

# Service Service Service



# Service Manual



Internet Radio

## TABLE OF CONTENTS

Location of PCBs .....	1-1	PB - Aux IN.....	8-1
Specifications .....	1-2	PB - Headphone .....	9-1
Measurement Setup .....	1-3	PB - KEYS.....	10
Service Aids, Safety Instruction, etc. ....	1-4	Circuit diagram .....	10-1
Instructions On CD Playability .....	1-5 to 1-6	Layout diagram.....	10-2
Software & Firmware Upgrade .....	2-1...2-2	PB - KEYS & RC.....	11
Malfunction Check Chart (TBC) .....	2-3	Circuit diagram .....	11-1
Service Test Program.....	3-1...3-2	Layout diagram.....	11-2
Disassembly Diagram .....	4-1	PB - LCD Interface.....	12-1
Block Diagram .....	5-1	PB - HasLi - 08 .....	13
Wiring Diagram.....	6-1	Circuit diagram .....	13-1...13-9
PB - AF/AMP .....	7	Layout diagram.....	13-10...13-11
Circuit diagram .....	7-1...7-4	Explode View .....	14-1
Layout diagram.....	7-5...7-6	Service Partlist .....	14-2

© Copyright 2008 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.

Published by DB 0824 Service Audio Printed in The Netherlands Subject to modification

**CLASS 1  
LASER PRODUCT**

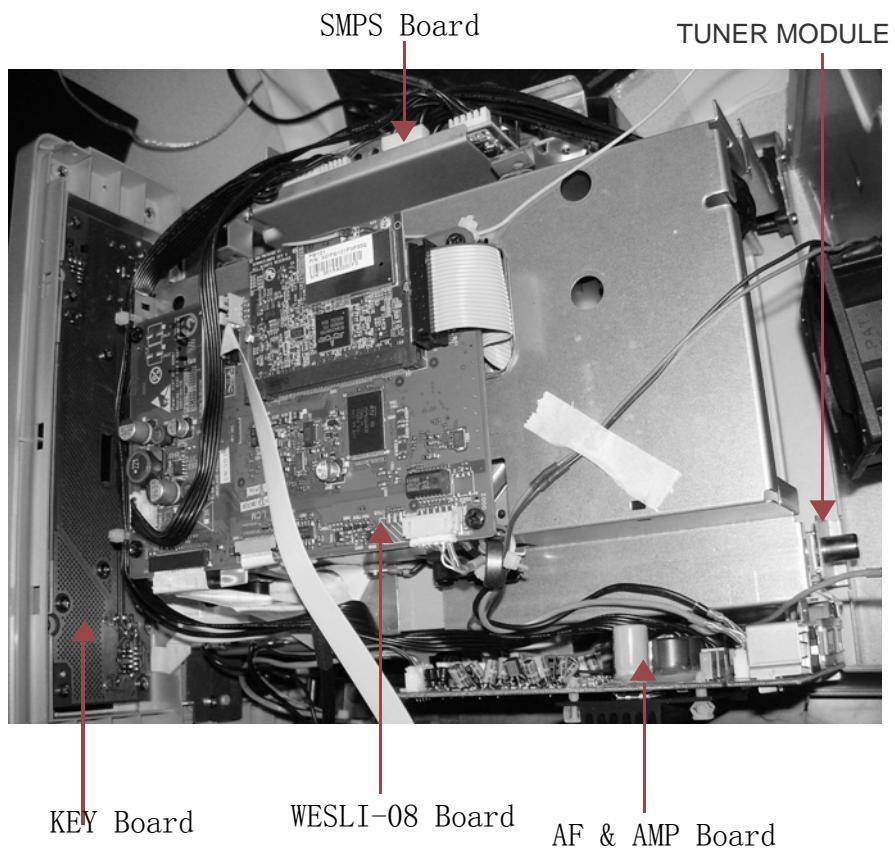
© 3141 785 32960

**Version 1.0**



**PHILIPS**

## Location of PCBS



## VERSION VARIATIONS :

Type /Versions:		MCI500H							
		/05	/12	/37					
Board in used:	Service policy								
SMPS BOARD	M	M							
TUNER MODULE	M	M							
AF&AMP BOARD	M	M							
AUX IN BOARD	M	M							
HEADPHONE BOARD	M	M							
KEYS&RC BOARD	M	M							
KEYS BOARD	M	M							
WESLI-08 BOARD	M	M							
LCD INTERFACE BOARD	M	M							
<hr/>									
Type /Versions:		MCI500H							
		/05	/12	/37					
Features	Feature diffrence								
RDS									
VOLTAGE SELECTOR									
ECO STANDBY - DARK									

\* TIPS : C -- Component Lever Repair.  
M -- Module Lever Repair  
✓ -- Used

## Specification

### General

AC Power .....	230V ±10%, 50Hz (for /12, /05 /79)
.....	120V ±10%, 60Hz (for /37)
..	120V ±15%, 60Hz or 230V ±15%, 50Hz (for /55, /97)

Dimensions (w x h x d) ..... Main unit: 260 x 180 x 275 mm

Weight (Net)..... Main unit: 4.58 kg; Main unit +  
..... Speakers: 8.40 kg

### Power consumption

Active (ON) .....	45W
(Active) Standby .....	< 15W
ECO (Passive) Standby .....	< 0.9W

### Amplifier

Output power .....	2 x 50W (RMS)
Frequency response .....	30 - 22,000Hz (-3dB)
Signal-to-noise ratio .....	75 dB(A) (IEC)

### Speakers

Power .....	50W (RMS) / 75 W (MPO)
Frequency response .....	60Hz -- 30kHz (-6dB)
Sensitivity .....	84 dB / m / W
Impedance .....	9Ω
Speaker drivers .....	2 way bass reflex system ..... 5½" Woofer, 25mm dome Tweeter

Dimensions (w x h x d) ..... 173 x 300 x 265 mm

### Headphones

Impedance .....

16 - 150Ω (Ohms)

### Input sensitivity

AUX IN .....

500mV / 1V (user selectable)

### Wireless

Wireless standard .....

802.11g, backwards compatible to 802.11b

Wireless security ...

WEP(64or128 bit),WPA/WPA2(8-63characters)

Frequency range .....

2412 - 2462MHz (CH1-CH11)

### Wired (LAN / Ethernet)

Wired standard .....

802.3 / 802.3u

Speed .....

10 / 100MBit/s

Mode .....

half / full duplex

Crossover detection (Auto MDIX) .....

