

Service
Service
Service



Service Manual

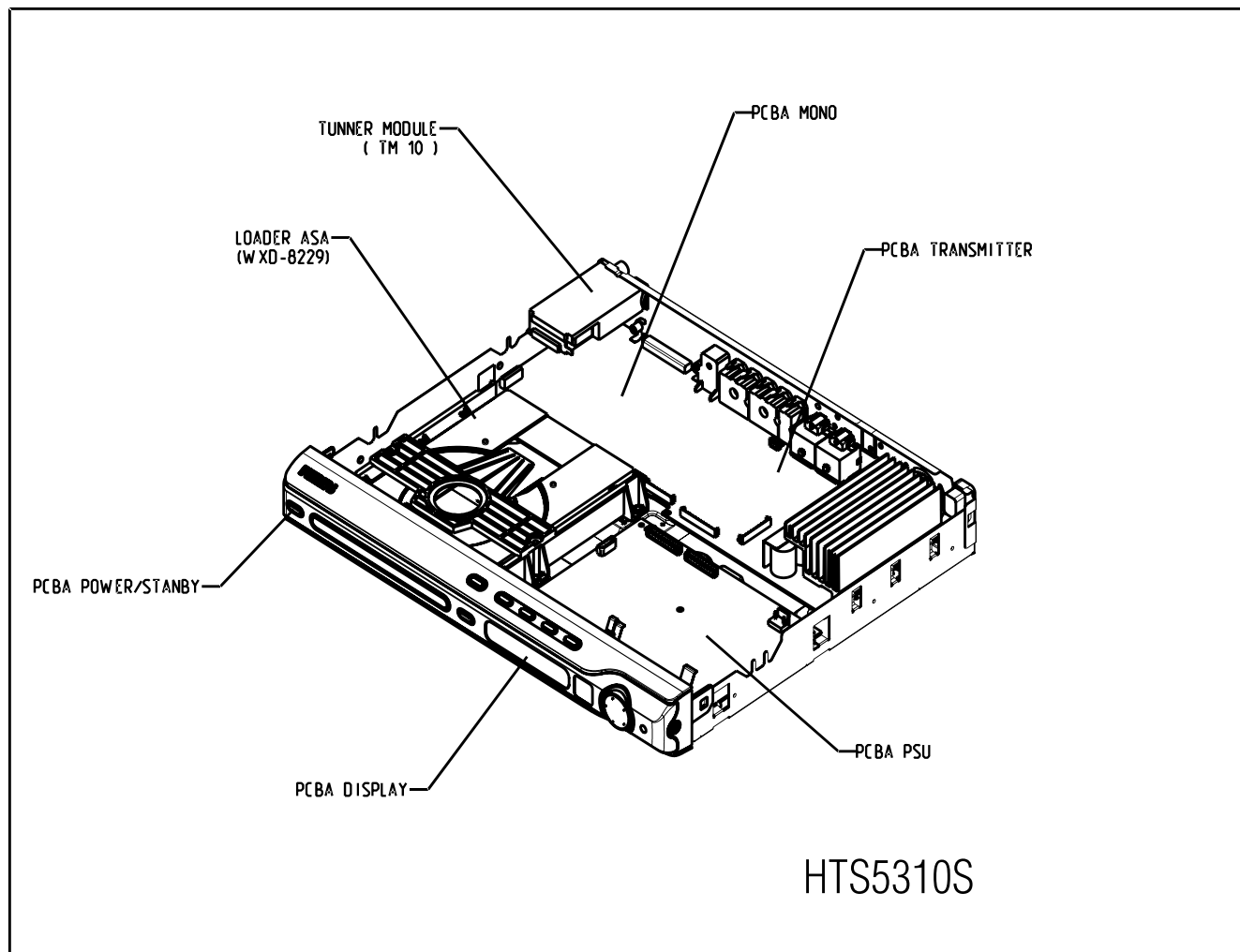


Contents	Page	Contents	Page
1 Technical Specifications and Connection Facilities	2	PSU Circuit Diagram	32
2 Measurements Setup, Service Aid & Lead Free Requirements	4	9 Exploded View & Spare Parts List	33
3 Directions For Use	8	Exploded View of the set	33
4 Dismantling Instructions & Service Positions	10	Spare Part List	34
5 Service Test Program	12		
6 FTD Display Pin Connection	14		
7 Block Diagram	15		
Wiring Diagram	16		
8 Circuit Diagram and PWB Layout	17		
Front: Display	17		
Front: Display (Top view)	18		
Front: Display (Bottom view)	19		
Front: Standby	20		
Mono Board: Circuit Diagram (Part 1)	21		
Mono Board: Circuit Diagram (Part 2)	22		
Mono Board: Circuit Diagram (Part 3)	23		
Mono Board: Circuit Diagram (Part 4)	24		
Mono Board: Circuit Diagram (Part 5)	25		
Mono Board: Circuit Diagram (Part 6)	26		
Mono Board: Circuit Diagram (Part 7)	27		
Mono Board: Circuit Diagram (Part 8)	28		
Mono Board: Circuit Diagram (Part 9)	29		
Layout: Mono Board (Top View)	30		
Layout: Mono Board (Bottom View)	31		

©Copyright 2005 Philips Consumer Electronics B.V. Eindhoven, The Netherlands.
All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise without the prior permission of Philips.



LOCATION OF PC BOARDS



VERSION VARIATIONS:

[illegible]

1. Specifications

1.1 General:

Mains voltage	: 230V for /05, /12, /51 120V/230V for /98
Mains frequency	: 50/60Hz for /98, 50Hz for /12, /05, /51
Power consumption	: 100W < 0.5W Eco standby power < 100W 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 for /12, /05, /51 100kHz for /98,
IF frequency	: 10.7MHz $\pm$ 25kHz
Aerial input	: 75 Ω coaxial
Sensitivity at 26dB S/N	: < 7 μ V
Selectivity at 600kHz bandwidth	: > 25dB
IF rejection	: > 60dB
Image rejection	: > 25dB
Distortion at RF=1mV, dev. 75kHz	: < 3%
-3dB Limiting point	: < 8 μ V
Crosstalk at RF=1mV, dev. 67.5kHz	: > 28dB
Crosstalk at RF=1mV, dev. 40kHz	: > 18dB

MW

Tuning range	: 531-1602kHz for /12, /05, /51, /98, /93, /55 530-1700kHz for /98, /55, /93
Grid	: 9kHz for /12, /05, /51, /98, /93, /55 10kHz for /98, /55, /93
IF frequency	: 450kHz $\pm$ 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 $\pm$ 0.5dB	: 20Hz-20kHz
Hum (Volume Minimum)	: 200nW
Residual noise (Volume Minimum)	: 40nW
Input sensitivity	
Aux In	: 1V $\pm$ 3dB at 22k Ω
Scart In	: 1V $\pm$ 3dB at 22k Ω
Output sensitivity	
Line Out (Left/Right)	: 1V $\pm$ 2dB at 10k Ω
Scart Out (Left/Right)	: 1V $\pm$ 2dB at 10k Ω

1.4 COMPACT DISC/VCD/DVD:

Video Decoding	: MPEG-1/MPEG-2/ MPEG-4/DivX 3.11, 4.x & 5.x
Video DAC	: 12 Bits
Signal System	: PAL / NTSC
Video Format	: 4:3 / 16:9
CVBS Out ¹⁾	
CVBS level	: 1.0 $\pm$ 0.1V _{p-p}
Luminance S/N	: $\geq$ 60dB

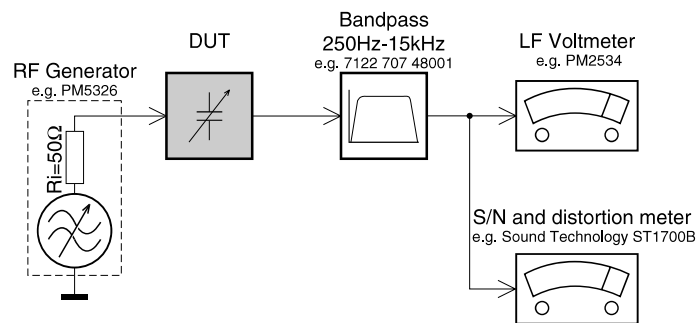
S-Video Out ¹⁾	
Y level	: 1.0 $\pm$ 0.1V _{p-p}
Y S/N	: $\geq$ 60dB
C level (burst)	: 286mV _{pp} +1/-4 dB
RGB/YUV Out 1)	
Amplitude	: 1.0 $\pm$ 0.1V _{p-p}
S/N	: $\geq$ 60dB

¹⁾ Output terminals to be terminated with 75 Ω

2. Measurements Setup, Service Aid & Lead Free Requirements

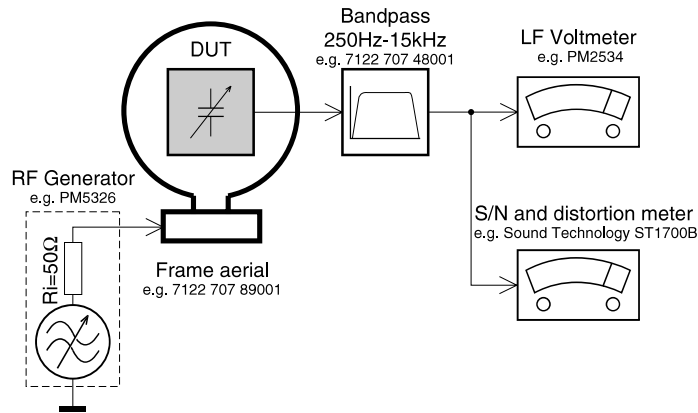
MEASUREMENT SETUP

Tuner FM



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

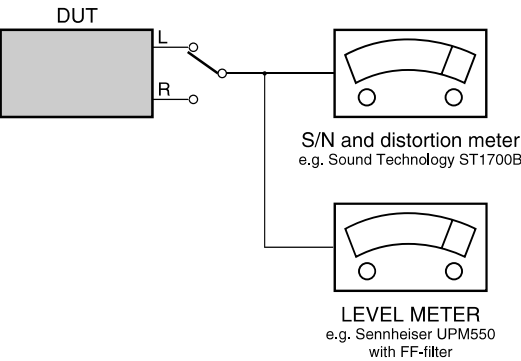
Tuner AM (MW,LW)



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).

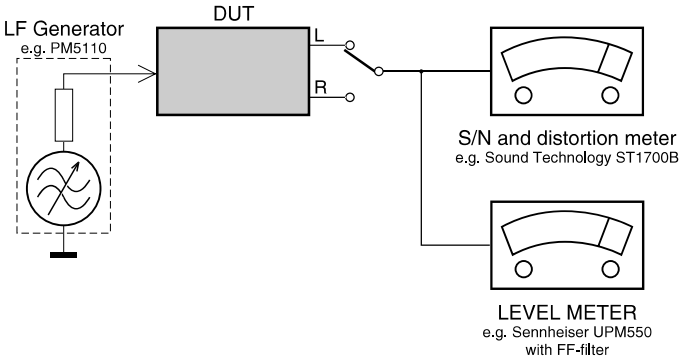
CD

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

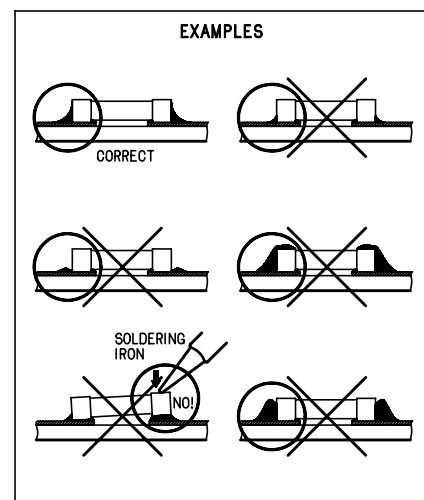
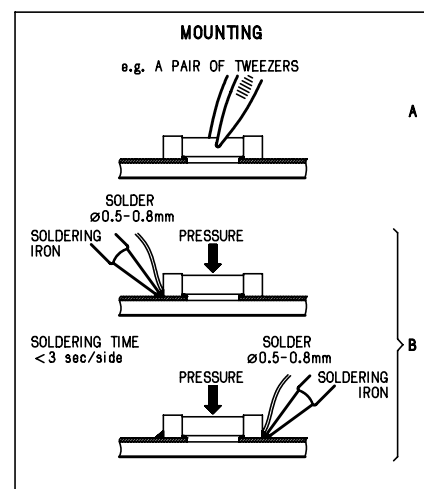
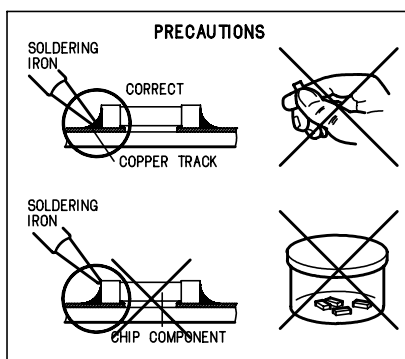
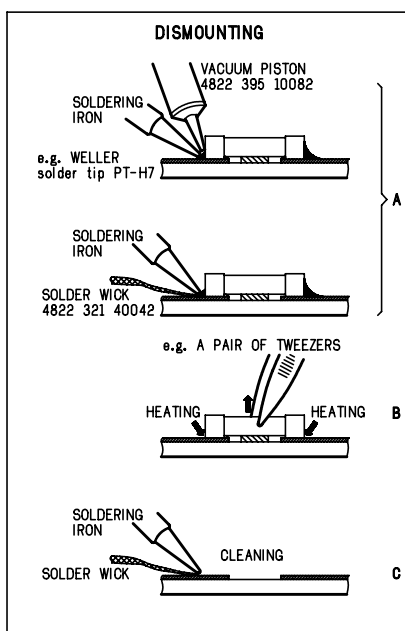
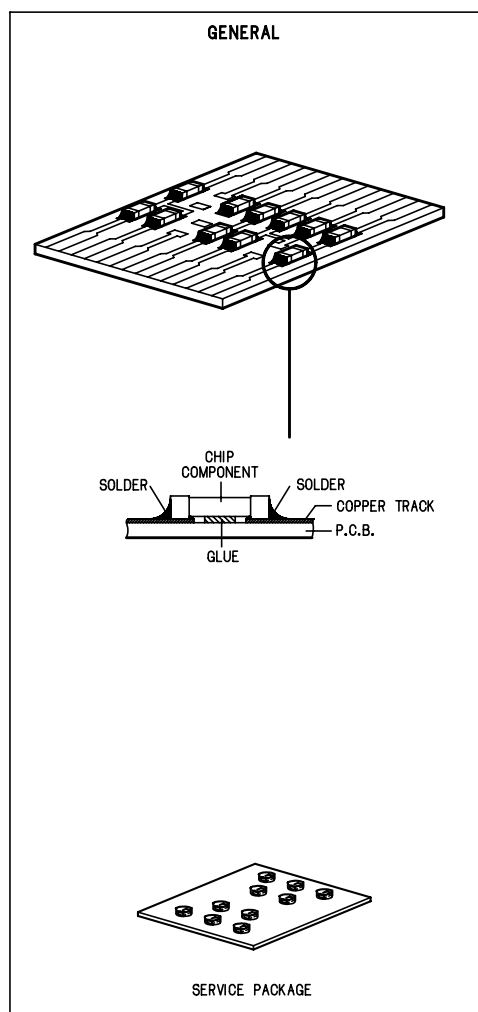
Service Tools:

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 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, 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 .

