DVD Receiver HTS3320/51

Service
Service
Service

Service Manual

CLASS 1
LASER PRODUCT

MP3-CD PLAYBACK MP3

DVD VIDEO

COMPACT disc DIGITAL VIDEO

COMPACT disc DIGITAL AUDIO

Contents

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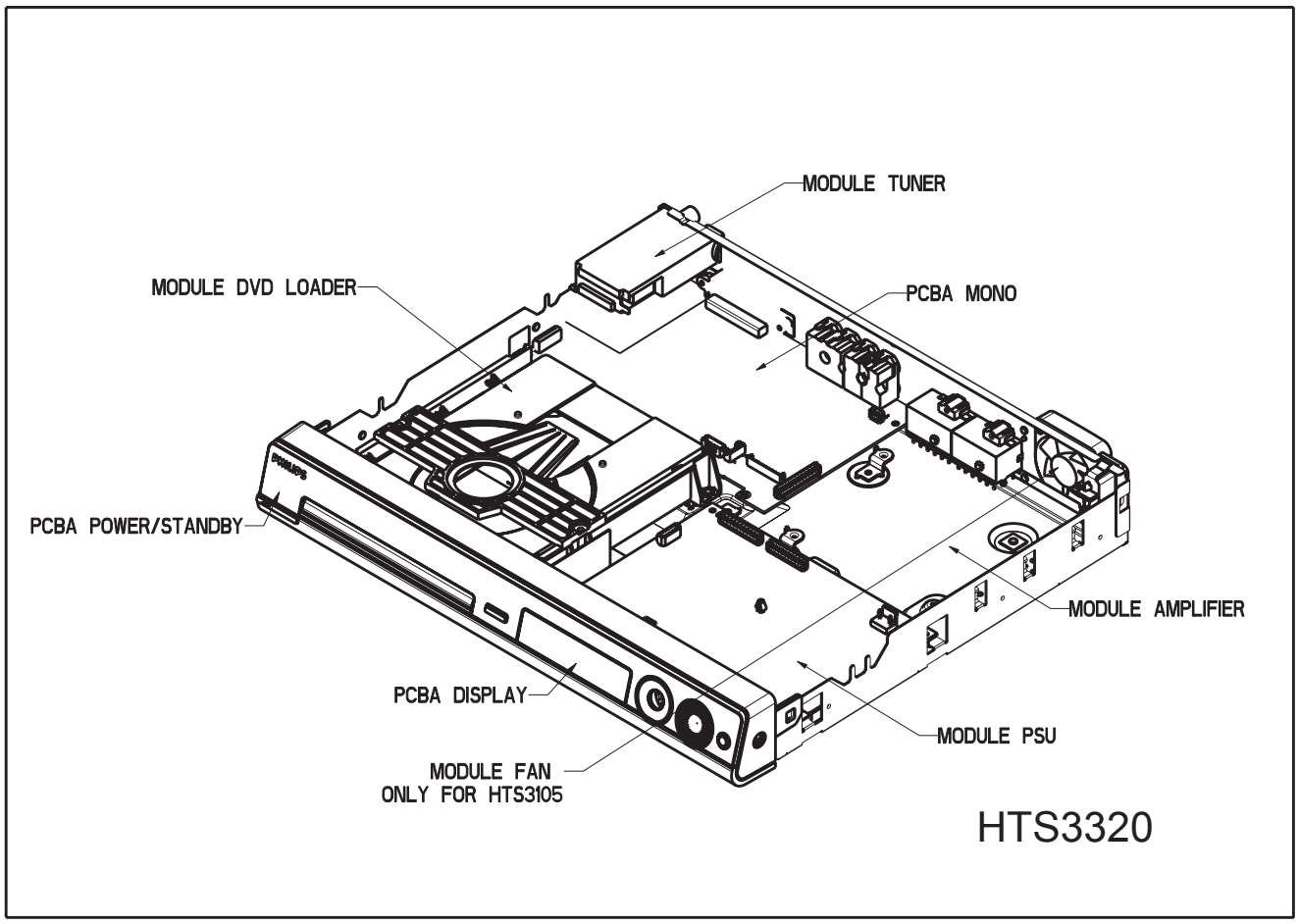
Version 1.0

PHILIPS

LOCATION OF PC BOARDS



VERSION VARIATIONS:

Type /Versions: / Features &	HTS3320 /51
Progressive Scan	x
Line-Out	x
TV-In	x
Aux-In	x
Y/Pb/Pr (YUV) Component Video Output	x
CVBS	x
SCART	–

1. Specifications

1.1 General:

Mains voltage	:	230V
Mains frequency	:	50Hz
Power consumption	:	150W < 1W Eco standby power < 150W at 1/8 P_{rated} (For main unit)
Dimension main unit	:	435 x 55 x 328mm

1.2 Tuner

FM

Tuning range	:	87.5-108MHz
Grid	:	50kHz 100kHz
IF frequency	:	10.7MHz ± 25kHz
Aerial input	:	75Ω coaxial
Sensitivity at 26dB S/N	:	< 7µV
Selectivity at 600kHz bandwidth	:	> 25dB
IF rejection	:	> 60dB
Image rejection	:	> 25dB
Distortion at RF=1mV, dev. 75kHz	:	< 3%
-3dB Limiting point	:	8µV
Crosstalk at RF=1mV, dev. 67.5kHz	:	> 28dB
Crosstalk at RF=1mV, dev. 40kHz	:	> 18dB

MW

Tuning range	:	531-1602kHz , 530-1700kHz
Grid	:	9kHz 10kHz
IF frequency	:	450kHz ± 1kHz
Aerial input	:	Frame aerial
Sensitivity at 26dB S/N	:	< 4.0mV/M
Selectivity at 18kHz bandwidth	:	> 20dB
IF rejection	:	> 45dB
Image rejection	:	> 28dB
Distortion at RF=50mV, m=80%	:	< 5%

1.3 AMPLIFIER:

Output power		
Front	:	100W RMS / channel
Rear	:	75W RMS / channel
Center	:	100W RMS
Subwoofer	:	150W RMS
Frequency response ±0.5dB	:	20Hz-20kHz
Hum (Volume Minimum)	:	200nW
Residual noise (Volume Minimum)	:	40nW
Input sensitivity		
Aux In	:	1V ± 3dB at 22kΩ
Scart In	:	0.5V ± 3dB at 22kΩ
Output sensitivity		
Line Out (Left/Right)	:	1V ± 2dB at 10kΩ
Scart Out (Left/Right)	:	1V ± 2dB at 10kΩ

1.4 COMPACT DISC/VCD/DVD:

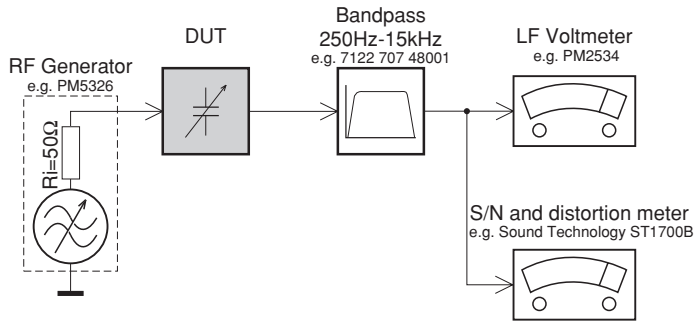
Video Decoding	:	MPEG-1/MPEG-2/ DivX 3/4/5/6 Ultra,
Video DAC	:	12 Bits
Signal System	:	PAL / NTSC
Video Format	:	4:3 / 16:9
CVBS Out [1)]		
CVBS level	:	1.0 ± 0.1 V_{p-p}
Luminance S/N	:	>= 60dB
RGB/YUV Out [1)]		
Amplitude	:	1.0 ± 0.1 V_{p-p}
S/N	:	>= 60dB

[1)] Output terminals to be terminated with 75Ω

2. Measurements Setup, Service Aid & Lead Free Requirements

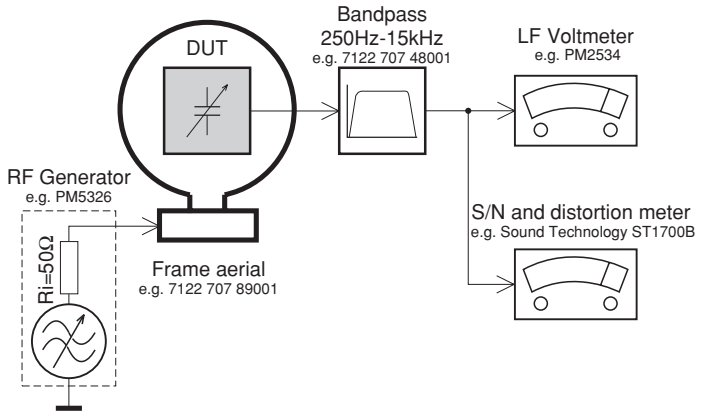
MEASUREMENT SETUP

Tuner FM



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

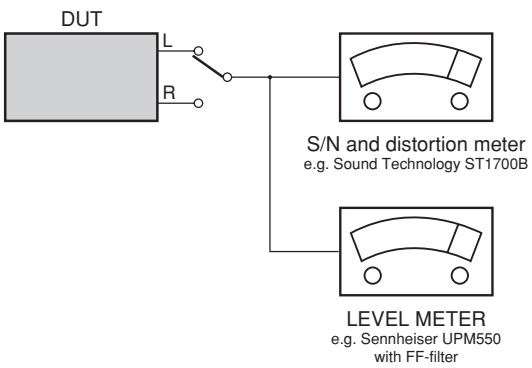
Tuner AM (MW,LW)



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

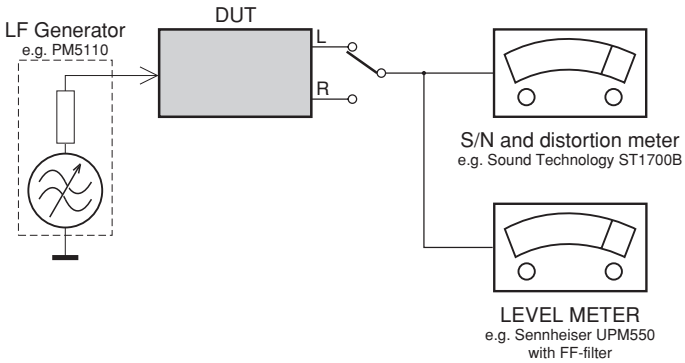
CD

Use Audio Signal Disc SBC429 4822 397 30184
(replaces test disc 3)



Recorder

Use Universal Test Cassette **CrO2** SBC419 4822 397 30069
or Universal Test Cassette **Fe** SBC420 4822 397 30071



SERVICE AIDS

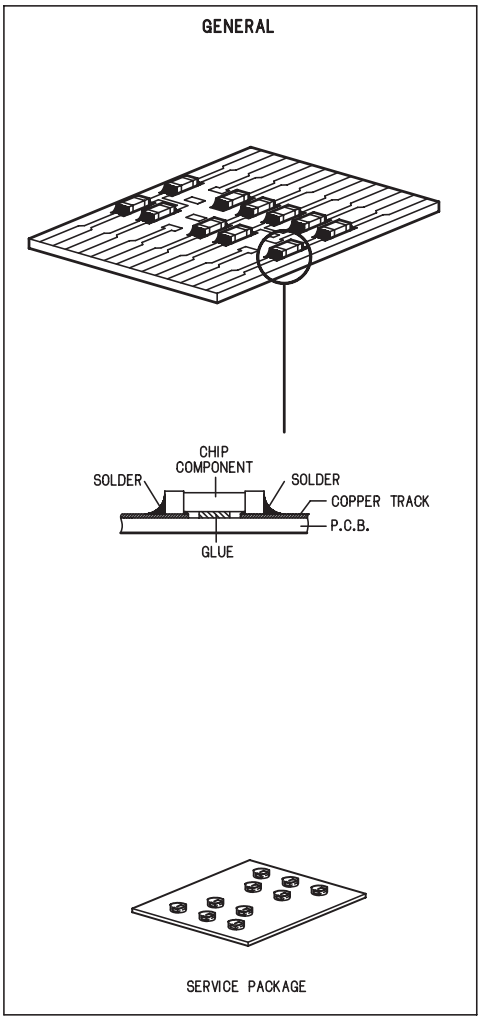
Service Tools:

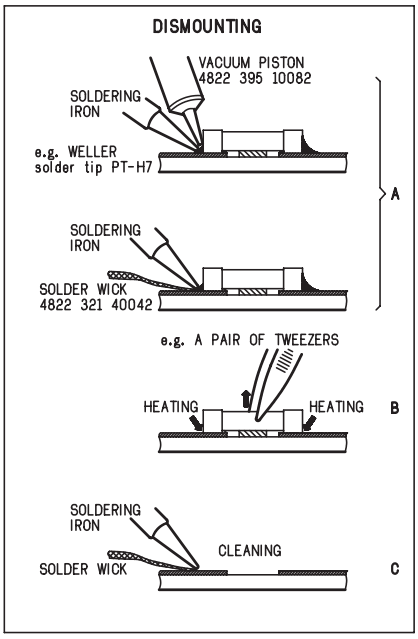
Universal Torx driver holder 4822 395 91019
Torx bit T10 150mm 4822 395 50456
Torx driver set T6 - T20 ..... 4822 395 50145
Torx driver T10 extended 4822 395 50423

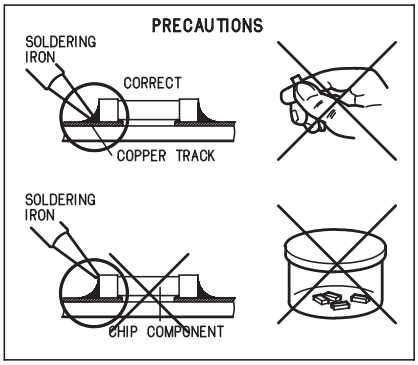
Compact Disc:

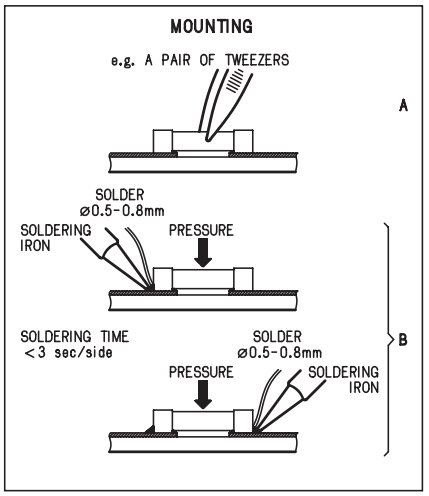
SBC426/426A Test disc 5 + 5A 4822 397 30096
SBC442 Audio Burn-in Test disc 1kHz 4822 397 30155
SBC429 Audio Signals disc 4822 397 30184
Dolby Pro-logic Test Disc 4822 395 10216

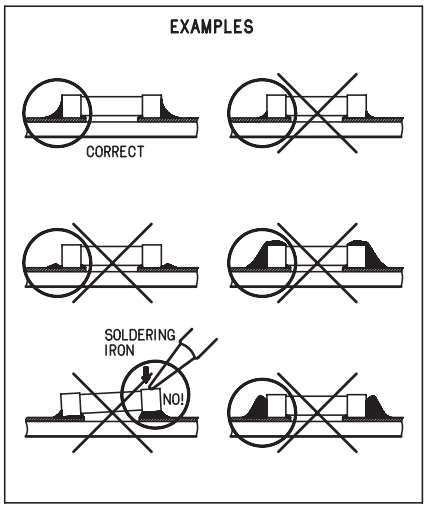
HANDLING CHIP COMPONENTS











ESD

GB WARNING

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

NL WAARSCHUWING

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

F ATTENTION

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

D WARNUNG

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

I AVVERTIMENTO

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

GB ESD PROTECTION EQUIPMENT:

Complete Kit ESD3 (small tablemat, wristband, connection box, extention cable and earth cable) 4822 310 10671
Wristband tester 4822 344 13999

GB

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

Safety components are marked by the symbol ⚠.

NL

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

De Veiligheidsonderdelen zijn aangeduid met het symbool ⚠

F

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

Less composants de sécurité sont marqués ⚠

D

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

Sicherheitsbauteile sind durch das Symbol ⚠ markiert.

I

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

Componenty di sicurezza sono marcati con ⚠

GB

After servicing and before returning set to customer perform a leakage current measurement test from all exposed metal parts to earth ground to assure no shock hazard exist. The leakage current must not exceed 0.5mA.

CLASS 1
LASER PRODUCT

GB Warning !

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

S Varning !

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

SF Varoitus !

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

DK Advarse !

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

F

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

2.1 Lead Free Requirements

Pb(Lead) Free Solder

When soldering , be sure to use the pb free solder.

INDENTIFICATION:

Regardless of special logo (not always indicated)

one must treat all sets from **1 Jan 2005** onwards, according next rules:

Important note: In fact also products of year 2004 must be treated in this way as long as you avoid mixing solder-alloys (leaded/ lead-free). So best to always use SAC305 and the higher temperatures belong to this.

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

- Use only lead-free solder alloy Philips SAC305 with order code 0622 149 00106. If lead-free solder-paste is required, please contact the manufacturer of your solder-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 solder alloy. The solder tool must be able
  - To reach at least a solder-temperature of 400°C,
  - To stabilize the adjusted temperature at the solder-tip
  - To exchange solder-tips for different applications.
- Adjust your solder tool so that a temperature around 360°C – 380°C is reached and stabilized 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 rise drastically and flux-fluid will be destroyed. To avoid wear-out of tips switch off un-used equipment, or reduce heat.
- Mix of lead-free solder alloy / parts with leaded solder alloy / parts is possible but PHILIPS recommends strongly to avoid mixed solder alloy types (leaded and lead-free).
  If one cannot avoid or does not know whether product is lead-free, clean carefully the solder-joint from old solder alloy and re-solder with new solder alloy (SAC305).
- 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 BGA-ICs:
  - always use the 12nc-recognizable soldering temperature profile of the specific BGA (for de-soldering always use the lead-free temperature profile, in case of doubt)
  - lead free BGA-ICs will be delivered in so-called 'dry-packaging' (sealed pack including a silica gel pack) to protect the IC against moisture. After opening, dependent of MSL-level seen on indicator-label in the bag, the BGA-IC possibly still has to be baked dry. (MSL=Moisture Sensitivity Level). This will be communicated via AYS-website.
  Do not re-use BGAs at all.
- For sets produced before 1.1.2005 (except products of 2004), containing leaded solder-alloy and components, all needed spare-parts will be available till the end of the service-period. For repair of such sets nothing changes.
- On our website **www.atyourservice.ce.Philips.com** you find more information to:
  - BGA-de-/soldering (+ baking instructions)
  - Heating-profiles of BGAs and other ICs used in Philips-sets

  You will find this and more technical information within the "magazine", chapter "workshop news".