Yes

### HD player

Frequency range .....	30 -- 20,000Hz (-3dB)
Signal-to-noise ratio .....	75dBA (IEC)
M4A (AAC) bit rate .....	16 - 320kbps, CBR/VBR
MP3 bit rate .....	32 - 320kbps, CBR/VBR
WMA bit rate .....	up to 192kbps, CBR/VBR
Sampling frequencies .....	32, 44.1, 48kHz
HD storage capacity .....	160GB*
Recording quality .....	128, or 160, or 192, or 256, or 320kbps
Recording speed .....	1x, 4x
CDDB (CD recognition database) .....	

internal Gracenote® / online access enabled

Album artwork .....

Yes, supported

\*Actual formatted capacity will be less

### CD player

Frequency range .....	30 -- 20,000Hz (-3dB)
Signal-to-noise ratio .....	75dBA (IEC)
M4A (AAC) bit rate .....	16 - 320kbps, CBR/VBR
MP3 bit rate .....	32 - 320kbps, CBR/VBR
WMA bit rate .....	up to 192kbps, CBR/VBR
Sampling frequencies .....	32, 44.1, 48kHz

### USB player

USB .....	12Mbps,V1.1(support MP3,WMA and M4A files)
USB class .....	MSC, MTP
Number of tracks/titles .....	maximum 9999
File format .....	FAT, FAT-32 only

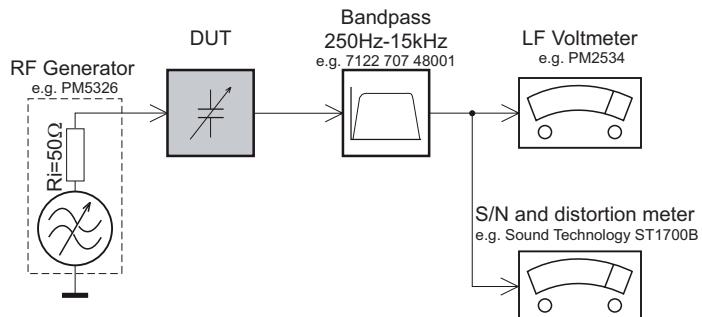
### Tuner

FM wave range .....	87.5 -- 108.0 MHz
Number of presets .....	60
FM antenna/cable .....	COAX / Dipole-antenna (75Ω IEC-connector)

Specifications and external appearance are subject to change without notice.

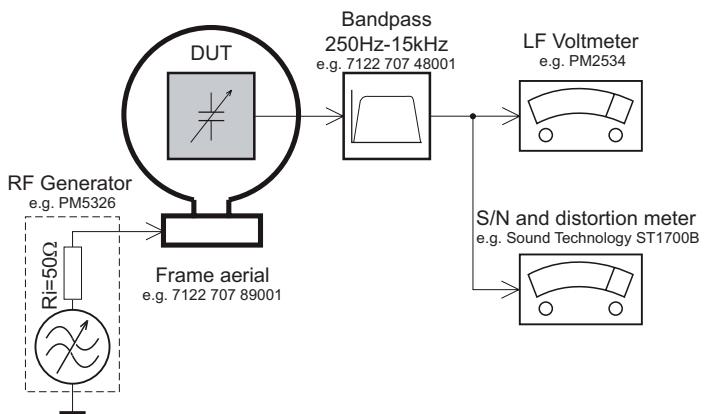
## MEASUREMENT SETUP

### Tuner FM



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

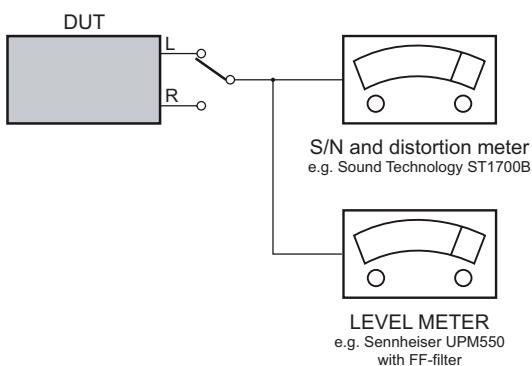
### Tuner AM (MW,LW)



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

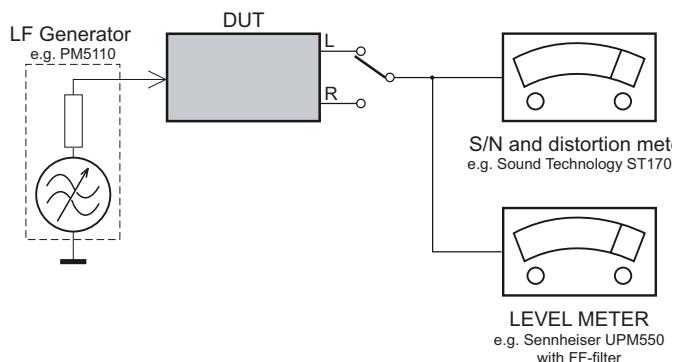
### CD

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



### Recorder

Use Universal Test Cassette CrO<sub>2</sub> SBC419 4822 397 30069  
or Universal Test Cassette Fe SBC420 4822 397 30071



## SERVICE AIDS



### WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.

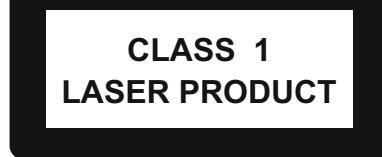
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

### ESD



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  $\triangle$ .



## INFORMATION ABOUT LEAD-FREE SOLDERING

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

### IDENTIFICATION:

Regardless of special logo (not always indicated) one must treat all sets from **1 Jan 2005** onwards, according next rules:



- On our website [www.atyourservice.ce.Philips.com](http://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
  - \* Lead free

