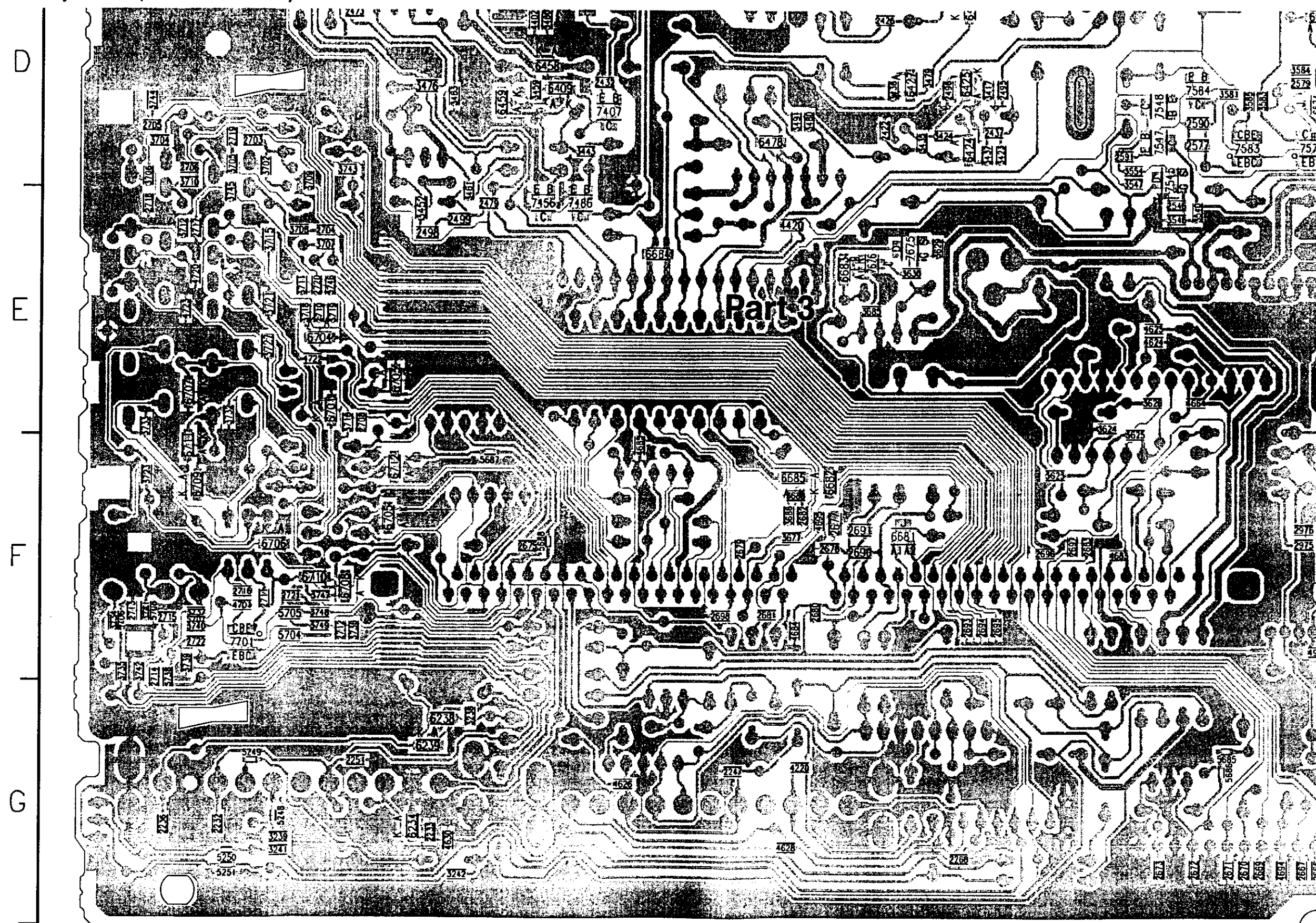
Layout LSP (Part 1 Bottom Side)



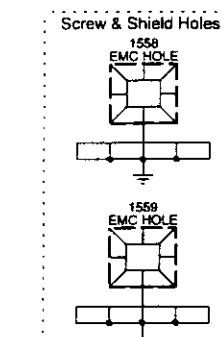
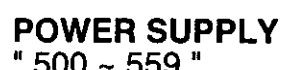
9



Layout LSP (Part 3 Bottom Side)



B1 POWER SUPPLY & CONNECTIVITIES



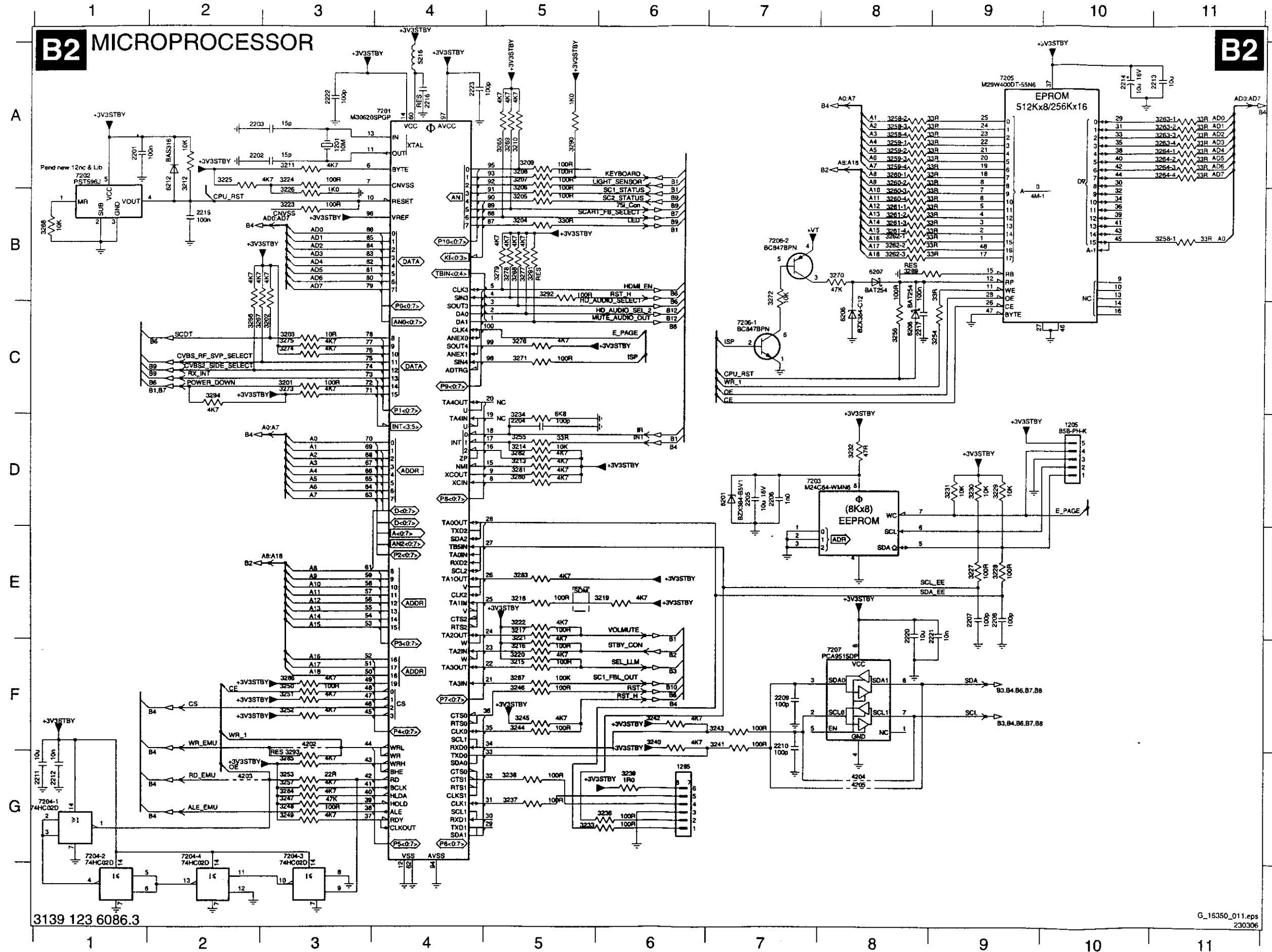
JUMPER	STANDBY ORIGINAL CONCEPT	STANDBY NEW CONCEPT
4505/4506	Y	N
4501/4502	Y	N
4503/4504	N	Y
6503/3507		
3508/2514	N	Y
7503		

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1501 A9	5582 C2
1558 F5	5583 B2
1559 G5	5584 B2
1580 A3	5585 C2
1581 B4	5586 C2
1582 C3	5587 C2
1583 E3	5588 C2
1584 F3	5589 D2
1585 C4	5590 D2
1586 A4	5591 D2
2500 B8	5592 D2
2502 B7	5593 D2
2503 B6	5594 D2
2506 B7	5595 E2
2507 D7	5596 E2
2508 D7	5597 E2
2509 D9	5598 E2
2510 D9	5599 E2
2511 D10	6502 D8
2512 D10	6503 B9
2513 C10	6560 A1
2514 B10	7500 A7
2515 D10	7502 C7
2560 B2	7503 C10
2580 B3	7504 B5
2581 B3	7505 D7
2582 B3	7506 C6
2583 A1	7560 A2
2584 A1	
2585 A2	
2586 A2	
2587 F2	
2588 F2	
2589 F2	
3500 B7	
3501 B6	
3503 D9	
3504 D9	
3505 D9	
3506 B6	
3507 B9	
3508 B10	
3560 A2	
3561 A3	
3581 B2	
3582 C2	
3583 C2	
3584 B3	
4501 C8	
4502 C8	
4503 C8	
4504 C8	
4505 B10	
4506 B10	
4560 F2	
4561 F2	
4562 F2	
4563 F2	
4575 C3	
4576 C3	
4577 C3	
4578 A3	
4579 A2	
4580 B2	
4581 B2	
4582 C2	
4583 B2	
4584 B2	
4585 C2	
4586 C2	
4587 C2	
4588 C2	
4589 D2	
4590 D2	
4591 D2	
4592 D2	
4593 D2	
4594 D2	
4595 E2	
4596 E2	
4597 E2	
4598 E2	
4599 E2	
5501 C7	
5502 D9	
5503 D10	
5560 E2	
5561 F2	
5562 F2	
5563 F2	
5580 B2	
5581 B2	

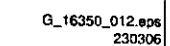
SSB: Micro Processor

B2 MICROPROCESSOR

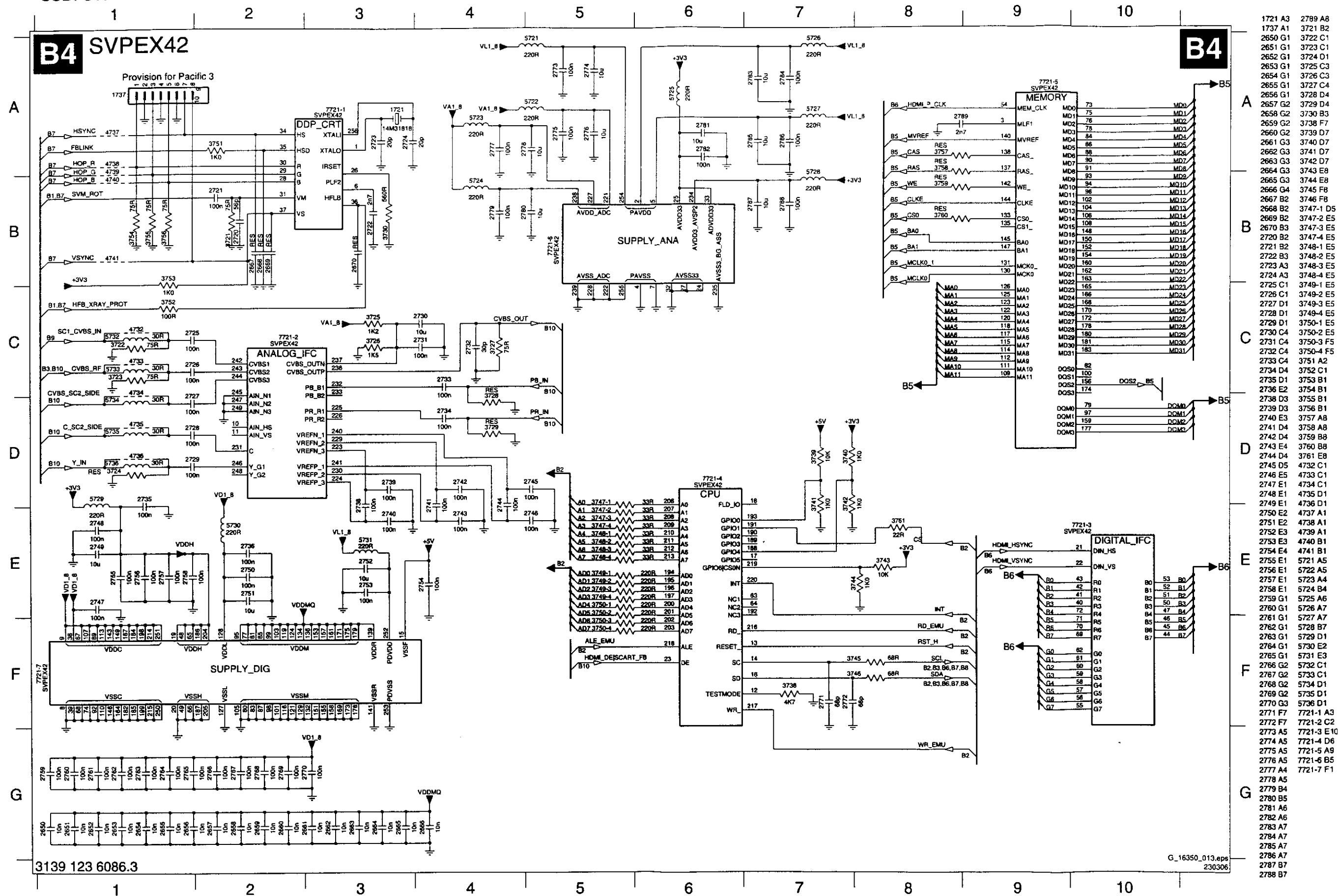


1201 A3	3261-3 B8
1205 D10	3261-4 B8
1285 G6	3262-1 B8
2201 A1	3262-2 B8
2202 A2	3262-3 B8
2203 A2	3263-1 A11
2204 D5	3263-2 A11
2205 D7	3263-3 A11
2206 D7	3263-4 A11
2207 E9	3264-1 A11
2208 E9	3264-2 A11
2209 F7	3264-3 A11
2210 F7	3264-4 A11
2211 G1	3265 A5
2212 G1	3266 C2
2213 A10	3267 C2
2214 A10	3268 B1
2215 B2	3269 A5
2216 A4	3270 B8
2217 C8	3271 C5
2220 E8	3272 B7
2221 E9	3273 C3
2222 A3	3274 C3
2223 A4	3275 C3
3201 C3	3276 C5
3202 C3	3277 B5
3203 C3	3278 B5
3204 B5	3279 B5
3205 B5	3280 B5
3206 A5	3281 D5
3207 A5	3282 D5
3208 A5	3283 E5
3209 A5	3284 G3
3210 A5	3285 G3
3211 A3	3286 F3
3212 A2	3287 F5
3213 D5	3288 B5
3214 D5	3289 B8
3215 F5	3290 A5
3216 F5	3291 B5
3217 E5	3292 B5
3218 E5	3293 G3
3219 E6	3294 C2
3220 F5	4202 F3
3221 E5	4203 G2
3222 E5	4204 G8
3223 B3	4205 G8
3224 A3	5216 A4
3225 A2	6201 D7
3226 B3	6206 G3
3227 E9	6207 B8
3228 E9	6208 G3
3229 D9	6212 A2
3230 D9	7201 A4
3231 D9	7202 A1
3232 D8	7203 D8
3233 G5	7204-1G 1
3234 D5	7204-2G 1
3236 G6	7204-3G 3
3237 G5	7204-4G 2
3238 G5	7205 A1
3239 G6	7206-1C 7
3240 F8	7206-2B 7
3241 F7	7207 F1
3242 F6	
3243 F7	
3244 F5	
3245 F5	
3246 F5	
3247 G3	
3248 G3	
3249 G3	
3250 F3	
3251 F3	
3252 F3	
3253 G3	
3254 C9	
3255 D5	
3256 C8	
3257 G3	
3258-1 B11	
3258-2 A8	
3258-3 A8	
3258-4 A8	
3259-1 A8	
3259-2 A8	
3259-3 A8	
3259-4 A8	
3260-1 A8	
3260-2 A8	
3260-3 B8	
3260-4 B8	
3261-1 B8	
3261-2 B8	