For additional questions please contact your local repair-helpdesk.

2.2 Service Hints

CAUTION

CHARGED CAPACITORS ON THE SERVO BOARD MAY DAMAGE THE DRIVE ELECTRONICS WHEN CONNECTING A NEW DRIVE.THAT'S WHY, BESIDES THE SAFETY MEASURES LIKE

- **SWITCH OFF POWER SUPPLY**
- **ESD PROTECTION**

ADDITIONAL ACTIONS MUST BE TAKEN BY THE REPAIR TECHNICIAN.

The following steps have to be done when replacing the defective loader :

1. Dismantling of the loader to access the ESD protection point if necessary.
2. **Solder the ESD protection point*.**
3. Disconnect flexfoil cable from the defective loader.
4. Put a paper clip on the flexfoil to short-circuit the contacts (fig.1)
5. Replace the defective loader with a new loader.
6. Remove paperclip from the flexfoil and connect it to the new loader.
7. Remove solder joint on the ESD protection point.

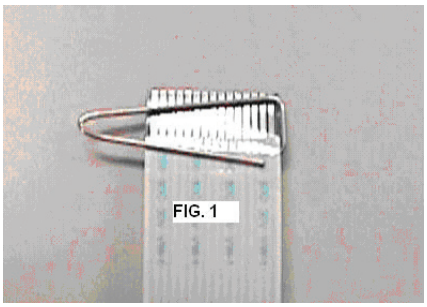
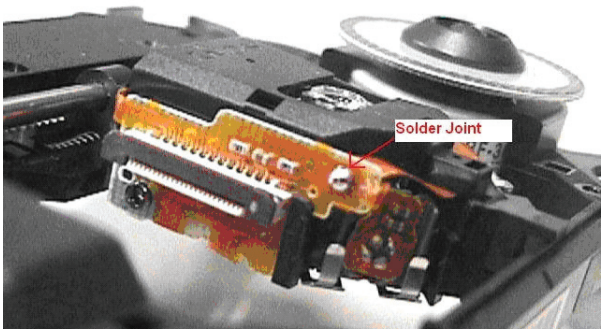


FIG. 1

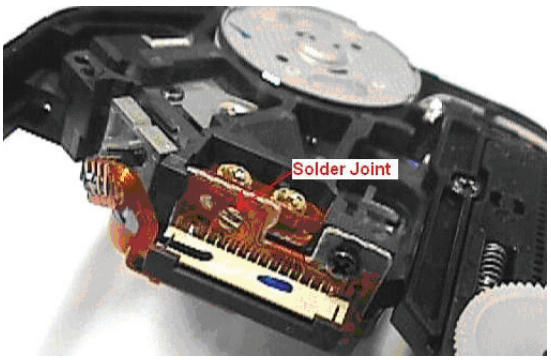
ATTENTION: The laser diode of this loader is protected against ESD by a solder joint which shortcircuits the laserdiode to ground. For proper functionality of the loader this solder joint must be remove **after** connection loader to the set.

Type 1



(ESD protection point is accessible from top of loader)

Type 2

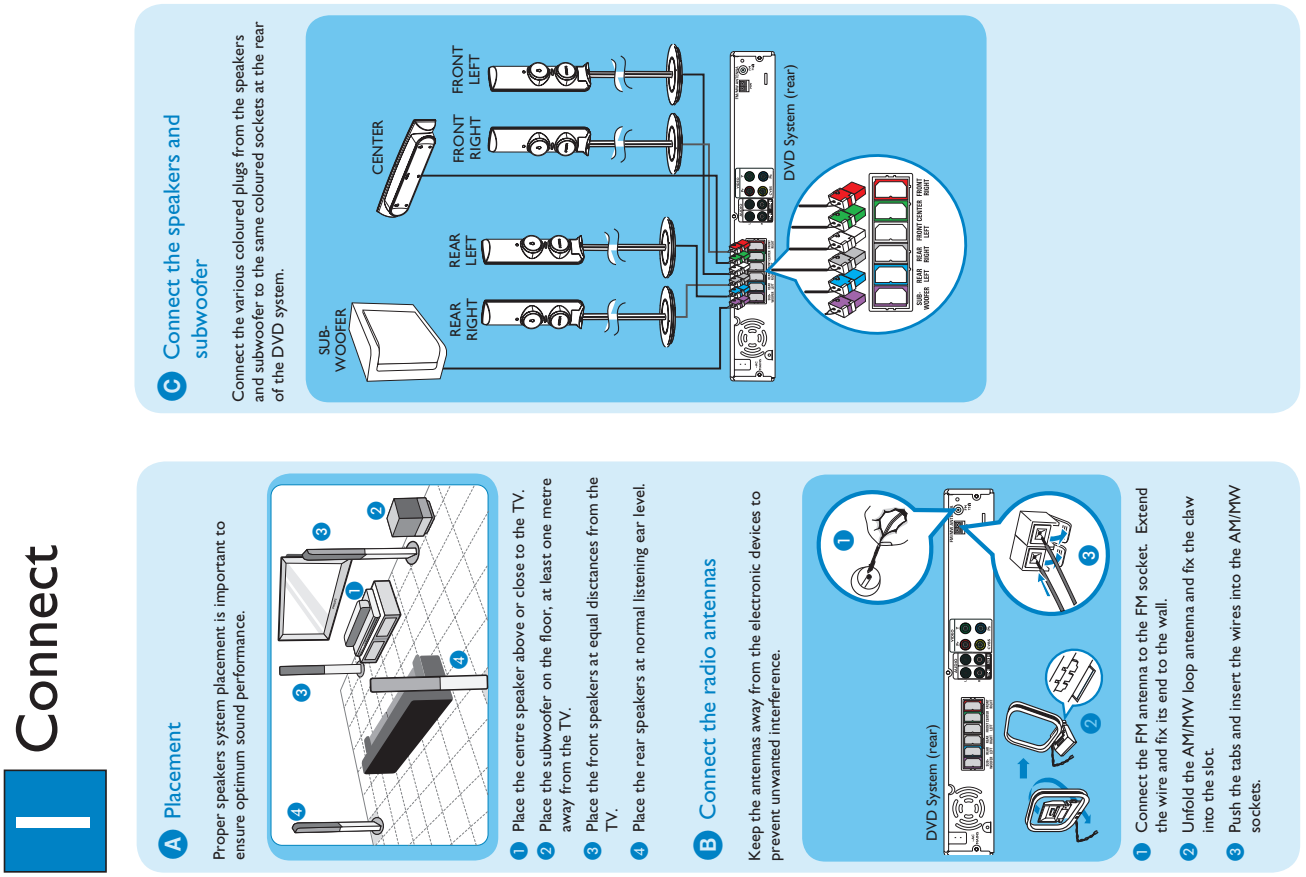


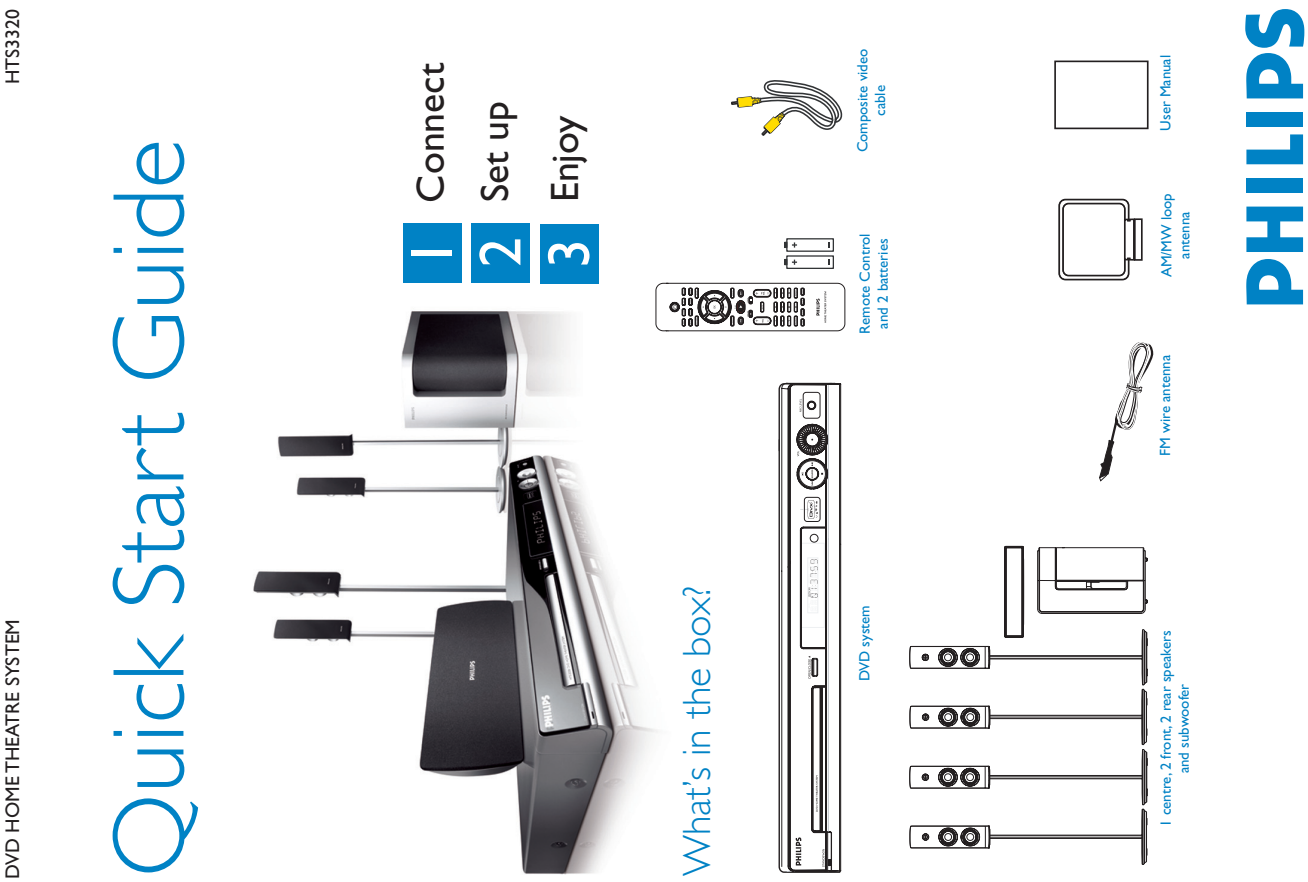
(ESD protection point is accessible from bottom of the loader)

Only applicable for defective loader needed to be sent back to supplier for failure analysis and to support backcharging evidence.
This is also applicable for all partnership workshops.

3. Directions For Use

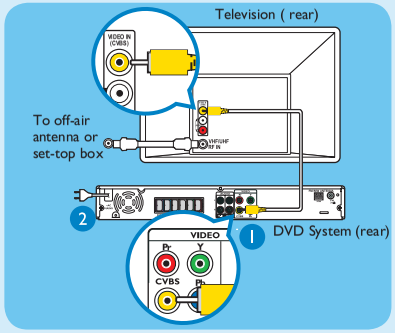
The following except of the Quick Use Guide serves as an introduction to the set.
The Complete Direction for the Use can be downloaded in different languages from the internet site of Philips Customer care Center:
www.p4c.philips.com





2 Set up

D Connect the DVD system to TV

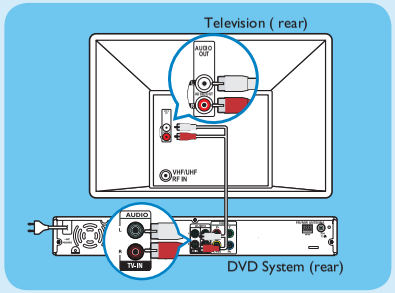


1. Use the supplied composite video cable to connect the CVBS socket on this DVD system to the VIDEO IN socket on your TV.
2. Plug in the power cable from the DVD system to an AC power outlet.

Note It is important to connect the DVD system directly to your TV.

E Connect the audio from TV to DVD system (optional)

To hear the TV audio through this home theatre system, use the red and white audio cables (not supplied) to connect the TV IN (R/L) sockets on this DVD system to the AUDIO output sockets on your TV.



Note Press **TV** on the remote control to get the sound output from the speakers system when watching the TV programme.

A Finding the viewing channel

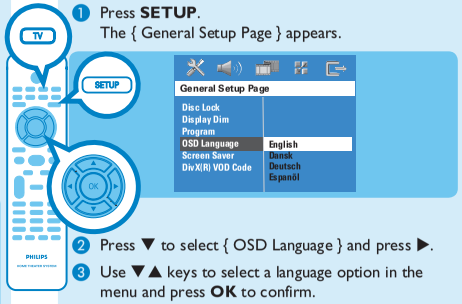
1. Press **STANDBY ON** on the DVD system.
2. Press **SOURCE** on the DVD system until "DISC" appears on the display panel.

3. Turn on the TV. Use the TV's remote control to select the correct viewing channel for the DVD system.
   You should see the blue DVD background on the TV.

Note To search for the correct viewing channel, press the Channel Down button on the TV's remote control repeatedly (or AV, SELECT, button) until you see the blue DVD background.

B Select the display language on the screen

1. Press **SETUP**.
   The { General Setup Page } appears.



2. Press ▼ to select { OSD Language } and press ▶.
3. Use ▼▲ keys to select a language option in the menu and press **OK** to confirm.
4. Press **SETUP** to exit.

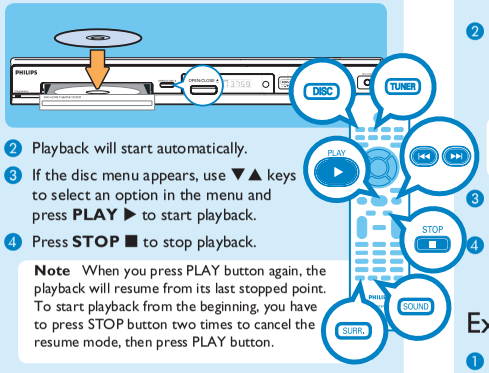
Note The language set here is only for the menus that are shown on the TV while operating this DVD system, not for the DVD disc menu.

There are various setup options (Audio Setup, Video Setup, Preference Setup) available on this DVD system. Refer to the user manual for more information.

3 Enjoy

Start disc playback

1. Press **OPEN CLOSE** to open the disc tray.
   Load a disc and close the disc tray.



2. Playback will start automatically.
3. If the disc menu appears, use ▼▲ keys to select an option in the menu and press **PLAY** ▶ to start playback.
4. Press **STOP** ■ to stop playback.

Note When you press PLAY button again, the playback will resume from its last stopped point. To start playback from the beginning, you have to press STOP button two times to cancel the resume mode, then press PLAY button.

Listen to radio

1. Press **TUNER**.
   The display panel will show "AUTO INSTALL PRESS PLAY".
2. Press **PLAY** ▶ until "START ..." appears on the display panel.
   All the available radio stations with strong reception signal will be stored automatically.

Note This feature is only available for the first time setup. If you wish to reinstall all the radio stations, hold down the PROGRAM button on the remote control.

3. Once complete, use ⏮ ⏭ keys to select a preset radio station.
4. To delete a preset radio station, hold down **STOP** ■ until "FM/MW X DELETED" appears.

Experience surround sound

1. Press **SURR** to switch between stereo and multi-channel.
2. Press **SOUND** to select either CONCERT, DRAMA, ACTION or SCI-FI preset digital sound effects.

Troubleshooting

For more troubleshooting tips, see the user manual.

No picture.
- Press DISC button on the remote control.
- Check the connection to the TV and ensure the plugs are firmly in place.

No sound.
- Adjust the volume.
- Check the speaker connections and settings.
- Check the audio connections and press SOURCE button to select the correct input source.
- The centre and rear speakers operate only in multi-channel surround mode. Press SURR button to select multi-channel surround output.

The DVD system does not work.
- Disconnect the power cord from the power outlet for a few minutes. Reconnect the power cord and try again.

Need help?

User Manual
See the user manual that cames with your Philips DVD System

Online
Go to www.philips.com/support

Be responsible
Respect copyrights

12 NC 3139 246 22081
www.philips.com

4. Dismantling Instructions

4.1 Dismantling of the DVD Loader Tray Cover

1) Insert a minus screwdriver and push the lever in the direction as shown in Figure 4-1 to unlock the tray before sliding it out.

Figure 4-1

2) Remove the Tray Cover as shown in Figure 4-2

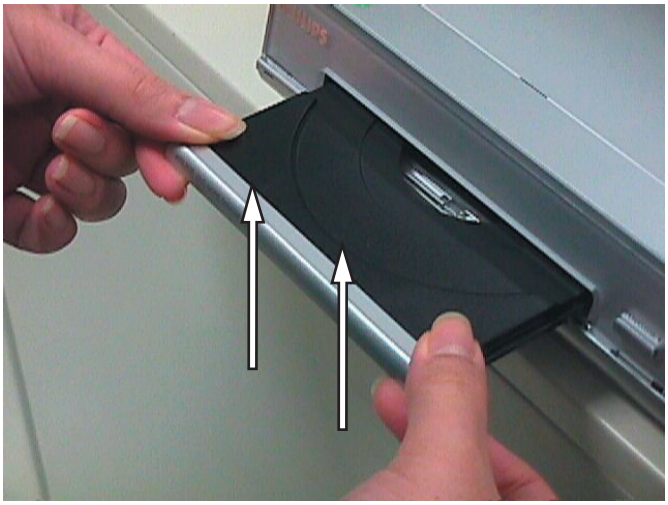


Figure 4-2

4.2 Dismantling of the Front Board, PSU Module & DVD Loader.

1) Release 4 snap hooks to remove the Front Board.
   - 1 snap hook each on the left & right side
   - 2 snap hooks on the bottom side

2) Loosen 4 screws A (See Figure 4-3) to remove the PSU Module.

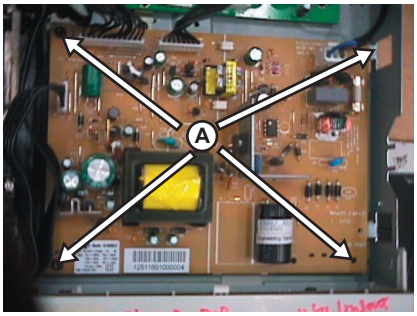


Figure 4 3

3) Loosen 4 screws B (See Figure 4-4) to remove the DVD Loader.

