

Service
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Service Manual



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This Service manual is for HTS3105/98/75 First and Second Generation models.

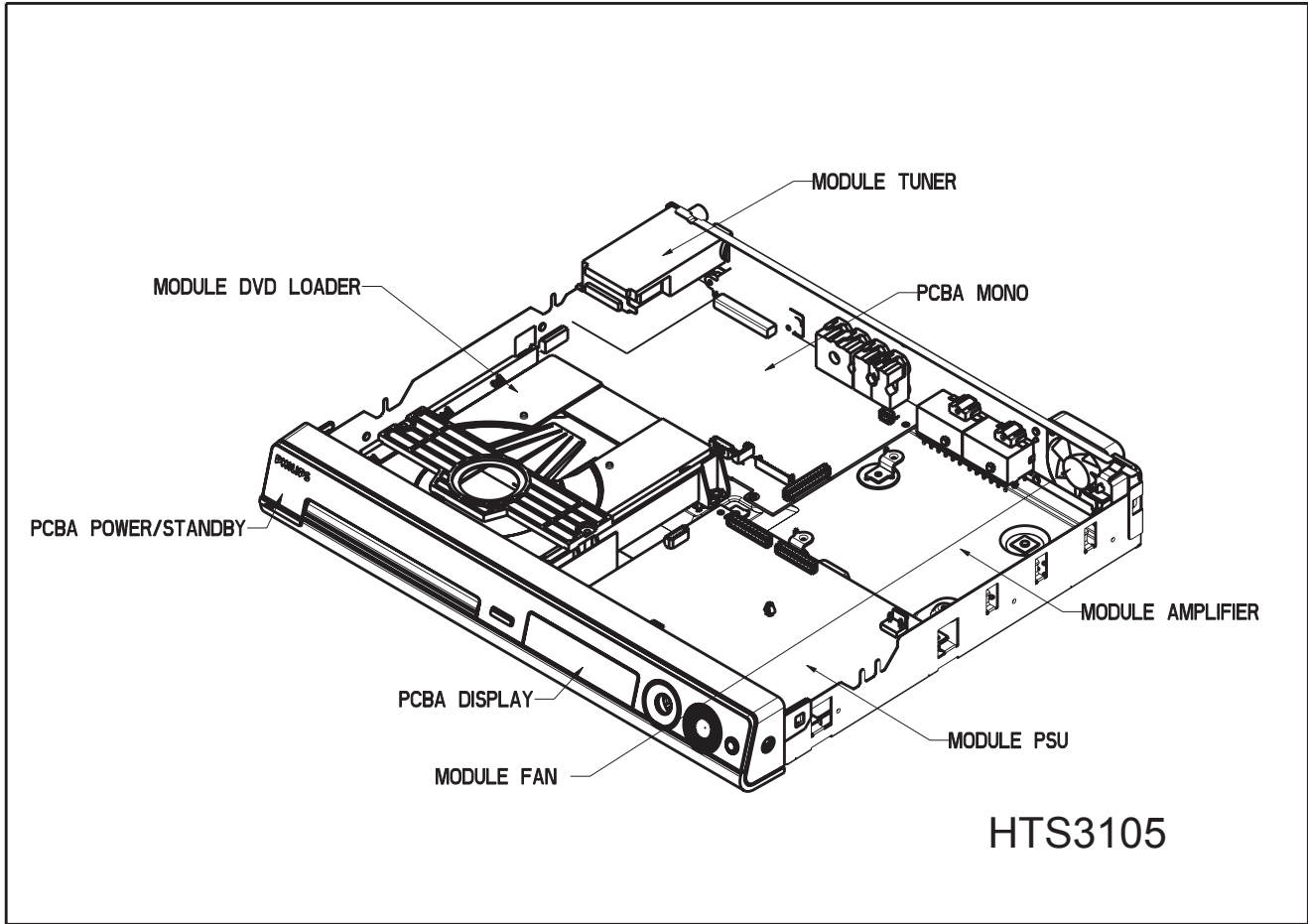
For First Generation model (HTS3105/98/75), the serial number begins with NW1A xxxx xxxx (PSCI) and VN1A xxxx xxxx (PACH).

For Second Generation model (HTS3105/98/75), the serial number begins with NW2A xxxx xxxx (PSCI) and VN2A xxxx xxxx (PACH).

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LOCATION OF PC BOARDS



VERSION VARIATIONS:

Features &	Type /Versions:	HTS3105		
		/98	/75	/93
Progressive Scan		x	x	x
Line-Out		x	x	x
TV-In		x	x	x
Aux-In		x	x	x
Y/Pb/Pr (YUV) Component Video Output		x	x	x
CVBS		x	x	x
SCART		—	—	—

1. Specifications

1.1 General:

Mains voltage	: 120V/230V
Mains frequency	: 50/60Hz
Power consumption	: 70W < 1W Eco standby power < 150W at 1/8 P _{rated} (For main unit)
Dimension main unit	: 360 x 54 x 324mm

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 ± 0.1V _{p-p}
Luminance S/N	: >= 60dB

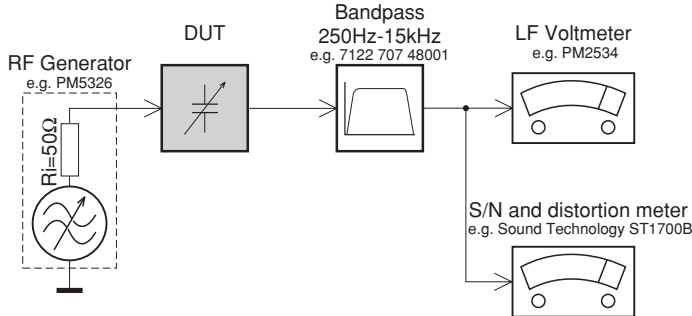
RGB/YUV Out ¹⁾	
Amplitude	: 1.0 ± 0.1V _{p-p}
S/N	: >= 60dB

¹⁾ Output terminals to be terminated with 75Ω

2. Measurements Setup, Service Aid & Lead Free Requirements

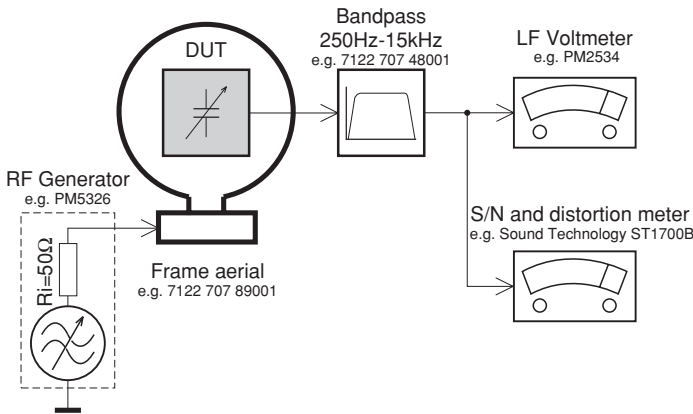
MEASUREMENT SETUP

Tuner FM



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

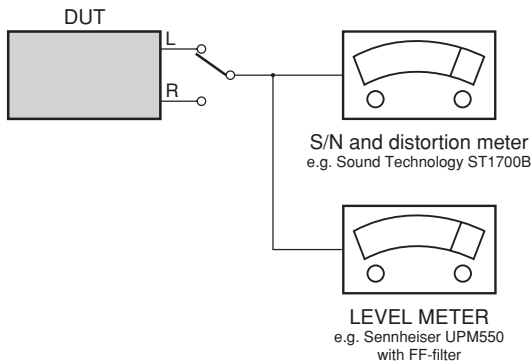
Tuner AM (MW,LW)



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

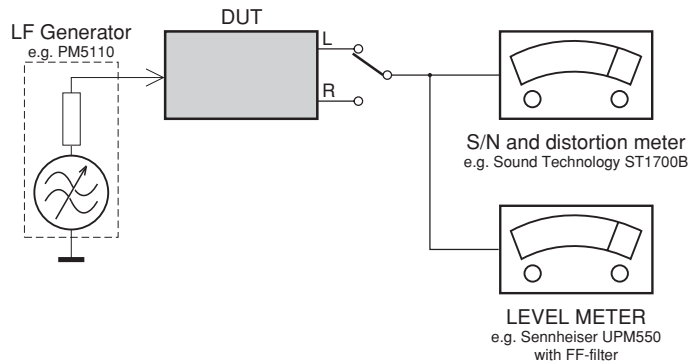
CD

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

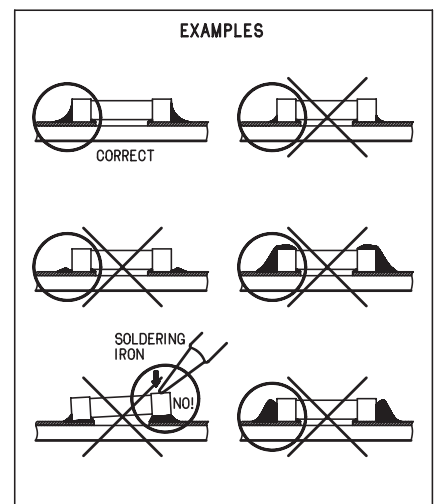
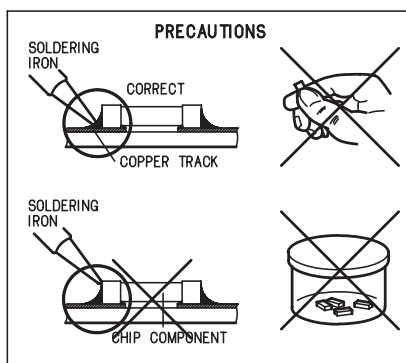
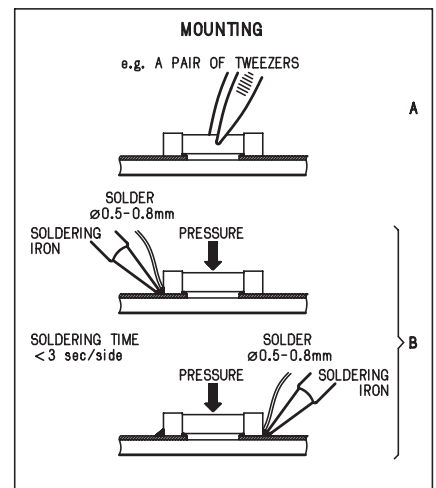
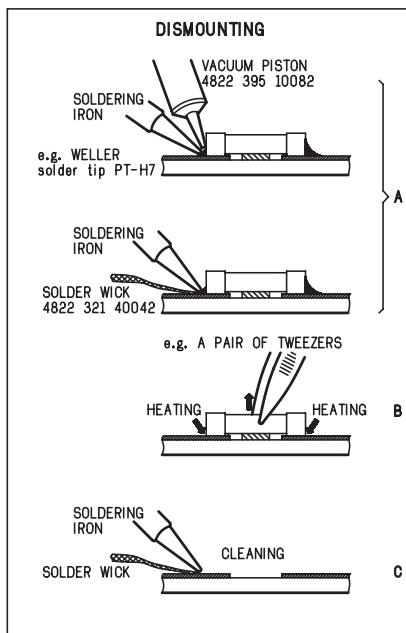
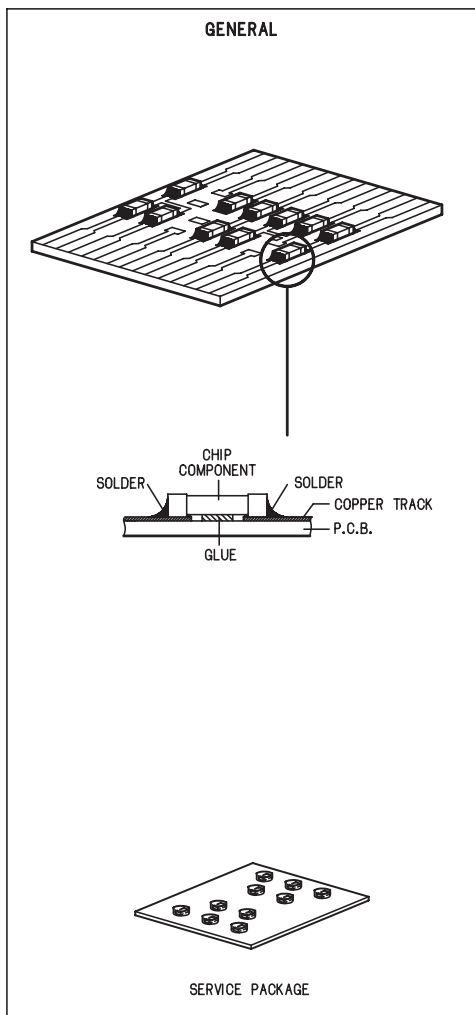
Service Tools:

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



(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.

ESD**(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 hetzelfde 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).

Unvorsichtige Behandlung im Reparaturfall kann 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 ridotta in caso di non osservazione della più grande cauzione alla loro manipolazione.

Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa 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, extension 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 \triangle .

(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 \triangle .

(F)

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

Less composants de sécurité sont marqués \triangle .

(D)

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

Sicherheitsbauteile sind durch das Symbol \triangle markiert.

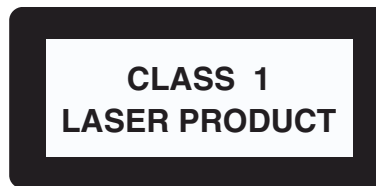
(I)

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.

Componenti di sicurezza sono marcati con \triangle .

(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.

**(GB) Warning !**

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

(S) Varning !

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

(SF) Varoitus !

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

(DK) Advarse !

Usynlig laserstrålning ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for strålning.

(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.

IDENTIFICATION:



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 (lead-ed/ 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
 - o To reach at least a solder-temperature of 400°C,
 - o To stabilize the adjusted temperature at the solder-tip
 - o 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 lead-ed solder alloy / parts is possible but PHILIPS recommends strongly to avoid mixed solder alloy types (lead-ed 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 lead-ed 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

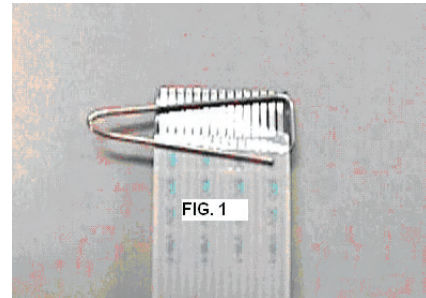
CHARGED CAPACITORS ON THE SERVO BOARD MAY DAMAGE THE DRIVE ELECTRONICS WHEN CONNECTING A NEW DRIVE. THAT'S WHY, BESIDES THE SAFETY MEASURES LIKE

- SWITCH OFF POWER SUPPLY
- ESD PROTECTION

ADDITIONAL ACTIONS MUST BE TAKEN BY THE REPAIR TECHNICIAN.

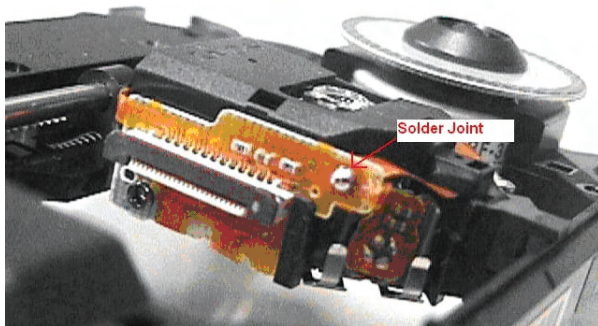
The following steps have to be done when replacing the defective loader :

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.



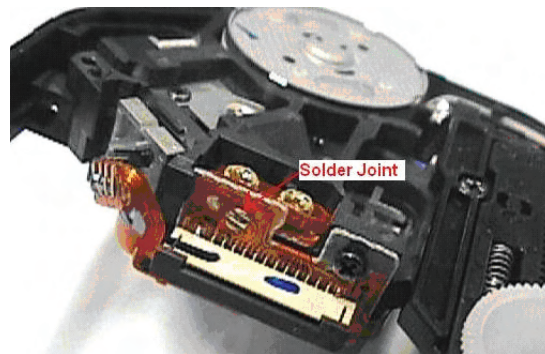
ATTENTION: The laser diode of this loader is protected against ESD by a solder joint which shortcircuits the laserdiode to ground. For proper functionality of the loader this solder joint must be remove **after** connection loader to the set.