B3 TUNER IF & DEMODULATOR

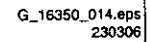


B4 SVPEX42

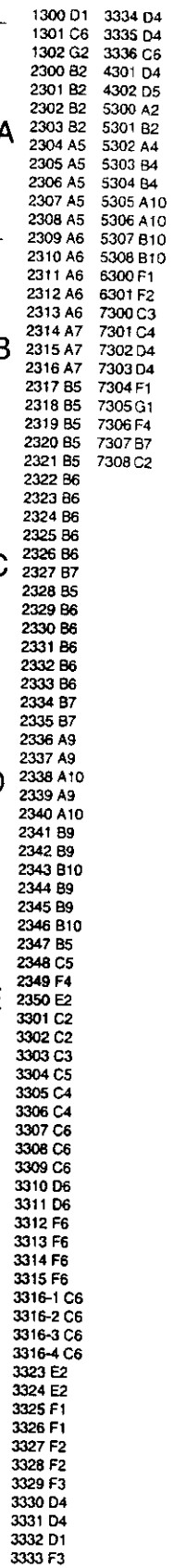


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B5 DDR DRAM & SUPPLY



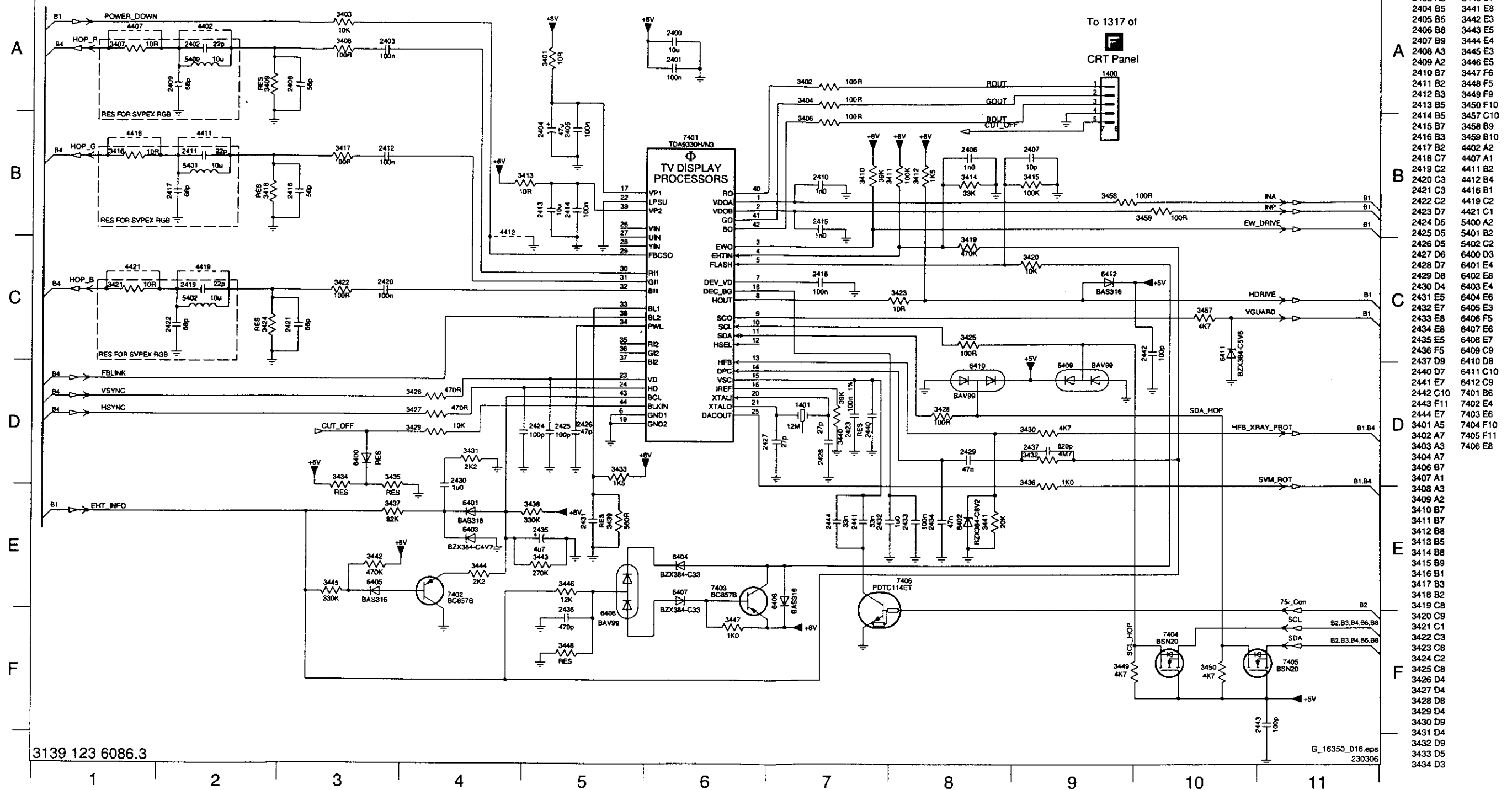
B6 HDMI



SSB: Deflection Controller

B7 DEFLECTION CONTROLLER

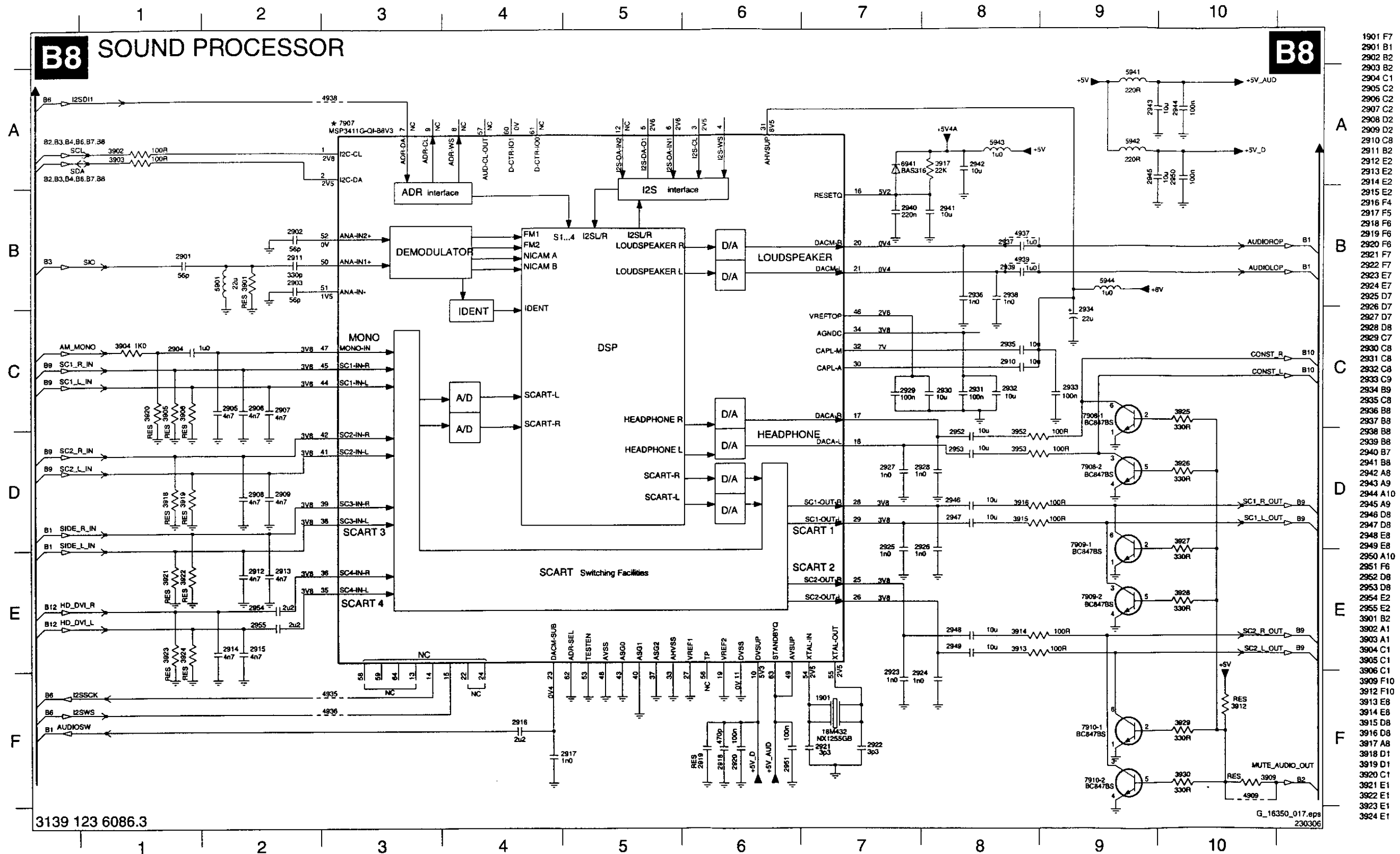
B7



3139 123 6086.3

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230306

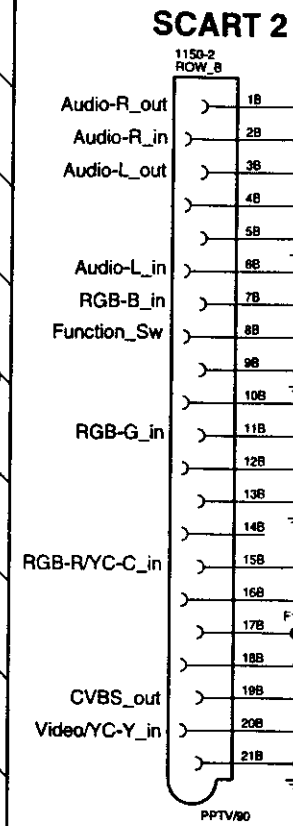
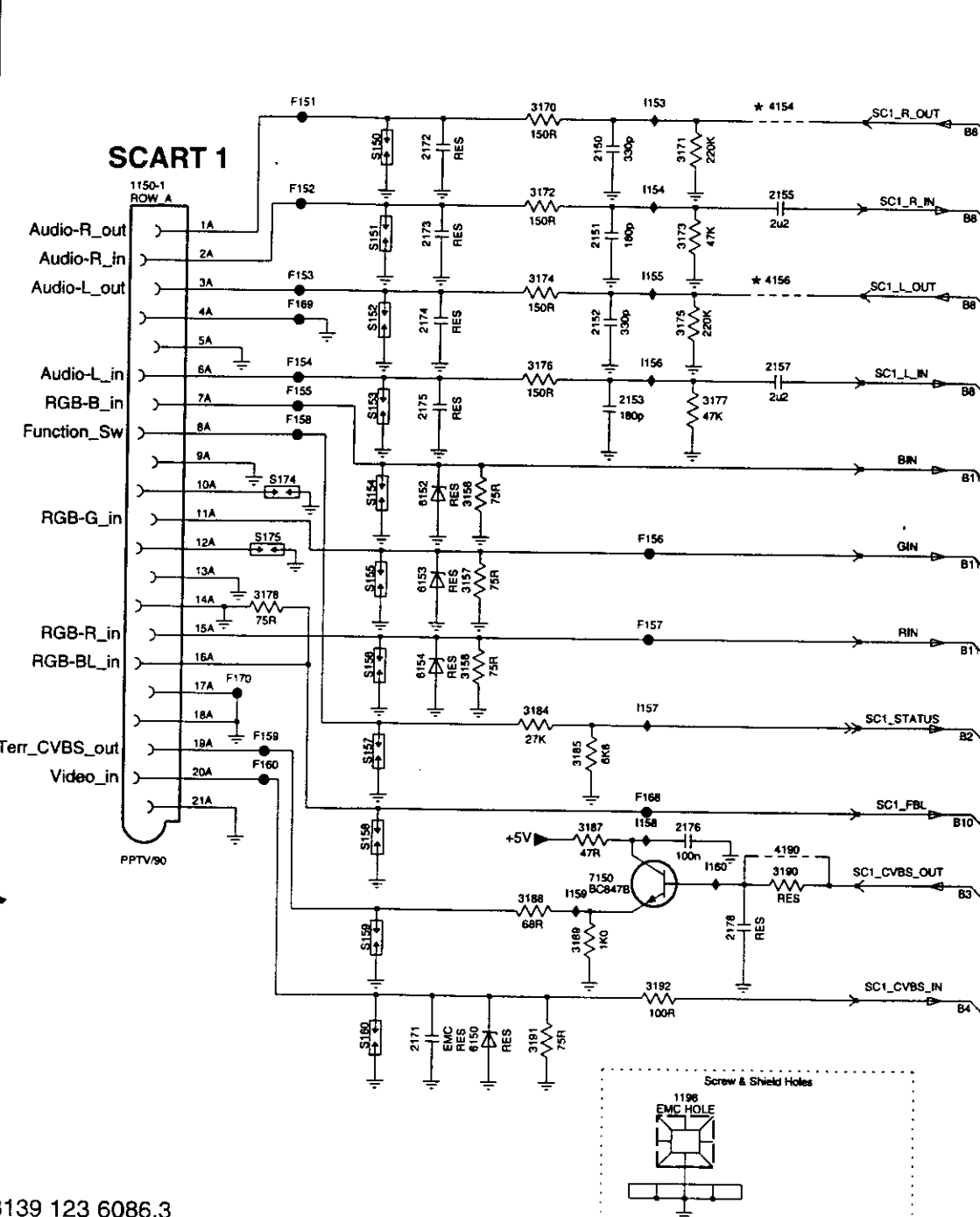
SSB: Sound Processor



1901 F7	3925 C10
2901 B1	3926 D10
2902 B2	3927 D10
2903 B2	3928 E10
2904 C1	3929 F10
2905 C2	3930 F10
2906 C2	3952 D8
2907 C2	3953 D8
2908 D2	4909 F10
2909 D2	4935 F3
2910 C8	4936 F3
2911 B2	4937 B8
2912 E2	4938 A3
2913 E2	4939 B8
2914 E2	5901 B2
2915 E2	5941 A9
2916 F4	5942 A9
2917 F5	5943 A8
2918 F6	5944 B9
2919 F6	6941 A7
2920 F6	7907 A3
2921 F7	7908-1 C9
2922 F7	7908-2 D9
2923 E7	7909-1 D9
2924 E7	7909-2 E9
2925 D7	7910-1 F9
2926 D7	7910-2 F9
2927 D7	
2928 D8	
2929 C7	
2930 C8	
2931 C8	
2932 C8	
2933 C9	
2934 B9	
2935 C8	
2936 B8	
2937 B8	
2938 B8	
2939 B8	
2940 B7	
2941 B8	
2942 A8	
2943 A9	
2944 A10	
2945 A9	
2946 D8	
2947 D8	
2948 E8	
2949 E8	
2950 A10	
2951 F6	
2952 D8	
2953 D8	
2954 E2	
2955 E2	
3901 B2	
3902 A1	
3903 A1	
3904 C1	
3905 C1	
3906 C1	
3908 F10	
3912 F10	
3913 E8	
3914 E8	
3915 D8	
3916 D8	
3917 A8	
3918 D1	
3919 D1	
3920 C1	
3921 E1	
3922 E1	
3923 E1	
3924 E1	

SSB: SCART Analogue I/O

B9 SCART ANALOGUE I/O

A
B
C
D
E
F

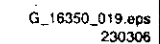
1150-1 B1 6151 E8
1150-2 B6 6152 C2
1198 F4 6153 C2
2150 A3 6154 D2
2151 B3 7150 E3
2152 B3 7151 D9
2153 C3 F151 A2
2155 B4 F152 B2
2157 B4 F153 B2
2158 A8 F154 B2
2159 A8 F155 C2
2160 B8 F156 C3
2161 C8 F157 D3
2162 A9 F158 C2
2163 A9 F159 D2
2164 B9 F160 D2
2165 C9 F161 A7
2167 A10 F162 A7
2168 E9 F163 B7
2169 B10 F164 B7
2170 E7 F165 C7
2171 F2 F166 D7
2172 A2 F167 D7
2173 B2 F168 E3
2174 B2 F169 B2
2175 C2 F170 D1
2176 E4 F171 B7
2177 D9 F172 D6
2178 E4 F173 D7
2179 E10 I152 E10
3156 C3 I153 A3
3157 C3 I154 B3
3158 D3 I155 B3
3159 C9 I156 B3
3160 C9 I157 D3
3161 C8 I158 E3
3162 D8 I159 E3
3163 D8 I160 E4
3164 E8 I161 A3
3165 E8 I162 A3
3166 E9 I163 B1
3169 E8 I164 B3
3170 A3 I165 C3
3171 A4 I166 D3
3172 B3 I167 D3
3173 B4 I168 E1
3174 B3 I169 A2
3175 B4 I170 A2
3176 B3 I171 B2
3177 C4 I172 C2
3178 D2 I173 D2
3183 D10 I155 D2
3184 D3 I156 D2
3185 D3 I157 D2
3186 D9 I158 E2
3187 E3 I159 E2
3188 E3 I160 F2
3189 E3 I161 A7
3190 E4 I162 A7
3191 F3 I163 B7
3192 F3 I164 C7
3193 A8 I165 C7
3194 A9 I166 D7
3195 A8 I167 E7
3196 A9 I168 F7
3197 B8 I169 C7
3198 B9 I170 C7
3199 B8 I171 C7
4154 A4 I172 C7
4156 B4 I173 D7
4159 C9 I174 C7
4160 C9 I175 C7
4166 A10
4168 B10
4183 D10
4190 E4
6150 F3

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230306

B10 Y Pb Pr EXT INPUT

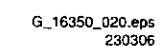


B10



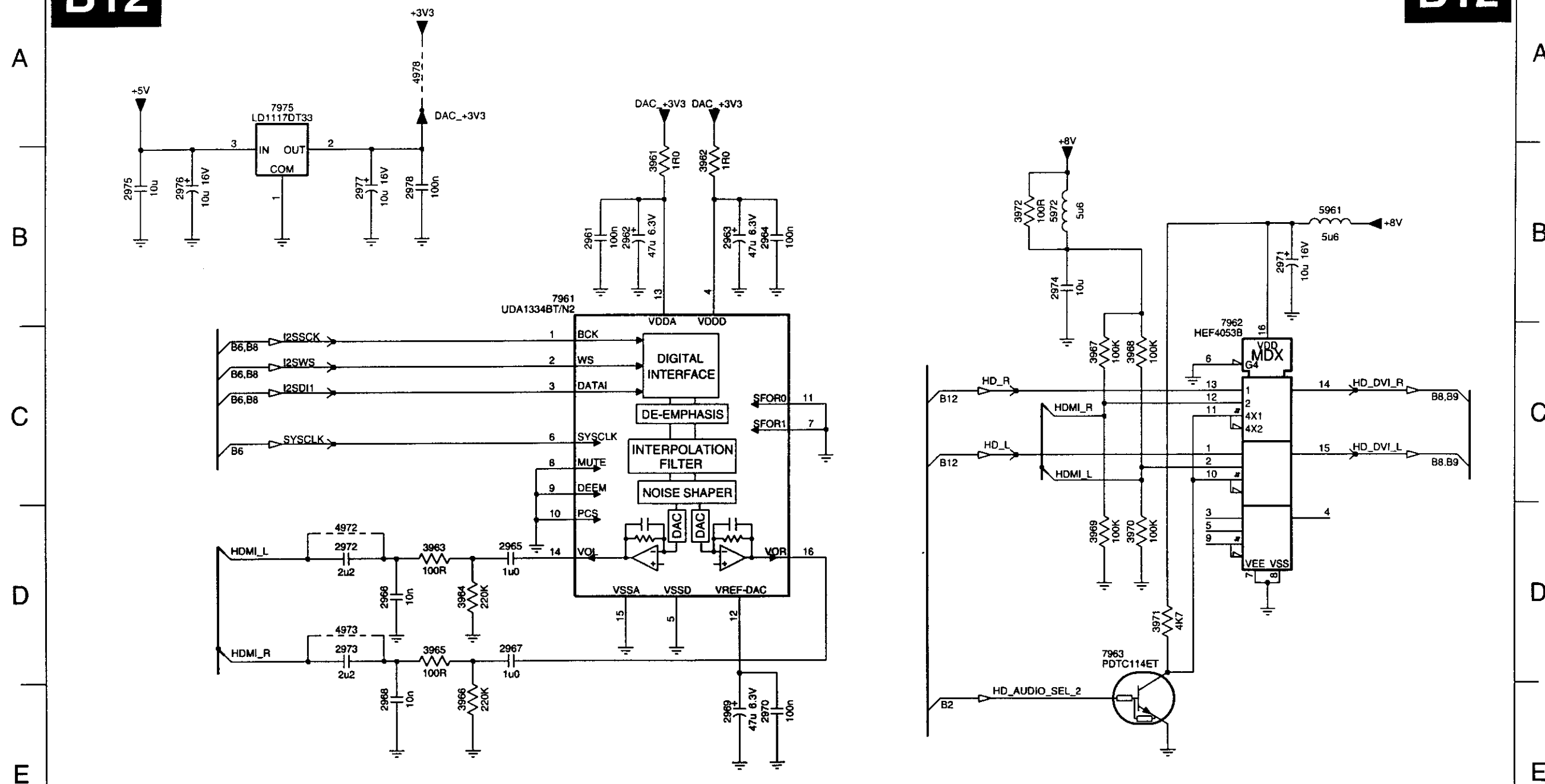
1101-1 A1	6107 E2
1101-2 B1	7103 A7
1101-3 C1	7104 D8
2101 B3	7105 E8
2102 B4	7106 E3
2103 B4	7107 G2
2104 B3	7108 B9
2105 B4	7109 C9
2106 B4	7110 C7
2107 A9	7111 E7
2108 D10	7112 G4
2109 E10	7113 E4
2110 F4	S102 B3
2111 G2	S103 C3
2112 B8	S104 B3
2113 B8	S105 A4
2114 B10	S106 D3
2115 A3	S107 A3
2116 A4	S108 A3
2117 A4	S109 C3
2118 A3	S110 D3
2119 A4	
2120 A4	
2121 C3	
2122 C4	
2123 C4	
2124 D3	
2125 D4	
2126 D4	
2127 G2	
2128 E2	
3101 B3	
3102 B4	
3103 C3	
3104 C3	
3105 B3	
3106 B4	
3107 A3	
3108 A4	
3109 D3	
3110 D3	
3111 C3	
3112 G1	
3113 F4	
3114 G1	
3115 G2	
3116 F2	
3117 B9	
3118 B10	
3119 C8	
3120 C9	
3121 C9	
3122 C9	
3123 C10	
3124 A3	
3125 A4	
3126 A3	
3127 A4	
3128 C4	
3129 D3	
3130 D4	
3131 E2	
3132 F2	
3133 E1	
3134 F1	
3135 E1	
3136 F1	
3137 E1	
3138 F1	
3139 B7	
3140 E7	
3141 G4	
3142 E4	
3143 E4	
3144 E1	
4101 G3	
4102 G3	
4103 G3	
4113 G4	
4119 C8	
5101 A9	
5102 C10	
5103 E10	
5104 E4	
5105 B9	
5106 E1	
6101 G2	
6102 G1	
6103 B2	
6104 C2	
6105 A3	
6106 D2	

B11 ADC



1600 F3 3621-4 D9
1601 F2 3622-1 D9
2600 B6 3622-2 D9
2601 B6 3622-3 D9
2602 B6 3622-4 D9
2603 B7 3623 C1
2604 B7 3624 D1
2605 B7 3625 E1
2606 B6 3626 D4
2607 B6 3627 D4
2608 B6 4602 F7
2609 B7 4603 C2
2610 B7 4604 C1
2611 B7 4605 D1
2612 B2 4606 E1
2613 B2 4607 D4
2614 C3 4608 D4
2615 C3 4635 A2
2616 C4 5600 A4
2617 C4 5601 A5
2618 C3 5602 B3
2619 D3 5603 C1
2620 D3 5604 C1
2621 D3 5605 D1
2622 D2 5606 D1
2623 E3 5607 E1
2624 E3 5608 E1
2625 E3 7600 C2
2626 E3 7601 C4
2627 E3 7635 A2
2628 C1
2629 C2
2630 D1
2631 D2
2632 E1
2633 E2
2634 F7
2635 B2
2636 B2
2637 C2
3601 D3
3602 D2
3603 D2
3604 D3
3605 D3
3606 D3
3607 E3
3608 E2
3609 E7
3610 E6
3611 F7
3612 F3
3613 F6
3614 F3
3615 C2
3616 C2
3617-1 E9
3617-2 E9
3617-3 E9
3617-4 E9
3618-1 E9
3618-2 E9
3618-3 E9
3618-4 E9
3619-1 C9
3619-2 C9
3619-3 C9
3619-4 D9
3620-1 D9
3620-2 D9
3620-3 D9
3620-4 D9
3621-1 D9
3621-2 D9
3621-3 D9