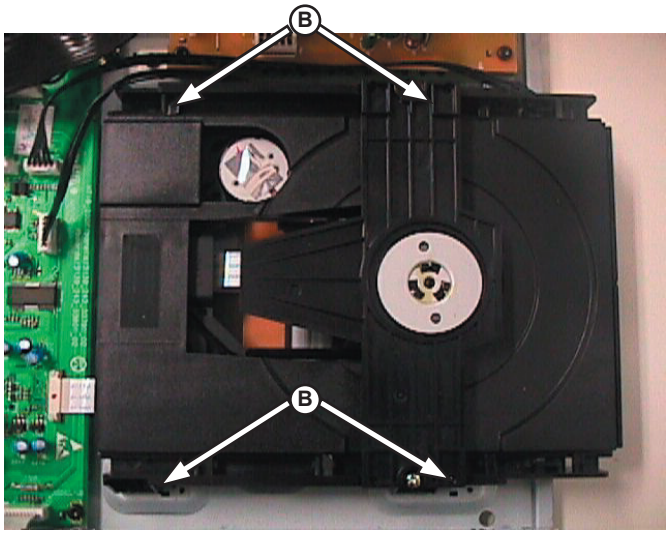


Figure 4-4

4.3 Dismantling of the Tuner Module & Mono Board.

1) Loosen 1 screw to remove the Tuner Module.
2) Loosen 2 screws D to remove the Mono Board.

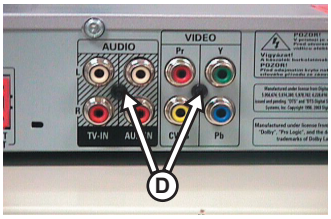


Figure 4-5 (AP)

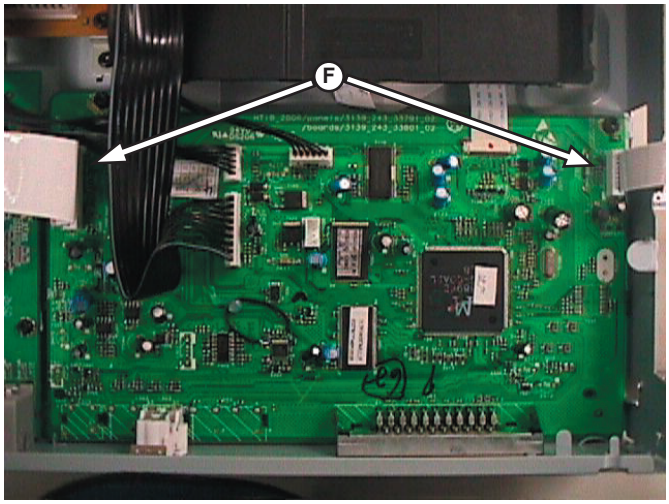


Figure 4-6

4.4 Dismantling of the Amp-module Board

1) Loosen 4 screws F and 2 screws G (See Figure 4-7 & Figure 4-8) to remove Amp-Module Board.

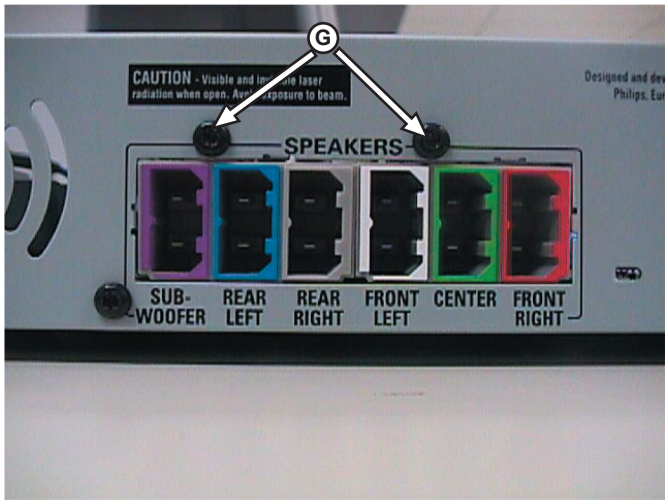


Figure 4-7

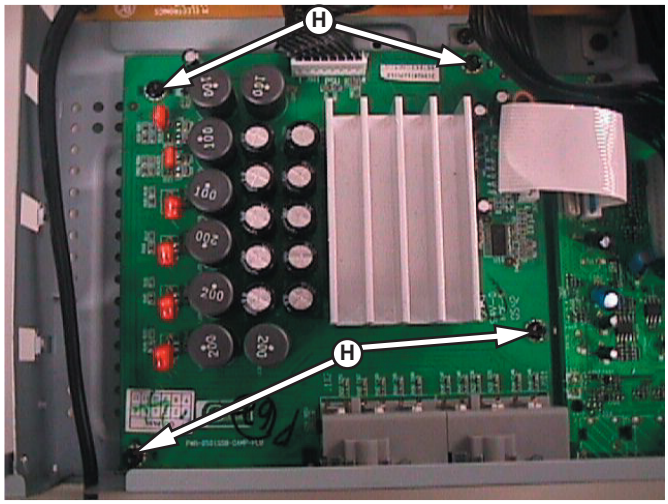
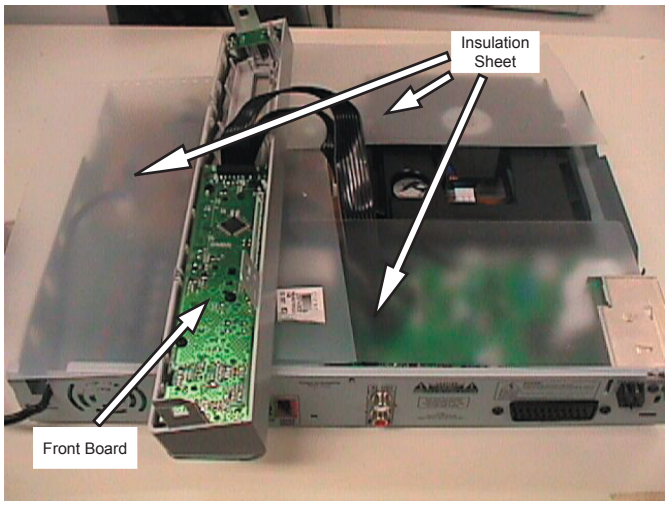
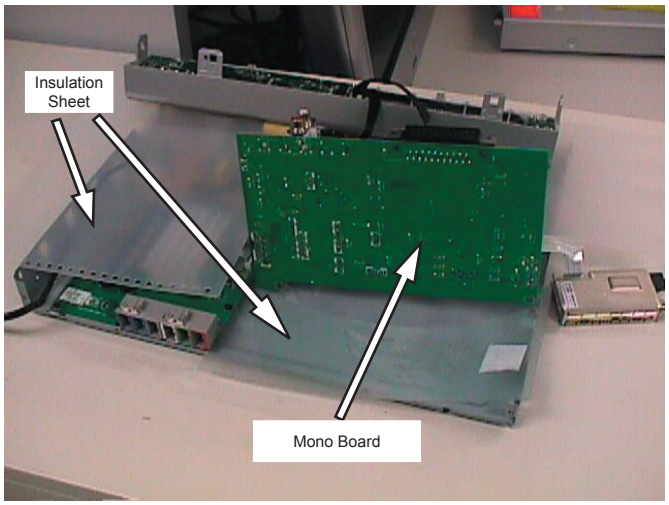


Figure 4-8

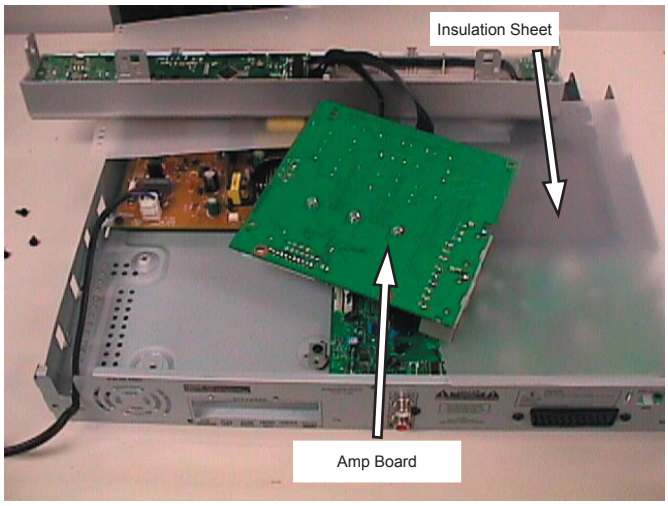
3.4 Service Positions



Service Position - Front Board

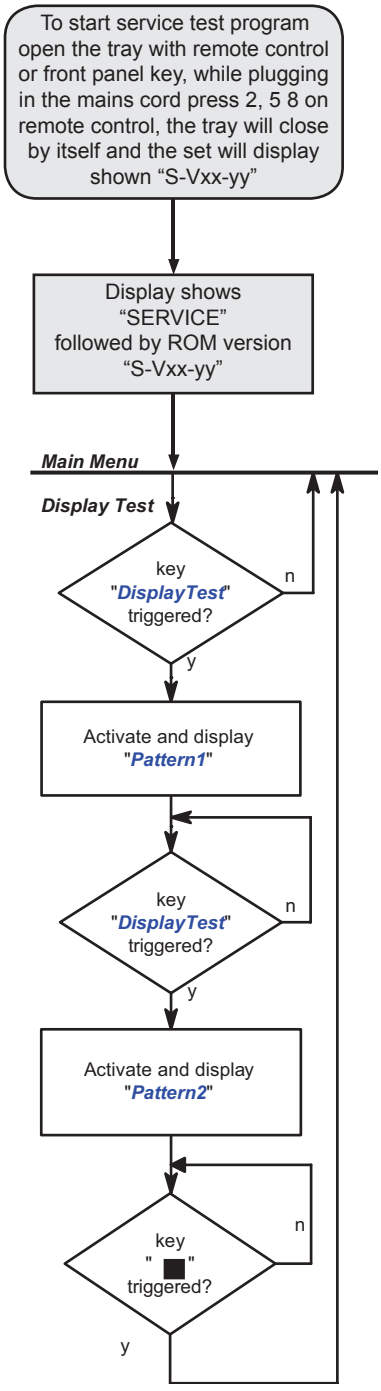


Service Position - Mono Board



Service Position -Amp-Board

5. Service Test Program



S refers to Service Mode
V refers to Version
xx refers to Software version number of BEA (counting up from 01 to 99)
yy refers to Software version number of Front uP (counting up from 01 to 99)

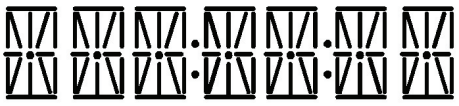
5.1 Display Test

Purpose:
This test is used to check the driving circuits, the display and whether there are any short-circuits, open-circuits or any other defects.

Player:

Following display patterns are used to test the display and its connections to µP.

Pattern 1: *Default: All display control pins are ON*
- to check the open-circuits



Pattern 2: *Alternate display control pins are on (Test Pattern: 0x55)*
- to check the short-circuits on Data port

Receiver:

Following display patterns are used to test the display and its connections to µP.

Pattern 1: *Default: All display control pins are ON*
- to check the open-circuits

Pattern 2: *Alternate display control pins are on (Test Pattern: 0x55)*
- to check the short-circuits on Data port

5.1.1 Reprogramming of DVD version Matrix

After repair, the customer setting and region code may be lost. Reprogramming will put the set back in the state in which it has left the factory, ie. with the default setting and the allowed region code.

Model	Region	Region Code	TV Type
HTS 3320/51	Russia	5	PAL

To reprogram do as follows:
1) Power up the set and select DISC source.
2) Open tray by press “OPEN/CLOSE” button on the set or press and hold “STOP” button on the RC.
3) Press the following buttons on the Remote Control:
<9> <9> <9> <9> <AUDIO> <7> .....for HTS 3320/51
4) The display shows **‘YYYY-ZZ’** and the tray will close.
YYYY = model number (eg. 8300, 8500, etc.)
ZZ = slash stroke version (eg. 01, 69, etc.)

5.1.2 Procedure for check Software version

1) Power up the set and select DISC source.
2) Open tray by press “OPEN/CLOSE” button on the set or press and hold “STOP” button on the RC.
3) Press “DISPLAY” button on the Remote control.
4) The TV screen will shows:

PPPP-Vxx YYYYY-ZZ
SERVO: GGGGGGGG REG:DD

PPPP = HTS 3300MKII
xx = version number
YYYYY = model # - 3300D
ZZ = stroke version (12, 51, 05, 98, 55, 51K)
GGGGGGGG = version for servo code

5.1.3 Burning of firmware

1. Unzip the zip-archive attached with this service information.
2. Start the CD burning software and create a new CD Project (Data disc) with the following settings:
   a. File System: ISO9660
   b. Format: MODE 2/XA
   c. Recording format: Single Session (Track at once), Finalized CD
3. Place the content of the zip-archive into the root directory of the new CD project.
4. Burn the data onto a blank CDR or CDRW.

Note: ISO9660 is mandatory, UDF discs are not supported! The final CDROM must not contain any other data except the file from the zip-archive.

5.1.4 Procedure to upgrade the firmware

1. Power up the set and open tray.
2. Insert the prepared Upgrade CDROM and close the tray.
3. The set will display:

LOAD -> MULTICH ->…… ->UPG END.
The whole process takes less than 2 minutes.

Note: Do not press any button or interrupt the main supply upgrading process,Otherwise the set may become defective.

4. When the upgrade is completed, the tray will close automatic.
5. The tray will close and the set will go to Standby mode automatically when the upgrade process is completed.

5.1.5 Procedure to check the firmware version to confirm upgrading

1. Power up the set and open tray.
2. Press the <Menu Display> button on the Remote Control.
3. The firmware version will be displayed on the top left hand corner of the OSD.

5.1.6 Trade Mode

Trade mode is a feature that will block all set keys when enabled. It is for dealers to prevent customers fromremoving disc, changing source etc using the set keys.Rotary and Remote Control (RC) keys are still allowed inTrade mode.

To activate Trade Mode:

1) Power up the set and select DISC source.
2) Open tray by press “OPEN/CLOSE” button on the set or press and hold “STOP” button on the RC.
3) Then press buttons <2> <5> <9> on the RC.
4) The display shows **‘TRA ON’** and the tray will close.
Trade Mode is now enabled.

To deactivate Trade Mode:

1) Power up the set and select DISC source.
2) Open tray by press and hold “STOP”button on the RC.
3) Then press buttons <2> <5> <9> on the RC.
4) The display shows **‘TRA OFF’** and the tray will close.
Trade Mode is now disabled.

5.1.7 Procedure to change Tuner Grid (/98, /55 only)

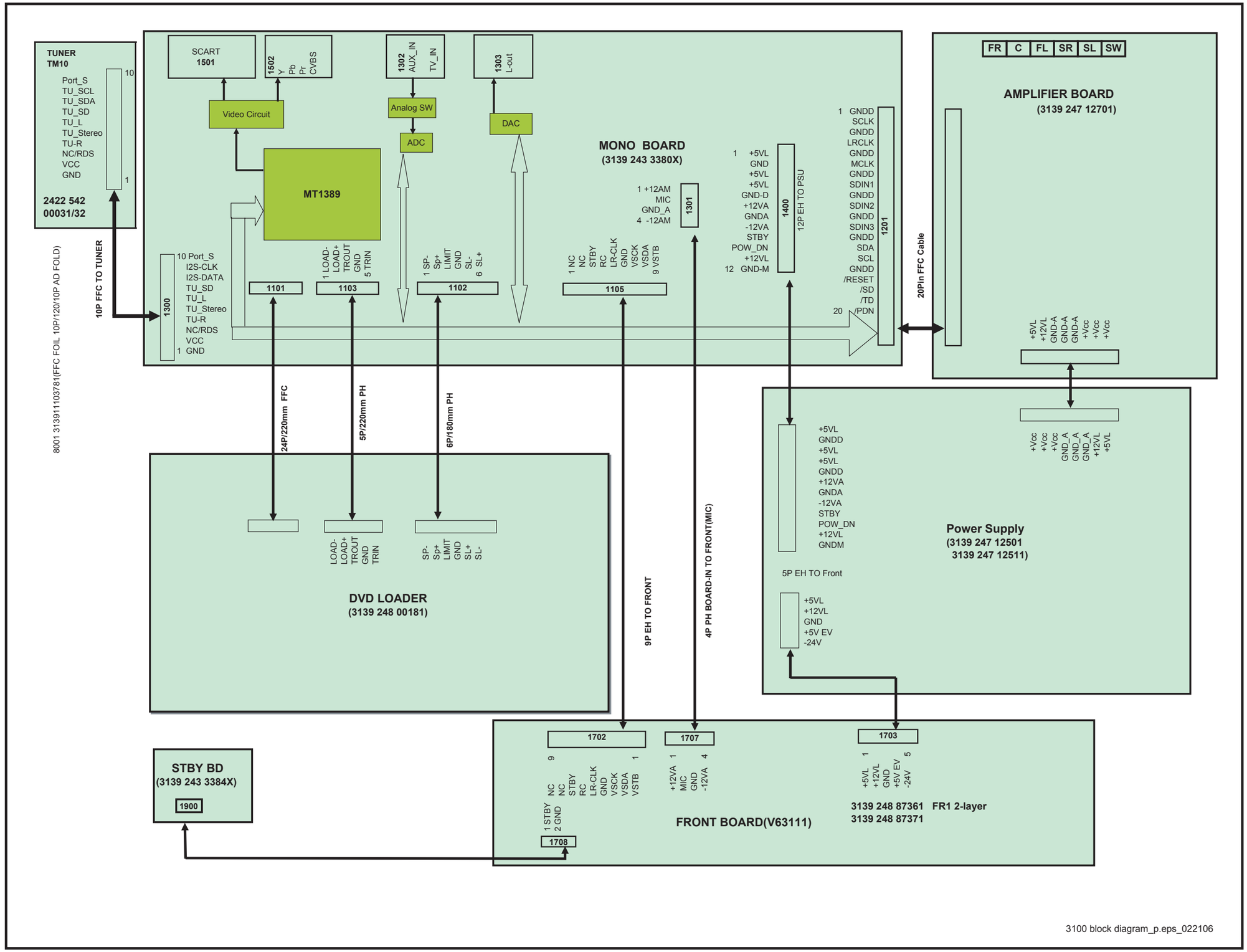
1. Press **SOURCE** to select “FM” or “MW”.
2. Press **STANDBY ON** to switch the DVD system to standby mode.
3. Press **STANDBY ON** again to turn on the DVD system and hold down |◄◄ button on the front panel.
   ➜ The display will show "GRID 9" or "GRID 10".

   Helpful Hint:
   – GRID 9 and GRID 10 indicate that the tuning grid is in step of 9 kHz and 10 kHz respectively.