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.**

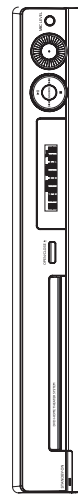
This is also applicable for all partnership workshops.

Quick Start Guide

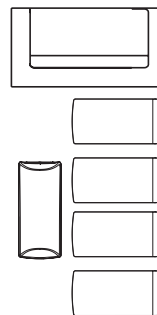


- 1 Connect
- 2 Set up
- 3 Enjoy

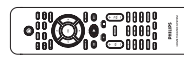
What's in the box?



DVD system



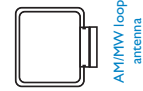
1 centre, 2 front, 2 rear speakers and subwoofer



Remote Control and 2 batteries



Composite video cable



AM/MW loop antenna



User Manual

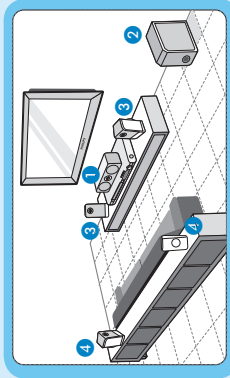


FM wire antenna

1 Connect

A Placement

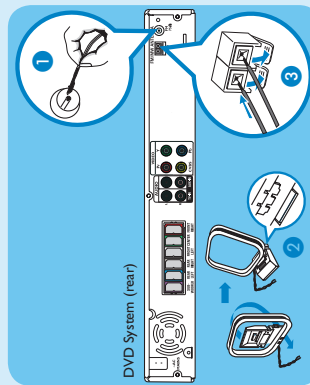
Proper speakers system placement is important to ensure optimum sound performance.



- 1 Place the centre speaker above or close to the TV.
- 2 Place the subwoofer on the floor, at least one metre away from the TV.
- 3 Place the front speakers at equal distances from the TV.
- 4 Place the rear speakers at normal listening ear level.

B Connect the radio antennas

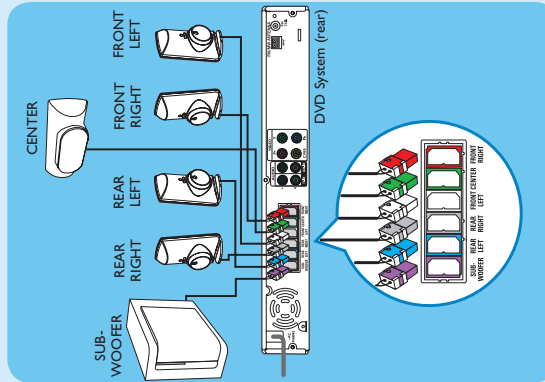
Keep the antennas away from the electronic devices to prevent unwanted interference.



- 1 Connect the FM antenna to the FM socket. Extend the wire and fix its end to the wall.
- 2 Unfold the AM/MW loop antenna and fix the claw into the slot.
- 3 Push the tabs and insert the wires into the AM/MW sockets.

C Connect the speakers and subwoofer

Connect the various coloured plugs from the speakers and subwoofer to the same coloured sockets at the rear of the DVD system.



3. Directions For Use

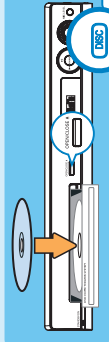
The following except of the Quick Use Guide serves as an introduction to the set.

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

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.

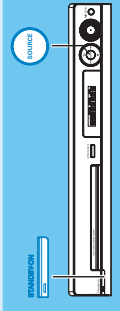
Experience surround sound

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

2 Set up

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.

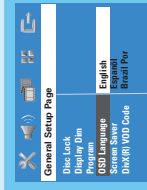


- 3 Turn on the TV. Use the TV's remote control to select the correct viewing channel for the DVD system. You should see the blue DVD background on the TV.

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.

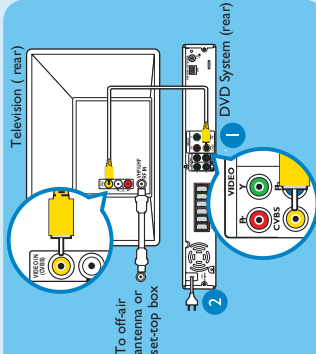


- 2 Press **▼** to select { OSD Language } and press **▶**.
- 3 Use **▲** keys to select a language option in the menu and press **OK** to confirm.
- 4 Press **SETUP** to exit.

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.

D Connect the DVD system to TV

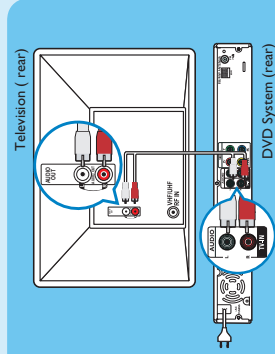


- 1 Use the supplied composite video cable to connect the CVBS socket on this DVD system to the VIDEO IN socket on your TV.
- 2 Plug in the power cable from the DVD system to an AC power outlet.

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.

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 came with your Philips DVD System

Online

Go to www.philips.com/support



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I 2 NC 31 39 2 46 1 981 2
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

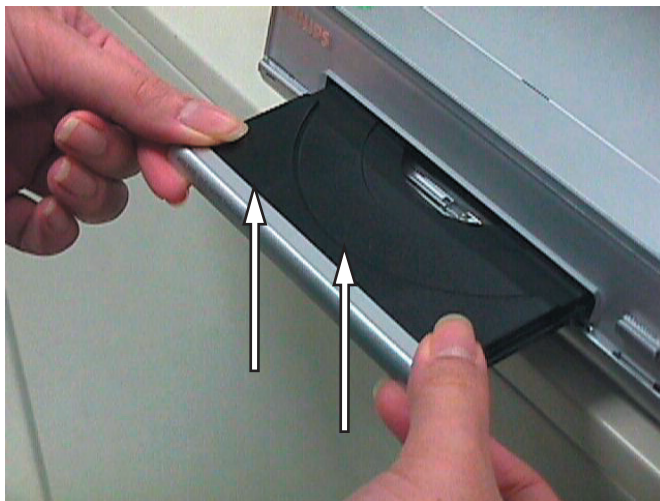


Figure 4-2

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.

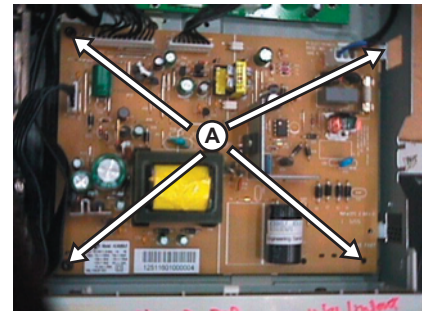


Figure 4 3

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

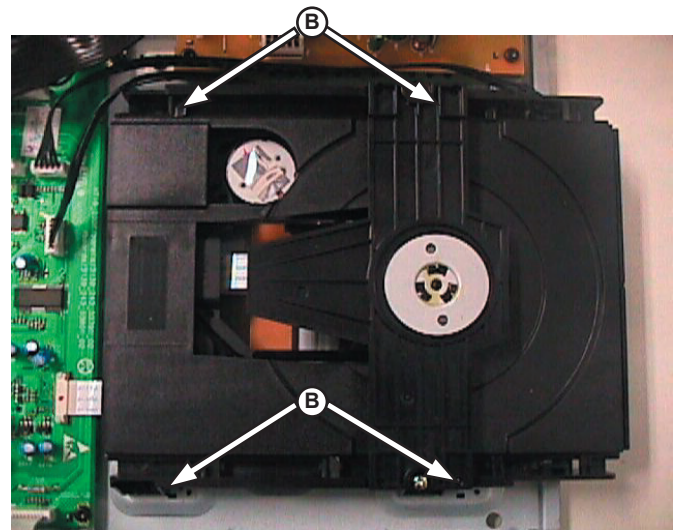


Figure 4-4

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.

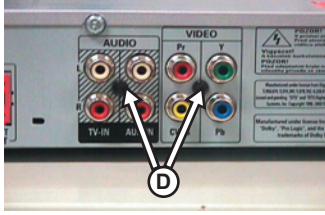


Figure 4-5 (AP)

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.

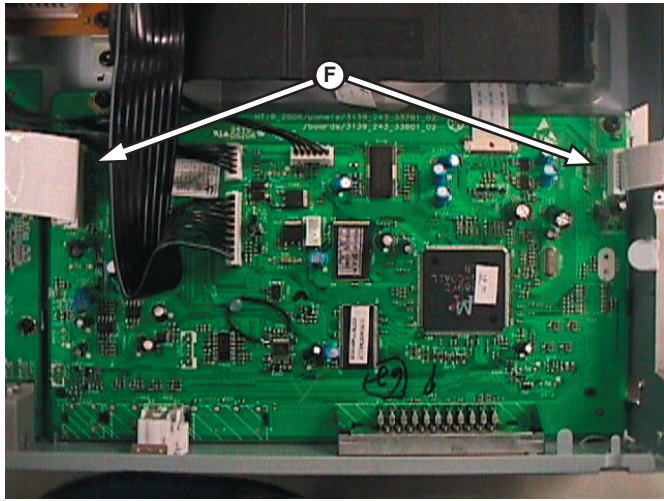


Figure 4-6

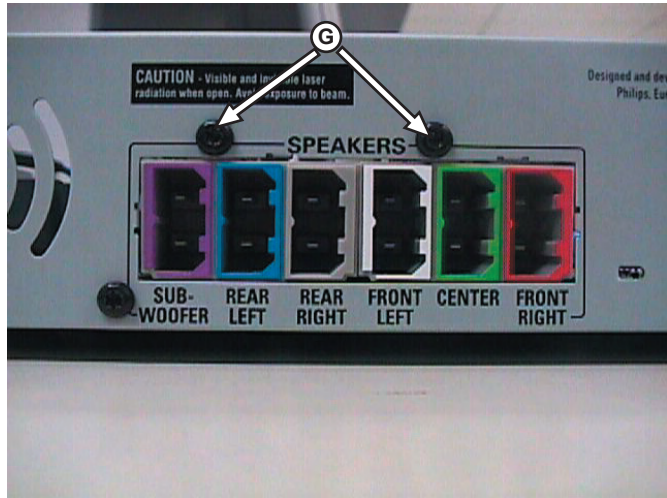


Figure 4-7

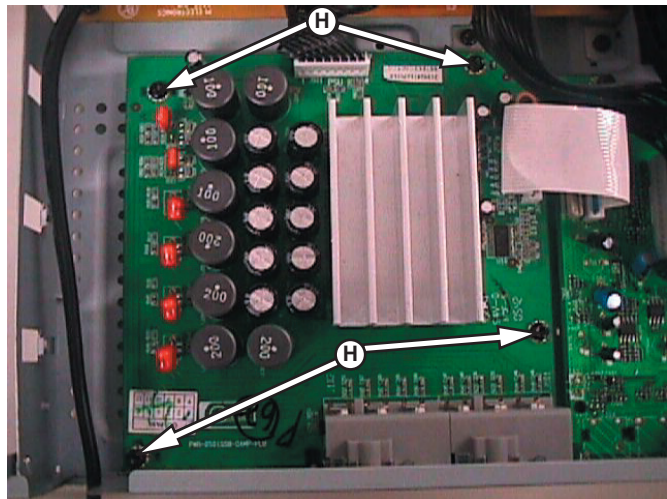
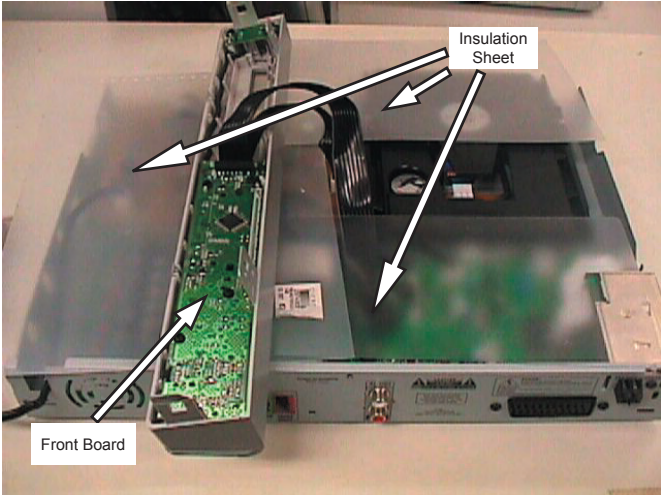
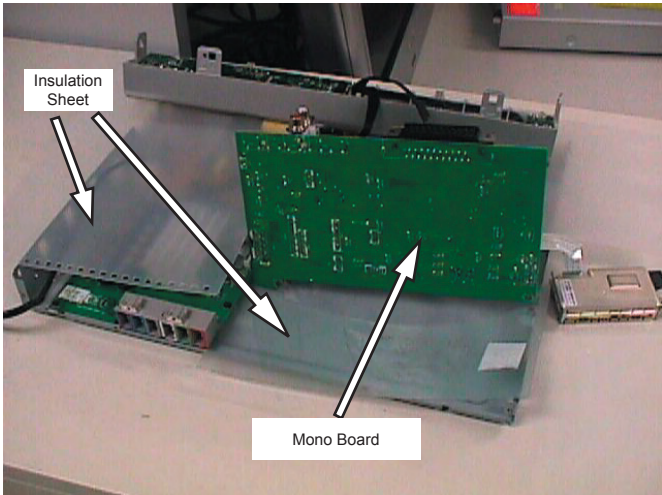


Figure 4-8

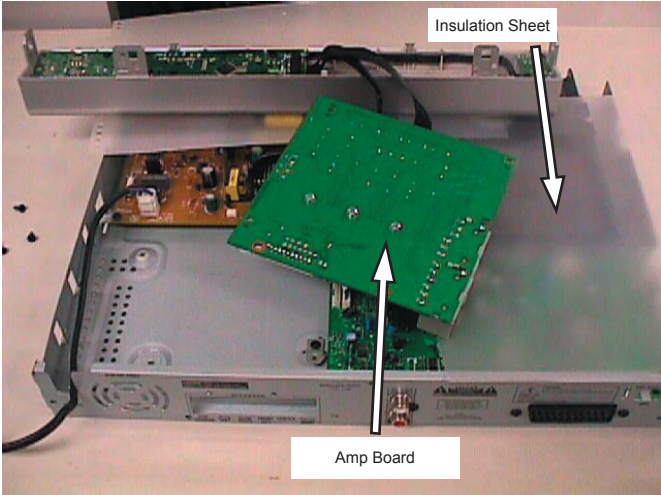
3.4 Service Positions



Service Position - Front Board

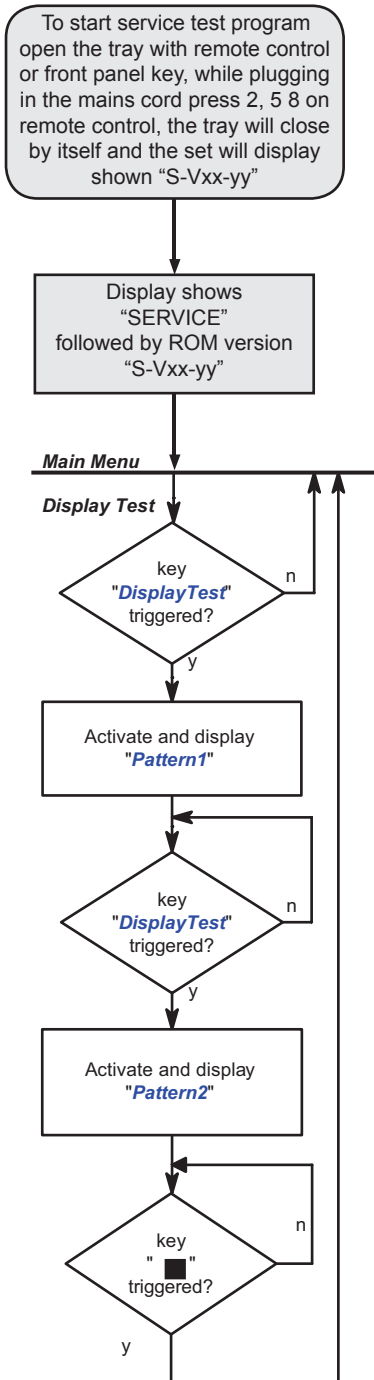


Service Position - Mono Board



Service Position -Amp-Board

4. 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)

4.1 Display Test

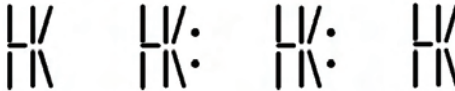
Purpose:
 This test is used to check the driving circuits, the display and whether there are any short-circuits, open-circuits or any other defects.
 Display test key = ►II

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

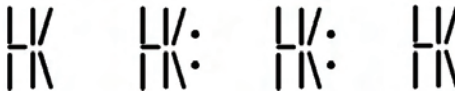


Receiver: (HTS3100/3105):
 Following display patterns are used to test the display and its connections to µP.