(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 utilisées les pièces de rechange identiques à celles spécifiées.

Less composants de sécurité sont marqués .

(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  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 .

(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 alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

(DK) Advarse !

Usynlig laserstråling ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse 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.

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.

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

HTS 5310S

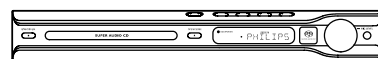
Home Theatre System

Quick Start Guide

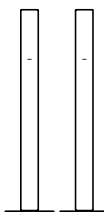
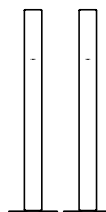
- 1 Connect
- 2 Setup
- 3 Enjoy



What's in the Box



DVD system

Front speakers
(left & right)Rear speakers
(left & right)

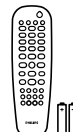
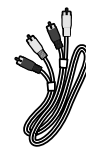
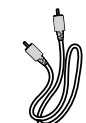
Centre speaker



Subwoofer



Quick start guide

Remote control
and 2 batteriesAudio cables
(red & white plugs)Video cables
(yellow plug)AM/MW
loop antenna

FM wire antenna



User manual

PHILIPS

3 Enjoy

Play DVD

1 Press **OPEN/CLOSE** on the front of the DVD system to open the disc tray.



2 Place DVD in tray with the label facing up.

3 Press **OPEN/CLOSE** again.

4 Press **UP** , **DOWN** , **RIGHT** or **LEFT** to scroll through the options in the DVD menu.

5 Press **PLAY** on the option you want.

6 To stop press **STOP** .

Tip Press **PLAY** to resume from where you stopped or press **STOP** and **PLAY** to start from the beginning of the title.

7 Press **DISC MENU** to go back to the DVD menu.

Listen to Radio

1 Press **TUNER** .

Front display

AUTO INSTALL PRESS PLAY

2 Press and hold **PLAY** until 'START' appears.

Tip This feature is only available for first time setup, refer to user manual if you wish to program radio stations again or for manual programming.



3 Once completed you can use **NEXT** or **PREVIOUS** to select a radio station.

Experience Surround Sound

1 Press **SURR** to switch between Stereo and Multi-channel.

2 Press **SOUND** for either Concert, Drama, Action or Sci-fi preset digital sound effects.

Troubleshooting

For more troubleshooting tips, see the user manual.

Problem

No power

Tip

- Check if the AC power cord is properly connected.
- Press the **STANDBY-ON** on the front of the DVD system to turn on the power.

No picture

- Press **DISC** on remote control.
- Check connection to TV and ensure the plugs are firmly in place.

No sound or distorted sound

- Adjust the volume.
- Check the speaker connections and settings.
- Check audio connections and press **SOURCE** button to select the correct input source.

Remote control does not work

- Check that the batteries are loaded correctly or replace the batteries with new ones.
- Select the source (**DISC** or **TUNER**, for example) before pressing the function button.
- Reduce the distance between the remote control and the system.
- Point the remote control directly toward the IR sensor.

Need help?

User Manual

For more product information refer to the user manual of the home theatre system.

Online

Go to www.philips.com/support

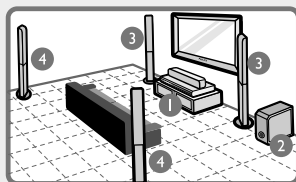


2005 © Koninklijke Philips N.V.
All rights reserved.
12 NC 31 39 115 17481
www.philips.com

1 Connect

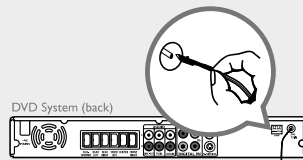
A Position Speakers & Subwoofer

- 1 Place centre speaker on or close to the TV.
- 2 Place subwoofer on the floor.
- 3 Place front speakers equal distance from the TV and angle them 45 degree to the listener.
- 4 Place rear speakers facing the listener, equal distance on the left and right.

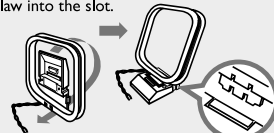


B Fix Antennas

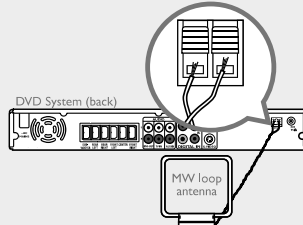
- 1 Connect the FM antenna to the FM socket, extend the antenna and fix it on the wall.



- 2 Unfold the AM/ MW loop antenna and fix the claw into the slot.

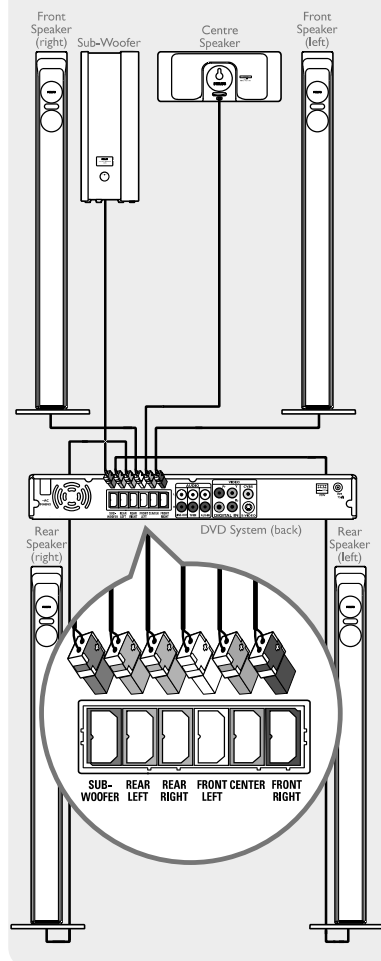


- 3 Push back tab and insert each wire into slot.



C Connect Speakers & Subwoofer to DVD System

Connect the various coloured plugs from the speakers and subwoofer to the same colour socket on the rear of DVD system.

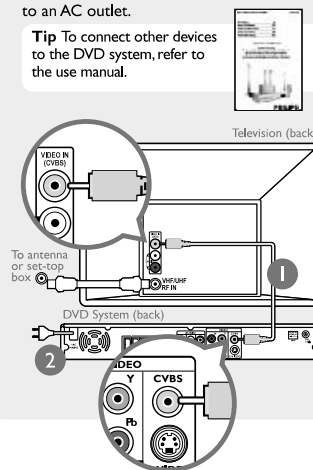


D Connect DVD system to TV

- 1 Use the yellow Video cable to connect the yellow CVBS socket on the rear of the DVD system and the yellow VIDEO IN jack at the rear of the TV.

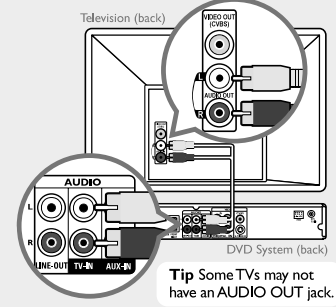
- 2 Plug in the power cable of the DVD system to an AC outlet.

Tip To connect other devices to the DVD system, refer to the use manual.



E Connect Audio from TV to DVD System (Optional)

Use the red & white audio cables to connect the red & white TV-IN sockets on the rear of the DVD system and the red & white AUDIO OUT sockets on the TV.

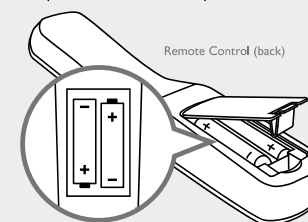


Tip Some TVs may not have an AUDIO OUT jack.

2 Setup

A Insert Batteries in Remote Control

- 1 Remove batteries compartment cover.
- 2 Insert the provided batteries in the remote control. Take note of where the positive and negative ends should go.
- 3 Replace the batteries compartment cover.



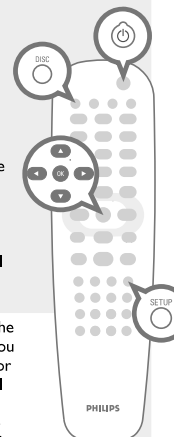
B Find Correct Viewing Channel

- 1 Press **STANDBY-ON** on the DVD system's remote control.
- 2 Press **DISC** on the remote control repeatedly until 'DISC' appears on the front panel.
- 3 Press **SETUP**.
- 4 Switch on the TV.
- 5 Press '0' on the TV's remote control, then repeatedly press the Channel Down button until you see the General Setup Page. This is the correct viewing channel for the home theatre system.

Tip In some TVs, to find the correct viewing channel, you can keep pressing the AV or the SELECT buttons. If still unable to find the correct viewing channel, check the connections again or check your TV's user manual.

- 6 Press **SETUP** to finish.

Tip To make changes to any of the options in the Setup menus, refer to the user manual.



4. Dismantling Instructions

4.1 Dismantling of the DVD Loader

- 1) The tray can be manually open by inserting a minus screw drive and push the lever in the direction as shown in Figure 3-1 to unlock the tray before sliding it out.



Figure 4-1

- 2) Slide out the tray and remove the Cover Tray (pos 110) as shown in Figure 4-2.

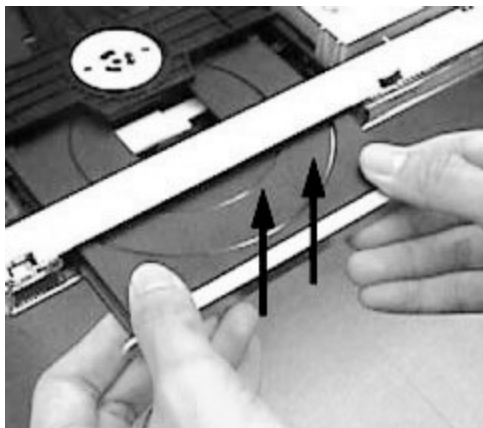


Figure 4-2

- 3) Loosen 5 screws to remove the Front Top.(pos 240)
 - 1 screw each on the left & right side (pos 272)
 - 3 screws behind
- 4) Loosen 4 screws C (see Figure 4-4) to remove the DVD Loader.

4.2 Dismantling of the Tuner Module, MONO Board, Front Board, PSU Module

- 1) Loosen 1 screw A (see Figure 4-3) to remove the Tuner Module (pos 1040).
- 2) Loosen 9 screws B (see Figure 4-3) and 4 screws (see Figure 4-4) to remove MONO Board.
- 3) Release 4 snap hooks to remove Front Board.
 - 1 snap hook each on the left & right side (pos 161).
 - 2 snap hooks on the bottom side (pos 161).
- 4) Loosen 4 screws E (see Figure 4-4) to remove the PSU Module.