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

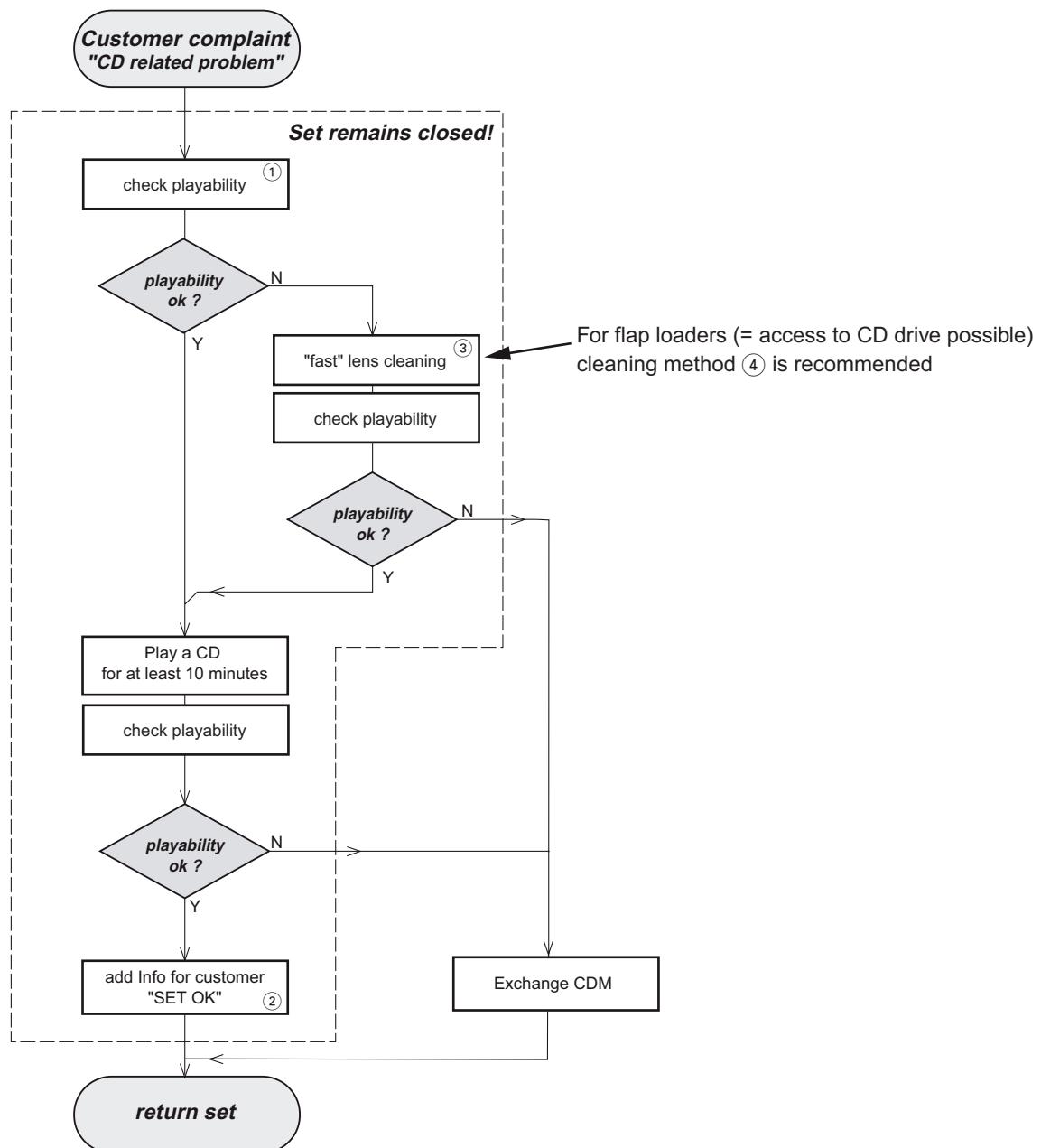
For additional questions please contact your local repair-helpdesk.

## SERVICE INSTRUCTION

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

- Route the wire trees correctly and fix them with the mounted cable clamps.
- Check the insulation of the AC Power lead for external damage.
- Check the strain relief of the AC Power cord for proper function.
- Check the electrical DC resistance between the AC Power Plug and the secondary side (only for sets which have a AC Power isolated power supply):
- 1. Unplug the AC Power cord and connect a wire between the two pins of the AC Power plug.
- 2. Set the AC Power switch to the "on" position (keep the AC Power cord unplugged!).
- 3. Measure the resistance value between the pins of the AC Power plug and the metal shielding of the tuner or the aerial connection on the set. The reading should be larger than 4.5 Mohm (For U.S. it should be between 4.2 Mohm and 12 Mohm).
- 4. Switch "off" the set, and remove the wire between the two pins of the AC Power plug.
- Check the cabinet for defects, to avoid touching of any inner parts by the customer.

## INSTRUCTIONS ON CD PLAYABILITY



① - ④ For description - see following pages

## INSTRUCTIONS ON CD PLAYABILITY

(1)

### PLAYABILITY CHECK

For sets which are compatible with **CD-RW** discs  
use CD-RW Printed Audio Disc ..... 7104 099 96611  
TR 3 (Fingerprint)  
TR 8 (600 $\mu$  Black dot) **maximum at 01:00**

- playback of these two tracks without audible disturbance  
playing time for: Fingerprint  $\geq$  10seconds  
Black dot from 00:50 to 01:10
- jump forward/backward (search) within a reasonable time

For all other sets  
use CD-DA SBC 444A..... 4822 397 30245  
TR 14 (600 $\mu$  Black dot) **maximum at 01:15**  
TR 19 (Fingerprint)  
TR 10 (1000 $\mu$  wedge)

- playback of all these tracks without audible disturbance  
playing time for: 1000 $\mu$  wedge  $\geq$  10seconds  
Fingerprint  $\geq$  10seconds  
Black dot from 01:05 to 01:25
- jump forward/backward (search) within a reasonable time

(2)

### CUSTOMER INFORMATION

It is proposed to add an addendum sheet to the set which informs the customer that the set has been checked carefully - but no fault was found.  
The problem was obviously caused by a scratched, dirty or copy-protected CD. In case problems remain, the customer is requested to contact the workshop directly.  
The lens cleaning (method ③) should be mentioned in the addendum sheet.

The final wording in national language as well as the printing is under responsibility of the Regional Service Organizations.

(4)

### LIQUID LENS CLEANING

Before touching the lens it is advised to clean the surface of the lens by blowing clean air over it.  
This to avoid that little particles make scratches on the lens.

Because the material of the lens is synthetic and coated with a special anti-reflectivity layer, cleaning must be done with a non-aggressive cleaning fluid. It is advised to use "Cleaning Solvent"

The actuator is a very precise mechanical component and may not be damaged in order to guarantee its full function. Clean the lens gently (don't press too hard) with a soft and clean cotton bud moistened with the special lens cleaner.

The direction of cleaning must be in the way as indicated in the picture below.



## SOFTWARE UPGRADING PROCEDURE

### Software Version Verification Procedure

It is important to write down the system version information of your Center before you start the upgrade procedure. This information is also useful in case you need to call Philips Customer Care Center.

1. Press **MENU**.
2. Press **▲/▼** to select “**Information**”. Press **OK**.
3. Press **▲/▼** to select “**System**”. Press **OK**.
4. The software version number is shown on the display.
5. If the software version is not the latest one, you need to upgrade MCI500H.