SSB: HDMI Sound Switching

B12**HDMI SOUND SWITCHING****B12**

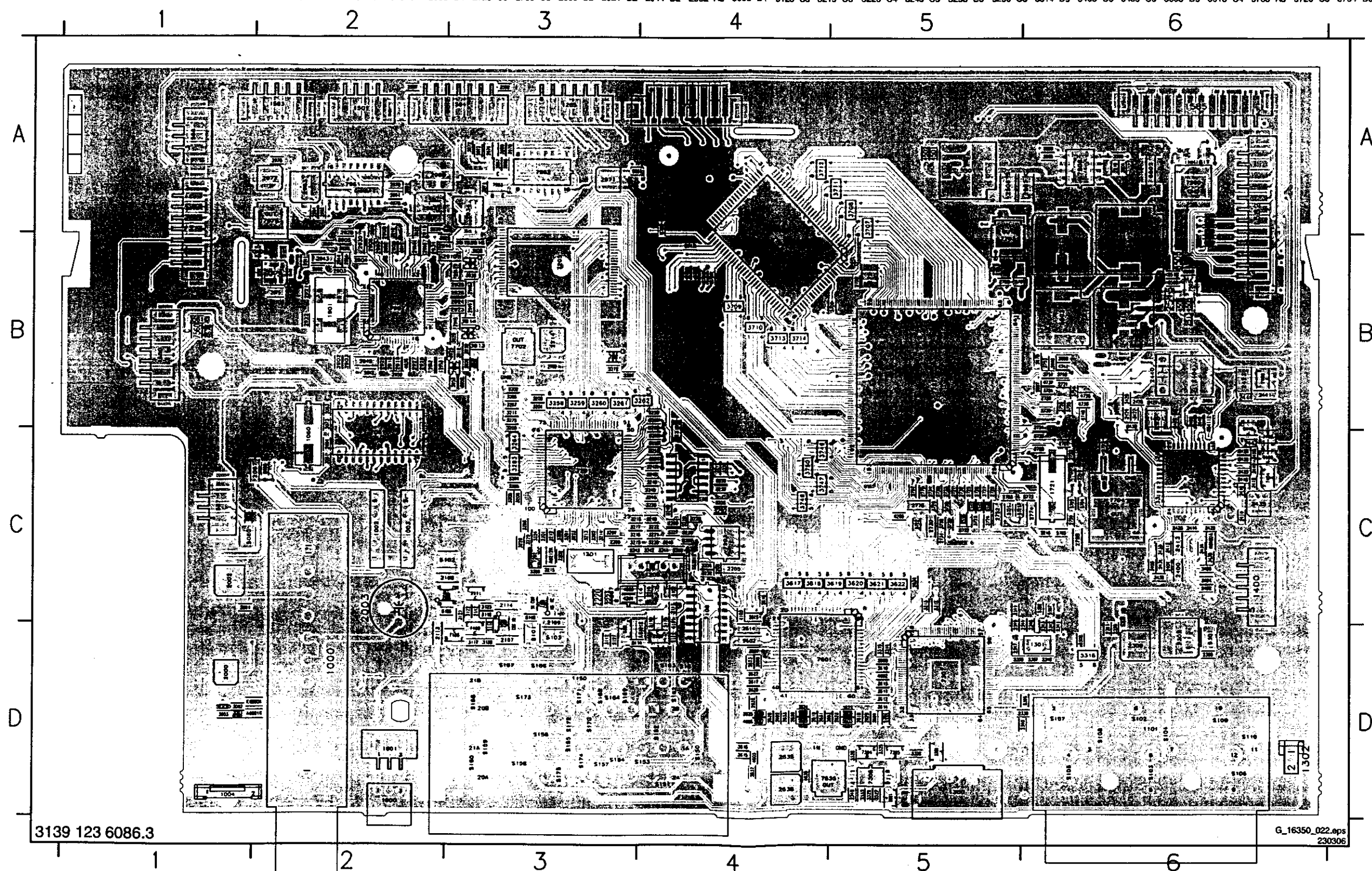
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2962 B4
2963 B4
2964 B4
2965 D3
2966 D2
2967 D3
2968 E2
2969 E4
2970 E4
2971 B7
2972 D2
2973 D2
2974 B6
2975 B1
2976 B1
2977 B2
2978 B2
3961 B4
3962 B4
3963 D3
3964 D3
3965 D3
3966 E3
3967 C6
3968 C6
3969 D6
3970 D6
3971 D7
3972 B6
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7961 B3
7962 C7
7963 D6
7975 A2

3139 123 6086.3

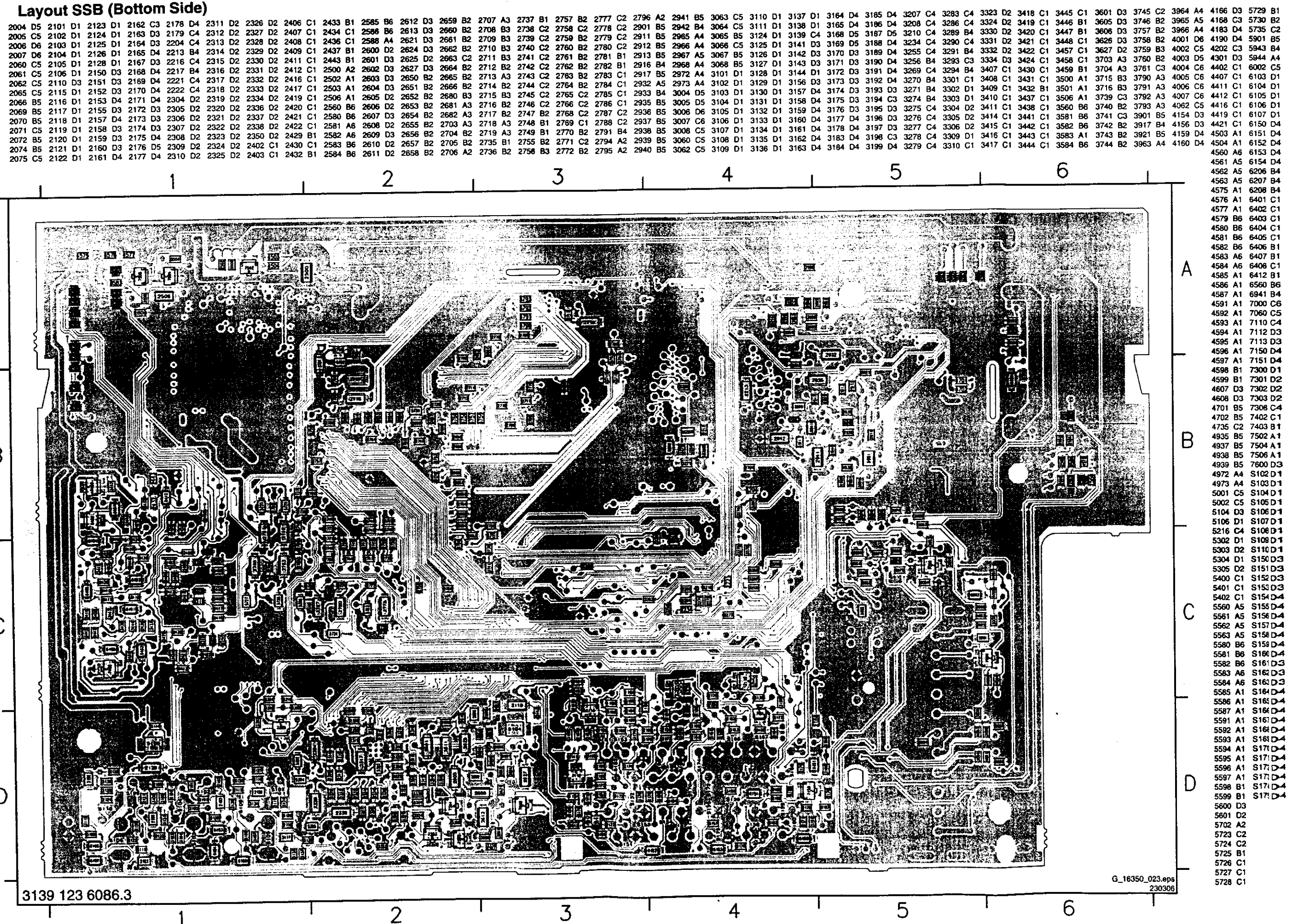
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230306

Layout SSB (Top Side)

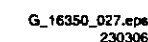
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1002 C2 1401 B6 1737 A4 2109 C3 2209 C4 2303 D6 2400 C6 2427 B6 2512 B6 2622 D4 2667 B6 2727 C5 2767 C5 2905 B2 2923 B3 2946 B3 2964 A2 3112 D3 3201 B3 3217 C3 3230 C4 3245 C4 3260 B3 3282 C3 3316 D6 3406 C6 3439 C6 3607 D4 3620 C5 3710 B4 3728 C5 3756 B6 5606 D4
1003 C2 1501 A2 1901 B2 2111 C4 2210 C4 2335 D6 2401 C6 2428 B6 2513 B6 2623 D4 2668 B6 2728 C5 2773 C6 2906 B2 2924 B3 2947 B3 2969 A2 3113 D4 3202 B3 3218 C3 3231 C4 3246 C4 3261 B3 3284 C4 3325 D5 3412 C6 3440 B6 3608 D4 3621 C5 3711 A5 3729 C5 3902 B2 5607 D4
1004 D1 1580 B1 2000 D1 2112 C3 2211 C4 2339 D6 2404 B6 2431 C6 2514 B6 2626 D4 2669 B6 2729 C5 2774 C6 2907 B2 2925 B3 2948 B3 2970 A2 3114 D3 3203 B3 3219 C4 3232 C4 3247 C4 3262 B4 3285 C4 3326 D5 3413 C6 3449 C6 3609 D5 3622 C5 3712 A4 3730 B6 3903 B2 5608 D4
1060 C2 1581 A1 2001 C1 2113 D2 2212 C4 2340 D6 2405 B6 2435 C6 2515 B6 2628 D5 2670 B6 2730 C5 2775 C5 2908 B2 2926 B3 2949 B3 2971 A3 3115 C4 3204 C3 3220 C4 3233 C4 3248 C4 3263 C3 3287 C3 3327 D5 3423 C6 3450 C6 3610 D5 3623 D5 3713 B4 3738 C6 3904 B2 5701 B5
1101 D6 1582 A6 2002 C1 2114 C3 2214 B3 2341 D6 2410 C6 2440 B6 2587 A2 2629 D5 2701 B4 2731 C5 2776 C5 2909 B2 2927 B2 2950 B2 2974 A3 3116 C4 3205 C3 3221 C4 3236 C4 3249 C4 3264 C3 3288 C3 3328 D5 3425 C6 3503 A6 3611 D5 3624 D4 3714 B4 3747 C4 3905 A2 5703 C6
1150 D3 1583 A2 2003 C2 2127 D3 2215 C3 2342 D6 2413 C6 2441 B6 2589 A3 2630 D4 2702 B4 2732 C5 2789 C6 2910 B3 2928 B2 2951 B2 2975 B2 3117 D3 3206 C3 3222 C4 3237 C4 3250 B4 3265 C3 3292 C4 3329 D5 3426 B6 3504 A6 3612 D5 3625 D4 3717 B4 3748 C4 3906 B2 5704 C6
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1300 D5 1587 C1 2068 C2 2205 C4 2223 C3 2346 D6 2423 B6 2508 A5 2617 D4 2634 C5 2723 C6 2751 B5 2798 C6 2919 B2 2934 A3 2955 B2 3001 D1 3121 C3 3213 C3 3226 C3 3241 C4 3254 B3 3272 B3 3312 C5 3401 B6 3433 C6 3561 B1 3616 D4 3706 B5 3724 C5 3752 B6 3914 B3 5731 C5
1301 D6 1600 D2 2073 B2 2206 C4 2300 D6 2347 D5 2424 B6 2509 A6 2618 D5 2635 D4 2724 C6 2752 C5 2902 B2 2920 B2 2943 B2 2961 A2 3002 D1 3122 C3 3214 C3 3227 C4 3242 C4 3257 C4 3273 B3 3313 C5 3402 C6 3434 C6 3602 D4 3617 C4 3707 A5 3725 C5 3753 B6 3915 B3 5732 C5
1302 D6 1601 D2 2107 D3 2207 C4 2301 D6 2348 D6 2425 B6 2510 A6 2619 D4 2636 D4 2725 C5 2753 C5 2903 B2 2921 B2 2944 B2 2962 A2 3003 D1 3123 C3 3215 C3 3228 C4 3243 C3 3258 B3 3280 C3 3314 D5 3403 C6 3435 C6 3603 D5 3618 C4 3708 A5 3726 C5 3754 B6 3916 B3 5733 C5

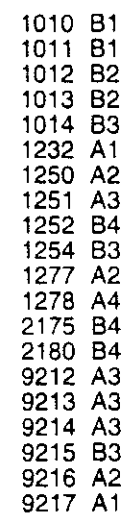


Layout SSB (Bottom Side)

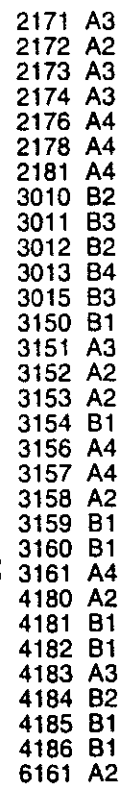


SIDE AV PANEL + HP PANEL + TOP CONTROL (SL6)

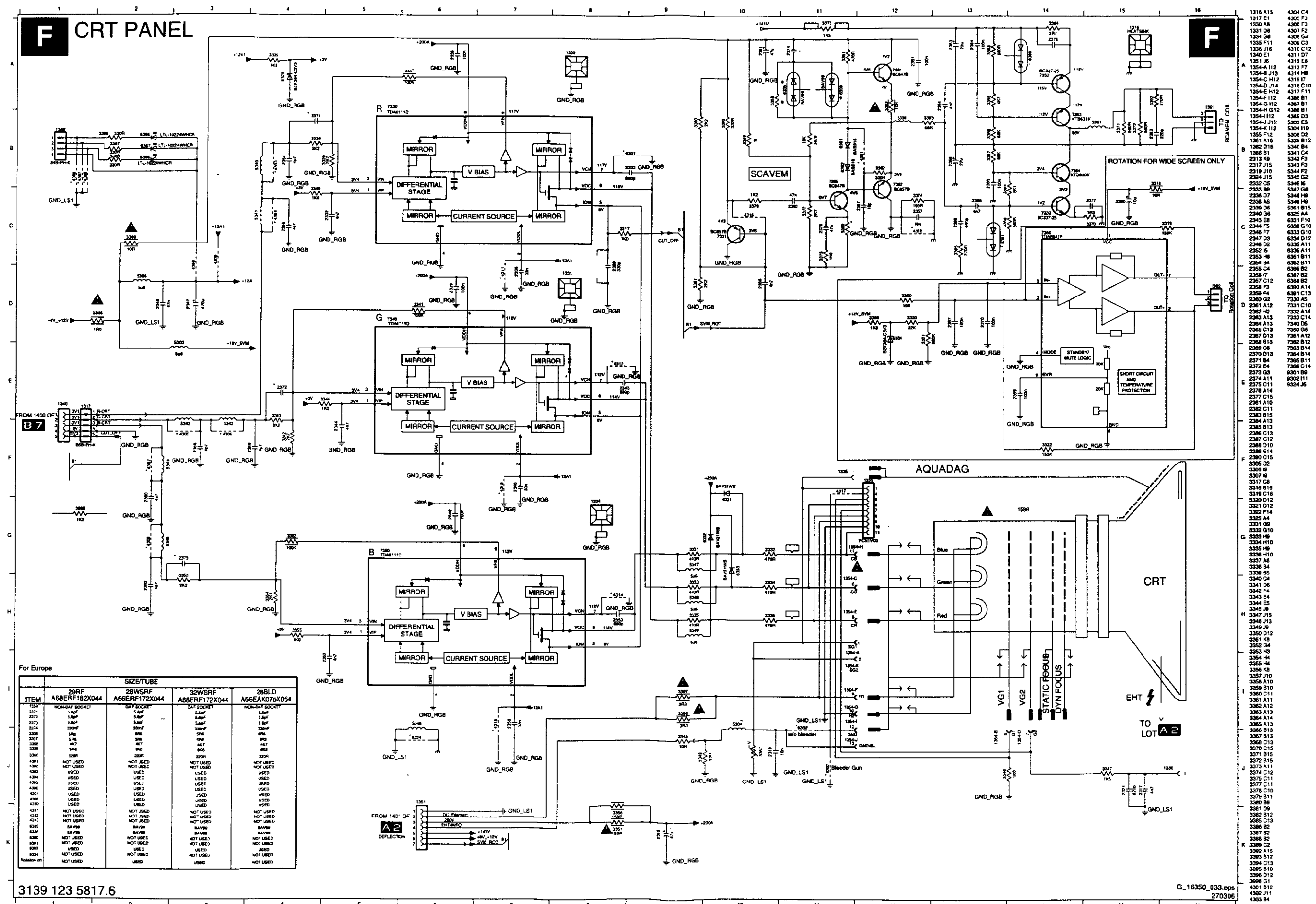




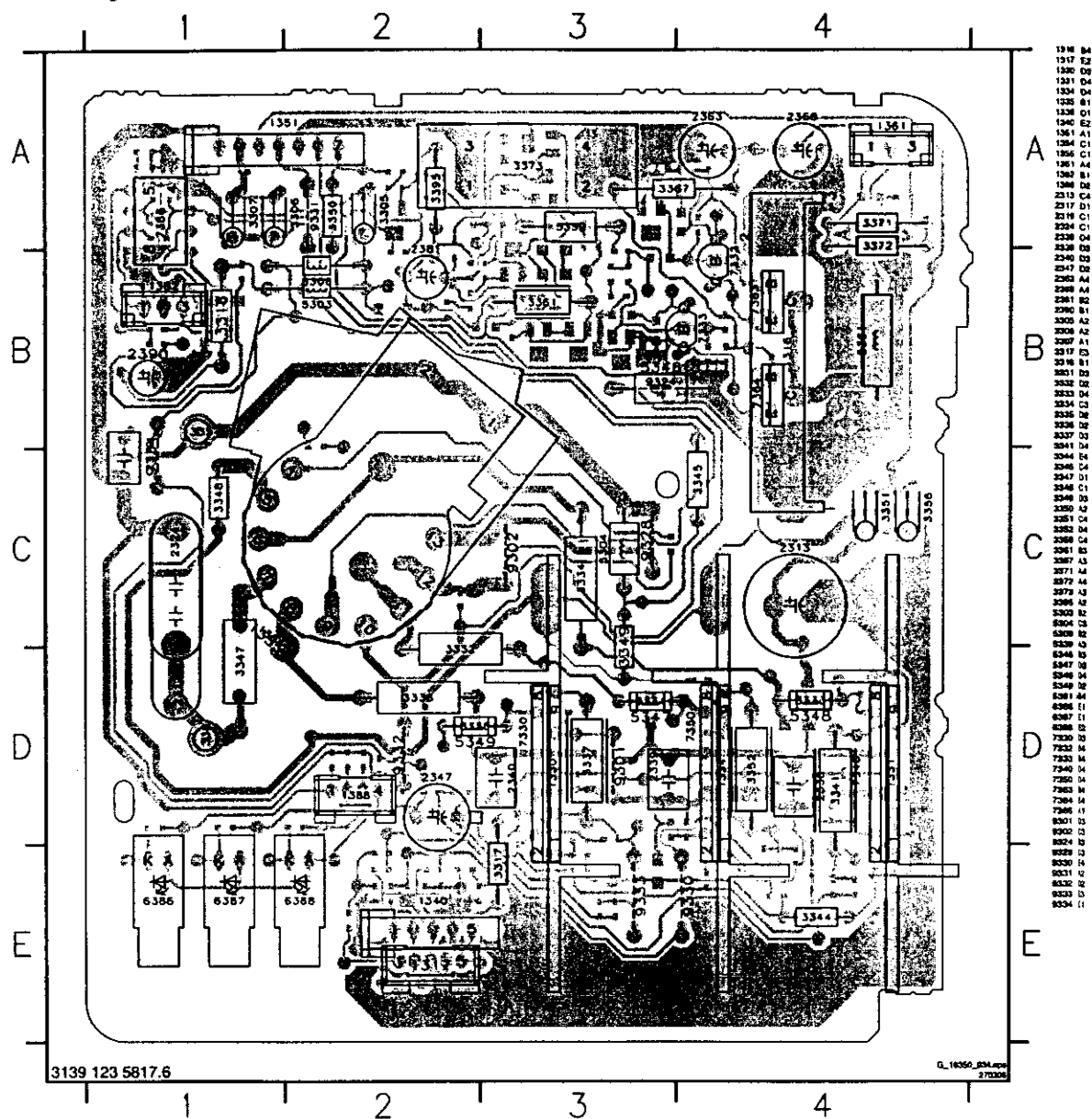
1 2 3 4



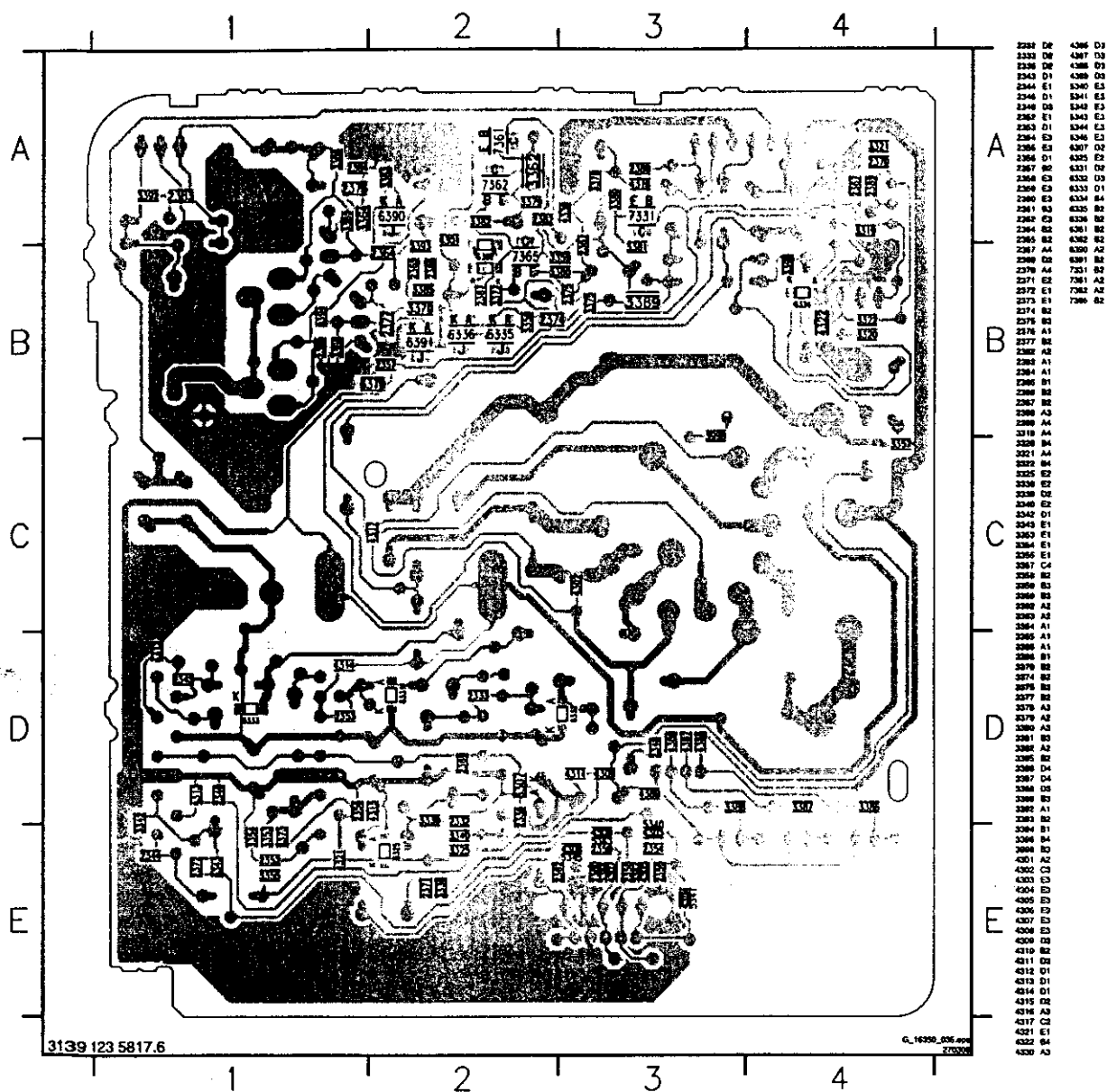
CRT Panel



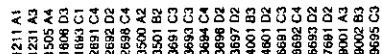
Layout CRT Panel (Top Side)



Layout CRT (Bottom Side)



FRONT INTERFACE PANEL



Personal Notes:

8. Alignments

Index of this chapter:

- 8.1 General Alignment Conditions
- 8.2 Hardware Alignments
- 8.3 Software Alignments
- 8.4 Option Settings

8.1 General Alignment Conditions

8.1.1 Default Alignment Settings

Perform all electrical adjustments under the following conditions:

- Power supply voltage: 230 V_{AC} / 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 to 30 minutes.
- Measure 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 heatsinks as ground.
- Test probe: 100 : 1, R_i > 10 Mohm, C_i < 3.5 pF.
- Use an isolated trimmer/screwdriver to perform alignments.