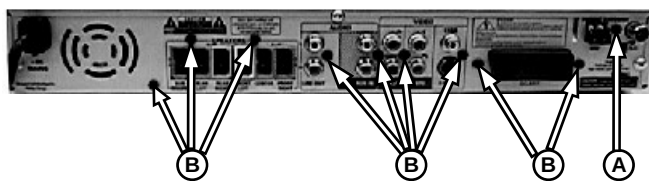


Figure 4-3

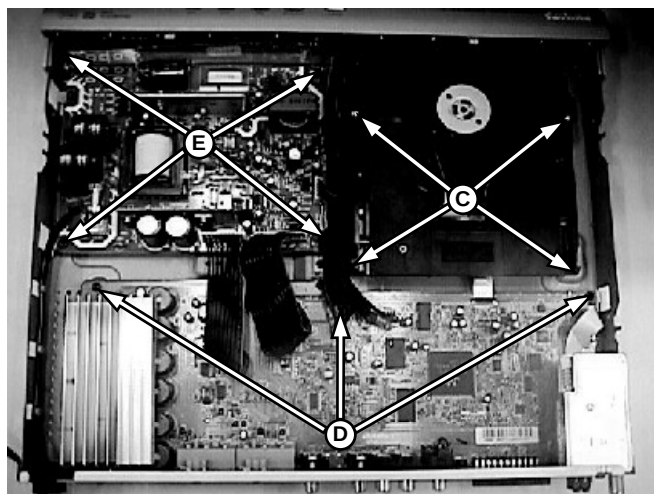
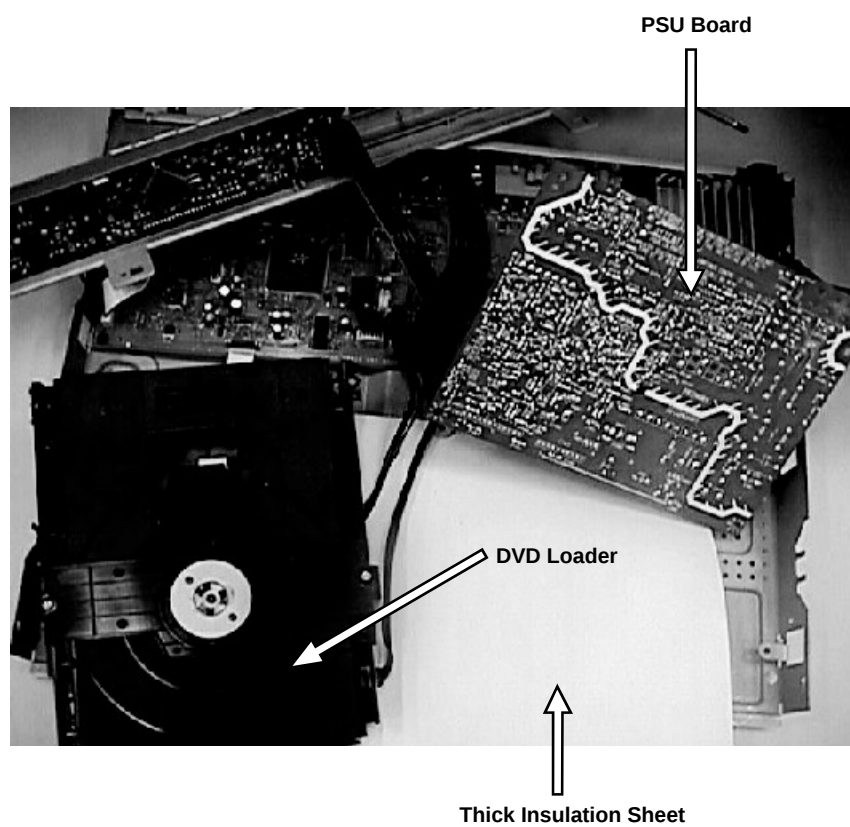
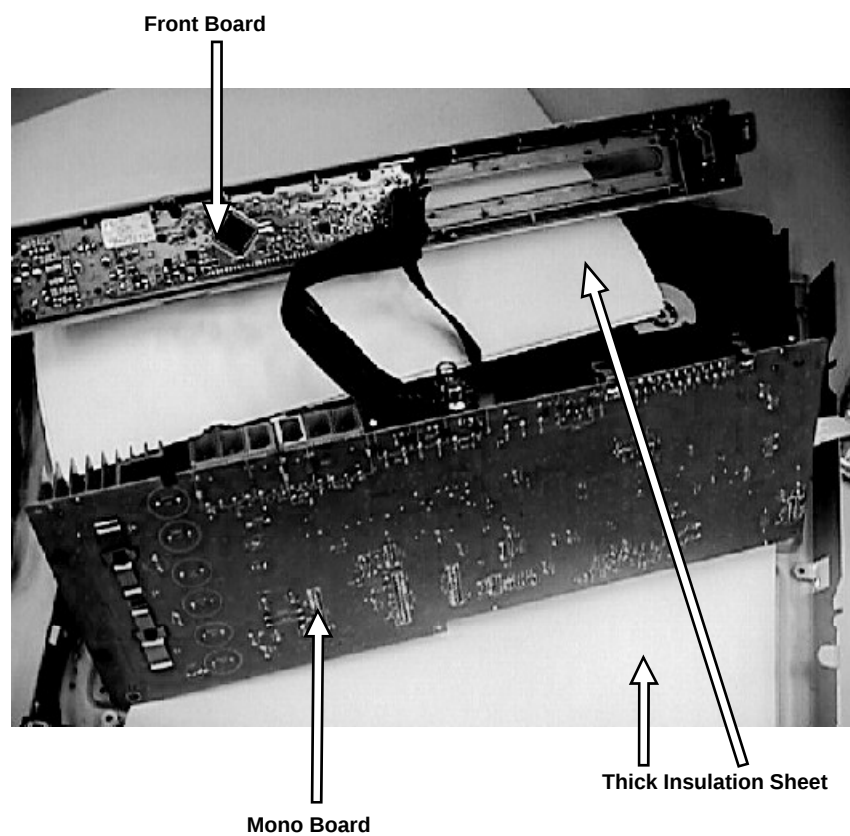
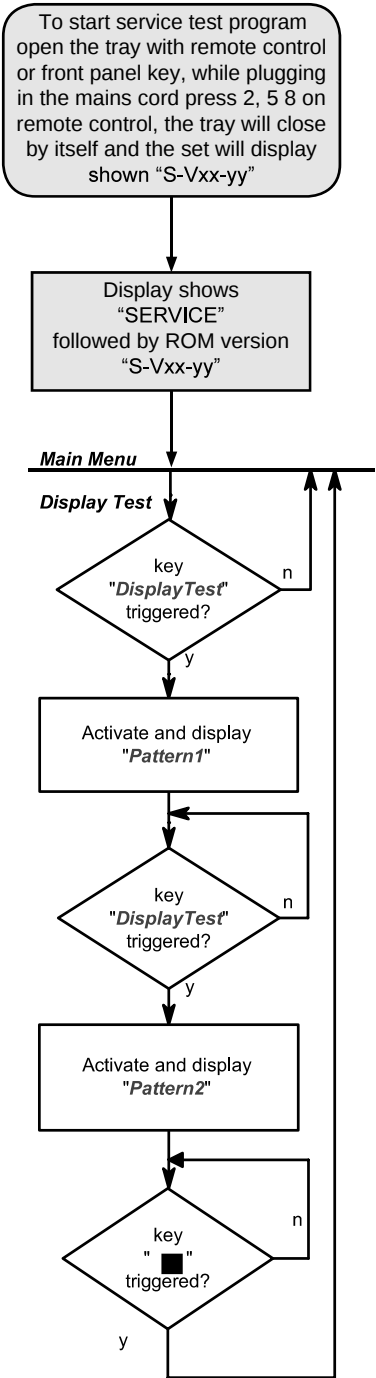


Figure 4-4

4.3 Service Positions



5. Service Test Program

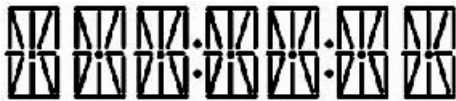


S refers to Service Mode
V refers to Version
xx refers to Software version number of BEA (counting up from 01 to 99)
yy refers to Software version number of Front uP (counting up from 01 to 99)

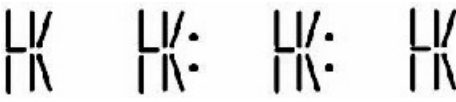
5.1 Display Test

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.

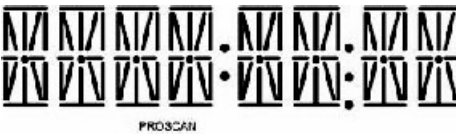
Player:
Following display patterns are used to test the display and its connections to μP.
Pattern 1: Default: All display control pins are ON
- to check the open-circuits



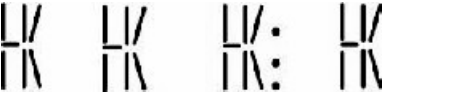
Pattern 2: Alternate display control pins are on (Test Pattern: 0x55)
- to check the short-circuits on Data port



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



TEST	Activated with	ACTION
EEPROM FORMAT TEST	◀◀ to Exit	Load default data. Display shows "NEW". Caution! All presets from the customer will be lost!!
ROTARY ENCODER TEST	Volume Knob	Display shows value for 2 seconds. Volume values increases or decreases in steps of 1 until 0 (VOL MIN) or 40 (VOL MAX) is reached.
LEAVE SERVICE TEST PROGRAM	Disconnect mains cord	

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 5310S/12	Europe	2	PAL
HTS 5310S/51	Russia	5	PAL
HTS 5310S/61	Korea	3	PAL
HTS 5310S/75	Australia	4	PAL
HTS 5310S/93	China	6	PAL
HTS 5310S/98	Asia Pacific	3	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 5310S/12
 - <9> <9> <9> <9> <ZOOM> <4> for HTS 5310S/51
 - <9> <9> <9> <9> <ZOOM> <3> for HTS 5310S/61
 - <9> <9> <9> <9> <ZOOM> <2> for HTS 5310S/75
 - <9> <9> <9> <9> <ZOOM> <1> for HTS 5310S/93
 - <9> <9> <9> <9> <AUDIO> <9> for HTS 5310S/98
- 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 = LX1S, LX1D or LX2W
 xx = version number
 YYYYY = model # - 3000S / 2000D / 5000W
 ZZ = stroke version
 DD = region code
 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 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.

5.1.7 Procedure to change Tuner Grid (not for all versions)

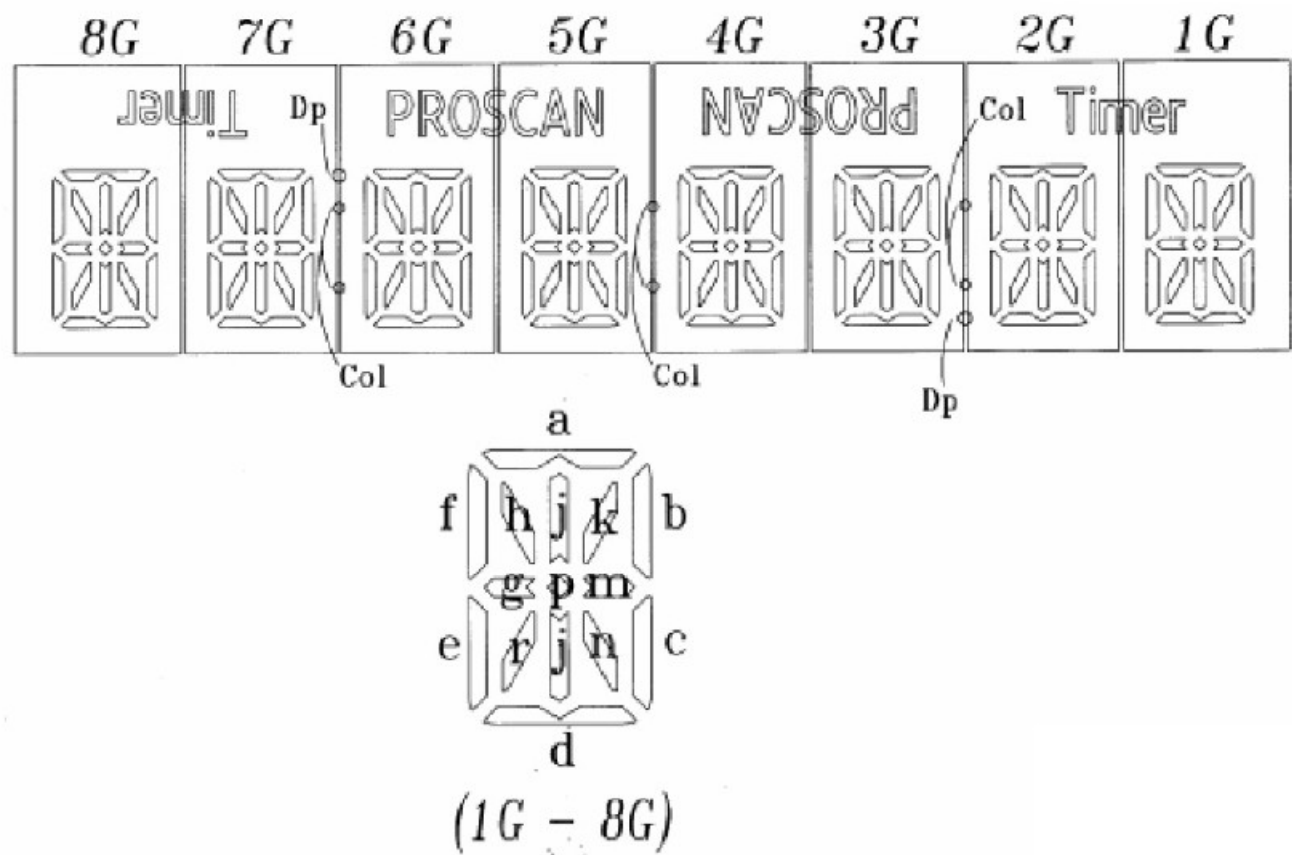
- Press **SOURCE** to select "FM" or "MW".
- ② Press **STANDBY ON** to switch the DVD system to standby mode.
- ③ Press **STANDBY ON** again to turn on the DVD system and hold down **◀◀** button on the front panel.
 → The display will show "GRID 9" or "GRID 10".