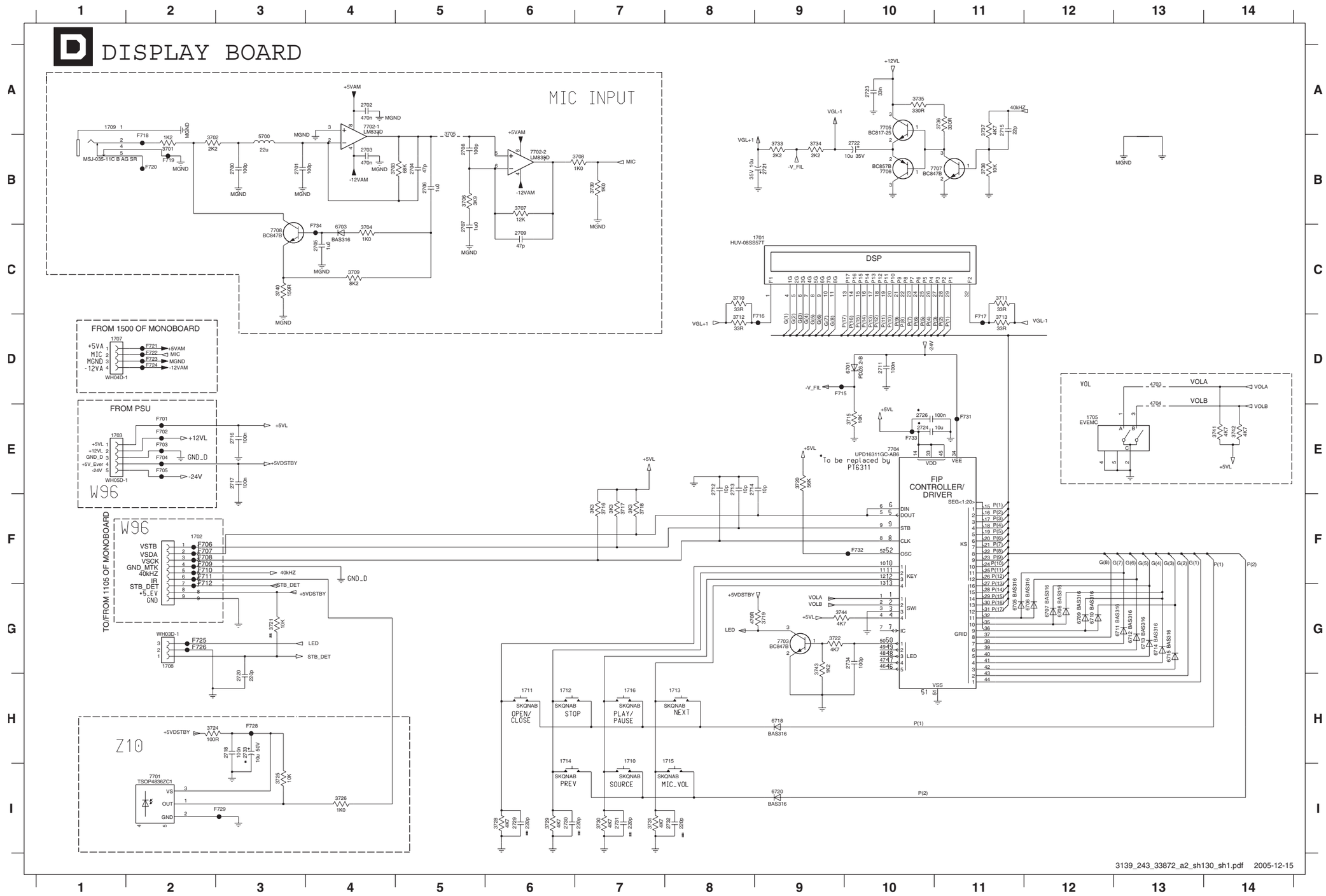
Note: Repeating the same action will toggle back to its previous tuning grid setting.

Notes:

Block Diagram

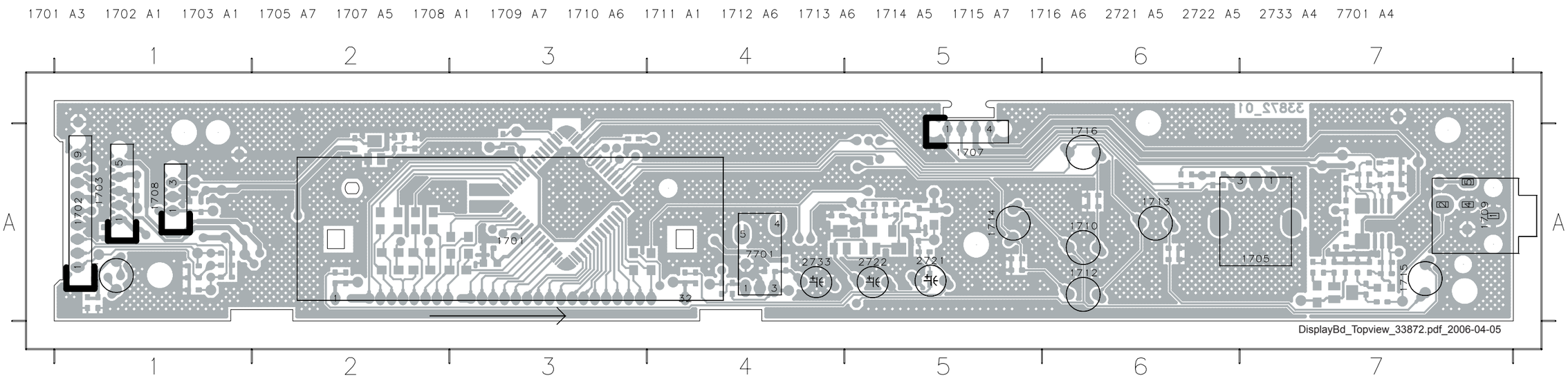


Front: Display



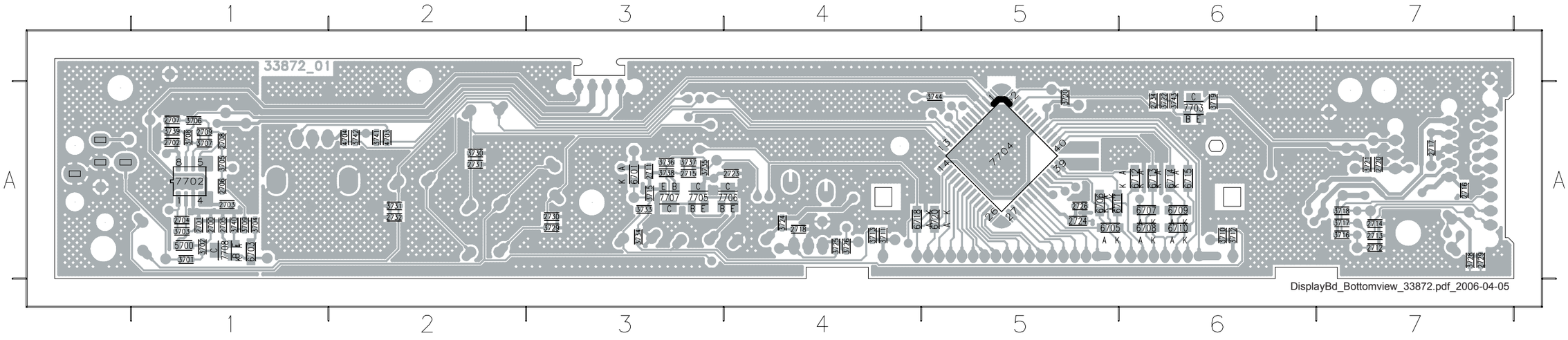
1701 C9
1702 F2
1703 E1
1705 E12
1707 D1
1708 G2
1709 A1
1710 H7
1711 H6
1712 H6
1713 H8
1714 H6
1715 H8
1716 H7
2700 B3
2701 B3
2702 A4
2703 B4
2704 B5
2705 C4
2706 B5
2707 C5
2708 B5
2709 C6
2711 D10
2712 E8
2713 E8
2714 E8
2715 A11
2716 E3
2717 E3
2718 H3
2720 H3
2721 B9
2722 B10
2723 A10
2724 E10
2726 E10
2729 I6
2730 I6
2731 I7
2732 I8
2734 G10
3701 B2
3702 B2
3703 B4
3704 C4
3705 B5
3706 B5
3707 B6
3708 B7
3709 C4
3710 C8
3711 C11
3712 D8
3713 D11
3715 E10
3716 F7
3717 F7
3718 F7
3719 G9
3720 E9
3721 G3
3722 G9
3724 H2
3725 I3
3726 I4
3728 I6
3729 I6
3730 I7
3731 I7
3733 B9
3734 B9
3735 A10
3736 A11
3737 A11
3738 B11
3739 B7
3740 C3
3741 E14
3742 E14
3743 G9
3744 G9
4703 D13
4704 E13
5700 B3
6701 D10
6703 C4
6705 G11
6706 G12
6707 G12
6708 G12
6709 G12
6710 G12
6711 G13
6712 G13
6713 G13
6714 G13
6715 G13
6718 H9
6720 I9
7701 I2
7702-1 A4
7702-2 B6
7703 G9
7704 E10
7705 A10
7706 B10
7707 B11
7708 C3
F701 E2
F702 E2
F703 E2
F704 E2
F705 E2
F706 F2
F707 F2
F708 F2
F709 F2
F710 F2
F711 F2
F712 G2
F715 D9
F716 D9
F717 D11
F718 B2
F719 B2
F720 B2
F721 D2
F722 D2
F723 D2
F724 D2
F725 G2
F726 G2
F728 H3
F729 I3
F731 E11
F732 E10
F733 C4
F734 C4

Front: Display (topview)

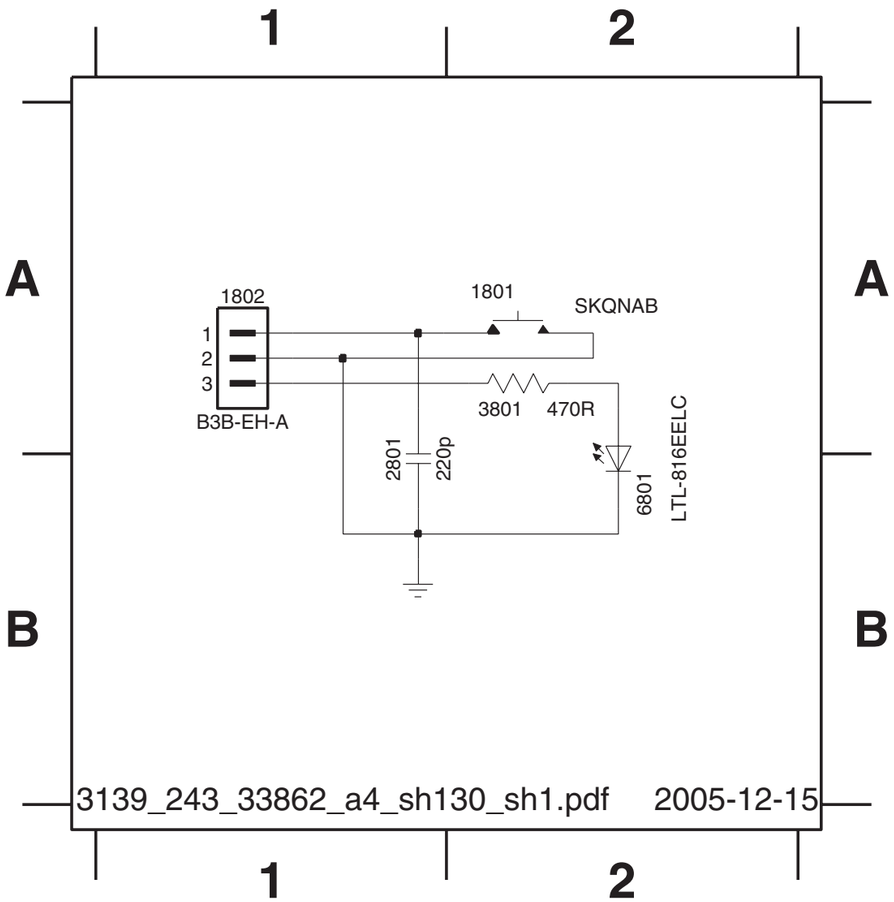


Front: Display (Bottom view)

2700 A1 2701 A1 2702 A1 2703 A1 2704 A1
2705 A1 2706 A1 2707 A1 2708 A1 2709 A1
2711 A3 2712 A7 2713 A7 2714 A7 2715 A3
2716 A7 2717 A7 2718 A4 2720 A7 2723 A4
2724 A5 2726 A5 2729 A7 2730 A3 2731 A2
2732 A2 2734 A6 3701 A1 3702 A1 3703 A1
3704 A1 3705 A1 3706 A1 3707 A1 3708 A1
3709 A1 3710 A6 3711 A4 3712 A6 3713 A4
3715 A3 3716 A7 3717 A7 3718 A7 3719 A6
3720 A5 3721 A7 3722 A6 3724 A4 3725 A4
3726 A4 3728 A7 3729 A3 3730 A2 3731 A2
3733 A3 3734 A3 3735 A3 3736 A3 3737 A3
3738 A3 3739 A1 3740 A1 3741 A2 3742 A2
3743 A6 3744 A5 4703 A2 4704 A2 5700 A1
6701 A3 6703 A1 6705 A5 6706 A5 6707 A6
6708 A6 6709 A6 6710 A6 6711 A5 6712 A6
6713 A6 6714 A6 6715 A6 6718 A4 6720 A5
7702 A1 7703 A6 7704 A5 7705 A4 7706 A4
7707 A3 7708 A1

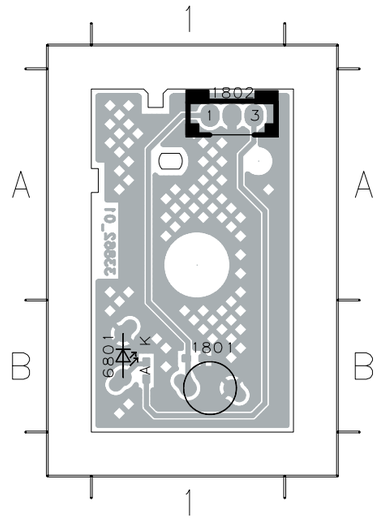


Front: Standby



1801 A2
1802 A1
2801 B1
3801 A2
6801 B2

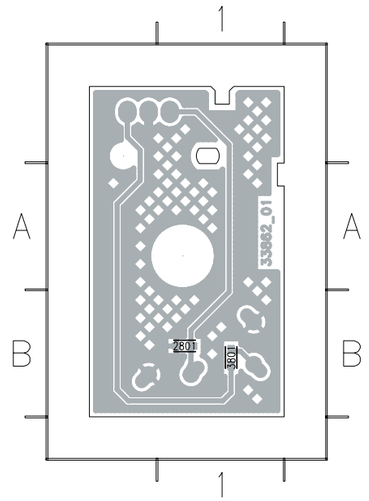
Front: Standby (Top View)



1801 B1
1802 A1
6801 B1

StandbyBoard_Topview_33862.pdf_2006-04-05

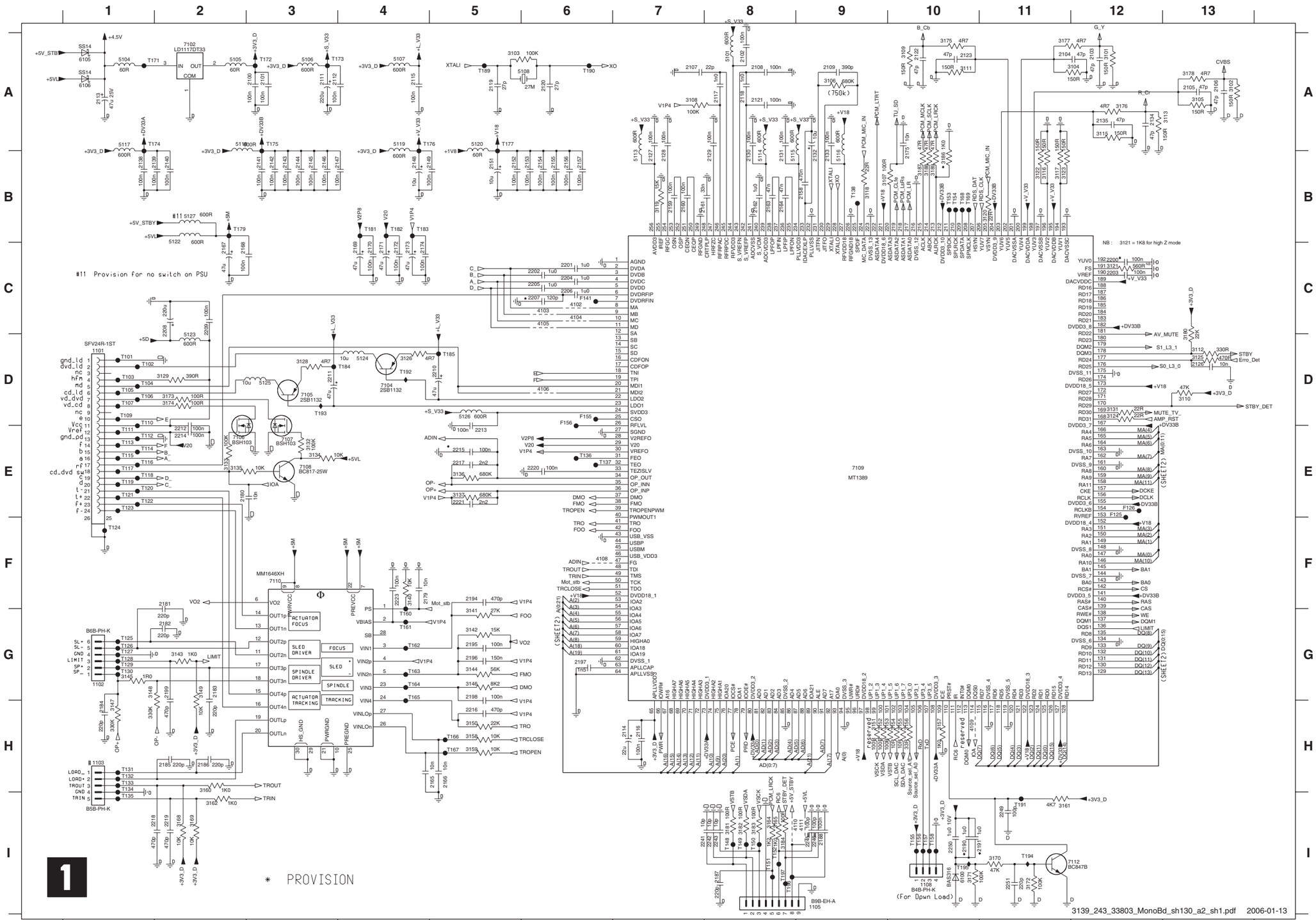
Front: Standby (Bottom View)