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



4.1.1 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 3105/98	APAC	3	PAL
HTS 3105/75	AUST/NZ	4	PAL
HTS 3105/93	CHINA	6	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> <0>for HTS 3105/98
 - <9> <9> <9> <9> <AUDIO> <4>for HTS 3105/75
 - <9> <9> <9> <9> <AUDIO> <2>for HTS 3105/93
- 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.)

4.1.2 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, 61, 93, 55,BK)
 DD = Region Code
 GGGGGGGG = version for servo code

4.1.3 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.

4.1.4 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 -> ERASE -> WRITE -> 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.

4.1.5 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.

4.1.6 Trade Mode

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

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

- 1 Press **SOURCE** to select "FM" or "TV".
- 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".

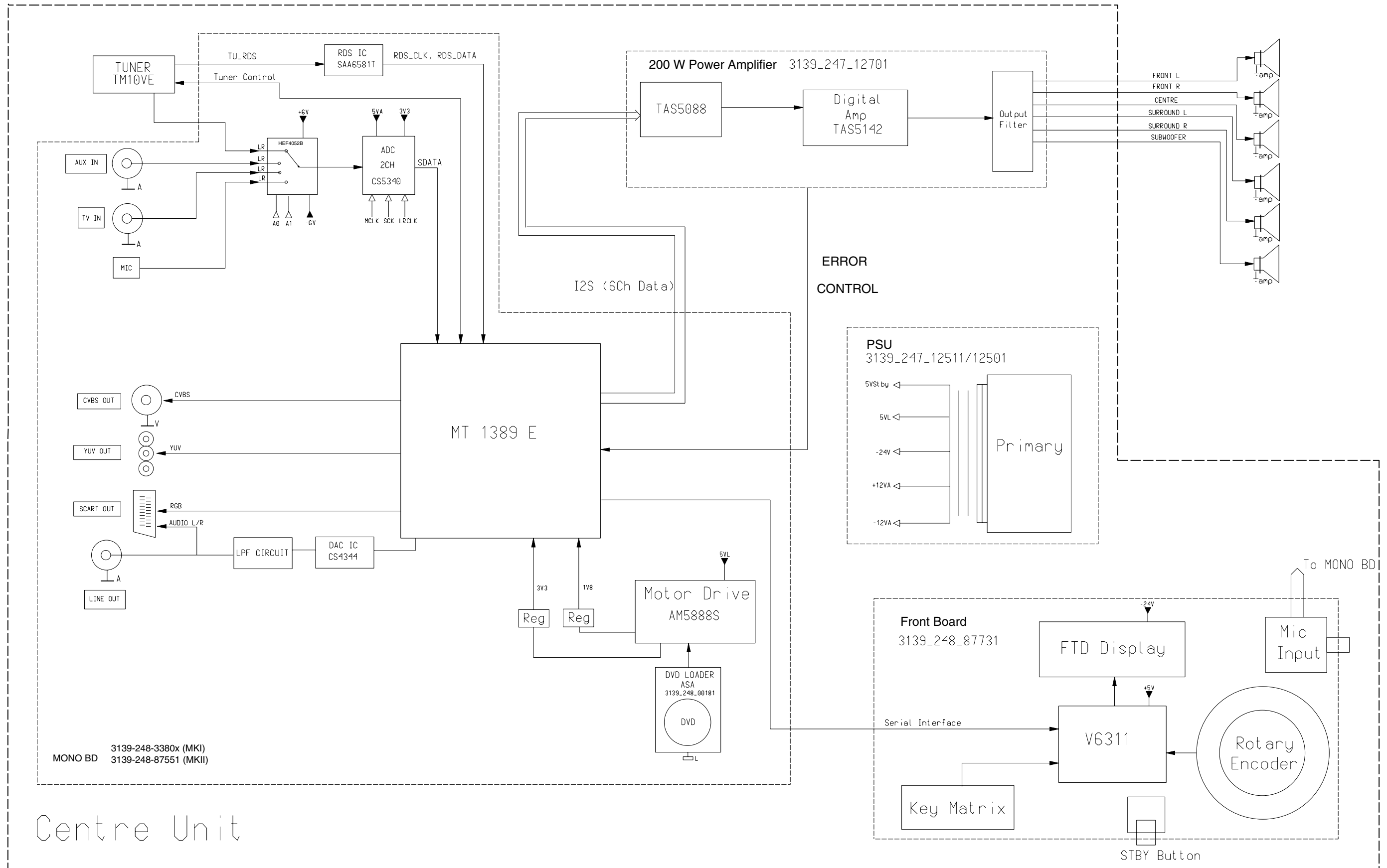
Helpful Hint:

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

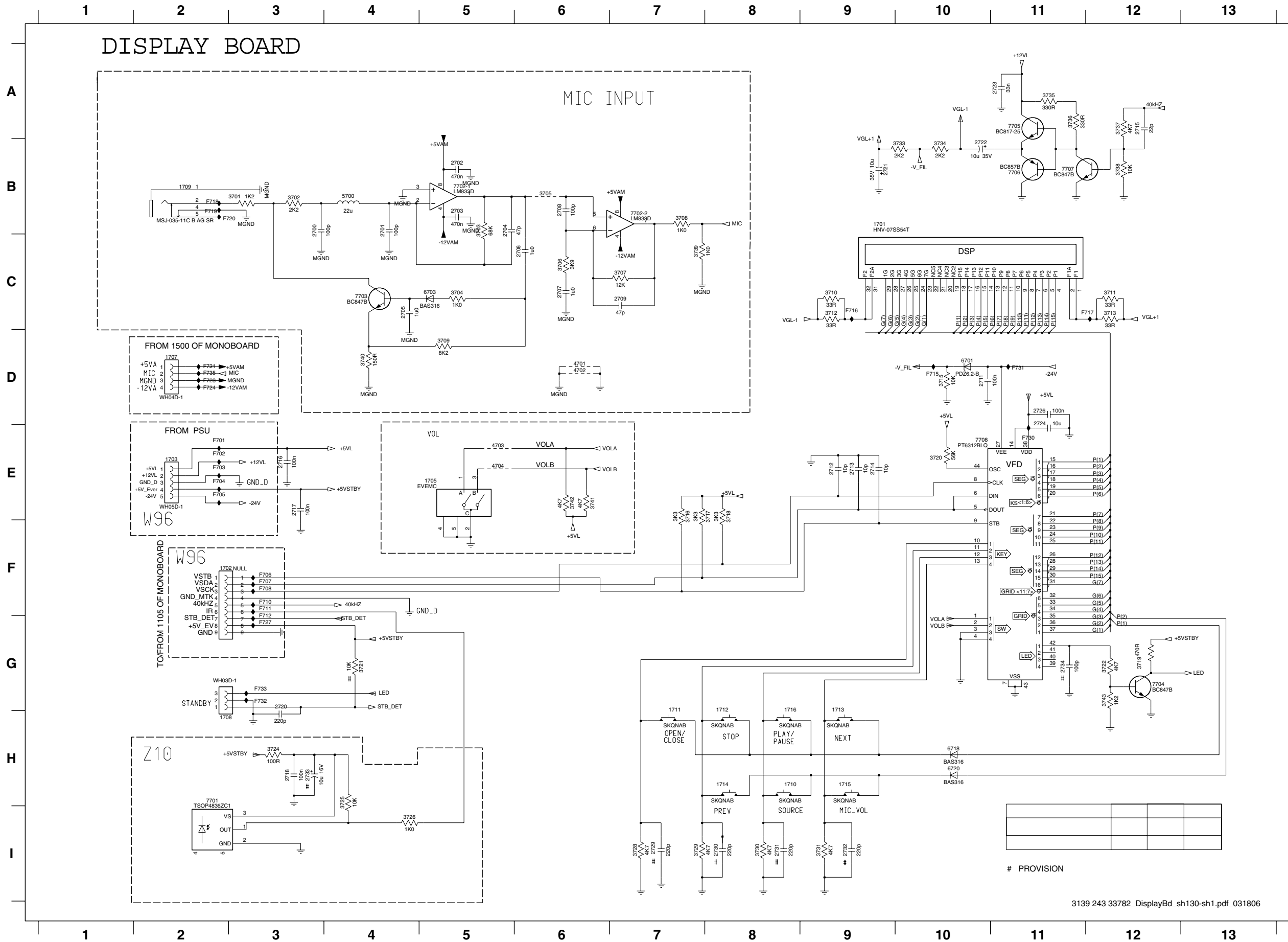
Note: Repeating the same action will toggle back to its previous tuning grid setting.

Notes:

Block Diagram



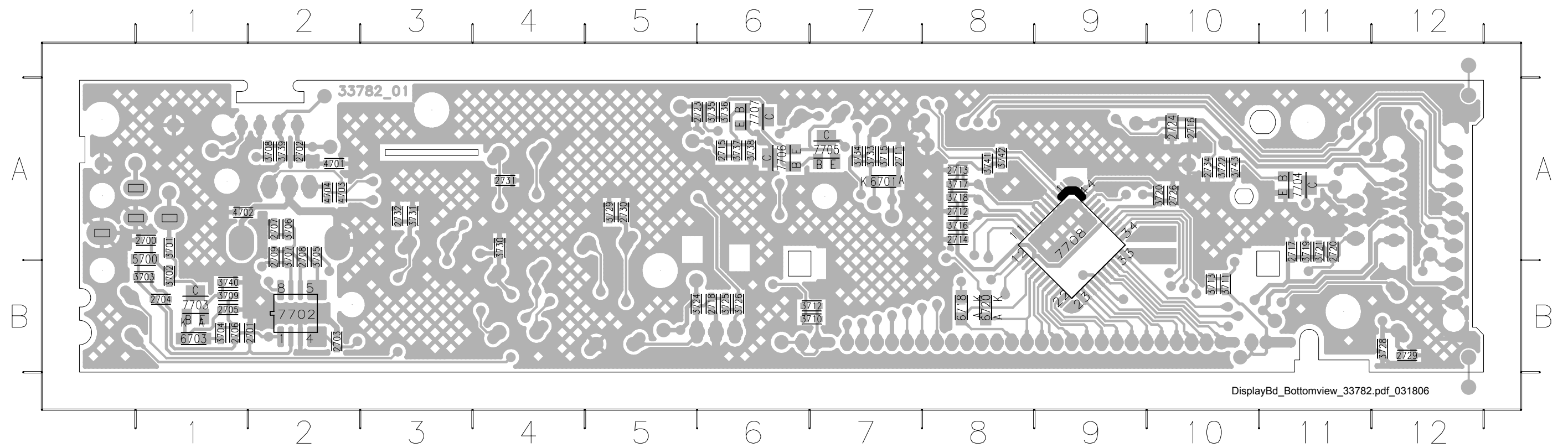
Front: Display



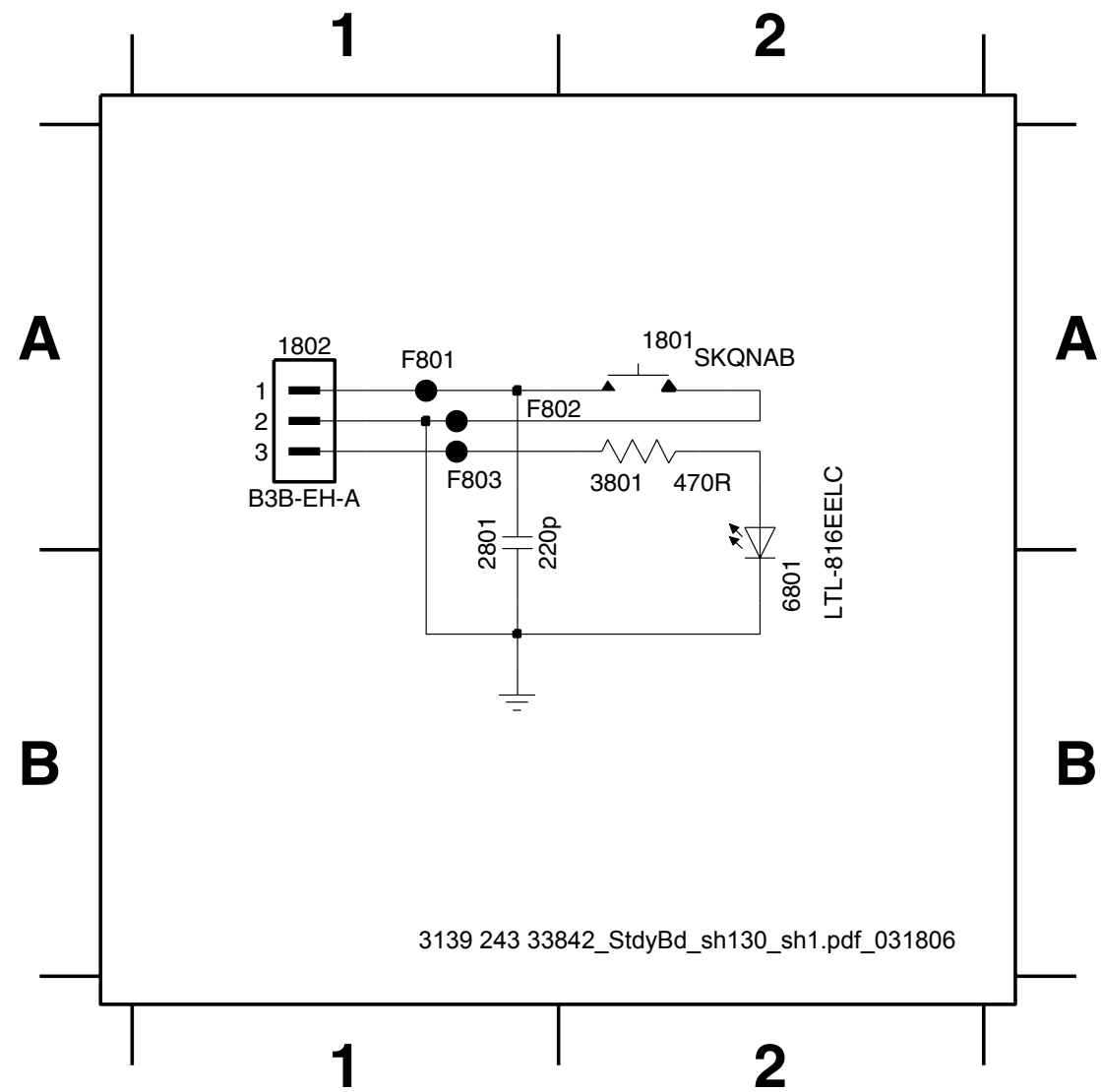
- 1701 B9
- 1702 F2
- 1703 E2
- 1705 E5
- 1707 D2
- 1708 H2
- 1709 B2
- 1710 H8
- 1711 H7
- 1712 H8
- 1713 H9
- 1714 H8
- 1715 H9
- 1716 H8
- 2000 B3
- 2010 B4
- 2020 B5
- 2030 B5
- 2040 B5
- 2050 C4
- 2060 C6
- 2070 C6
- 2080 B6
- 2090 C7
- 2110 D10
- 2120 E9
- 2130 E9
- 2140 E9
- 2150 A12
- 2160 E3
- 2170 E3
- 2180 H3
- 2200 G3
- 2210 B9
- 2220 B10
- 2230 A11
- 2240 E11
- 2260 D11
- 2290 I7
- 2300 I8
- 2310 I8
- 2320 I9
- 2330 H3
- 2340 G11
- 3010 B3
- 3020 B3
- 3030 B5
- 3040 C5
- 3050 B6
- 3060 C6
- 3070 C7
- 3080 B7
- 3090 D5
- 3100 C9
- 3110 C12
- 3120 C9
- 3130 C12
- 3150 D10
- 3160 E7
- 3170 E8
- 3180 E8
- 3190 G12
- 3200 E10
- 3210 G4
- 3220 G12
- 3240 H3
- 3250 H4
- 3260 I4
- 3280 I7
- 3290 I7
- 3300 I8
- 3310 I9
- 3330 B10
- 3340 B10
- 3350 A11
- 3360 A11
- 3370 A12
- 3380 B12
- 3390 C7
- 3400 D4
- 3410 E6
- 3420 E6
- 3430 G12
- 4701 D6
- 4702 D6
- 4703 E5
- 4704 E5
- 5700 B4
- 6701 D9
- 6703 C5
- 6718 H10
- 6720 H10
- 7701 H2
- 7702-1 B5
- 7702-2 B7
- 7703 C4
- 7704 G12
- 7705 A11
- 7706 B11
- 7707 B11
- 7708 E10
- F701 E2
- F702 E2
- F703 E2
- F704 E2
- F705 E2
- F706 F3
- F707 F3
- F708 F3
- F710 F3
- F711 F3
- F712 G3
- F715 D10
- F716 C9
- F717 C12
- F718 B2
- F719 B2
- F720 B3
- F721 D2
- F723 D2
- F724 D2
- F727 G3
- F730 E11
- F731 D11
- F732 G3
- F733 G3
- F735 D2