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

- Choose "Soft" picture mode with the "Smart Picture" button on the remote control.
- Set "Dynamic Contrast" and "Active Control" to "off" (if either one of them is present).
- Set "Brightness" to aligned value unless otherwise specified.
- Set "Contrast value" to 99.

8.1.2 Adjustment Sequence

Use the following adjustment sequence:

1. Set the correct TV-set OPTIONS as described in paragraph "Options". After slotting, re-start the set.
2. Rough adjustment of VG2 and FOCUS (potentiometers in "midway" positions; N.B.: wrong positions may cause error messages because of H or V-protection mechanism).
3. PF-AGC alignment.
4. Rough adjustment of GEOMETRY.
5. Allow the set to warm up.
6. Precise adjustment of VG2 and FOCUS.
7. Precise adjustment of GEOMETRY.
8. PIP alignments (if present).
9. COLOUR alignments.
10. Other software alignments.

8.2 Hardware Alignments

Notes:

- The Service Alignment Mode (SAM) is described in chapter 5 "Service Modes, Error Codes, and Fault Finding".
- Use the cursor-, menu-, and OK-buttons of the remote control (RC) transmitter for navigation.



Figure 8-1 Focus 1, 2, and Screen Vg2 adjustment

8.2.1 Vg2 Adjustment

In the frame-blanking period of the R, G, and B signals applied to the CRT, the video processor inserts a measuring pulse with different DC levels. Measure the black level pulse during the vertical flyback at the RGB cathodes of the CRT (pin B = R, G = G, H = B).

1. Connect the RF output of a pattern generator to the antenna input. Input a "black" picture (blank screen on CRT without any OSD info) test pattern.
2. In the SAM mode, set the "Normal Red", "Normal Green" and "Normal Blue" values to "0" for "White Tone".
3. Disable the black current loop (via the AKB filter).
4. Use the MENU key to enter the "user" menu, select "Picture", and set "Brightness" and "Contrast" to "0".
5. Set the oscilloscope to 20 V/div and the time base to 20 µs/div. Use external triggering on the vertical pulse.
6. Caution: use a trigger point on the "odd" side! Connect a 10:1 probe to one of the cathodes of the picture tube socket (see circuit diagram F).
7. Measure at cathodes on the picture tube socket the DC-level of the measuring pulse (1st full line after the frame blanking) with respect to earth; N.B.: R = pin 8, G = pin 6, B = pin 11 of CRT socket.
8. Select the pin with the highest level found and adjust V_{CUTOFF} means of the Vg2-potentiometer (lowest-one) on the Line Output Transformer (LOT) to 145 ± 5 V_{DC} (for all screen sizes).
9. Reset "Contrast" and "Brightness" to their original values.

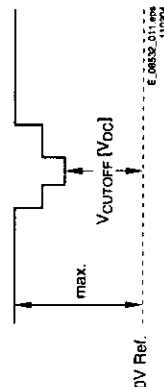


Figure 8-2 Waveform Vg2 alignment

8.2.2 Focus alignment

The LOT has the following outline:

- Focus 1 (F1) = Static alignment (red wire).
- Focus 2 (F2) = Dynamic alignment (white wire).

1. Use an external video pattern generator to input a "circle" or "crosshatch" test pattern to the set.
2. Choose "Natural" picture mode with the "Smart Picture" button on the remote control transmitter.
3. Adjust the "dynamic focus 2" potentiometer (in the middle on the LOT) until the horizontal lines at the centre of the screen are of minimum width without introducing a visible haze.
4. Adjust the "static focus 1" potentiometer (highest of the LOT) until the horizontal lines at the sides of the screen are of minimum width without introducing a visible haze.
5. Repeat these two steps to achieve the best result.

8.3 Software Alignments

Put the set in the SAM (see the "Service Modes, Error Codes and Fault Finding" section). The SAM menu will now appear on the screen. The different alignment parameters are described further on.

Notes:

- All changes to menu items and alignments must be stored manually.
- If an empty E2PROM (permanent memory) is detected, all settings are set to pre-programmed default values, so the set must be re-aligned.

8.3.1 Tuner

AGC

1. Set an external pattern generator to a colour bar video signal and connect the RF output to the aerial input of the TV. Set the amplitude to 10 mV and the frequency to 475.25 MHz. Use system PAL B/G if possible, otherwise match the system of your generator with the received signal in the set.
2. Put the set in the SAM mode.
3. Select via the TUNER menu, the AGC sub-menu.
4. Connect a DC multi-meter to pin 1 of the tuner (F235, AGC pin).
5. Adjust the AGC until the voltage at pin 1 (F235, AGC pin) of the tuner is 3.3 V (± 0.1 V). The value can be incremented or decremented by pressing the right/left CURSOR button on the RC.
6. After alignment, save the value(s) with the STORE command in the SAM main menu.

IF PILL OFFSET

No adjustments needed: default value (which can not be changed) is "0".

8.3.2 Geometry

Notes:

- Set an external pattern generator to a crosshatch video signal and connect the RF output to the aerial input of the TV. Set the amplitude at least 1 mV_{RMS} (60 dBµV) and the frequency to 475.25 MHz. Use system PAL B/G if possible, otherwise match the system of your generator with the received signal in the set.
- Use the default alignment settings, but set "Brightness" to "32".
- For wide screen models, set to "wide screen" mode, for "classic" models, set to "4:3".
- After alignment, save the value(s) with the STORE command in the SAM main 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 user MENU, choose FEATURES, and select ROTATION. With the use of a crosshatch test pattern, align it to a correct horizontal picture.

Alignment

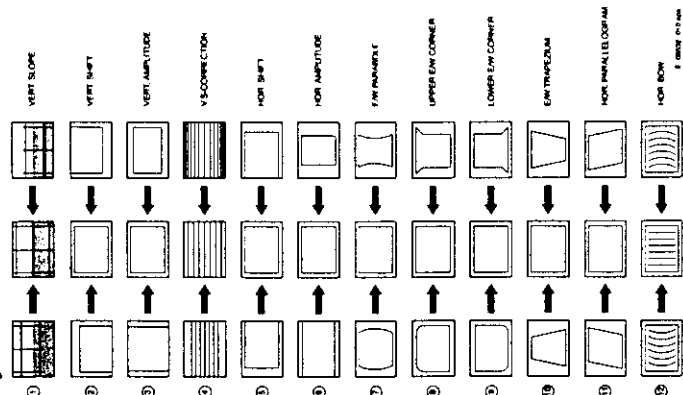


Figure 8-3 Geometry Alignments

Select "Pixel Plus" mode and put a test picture on the screen. Use the following software regulations to modify the vertical parts of the screen geometry (see Figure "Geometry Alignments" for a general idea of what you should see on the screen):

1. VSH (Vertical Shift): Align for the vertical picture centre, range from 0 to +63.
2. VAM (Vertical Amplitude): Compensating for any gain error in amplifier, adjust range from 0 to +63 to the proper amplitude.
3. VSC (Vertical S-Correction): Align for equal height of the blocks in the top, the bottom and the middle, range from 0 to +63.
4. VS (Vertical Slope): First activate menu item SBL (Service Banding = ON), so the lower part of the test picture is no longer visible. Then adjust the Vertical Slope. Align for the horizontal line in the middle of the test picture to line up with the boundary between the (still visible) upper part of the screen and the (invisible) lower part of the screen. Range from 0 to +63. After this, switch the SBL to OFF again.

Next, align the following horizontal screen geometry settings:

1. HSH (Horizontal Shift): Adjust for the horizontal centre of the screen, range from 0 to +63.

8.3.4 Sound

No adjustments needed. Use the given default values:

- AF-M = 250
- A2T = 400
- AT = 2

8.3.5 Smart Settings

No adjustments needed.

8.4 Option Settings

8.4.1 Introduction

The microprocessor communicates with a large number of 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 by the option codes.

Notes:

- After changing the option(s), save them with the STORE command.
- All changes are disregarded when the OPTIONS submenu is left without using the STORE command.
- The new option(s) setting is only active after the TV is switched "off" and "on" again with the Mains switch (the E.A.R.O.M. is then read again).

8.4.2 Changing Options

Options are used to control the presence/absence of certain features and hardware. There are two ways to change the option settings. All changes in the option settings are saved by selecting STORE and pressing the CURSOR RIGHT key. Some changes will only take effect after the set has been switched OFF and ON with the mains switch (cold start).

Changing Multiple Options by Changing Option Byte Values

Option Bytes (OB) makes it possible to set all options very fast. An option byte represents a number of different options. All options are controlled via option bytes (OB1 to OB13; each "OB" number represents 16 bits; bit numbers that are not used are omitted in the second column). Select an Option Byte you want to change with the CURSOR UP/DOWN keys, and key in the new value. See the table for more details. An explanation per option is listed in paragraph "Option Bit Definition".

Changing a Single Option

It is also possible to change an option one at a time. Therefore, select the option with the CURSOR UP/DOWN keys and change its setting with the LEFT/RIGHT keys.

2. EWW (East-West Width): This sets the (overall) horizontal size of the picture on the screen. Range from 0 to +63.

3. EWP (East-West Parabolic): Align for the vertical lines of the test picture to be straight lines. Range from 0 to +63.

4. HB (Horizontal Bow): Align the EW parabola to be symmetrical. Range from 0 to +63.

5. HP (Horizontal Parallel): Align for straight vertical lines on the picture sides. Range from 0 to +63.

6. UCP (Upper Corner Parabola): Align for the vertical lines in the upper corners of the screen to be straight. Range from 0 to +63.

7. LCP (Lower Corner Parabola): Align for the vertical lines in the lower corners of the screen to be straight. Range from 0 to +63.

8. EWT (East-West Trapezium): Align for equal length of the horizontal lines in the upper and lower parts of the screen. Range from 0 to +63.

Now, select "Double Lines" mode, and again align the following vertical screen geometry setting:

1. VS (Vertical Slope): First activate menu item SBL (Service Blanding = ON), so the lower part of the test picture is no longer visible. Then adjust the Vertical Slope. Align for the horizontal line in the middle of the test picture to line up with the boundary between the (left visible) upper part of the screen and the (invisible) lower part of the screen. Range from 0 to +63. After this, switch the SBL to OFF again.

8.3.3 White Tone

In the WHITE TONE sub menu, the colour values for the different colour temperatures can be changed.

The colour temperature mode (NORMAL, DELTA COOL, DELTA WARM) can be selected per colour (R, G, and B) with the RIGHT/LEFT cursor keys. The mode or value can be changed with the UP/DOWN cursor keys.

First, the values for the NORMAL colour temperature must be selected. Then the offset values for the DELTA COOL and DELTA WARM mode can be selected. Note that the alignment values are non-linear.

Alignment

Normally, no adjustments are needed. If the white tone alignment values used in CSN of the TV set do not give the required result, use the following alignment method:

1. Set the external pattern generator to a 100% white pattern, and connect its RF output to the serial input of the TV. Set the amplitude to at least 1 mV_{rms} (60 dBuV) and the frequency to 475.25 MHz. Use system PAL B/G if possible, otherwise match the system of your generator with the received signal in the set.
2. Set "Smart Picture" to "Natural".
3. Set "Dynamic NR" to "off".
4. Put the set in the SAM mode.
5. Select via the WHITE TONE menu, the PATTERN sub-menu.
6. Set PATTERN to "top".
7. Set NORMAL GREEN to "0".
8. Measure with the colour analyser (Minolta CA100 Colour Analyser or equivalent), calibrated with the spectra, on the centre of the screen.
9. Adjust with the cursor left/right command the Red and Blue register for the right xy-coordinates (see the table below).
10. Repeat the white tone adjustment also for the colour temperatures COOL and WARM.

Table 8.1 White tone alignment (with colour analyser)

White D mode	Temperature	OUV	X	Y
Normal	13100 K	+0.004	284 +/- 4	279 +/- 4
Cool	18300 K	+0.005	256 +/- 5	264 +/- 5
Warm	5500 K	+0.005	314 +/- 5	324 +/- 5

8.4.3 Option Settings

In the table below, you will find the option settings.

Table 8.2 Option codes in detail, at bit level

Option Byte 8 Bit table for restoring the TV set to its original Factory Default Options via the TVM Editor in the SAM menu		Model Number	2807952/172	3209665/172
OB1	Description of feature option to be switched ON or OFF			
Bit 7 (msb)	OP PHILIPS TUNER		1	1
Bit 6			0	0
Bit 5			0	0
Bit 4			0	0
Bit 3	OP AUI		1	1
Bit 2	OP UK PWR		1	1
Bit 1	OP VIRGIN MODE		1	1
Bit 0 (lsb)			0	0
Total DEC Value			108	108
Total HEX Value			6A	6A
OB2				
Bit 7 (msb)			0	0
Bit 6			0	0
Bit 5			0	0
Bit 4			0	0
Bit 3	OP TEL		1	1
Bit 2			0	0
Bit 1			0	0
Bit 0 (lsb)			0	0
Total DEC Value			0	0
Total HEX Value			00	00
OB3				
Bit 7 (msb)			0	0
Bit 6			0	0
Bit 5			0	0
Bit 4			0	0
Bit 3	OP WIDE SCREEN		1	1
Bit 2	OP WIDE		1	1
Bit 1			0	0
Bit 0 (lsb)			0	0
Total DEC Value			0	0
Total HEX Value			00	00
OB4				
Bit 7 (msb)	OP COMPRESS TB		1	1
Bit 6			0	0
Bit 5			0	0
Bit 4			0	0
Bit 3			0	0
Bit 2			0	0
Bit 1			0	0
Bit 0 (lsb)			0	0
Total DEC Value			0	0
Total HEX Value			00	00
OB5				
Bit 7 (msb)			0	0
Bit 6			0	0
Bit 5			0	0
Bit 4			0	0
Bit 3			0	0
Bit 2			0	0
Bit 1			0	0
Bit 0 (lsb)			0	0
Total DEC Value			0	0
Total HEX Value			00	00
OB6				
Bit 7 (msb)			0	0
Bit 6			0	0
Bit 5			0	0
Bit 4			0	0
Bit 3			0	0
Bit 2			0	0
Bit 1			0	0
Bit 0 (lsb)			0	0
Total DEC Value			0	0
Total HEX Value			00	00
OB7				
Bit 7 (msb)			0	0
Bit 6			0	0
Bit 5			0	0
Bit 4			0	0
Bit 3			0	0
Bit 2			0	0
Bit 1			0	0
Bit 0 (lsb)			0	0
Total DEC Value			0	0
Total HEX Value			00	00
OB8				
Bit 7 (msb)			0	0
Bit 6			0	0
Bit 5			0	0
Bit 4			0	0
Bit 3			0	0
Bit 2			0	0
Bit 1			0	0
Bit 0 (lsb)			0	0
Total DEC Value			0	0
Total HEX Value			00	00
OB9				
Bit 7 (msb)			0	0
Bit 6			0	0
Bit 5			0	0
Bit 4			0	0
Bit 3			0	0
Bit 2			0	0
Bit 1			0	0
Bit 0 (lsb)			0	0
Total DEC Value			0	0
Total HEX Value			00	00
OB10				
Bit 7 (msb)			0	0
Bit 6			0	0
Bit 5			0	0
Bit 4			0	0
Bit 3			0	0
Bit 2			0	0
Bit 1			0	0
Bit 0 (lsb)			0	0
Total DEC Value			0	0
Total HEX Value			00	00
OB11				
Bit 7 (msb)			0	0
Bit 6			0	0
Bit 5			0	0
Bit 4			0	0
Bit 3			0	0
Bit 2			0	0
Bit 1			0	0
Bit 0 (lsb)			0	0
Total DEC Value			0	0
Total HEX Value			00	00
OB12				
Bit 7 (msb)			0	0
Bit 6			0	0
Bit 5			0	0
Bit 4			0	0
Bit 3			0	0
Bit 2			0	0
Bit 1			0	0
Bit 0 (lsb)			0	0
Total DEC Value			0	0
Total HEX Value			00	00
OB13				
Bit 7 (msb)			0	0
Bit 6			0	0
Bit 5			0	0
Bit 4			0	0
Bit 3			0	0
Bit 2			0	0
Bit 1			0	0
Bit 0 (lsb)			0	0
Total DEC Value			0	0
Total HEX Value			00	00

8.4.4 Option Bit Definition

OP_PHILIPS_TUNER: Philips Tuner.

Function: Choose the tuner type that is configured in the hardware.

Values: OFF= Disabled. Other (non-Philips) tuner is used. ON= Enabled. Philips compatible tuner is used.

OP_ACI: Automatic Channel Installation.

Function: Disable/Enable automatic channel installation.
Values: OFF= Disabled Automatic Channel Installation. ON= Enabled Automatic Channel Installation.
Note: Download present program when ACI is ON.

OP_UK_PNP: UK Plug and Play.

Function: Disable/Enable UK's default Plug and Play setting.
Values: OFF= Disabled. UK's default Plug and Play setting is not available. ON= Enabled. UK's default Plug and Play setting is available.

Note: When UKPNP and VMOD are ON at the initial set-up, LANGUAGE= ENGLISH, COUNTRY= GREAT BRITAIN and after auto store is complete, VMOD will be set automatically to OFF while UKPNP remain ON.

OP_VIRGIN_MODE: Virgin Mode.

Values: OFF= Disabled, cannot access virgin mode. ON= Enabled, can access virgin mode.

Function: Disable/Enable virgin mode.

Note: Plug and Play menu item will be displayed to perform installation at the initial start up of the TV when VIRGIN MODE is ON and after installation is done, VIRGIN MODE will be automatically set to OFF.

OP_TILT: Rotation Tilt.

Function: Change the tilt level of picture tube.

Values: OFF= Disabled, menu item ROTATION is not available. ON= Enabled, menu item ROTATION is available (WS = 1; 4; 3 x 0).

OP_WIDE_SCREEN: Screen size 16x9.

Function: Disable/Enable Screen size 16x9.
Values: OFF= Disabled. Screen size 16x9 is not available. ON= Enabled. Screen size 16x9 is available.

OP_WSSB: Wide Screen Signaling Bit.

Function: Disable/Enable Wide screen Signaling bit function.
Values: OFF= Disabled. ON= Enabled (WS = 1; 4; 3 = 0).

OP_COMPRESS_16_9: Compression enable/disable bit.

Function: Disable/Enable screen compression function.
Values: OFF= Disabled. ON= Enabled (compression = 1; no compression x 0).

OP_LIGHT_SENSOR: Light sensor on/off switching bit.

Function: Disable/Enable Light sensor.
Values: OFF= Disabled. Light sensor mode disabled. ON= Enabled. Light sensor mode available.

OP_SS_DEMO_EU: Split Screen Demo.

Function: Disable/Enable Split Screen Demo.
Values: OFF= Disabled. Split Screen Demo is not available. ON= Enabled. Split Screen Demo is available.