There are 3 ways to update the software.

- A) Using CD-Rom
- B) Using WADM

### A. Using CD-Rom

#### 1. Software Upgrade Disc Preparation

Tools Required : You will need the following items :

- PC (Pentium III 300MHz processor or higher)
- CD-R/RW writer and writing application software
- Blank CD-R or CDRW disc
- Broadband / High speed internet connection

#### 2. How to download the software to your computer

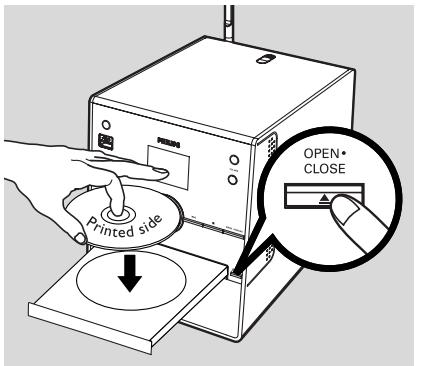
1. To download free firmware and software upgrades for your product, please login to [www.club.philips.com](http://www.club.philips.com)  
Download the firmware upgrade files and store them on your PC
2. Unzip the .zip file and extract files into your PC.

#### Note:

- Please do not rename the filename.
- If you do not have the software to open the .zip file, please visit below website to download the software.  
<http://www.winzip.com/>

#### 3. Steps to upgrade the MCI500H

1. Make sure the Audio Station has connected to the Audio Center.
2. Burn the file to blank CD-R or CDRW. Finalize the disc. (The application may do this automatically.)
3. Turn on the Audio Center and turn on the Audio Station, insert the CD to the slot loader, CD graphic printed side facing you.



4. The Audio Center will upgrade automatically.
  - The message “**Updating firmware, please wait....**” and the “**process bar**” show on the display of the Audio Center.
  - The upgrade process of the Center will reboot twice

**Note: Do NOT power off the Audio Center or eject the disc at this stage.**

5. It takes around 5 mins to complete the firmware upgrade for the Audio Center.
6. When done, the Audio Center will go to the HD mode automatically.

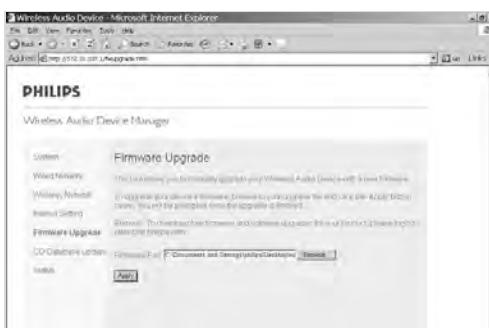
#### 4. After the upgrade

Do confirm the software version by checking the system version.  
Please follow the procedure described in the section “**Software Version Verification Procedures**”.

### B. Upgrading firmware

The supplied PC Installer CD Wireless Audio Device Manager (WADM) helps you get the upgrades for MCI500H Center.

- 1 Register your Philips Wireless Music Center with [www.club.philips.com](http://www.club.philips.com)
- 2 Download the firmware upgrade files and store them on your PC
- 3 Place Center on a flat and firm surface
- 4 Connect Center to power supply  
→ HD screen appears on Center
- 5 Connect Center to your PC via the supplied ethernet cable.
- 6 Install and launch WADM (see **Connect to your PC** section B)
- 7 Click **Device Configuration**, and then click the **Firmware upgrade** sub-menu
- 8 As prompted, click **Browse** and indicate the location where you kept the firmware upgrade files on PC



- 9 Click **Apply** to start upgrading firmware **On Philips Wireless Music Center:**
  - The display shows “**Updating firmware, please wait...**”
  - Center will reboot itself during the installation process
  - When Center returns to HD screen, the installation is completed

#### IMPORTANT!

##### On Philips Wireless Music Center

- **Never interrupt the firmware upgrading before its completion.**
- **Before finishing the installation, never operate other functions.**

### \* Hints: Restoring previous firmware

After the Center's firmware is upgraded, you can restore it to its previous version as desired.

- 1 Select HD mode, and then select **Restore firmware**
  - a. Press **MENU** to enter the MENU screen
  - b. Press the navigation controls **▲** or **▼** and **▶** to enter **Settings**, **Firmware** and **Restore firmware** one by one.
- 2 Press **▶** to select **Yes**

#### Helpful hint:

- After restoration to previous firmware, the set will lost Wi-Fi links to associated stations or external network.

### \* Reset

#### When to reset the Center:

- Resetting the Center helps to re-establish the Wi-Fi connection between the Center and Station.
- Change the way the Center connects to an external Wi-Fi/wired network.

- 1 Check that the set is switched on (see **5.Basic functions**).
- 2 Press **MENU** to enter the menu screen
- 3 Press the navigation controls **▲** or **▼** and **▶** to enter **Settings** followed by **Restore settings**.



- 4 Press **▶** to select **Yes**
  - The set is rebooted. Language selection screen appears.
- 5 Select your desired language: **English**, **Français**, **Español**, **Nederlands**, **Italiano** or **Deutsch**
  - The set enters Installation Mode
  - The search for Center starts. The Wi-Fi connection is being re-established

#### Helpful hint:

- After restoration to default settings, the network mode will go back to Ad-Hoc mode.
- Restoring to default settings does not delete any stored music tracks

## Gracenote CD Information

The Gracenote music recognition service enables the set to look up CD track information (including album, artist, genre, track information) from its built-in database. It allows the recorded CD tracks to be properly categorized (for example, under Artists, Albums, Genres or All tracks) and also be merged with the existing tracks in the hard disk.

### 12.1 Gracenote music recognition database

A 800 MB CD database (contains 800,000 most popular CDs) is embedded in every WAC3500 Center for quick look-up on track information. An update file that contains newly released CDs is available quarterly on [www.club.philips.com](http://www.club.philips.com) for download.