Front: Display (Bottom view)

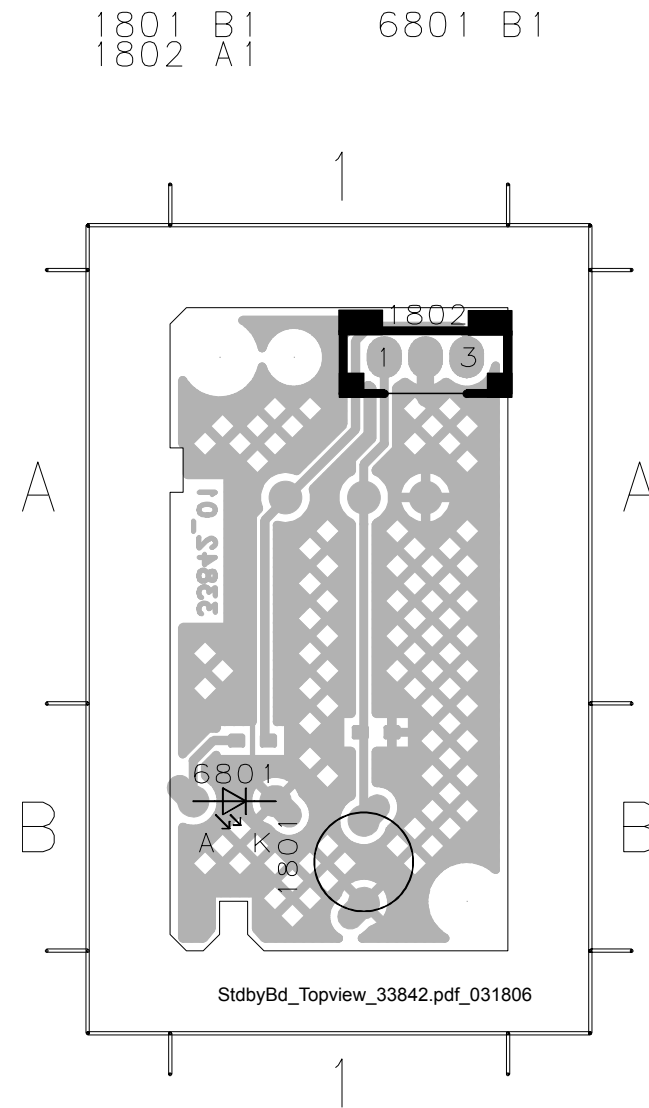
2700	A 1	2707	A2	2715	A6	2726	A 10	3702	B 1	3709	B 1	3717	A8	3725	B6	3734	A7	3741	A8	5700	A 1	7704	A 11
2701	B 2	2708	A2	2716	A10	2729	B12	3703	B 1	3710	B 7	3718	A8	3726	B6	3735	A6	3742	A8	6701	A7	7705	A7
2702	A2	2709	A2	2717	A11	2730	A5	3704	B 1	3711	B 10	3719	A11	3728	B12	3736	A6	3743	A10	6703	B 1	7706	A6
2703	B 2	2711	A7	2718	B6	2731	A4	3705	A2	3712	B 7	3720	A10	3729	A5	3737	A6	4701	A2	6718	B 8	7707	A6
2704	B 1	2712	A8	2720	A11	2732	A3	3706	A2	3713	B 10	3721	A11	3730	A4	3738	A6	4702	A1	6720	B 8	7708	A9
2705	B 1	2713	A8	2723	A5	2734	A10	3707	A2	3715	A7	3722	A10	3731	A3	3739	A2	4703	A2	7702	B 2		
2706	B 1	2714	A8	2724	A10	3701	A 1	3708	A2	3716	A8	3724	B5	3733	A7	3740	B 1	4704	A2	7703	B 1		



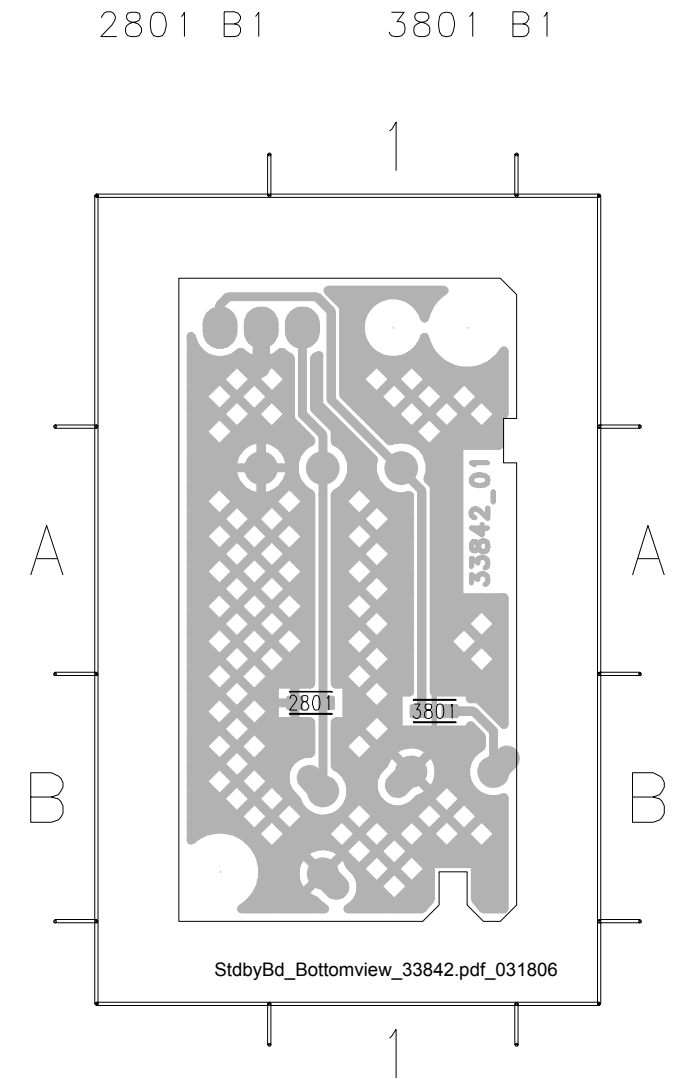
Front: Standby



Front: Standby (Top View)

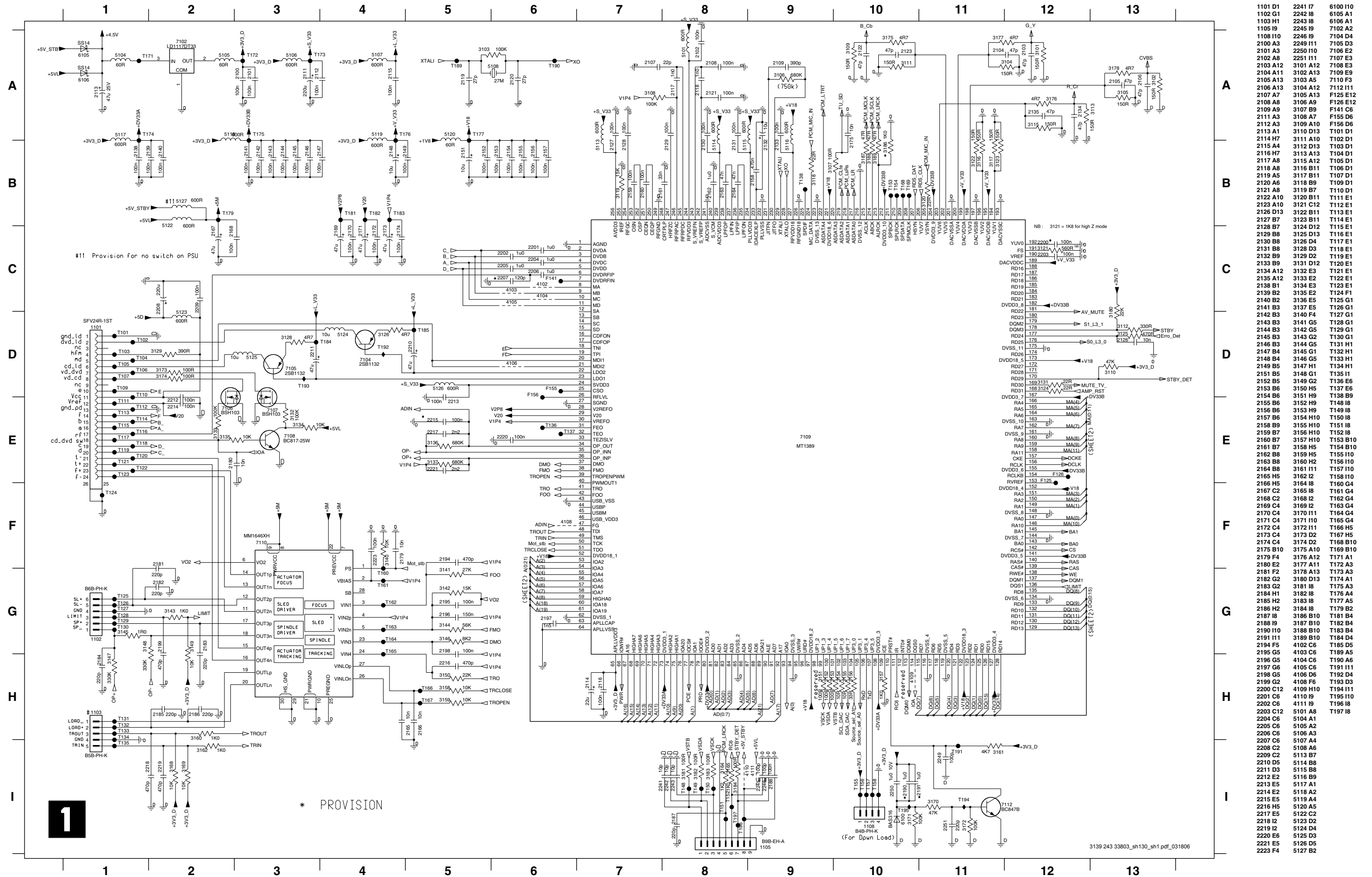


Front: Standby (Bottom View)



- 1801 A2
- 1802 A1
- 2801 A1
- 3801 A2
- 6801 B2
- F801 A1
- F802 A1
- F803 A1

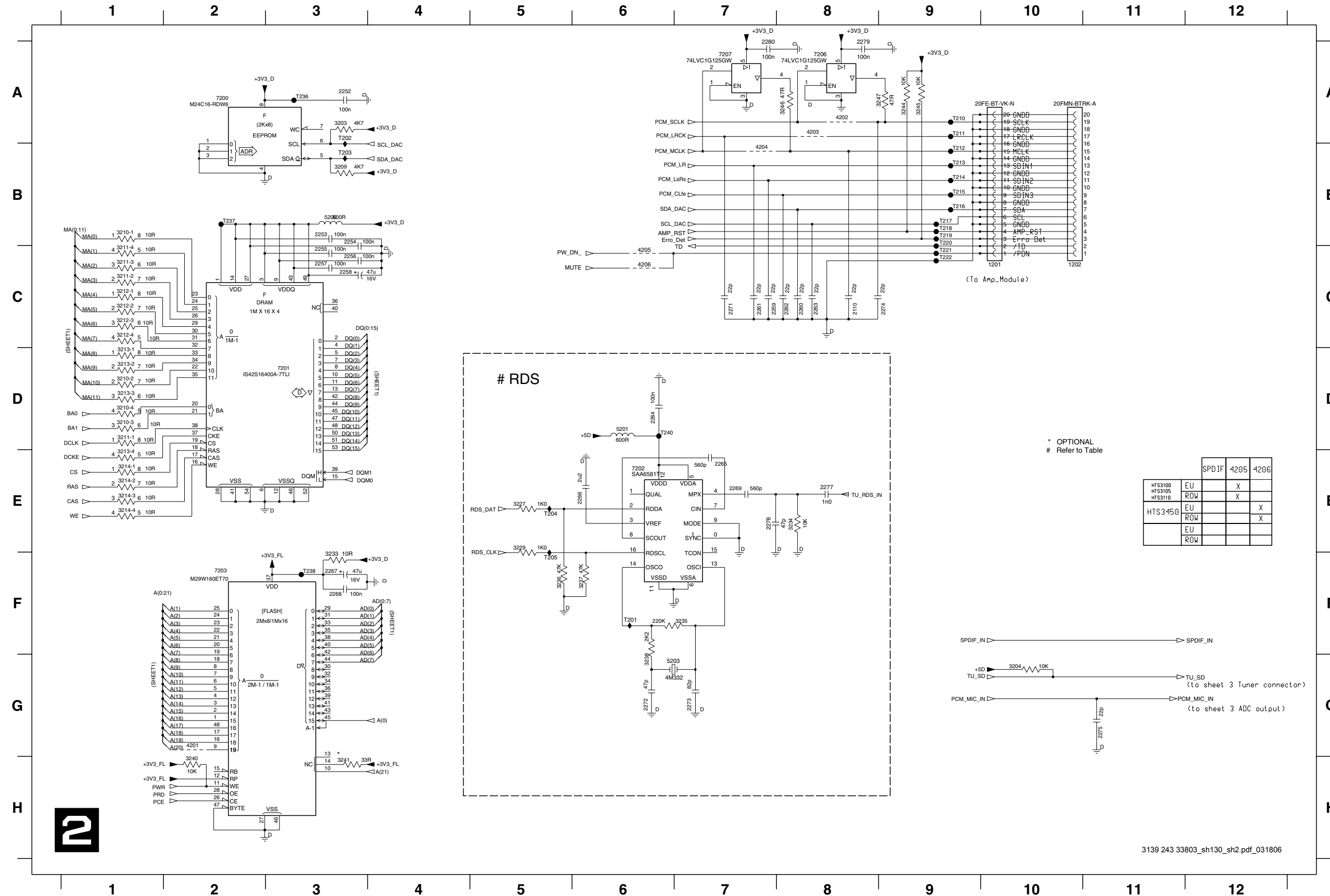
MKI Mono Board: Circuit Diagram (Part 1)