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

Index of this chapter:

- 9.1 Introduction
- 9.2 Small Signal Board
- 9.3 Software Upgrading
- 9.4 Abbreviation List
- 9.5 IC Data Sheets

For a description of the deflection circuits, the correction circuits and the X-ray protection circuits of the LSP, see the ESI manual. For a description of the remaining LSP circuits, see the A02 manual, on which the ESI was based. For a description of the new SSB, see the circuit diagrams in chapter 6 and the general description below.

9.1.1 General description of the SSB

Note: Only new circuits (circuits that have not been published recently) are mentioned. For the other circuits, see the A02 and the ESI manuals.

9.1 Introduction

The L06.1E is a 100 Hz widescreen CRT based HD prepared TV set for the year 2006. Its CRT has a "RP" (Real Flat) screen, with 29 and 32 inch screen formats.

The set has the following styling: SL5.

Pixel Plus technology is used for improved picture quality.

This TV set is based on the LSP of the ESI (which in its turn is based on the A02).

Note: The SSB is no longer directly attached to the LSP, but has been moved to a separate position in the TV set. Flatcables are used for the connections between the LSP and the SSB.

The L06.1E chassis has a new SSB, with respect to the SSB used in the ESI chassis. This SSB is based on the Trident and a new processor Reneas (instead of the Painter processor used in the L05 chassis).

The main functionalities of the SSB are:

- RF tuner, RF/AV decoder, 3D comb filter, AV interface for: 2 SCART connectors, 1 Side AV (for SVHS and headphones), HD YPbPr/LR; HDMI/DVI plus LR Audio.
- Up-scaler (uses PQ registers in Trident).
- Audio decoder/processor.
- Deflection processor.
- System controller with Teletext processor (128 MB memory, shared between video and Teletext - 1200 pages).

9.2 Small Signal Board

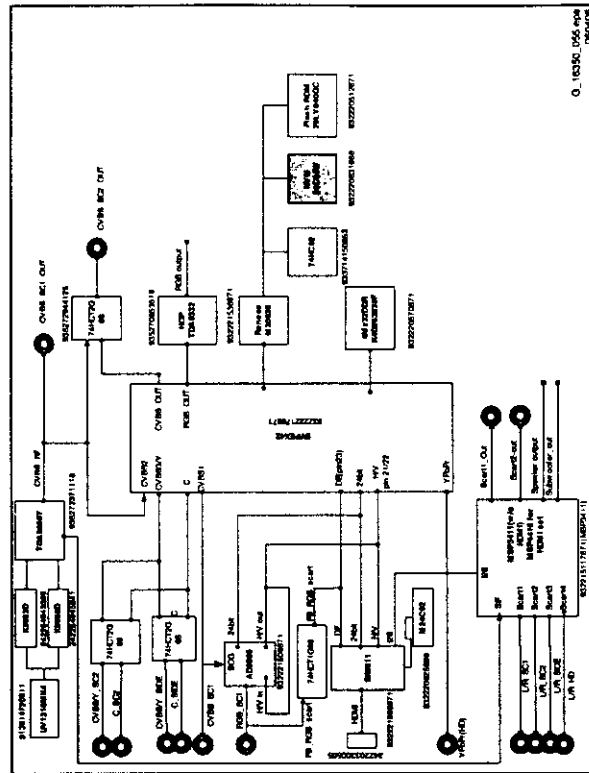


Figure 9-1 SSB architecture

9.3 Software Upgrading

In this chassis, you can upgrade the software via the IAP tool (in Application Programming). This offers the possibility to replace the entire SW image without having to remove the flash-RAM from its socket. You can find more information on that in Chapter 5 ("Service Modes, Error Codes, and Faultfinding") in the paragraph "IAP Tool".

9.4 Abbreviation List

06/12	SCART switch control signal on AV board: 0 = loop through (AUX to TV), 6 = play 16:9 format, 12 = play 4:3 format
2CS	2 Carrier Sound
A2	Commonly known as 2 Carrier Sound (2CS) system
AC	Alternating Current
ACI	Automatic Channel Installation: algorithm that installs TV channels directly from a cable network by means of a predefined TXT page
ADC	Analogue to Digital Converter
ADOC	Automatic Frequency Control: control signal used to tune to the correct frequency
AFC	Automatic Frequency Control: control signal used to tune to the correct frequency
AGC	Automatic Gain Control: algorithm that controls the video input of the feature box
AM	Amplitude Modulation
ANC	Automatic Noise Reduction: One of the algorithms of Auto TV
AP	Asia Pacific
AR	Aspect Ratio: 4 by 3 or 16 by 9
ASD	Automatic Standard Detection
AUDIO-SL	Audio Surround Left
AV	Audio Video
AVL	Automatic Volume Level control
B-SC1-IN	Blue SCART1 in
B-SC2-IN	Blue SCART2 in
B-TXT	Blue teletext
B/G	Monochrome TV system: Sound carrier distance is 5.5 MHz
BBD	Black Bar Detection
BCL	Beam Current Limiter
BC-PROT	PROtection signal to the microprocessor in case of a too high Beam Current
BLC-INFO	Black Current INFO
BLD	Black Level Detection
BS	Black Stretch
BTSC	Broadcast Television Standard Committee: Multiplex FM stereo sound system, originating from the USA and used e.g. in LATAM and AP-NTSC countries
C	Centre channel (audio) or Chroma; The NTSC/PAL/SECAM video signal contains two parts that make up what we see on the display; the luminance (or intensity) part and the colour (or chroma) part
CBA	Circuit Board Assembly (or PWB)
CL	Constant Level: audio output to connect with an external amplifier
CLUT	Colour Look Up Table
CompPair	Computer aided rePair
CRT	Cathode Ray Tube (or picture tube)
CSM	Customer Service Mode
CTI	Colour Transient Improvement; Manipulation of the steepness of the chroma transients
CVBS	Composite Video Blanking and Synchronisation
CVBS-EXT	CVBS signal from external source (VCR, VCD, etc.)
CVBS-INT	CVBS signal from Tuner
CVBS-MON	CVBS monitor signal
CVBS-TER-OUT	CVBS terrestrial out
CVI	Component Video Input

D/K	Monochrome TV system: Sound carrier distance is 6.5 MHz. D = VHF-band, K = UHF-band
DAC	Digital to Analogue Converter
DAF	Dynamic Alignment and Focusing; a method to keep the electron spot round and focused during the whole scan
DBE	Dynamic Bass Enhancement: extra low frequency amplification
DC	Direct Current
DOC	Dynamic Contrast Control
DC-filament	Filament supply voltage
DEGAUSS	Control line: Logic LOW to enable CRT degaussing, Logic HIGH to disable the CRT degaussing
DFU	Directions For Use: owner's manual
DNR	Digital Noise Reduction; Noise reduction feature of the set / Dynamic Noise Reduction
DNR	Digital Noise Reduction; Noise reduction feature of the set / Dynamic Noise Reduction
DOP	Digital Output Processor (Part of ADOC which takes care of RGB control and deflection)
DPL	Dolby Pro Logic
DPL	Dolby Pro Logic
DRAM	Dynamic RAM; dynamically refreshed RAM
DRAM	Dynamic RAM; dynamically refreshed RAM
DS	Digital Scan
DSP	Digital Signal Processing
DST	Dealer Service Tool: Special remote control designed for dealers to enter e.g. service mode (a DST-amulator is available in ComPair)
DTS	Digital Theatre Sound
DVD	Digital Versatile Disc
DVI(-d)-I	Digital Visual Interface (d = digital only) (= integrated); A digital video interface to a display, designed to replace the analogue YPbPr or RGB interface
DW	Double Window
DYN-FASE-COR	Dynamic phase correction, to correct the phase of the H-drive
EEPROM	Electrically Erasable and Programmable Read Only Memory
EHT	Extreme High Tension; the voltage between the cathode and the shadow mask that accelerates the electrons towards the screen (around 25 kV)
EHT-INFO	Extra High Tension INFO; information used for contrast reduction, vertical and horizontal amplitude correction, beam current protection, and flash detection
EMI	Electro Magnetic Interference; Leakage of high-frequency radiation from a transmission medium
EPG	Electronic Program Guide; System used by broadcasters to transmit TV guide information (= NextView)
EPLD	Erasable Programmable Logic Device
EU	Europe
EW	East West; related to horizontal deflection of the set
EXT	EXTernal (source), entering the set by SCART or by cinch (jacks)
FBL	Fast Blanking: DC signal accompanying RGB signals
FBL-SC1-IN	Fast blanking signal for SCART1 in
FBL-SC2-IN	Fast blanking signal for SCART2 in
FBL-TXT	Fast Blanking Teletext
FBX	Feature Box: Part of the small signal board/separate module which contains 100 Hz processing, extra features and AutoTV algorithms (FBX6 = based on PICNIC, FBX7 = based on PICNIC and Eagle, FBX8 = based on PICNIC, Eagle, and Columbus)
FE	Front End; Tuner and RF part together
FLASH	FLASH memory
Field	Each interlaced broadcast FRAME is composed of two Fields; each Field consists of either Odd or Even lines
Flament	Filament of CRT
FLASH	FLASH memory
FM	Field Memory / Frequency Modulation
FM-Radio	Radio receiver that can receive the FM Band 87.5 - 108 MHz
FMR	FM Radio
Frame	A complete TV picture comprising all lines (625/525)
FRAMEDRIVE -	Differential frame (vertical) drive signal (negative)
FRAMEDRIVE +	Differential frame (vertical) drive signal (positive)
FRC	Frame Rate Converter
FRONT-C	Front input chrominance (SVHS)
FRONT-DETECT	Control line for detection of headphone insertion, Service Mode jumper, power failure detection
FRONT-Y_CVBS	Front input luminance or CVBS (SVHS)
FTV	Flat Television
G	Green
G-SC1-IN	Green SCART1 in
G-SC2-IN	Green SCART2 in
G-TXT	Green teletext
Gbits	Giga bits per second
H	H, sync to the module
H-2FH	Horizontal sync input for the 2FH source
H-A50	Horizontal Acquisition 1H: horizontal sync pulse coming out of the HIP
H-D100	Horizontal Drive 2FH: Horizontal sync pulse coming out of the Feature Box
H-DRIVE	Horizontal Drive
H-FLYBACK	Horizontal Flyback
H-OUT	H, sync output of the module / Horizontal Acquisition; horizontal sync pulse
HA	Horizontal Output pulse
HD	High Definition: 720p, 1080i, 1080p
HDMI	High Definition Multimedia Interface; digital audio and video interface
HEADPHONE-L	Stereo headphone (left) signal output
HEADPHONE-R	Stereo headphone (right) signal output
HFB	Horizontal Flyback Pulse; Horizontal sync pulse from large signal deflection
HP	Head Phone
HW	Hardware
I	Monochrome TV system: Sound carrier distance is 6.0 MHz. VHF- and UHF-band
IAP	IAP Tool (in Application Programming); used to upload software to a TV set without having to remove flash ROMs
I ² C	Inter IC bus (also called IIC)
I ² S	Inter IC Sound bus
IC	Integrated Circuit
IDRIVE-	Vertical drive -
IDRIVE+	Vertical drive +
IF	Intermediate Frequency

IF-TER IIC Interlaced	IF signal from main tuner Inter IC bus (also called I ² C) Scan mode where two fields are used to form one frame. Each field contains half the number of the total amount of lines. The fields are written in "pairs", causing line flicker.	MP/TP	Multi Picture in Picture; Commercial feature showing several frozen or moving pips
IO	In/Out	MPX	Multiplex
IR	Infrared	MSP	Multi-standard Sound Processor: ITT sound decoder
IRDM	Internal ROM (inside the microcontroller)	MUTE	MUTE Line
IRQ	Interrupt ReQuest	NAFTA	North American Free Trade Association; Trade agreement between Canada, USA and Mexico
ITV	Institutional TV	NC	Not Connected
JTAG	Joint Test Action Group. Definition for a standardised serial test interface	NDF	No vertical Deflection; Vertical fly back protection
KEYB	Front panel keyboard	NHF	No Horizontal Deflection; Horizontal fly back protection
KEYBOARD	Input line. Carries the voltage value of the corresponding tact switch on TOP-control or FRONT-control keypad	NICAM	Near Instantaneously Companded Audio Multiplexing; This is a digital sound system, mainly used in Europe
L	Left audio channel	NTC	Negative Temperature Coefficient, non-linear resistor (resistance decreases if temperature increases)
LA'	Monochrome TV system. Sound carrier distance is 6.5 MHz. L' is Band I, L is all bands except for Band I	NTSC	National Television Standard Committee. Colour system used mainly in North America and Japan. Colour carrier NTSC MN = 3.579545 MHz, NTSC 4.43 = 4.433619 MHz (this is a VCR norm, it is not transmitted off-air)
Last Status	The settings last chosen by the customer and read and stored in RAM or in the NVM. They are called at start-up of the set to configure it according to the customer's preferences	NVM	Non Volatile Memory: IC containing data such as alignment values, preset stations
LATAM	Latin America	O/C	Open Circuit
LCD	Liquid Crystal Display	OB	Open Byte
L-CL-VOUT	REAR CINCH stereo output	OC	On/Off control signal for the LED
LED	Light Emitting Diode	ON/STBY	On/Standby
LFE	Low Frequency Enhancement audio channel	ON/OFF-LED	Active-LOW control line. Logic LOW = red LED "on", HIGH = red LED "off"
L-FRONT-IN LIGHT-SENSOR LINE DRIVE	EXT3 stereo input Ambient light intensity signal. Horizontal (line) deflection drive signal (for the line transistor) Low Noise Adapter / Low Noise Amplifier	OP	Option Byte
LNA	Line Output Transformer (also called FBT). The transformer in which the EHT is generated	OSD	On Screen Display
LOT	Left surround and Right surround channel (audio)	P50	Project 50: Communication protocol between TV and peripherals
LS	Load Speaker	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)
LS, Ra	Left and Right total in case of a Dolby ProLogic encoded signal (audio)	PC	Personal Computer
LSP	Large Signal Panel	PCB	Printed Circuit Board (or PWB)
Li, Ri	Left total and Right total in case of a Dolby ProLogic encoded signal (audio)	PCM	Pulse Code Modulation
LTI	Luminance Transient Improvement	PILOT	Pilot Signal
LTP	Luminance Transient Processor	PIG	Picture In Graphic
LUT	Look Up Table	PIP	Picture In Picture
LYOS	Low Voltage Differential Signalling, data transmission system for high speed and low EMI communication.	PLL	Phase Locked Loop; Used for e.g. FST tuning systems. The customer can directly provide the desired frequency
M/N	Monochrome TV system. Sound carrier distance is 4.5 MHz. M = 525 lines @ 60 Hz, N = 625 lines @ 50 Hz	POR	Power On Reset; Signal to reset the µP
Mb/s / Mbps	Mega bits per second	POR-FLASH	Signal that informs the micro controller (partner) that set will switch "off"
MCS	Multi Channel Sound; refers to Dolby Pro Logic Surround in ES/E ADOC	Progressive Scan	Scan mode where all scan lines are displayed in one frame at the same time, creating a double vertical resolution.
MDO	Mode control data output	PTC	Positive Temperature Coefficient, non linear resistor (resistance increases if temperature increases)
MPS	Microprocessor without interlocked Pipeline-Stages. A RISC-based microprocessor	PTP	Picture Tube Panel
Mips	Million Instructions per second	PWB	Printed Wiring Board (also called PCB)
MMI	Multi Media Interface	PWM	Pulse Width Modulation
MOSFET	Metal Oxide Semiconductor Field Effect Transistor	QSS	Quasi Split Sound
MPEG	Motion Pictures Experts Group chipset, aster-chip of ADOC IC)	R	Right audio channel / Red

RAM	Random Access Memory	SMPS	Switched Mode Power Supply
RC	Remote Control transmitter	SND	SOUND
RCS (6)	signal from the remote control receiver	SNDL-SCI-IN	Sound left SCART1 in
RDS	Radio Data System (European); This is an MPX signal carried in FM radio channels (87.5 ... 108 MHz)	SNDL-SCI-OUT	Sound left SCART1 out
RESET	RESET signal	SNDL-SC2-IN	Sound left SCART2 in
RF	Real Flat (picture tube) or Radio Frequency	SNDL-SC2-OUT	Sound left SCART2 out
RGB	Red, Green, and Blue colour space; The primary colour signals for TV. By mixing levels of R, G, and B, all colours (Y/C) are reproduced	SNDL-SC1-IN	Sound right SCART1 in
RGBHV	Red, Green, Blue, Horizontal sync, and Vertical sync	SNDL-SC1-OUT	Sound right SCART1 out
RISC	Reduced Instruction Set Computer; A processor architecture based on ultra-high speed processing technology that uses a far simpler set of operating commands than a normal microprocessor does	SNDL-SC2-IN	Sound right SCART2 in
RMS	Root Mean Square value	SNDL-SC2-OUT	Sound right SCART2 out
ROM	Read Only Memory	SNDL-VL-OUT	Surround sound left variable level out
S	Surround channel or mono surround channel (audio)	SNDL-VL-OUT	Surround sound right variable level out
SALSA	System Application for Low Segment of Analogue TV	SNRT	Synchronous No parity Eight bit Reception and Transmission
SAM	Service Alignment Mode	SOG	Sync On Green
SAP	Secondary Audio Program; Generally used to transmit audio in a second language	SOPS	Self Oscillating Power Supply
SAW	Surface Acoustic Wave	SOUND-ENABLE	Control line to do hardware mute or un-mute of loudspeakers.
SC	SendCastle: two-level pulse derived from sync signals	SRAM	Static RAM
SCART	Syndicat des Constructeurs d'Appareils Radiotélévisuels et Téléviseurs; This is a 21-pin connector used in EU, that carries various audio, video, and control signals (it is also called Pinel connector)	SS	Small Screen
SCAVER	Scan Velocity Modulation; Advanced beam control technology, which results in sharper edges on all images for outstanding clarity	ST-BY	StandBy
SC1-OUT	SCART output of the MSP audio IC	STANDBY (POR)	Signal coming from Main Supply informing the supply is switching "off"
SC2-B-IN	SCART2 blue in	STATUS	Status signal from pin 8 of SCART connector
SC2-C-IN	SCART2 chrominance in	STBY	StandBy
SC2-OUT	SCART output of the MSP audio IC	SVHS	Super Video Home System
SC	Short Circuit	SW	Software or Subwoofer or Switch
SCL	Serial Clock signal on I ² C bus	TBD	To Be Defined
SCL-F	Standard Definition	THD	Total Harmonic Distortion
SD	Data Signal on Fast I ² C bus	TILT	PWM Output signal (variable DC level) to control the picture tilt from the DOP block of the ADOC.
SDA	Data Signal on Fast I ² C bus	TXT	Teletext: TXT is a digital addition to analogue TV signals that contain textual and graphical information (25 rows x 40 columns). The information is transmitted within the first 25 lines during the Vertical Blank Interval (VBI)
SDM	Service Default / Alignment Mode	TXT-SW	Teletext switch
SDAM	Synchronous DRAM	U-100	U signal 1H (after Feature Box) Transmitter
SECAM	SECquence Couleur Avec Mémoire; Colour system mainly used in France and East Europe. The chroma is FM modulated and the R-Y and B-Y signals are transmitted line sequentially. Colour carriers = 4.406250 MHz and 4.250000 MHz	UBC	Ultra Bass Enhancement Microcontroller
SEL-SVHS-RR	SVHS Selection Signal	UI	User Interface
SIF	Sound Intermediate Frequency	UOC	Ultimate One Chip Microprocessor
SIMM	Single In-line Memory Module; 80-fold connector between LSP and SSB	UV	Colour difference signals
SL	Single In-line Memory Module; 80-fold connector between LSP and SSB	V	V_sync
SLDP	Smart Local Dooding Prevention (HW and SW)	V-100	V_sync from Feature Box (2H)
SMC	Surface Mounted Component	V-2FH	Vertical sync input for the 2H source.