#### 12.1.1 To update Gracenote music recognition database

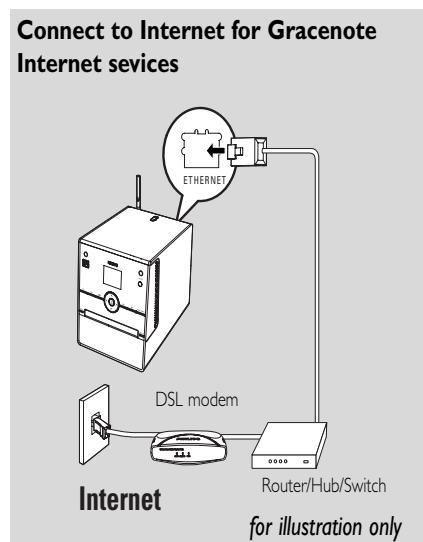
- 1 Use your PC to register your product on [www.club.philips.com](http://www.club.philips.com) and go to "Show Upgrades & Support" page to download Gracenote Music recognition database update. Note that the updates are posted quarterly and each update is independent of each other; i.e. a later update could be installed without an earlier update.
- 2 After storing the file on your PC, you can either burn a CD with the update file using your favorite CD burning software and drop the CD into the WAC3500 Center for automatic update, or you can use WADM's Gracenote update option if you have connected your PC to WAC3500 Center.

### 12.2 Gracenote Internet Query

If the CD track information of your new CD disc cannot be displayed on the WAC3500, the quickest and surest solution is to look it up from the internet by following steps below.

#### 12.2.1 Connecting to the Internet

- 1 Check that you have connected the Center to an Access Point or Router with Internet access or connect the Center to an ADSL modem with Internet access directly.



#### Helpful hint:

- Make sure that no dial-up, user name or password is required for the Internet access.
- 2 Set DNS and Gateway
  - If you are using a DHCP\* enabled Access Point, Router or ADSL modem, the DNS and Gateway can be got automatically, so you need only to set the Center to Automatic (DHCP) mode by following steps below:  
\*DHCP stands for Dynamic Host Configuration Protocol. It is a protocol for assigning dynamic IP addresses to devices on a network.
  - a. Press MENU
  - b. Press ▲ or ▼ and ► to select Settings > Network > Wired
  - c. Press ► to continue
  - d. Press ▲ or ▼ and ► to select Automatic (DHCP).
  - If there is no DHCP, set the DNS and Gateway manually by following steps below:  
**On your PC**, carry out the following steps:

#### a. Click Start > Run



- b. Type cmd and click OK
- c. Type ipconfig/all

- d. Write down the DNS and Gateway of the current connection

```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\philips>ipconfig/all

Windows IP Configuration

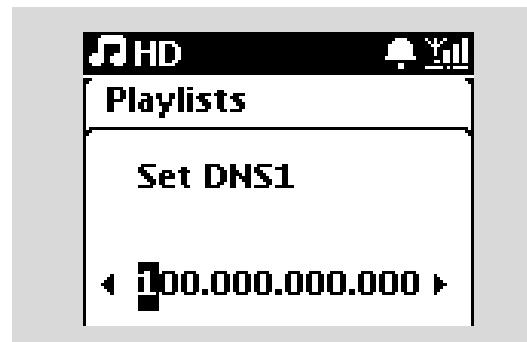
Host Name . . . . . : Test42
Primary Dns Suffix . . . . . :
NetBIOS Namespace . . . . . : Hybrid
IP Routing Enabled . . . . . : No
WINS Proxy Enabled . . . . . : No

Ethernet adapter Local Area Connection:
   Connection-specific DNS Suffix . . . . . : 3Com 3C920 Integrated Fast Ether
   Controller (3C905C-TX Compatible)
   Physical Address . . . . . : 00-06-58-50-A0
   DHCP Enabled . . . . . : No
   IP Address . . . . . : 172.31.107.5
   Subnet Mask . . . . . : 255.255.0.0
   Default Gateway . . . . . :

C:\Documents and Settings\philips>
```

#### On the Center

- a. Press MENU to enter the menu screen
- b. Press ▲ or ▼ and ► to enter Settings > Network > Internet
- c. Press ► to continue
- d. Set DNS



- 1) Enter the DNS server you wrote down
- 2) Press OK►II to confirm
- 3) Press OK►II to skip Set DNS2

#### Helpful hint:

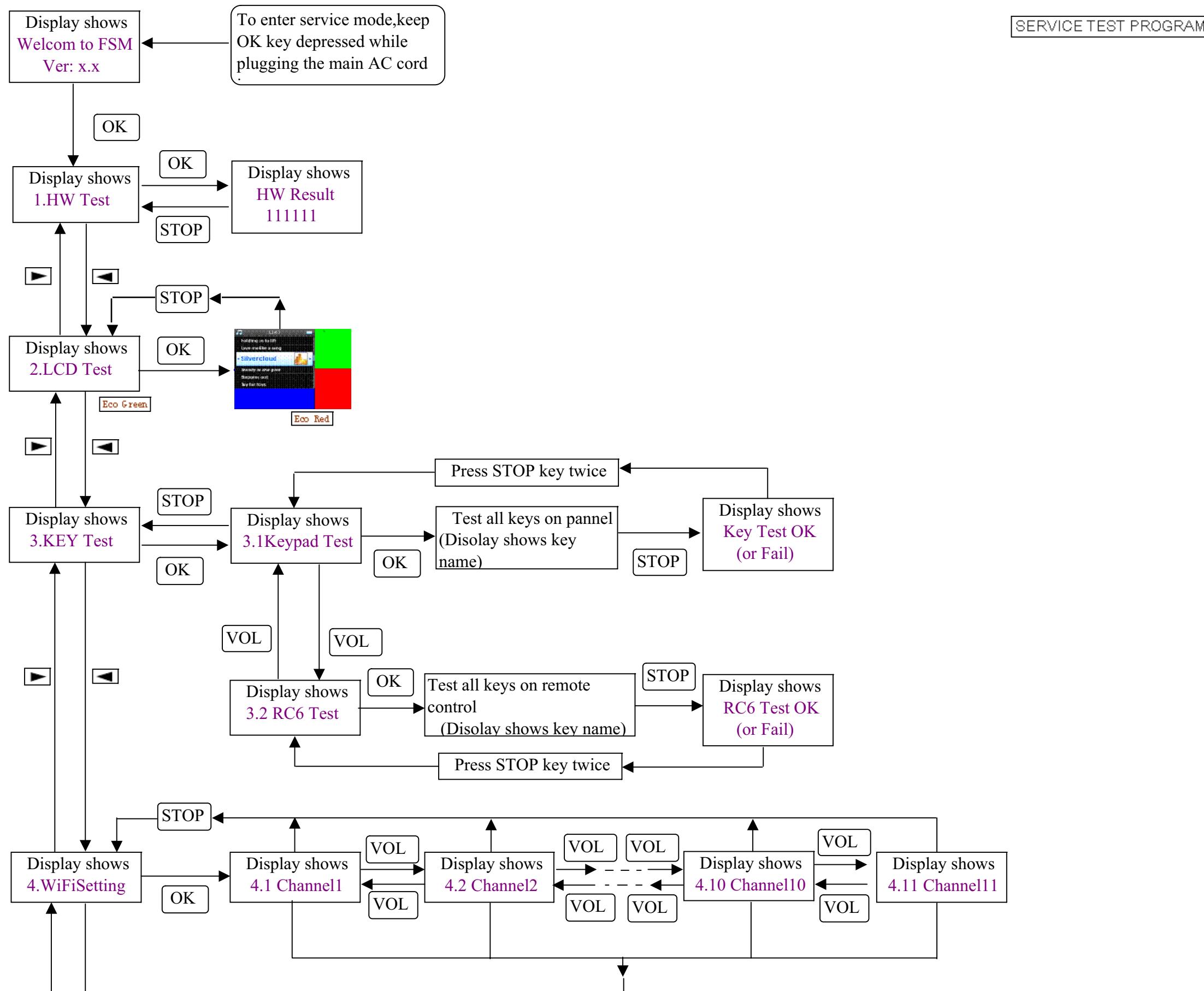
- If necessary, follow Steps 1) to 2) above to set a secondary DNS server in Set DNS2
- e. Set Gateway
- 1) Enter the Gateway you wrote down
- 2) Press OK►II to confirm
- f. Set proxy
- If you are using a proxy server to visit websites, enable Proxy and proceed with the proxy setting as prompted, then press OK►II to confirm
- Otherwise, press OK►II to skip
- 3) Choose to apply the settings as prompted  
→ Settings will change. **Connection to station could be lost** appears.