Helpful Hint:

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

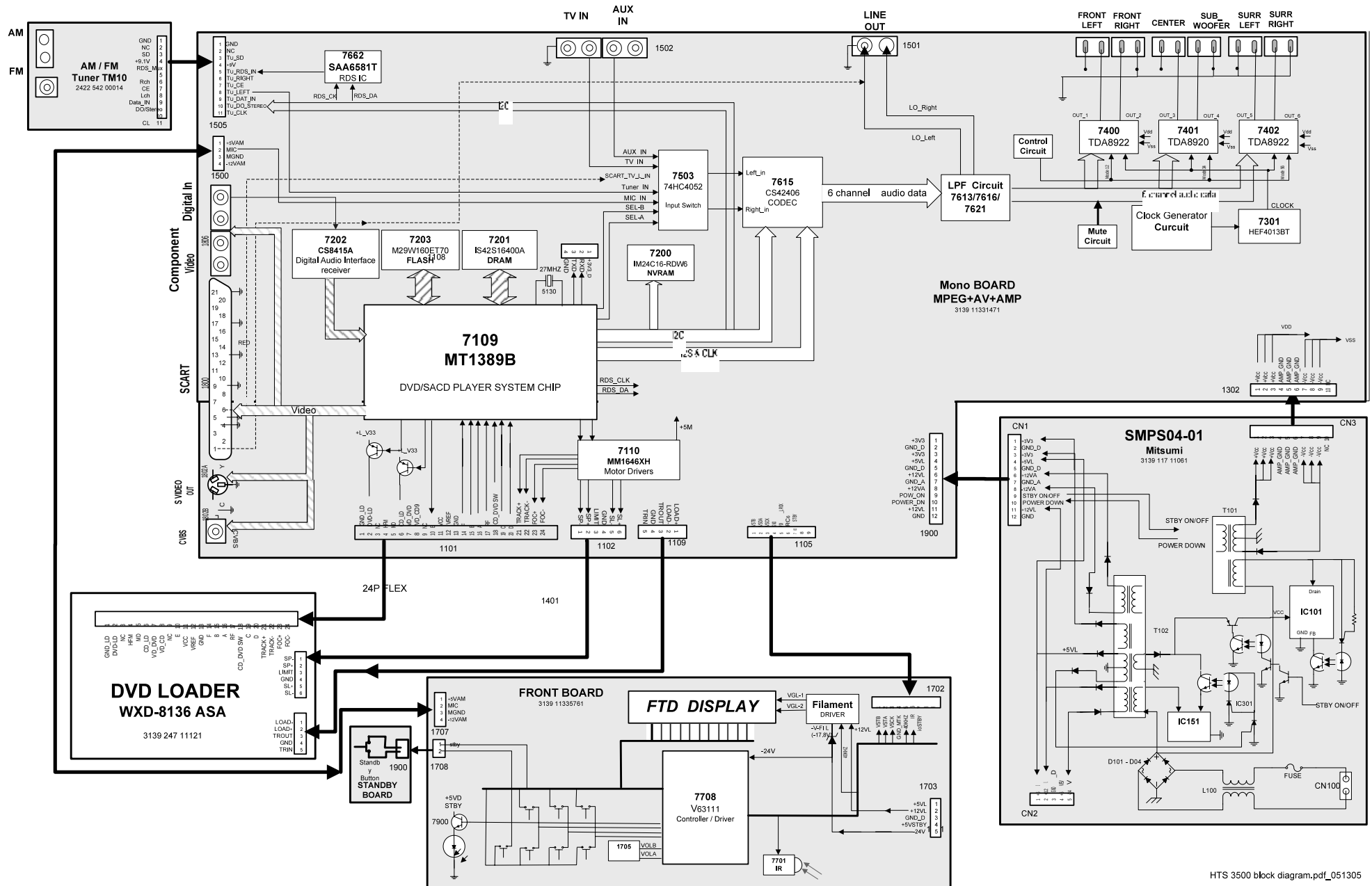
Note: Repeating the same action will toggle back to its previous tuning grid setting.

6. FTD Display Pin Connection

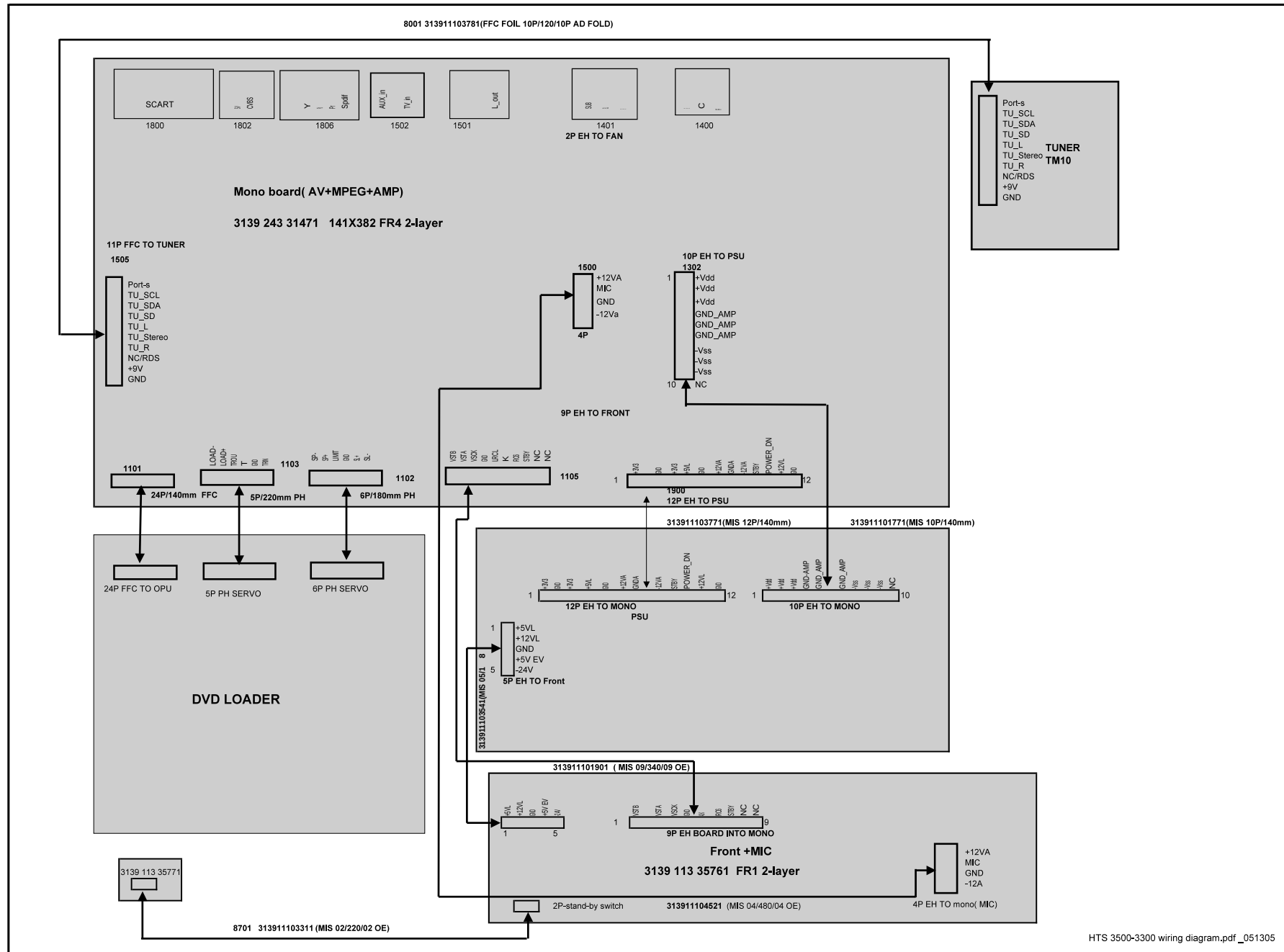


	8G	7G	6G	5G	4G	3G	2G	1G
P1	a	a	a	a	a	a	a	a
P2	j	j	j	j	j	j	j	j
P3	h	h	h	h	h	h	h	h
P4	k	k	k	k	k	k	k	k
P5	b	b	b	b	b	b	b	b
P6	f	f	f	f	f	f	f	f
P7	m	m	m	m	m	m	m	m
P8	g	g	g	g	g	g	g	g
P9	e	e	e	e	e	e	e	e
P10	e	e	e	e	e	e	e	e
P11	r	r	r	r	r	r	r	r
P12	n	n	n	n	n	n	n	n
P13	d	d	d	d	d	d	d	d
P14	col		col		col			
P15	p	p	p	p	p	p	p	p
P16	Timer		PROSCAN		PROSCAN		Timer	
P17	dp				dp			

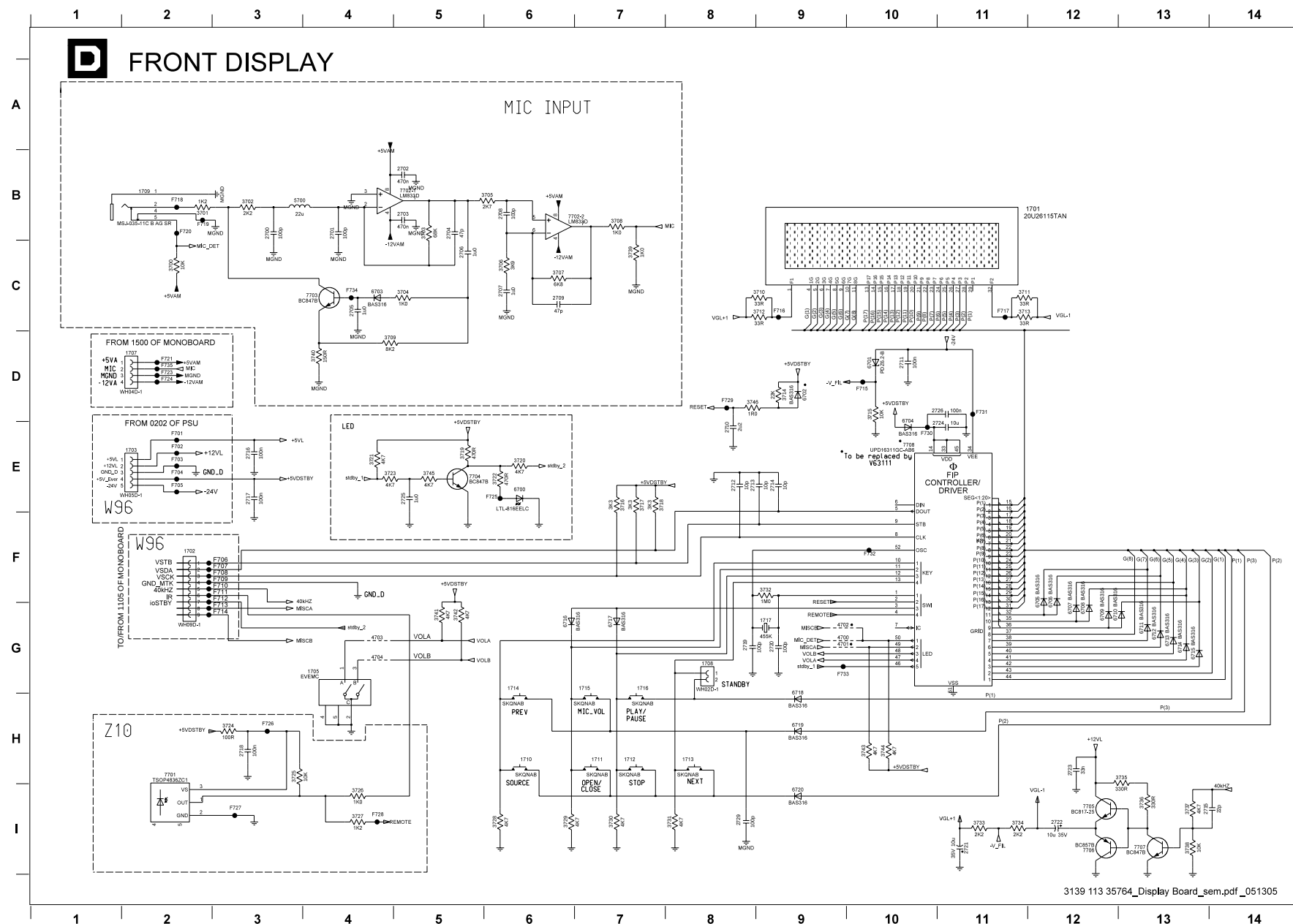
7. Block Diagram



Wiring Diagram



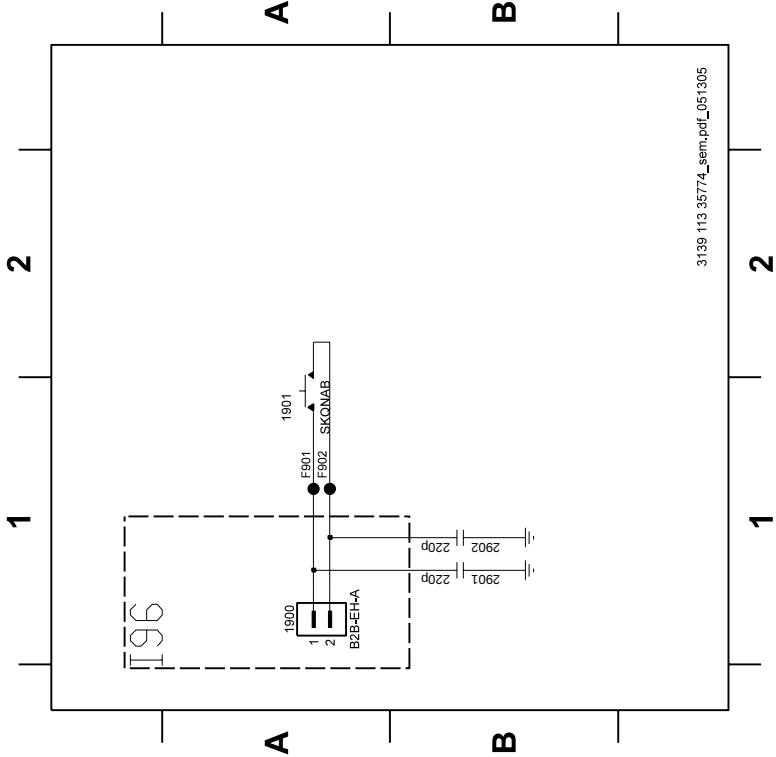
8. Front: Display



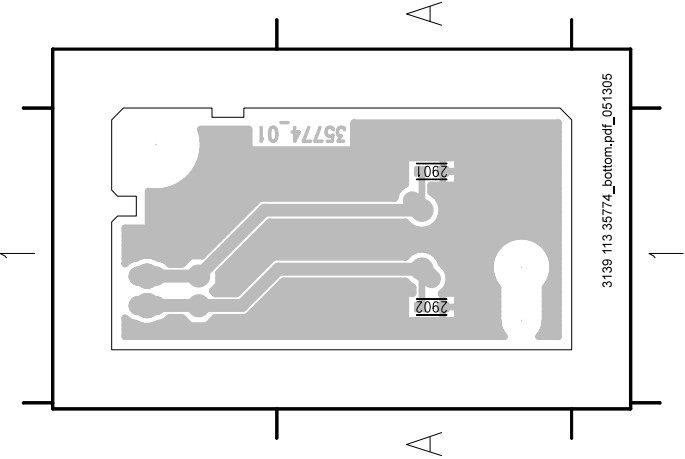
3139 113 35764_Display Board_sem.pdf_051305