Vertical sync pulse coming from the Feature Box Virtual Dolby Surround Vertical Output pulse

3381	4822 050 24700	4761.1% 0.6W	3520	3198 012 11570	0.1521 5% 1W	5408	2422 031 02935	Bridge cap W7132-004T
3382	4822 050 24700	4761.1% 0.6W	3521	4822 051 30008	1.9415 5% 0.062W	5410	4822 038 00079	121H 10%
3383	4822 051 30008	1.9415 5% 0.062W	3522	4822 051 30008	1.9415 5% 0.062W	5411	4822 038 00079	121H 10%
3384	4822 051 30008	1.9415 5% 0.062W	3523	2122 663 00018	4.710 20% 0.083W	5412	2422 031 00079	121H 10%
3385	4822 051 30008	1.9415 5% 0.062W	3524	4822 051 30008	1.9415 5% 0.062W	5413	2422 031 00081	121H 10%
3386	4822 051 30008	1.9415 5% 0.062W	3525	4822 051 30008	1.9415 5% 0.062W	5414	4822 038 00079	121H 10%
3387	4822 051 30008	1.9415 5% 0.062W	3526	4822 051 30008	1.9415 5% 0.062W	5415	4822 038 00079	121H 10%
3388	4822 051 30008	1.9415 5% 0.062W	3527	4822 051 30008	1.9415 5% 0.062W	5416	4822 038 00079	121H 10%
3389	4822 051 30008	1.9415 5% 0.062W	3528	4822 051 30008	1.9415 5% 0.062W	5417	4822 038 00079	121H 10%
3390	4822 051 30008	1.9415 5% 0.062W	3529	4822 051 30008	1.9415 5% 0.062W	5418	4822 038 00079	121H 10%
3391	4822 051 30008	1.9415 5% 0.062W	3530	4822 051 30008	1.9415 5% 0.062W	5419	4822 038 00079	121H 10%
3392	4822 051 30008	1.9415 5% 0.062W	3531	4822 051 30008	1.9415 5% 0.062W	5420	4822 038 00079	121H 10%
3393	4822 051 30008	1.9415 5% 0.062W	3532	4822 051 30008	1.9415 5% 0.062W	5421	4822 038 00079	121H 10%
3394	4822 051 30008	1.9415 5% 0.062W	3533	4822 051 30008	1.9415 5% 0.062W	5422	4822 038 00079	121H 10%
3395	4822 051 30008	1.9415 5% 0.062W	3534	4822 051 30008	1.9415 5% 0.062W	5423	4822 038 00079	121H 10%
3396	4822 051 30008	1.9415 5% 0.062W	3535	4822 051 30008	1.9415 5% 0.062W	5424	4822 038 00079	121H 10%
3397	4822 051 30008	1.9415 5% 0.062W	3536	4822 051 30008	1.9415 5% 0.062W	5425	4822 038 00079	121H 10%
3398	4822 051 30008	1.9415 5% 0.062W	3537	4822 051 30008	1.9415 5% 0.062W	5426	4822 038 00079	121H 10%
3399	4822 051 30008	1.9415 5% 0.062W	3538	4822 051 30008	1.9415 5% 0.062W	5427	4822 038 00079	121H 10%
3400	4822 051 30008	1.9415 5% 0.062W	3539	4822 051 30008	1.9415 5% 0.062W	5428	4822 038 00079	121H 10%
3401	4822 051 30008	1.9415 5% 0.062W	3540	4822 051 30008	1.9415 5% 0.062W	5429	4822 038 00079	121H 10%
3402	4822 051 30008	1.9415 5% 0.062W	3541	4822 051 30008	1.9415 5% 0.062W	5430	4822 038 00079	121H 10%
3403	4822 051 30008	1.9415 5% 0.062W	3542	4822 051 30008	1.9415 5% 0.062W	5431	4822 038 00079	121H 10%
3404	4822 051 30008	1.9415 5% 0.062W	3543	4822 051 30008	1.9415 5% 0.062W	5432	4822 038 00079	121H 10%
3405	4822 051 30008	1.9415 5% 0.062W	3544	4822 051 30008	1.9415 5% 0.062W	5433	4822 038 00079	121H 10%
3406	4822 051 30008	1.9415 5% 0.062W	3545	4822 051 30008	1.9415 5% 0.062W	5434	4822 038 00079	121H 10%
3407	4822 051 30008	1.9415 5% 0.062W	3546	4822 051 30008	1.9415 5% 0.062W	5435	4822 038 00079	121H 10%
3408	4822 051 30008	1.9415 5% 0.062W	3547	4822 051 30008	1.9415 5% 0.062W	5436	4822 038 00079	121H 10%
3409	4822 051 30008	1.9415 5% 0.062W	3548	4822 051 30008	1.9415 5% 0.062W	5437	4822 038 00079	121H 10%
3410	4822 051 30008	1.9415 5% 0.062W	3549	4822 051 30008	1.9415 5% 0.062W	5438	4822 038 00079	121H 10%
3411	4822 051 30008	1.9415 5% 0.062W	3550	4822 051 30008	1.9415 5% 0.062W	5439	4822 038 00079	121H 10%
3412	4822 051 30008	1.9415 5% 0.062W	3551	4822 051 30008	1.9415 5% 0.062W	5440	4822 038 00079	121H 10%
3413	4822 051 30008	1.9415 5% 0.062W	3552	4822 051 30008	1.9415 5% 0.062W	5441	4822 038 00079	121H 10%
3414	4822 051 30008	1.9415 5% 0.062W	3553	4822 051 30008	1.9415 5% 0.062W	5442	4822 038 00079	121H 10%
3415	4822 051 30008	1.9415 5% 0.062W	3554	4822 051 30008	1.9415 5% 0.062W	5443	4822 038 00079	121H 10%
3416	4822 051 30008	1.9415 5% 0.062W	3555	4822 051 30008	1.9415 5% 0.062W	5444	4822 038 00079	121H 10%
3417	4822 051 30008	1.9415 5% 0.062W	3556	4822 051 30008	1.9415 5% 0.062W	5445	4822 038 00079	121H 10%
3418	4822 051 30008	1.9415 5% 0.062W	3557	4822 051 30008	1.9415 5% 0.062W	5446	4822 038 00079	121H 10%
3419	4822 051 30008	1.9415 5% 0.062W	3558	4822 051 30008	1.9415 5% 0.062W	5447	4822 038 00079	121H 10%
3420	4822 051 30008	1.9415 5% 0.062W	3559	4822 051 30008	1.9415 5% 0.062W	5448	4822 038 00079	121H 10%
3421	4822 051 30008	1.9415 5% 0.062W	3560	4822 051 30008	1.9415 5% 0.062W	5449	4822 038 00079	121H 10%
3422	4822 051 30008	1.9415 5% 0.062W	3561	4822 051 30008	1.9415 5% 0.062W	5450	4822 038 00079	121H 10%
3423	4822 051 30008	1.9415 5% 0.062W	3562	4822 051 30008	1.9415 5% 0.062W	5451	4822 038 00079	121H 10%
3424	4822 051 30008	1.9415 5% 0.062W	3563	4822 051 30008	1.9415 5% 0.062W	5452	4822 038 00079	121H 10%
3425	4822 051 30008	1.9415 5% 0.062W	3564	4822 051 30008	1.9415 5% 0.062W	5453	4822 038 00079	121H 10%
3426	4822 051 30008	1.9415 5% 0.062W	3565	4822 051 30008	1.9415 5% 0.062W	5454	4822 038 00079	121H 10%
3427	4822 051 30008	1.9415 5% 0.062W	3566	4822 051 30008	1.9415 5% 0.062W	5455	4822 038 00079	121H 10%
3428	4822 051 30008	1.9415 5% 0.062W	3567	4822 051 30008	1.9415 5% 0.062W	5456	4822 038 00079	121H 10%
3429	4822 051 30008	1.9415 5% 0.062W	3568	4822 051 30008	1.9415 5% 0.062W	5457	4822 038 00079	121H 10%
3430	4822 051 30008	1.9415 5% 0.062W	3569	4822 051 30008	1.9415 5% 0.062W	5458	4822 038 00079	121H 10%
3431	4822 051 30008	1.9415 5% 0.062W	3570	4822 051 30008	1.9415 5% 0.062W	5459	4822 038 00079	121H 10%
3432	4822 051 30008	1.9415 5% 0.062W	3571	4822 051 30008	1.9415 5% 0.062W	5460	4822 038 00079	121H 10%
3433	4822 051 30008	1.9415 5% 0.062W	3572	4822 051 30008	1.9415 5% 0.062W	5461	4822 038 00079	121H 10%
3434	4822 051 30008	1.9415 5% 0.062W	3573	4822 051 30008	1.9415 5% 0.062W	5462	4822 038 00079	121H 10%
3435	4822 051 30008	1.9415 5% 0.062W	3574	4822 051 30008	1.9415 5% 0.062W	5463	4822 038 00079	121H 10%
3436	4822 051 30008	1.9415 5% 0.062W	3575	4822 051 30008	1.9415 5% 0.062W	5464	4822 038 00079	121H 10%
3437	4822 051 30008	1.9415 5% 0.062W	3576	4822 051 30008	1.9415 5% 0.062W	5465	4822 038 00079	121H 10%
3438	4822 051 30008	1.9415 5% 0.062W	3577	4822 051 30008	1.9415 5% 0.062W	5466	4822 038 00079	121H 10%
3439	4822 051 30008	1.9415 5% 0.062W	3578	4822 051 30008	1.9415 5% 0.062W	5467	4822 038 00079	121H 10%
3440	4822 051 30008	1.9415 5% 0.062W	3579	4822 051 30008	1.9415 5% 0.062W	5468	4822 038 00079	121H 10%
3441	4822 051 30008	1.9415 5% 0.062W	3580	4822 051 30008	1.9415 5% 0.062W	5469	4822 038 00079	121H 10%
3442	4822 051 30008	1.9415 5% 0.062W	3581	4822 051 30008	1.9415 5% 0.062W	5470	4822 038 00079	121H 10%
3443	4822 051 30008	1.9415 5% 0.062W	3582	4822 051 30008	1.9415 5% 0.062W	5471	4822 038 00079	121H 10%
3444	4822 051 30008	1.9415 5% 0.062W	3583	4822 051 30008	1.9415 5% 0.062W	5472	4822 038 00079	121H 10%
3445	4822 051 30008	1.9415 5% 0.062W	3584	4822 051 30008	1.9415 5% 0.062W	5473	4822 038 00079	121H 10%
3446	4822 051 30008	1.9415 5% 0.062W	3585	4822 051 30008	1.9415 5% 0.062W	5474	4822 038 00079	121H 10%
3447	4822 051 30008	1.9415 5% 0.062W	3586	4822 051 30008	1.9415 5% 0.062W	5475	4822 038 00079	121H 10%
3448	4822 051 30008	1.9415 5% 0.062W	3587	4822 051 30008	1.9415 5% 0.062W	5476	4822 038 00079	121H 10%
3449	4822 051 30008	1.9415 5% 0.062W	3588	4822 051 30008	1.9415 5% 0.062W	5477	4822 038 00079	121H 10%
3450	4822 051 30008	1.9415 5% 0.062W	3589	4822 051 30008	1.9415 5% 0.062W	5478	4822 038 00079	121H 10%
3451	4822 051 30008	1.9415 5% 0.062W	3590	4822 051 30008	1.9415 5% 0.062W	5479	4822 038 00079	121H 10%
3452	4822 051 30008	1.9415 5% 0.062W	3591	4822 051 30008	1.9415 5% 0.062W	5480	4822 038 00079	121H 10%
3453	4822 051 30008	1.9415 5% 0.062W	3592	4822 051 30008	1.9415 5% 0.062W	5481	4822 038 00079	121H 10%
3454	4822 051 30008	1.9415 5% 0.062W	3593	4822 051 30008	1.9415 5% 0.062W	5482	4822 038 00079	121H 10%
3455	4822 051 30008	1.9415 5% 0.062W	3594	4822 051 30008	1.9415 5% 0.062W	5483	4822 038 00079	121H 10%
3456	4822 051 30008	1.9415 5% 0.062W	3595	4822 051 30008	1.9415 5% 0.062W	5484	4822 038 00079	121H 10%
3457	4822 051 30008	1.9415 5% 0.062W	3596	4822 051 30008	1.9415 5% 0.062W	5485	4822 038 00079	121H 10%
3458	4822 051 30008	1.9415 5% 0.062W	3597	4822 051 30008	1.9415 5% 0.062W	5486	4822 038 00079	121H 10%
3459	4822 051 30008	1.9415 5% 0.062W	3598	4822 051 30008	1.9415 5% 0.062W	5487	4822 038 00079	121H 10%
3460	4822 051 30008	1.9415 5% 0.062W	3599	4822 051 30008	1.9415 5% 0.062W	5488	4822 038 00079	121H 10%
3461	4822 051 30008	1.9415 5% 0.062W	3600	4822 051 30008	1.9415 5% 0.062W	5489	4822 038 00079	121H 10%
3462	4822 051 30008	1.9415 5% 0.062W	3601	4822 051 30008	1.9415 5% 0.062W	5490	4822 038 00079	121H 10%
3463	4822 051 30008	1.9415 5% 0.062W	3602	4822 051 30008	1.9415 5% 0.062W	5491	4822 038 00079	121H 10%
3464	4822 051 30008	1.9415 5% 0.062W	3603	4822 051 30008	1.9415 5% 0.062W	5492	4822 038 00079	121H 10%
3465	4822 051 30008	1.9415 5% 0.062W	3604	4822 051 30008	1.9415 5% 0.062W	5493	4822 038 00079	121H 10%
3466	4822 051 30008	1.9415 5% 0.062W	3605	4822 051 30008	1.9415 5% 0.062W	5494	4822 038 00079	121H 10%
3467	4822 051 30008	1.9415 5% 0.062W	3606	4822 051 30008	1.9415 5% 0.062W	5495	4822 038 00079	121H 10%
3468	4822 051 30008	1.9						

3366	4822 130 60807	BF440	2107	2020 552 96823	10uF 18V	2341	3198 017 41050	1uF 10V 0603
3367	9302 628 5112	DA3874 1P1N1	2108	2020 552 96823	10uF 18V	2342	3198 014 31020	10uF 25V 0603
3368	4822 130 44568	BC0494	2109	2020 552 96823	10uF 18V	2343	5322 126 11583	10uF 20V 50V 0603
3369	4822 130 44568	BC0494	2110	2020 552 96823	10uF 18V	2344	3198 014 31020	10uF 25V 0603
3370	9240 561 44217	DA0072	2111	5322 126 11583	10uF 20V 50V 0603	2345	3198 014 31020	10uF 25V 0603
3371	9240 561 44217	DA0072	2112	2020 552 96823	10uF 18V	2346	4822 126 14507	18uF 5% 50V 0603
3372	5322 184 27887	STPMK020FF	2113	2020 552 96823	10uF 18V	2347	4822 126 14507	18uF 5% 50V 0603
3373	5322 184 27887	STPMK020FF	2114	3198 016 31020	10uF 25V 0603	2348	3198 014 31020	10uF 25V 0603
3374	3302 130 10258	MUN0213	2115	4822 126 14241	330uF 0603 50V	2349	3198 014 31020	10uF 25V 0603
3375	9352 637 54112	TEA15083LV1	2116	4822 126 14241	330uF 0603 50V	2350	2238 586 59812	10uF 18V 50V 0603
3376	9352 720 43118	TEA15083LV1	2117	3198 016 31020	10uF 25V 0603	2351	2238 586 59812	10uF 18V 50V 0603
3377	9352 720 43118	TEA15083LV1	2118	4822 126 14461	22uF 10V 0603	2352	2238 586 59812	10uF 18V 50V 0603
3378	9352 720 43118	TEA15083LV1	2119	4822 126 14461	22uF 10V 0603	2353	2238 586 59812	10uF 18V 50V 0603
3379	9352 720 43118	TEA15083LV1	2120	4822 126 14461	22uF 10V 0603	2354	2238 586 59812	10uF 18V 50V 0603
3380	9352 720 43118	TEA15083LV1	2121	3198 016 31020	10uF 25V 0603	2355	2238 586 59812	10uF 18V 50V 0603
3381	9352 720 43118	TEA15083LV1	2122	4822 126 14241	330uF 0603 50V	2356	2238 586 59812	10uF 18V 50V 0603
3382	9352 720 43118	TEA15083LV1	2123	4822 126 14241	330uF 0603 50V	2357	2238 586 59812	10uF 18V 50V 0603
3383	9352 720 43118	TEA15083LV1	2124	3198 016 31020	10uF 25V 0603	2358	2238 586 59812	10uF 18V 50V 0603
3384	9352 720 43118	TEA15083LV1	2125	4822 126 14241	330uF 0603 50V	2359	2238 586 59812	10uF 18V 50V 0603
3385	9352 720 43118	TEA15083LV1	2126	4822 126 14241	330uF 0603 50V	2360	2238 586 59812	10uF 18V 50V 0603
3386	9352 720 43118	TEA15083LV1	2127	2020 552 96823	10uF 18V 50V 0603	2361	2238 586 59812	10uF 18V 50V 0603
3387	9352 720 43118	TEA15083LV1	2128	2020 552 96823	10uF 18V 50V 0603	2362	2238 586 59812	10uF 18V 50V 0603
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3389	9352 720 43118	TEA15083LV1	2130	2020 552 96823	10uF 18V 50V 0603	2364	2238 586 59812	10uF 18V 50V 0603
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3392	9352 720 43118	TEA15083LV1	2133	2020 552 96823	10uF 18V 50V 0603	2367	2238 586 59812	10uF 18V 50V 0603
3393	9352 720 43118	TEA15083LV1	2134	2020 552 96823	10uF 18V 50V 0603	2368	2238 586 59812	10uF 18V 50V 0603
3394	9352 720 43118	TEA15083LV1	2135	2020 552 96823	10uF 18V 50V 0603	2369	2238 586 59812	10uF 18V 50V 0603
3395	9352 720 43118	TEA15083LV1	2136	2020 552 96823	10uF 18V 50V 0603	2370	2238 586 59812	10uF 18V 50V 0603
3396	9352 720 43118	TEA15083LV1	2137	2020 552 96823	10uF 18V 50V 0603	2371	2020 552 96823	10uF 18V 50V 0603
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3404	9352 720 43118	TEA15083LV1	2145	2020 552 96823	10uF 18V 50V 0603	2379	2020 552 96823	10uF 18V 50V 0603
3405	9352 720 43118	TEA15083LV1	2146	2020 552 96823	10uF 18V 50V 0603	2380	2020 552 96823	10uF 18V 50V 0603
3406	9352 720 43118	TEA15083LV1	2147	2020 552 96823	10uF 18V 50V 0603	2381	2020 552 96823	10uF 18V 50V 0603
3407	9352 720 43118	TEA15083LV1	2148	2020 552 96823	10uF 18V 50V 0603	2382	2020 552 96823	10uF 18V 50V 0603
3408	9352 720 43118	TEA15083LV1	2149	2020 552 96823	10uF 18V 50V 0603	2383	2020 552 96823	10uF 18V 50V 0603
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3415	9352 720 43118	TEA15083LV1	2156	2020 552 96823	10uF 18V 50V 0603	2390	2020 552 96823	10uF 18V 50V 0603
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3422	9352 720 43118	TEA15083LV1	2163	2020 552 96823	10uF 18V 50V 0603	2397	2020 552 96823	10uF 18V 50V 0603
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3424	9352 720 43118	TEA15083LV1	2165	2020 552 96823	10uF 18V 50V 0603	2399	2020 552 96823	10uF 18V 50V 0603
3425	9352 720 43118	TEA15083LV1	2166	2020 552 96823	10uF 18V 50V 0603	2400	2020 552 96823	10uF 18V 50V 0603
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3442	9352 720 43118	TEA15083LV1	2183	2020 552 96823	10uF 18V 50V 0603	2417	2020 552 96823	10uF 18V 50V 0603
3443	9352 720 43118	TEA15083LV1	2184	2020 552 96823	10uF 18V 50V 0603	2418	2020 552 96823	10uF 18V 50V 0603
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3447	9352 720 43118	TEA15083LV1	2188	2020 552 96823	10uF 18V 50V 0603	2422	2020 552 96823	10uF 18V 50V 0603
3448	9352 720 43118	TEA15083LV1	2189	2020 552 96823	10uF 18V 50V 0603	2423	2020 552 96823	10uF 18V 50V 0603
3449	9352 720 43118	TEA15083LV1	2190	2020 552 96823	10uF 18V 50V 0603	2424	2020 552 96823	10uF 18V 50V 0603
3450	9352 720 43118	TEA15083LV1	2191	2020 552 96823	10uF 18V 50V 0603	2425	2020 552 96823	10uF 18V 50V 0603
3451	9352 720 43118	TEA15083LV1	2192	2020 552 96823	10uF 18V 50V 0603	2426	2020 552 96823	10u