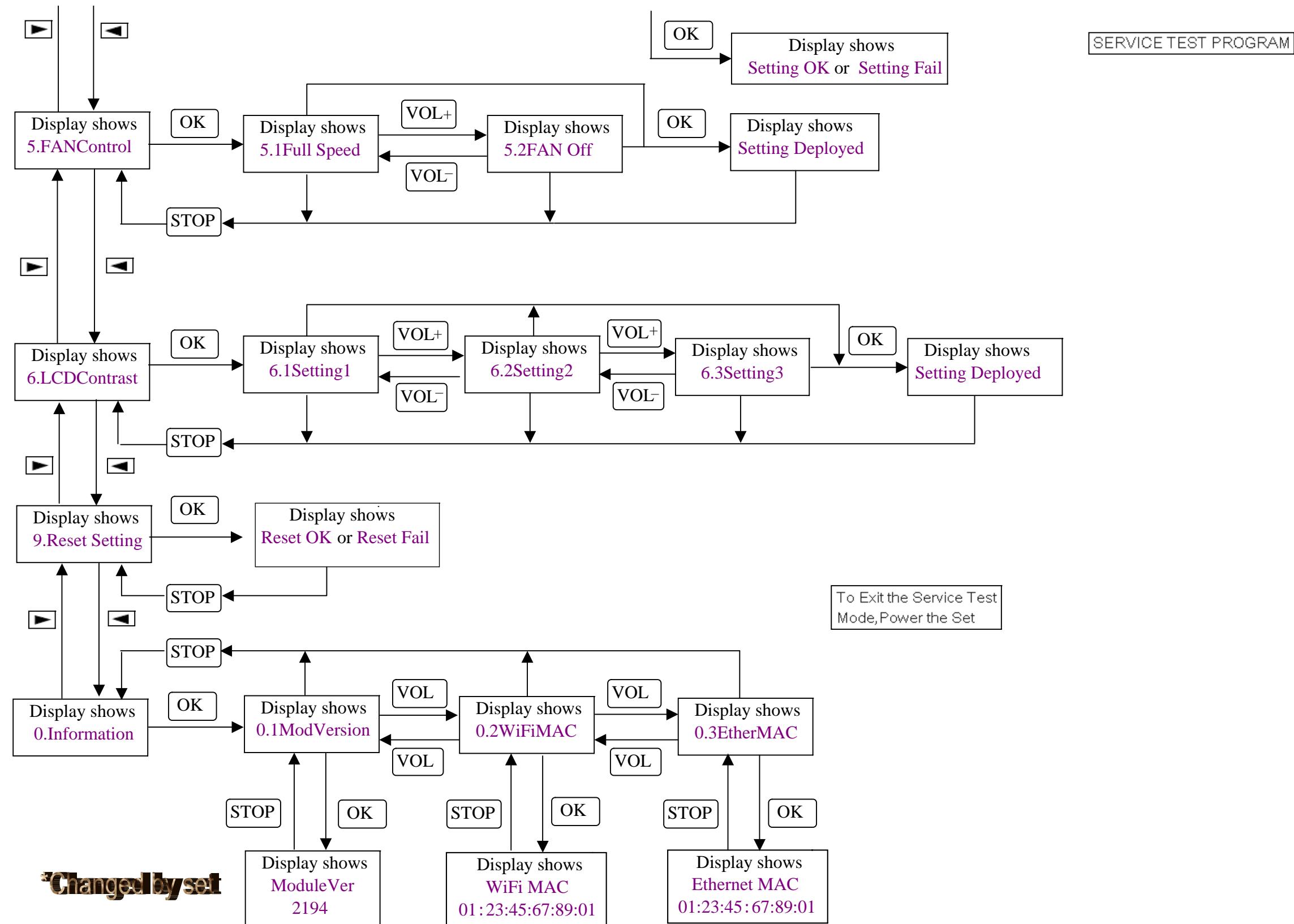
### 12.2.2 Looking up CD track information

When the internet connection is made, insert the CD disc that you want to look for its information into the CD loader on the Center. Searching start immediately. It will search from local Gracenote CD database firstly. If can't find the CD track information, online searching will then start. The searching results will be shown on the Center's display,

#### Helpful hint:

If the internet query failed due to failure in internet connection, the error message "Check the internet setup for Gracenote online" will appear. Check if your internet connection is correct (see **12.2.1** above)