2801 B1
3801 B1

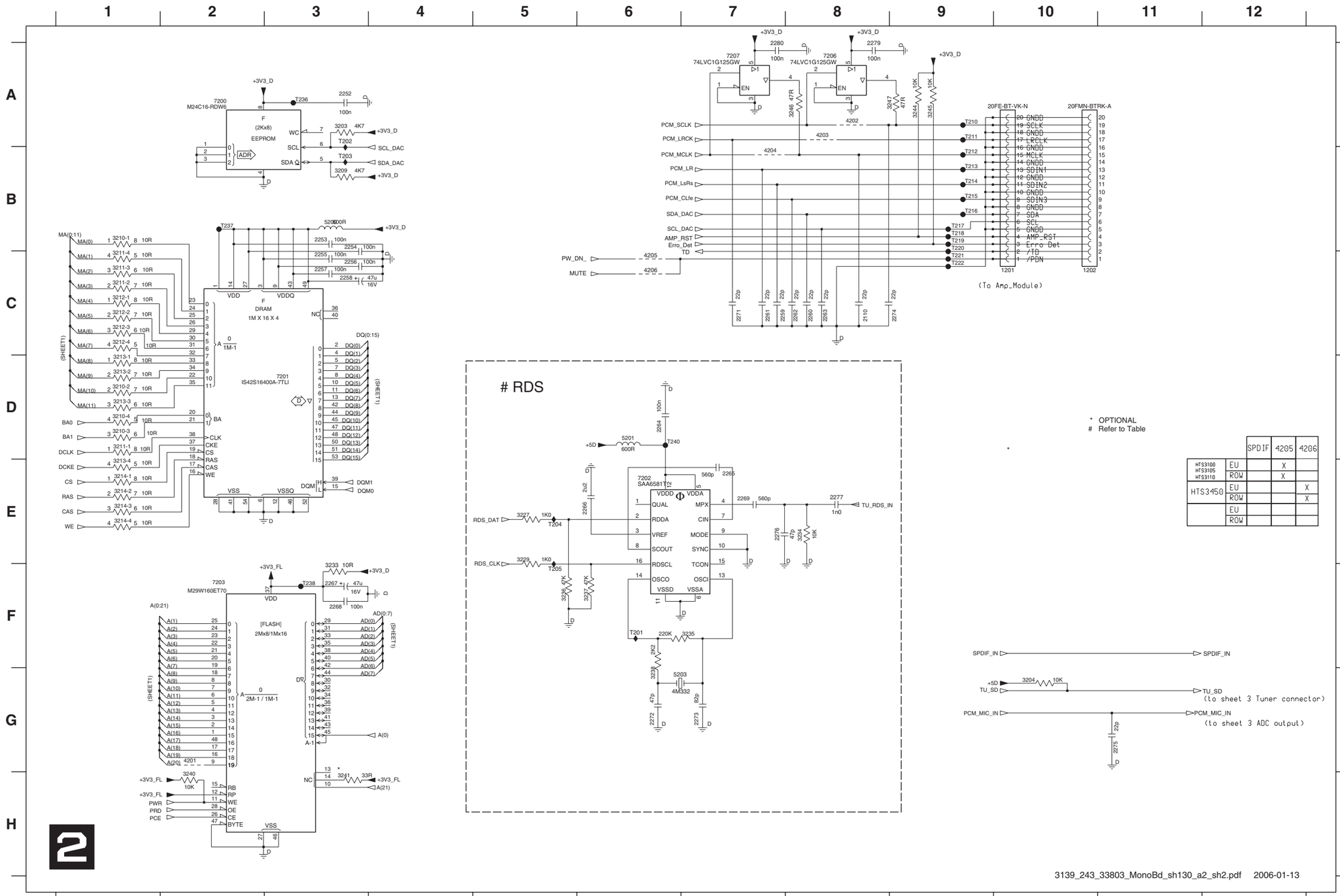
StandbyBoard_Bottomview_33862.pdf_2006-04-05

Mono Board: Circuit Diagram (Part 1)



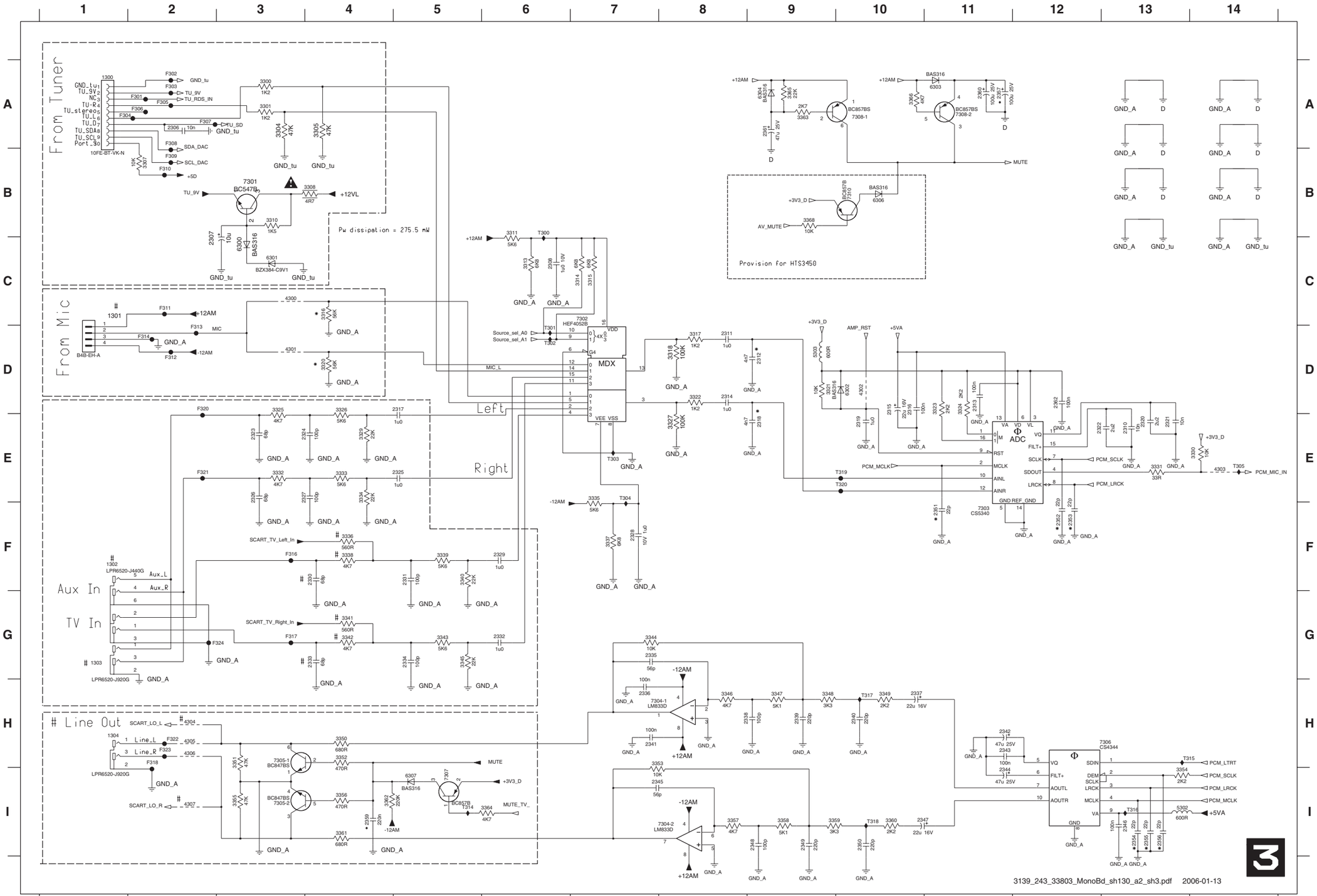
1101 D1	2241 I7	6100 I10	
1102 G1	2242 I8	6105 A1	
1103 H1	2243 I8	6106 A1	
1105 I9	2245 I9	7102 A2	
1108 I10	2246 I9	7104 D4	
2100 A3	2249 I11	7105 D3	
2101 A3	2250 I10	7106 E2	
2102 A8	2251 I11	7107 E3	
2103 A12	3101 A12	7108 E3	
2104 A11	3102 A13	7109 E9	
2105 A13	3103 A5	7110 F3	
2106 A13	3104 A12	7112 I11	
2107 A7	3105 A13	F125 E12	
2108 A8	3106 A9	F126 E12	
2109 A9	3107 B9	F141 C6	
2111 A3	3108 A7	F155 D6	
2112 A3	3109 A10	F156 D6	
2113 A1	3110 D13	T101 D1	
2114 H7	3111 A10	T102 D1	
2115 A4	3112 D13	T103 D1	
2116 H7	3113 A13	T104 D1	
2117 A8	3115 A12	T105 D1	
2118 A8	3116 B11	T106 D1	
2119 A5	3117 B11	T107 D1	
2120 A6	3118 B9	T109 D1	
2121 A8	3119 B7	T110 D1	
2122 A10	3120 B11	T111 E1	
2123 A10	3121 C12	T112 E1	
2126 D13	3122 B11	T113 E1	
2127 B7	3123 B11	T114 E1	
2128 B7	3124 D12	T115 E1	
2129 B8	3125 D13	T116 E1	
2130 B8	3126 D4	T117 E1	
2131 B8	3128 D3	T118 E1	
2132 B9	3129 D2	T119 E1	
2133 B9	3131 D12	T120 E1	
2134 A12	3132 E3	T121 E1	
2135 A12	3133 E2	T122 E1	
2138 B1	3134 E3	T123 E1	
2139 B2	3135 E2	T124 F1	
2140 B2	3136 E5	T125 G1	
2141 B3	3137 E5	T126 G1	
2142 B3	3140 F4	T127 G1	
2143 B3	3141 G5	T128 G1	
2144 B3	3142 G5	T129 G1	
2145 B3	3143 G2	T130 G1	
2146 B3	3144 G5	T131 H1	
2147 B4	3145 G1	T132 H1	
2148 B4	3146 G5	T133 H1	
2149 B5	3147 H1	T134 H1	
2151 B5	3148 G1	T135 I1	
2152 B5	3149 G2	T136 E6	
2153 B6	3150 H5	T137 E6	
2154 B6	3151 H9	T138 B9	
2155 B6	3152 H9	T148 I8	
2156 B6	3153 H9	T149 I8	
2157 B6	3154 H10	T150 I8	
2158 B9	3155 H10	T151 I8	
2159 B7	3156 H10	T152 I8	
2160 B7	3157 H10	T153 B10	
2161 B7	3158 H5	T154 B10	
2162 B8	3159 H5	T155 I10	
2163 B8	3160 H2	T156 I10	
2164 B8	3161 I11	T157 I10	
2165 H5	3162 I2	T158 I10	
2166 H5	3164 I8	T160 G4	
2167 C2	3165 I8	T161 G4	
2168 C2	3168 I2	T162 G4	
2169 C4	3169 I2	T163 G4	
2170 C4	3170 I11	T164 G4	
2171 C4	3171 I10	T165 G4	
2172 C4	3172 I11	T166 H5	
2173 C4	3173 D2	T167 H5	
2174 C4	3174 D2	T168 B10	
2175 B10	3175 A10	T169 B10	
2179 F4	3176 A12	T171 A1	
2180 E2	3177 A11	T172 A3	
2181 F2	3178 A13	T173 A3	
2182 G2	3180 D13	T174 A1	
2183 G2	3181 I8	T175 A3	
2184 H1	3182 I8	T176 A4	
2185 H2	3183 I8	T177 A5	
2186 H2	3184 I8	T179 B2	
2187 I8	3186 B10	T181 B4	
2188 I9	3187 B10	T182 B4	
2190 I10	3188 B10	T183 B4	
2191 I11	3189 B10	T184 D4	
2194 F5	4102 C6	T185 D5	
2195 G5	4103 C6	T189 A5	
2196 G5	4104 C6	T190 A6	
2197 G6	4105 C6	T191 I11	
2198 G5	4106 D6	T192 D4	
2199 G2	4108 F6	T193 D3	
2200 C12	4109 H10	T194 I11	
2201 C6	4110 I9	T195 I10	
2202 C6	4111 I9	T196 I8	
2203 C12	5101 A8	T197 I8	
2204 C6	5104 A1		
2205 C6	5105 A2		
2206 C6	5106 A3		
2207 C6	5107 A4		
2208 C2	5108 A6		
2209 C2	5113 B7		
2210 D5	5114 B8		
2211 D3	5115 B8		
2212 E2	5116 B9		
2213 E5	5117 A1		
2214 E2	5118 A2		
2215 E5	5119 A4		
2216 H5	5120 A5		
2217 E5	5122 C2		
2218 I2	5123 D2		
2219 I2	5124 D4		
2220 E6	5125 D3		
2221 E5	5126 D5		
2223 F4	5127 B2		

Mono Board: Circuit Diagram (Part 2)



1201 C10
1202 C10
2110 C8
2252 A3
2253 B3
2254 B3
2255 C3
2256 C3
2257 C3
2258 C3
2259 C7
2260 C8
2261 C7
2262 C8
2263 C8
2264 D6
2265 E7
2266 E6
2267 F3
2268 F3
2269 E7
2271 C7
2272 G6
2273 G7
2274 C9
2275 G11
2276 E7
2277 E8
2279 A8
2280 A7
3203 A3
3204 G10
3209 B3
3210-1 B1
3210-2 D1
3210-3 D1
3210-4 D1
3211-1 D1
3211-2 C1
3211-3 C1
3211-4 C1
3212-1 C1
3212-2 C1
3212-3 C1
3212-4 C1
3213-1 D1
3213-2 D1
3213-3 D1
3213-4 E1
3214-1 E1
3214-2 E1
3214-3 E1
3214-4 E1
3227 E5
3229 E5
3233 F3
3234 E8
3235 F7
3236 F5
3237 F6
3238 G6
3240 H2
3241 H3
3244 A9
3245 A9
3246 A8
3247 A9
4201 G2
4202 A8
4203 A8
4204 B7
4205 C6
4206 C6
5200 B3
5201 D6
5203 G6
7200 A2
7201 D3
7202 E6
7203 F2
7206 A8
7207 A7
T201 F6
T202 A3
T203 B3
T204 E5
T205 F5
T210 A9
T211 A9
T212 B9
T213 B9
T214 B9
T215 B9
T216 B9
T217 B9
T218 B9
T219 B9
T220 B9
T221 C9
T222 C9
T236 A3
T237 B2
T238 F3
T240 D6

Mono Board: Circuit Diagram (Part 3)



1300 A1
1301 C1
1302 F1
1303 G1
1304 H1
2306 A2
2307 C2
2308 C6
2310 E13
2311 D8
2312 D9
2313 D11
2314 D8
2315 D10
2316 D10
2317 D5
2318 E9
2319 E10
2320 E13
2321 E13
2322 E12
2323 E3
2324 E4
2325 E5
2326 E3
2327 E4
2328 F7
2329 F6
2330 F4
2331 F5
2332 G6
2333 G4
2334 G5
2335 G7
2336 H7
2337 H10
2338 H9
2339 H9
2340 H10
2341 H7
2342 H11
2343 H11
2344 I11
2345 I7
2346 I13
2347 I10
2348 I9
2349 I9
2350 I10
2351 F11
2352 F12
2353 F12
2354 I13
2355 I13
2356 I13
2357 A11
2359 I4
2360 A11
2361 A9
2362 D12
3300 A3
3301 A3
3304 A3
3305 A4
3307 B2
3308 B4
3310 B3
3311 B6
3313 C6
3314 C7
3315 C7
3316 C4
3317 D8
3318 D8
3320 D4
3321 D9
3322 D8
3323 D11
3324 D11
3325 D3
3326 D4
3327 E8
3329 E4
3330 E14
3331 E13
3332 E3
3333 E4
3334 E4
3335 E7
3336 F4
3337 F7
3338 F4
3339 F5
3340 F5
3341 G4
3342 G4
3343 G5
3344 G7
3345 G5
3346 H8
3347 H9
3348 H9
3349 H10
3350 H4
3351 H3
3352 H4
3353 H7
3354 I13
3355 I3
3356 I4
3357 I8
3358 I9
3359 I9
3360 I10
3361 I4
3362 I4
3363 A9
3364 I6
3365 A9
3366 A10
3368 B9
4300 C3
4301 D3
4302 D10
4303 E14
4304 H2
4305 H2
4306 H2
4307 I2
5302 I13
5303 D9
6300 C3
6301 C3
6302 D10
6303 A11
6304 A9
6306 B10
6307 I5
7301 B3
7302 C7
7303 F11
7304-1 H8
7304-2 I8
7305-1 H3
7305-2 I3
7306 H12
7307 I5
7308-1 A10
7308-2 A11
7310 B10
F301 A2
F302 A2
F303 A2
F304 A1
F305 A2
F306 A2
F307 A2
F308 A2
F309 B2
F310 B2
F311 C2
F312 D2
F313 D2
F314 D2
F316 F3
F317 G3
F318 H2
F320 D2
F321 E2
F322 H2
F323 H2
F324 G3
T300 B6
T301 D6
T302 D6
T303 E7
T304 E7
T305 E14
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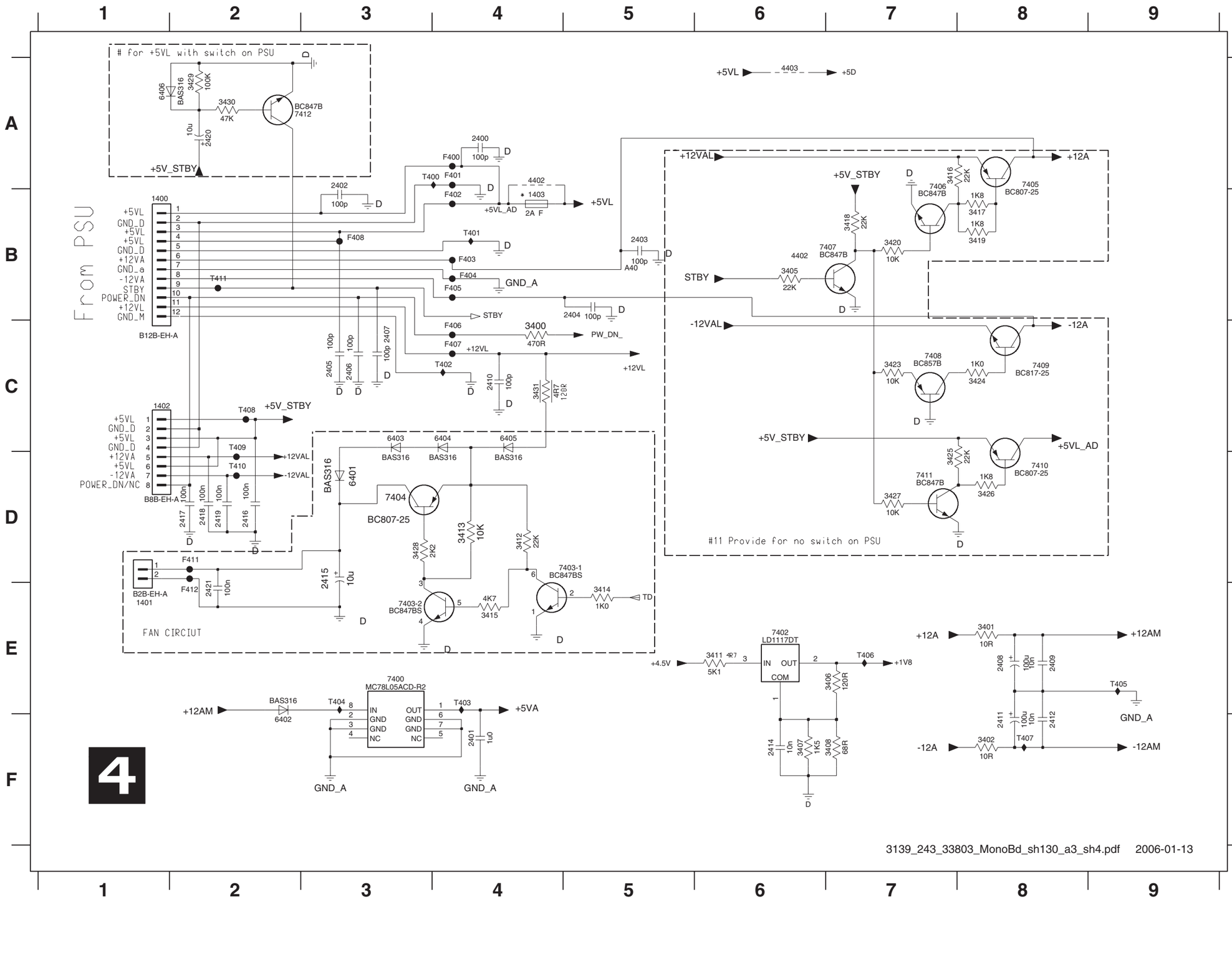
T315 H13
T316 I13
T317 H10
T318 I10
T319 E10
T320 E10