Spare Parts List

2761	2762	2763	2764	2765	2766	2767	2768	2769	2770	2771	2772	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790	2791	2792	2793	2794	2795	2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808	2809	2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822	2823	2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836	2837	2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850	2851	2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864	2865	2866	2867	2868	2869	2870	2871	2872	2873	2874	2875	2876	2877	2878	2879	2880	2881	2882	2883	2884	2885	2886	2887	2888	2889	2890	2891	2892	2893	2894	2895	2896	2897	2898	2899	2900	2901	2902	2903	2904	2905	2906	2907	2908	2909	2910	2911	2912	2913	2914	2915	2916	2917	2918	2919	2920	2921	2922	2923	2924	2925	2926	2927	2928	2929	2930	2931	2932	2933	2934	2935	2936	2937	2938	2939	2940	2941	2942	2943	2944	2945	2946	2947	2948	2949	2950	2951	2952	2953	2954	2955	2956	2957	2958	2959	2960	2961	2962	2963	2964	2965	2966	2967	2968	2969	2970	2971	2972	2973	2974	2975	2976	2977	2978	2979	2980	2981	2982	2983	2984	2985	2986	2987	2988	2989	2990	2991	2992	2993	2994	2995	2996	2997	2998	2999	3000	3001	3002	3003	3004	3005	3006	3007	3008	3009	3010	3011	3012	3013	3014	3015	3016	3017	3018	3019	3020	3021	3022	3023	3024	3025	3026	3027	3028	3029	3030	3031	3032	3033	3034	3035	3036	3037	3038	3039	3040	3041	3042	3043	3044	3045	3046	3047	3048	3049	3050	3051	3052	3053	3054	3055	3056	3057	3058	3059	3060	3061	3062	3063	3064	3065	3066	3067	3068	3069	3070	3071	3072	3073	3074	3075	3076	3077	3078	3079	3080	3081	3082	3083	3084	3085	3086	3087	3088	3089	3090	3091	3092	3093	3094	3095	3096	3097	3098	3099	3100	3101	3102	3103	3104	3105	3106	3107	3108	3109	3110	3111	3112	3113	3114	3115	3116	3117	3118	3119	3120	3121	3122	3123	3124	3125	3126	3127	3128	3129	3130	3131	3132	3133	3134	3135	3136	3137	3138	3139	3140	3141	3142	3143	3144	3145	3146	3147	3148	3149	3150	3151	3152	3153	3154	3155	3156	3157	3158	3159	3160	3161	3162	3163	3164	3165	3166	3167	3168	3169	3170	3171	3172	3173	3174	3175	3176	3177	3178	3179	3180	3181	3182	3183	3184	3185	3186	3187	3188	3189	3190	3191	3192	3193	3194	3195	3196	3197	3198	3199	3200	3201	3202	3203	3204	3205	3206	3207	3208	3209	3210	3211	3212	3213	3214	3215	3216	3217	3218	3219	3220	3221	3222	3223	3224	3225	3226	3227	3228	3229	3230	3231	3232	3233	3234	3235	3236	3237	3238	3239	3240	3241	3242	3243	3244	3245	3246	3247	3248	3249	3250	3251	3252	3253	3254	3255	3256	3257	3258	3259	3260	3261	3262	3263	3264	3265	3266	3267	3268	3269	3270	3271	3272	3273	3274	3275	3276	3277	3278	3279	3280	3281	3282	3283	3284	3285	3286	3287	3288	3289	3290	3291	3292	3293	3294	3295	3296	3297	3298	3299	3300	3301	3302	3303	3304	3305	3306	3307	3308	3309	3310	3311	3312	3313	3314	3315	3316	3317	3318	3319	3320	3321	3322	3323	3324	3325	3326	3327	3328	3329	3330	3331	3332	3333	3334	3335	3336	3337	3338	3339	3340	3341	3342	3343	3344	3345	3346	3347	3348	3349	3350	3351	3352	3353	3354	3355	3356	3357	3358	3359	3360	3361	3362	3363	3364	3365	3366	3367	3368	3369	3370	3371	3372	3373	3374	3375	3376	3377	3378	3379	3380	3381	3382	3383	3384	3385	3386	3387	3388	3389	3390	3391	3392	3393	3394	3395	3396	3397	3398	3399	3400	3401	3402	3403	3404	3405	3406	3407	3408	3409	3410	3411	3412	3413	3414	3415	3416	3417	3418	3419	3420	3421	3422	3423	3424	3425	3426	3427	3428	3429	3430	3431	3432	3433	3434	3435	3436	3437	3438	3439	3440	3441	3442	3443	3444	3445	3446	3447	3448	3449	3450	3451	3452	3453	3454	3455	3456	3457	3458	3459	3460	3461	3462	3463	3464	3465	3466	3467	3468	3469	3470	3471	3472	3473	3474	3475	3476	3477	3478	3479	3480	3481	3482	3483	3484	3485	3486	3487	3488	3489	3490	3491	3492	3493	3494	3495	3496	3497	3498	3499	3500	3501	3502	3503	3504	3505	3506	3507	3508	3509	3510	3511	3512	3513	3514	3515	3516	3517	3518	3519	3520	3521	3522	3523	3524	3525	3526	3527	3528	3529	3530	3531	3532	3533	3534	3535	3536	3537	3538	3539	3540	3541	3542	3543	3544	3545	3546	3547	3548	3549	3550	3551	3552	3553	3554	3555	3556	3557	3558	3559	3560	3561	3562	3563	3564	3565	3566	3567	3568	3569	3570	3571	3572	3573	3574	3575	3576	3577	3578	3579	3580	3581	3582	3583	3584	3585	3586	3587	3588	3589	3590	3591	3592	3593	3594	3595	3596	3597	3598	3599	3600	3601	3602	3603	3604	3605	3606	3607	3608	3609	3610	3611	3612	3613	3614	3615	3616	3617	3618	3619	3620	3621	3622	3623	3624	3625	3626	3627	3628	3629	3630	3631	3632	3633	3634	3635	3636	3637	3638	3639	3640	3641	3642	3643	3644	3645	3646	3647	3648	3649	3650	3651	3652	3653	3654	3655	3656	3657	3658	3659	3660	3661	3662	3663	3664	3665	3666	3667	3668	3669	3670	3671	3672	3673	3674	3675	3676	3677	3678	3679	3680	3681	3682	3683	3684	3685	3686	3687	3688	3689	3690	3691	3692	3693	3694	3695	3696	3697	3698	3699	3700	3701	3702	3703	3704	3705	3706	3707	3708	3709	3710	3711	3712	3713	3714	3715	3716	3717	3718	3719	3720	3721	3722	3723	3724	3725	3726	3727	3728	3729	3730	3731	3732	3733	3734	3735	3736	3737	3738	3739	3740	3741	3742	3743	3744	3745	3746	3747	3748	3749	3750	3751	3752	3753	3754	3755	3756	3757	3758	3759	3760	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10. EN 73

2238	546	15629	2.7H	10%	50V	0603	3102	4822	117	12925	47H	1%	0.063W	0603
2238	552	98423	10H	16V			3103	4822	051	30101	100X	5%	0.052W	
2238	556	59812	10H	16V	50V	0603	3104	4822	051	30159	100X	5%	0.052W	
2238	556	59812	10H	16V	50V	0603	3105	4822	051	30159	100X	5%	0.052W	
2238	556	59812	10H	16V	50V	0603	3106	4822	117	12925	47H	1%	0.063W	0603
2238	556	59812	10H	20V	50V	0603	3107	4822	051	30169	100X	5%	0.052W	
2238	556	59812	10H	20V	50V	0603	3108	4822	051	30169	100X	5%	0.052W	
2238	556	59812	10H	20V	50V	0603	3109	4822	051	30159	100X	5%	0.052W	
2238	556	59812	10H	20V	50V	0603	3110	4822	051	30221	100X	5%	0.052W	
2238	556	59812	10H	20V	50V	0603	3111	4822	051	30151	150X	5%	0.052W	
4822	126	14225	56H	5%	50V	0603	3112	4822	051	30101	100X	5%	0.052W	
4822	126	14225	56H	5%	50V	0603	3113	4822	051	30159	100X	5%	0.052W	
4822	126	14225	56H	5%	50V	0603	3114	4822	051	30159	100X	5%	0.052W	
4822	126	14225	56H	5%	50V	0603	3115	4822	051	30159	100X	5%	0.052W	
4822	126	14225	56H	5%	50V	0603	3116	4822	051	30159	100X	5%	0.052W	
4822	126	14225	56H	5%	50V	0603	3117	4822	051	30159	100X	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3118	4822	051	30221	100X	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3119	4822	051	30682	10H	16V	50V	0603
4822	051	30682	10H	16V	50V	0603	3120	4822	051	30682	10H	16V	50V	0603
4822	051	30682	10H	16V	50V	0603	3121	4822	051	30682	10H	16V	50V	0603
4822	051	30682	10H	16V	50V	0603	3122	4822	051	30682	10H	16V	50V	0603
4822	051	30682	10H	16V	50V	0603	3123	4822	051	30682	10H	16V	50V	0603
4822	051	30682	10H	16V	50V	0603	3124	4822	051	30151	150X	5%	0.052W	0603
4822	051	30682	10H	16V	50V	0603	3125	4822	051	30151	150X	5%	0.052W	0603
4822	051	30682	10H	16V	50V	0603	3126	4822	051	30151	150X	5%	0.052W	0603
4822	051	30682	10H	16V	50V	0603	3127	4822	117	12925	47H	1%	0.063W	0603
4822	051	30682	10H	16V	50V	0603	3128	4822	117	12925	47H	1%	0.063W	0603
4822	051	30682	10H	16V	50V	0603	3129	4822	051	30151	150X	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3130	4822	117	12925	47H	1%	0.063W	
4822	051	30682	10H	16V	50V	0603	3131	4822	117	12925	47H	1%	0.063W	
4822	051	30682	10H	16V	50V	0603	3132	4822	117	12925	47H	1%	0.063W	
4822	051	30682	10H	16V	50V	0603	3133	4822	117	12925	47H	1%	0.063W	
4822	051	30682	10H	16V	50V	0603	3134	4822	117	12925	47H	1%	0.063W	
4822	051	30682	10H	16V	50V	0603	3135	4822	117	12925	47H	1%	0.063W	
4822	051	30682	10H	16V	50V	0603	3136	4822	117	12925	47H	1%	0.063W	
4822	051	30682	10H	16V	50V	0603	3137	4822	117	12925	47H	1%	0.063W	
4822	051	30682	10H	16V	50V	0603	3138	4822	117	12925	47H	1%	0.063W	
4822	051	30682	10H	16V	50V	0603	3139	4822	117	12925	47H	1%	0.063W	
4822	051	30682	10H	16V	50V	0603	3140	4822	051	30472	47H	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3141	4822	051	30472	47H	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3142	4822	051	30472	47H	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3143	4822	051	30472	47H	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3144	4822	051	30472	47H	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3145	4822	051	30472	47H	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3146	4822	051	30472	47H	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3147	4822	051	30472	47H	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3148	4822	051	30472	47H	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3149	4822	051	30472	47H	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3150	4822	051	30472	47H	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3151	4822	051	30472	47H	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3152	4822	051	30472	47H	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3153	4822	051	30472	47H	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3154	4822	051	30472	47H	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3155	4822	051	30472	47H	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3156	4822	051	30472	47H	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3157	4822	051	30472	47H	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3158	4822	051	30682	10H	16V	50V	0603
4822	051	30682	10H	16V	50V	0603	3159	4822	051	30682	10H	16V	50V	0603
4822	051	30682	10H	16V	50V	0603	3160	4822	117	12925	47H	1%	0.063W	0603
4822	051	30682	10H	16V	50V	0603	3161	4822	051	30273	47H	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3162	4822	051	30101	100X	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3163	4822	051	30159	100X	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3164	4822	051	30159	100X	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3165	4822	051	30101	100X	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3166	4822	051	30101	100X	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3167	4822	051	30159	100X	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3168	4822	051	30159	100X	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3169	4822	051	30159	100X	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3170	4822	051	30159	100X	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3171	4822	117	12925	47H	1%	0.063W	
4822	051	30682	10H	16V	50V	0603	3172	4822	051	30151	150X	5%	0.052W	0603
4822	051	30682	10H	16V	50V	0603	3173	4822	051	30151	150X	5%	0.052W	0603
4822	051	30682	10H	16V	50V	0603	3174	4822	051	30151	150X	5%	0.052W	0603
4822	051	30682	10H	16V	50V	0603	3175	4822	117	12925	47H	1%	0.063W	
4822	051	30682	10H	16V	50V	0603	3176	4822	117	12925	47H	1%	0.063W	
4822	051	30682	10H	16V	50V	0603	3177	4822	117	12925	47H	1%	0.063W	
4822	051	30682	10H	16V	50V	0603	3178	4822	051	30159	100X	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3179	4822	051	30159	100X	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3180	4822	051	30159	100X	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3181	4822	051	30159	100X	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3182	4822	051	30159	100X	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3183	4822	051	30159	100X	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3184	4822	051	30273	47H	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3185	4822	051	30682	10H	16V	50V	0603
4822	051	30682	10H	16V	50V	0603	3186	4822	051	30478	47H	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3187	4822	051	30478	47H	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3188	4822	051	30478	47H	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3189	4822	051	30682	10H	16V	50V	0603
4822	051	30682	10H	16V	50V	0603	3190	4822	051	30682	10H	16V	50V	0603
4822	051	30682	10H	16V	50V	0603	3191	4822	051	30159	100X	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3192	4822	051	30159	100X	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3193	4822	051	30159	100X	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3194	4822	117	12925	47H	1%	0.063W	
4822	051	30682	10H	16V	50V	0603	3195	4822	051	30151	150X	5%	0.052W	
4822	051	30682	10H	16V	50V	0603	3196	4822	051	30159	100X	5%	0.052W	
4822														

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[illegible]

Spare Parts List

3221	4822 061 30103	100.1 5% 0.062W	3425	4822 061 30101	100.1 5% 0.062W
3222	4822 061 30102	100.1 5% 0.062W	3426	4822 061 30102	100.1 5% 0.062W
3223	4822 061 30101	100.1 5% 0.062W	3427	4822 061 30101	100.1 5% 0.062W
3224	4822 061 30472	4.71 5% 0.062W	3428	4822 061 30472	4.71 5% 0.062W
3225	4822 061 30101	100.1 5% 0.062W	3429	4822 061 30101	100.1 5% 0.062W
3226	4822 061 30102	100.1 5% 0.062W	3430	4822 061 30102	100.1 5% 0.062W
3227	4822 061 30103	100.1 5% 0.062W	3431	4822 061 30103	100.1 5% 0.062W
3228	4822 061 30104	100.1 5% 0.062W	3432	4822 061 30104	100.1 5% 0.062W
3229	4822 061 30105	100.1 5% 0.062W	3433	4822 061 30105	100.1 5% 0.062W
3230	4822 061 30106	100.1 5% 0.062W	3434	4822 061 30106	100.1 5% 0.062W
3231	4822 061 30107	100.1 5% 0.062W	3435	4822 061 30107	100.1 5% 0.062W
3232	4822 061 30108	100.1 5% 0.062W	3436	4822 061 30108	100.1 5% 0.062W
3233	4822 061 30109	100.1 5% 0.062W	3437	4822 061 30109	100.1 5% 0.062W
3234	4822 061 30110	100.1 5% 0.062W	3438	4822 061 30110	100.1 5% 0.062W
3235	4822 061 30472	4.71 5% 0.062W	3439	4822 061 30472	4.71 5% 0.062W
3236	4822 061 30101	100.1 5% 0.062W	3440	4822 061 30101	100.1 5% 0.062W
3237	4822 061 30102	100.1 5% 0.062W	3441	4822 061 30102	100.1 5% 0.062W
3238	4822 061 30103	100.1 5% 0.062W	3442	4822 061 30103	100.1 5% 0.062W
3239	4822 061 30104	100.1 5% 0.062W	3443	4822 061 30104	100.1 5% 0.062W
3240	4822 061 30105	100.1 5% 0.062W	3444	4822 061 30105	100.1 5% 0.062W
3241	4822 061 30106	100.1 5% 0.062W	3445	4822 061 30106	100.1 5% 0.062W
3242	4822 061 30107	100.1 5% 0.062W	3446	4822 061 30107	100.1 5% 0.062W
3243	4822 061 30108	100.1 5% 0.062W	3447	4822 061 30108	100.1 5% 0.062W
3244	4822 061 30109	100.1 5% 0.062W	3448	4822 061 30109	100.1 5% 0.062W
3245	4822 061 30110	100.1 5% 0.062W	3449	4822 061 30110	100.1 5% 0.062W
3246	4822 061 30472	4.71 5% 0.062W	3450	4822 061 30472	4.71 5% 0.062W
3247	4822 061 30101	100.1 5% 0.062W	3451	4822 061 30101	100.1 5% 0.062W
3248	4822 061 30102	100.1 5% 0.062W	3452	4822 061 30102	100.1 5% 0.062W
3249	4822 061 30103	100.1 5% 0.062W	3453	4822 061 30103	100.1 5% 0.062W
3250	4822 061 30104	100.1 5% 0.062W	3454	4822 061 30104	100.1 5% 0.062W
3251	4822 061 30105	100.1 5% 0.062W	3455	4822 061 30105	100.1 5% 0.062W
3252	4822 061 30106	100.1 5% 0.062W	3456	4822 061 30106	100.1 5% 0.062W
3253	4822 061 30107	100.1 5% 0.062W	3457	4822 061 30107	100.1 5% 0.062W
3254	4822 061 30108	100.1 5% 0.062W	3458	4822 061 30108	100.1 5% 0.062W
3255	4822 061 30109	100.1 5% 0.062W	3459	4822 061 30109	100.1 5% 0.062W
3256	4822 061 30110	100.1 5% 0.062W	3460	4822 061 30110	100.1 5% 0.062W
3257	4822 061 30472	4.71 5% 0.062W	3461	4822 061 30472	4.71 5% 0.062W
3258	4822 061 30101	100.1 5% 0.062W	3462	4822 061 30101	100.1 5% 0.062W
3259	4822 061 30102	100.1 5% 0.062W	3463	4822 061 30102	100.1 5% 0.062W
3260	4822 061 30103	100.1 5% 0.062W	3464	4822 061 30103	100.1 5% 0.062W
3261	4822 061 30104	100.1 5% 0.062W	3465	4822 061 30104	100.1 5% 0.062W
3262	4822 061 30105	100.1 5% 0.062W	3466	4822 061 30105	100.1 5% 0.062W
3263	4822 061 30106	100.1 5% 0.062W	3467	4822 061 30106	100.1 5% 0.062W
3264	4822 061 30107	100.1 5% 0.062W	3468	4822 061 30107	100.1 5% 0.062W
3265	4822 061 30108	100.1 5% 0.062W	3469	4822 061 30108	100.1 5% 0.062W
3266	4822 061 30109	100.1 5% 0.062W	3470	4822 061 30109	100.1 5% 0.062W
3267	4822 061 30110	100.1 5% 0.062W	3471	4822 061 30110	100.1 5% 0.062W
3268	4822 061 30472	4.71 5% 0.062W	3472	4822 061 30472	4.71 5% 0.062W
3269	4822 061 30101	100.1 5% 0.062W	3473	4822 061 30101	100.1 5% 0.062W
3270	4822 061 30102	100.1 5% 0.062W	3474	4822 061 30102	100.1 5% 0.062W
3271	4822 061 30103	100.1 5% 0.062W	3475	4822 061 30103	100.1 5% 0.062W
3272	4822 061 30104	100.1 5% 0.062W	3476	4822 061 30104	100.1 5% 0.062W
3273	4822 061 30105	100.1 5% 0.062W	3477	4822 061 30105	100.1 5% 0.062W
3274	4822 061 30106	100.1 5% 0.062W	3478	4822 061 30106	100.1 5% 0.062W
3275	4822 061 30107	100.1 5% 0.062W	3479	4822 061 30107	100.1 5% 0.062W
3276	4822 061 30108	100.1 5% 0.062W	3480	4822 061 30108	100.1 5% 0.062W
3277	4822 061 30109	100.1 5% 0.062W	3481	4822 061 30109	100.1 5% 0.062W
3278	4822 061 30110	100.1 5% 0.062W	3482	4822 061 30110	100.1 5% 0.062W
3279	4822 061 30472	4.71 5% 0.062W	3483	4822 061 30472	4.71 5% 0.062W
3280	4822 061 30101	100.1 5% 0.062W	3484	4822 061 30101	100.1 5% 0.062W
3281	4822 061 30102	100.1 5% 0.062W	3485	4822 061 30102	100.1 5% 0.062W
3282	4822 061 30103	100.1 5% 0.062W	3486	4822 061 30103	100.1 5% 0.062W
3283	4822 061 30104	100.1 5% 0.062W	3487	4822 061 30104	100.1 5% 0.062W
3284	4822 061 30105	100.1 5% 0.062W	3488	4822 061 30105	100.1 5% 0.062W
3285	4822 061 30106	100.1 5% 0.062W	3489	4822 061 30106	100.1 5% 0.062W
3286	4822 061 30107	100.1 5% 0.062W	3490	4822 061 30107	100.1 5% 0.062W
3287	4822 061 30108	100.1 5% 0.062W	3491	4822 061 30108	100.1 5% 0.062W
3288	4822 061 30109	100.1 5% 0.062W	3492	4822 061 30109	100.1 5% 0.062W
3289	4822 061 30110	100.1 5% 0.062W	3493	4822 061 30110	100.1 5% 0.062W
3290	4822 061 30472	4.71 5% 0.062W	3494	4822 061 30472	4.71 5% 0.062W
3291	4822 061 30101	100.1 5% 0.062W	3495	4822 061 30101	100.1 5% 0.062W
3292	4822 061 30102	100.1 5% 0.062W	3496	4822 061 30102	100.1 5% 0.062W
3293	4822 061 30103	100.1 5% 0.062W	3497	4822 061 30103	100.1 5% 0.062W
3294	4822 061 30104	100.1 5% 0.062W	3498	4822 061 30104	100.1 5% 0.062W
3295	4822 061 30105	100.1 5% 0.062W	3499	4822 061 30105	100.1 5% 0.062W
3296	4822 061 30106	100.1 5% 0.062W	3500	4822 061 30106	100.1 5% 0.062W
3297	4822 061 30107	100.1 5% 0.062W	3501	4822 061 30107	100.1 5% 0.062W
3298	4822 061 30108	100.1 5% 0.062W	3502	4822 061 30108	100.1 5% 0.062W
3299	4822 061 30109	100.1 5% 0.062W	3503	4822 061 30109	100.1 5% 0.062W
3300	4822 061 30110	100.1 5% 0.062W	3504	4822 061 30110	100.1 5% 0.062W
3301	4822 061 30472	4.71 5% 0.062W	3505	4822 061 30472	4.71 5% 0.062W
3302	4822 061 30101	100.1 5% 0.062W	3506	4822 061 30101	100.1 5% 0.062W
3303	4822 061 30102	100.1 5% 0.062W	3507	4822 061 30102	100.1 5% 0.062W
3304	4822 061 30103	100.1 5% 0.062W	3508	4822 061 30103	100.1 5% 0.062W
3305	4822 061 30104	100.1 5% 0.062W	3509	4822 061 30104	100.1 5% 0.062W
3306	4822 061 30105	100.1 5% 0.062W	3510	4822 061 30105	100.1 5% 0.062W
3307	4822 061 30106	100.1 5% 0.062W	3511	4822 061 30106	100.1 5% 0.062W
3308	4822 061 30107	100.1 5% 0.062W	3512	4822 061 30107	100.1 5% 0.062W
3309	4822 061 30108	100.1 5% 0.062W	3513	4822 061 30108	100.1 5% 0.062W
3310	4822 061 30109	100.1 5% 0.062W	3514	4822 061 30109	100.1 5% 0.062W
3311	4822 061 30110	100.1 5% 0.062W	3515	4822 061 30110	100.1 5% 0.062W
3312	4822 061 30472	4.71 5% 0.062W	3516	4822 061 30472	4.71 5% 0.062W
3313	4822 061 30101	100.1 5% 0.062W	3517	4822 061 30101	100.1 5% 0.062W
3314	4822 061 30102	100.1 5% 0.062W	3518	4822 061 30102	100.1 5% 0.062W
3315	4822 061 30103	100.1 5% 0.062W	3519	4822 061 30103	100.1 5% 0.062W
3316	4822 061 30104	100.1 5% 0.062W	3520	4822 061 30104	100.1 5% 0.062W
3317	4822 061 30105	100.1 5% 0.062W	3521	4822 061 30105	100.1 5% 0.062W
3318	4822 061 30106	100.1 5% 0.062W	3522	4822 061 30106	100.1 5% 0.062W
3319	4822 061 30107	100.1 5% 0.062W	3523	4822 061 30107	100.1 5% 0.062W
3320	4822 061 30108	100.1 5% 0.062W	3524	4822 061 30108	100.1 5% 0.062W
3321	4822 061 30109	100.1 5% 0.062W	3525	4822 061 30109	100.1 5% 0.062W
3322	4822 061 30110	100.1 5% 0.062W	3526	4822 061 30110	100.1 5% 0.062W
3323	4822 061 30472	4.71 5% 0.062W	3527	4822 061 30472	4.71 5% 0.062W
3324	4822 061 30101	100.1 5% 0.062W	3528	4822 061 30101	100.1 5% 0.062W
3325	4822 061 30102	100.1 5% 0.062W	3529	4822 061 30102	100.1 5% 0.062W
3326	4822 061 30103	100.1 5% 0.062W	3530	4822 061 30103	100.1 5% 0.062W
3327	4822 061 30104	100.1 5% 0.062W	3531	4822 061 30104	100.1 5% 0.062W
3328	4822 061 30105	100.1 5% 0.062W	3532	4822 061 30105	100.1 5% 0.062W
3329	4822 061 30106	100.1 5% 0.062W	3533	4822 061 30106	100.1 5% 0.062W
3330	4822 061 30107	100.1 5% 0.062W	3534	4822 061 30107	100.1 5% 0.062W
3331	4822 061 30108	100.1 5% 0.062W	3535	4822 061 30108	100.1 5% 0.062W
3332	4822 061 30109	100.1 5% 0.062W	3536	4822 061 30109	100.1 5% 0.062W
3333	4822 061 30110	100.1 5% 0.062W	3537	4822 061 30110	100.1 5% 0.062W
3334	4822 061 30472	4.71 5% 0.062W	3538	4822 061 30472	4.71 5% 0.062W
3335	4822 061 30101	100.1 5% 0.062W	3539	4822 061 30101	100.1 5% 0.062W
3336	4822 061 30102	100.1 5% 0.062W	3540	4822 061 30102	100.1 5% 0.062W
3337	4822 061 30103	100.1 5% 0.062W	3541	4822 061 30103	100.1 5% 0.062W
3338	4822 061 30104	100.1 5% 0.062W	3542	4822 061 30104	100.1 5% 0.062W
3339	4822 061 30105	100.1 5% 0.062W	3543	4822 061 30105	100.1 5% 0.062W
3340	4822 061 30106	100.1 5% 0.062W	3544	4822 061 30106	100.1 5% 0.062W
3341	4822 061 30107	100.1 5% 0.062W	3545	4822 061 30107	100.1 5% 0.062W
3342	4822 061 30108	100.1 5% 0.062W	3546	4822 061 30108	100.1 5% 0.062W
3343	4822 061 30109	100.1 5% 0.062W	3547	4822 061 30109	100.1 5% 0.062W
3344	4822 061 30110	100.1 5% 0.062W	3548	4822 061 30110	100.1 5% 0.062W