Front: Standby

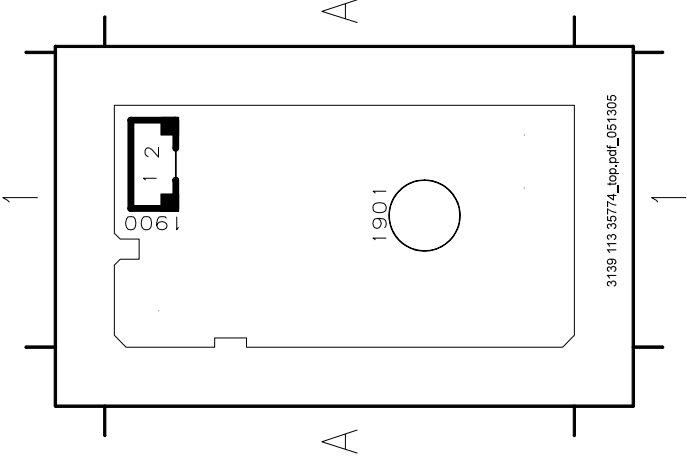
- 1900 A1
- 1901 A1
- 2901 B1
- 2902 B1
- F901 A1
- F902 A1



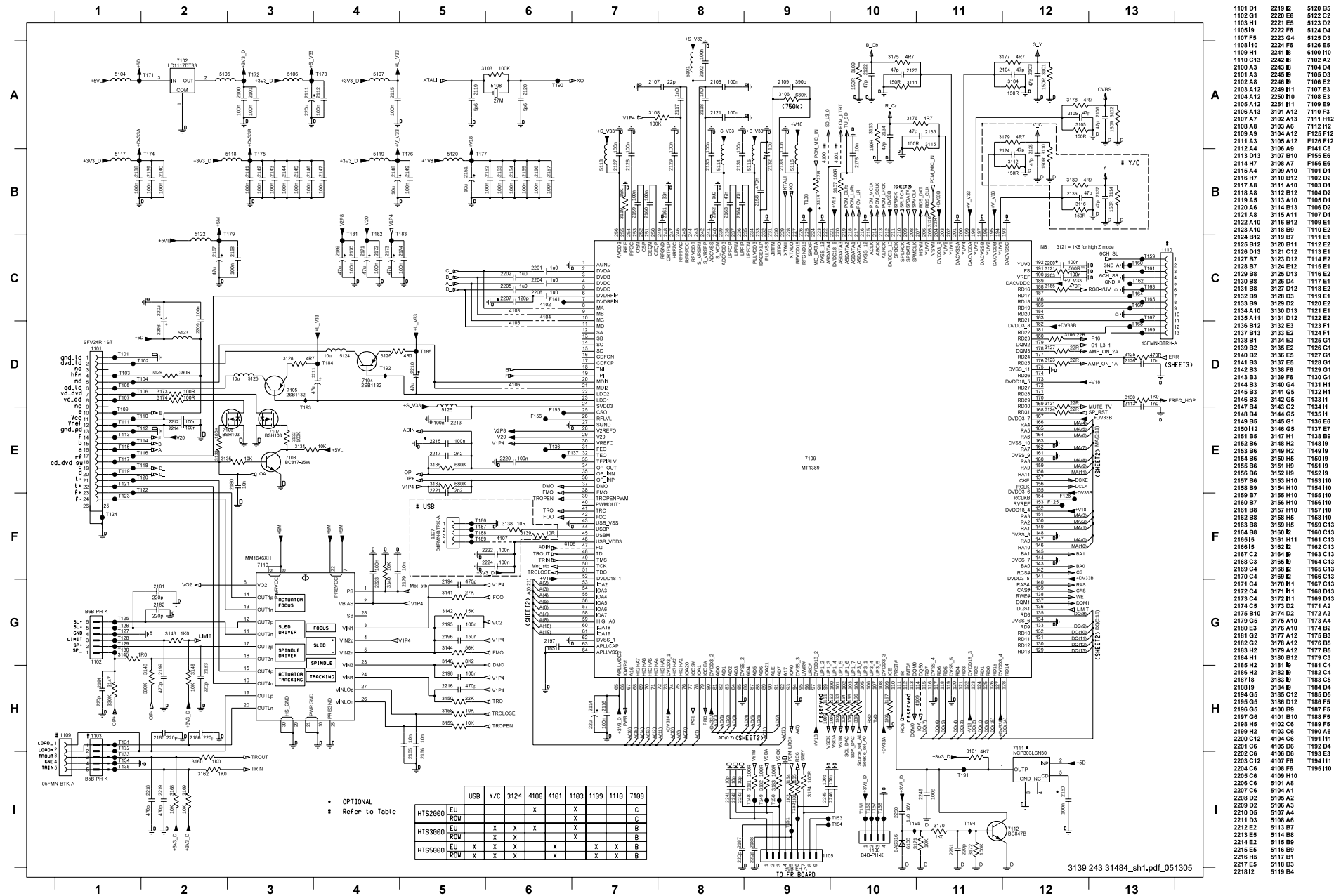
- 2901 A1
- 2902 A1



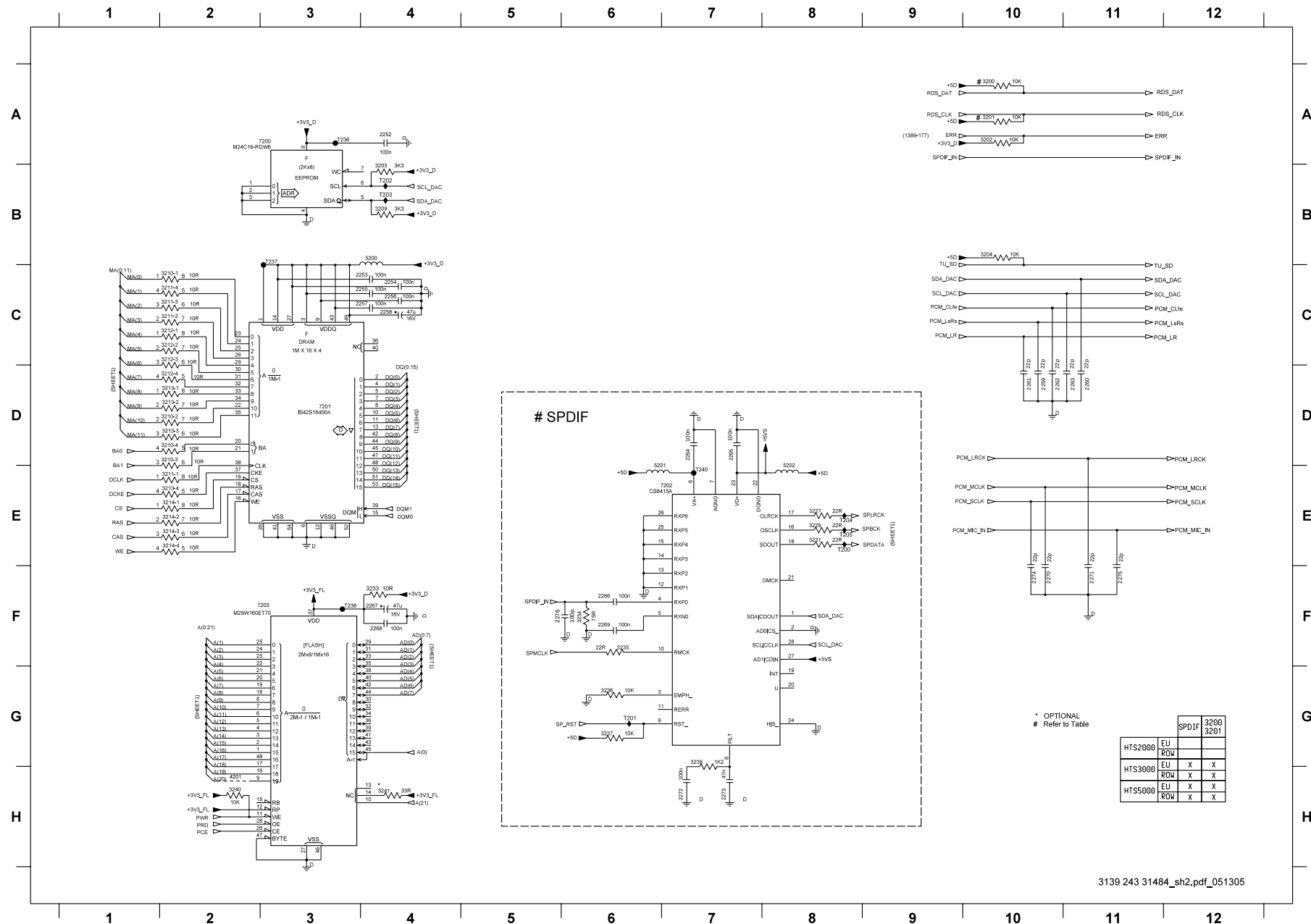
- 1900 A1
- 1901 A1



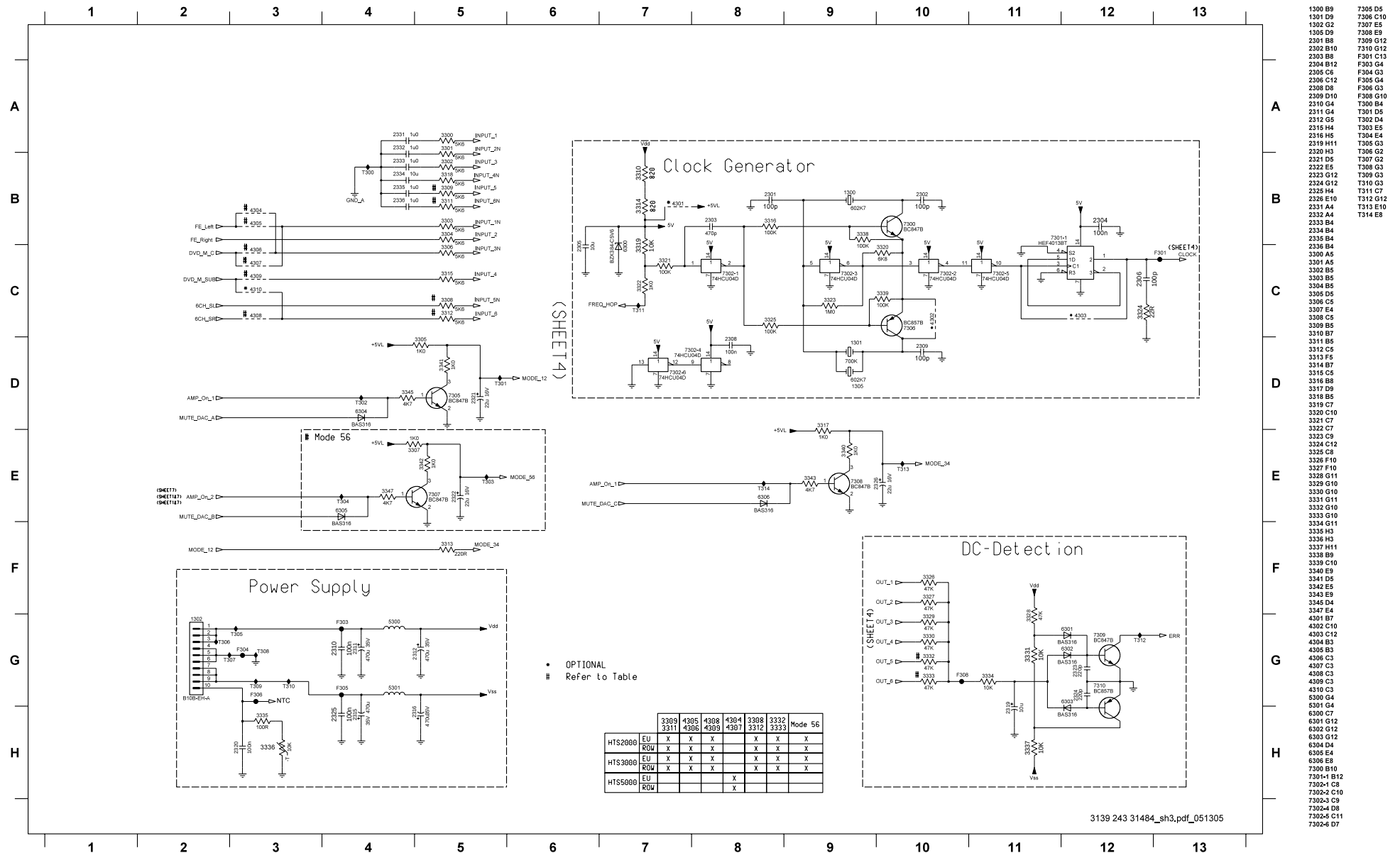
Mono Board: Circuit Diagram (Part 2)