1

* PROVISION

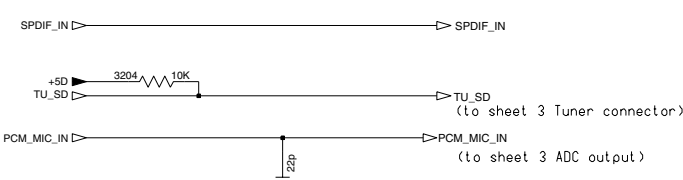
MKI Mono Board: Circuit Diagram (Part 2)



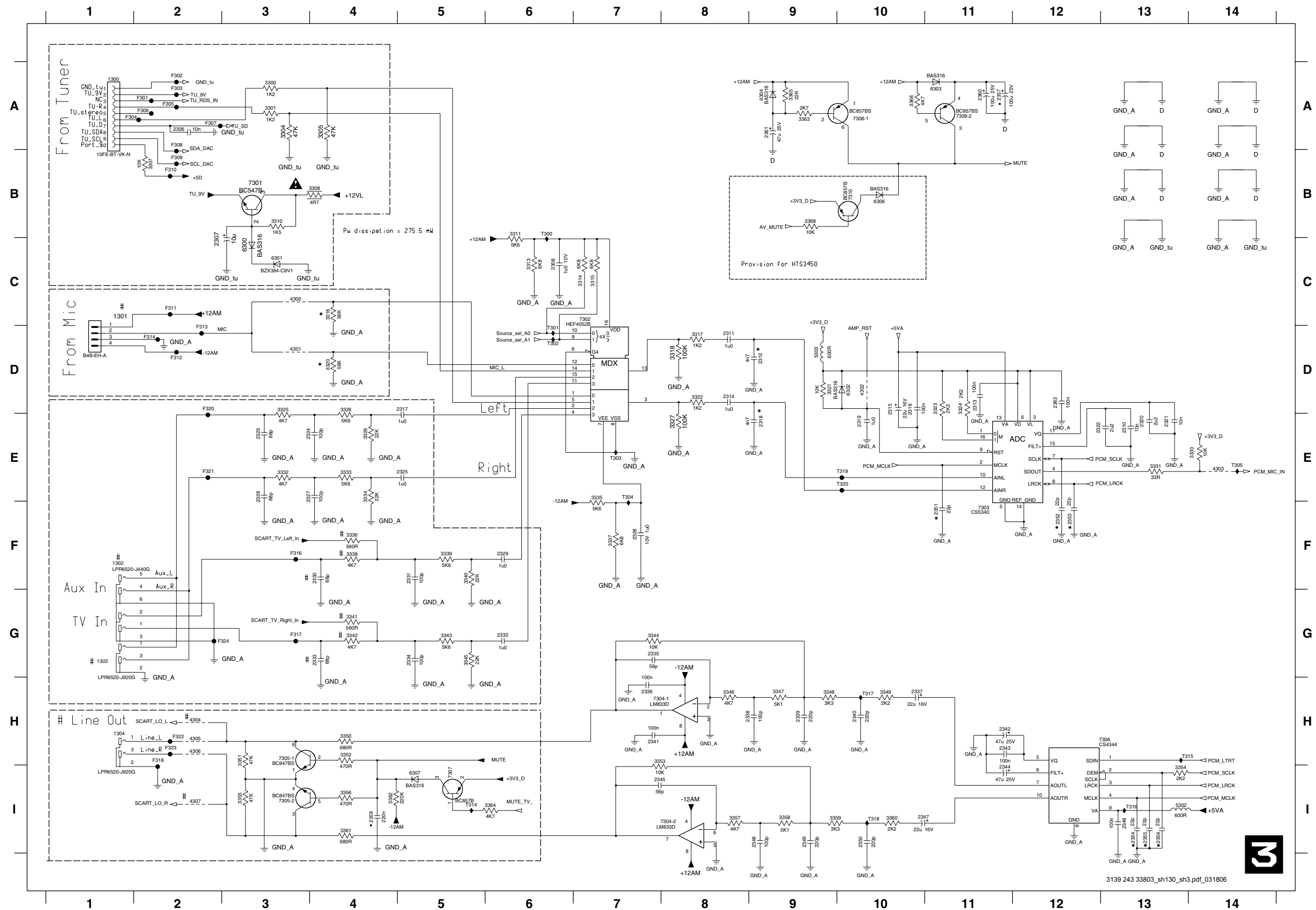
- T222 C9
- T220 C10
- T237 A3
- T238 B2
- T238 F3
- T240 D6
- 1201 C10
- 1202 C10
- 2110 C8
- 2252 A3
- 2253 B3
- 2254 B3
- 2255 C3
- 2256 C3
- 2257 C3
- 2258 C3
- 2259 C7
- 2260 C8
- 2261 C7
- 2262 C8
- 2263 C8
- 2264 D6
- 2265 E7
- 2266 E6
- 2267 F3
- 2268 F3
- 2269 E7
- 2271 C7
- 2272 G6
- 2273 G7
- 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

* OPTIONAL
Refer to Table

	SPDIF	4205	4206
HTS3100	EU	X	
HTS3105	ROW	X	
HTS3450	EU		X
	ROW		X



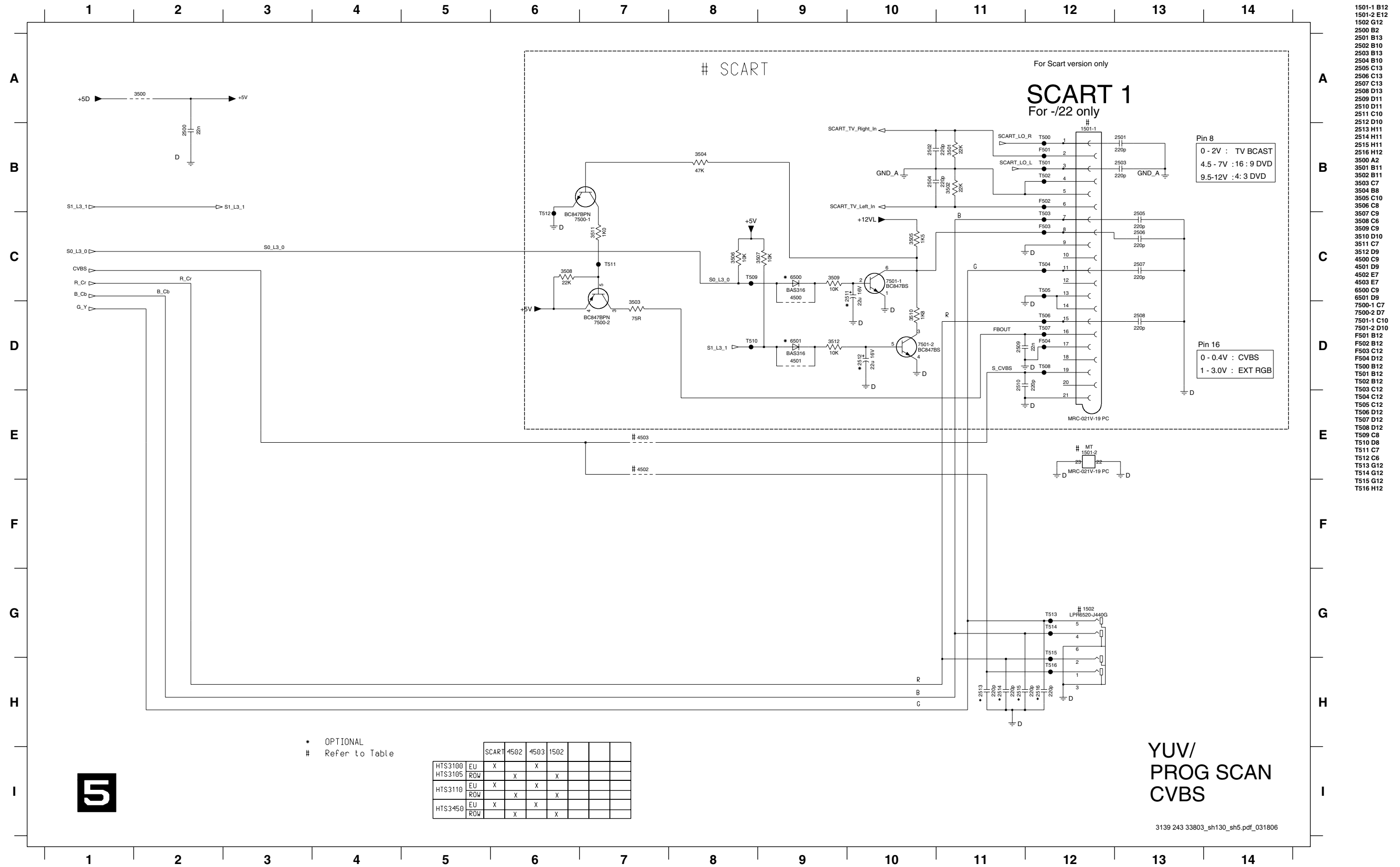
MKI Mono Board: Circuit Diagram (Part 3)



- 1300 A1
- 1301 C1
- 1302 F1
- 1303 G1
- 1304 H1
- 2306 A2
- 2307 C2
- 2308 C5
- 2310 E13
- 2311 D8
- 2312 D9
- 2313 D11
- 2314 D8
- 2315 D10
- 2316 D10
- 2317 D5
- 2318 E5
- 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
- 2363 A3
- 2364 A3
- 2365 A4
- 2367 B2
- 2368 B4
- 2369 B4
- 2370 B3
- 2371 B6
- 2372 C6
- 2373 C7
- 2374 C7
- 2375 C4
- 2376 D8
- 2377 D8
- 2378 D4
- 2379 D9
- 2380 D8
- 2381 D11
- 2382 D11
- 2383 D3
- 2384 D4
- 2385 D4
- 2386 D4
- 2387 E4
- 2388 E4
- 2389 E4
- 2390 E4
- 2391 E4
- 2392 E4
- 2393 E4
- 2394 E4
- 2395 E4
- 2396 E4
- 2397 E4
- 2398 E4
- 2399 E4
- 2400 E4



MKI Mono Board: Circuit Diagram (Part 5)



- 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

Pin 8
 0 - 2V : TV BCAST
 4.5 - 7V : 16 : 9 DVD
 9.5-12V : 4: 3 DVD

Pin 16
 0 - 0.4V : CVBS
 1 - 3.0V : EXT RGB

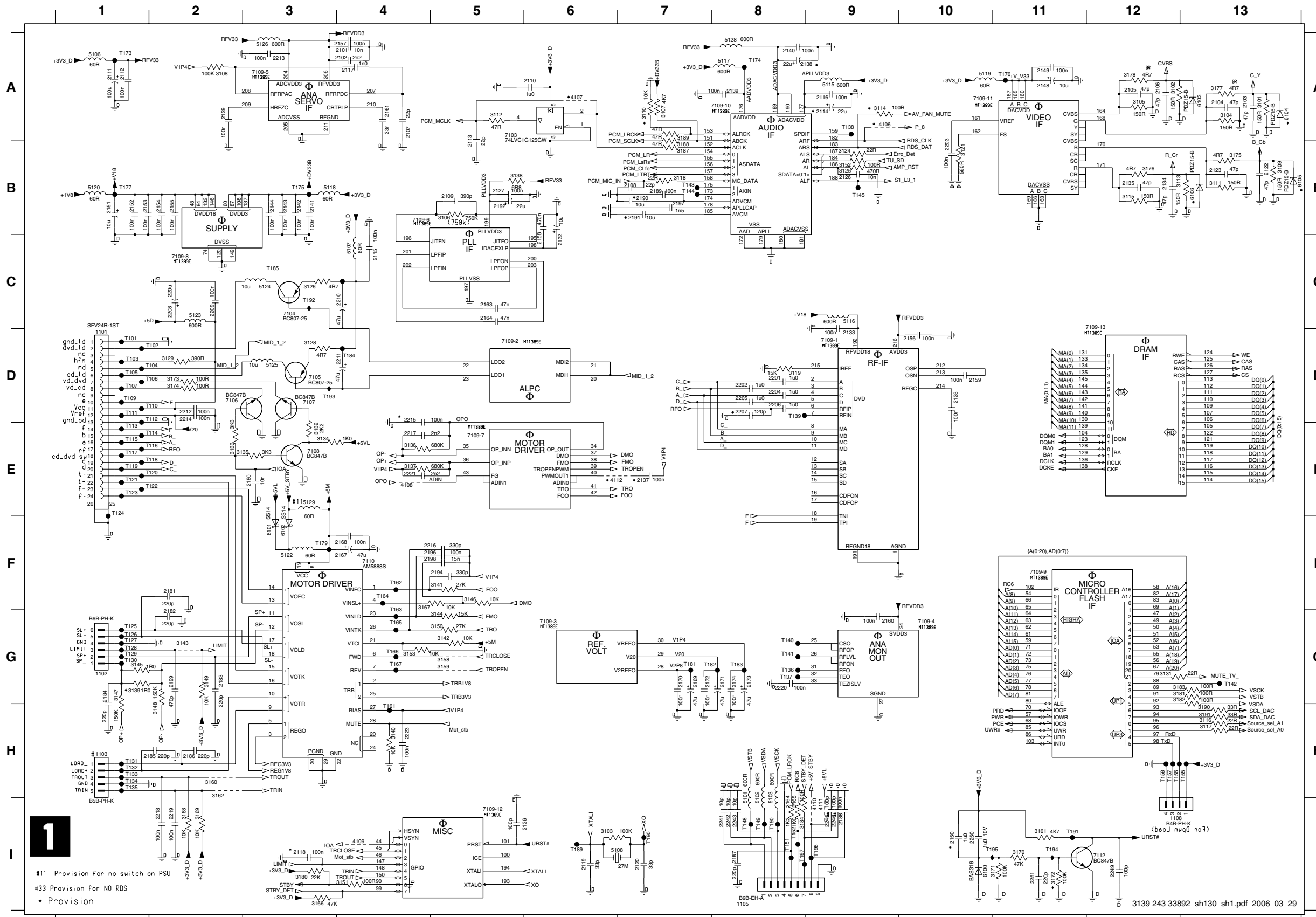
* OPTIONAL
 # Refer to Table

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



YUV/
 PROG SCAN
 CVBS

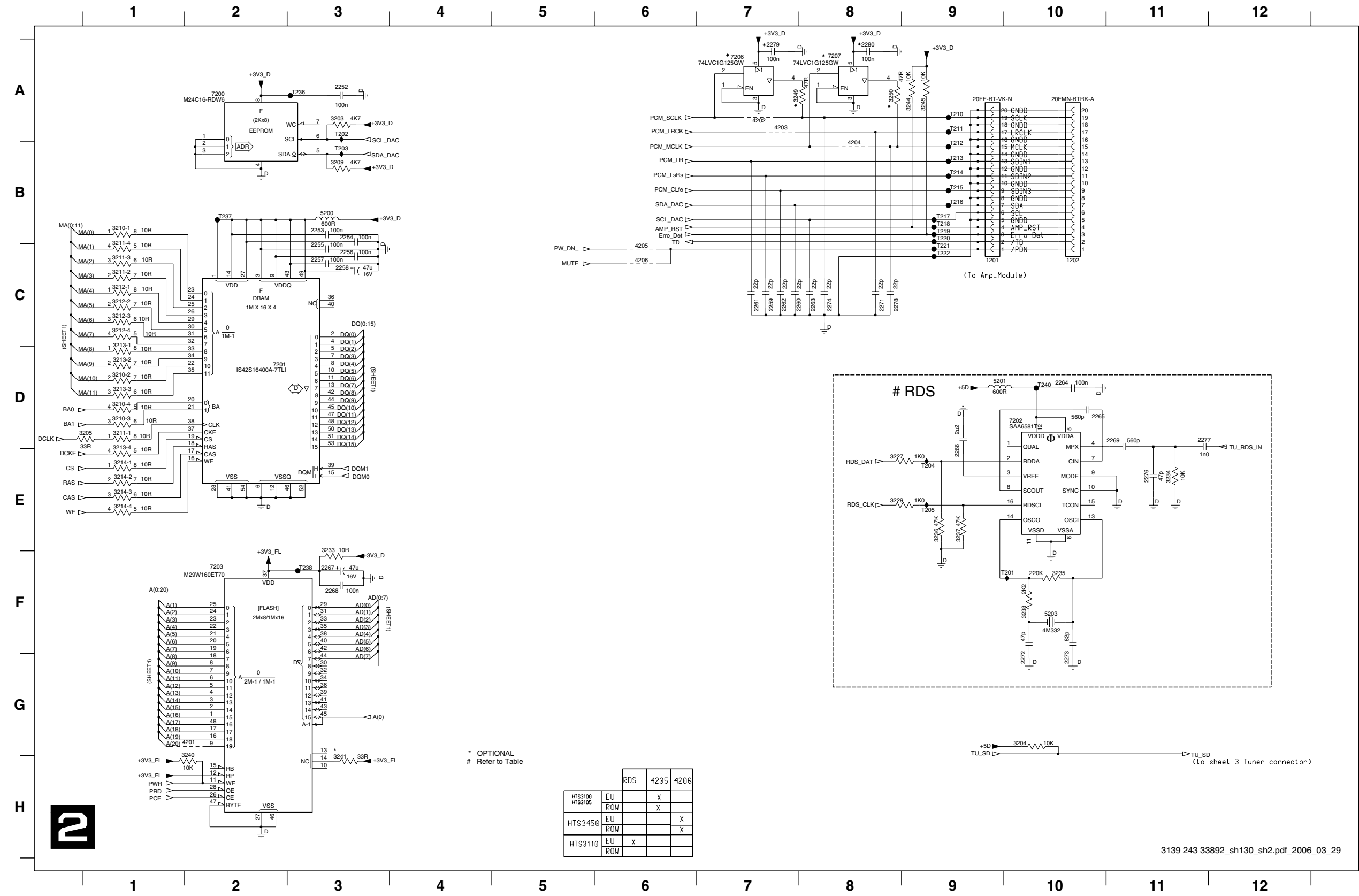
MKII Mono Board: Circuit Diagram (Part 1)