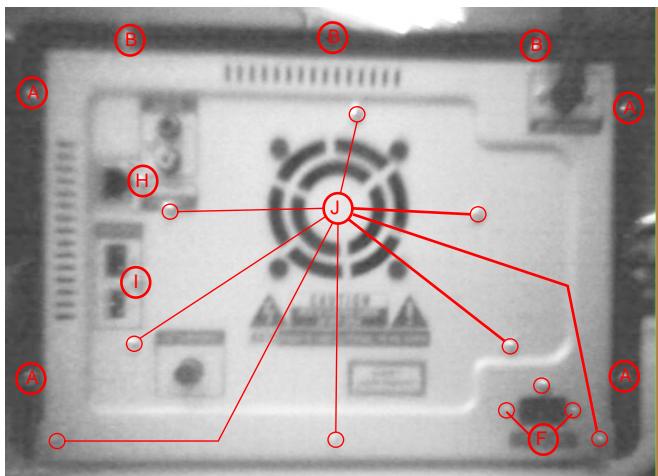
**SERVICE TEST PROGRAM**

**SERVICE TEST PROGRAM**

## Disassembly Diagram

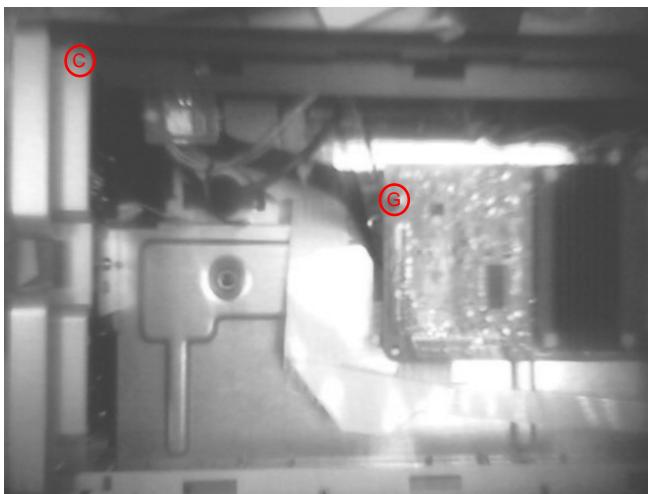
### 1. Remove Left & Right Cabinet

- remove screws T3x6 - 4 pcs (A)
- Pull the left or right cabinet and then lift it.



### 2. Remove Top Cabinet

- Remove screws T3x6 - 3 pcs (B) (Please refer to first picture)
- Remove screws M2.6x8 - 2 pcs (C)



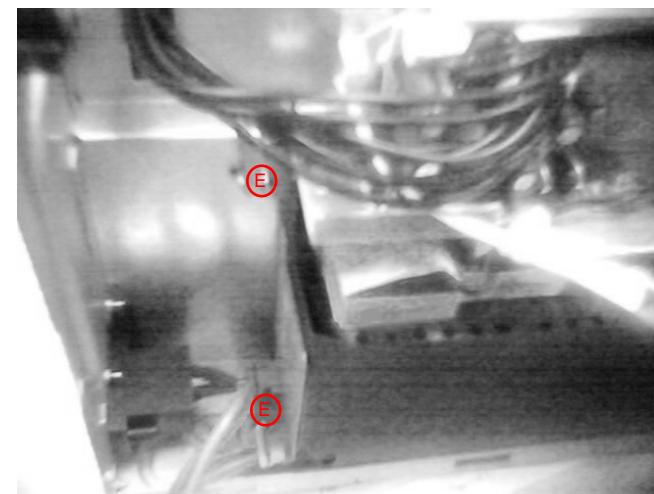
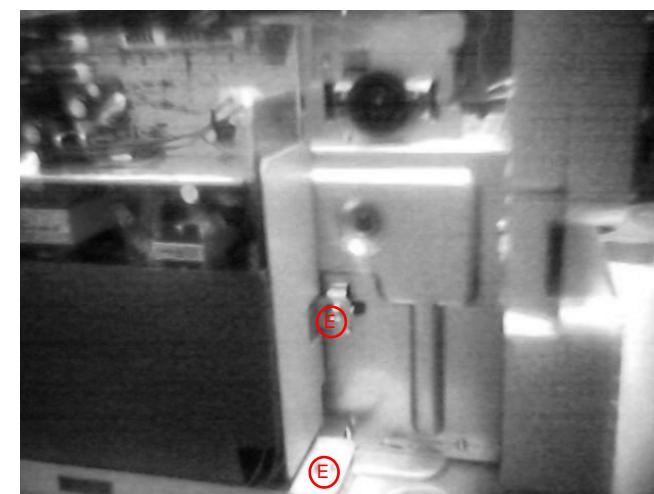
### 3. Remove Wesli board

- Remove screws T3x6 - 4 pcs (D)



### 4. Remove SMPS board

- Remove screws T2.6x4 - 4 pcs (E)
- Remove screws M3x8 - 2 pcs (F) (Please refer to first picture)



### 5. Remove Amp board

- Remove screws T3x6 - 1 pcs (G)  
(Please refer to second picture)
- Remove screws T3x6 - 1 pcs (H)  
(Please refer to first picture)
- Remove screws M2.6x8 - 1 pcs (I)  
(Please refer to first picture)

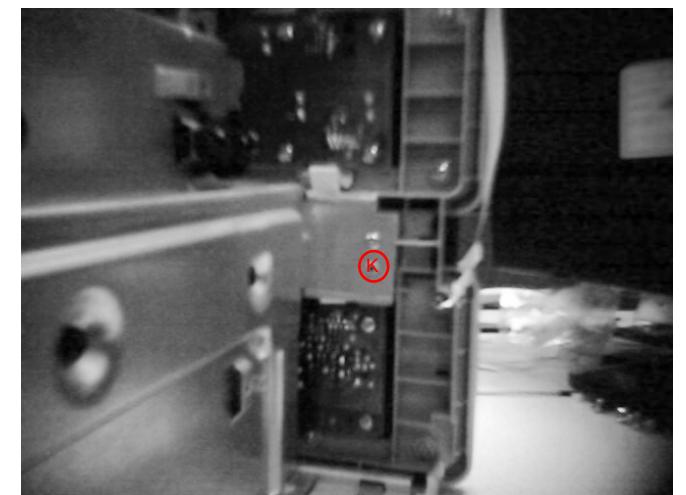
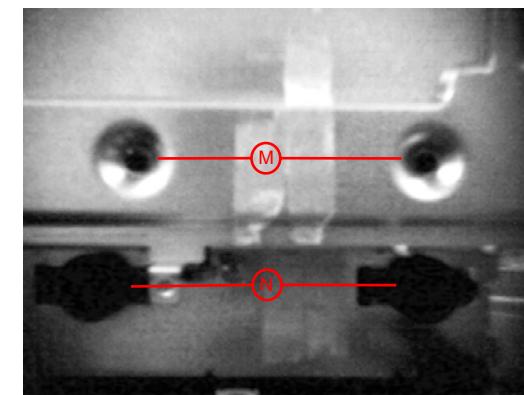