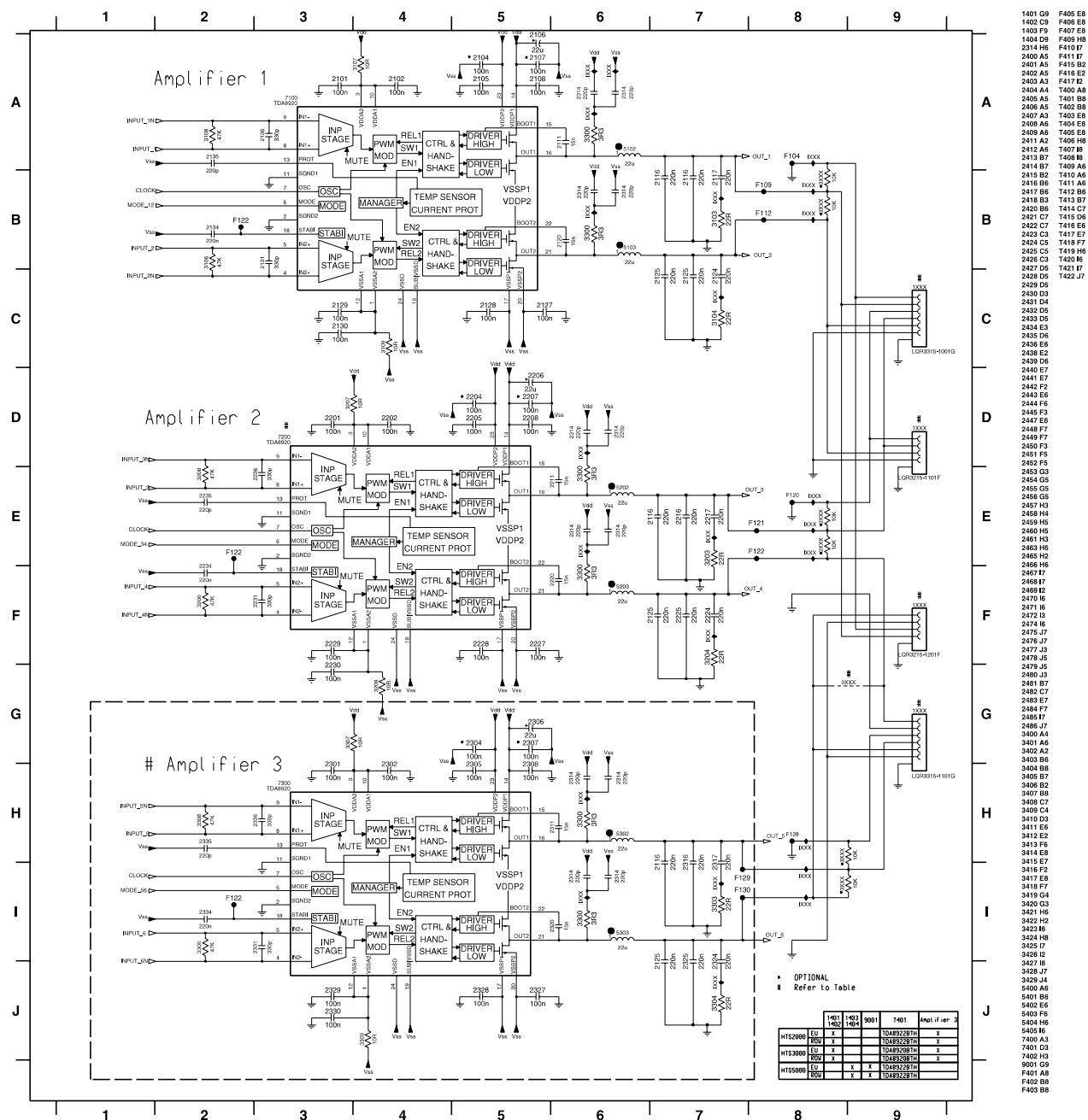


Mono Board: Circuit Diagram (Part 2)

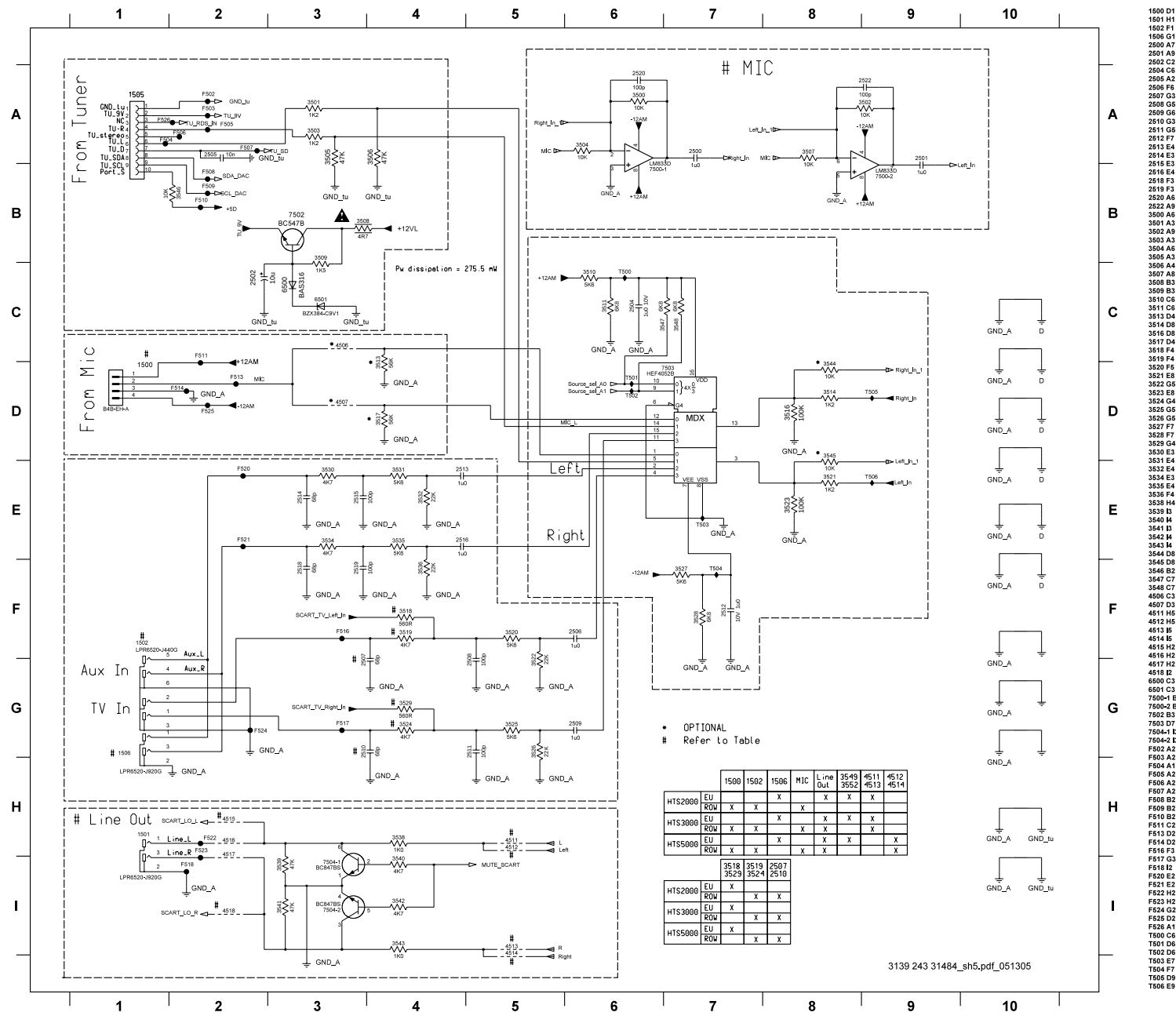


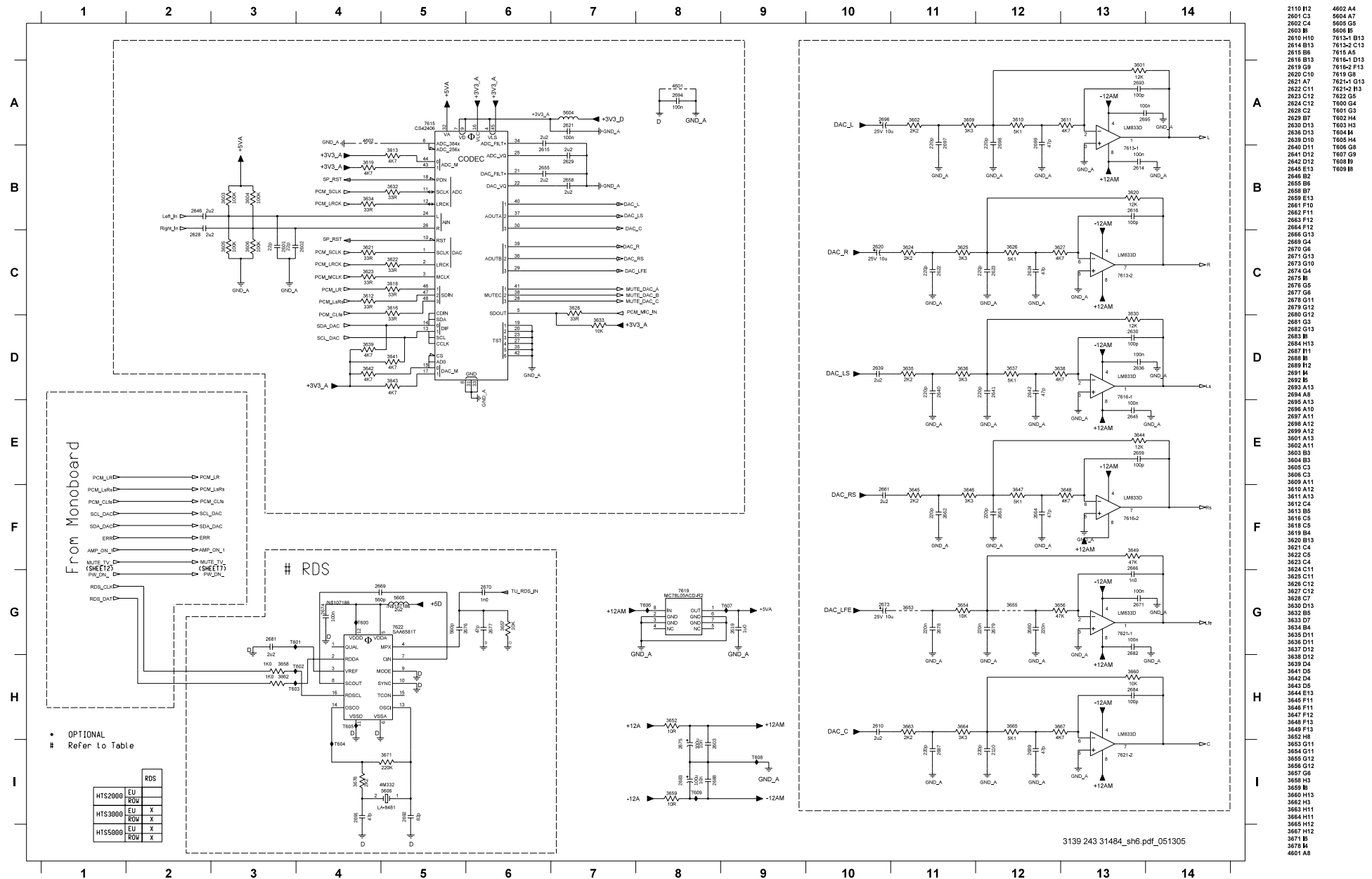
Mono Board: Circuit Diagram (Part 3)



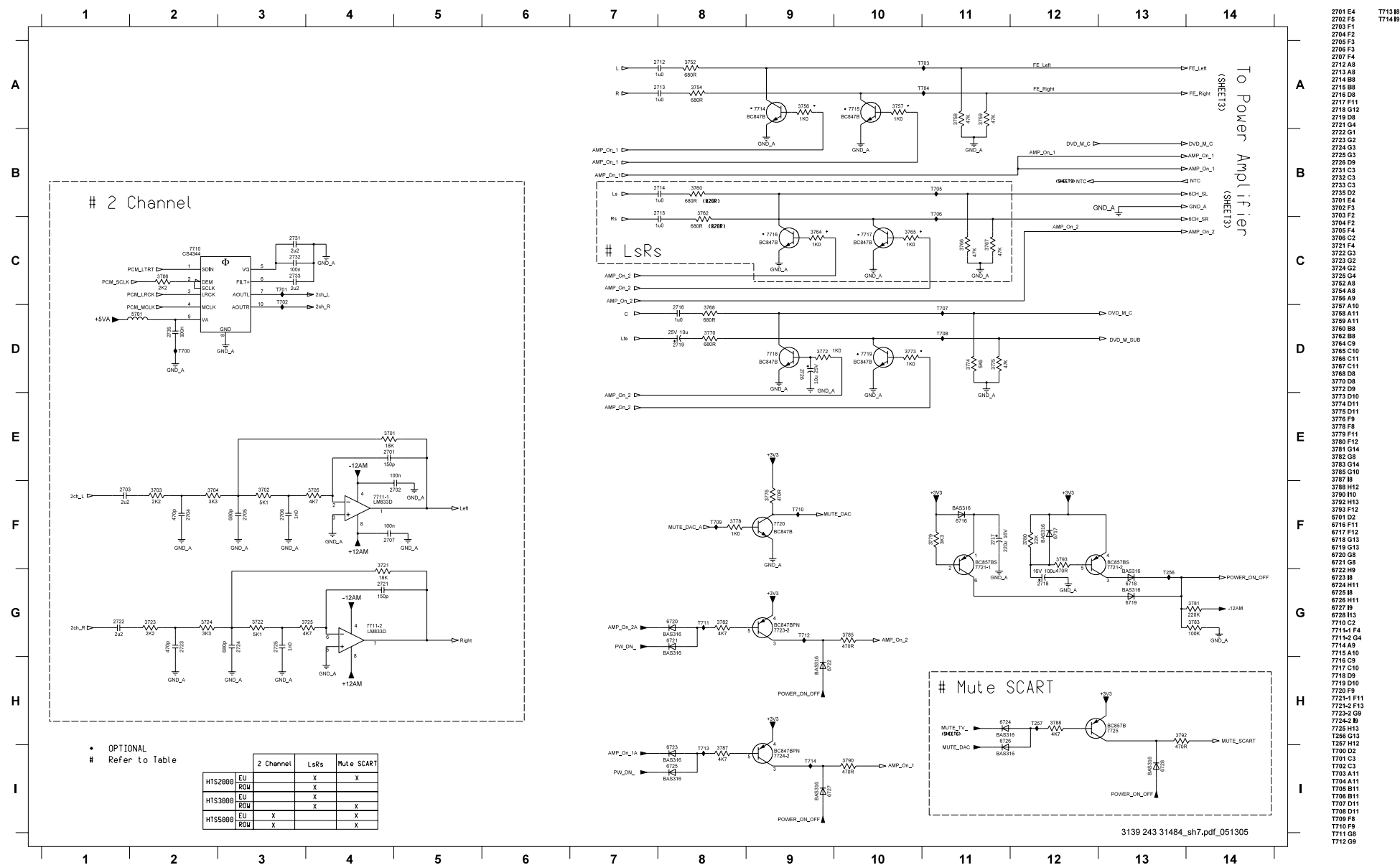


Mono Board: Circuit Diagram (Part 5)