1101 D1	2249 I12	6106 B13
1102 G1	2250 I10	7103 A5
1103 H1	2251 I11	7104 C3
1105 I8	3101 A13	7105 D3
1108 H2	3102 A12	7106 D2
2101 A4	3103 I6	7107 D3
2102 A4	3104 A13	7108 E3
2103 A13	3105 A12	7109-1 D9
2104 A13	3106 B5	7109-10 A8
2105 A12	3107 A7	7109-11 A11
2106 A12	3108 A2	7109-12 I5
2107 A4	3109 B13	7109-13 C12
2108 B7	3110 A7	7109-2 D5
2109 B5	3111 B13	7109-3 G6
2110 A6	3112 A5	7109-4 G10
2111 A1	3113 B12	7109-5 A3
2112 A1	3114 A9	7109-6 B4
2113 A5	3115 B12	7109-7 E5
2114 A9	3116 H13	7109-8 C2
2115 C4	3117 H13	7109-9 F11
2116 A9	3118 B7	7110 A4
2117 A4	3119 D8	7112 I12
2118 I3	3121 B10	7101 D1
2119 I6	3122 B9	7102 D2
2120 I7	3123 B9	7103 D1
2122 B13	3126 C3	7104 D2
2123 B13	3128 D3	7105 D1
2126 B9	3129 D2	7106 D2
2127 B5	3131 G12	7107 D1
2128 D10	3132 E3	7109 D1
2129 A2	3133 E2	7110 D2
2132 C6	3133 E3	7111 D1
2133 D9	3135 E2	7112 D2
2134 B12	3136 E4	7113 E1
2135 B12	3137 E4	7114 E2
2136 B5	3138 I5	7115 E1
2137 E7	3139 G1	7116 E2
2138 A9	3140 H4	7117 E1
2139 A8	3141 F5	7118 E2
2140 A8	3142 G5	7119 E1
2141 B3	3143 G2	7120 E2
2142 B3	3144 G5	7121 E1
2143 B3	3145 G1	7122 E2
2144 B3	3146 F5	7123 E1
2148 A11	3147 G1	7124 E1
2149 A11	3148 H2	7125 G1
2150 H10	3149 G2	7126 G1
2151 B1	3150 G5	7127 G1
2152 B1	3151 I4	7128 G1
2153 B1	3152 B9	7129 G1
2154 B2	3153 G4	7130 G1
2155 B2	3155 G5	7131 H1
2156 D10	3155 G5	7132 H1
2157 A4	3160 H2	7133 H1
2158 C6	3161 I11	7134 H1
2159 D10	3162 H2	7135 H1
2160 G9	3164 I8	7136 G8
2161 A4	3165 I8	7137 G8
2163 C5	3166 I3	7138 A9
2164 C5	3167 F4	7139 D8
2167 F4	3168 I2	7140 G8
2168 F4	3169 I2	7141 G8
2169 G7	3170 I11	7142 G13
2170 G7	3171 I11	7143 B7
2171 G8	3172 I11	7144 B7
2172 G7	3173 D2	7145 B9
2173 G8	3174 D2	7148 I8
2174 G8	3175 B13	7149 I8
2176 E3	3176 E3	7150 E3
2181 F2	3177 A13	7151 I8
2182 G2	3178 A12	7152 I8
2183 G2	3180 I3	7155 H13
2184 G1	3181 G12	7156 H12
2185 H2	3182 G12	7157 H12
2186 H2	3183 G12	7158 H12
2187 I8	3184 I8	7161 G4
2188 I9	3187 B7	7162 F4
2189 B7	3188 B7	7163 G4
2190 B7	3189 A7	7164 F4
2191 B7	3190 H13	7165 G4
2192 B5	3191 H13	7166 G4
2194 F5	4106 A9	7167 G4
2196 F4	4107 A6	7173 A1
2197 B7	4108 E4	7174 A6
2198 F4	4109 I4	7175 B3
2199 G2	4110 I9	7176 A11
2201 D8	4111 I9	7177 B1
2202 D8	4112 E6	7179 F3
2203 B10	5101 H8	7181 G7
2204 D8	5102 H8	7182 G7
2205 D8	5103 H8	7183 G8
2206 D8	5106 A1	7184 D4
2207 D8	5107 C4	7185 C3
2208 C2	5108 I6	7189 I6
2209 C2	5115 A9	7190 I7
2210 C3	5116 C9	7191 I11
2211 D3	5117 A8	7192 C3
2212 D2	5118 B3	7193 D3
2213 A3	5119 A10	7194 I11
2214 D2	5120 B1	7195 H1
2215 D4	5122 F3	7196 I9
2216 F4	5123 C2	7197 I8
2217 E4	5124 C3	
2218 I2	5125 D3	
2219 I2	5126 A3	
2220 G8	5128 A8	
2221 E4	5129 E3	
2223 H4	6100 H10	
2241 I8	6101 F3	
2242 I8	6102 F3	
2243 I8	6103 A13	
2245 I9	6104 A13	
2246 I9	6105 B13	



MKII Mono Board: Circuit Diagram (Part 2)



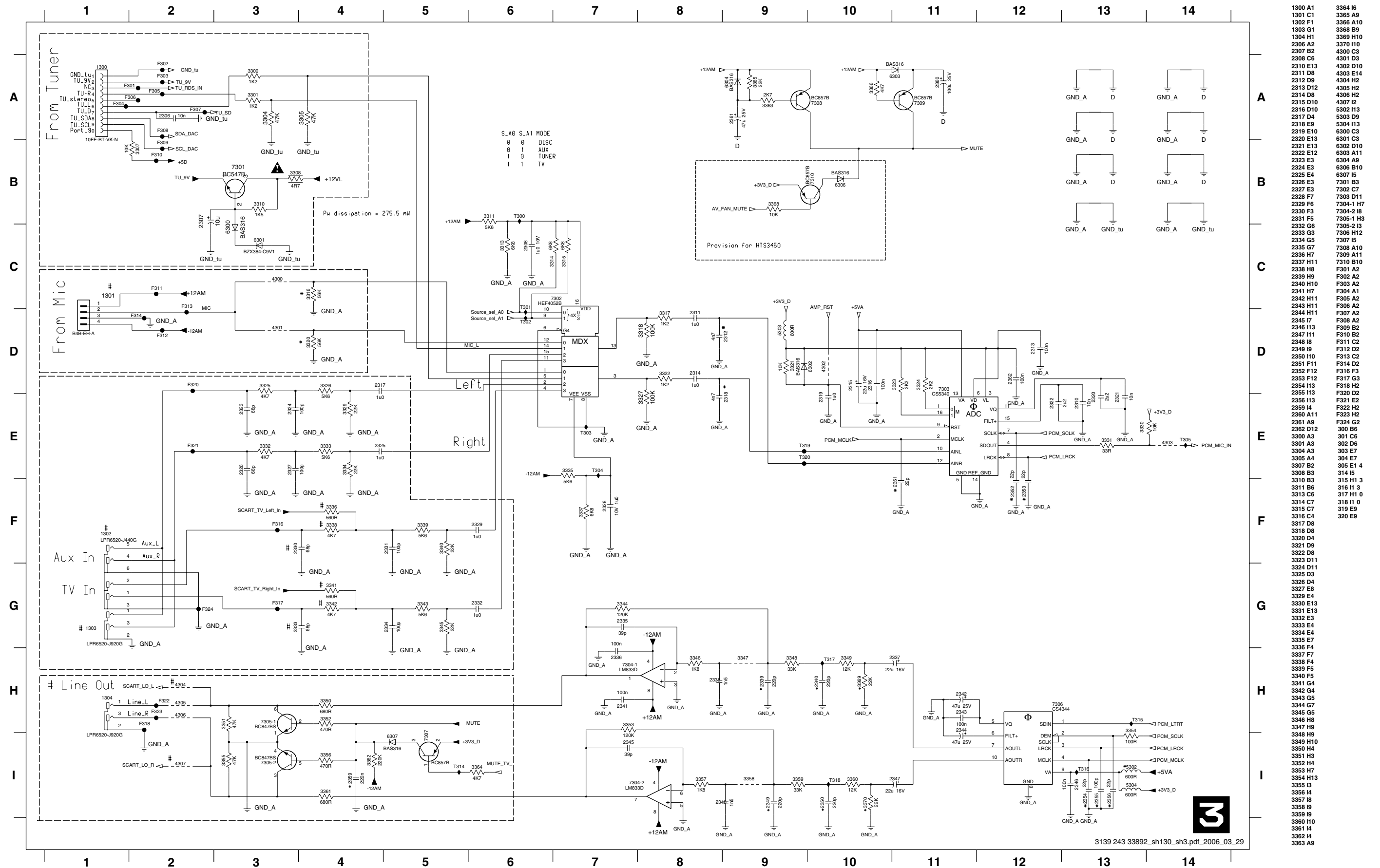
2

* OPTIONAL
Refer to Table

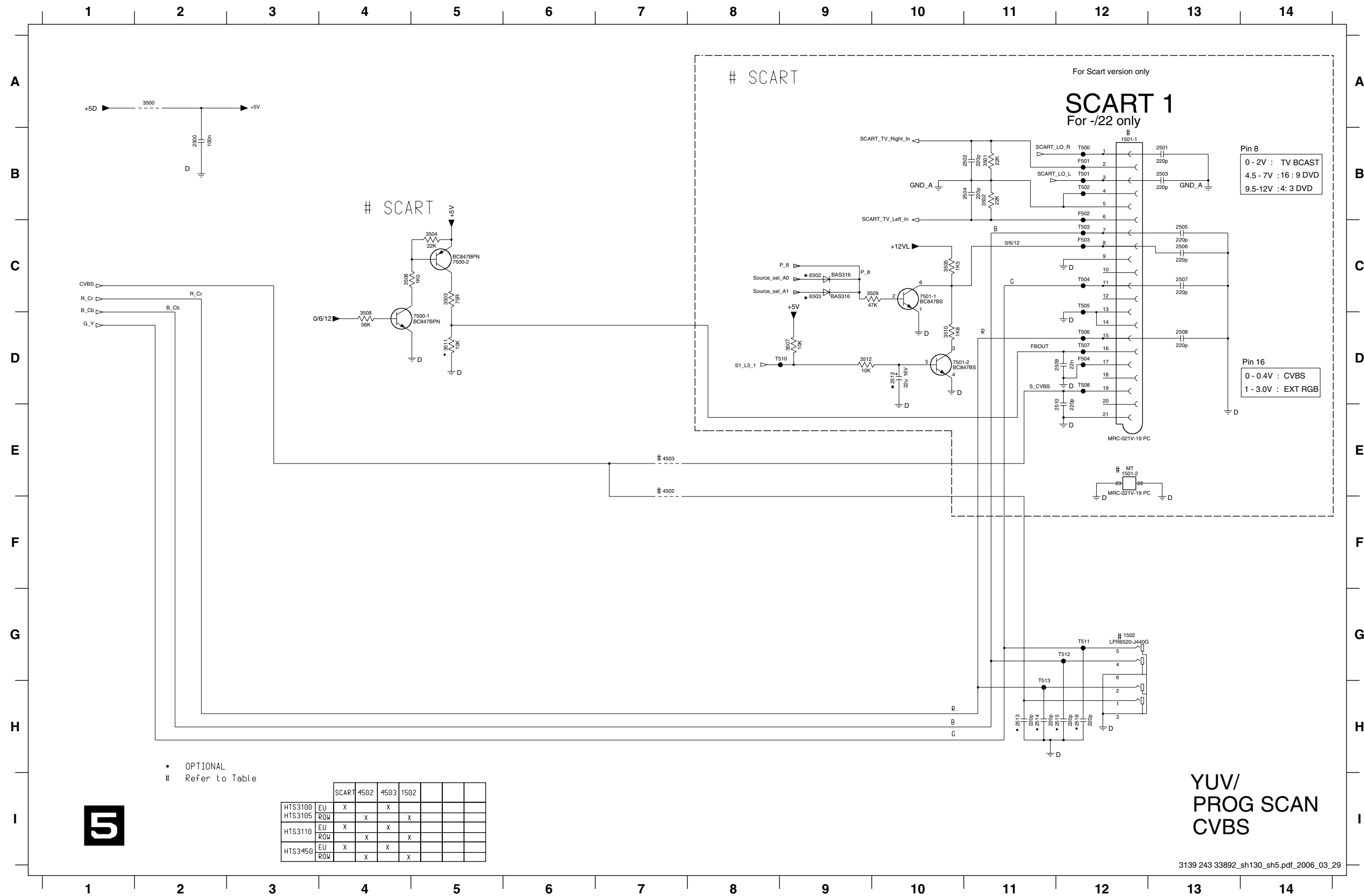
	RDS	4205	4206
HTS3100	EU	X	
HTS3105	ROW	X	
HTS3450	EU		X
	ROW		X
HTS3110	EU	X	
	ROW		

- 1201 C9
- 1202 C10
- 1203 C9
- 1204 E3
- 1205 E9
- 1206 A7
- 1207 A8
- 1208 A9
- 1209 A7
- 1210 A9
- 1211 A9
- 1212 B9
- 1213 B9
- 1214 B9
- 1215 B9
- 1216 B9
- 1217 B9
- 1218 B9
- 1219 B9
- 1220 B9
- 1221 C9
- 1222 C9
- 1223 A3
- 1224 B3
- 1225 B3
- 1226 C3
- 1227 C3
- 1228 C3
- 1229 C7
- 1230 C7
- 1231 C7
- 1232 C8
- 1233 D10
- 1234 D10
- 1235 E9
- 1236 F3
- 1237 F3
- 1238 F3
- 1239 G10
- 1240 G10
- 1241 C8
- 1242 E11
- 1243 D11
- 1244 C8
- 1245 A7
- 1246 A8
- 1247 A3
- 1248 A3
- 1249 G10
- 1250 D1
- 1251 B3
- 1252 B1
- 1253 D1
- 1254 D1
- 1255 D1
- 1256 C1
- 1257 C1
- 1258 C1
- 1259 D1
- 1260 D1
- 1261 E1
- 1262 E1
- 1263 E1
- 1264 E1
- 1265 E1
- 1266 E1
- 1267 E1
- 1268 E1
- 1269 E1
- 1270 E1
- 1271 E1
- 1272 E1
- 1273 E1
- 1274 E1
- 1275 E1
- 1276 E1
- 1277 E1
- 1278 E1
- 1279 A7
- 1280 A8
- 1281 A3
- 1282 A3
- 1283 G10
- 1284 D1
- 1285 B3
- 1286 B1
- 1287 D1
- 1288 D1
- 1289 D1
- 1290 D1
- 1291 E1
- 1292 E1
- 1293 E1
- 1294 E1
- 1295 E1
- 1296 E1
- 1297 E1
- 1298 E1
- 1299 E1
- 1300 E1