[illegible]

5207	4822 137 1116	Band 3001 at 100MHz	7304	9855 000 04199	BSN200	1354	2422 500 00004	Soclat CRT 10p 32"
5208	4822 137 1116	Band 3001 at 100MHz	7305	9855 000 04199	BSN200	1355	2422 500 00007	Soclat CRT 10p 32"
5209	4822 137 1116	Band 3001 at 100MHz	7306	9855 000 04199	BSN200	1356	2422 500 00010	Soclat CRT 10p 32"
5210	4822 137 1116	Band 3001 at 100MHz	7307	9855 000 04199	BSN200	1357	2422 500 00013	Soclat CRT 10p 32"
5211	4822 137 1116	Band 3001 at 100MHz	7308	9855 000 04199	BSN200	1358	2422 500 00016	Soclat CRT 10p 32"
5212	4822 137 1116	Band 3001 at 100MHz	7309	9855 000 04199	BSN200	1359	2422 500 00019	Soclat CRT 10p 32"
5213	4822 137 1116	Band 3001 at 100MHz	7310	9855 000 04199	BSN200	1360	2422 500 00022	Soclat CRT 10p 32"
5214	4822 137 1116	Band 3001 at 100MHz	7311	9855 000 04199	BSN200	1361	2422 500 00025	Soclat CRT 10p 32"
5215	4822 137 1116	Band 3001 at 100MHz	7312	9855 000 04199	BSN200	1362	2422 500 00028	Soclat CRT 10p 32"
5216	4822 137 1116	Band 3001 at 100MHz	7313	9855 000 04199	BSN200	1363	2422 500 00031	Soclat CRT 10p 32"
5217	4822 137 1116	Band 3001 at 100MHz	7314	9855 000 04199	BSN200	1364	2422 500 00034	Soclat CRT 10p 32"
5218	4822 137 1116	Band 3001 at 100MHz	7315	9855 000 04199	BSN200	1365	2422 500 00037	Soclat CRT 10p 32"
5219	4822 137 1116	Band 3001 at 100MHz	7316	9855 000 04199	BSN200	1366	2422 500 00040	Soclat CRT 10p 32"
5220	4822 137 1116	Band 3001 at 100MHz	7317	9855 000 04199	BSN200	1367	2422 500 00043	Soclat CRT 10p 32"
5221	4822 137 1116	Band 3001 at 100MHz	7318	9855 000 04199	BSN200	1368	2422 500 00046	Soclat CRT 10p 32"
5222	4822 137 1116	Band 3001 at 100MHz	7319	9855 000 04199	BSN200	1369	2422 500 00049	Soclat CRT 10p 32"
5223	4822 137 1116	Band 3001 at 100MHz	7320	9855 000 04199	BSN200	1370	2422 500 00052	Soclat CRT 10p 32"
5224	4822 137 1116	Band 3001 at 100MHz	7321	9855 000 04199	BSN200	1371	2422 500 00055	Soclat CRT 10p 32"
5225	4822 137 1116	Band 3001 at 100MHz	7322	9855 000 04199	BSN200	1372	2422 500 00058	Soclat CRT 10p 32"
5226	4822 137 1116	Band 3001 at 100MHz	7323	9855 000 04199	BSN200	1373	2422 500 00061	Soclat CRT 10p 32"
5227	4822 137 1116	Band 3001 at 100MHz	7324	9855 000 04199	BSN200	1374	2422 500 00064	Soclat CRT 10p 32"
5228	4822 137 1116	Band 3001 at 100MHz	7325	9855 000 04199	BSN200	1375	2422 500 00067	Soclat CRT 10p 32"
5229	4822 137 1116	Band 3001 at 100MHz	7326	9855 000 04199	BSN200	1376	2422 500 00070	Soclat CRT 10p 32"
5230	4822 137 1116	Band 3001 at 100MHz	7327	9855 000 04199	BSN200	1377	2422 500 00073	Soclat CRT 10p 32"
5231	4822 137 1116	Band 3001 at 100MHz	7328	9855 000 04199	BSN200	1378	2422 500 00076	Soclat CRT 10p 32"
5232	4822 137 1116	Band 3001 at 100MHz	7329	9855 000 04199	BSN200	1379	2422 500 00079	Soclat CRT 10p 32"
5233	4822 137 1116	Band 3001 at 100MHz	7330	9855 000 04199	BSN200	1380	2422 500 00082	Soclat CRT 10p 32"
5234	4822 137 1116	Band 3001 at 100MHz	7331	9855 000 04199	BSN200	1381	2422 500 00085	Soclat CRT 10p 32"
5235	4822 137 1116	Band 3001 at 100MHz	7332	9855 000 04199	BSN200	1382	2422 500 00088	Soclat CRT 10p 32"
5236	4822 137 1116	Band 3001 at 100MHz	7333	9855 000 04199	BSN200	1383	2422 500 00091	Soclat CRT 10p 32"
5237	4822 137 1116	Band 3001 at 100MHz	7334	9855 000 04199	BSN200	1384	2422 500 00094	Soclat CRT 10p 32"
5238	4822 137 1116	Band 3001 at 100MHz	7335	9855 000 04199	BSN200	1385	2422 500 00097	Soclat CRT 10p 32"
5239	4822 137 1116	Band 3001 at 100MHz	7336	9855 000 04199	BSN200	1386	2422 500 00100	Soclat CRT 10p 32"
5240	4822 137 1116	Band 3001 at 100MHz	7337	9855 000 04199	BSN200	1387	2422 500 00103	Soclat CRT 10p 32"
5241	4822 137 1116	Band 3001 at 100MHz	7338	9855 000 04199	BSN200	1388	2422 500 00106	Soclat CRT 10p 32"
5242	4822 137 1116	Band 3001 at 100MHz	7339	9855 000 04199	BSN200	1389	2422 500 00109	Soclat CRT 10p 32"
5243	4822 137 1116	Band 3001 at 100MHz	7340	9855 000 04199	BSN200	1390	2422 500 00112	Soclat CRT 10p 32"
5244	4822 137 1116	Band 3001 at 100MHz	7341	9855 000 04199	BSN200	1391	2422 500 00115	Soclat CRT 10p 32"
5245	4822 137 1116	Band 3001 at 100MHz	7342	9855 000 04199	BSN200	1392	2422 500 00118	Soclat CRT 10p 32"
5246	4822 137 1116	Band 3001 at 100MHz	7343	9855 000 04199	BSN200	1393	2422 500 00121	Soclat CRT 10p 32"
5247	4822 137 1116	Band 3001 at 100MHz	7344	9855 000 04199	BSN200	1394	2422 500 00124	Soclat CRT 10p 32"
5248	4822 137 1116	Band 3001 at 100MHz	7345	9855 000 04199	BSN200	1395	2422 500 00127	Soclat CRT 10p 32"
5249	4822 137 1116	Band 3001 at 100MHz	7346	9855 000 04199	BSN200	1396	2422 500 00130	Soclat CRT 10p 32"
5250	4822 137 1116	Band 3001 at 100MHz	7347	9855 000 04199	BSN200	1397	2422 500 00133	Soclat CRT 10p 32"
5251	4822 137 1116	Band 3001 at 100MHz	7348	9855 000 04199	BSN200	1398	2422 500 00136	Soclat CRT 10p 32"
5252	4822 137 1116	Band 3001 at 100MHz	7349	9855 000 04199	BSN200	1399	2422 500 00139	Soclat CRT 10p 32"
5253	4822 137 1116	Band 3001 at 100MHz	7350	9855 000 04199	BSN200	1400	2422 500 00142	Soclat CRT 10p 32"
5254	4822 137 1116	Band 3001 at 100MHz	7351	9855 000 04199	BSN200	1401	2422 500 00145	Soclat CRT 10p 32"
5255	4822 137 1116	Band 3001 at 100MHz	7352	9855 000 04199	BSN200	1402	2422 500 00148	Soclat CRT 10p 32"
5256	4822 137 1116	Band 3001 at 100MHz	7353	9855 000 04199	BSN200	1403	2422 500 00151	Soclat CRT 10p 32"
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5258	4822 137 1116	Band 3001 at 100MHz	7355	9855 000 04199	BSN200	1405	2422 500 00157	Soclat CRT 10p 32"
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5260	4822 137 1116	Band 3001 at 100MHz	7357	9855 000 04199	BSN200	1407	2422 500 00163	Soclat CRT 10p 32"
5261	4822 137 1116	Band 3001 at 100MHz	7358	9855 000 04199	BSN200	1408	2422 500 00166	Soclat CRT 10p 32"
5262	4822 137 1116	Band 3001 at 100MHz	7359	9855 000 04199	BSN200	1409	2422 500 00169	Soclat CRT 10p 32"
5263	4822 137 1116	Band 3001 at 100MHz	7360	9855 000 04199	BSN200	1410	2422 500 00172	Soclat CRT 10p 32"
5264	4822 137 1116	Band 3001 at 100MHz	7361	9855 000 04199	BSN200	1411	2422 500 00175	Soclat CRT 10p 32"
5265	4822 137 1116	Band 3001 at 100MHz	7362	9855 000 04199	BSN200	1412	2422 500 00178	Soclat CRT 10p 32"
5266	4822 137 1116	Band 3001 at 100MHz	7363	9855 000 04199	BSN200	1413	2422 500 00181	Soclat CRT 10p 32"
5267	4822 137 1116	Band 3001 at 100MHz	7364	9855 000 04199	BSN200	1414	2422 500 00184	Soclat CRT 10p 32"
5268	4822 137 1116	Band 3001 at 100MHz	7365	9855 000 04199	BSN200	1415	2422 500 00187	Soclat CRT 10p 32"
5269	4822 137 1116	Band 3001 at 100MHz	7366	9855 000 04199	BSN200	1416	2422 500 00190	Soclat CRT 10p 32"
5270	4822 137 1116	Band 3001 at 100MHz	7367	9855 000 04199	BSN200	1417	2422 500 00193	Soclat CRT 10p 32"
5271	4822 137 1116	Band 3001 at 100MHz	7368	9855 000 04199	BSN200	1418	2422 500 00196	Soclat CRT 10p 32"
5272	4822 137 1116	Band 3001 at 100MHz	7369	9855 000 04199	BSN200	1419	2422 500 00199	Soclat CRT 10p 32"
5273	4822 137 1116	Band 3001 at 100MHz	7370	9855 000 04199	BSN200	1420	2422 500 00202	Soclat CRT 10p 32"
5274	4822 137 1116	Band 3001 at 100MHz	7371	9855 000 04199	BSN200	1421	2422 500 00205	Soclat CRT 10p 32"
5275	4822 137 1116	Band 3001 at 100MHz	7372	9855 000 04199	BSN200	1422	2422 500 00208	Soclat CRT 10p 32"
5276	4822 137 1116	Band 3001 at 100MHz	7373	9855 000 04199	BSN200	1423	2422 500 00211	Soclat CRT 10p 32"
5277	4822 137 1116	Band 3001 at 100MHz	7374	9855 000 04199	BSN200	1424	2422 500 00214	Soclat CRT 10p 32"
5278	4822 137 1116	Band 3001 at 100MHz	7375	9855 000 04199	BSN200	1425	2422 500 00217	Soclat CRT 10p 32"
5279	4822 137 1116	Band 3001 at 100MHz	7376	9855 000 04199	BSN200	1426	2422 500 00220	Soclat CRT 10p 32"
5280	4822 137 1116	Band 3001 at 100MHz	7377	9855 000 04199	BSN200	1427	2422 500 00223	Soclat CRT 10p 32"
5281	4822 137 1116	Band 3001 at 100MHz	7378	9855 000 04199	BSN200	1428	2422 500 00226	Soclat CRT 10p 32"
5282	4822 137 1116	Band 3001 at 100MHz	7379	9855 000 04199	BSN200	1429	2422 500 00229	Soclat CRT 10p 32"
5283	4822 137 1116	Band 3001 at 100MHz	7380	9855 000 04199	BSN200	1430	2422 500 00232	Soclat CRT 10p 32"
5284	4822 137 1116	Band 3001 at 100MHz	7381	9855 000 04199	BSN200	1431	2422 500 00235	Soclat CRT 10p 32"
5285	4822 137 1116	Band 3001 at 100MHz	7382	9855 000 04199	BSN200	1432	2422 500 00238	Soclat CRT 10p 32"
5286	4822 137 1116	Band 3001 at 100MHz	7383	9855 000 04199	BSN200	1433	2422 500 00241	Soclat CRT 10p 32"
5287	4822 137 1116	Band 3001 at 100MHz	7384	9855 000 04199	BSN200	1434	2422 500 00244	Soclat CRT 10p 32"
5288	4822 137 1116	Band 3001 at 100MHz	7385	9855 000 04199	BSN200	1435	2422 500 00247	Soclat CRT 10p 32"
5289	4822 137 1116	Band 3001 at 100MHz	7386	9855 000 04199	BSN200	1436	2422 500 00250	Soclat CRT 10p 32"
5290	4822 137 1116	Band 3001 at 100MHz	7387	9855 000 04199	BSN200	1437	2422 500 00253	Soclat CRT 10p 32"
5291	4822 137 1116	Band 3001 at 100MHz	7388	9855 000 04199	BSN200	1438	2422 500 00256	Soclat CRT 10p 32"
5292	4822 137 1116	Band 3001 at 100MHz	7389	9855 000 04199	BSN200	1439	2422 500 00259	Soclat CRT 10p 32"
5293	4822 137 1116	Band 3001 at 100MHz	7390	9855 000 04199	BSN200	1440	2422 500 00262	Soclat CRT 10p 32"
5294	4822 137 1116	Band 3001 at 100MHz	7391	9855 000 04199	BSN200	1441	2422 500 00265	Soclat CRT 10p 32"
5295	4822 137 1116	Band 3001 at 100MHz	7392	9855 000 04199	BSN200	1442	2422 500 00268	Soclat CRT 10p 32"
5296	4822 137 1116	Band 3001 at 100MHz	7393	9855 000 04199	BSN200	1443	2422 500 00271	Soclat CRT 10p 32"
5297	4822 137 1116	Band 3001 at 100MHz	7394	9855 000 04199	BSN200	1444	2422 500 00274	Soclat CRT 10p 32"
5298	4822 137 1116	Band 3001 at 100MHz	7395	9855 000 04199	BSN200	1445	2422 500 00277	Soclat CRT 10p 32"
5299	4822 137 1116	Band 3001 at 100MHz	7396	9855 000 04199	BSN200	1446	2422 500 00280	Soclat CRT 10p 32"
5300	4822 137 1116	Band 3001 at 100MHz	7397	9855 000 04199	BSN200	1447	2422 500 00283	Soclat CRT 10p 32"
5301	4822 137 1116	Band 3001 at 100MHz	7398	9855 000 04199	BSN200	1448	2422 500 00286	Soclat CRT 10p 32"
5302	4822 137 1116	Band 3001 at 100MHz	7399	9855 000 04199	BSN200	1449	2422 500 00289	Soclat CRT 10p 32"

366	4822 051 30063	66043 5% 0.062W
367	4822 116 02247	66043 5% 0.31W
368	4822 051 30064	66043 5% 0.062W
369	4822 051 30065	66043 5% 0.062W
370	4822 051 30066	66043 5% 0.062W
371	2112 815 11002	140 1% 0.5W
372	2112 815 11002	140 1% 0.5W
373	2322 257 41162	3.5A0 5W
374	4822 051 30068	66043 5% 0.062W
375	4822 051 30069	66043 5% 0.062W
376	4822 051 30070	66043 5% 0.062W
377	4822 051 30071	66043 5% 0.062W
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574	4822 051 30268	66043 5% 0.062W
575	4822 051 30269	66043 5% 0.062W
576	4822 051 30270	66043 5% 0.062W
577	4822 051 30271	66043 5% 0.062W
578	4822 051 30272	66043 5% 0.062W
579	4822 051 30273	66043 5% 0.062W
580	4822 051 30274	66043 5% 0.062W
581	4822 051 30275	66043 5% 0.062W
582	4822 051 30276	66043 5% 0.062W
583	4822 051 30277	66043 5% 0.062W
584	4822 051 30278	66043 5% 0.062W
585	4822 051 30279	66043 5% 0.062W
586	4822 051 30280	66043 5% 0.062W
587	4822 051 30281	66043 5% 0.062W
588	4822 051 30282	66043 5% 0.062W
589	4822 051 30283	66043 5% 0.062W
590	4822 051 30284	66043 5% 0.062W
591	4822 051 30285	66043 5% 0.062W
592	4822 051 30286	66043 5% 0.062W
593	4822 051 30287	66043 5% 0.062W
594	4822 051 30288	66043 5% 0.062W
595	4822 051 30289	66043 5% 0.062W
596	4822 051 30290	66043 5% 0.062W
597	4822 051 30291	66043 5% 0.062W
598	4822 051 30292	66043 5% 0.062W
599	4822 051 30293	66043 5% 0.062W
600	4822 051 30294	66043 5% 0.062W
601	4822 051 30295	66043 5% 0.062W
602	4822 051 30296	66043 5% 0.062W
603	4822 051 30297	66043 5% 0.062W
604	4822 051 30298	66043 5% 0.062W
605	4822 051 30299	66043 5% 0.062W
606	4822 051 30300	66043 5% 0.062W
607	4822 051 30301	66043 5% 0.062W
608	4822 051 30302	66043 5% 0.062W
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