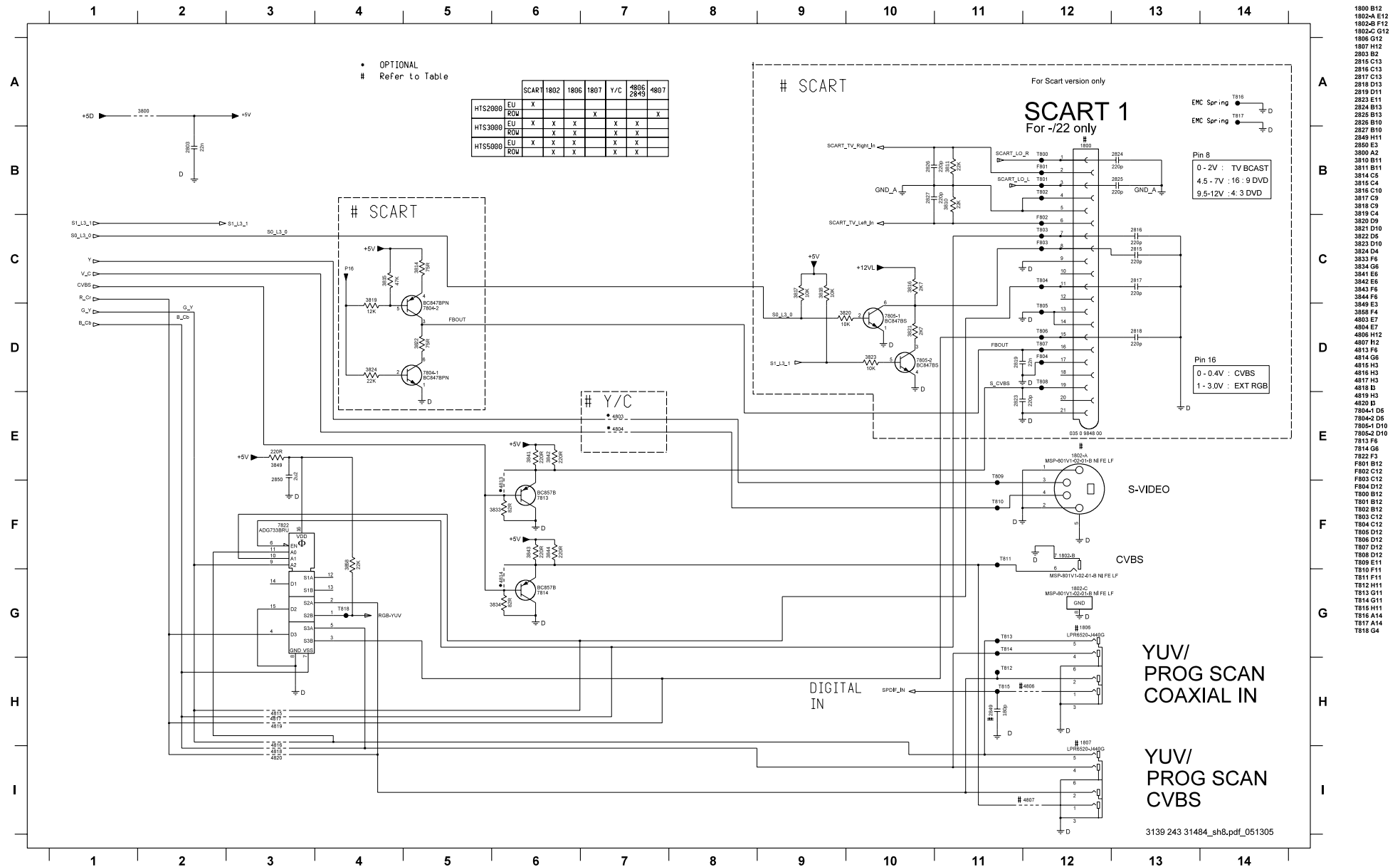




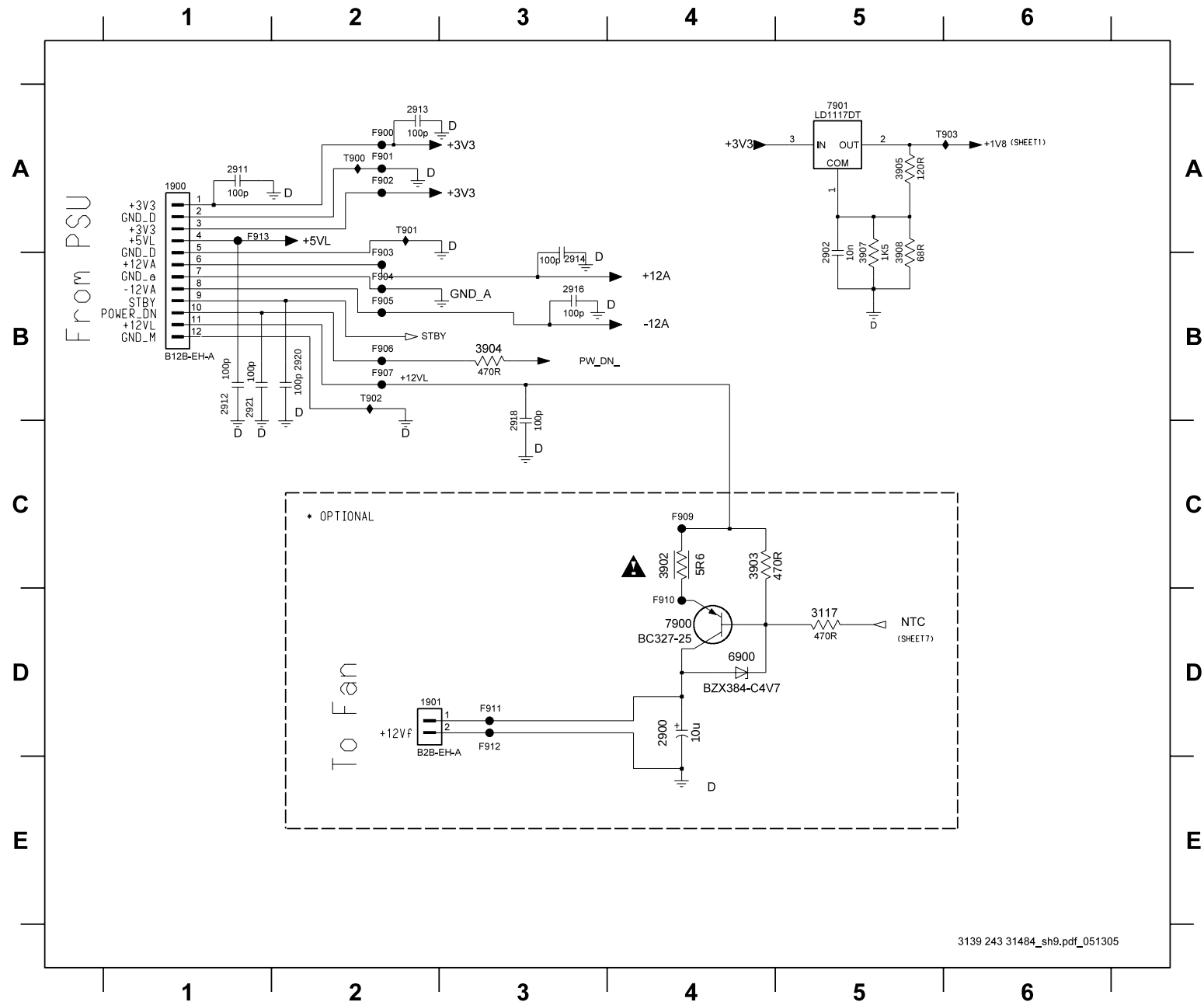
Mono Board: Circuit Diagram(Part 7)



Mono Board: Circuit Diagram (Part 8)

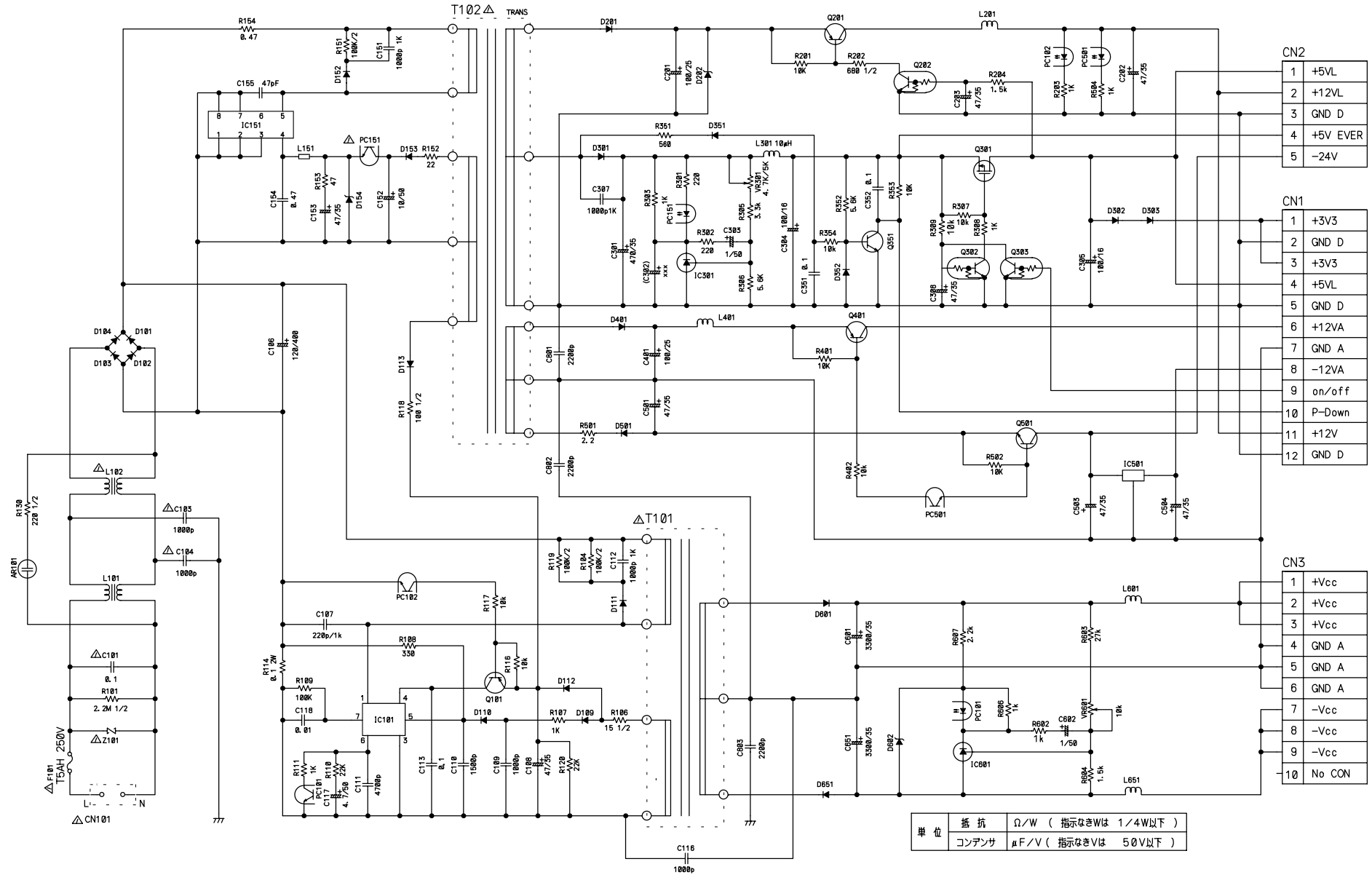


Mono Board: Circuit Diagram (Part 9)



1900 A1
1901 D2
2900 D4
2902 B5
2911 A1
2912 B1
2913 A2
2914 B3
2916 B3
2918 C3
2920 B2
2921 B1
3107 D5
3902 C4
3903 C4
3904 B3
3905 A5
3907 B5
3908 B5
6900 D4
7900 D4
7901 A5
F900 A2
F901 A2
F902 A2
F903 B2
F904 B2
F905 B2
F906 B2
F907 B2
F909 C4
F910 D4
F911 D3
F912 D3
F913 A1
T900 A2
T901 A2
T902 B2
T903 A6