MKII Mono Board: Circuit Diagram (Part 3)



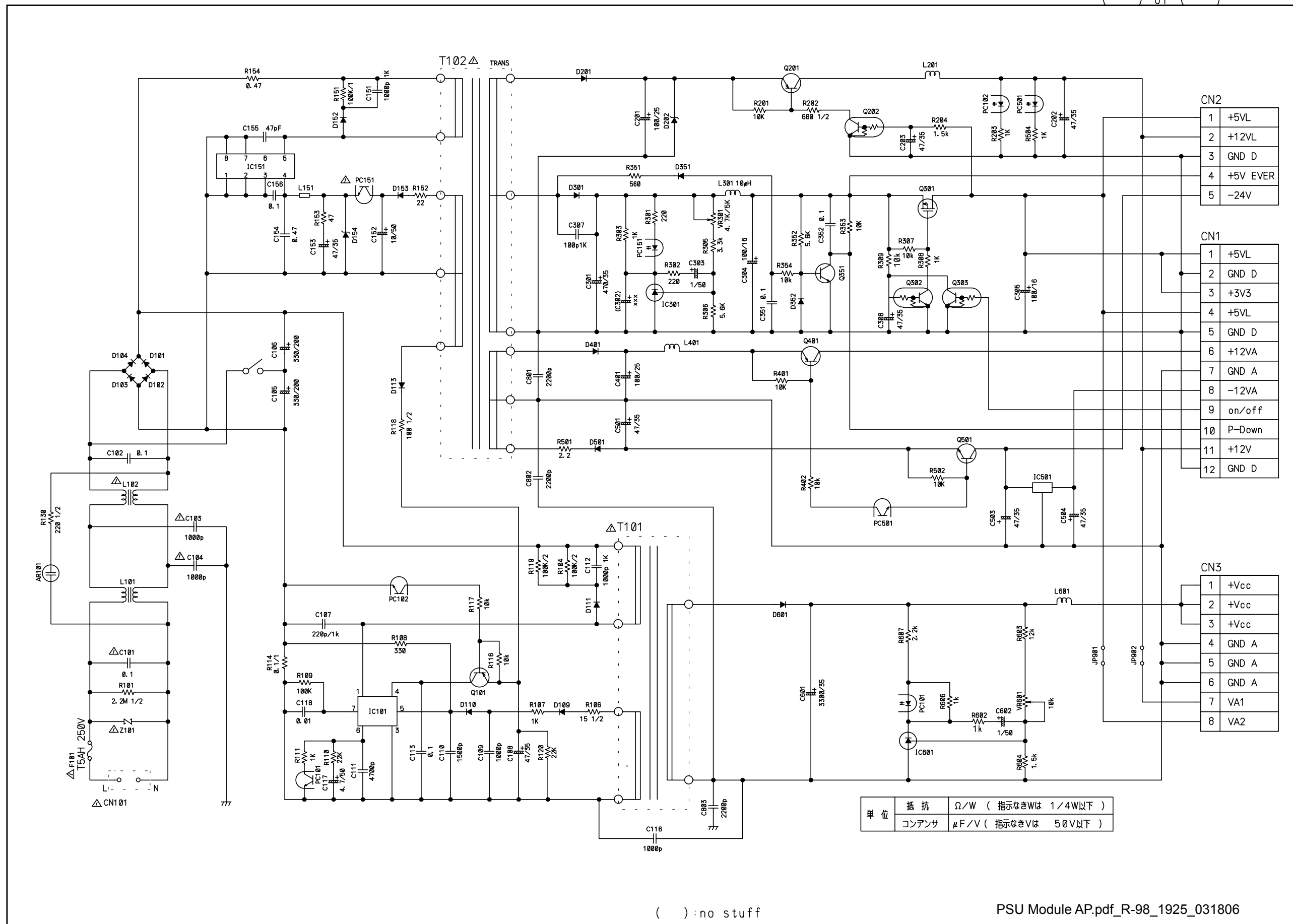
MKII Mono Board: Circuit Diagram (Part 5)



- 1501-1 B12
- 1501-2 E12
- 1502 C12
- 2500 B2
- 2501 B13
- 2502 B11
- 2503 B13
- 2504 B11
- 2505 C13
- 2506 C13
- 2507 C13
- 2508 D13
- 2509 D12
- 2510 E12
- 2512 D10
- 2513 H11
- 2514 H11
- 2515 H12
- 2516 H12
- 3500 A2
- 3501 B11
- 3502 B11
- 3503 C5
- 3504 C5
- 3505 C10
- 3506 C4
- 3507 D9
- 3508 D4
- 3509 C10
- 3510 D10
- 3511 D5
- 3512 D9
- 4502 E7
- 4503 E7
- 6502 C9
- 6503 C9
- 7500-1 D5
- 7500-2 C5
- 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
- T510 D9
- T511 G12
- T512 G12
- T513 H11

YUV/
PROG SCAN
CVBS

PSU Circuit Diagram (For information only) PSU: Europe



CN2

1	+5VL
2	+12VL
3	GND D
4	+5V EVER
5	-24V

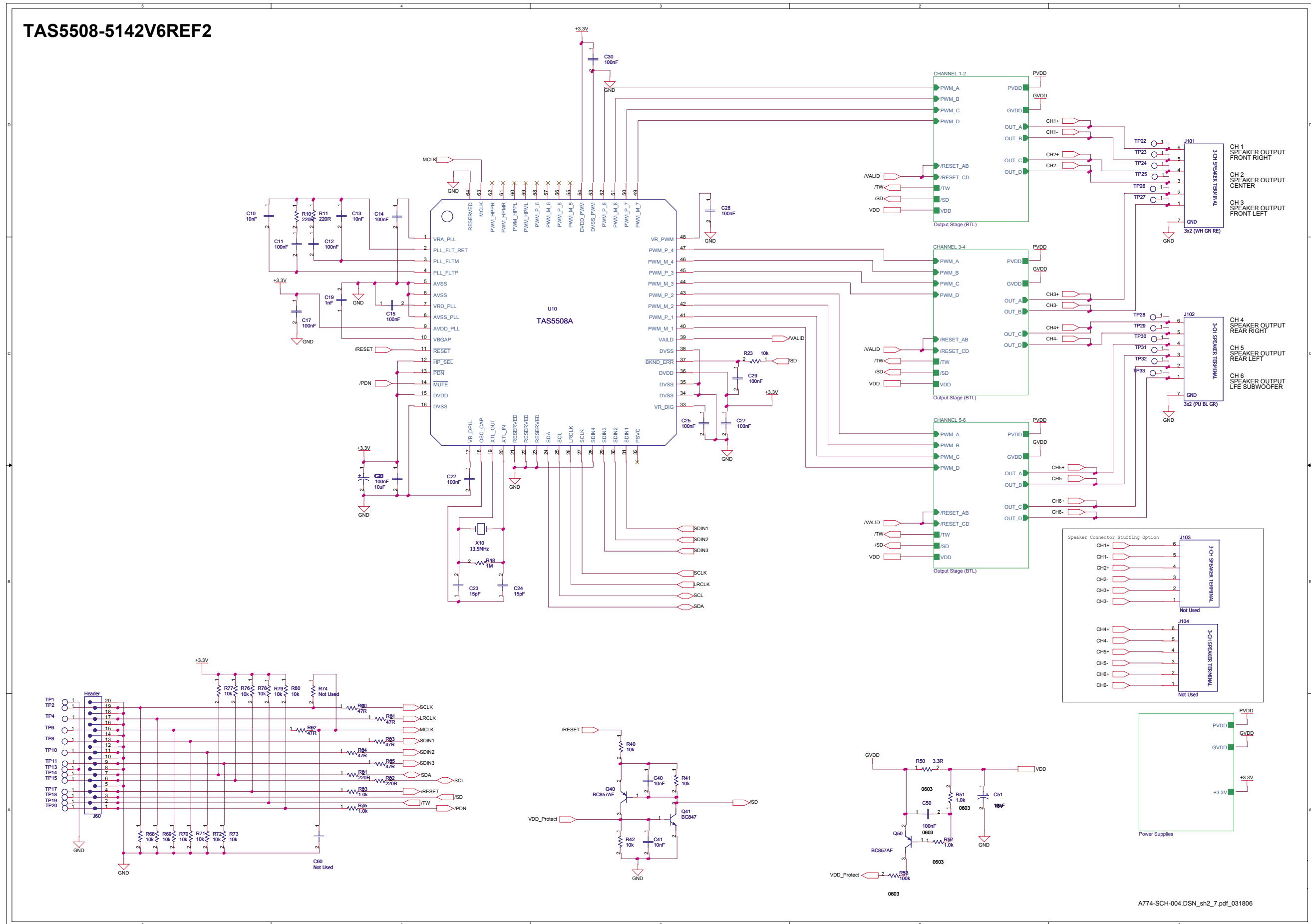
CN1

1	+5VL
2	GND D
3	+3V3
4	+5VL
5	GND D
6	+12VA
7	GND A
8	-12VA
9	on/off
10	P-Down
11	+12V
12	GND D

CN3

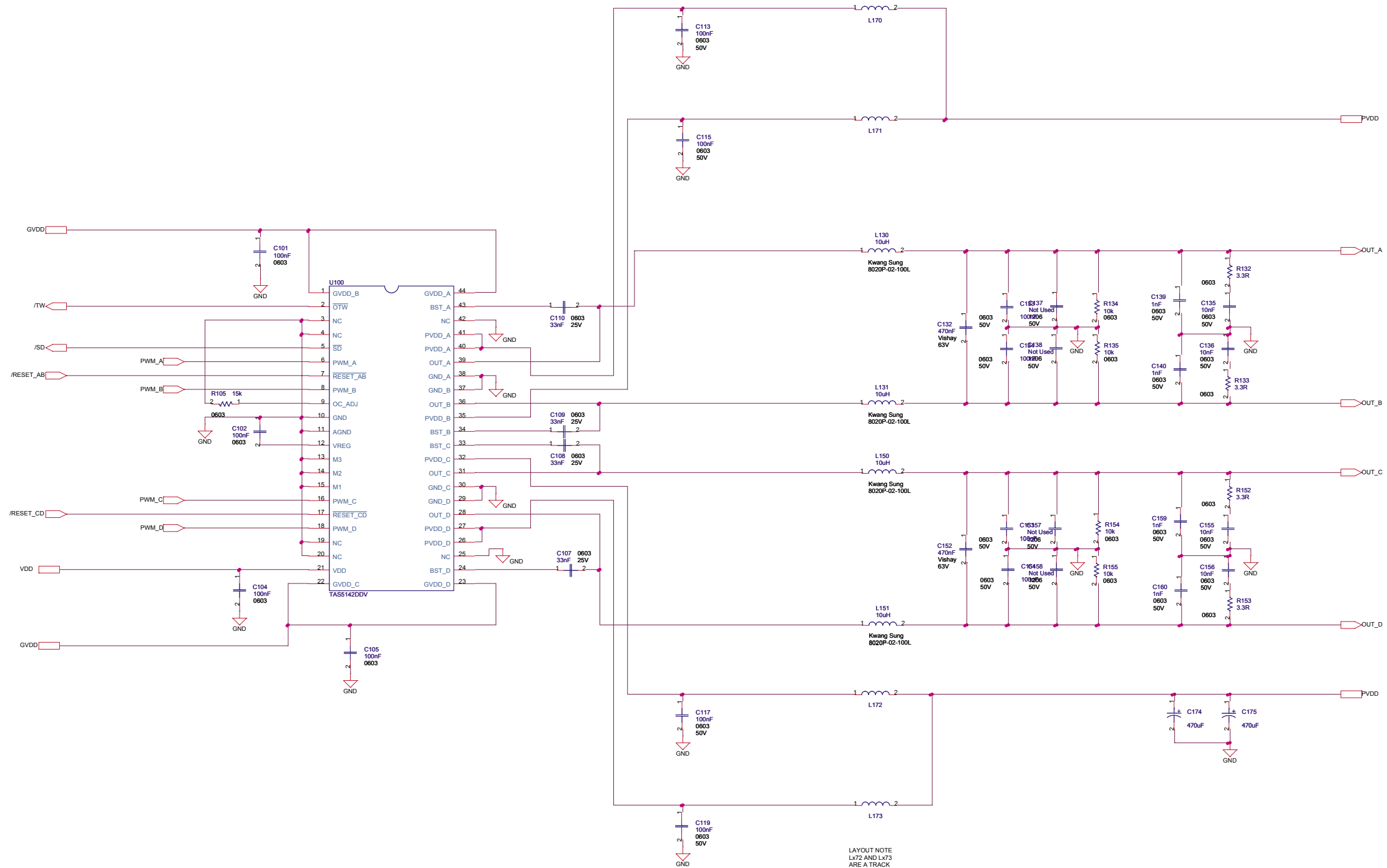
1	+Vcc
2	+Vcc
3	+Vcc
4	GND A
5	GND A
6	GND A
7	VA1
8	VA2

For information only (Amp Board)



For information only (Amp Board)

POWER OUTPUT STAGE (BTL)