Mono Board: Circuit Diagram (Part 4)



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1401 E1
1402 C1
1403 B4
2400 A4
2401 F4
2402 A3
2403 B5
2404 B5
2405 C3
2406 C3
2407 C3
2408 E8
2409 E8
2410 C4
2411 F8
2412 F8
2414 F6
2415 D3
2416 D2
2417 D2
2418 D2
2419 D2
2420 A2
2421 E2
3400 C4
3401 E8
3402 F8
3405 B6
3406 E7
3407 F6
3408 F7
3411 E6
3412 D4
3413 D4
3414 E5
3415 E4
3416 A7
3417 B8
3418 B7
3419 B8
3420 B7
3423 C7
3424 C8
3425 D7
3426 D8
3427 D7
3428 D3
3429 A2
3430 A2
3431 C4
4402 A4
4403 A6
6401 D3
6402 F2
6403 C3
6404 C4
6405 C4
6406 A1
7400 E3
7402 E6
7403-1 D5
7403-2 E3
7404 D3
7405 A8
7406 A7
7407 B6
7408 C7
7409 C8
7410 D8
7411 D7
7412 A2
F400 A4
F401 A4
F402 B4
F403 B4
F404 B4
F405 B4
F406 C4
F407 C4
F408 B3
F411 D2
F412 E2
T400 A3
T401 B4
T402 C4
T403 E4
T404 E3
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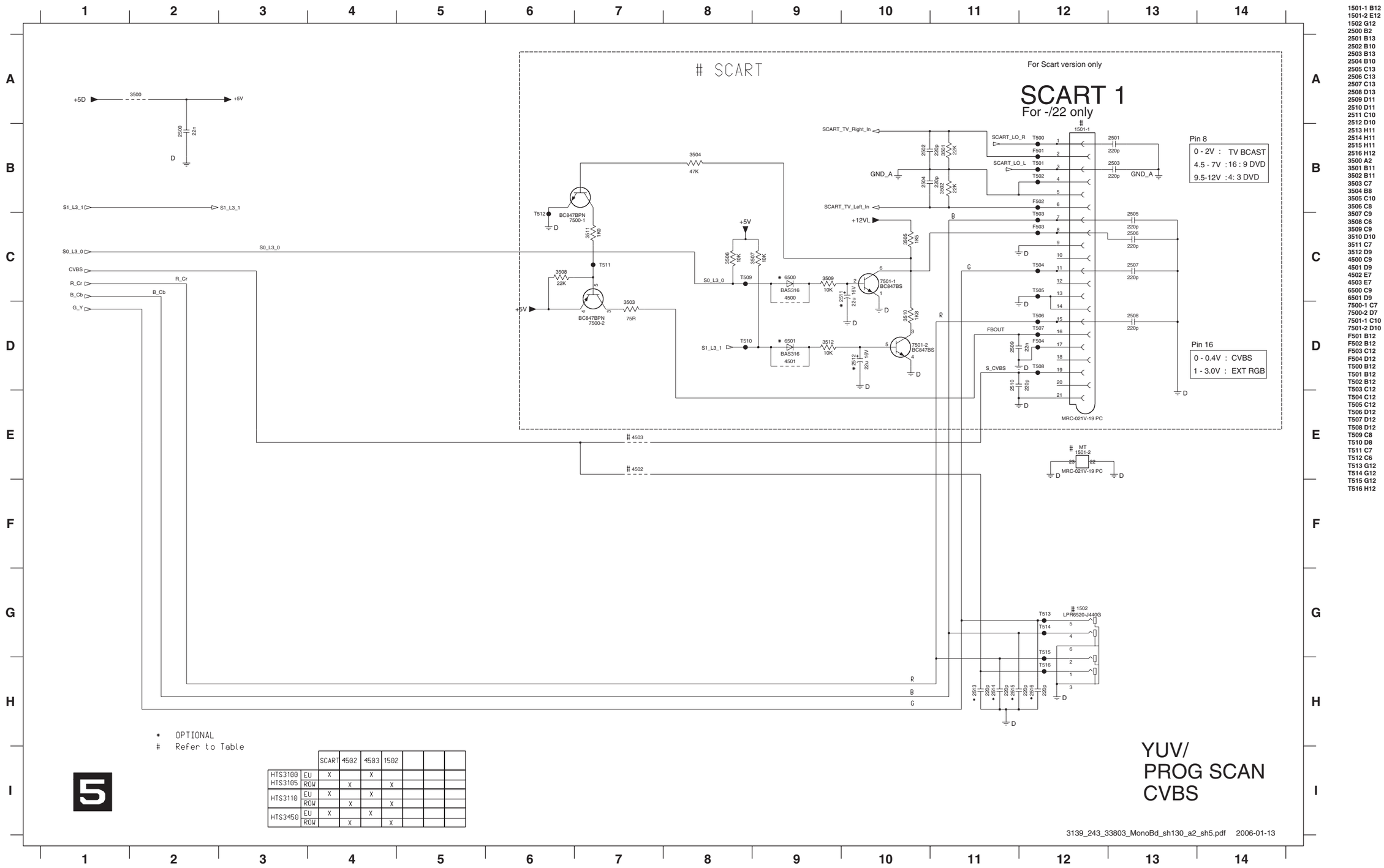
T406 E7
T407 F8
T408 C2
T409 C2
T410 D2
T411 B2

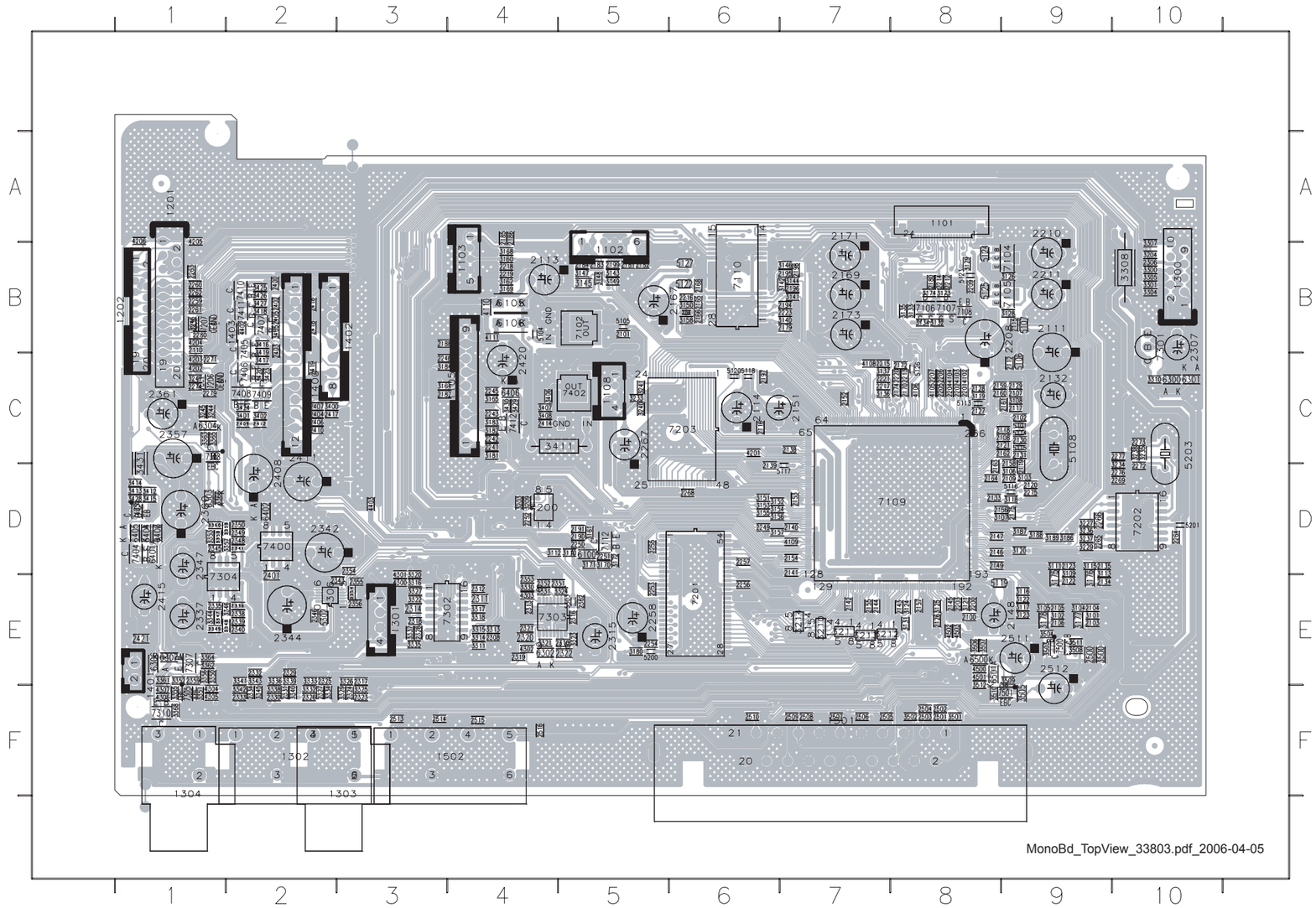
Mono Board: Circuit Diagram (Part 5)



		SCART	4502	4503	1502			
HTS3100 HTS3105	EU	X		X				
	ROW		X		X			
HTS3110	EU	X		X				
	ROW		X		X			
HTS3450	EU	X		X				
	ROW		X		X			

1501-1 B12
1501-2 E12
1502 G12
2500 B2
2501 B13
2502 B10
2503 B13
2504 B10
2505 C13
2506 C13
2507 C13
2508 D13
2509 D11
2510 D11
2511 C10
2512 D10
2513 H11
2514 H11
2515 H11
2516 H12
3500 A2
3501 B11
3502 B11
3503 C7
3504 B8
3505 C10
3506 C8
3507 C9
3508 C6
3509 C9
3510 D10
3511 C7
3512 D9
4500 C9
4501 D9
4502 E7
4503 E7
6500 C9
6501 D9
7500-1 C7
7500-2 D7
7501-1 C10
7501-2 D10
F501 B12
F502 B12
F503 C12
F504 D12
T500 B12
T501 B12
T502 B12
T503 C12
T504 C12
T505 C12
T506 D12
T507 D12
T508 D12
T509 C8
T510 D8
T511 C7
T512 C6
T513 G12
T514 G12
T515 G12
T516 H12

Layout: Mono Board (Topview)



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1103 B4
1105 C4
1108 C5
1201 A1
1202 B1
1300 B10
1301 E3
1302 F2
1303 F3
1304 F1
1400 C2
1401 F1
1402 B3
1403 B2
1501 F7
1502 F4
2100 E8
2101 B5
2102 C9
2103 F9
2104 F9
2105 F9
2106 F9
2107 C9
2108 C9
2109 D9
2110 B1
2111 B9
2112 B9
2113 B4
2114 C6
2115 B9
2116 C6
2117 C9
2118 C9
2119 D9
2120 D9
2121 C9
2122 F9
2123 D9
2126 E8
2127 C8
2128 C8
2129 C9
2130 C9
2131 C9
2132 C9
2133 D8
2134 E9
2135 D9
2138 C7
2139 D6
2140 D7
2141 D7
2142 E7
2143 E6
2144 E7
2145 E8
2146 D8
2147 D8
2148 E9
2149 D8
2151 C7
2152 C7
2153 D7
2154 D7
2155 E7
2156 D8
2157 E8
2158 C8
2159 C8
2160 C8
2161 C9
2162 C9
2163 D8
2164 D8
2165 B6
2166 B6
2167 B6
2168 B6
2169 B7
2170 C8
2171 A7
2172 C8
2173 B7
2174 C8
2175 D9
2176 B7
2177 B7
2178 B7
2179 B7
2180 B8
2181 B5
2182 B5
2183 B5
2184 B5
2185 A4
2186 A4
2187 C3
2188 B3
2190 D5
2191 D5
2194 B7
2195 B7
2196 B7
2197 C6
2198 B7
2199 B5
2200 E8
2201 C8
2202 C8
2203 E8
2204 C8
2205 C8
2206 C8
2207 C8
2208 B9
2209 B8
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2211 B9
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2214 B8
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2217 B4
2218 B4
2219 B4
2220 C8
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2223 B7
2241 C4
2243 C4
2245 C3
2246 C3
2249 D6
2250 D5
2251 D5
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2259 B1
2260 B1
2261 B1
2262 B1
2263 B1
2264 D10
2265 D9
2266 D9
2267 C5
2268 D6
2269 D10
2271 C1
2272 D10
2273 C10
2274 C10
2275 D9
2276 D10
2277 C10
2279 C1
2280 B1
2306 B10
2307 B10
2308 E4
2310 E5
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2315 E5
2316 E3
2317 E3
2318 E3
2319 E4
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2327 E2
2328 E2
2329 E2
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2332 E2
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2334 E2
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2336 E2
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2338 E2
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2343 E3
2344 E2
2345 D1
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2349 D2
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2356 E3
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2505 F8
2506 F7
2507 F7
2508 F7
2509 F7
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3117 D9
3118 D9
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3123 E8
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3401 C2
3402 C2
3405 B2
3406 C4
3407 C4
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3414 D1
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3416 B2
3417 C2
3418 B2
3419 B2
3420 C2
3423 C2
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4301 E3
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4306 F1
4307 F1
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4403 D3
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4502 E8
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7202 D10
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7310 F1
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7404 D1
7405 B2
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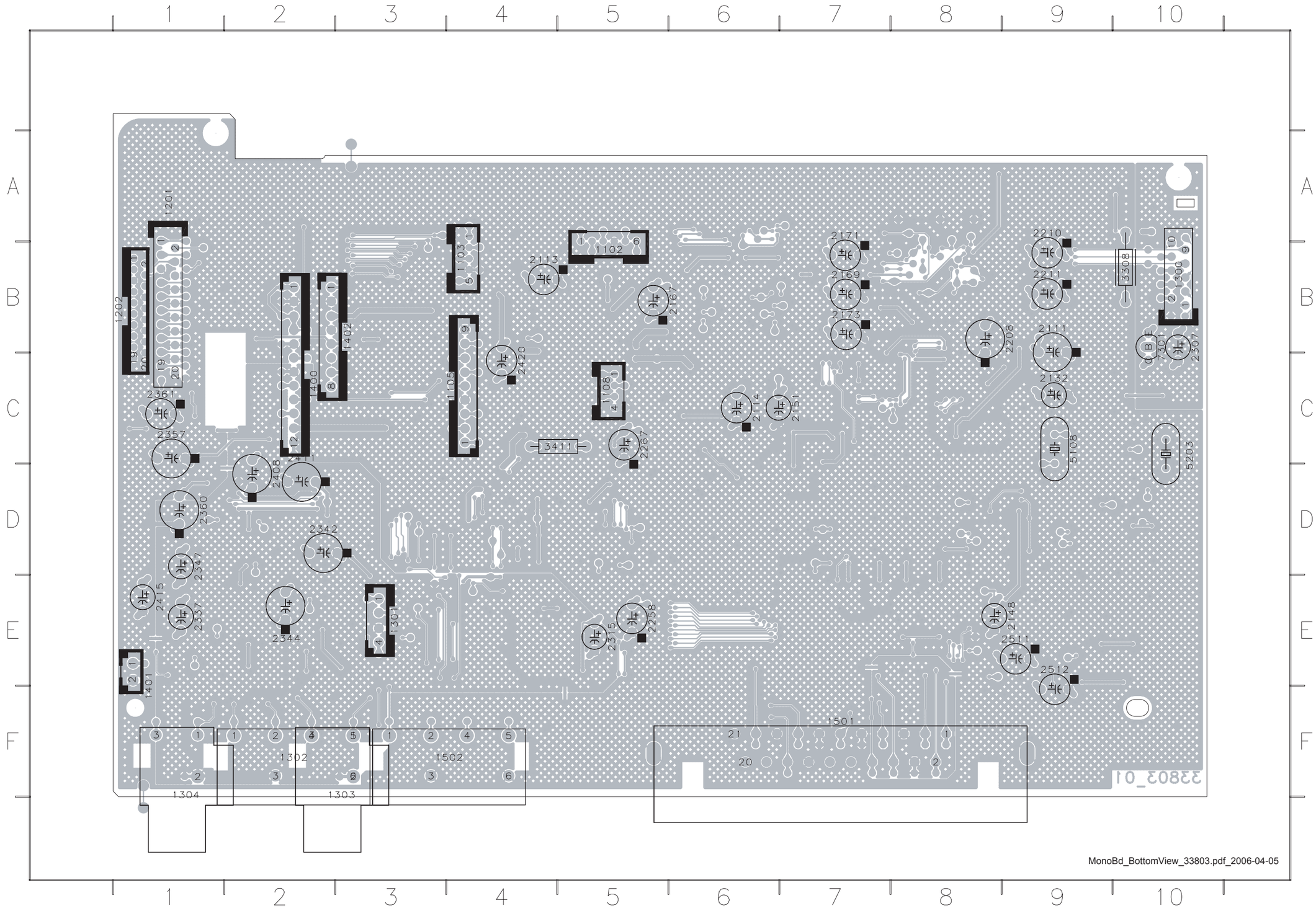
7500 E9
7501 F9