PSU Circuit Diagram (For information only)



() : no stuff

HTS5310S (/12,/51,/61,/75,/93,/98)**MISCELLANEOUS**

0102	3139 247 51831	BADGE PHILIPS ASSY SILVER	
0110	3139 244 06051	COVER CD TRAY CHROME	
0119	3139 244 06041	BUTTON POWER/STANDBY PNT PRT	
0120	3139 244 06031	BUTTON OPEN/CLOSE PNT PRT	
0124	3139 244 06021	BUTTON SET SOURCE/CTRL PNT PRT	
0127	3139 244 06011	KNOB VOLUME CHROME	
0128	3139 244 05991	BUTTON MIC LEVEL PNT/61, /75, /93, /98 only	
0129	3139 244 06002	WINDOW DISPLAY EU PRT	/51 only
0165	3139 243 10080	CUSHION FOOT	
0331	2422 076 00546	CBLE FM AERIAL 24AWG BK B	
		/12, /51, /75, /93, /98 only	
0333	3139 258 70111	REMOTE CONTROL HTS3500S EU	
		/12, /51 only	
0333	3139 258 70101	REMOTE CONTROL HTS3500S AP	
		/61, /75, /93, /98 only	
0336	4822 321 11499	△ MAINSCORD 2.0M - EU	/12, /51, /98 only
0336	2422 070 98222	△ MAINSCORD KOR 3A 1M8 VH BK B	
		/61 only	
0336	2422 070 98233	△ MAINSCORD AUS 7A5 1M8 VH BK B	
		/75 only	
0336	2422 070 98232	△ MAINSCORD CHN 6A 1M8 VH BK B	
		/93 only	
1010	3139 118 58372	PCBA MONO HTS3000S EU	/12, /51 only
1010	3139 118 58382	PCBA MONO HTS3000S ROW	
		/61, /75, /93, /98 only	
1020	3139 247 11121	LOADER ASSY ST KHM RX	
1030	3139 117 11061	△ PCBA PSU 04-01 EU (MITSUMI)	
		/12, /51 only	
1030	3139 117 11051	△ PCBA PSU 04-01 WR (MITSUMI)	
		/61, /75, /93, /98 only	
1040	2422 542 00014	TUN A F ENG078VVQF EUR B/12, /51 only	
1040	2422 542 00015	TUN A F ENG068VVQF USA B	
		/61, /75, /93, /98 only	
8001	3139 241 01381	FFC FOIL10P/120/10P AD FOLD	
1010	3139 118 58512	PCBA DISPLAY HTS3000S EU/12, /51 only	
1020	3139 118 58492	PCBA STAND-BY KEY HTS3000S	

BOX SPK ASSY SW-3500HTS-E

9965 000 28372	HTS3500 SUBWOOFER
9965 000 28373	CLOTH FRAME ASS'Y (BACK)
9965 000 28374	CLOTH FRAME ASS'Y (FRONT)
9965 000 28375	RUBBER FOOT
9965 000 28376	CABLE A'SSY 5.3M PURPLE SMK

BOX SPK ASSY CS-5310HTS/12

9965 000 30398	SPEAKER BOX -M-L
9965 000 30399	SPEAKER BOX -M-R
9965 000 30400	SPEAKER BOX -S-L
9965 000 30401	SPEAKER BOX -S-R
9965 000 30392	CABLE ASSY - 6080MM WHITE
9965 000 30393	CABLE ASSY - 6080MM RED
9965 000 30394	CABLE ASSY - 16080MM BLUE
9965 000 30395	CABLE ASSY - 16080MM GREY
9965 000 30397	RUBBER FOOT (L/R SPK)
9965 000 30402	SPEAKER BOX (CENTRE)
9965 000 28367	CABLE A'SSY 5.2M GREEN SMK S
9965 000 28371	RUBBER FOOT 40.5LX6.0WX1.5T

PCBA MONO HTS3000S ROW (/61,/75,/93,/98)**MISCELLANEOUS**

1101	2422 025 17529	CON BM H 24P F 0.50 FFC 0.3 R
------	----------------	-------------------------------

CAPACITORS

2314	2238 600 15614	CER2 0805 X7R 100V 220P PM10 R
2400	2020 021 91431	ELCAP YXA 100V S 22U PM20
2408	2238 600 15614	CER2 0805 X7R 100V 220P PM10 R
2411	2238 600 15614	CER2 0805 X7R 100V 220P PM10 R
2412	2238 600 15614	CER2 0805 X7R 100V 220P PM10 R
2416	2238 600 15614	CER2 0805 X7R 100V 220P PM10 R
2420	2238 600 15614	CER2 0805 X7R 100V 220P PM10 R
2427	2020 021 91431	ELCAP YXA 100V S 22U PM20
2435	2238 600 15614	CER2 0805 X7R 100V 220P PM10 R
2438	2238 600 15614	CER2 0805 X7R 100V 220P PM10 R
2439	2238 600 15614	CER2 0805 X7R 100V 220P PM10 R
2443	2238 600 15614	CER2 0805 X7R 100V 220P PM10 R
2447	2238 600 15614	CER2 0805 X7R 100V 220P PM10 R
2454	2020 021 91431	ELCAP YXA 100V S 22U PM20
2465	2238 600 15614	CER2 0805 X7R 100V 220P PM10 R
2466	2238 600 15614	CER2 0805 X7R 100V 220P PM10 R
2470	2238 600 15614	CER2 0805 X7R 100V 220P PM10 R
2474	2238 600 15614	CER2 0805 X7R 100V 220P PM10 R

RESISTORS

3210	4822 117 12662	10R X4 5%
3211	4822 117 12662	10R X4 5%
3212	4822 117 12662	10R X4 5%
3213	4822 117 12662	10R X4 5%
3214	4822 117 12662	10R X4 5%
3508	4822 052 10478	4R70 5% 0,33W
3849	2422 549 43062	IND FXD SM EMI 100MHZ 600R R

COILS & FILTERS

5101	2422 549 43062	IND FXD SM EMI 100MHZ 600R R
5104	2422 549 45618	IND FXD 0603 EMI 100MHZ 60R R
5105	2422 549 45618	IND FXD 0603 EMI 100MHZ 60R R
5106	4822 157 71206	BLM21A601SPT
5107	4822 157 71206	BLM21A601SPT
5108	2422 543 01393	RES XTL SM 27MHZ 10P CX8045 R
5113	2422 549 43062	IND FXD SM EMI 100MHZ 600R R
5114	2422 549 43062	IND FXD SM EMI 100MHZ 600R R
5115	2422 549 43062	IND FXD SM EMI 100MHZ 600R R
5116	2422 549 43062	IND FXD SM EMI 100MHZ 600R R
5117	2422 549 43062	IND FXD SM EMI 100MHZ 600R R
5118	2422 549 43062	IND FXD SM EMI 100MHZ 600R R
5119	4822 157 71206	BLM21A601SPT
5120	2422 549 45618	IND FXD 0603 EMI 100MHZ 60R R
5122	4822 157 71206	BLM21A601SPT
5123	2422 549 43062	IND FXD SM EMI 100MHZ 600R R
5124	3198 018 31090	FXDIND SM 0805 10U PM10 COL R
5125	3198 018 31090	FXDIND SM 0805 10U PM10 COL R
5126	2422 549 43062	IND FXD SM EMI 100MHZ 600R R
5200	2422 549 43062	IND FXD SM EMI 100MHZ 600R R
5201	2422 549 43062	IND FXD SM EMI 100MHZ 600R R
5202	2422 549 43062	IND FXD SM EMI 100MHZ 600R R
5300	4822 157 11411	100MHZ
5301	4822 157 11411	100MHZ
5400	2422 536 00822	IND FXD 16RHP S 22U P10M20 B
5401	2422 536 00822	IND FXD 16RHP S 22U P10M20 B
5402	2422 536 00822	IND FXD 16RHP S 22U P10M20 B
5403	2422 536 00822	IND FXD 16RHP S 22U P10M20 B
5404	2422 536 00822	IND FXD 16RHP S 22U P10M20 B
5405	2422 536 00822	IND FXD 16RHP S 22U P10M20 B
5604	2422 549 43062	IND FXD SM EMI 100MHZ 600R R

DIODES

6100	4822 130 11397	BAS316
6300	3198 020 55680	DIO REG SM BZX384-C5V6 COL R
6301	4822 130 11397	BAS316
6302	4822 130 11397	BAS316
6303	4822 130 11397	BAS316
6304	4822 130 11397	BAS316
6305	4822 130 11397	BAS316
6306	4822 130 11397	BAS316
6307	4822 130 11397	BAS316
6308	4822 130 11397	BAS316
6309	4822 130 11397	BAS316
6500	4822 130 11397	BAS316
6501	9322 159 70685	DIO REG SM MM3Z9V1 (ONSE) R
6716	4822 130 11397	BAS316
6717	4822 130 11397	BAS316
6718	4822 130 11397	BAS316
6719	4822 130 11397	BAS316
6720	4822 130 11397	BAS316
6721	4822 130 11397	BAS316
6722	4822 130 11397	BAS316
6723	4822 130 11397	BAS316
6724	4822 130 11397	BAS316
6725	4822 130 11397	BAS316
6726	4822 130 11397	BAS316

DIODES

6727	4822 130 11397	BAS316
6728	4822 130 11397	BAS316

TRANSISTORS & INTEGRATED CIRCUITS

7102	4822 209 17398	LD1117DT33
7104	4822 130 11565	2SB1132
7105	4822 130 11565	2SB1132
7106	9340 547 13215	FET SIG SM BSH103 (PHSE) R
7107	9340 547 13215	FET SIG SM BSH103 (PHSE) R
7108	9340 219 30115	BC817-25W
7109	9322 219 32671	IC SM MT1389EE/B-L (MEDI) Y
7110	9322 201 94668	IC SM MM1646XH (MITM) R
7112	5322 130 60159	BC846B
7201	9322 209 03668	IC SM IS42S16400B-7TL (ISSI) R
7202	9322 185 10668	IC SM CS8415A-CZ (CILO) R
7204	3139 110 53801	FLASH ASSY HTS3500
7300	5322 130 60159	BC846B
7301	5322 209 14477	HEF4013BT
7302	5322 209 11517	PC74HCU04T
7305	5322 130 60159	BC846B
7306	4822 130 60373	BC856B
7307	5322 130 60159	BC846B
7308	5322 130 60159	BC846B
7309	5322 130 60159	BC846B
7310	4822 130 60373	BC856B
7400	9352 753 45518	IC SM TDA8922BTH/N2 (PHSE) R
7401	9352 753 44518	IC SM TDA8920BTH/N2 (PHSE) R
7402	9352 753 45518	IC SM TDA8922BTH/N2 (PHSE) R
7500	4822 209 30095	LM833D
7502	4822 130 40959	BC547B
7503	5322 209 11102	HEF4052BT
7504	9340 425 20115	TRA SIG SM BC847BS (PHSE) R
7613	4822 209 30095	LM833D
7615	9322 215 93668	IC SM CS42406-CQZ (CILO) R
7616	4822 209 30095	LM833D
7619	4822 209 33411	MC78L05ACD
7621	4822 209 30095	LM833D
7720	5322 130 60159	BC846B
7721	9340 425 10115	TRA SIG SM BC857BS (PHSE) R
7723	9340 425 30115	TRA SIG SM BC847BPN (PHSE) R
7724	9340 425 30115	TRA SIG SM BC847BPN (PHSE) R
7725	4822 130 60373	BC856B
7822	9322 220 63668	IC SM TS5V330PW (TI00) R
7901	9322 144 97668	IC SM LD1117DT (ST00) R

PCBA DISPLAY HTS3000S AP (/61,/75,/93,/98)**MISCELLANEOUS**

1701	3139 111 04131	FTD HUV-08SS57T (LX-3900SA)
1705	2422 129 16836	ROT ENCODER 12P EVEGC2F2012B B
1709	2422 026 05691	SOC PHONE H 1P F 3.5 MSJ Y
1710	4822 276 13775	SWITCH
1711	4822 276 13775	SWITCH
1712	4822 276 13775	SWITCH
1713	4822 276 13775	SWITCH
1714	4822 276 13775	SWITCH
1715	4822 276 13775	SWITCH
1716	4822 276 13775	SWITCH
1717	2422 540 98011	RES CER 455KHZ CSB*E B

COILS & FILTERS

5700	4822 126 14491	2.2UF 10V 0805
6700	9322 179 76676	LED VS LTL-816EELC (LITO) A
6701	9340 548 54115	DIO REG SM PDZ6.2B (PHSE) R
6703	4822 130 11397	BAS316
6704	4822 130 11397	BAS316
6705	4822 130 11397	BAS316
6706	4822 130 11397	BAS316
6707	4822 130 11397	BAS316
6708	4822 130 11397	BAS316
6709	4822 130 11397	BAS316
6710	4822 130 11397	BAS316
6711	4822 130 11397	BAS316
6712	4822 130 11397	BAS316
6713	4822 130 11397	BAS316
6714	4822 130 11397	BAS316
6715	4822 130 11397	BAS316
6716	4822 130 11397	BAS316
6717	4822 130 11397	BAS316
6718	4822 130 11397	BAS316
6719	4822 130 11397	BAS316
6720	4822 130 11397	BAS316

TRANSISTORS & INTEGRATED CIRCUITS

7701	9322 185 95667	IR RECEIVER TSOP4836 (VISH)L
7702	4822 209 30095	LM833D
7703	5322 130 60159	BC846B
7704	5322 130 60159	BC846B
7705	4822 130 42804	BC817-25
7706	4822 130 60373	BC856B
7707	5322 130 60159	BC846B
7708	9322 217 04671	IC SM V63111LF (VAIT) Y