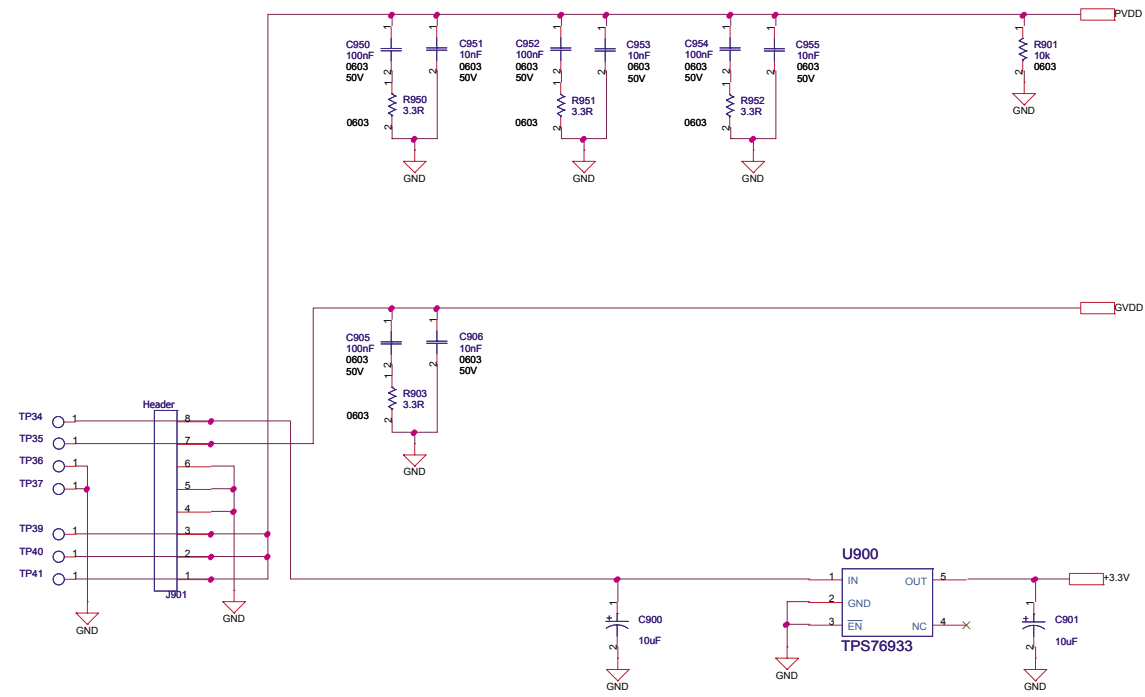


LAYOUT NOTE
Lx72 AND Lx73
ARE A TRACK
IN THE PCB.
W: TBD MM
L: TBD MM

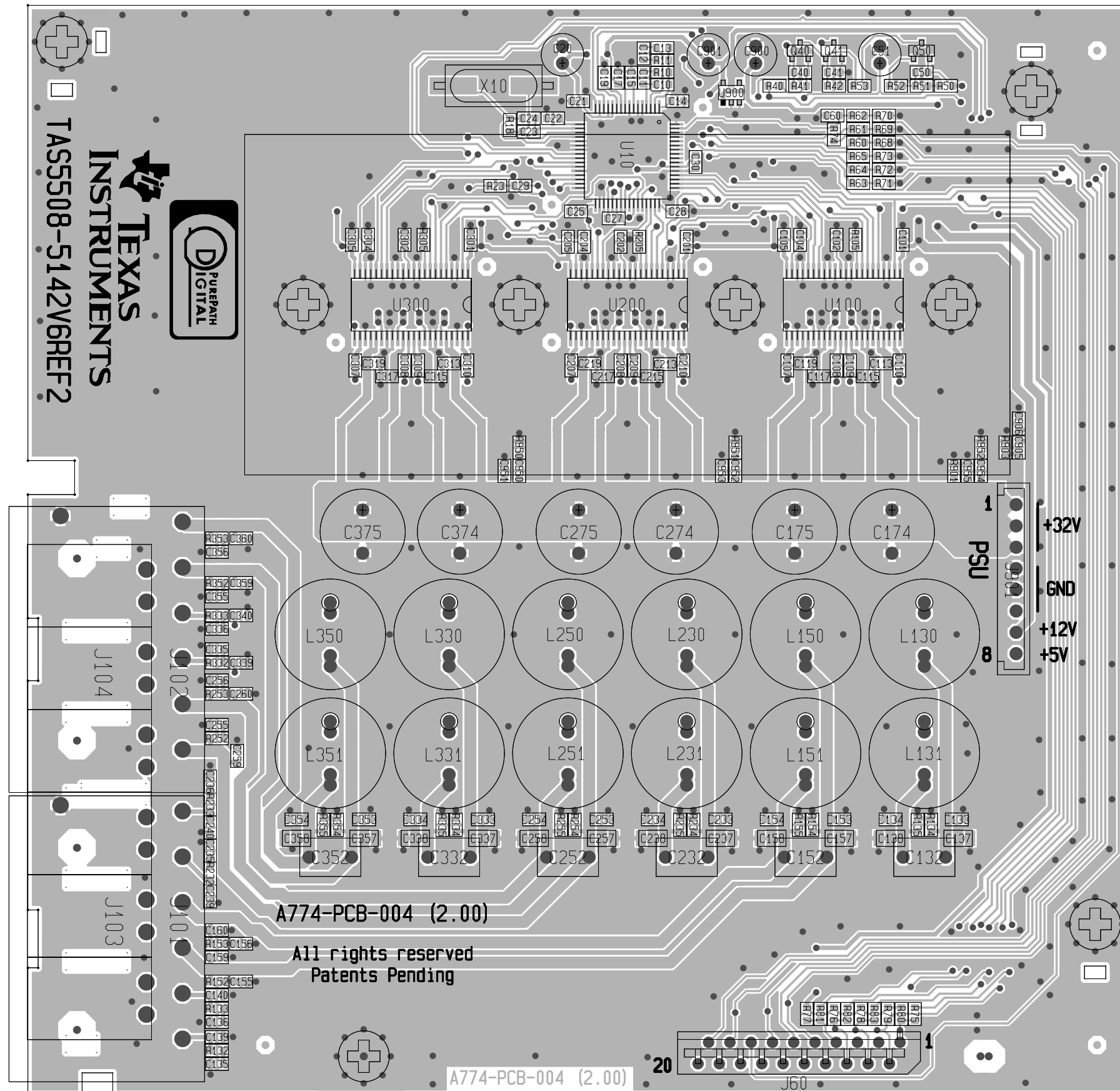
Mode Table

M2	M1	Type	Description
L	L	2x2BTL	Full Protection, 2N+2 mode
L	H	2x2BTL	No OLP - Latching Shutdown, 2N + 2, No Pulse Stretcher
H	L	2x2BTL	Full Protection, 1N + 2 mode
H	H	1x2BTL	Full Protection, 1N + 2 mode (PBTL)

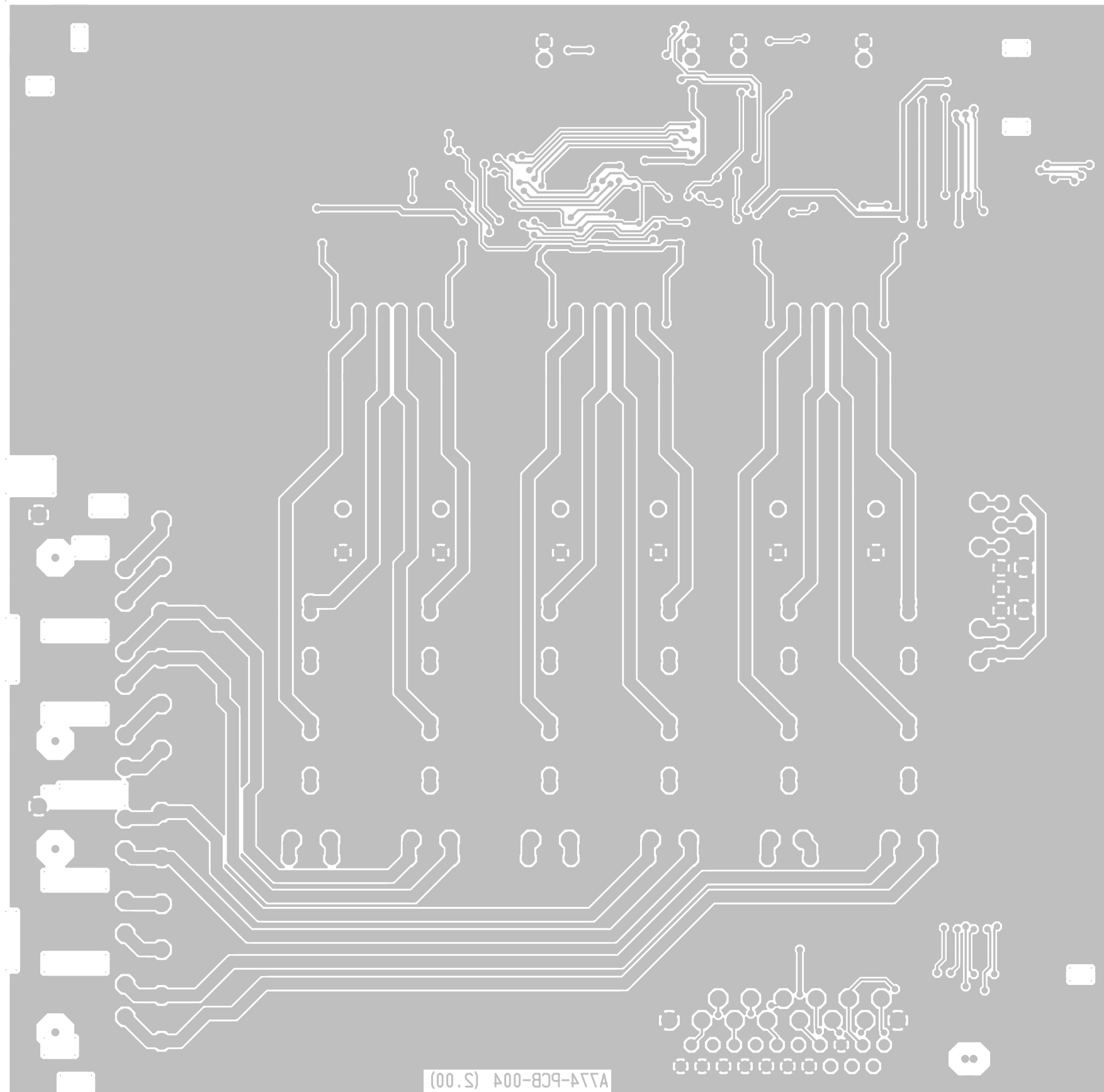
POWER SUPPLIES



Amp Board Layout : Topview



Amp Board Layout : Bottomview



9. Exploded View of the Set

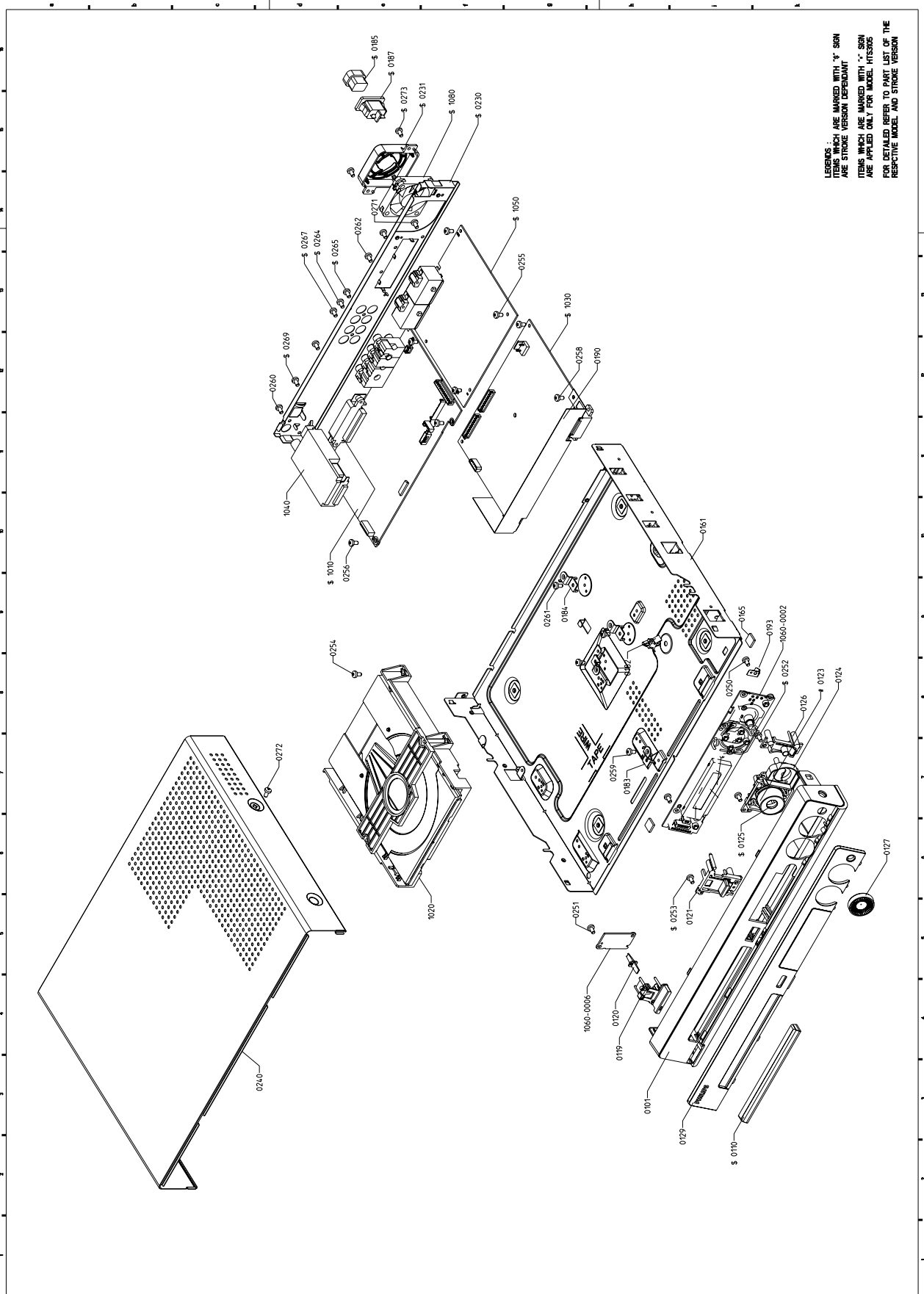


Figure 9-1

HTS3105/75**MISCELLANEOUS**

0110	313924410911	COVER TRAY HTS3105 PNT PRT
0127	313924410091	KNOB VOLUME CHROME
0190	313911327763	SHIELD SMPS LX3900SA
0325	313924712641	BOX SPK ASSY SW-3105 P
0326	313924712631	BOX SPK ASSY CS-3105 P
0331	242207600546	FM AERIAL 24AWG BK B
0331	242207600852	ANT FM WIRE 1M5 24AWG BK B /93 only
0332	242254945386	ANT AM LOOP LAN-011 B
0333	242254900901	REMOTE CONTR
0336	242207098248	△ MAINSCORD AUS/NZ 1M5 DET 2P B /75 only
0336	242207098257	△ MAINSCORD CHN 2A5 1M5 DET 2P B /93 only
0336	242207098231	MAINSCORD IEC 2A5 1M8 VH BK B /98 only
0340	242207600662	CBLE CINCH 1M7 CINCH 1P YE B
1020	313924800181	LOADER ASSY WXD8829 KHM313 RX
1030	313924712721	MODULE PSU 06T400M WR
1040	242254200032	TUN A+F ENG06806QRF USA B
1050	313924712251	MODULE AMP-05-02 500W
1060	313924887731	PCBAS FRONT HTS3100 ROW
1070	313924888462	PCBAS MONO II HTS3105 ROW
1080	282203100048	FAN 12VDC 0.5W 3700RPM B
8001	313924101381	FFC FOIL10P/120/10P AD FOLD
8005	313924101921	FFC FOIL 20P/080/20P AD
P001	314107936081	FRAME ASSY ASSY HTS3100
P002	314107936031	FRONT CAB ASSY HTS3105 ROW

LOADER ASSY WXD8829 KHM313 RX

0151	242254900493	DVD LOADER WXD-8829(Y) B
0152	242254900629	DVD MECHANISM KHM-313AAA Y
1101	313924100341	FFC FOIL 24P/220/24P AD 0.5MMP
1102	313911103761	CBLE PH 06P/180/06P PH 28ST BK
1103	313911035861	CBLE PH 05P/220/05P PH 26ST BK

BOX SPK ASSY SW-3105 P

0030	996500035004	SW3105 SUBWOOFER BOX
0040	996500034997	RUBBER FOOT SW
0050	996500034998	CABLE ASSY 5.3M PURPLE SMK

BOX SPK ASSY CS-3105 P

0030	996500034999	SPEAKER BOX FRONT-L
0040	996500035000	SPEAKER BOX FRONT-R
0050	996500035001	SPEAKER BOX REAR-L
0060	996500035002	SPEAKER BOX REAR-R
0070	996500034987	CABLE ASSY 5.2M WHITE SMK
0080	996500034988	CABLE ASSY 5.2M RED SMK
0090	996500034989	CABLE ASSY 5.2M BLUE SMK
0100	996500034990	CABLE ASSY 5.2M GREY SMK
0110	996500034991	RUBBER FOOT 58.5LX5.5WX3T
0130	996500034992	RUBBER FOOT 24LX6WX1T (L)
0140	996500035003	SPEAKER BOX CENTER
0150	996500034994	CABLE ASSY 5.2M GREEN SMK S
0160	996500034995	RUBBER FOOT 39.5LX5.5WX2T

11 REVISION LIST

11.1 Manual 3139 785 31951

1. Additional of HTS3105/75
2. Additional of HTS3105/75 for Reprogramming of DVD version Matrix in page 15 of documents.
3. Revise of spare parts list for HTS3105/75

11.2 Manual 3139 785 31952

1. Additional of PCBA MONOBOARD MARK II Circuit Diagrams and Layouts
2. Revise of spare parts list for HTS3105/93/98/75 include /93 power cord

11.3 Manual 3139 785 31953

1. Spare parts list updated.