Layout: Mono Board (Bottom view)



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1108 C5
1201 A1
1202 B1
1300 B10
1301 E3
1302 F2
1303 F3
1304 F1
1400 C2
1401 F1
1402 B3
1501 F7
1502 F4
2111 B9
2113 B4
2114 C6
2132 C9
2148 E9
2151 C7
2167 B6
2169 B7
2171 A7
2173 B7
2208 B9
2210 A9
2211 B9
2258 E5
2267 C5
2307 B10
2315 E5
2337 E1
2342 D2
2344 E2
2347 D1
2357 C1
2360 D1
2361 C1
2408 D2
2411 C2
2415 E1
2420 C4
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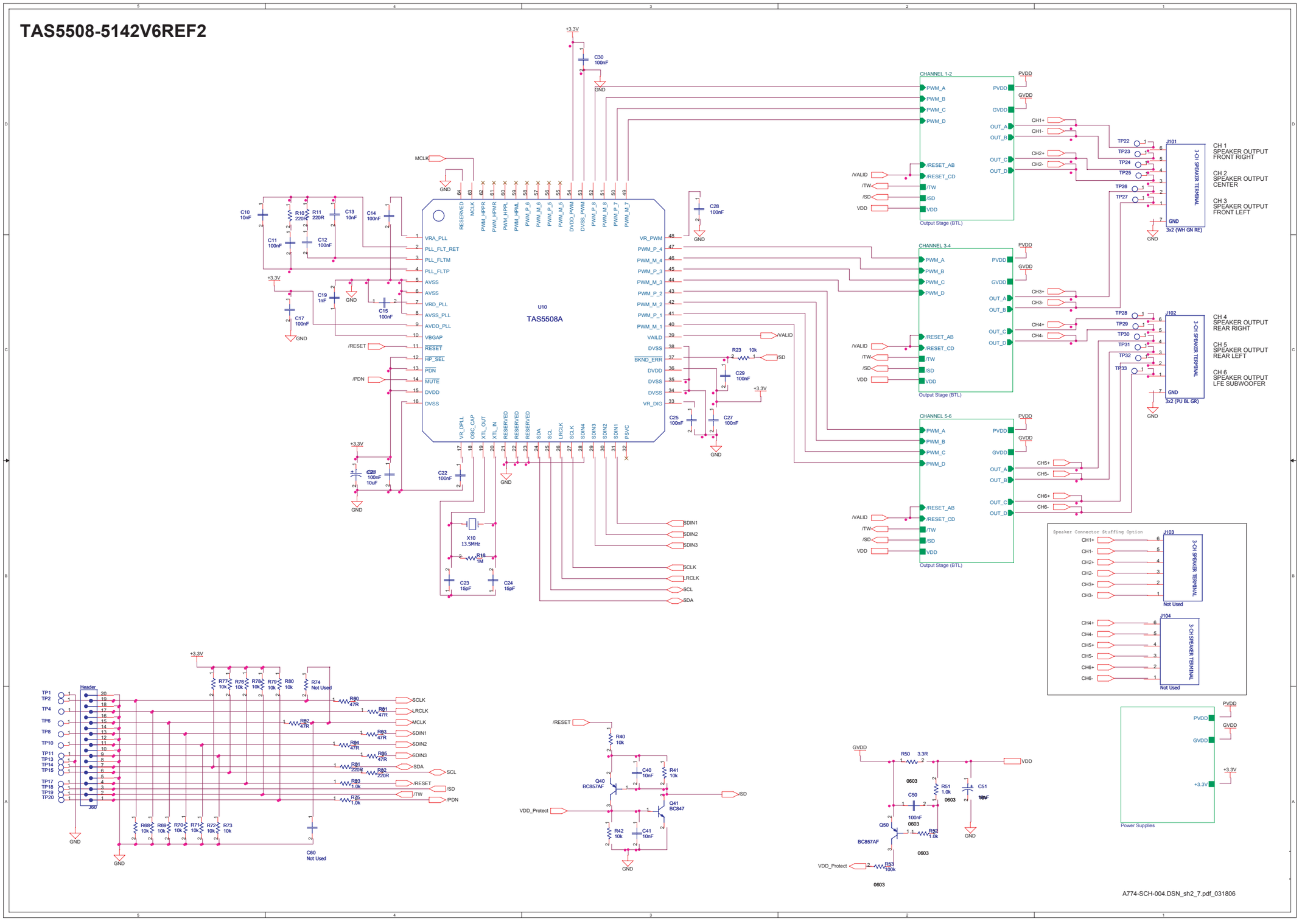
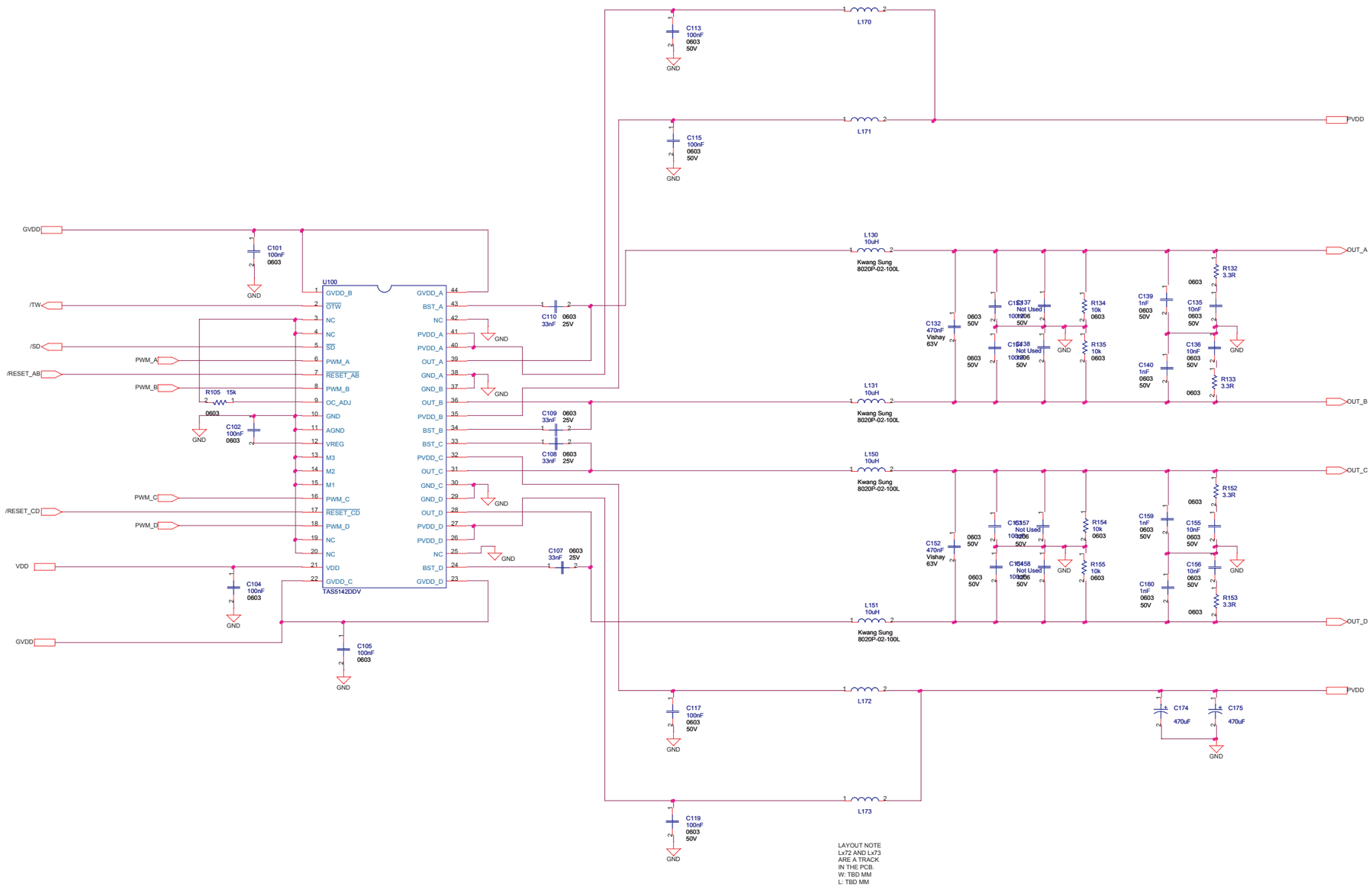
2512 E9
3308 B10
3411 C5
5108 C9
5203 C10
7301 B10

For information only (Amp Board)



For information only (Amp Board)

POWER OUTPUT STAGE (BTL)



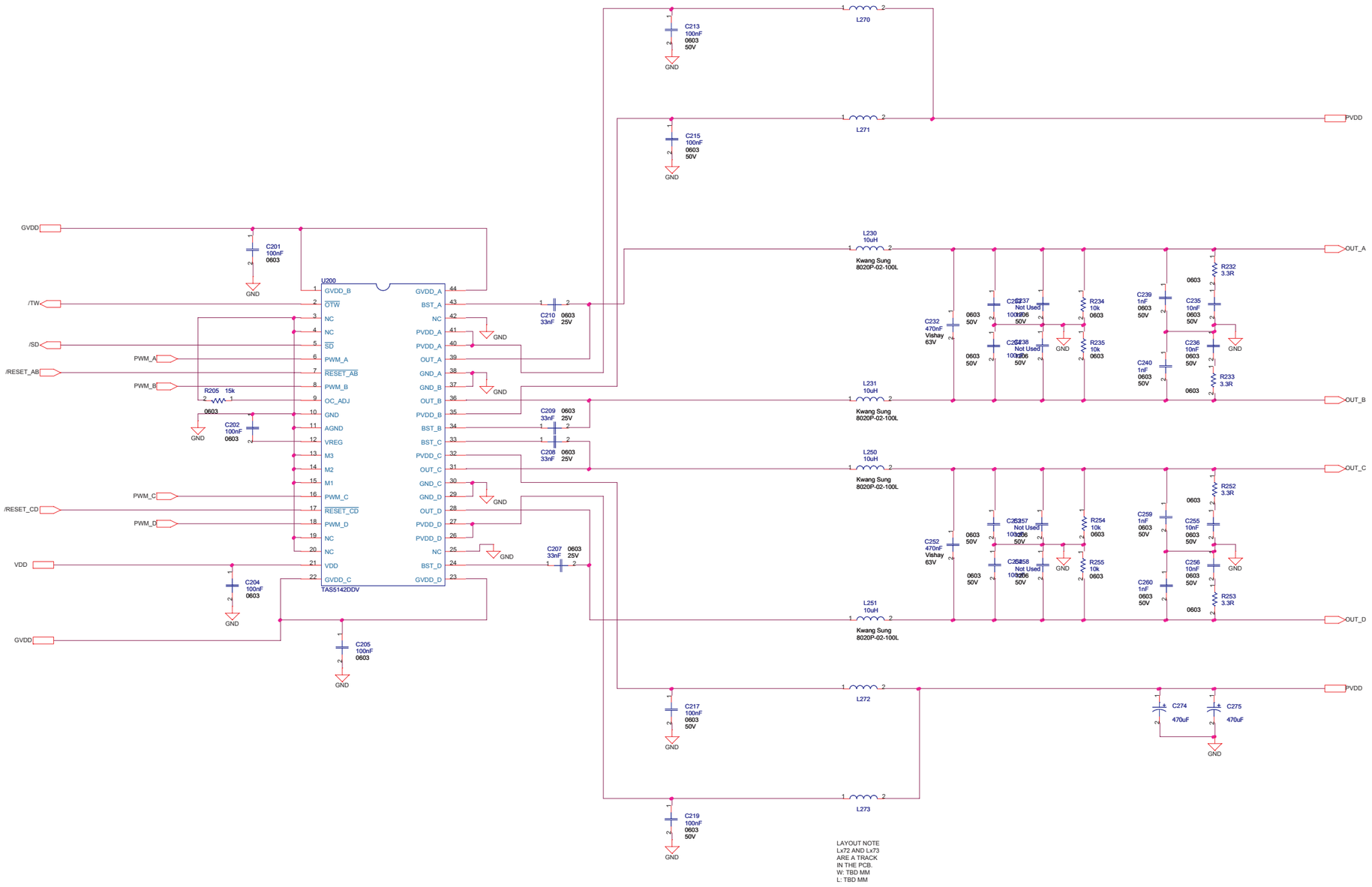
Mode Table

M2	M1	Type	Description
L	L	2xBTL	Full Protection, 2N+2 mode
L	H	2xBTL	No OLP - Latching Shutdown, 2N + 2, No Pulse Stretcher
H	L	2xBTL	Full Protection, 1N + 2 mode
H	H	1xPBTL	Full Protection, 1N + 2 mode (PBTL)

A774-SCH-004.(3.00)_sh3_7.pdf_031806

For information only (Amp Board)

POWER OUTPUT STAGE (BTL)



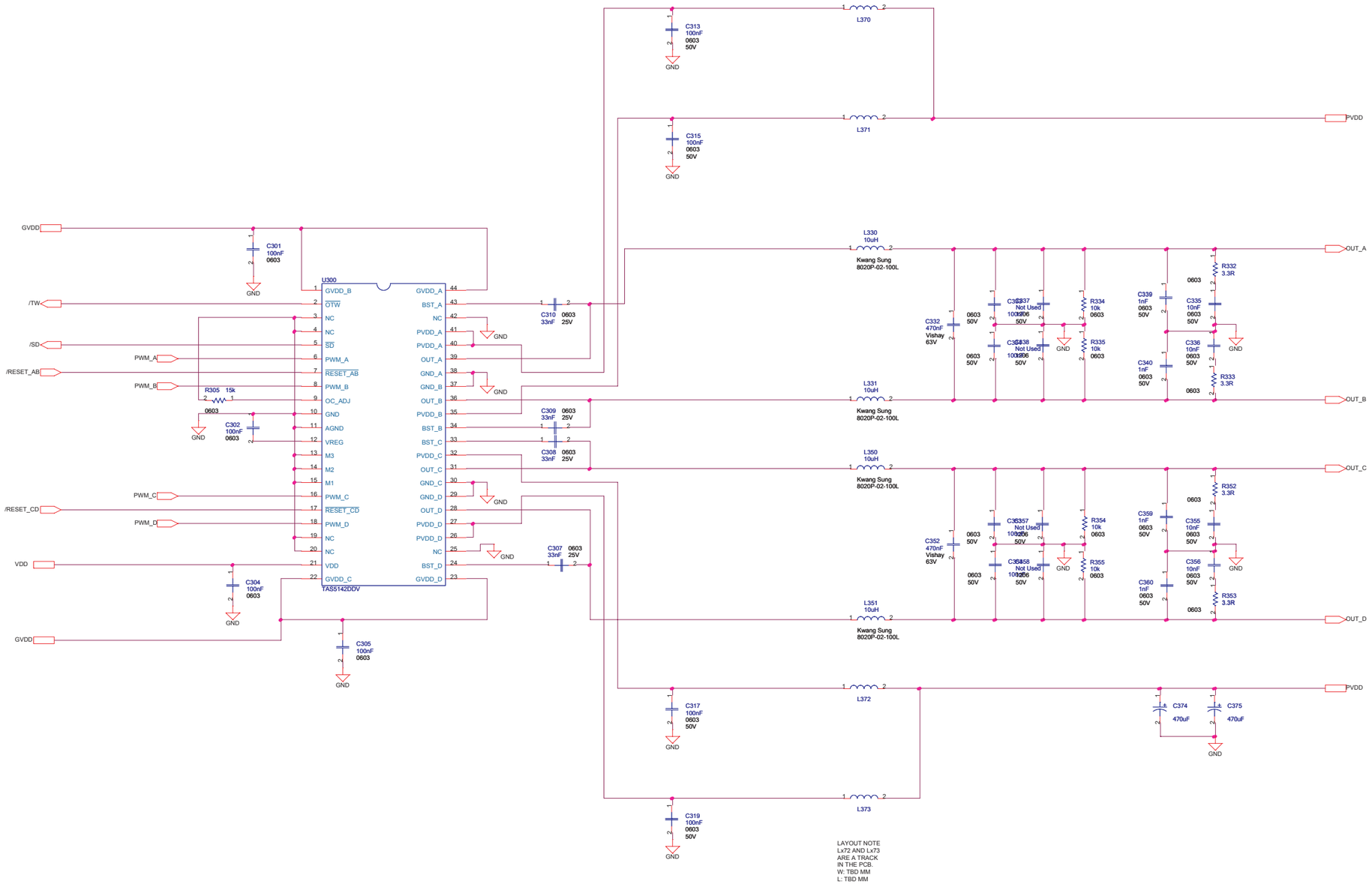
Mode Table

M2	M1	Type	Description
L	L	2xBTL	Full Protection, 2N+2 mode
L	H	2xBTL	No OLP - Latching Shutdown, 2N + 2, No Pulse Stretcher
H	L	2xBTL	Full Protection, 1N + 2 mode
H	H	1xPBTL	Full Protection, 1N + 2 mode (PBTL)

A774-SCH-004(3.00)_sh4_7.pdf_031806

For information only (Amp Board)

POWER OUTPUT STAGE (BTL)

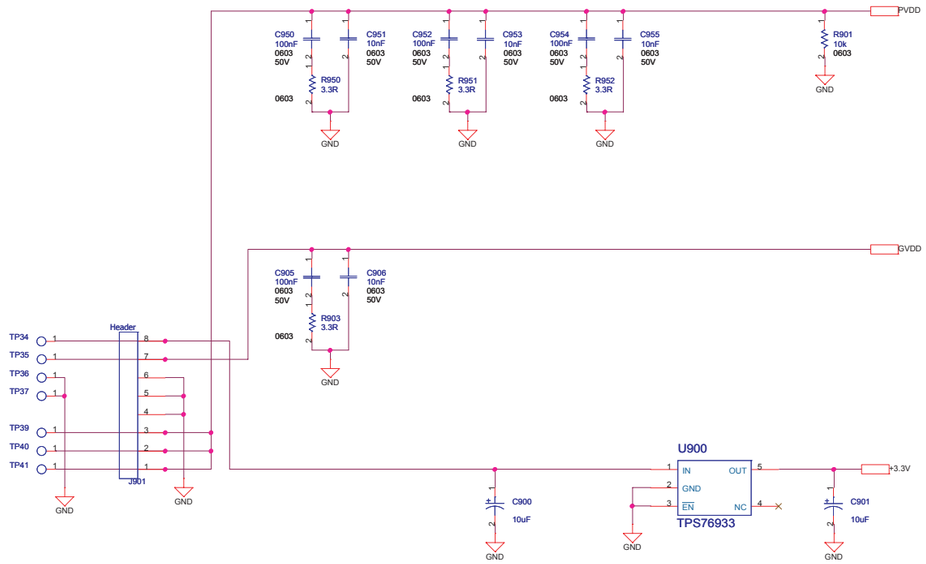


Mode Table

M2	M1	Type	Description
L	L	2xBTL	Full Protection, 2N+2 mode
L	H	2xBTL	No OLP - Latching Shutdown, 2N + 2, No Pulse Stretcher
H	L	2xBTL	Full Protection, 1N + 2 mode
H	H	1xPBTL	Full Protection, 1N + 2 mode (PBTL)

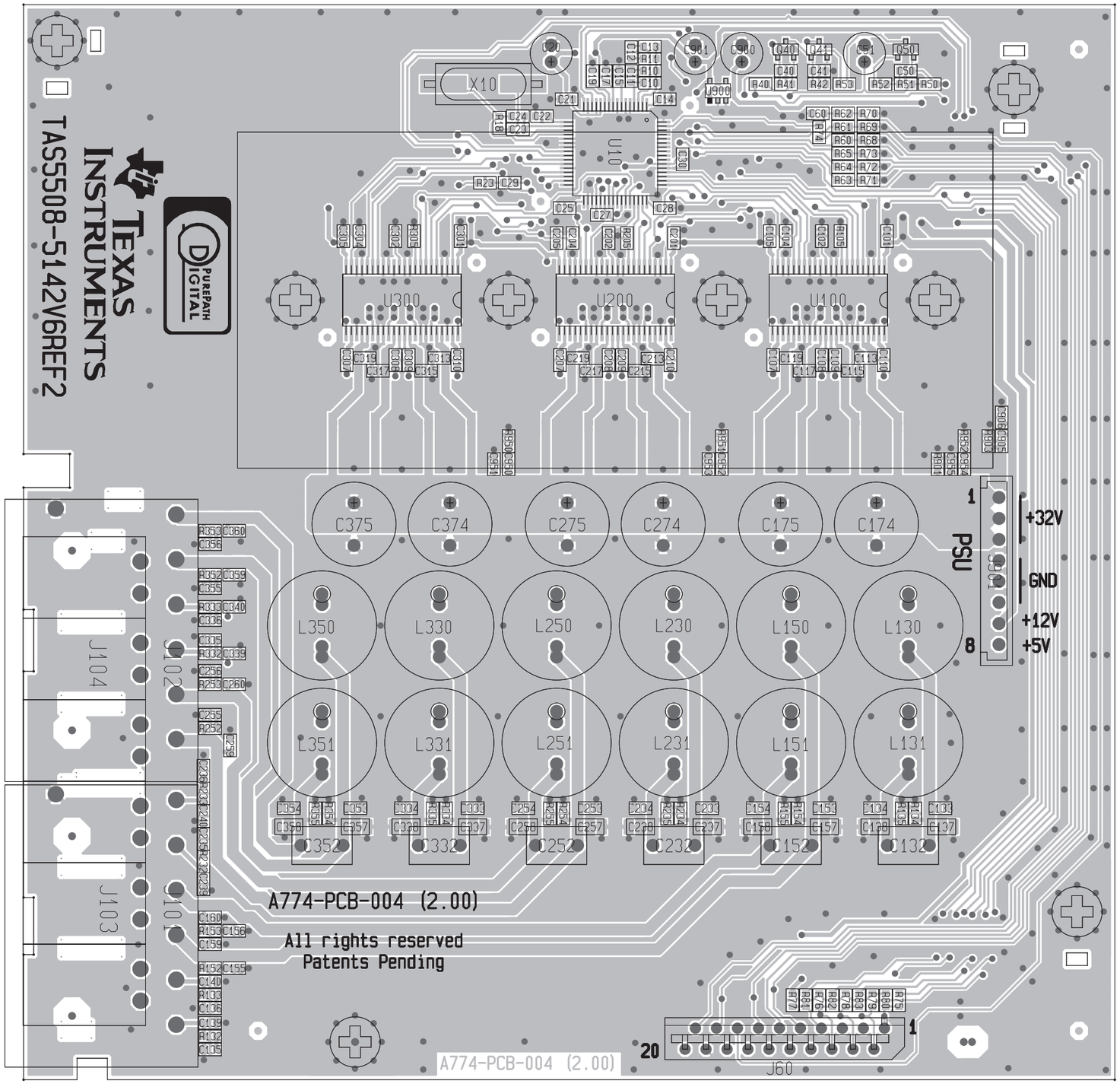
A774-SCH-004 (3.00)_sh5_7.pdf_031806

POWER SUPPLIES



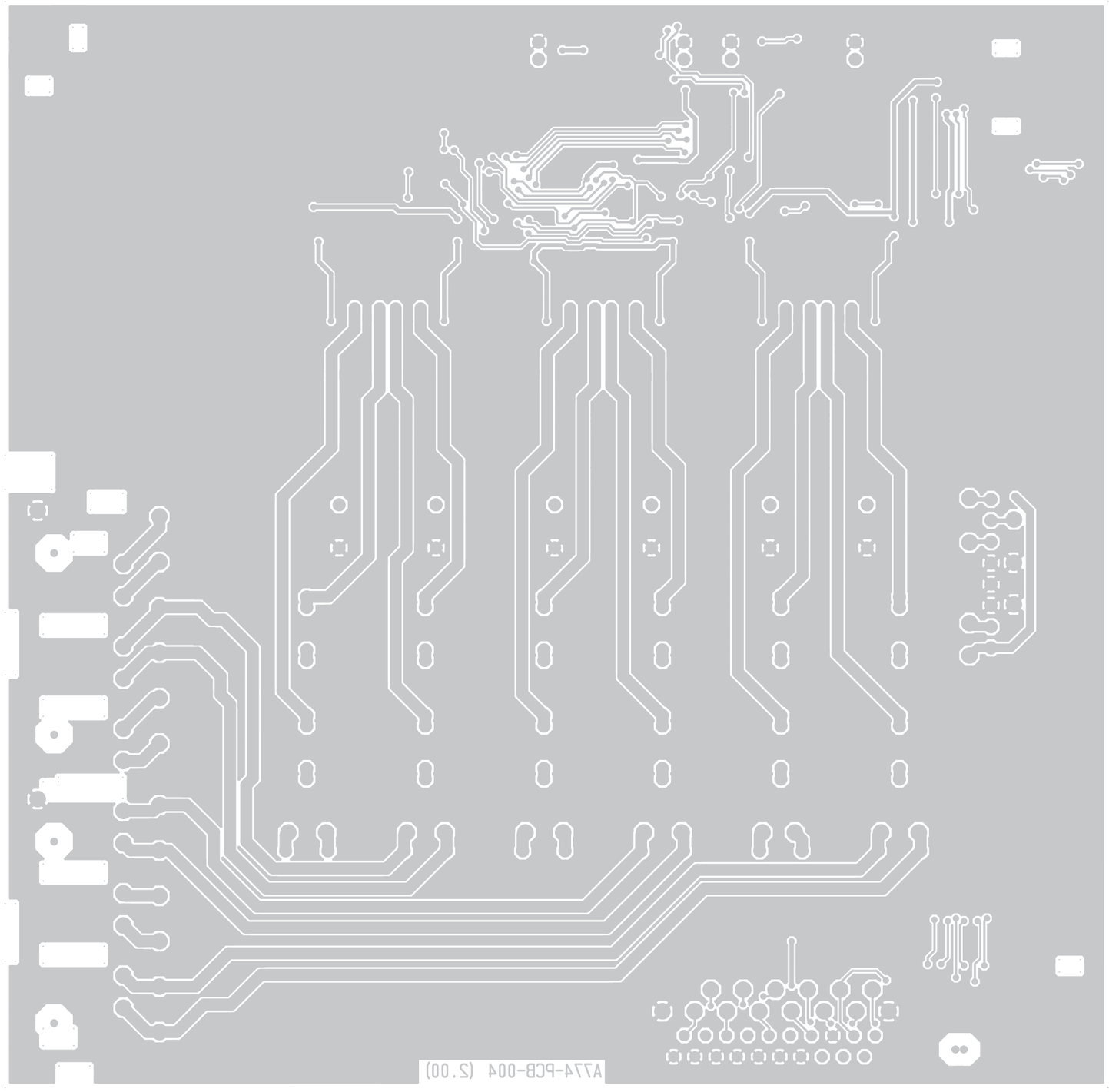
A774-SCH-004 (3.00)_sh6_7.pdf_031806

Amp Board Layout : Topview



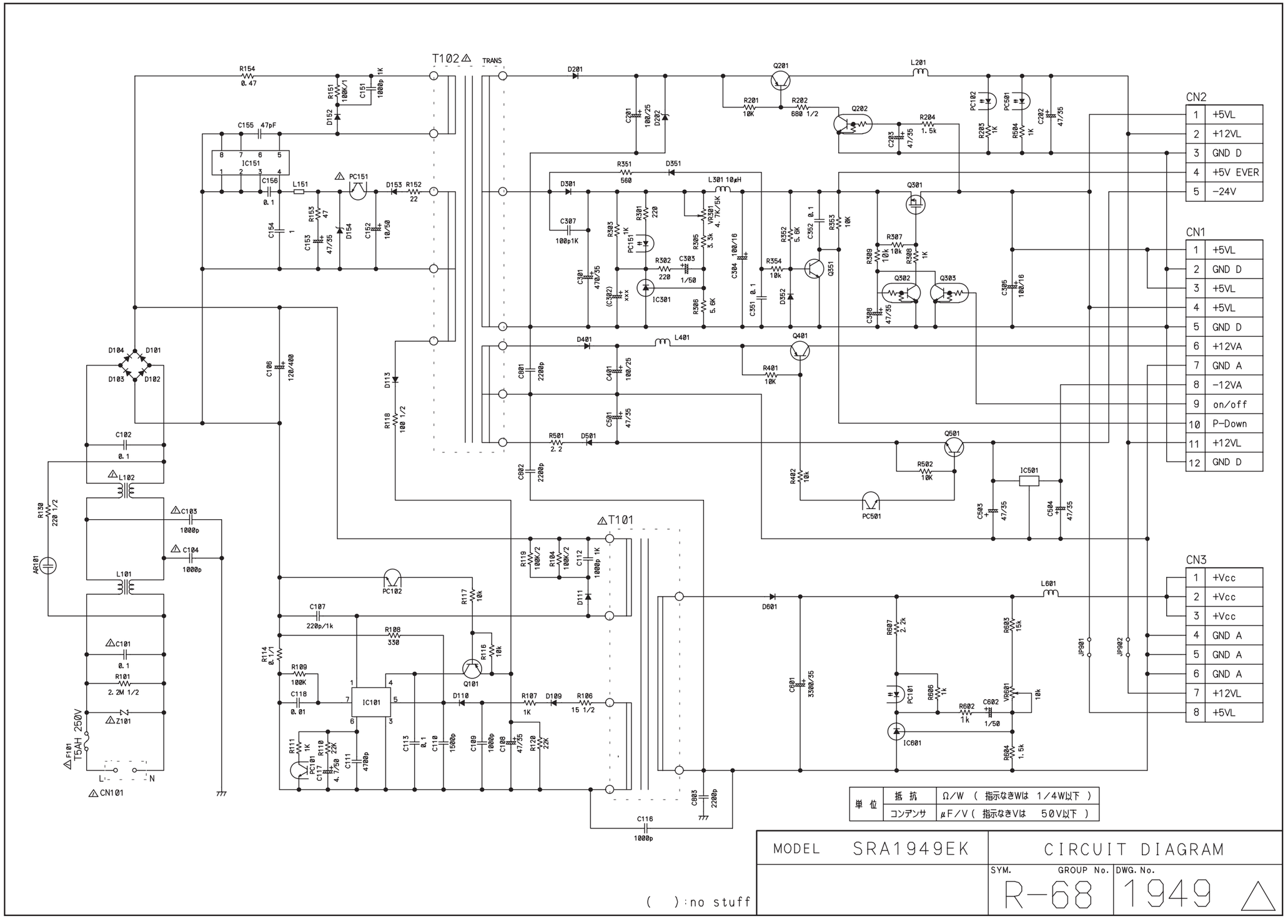
Pg4_A774_PCB_004 (2.00).pdf_Topview_031806

Amp Board Layout : Bottomview



hts3105ampbdbtm.pdf_Bottomview_031806

For Information Only PSU Module



9. Exploded View of the Set

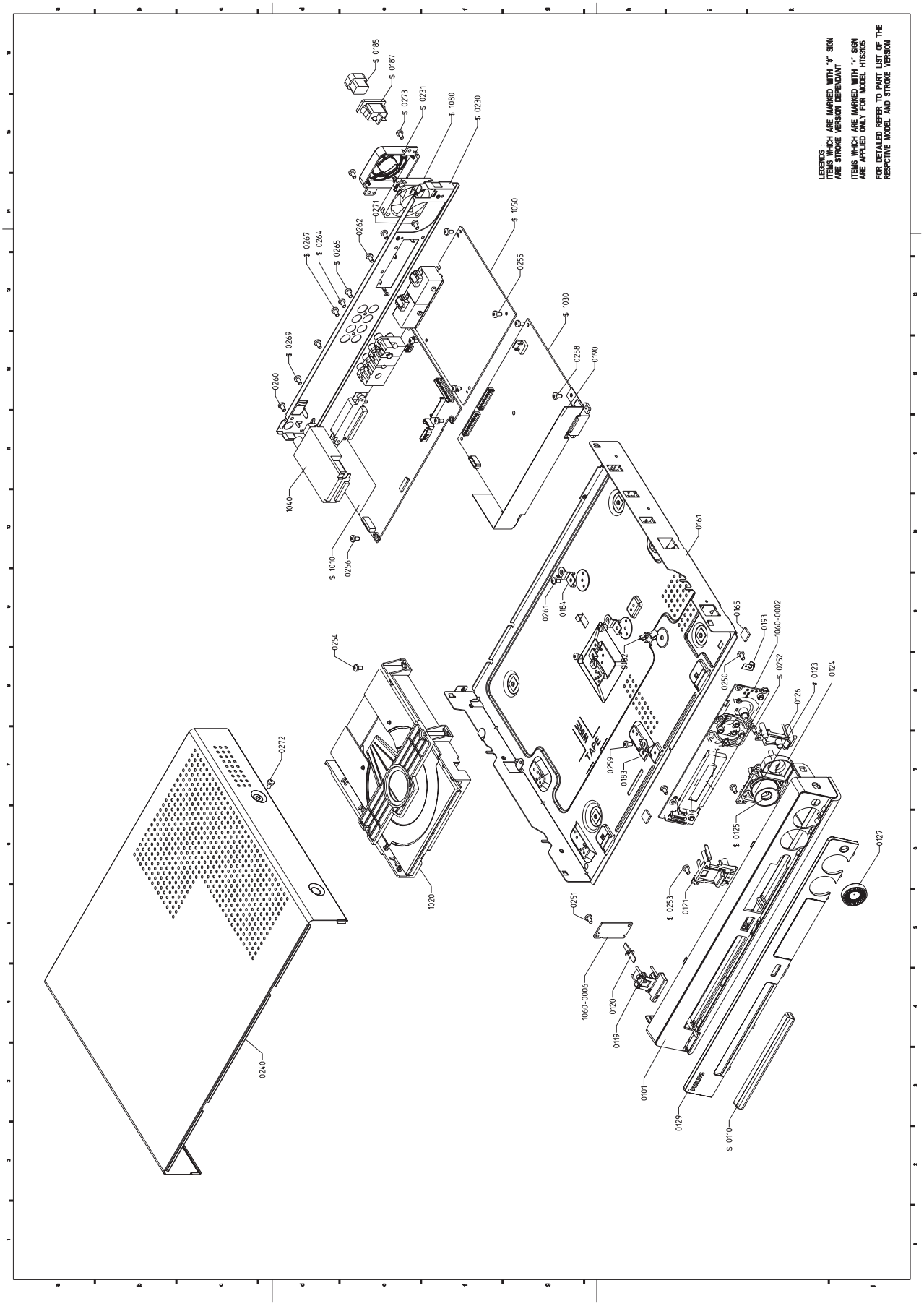


Figure 9-1

HTS3320/51

MISCELLANEOUS

0110	3139 244 12111		COVER CD TRAY HTS3320/51
0185	4822 532 60948		BUSH
0231	3139 244 11011		COVER FAN HTS3105
0331	2422 076 00546		FM AERIAL 24AWG BK B
0332	2422 549 45386		ANT AM LOOP LAN-011 B
0332Alt	2422 549 45813		ANT AM LOOP 039S20014 B
0333	2422 549 00901		REMOTE CONTR HTS3100-KOK B
0336	4822 321 11499	⚠	MAINSCORD 2.0M - EU
0340	2422 076 00662		CBLE CINCH 1M7 CINCH 1P YE B
1010	3139 248 87711		PCBAS MONO HTS3110 ROW
1020	3139 248 00181		LOADER ASSY WXD8829 KHM313 RX
1030	3139 247 12711	⚠	MODULE PSU 06T400M EU
1040	2422 542 00031		TUN A F ENG07806QRF EUR B
1050	3139 247 12251		MODULE AMP-05-02 500W
1060	3139 248 87671		PCBAS FRONT HTS3110 ROW
1080	2822 031 00048		FAN 12VDC 0.5W 3700RPM B
8001	3139 241 01381		FFC FOIL10P/120/10P AD FOLD
8005	3139 241 02011		FFC FOIL 20P/140/20P AD
P001	3141 079 36151		FRAME ASSY HTS3110/75
P002	3141 079 36531		FRONT CAB ASSY HTS3325

LOADER ASSY WXD8829 KHM313 RX

0151	2422 549 00493	DVD LOADER WXD-8829(Y) B
0152	2422 549 00629	DVD MECHANISM KHM-313AAA Y
1101	3139 241 00341	FFC FOIL 24P/220/24P AD 0.5MMP

BOX SPK ASSY SW-3105 P

9965 000 35004	SW3105 SUBWOOFER BOX
9965 000 34997	RUBBER FOOT SW
9965 000 34998	CABLE A'SSY 5.3M PURPLE SMK

BOX SPK ASSY C-3110 P

9965 000 35003	SPEAKER BOX CENTER
9965 000 34995	RUBBER FOOT 39.5LX5.5WX2T
9965 000 34994	CABLE A'SSY 5.2M GREEN SMK S

BOX SPK ASSY FR/TALL-3320 P

9965 000 37428	SPEAKER BOX FRONT-L
9965 000 37429	SPEAKER BOX FRONT-R
9965 000 37430	SPEAKER BOX REAR-L
9965 000 37431	SPEAKER BOX REAR-R
9965 000 34987	CABLE A'SSY 5.2M WHITE SMK
9965 000 34988	CABLE A'SSY 5.2M RED SMK
9965 000 34989	CABLE A'SSY 5.2M BLUE SMK
9965 000 34990	CABLE A'SSY 5.2M GREY SMK
9965 000 36536	RUBBER FOOT