### 6. Remove rear cabinet.

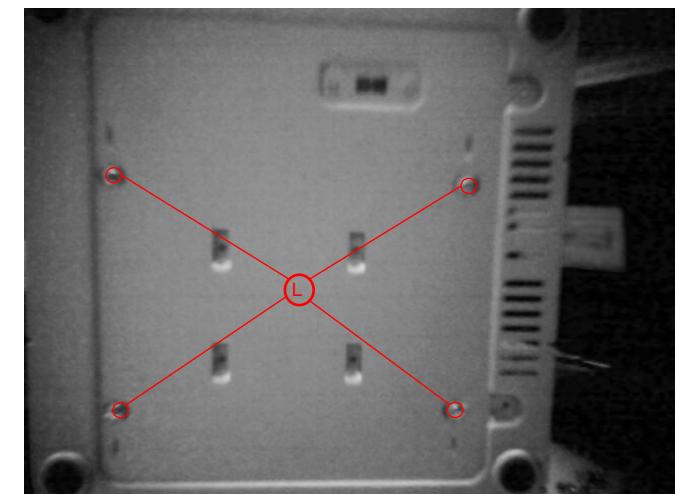
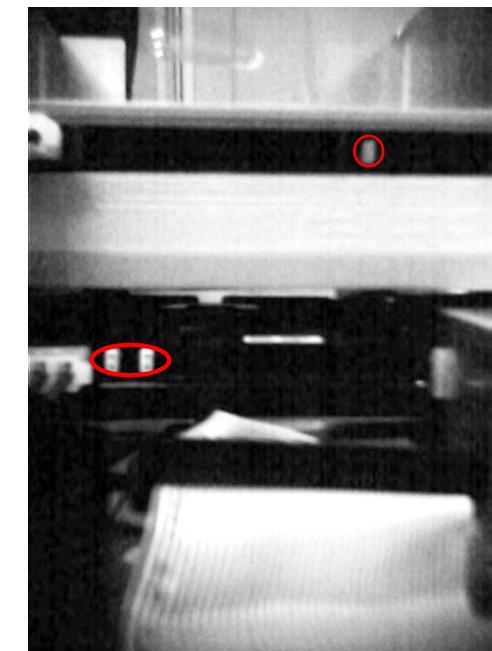
- Remove screws T3x6 - 9 pcs (J)  
(Please refer to second picture)

### 7. Remove HDD & CD loader cover.

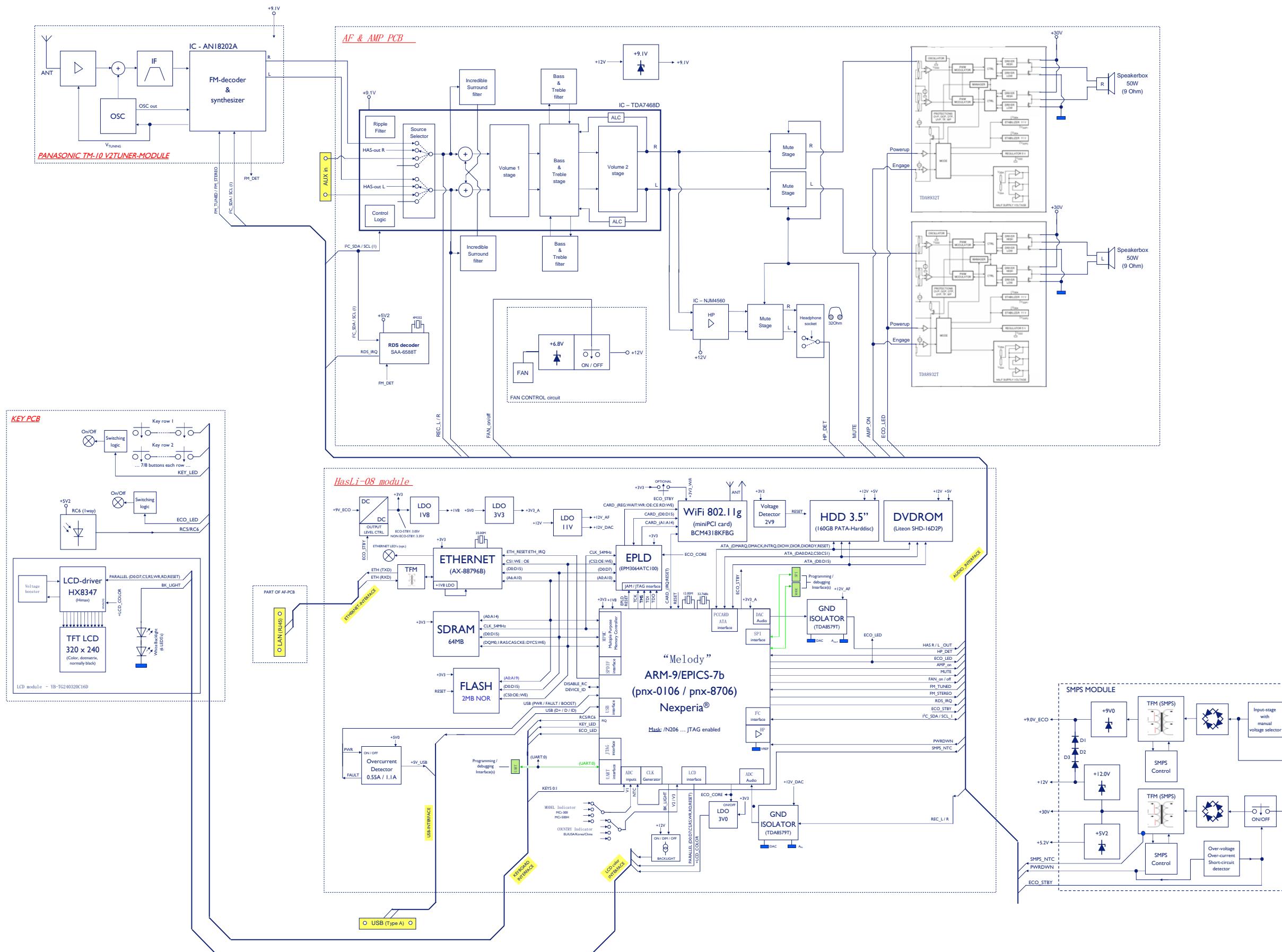
- Remove screws M2.6x8 - 2 pcs (K)
- Remove screws T3x6 - 9 pcs (L)
- Remove screws T3x6 - 2x2 pcs (M)
- Remove screws T3x4 - 2x2 pcs (N)



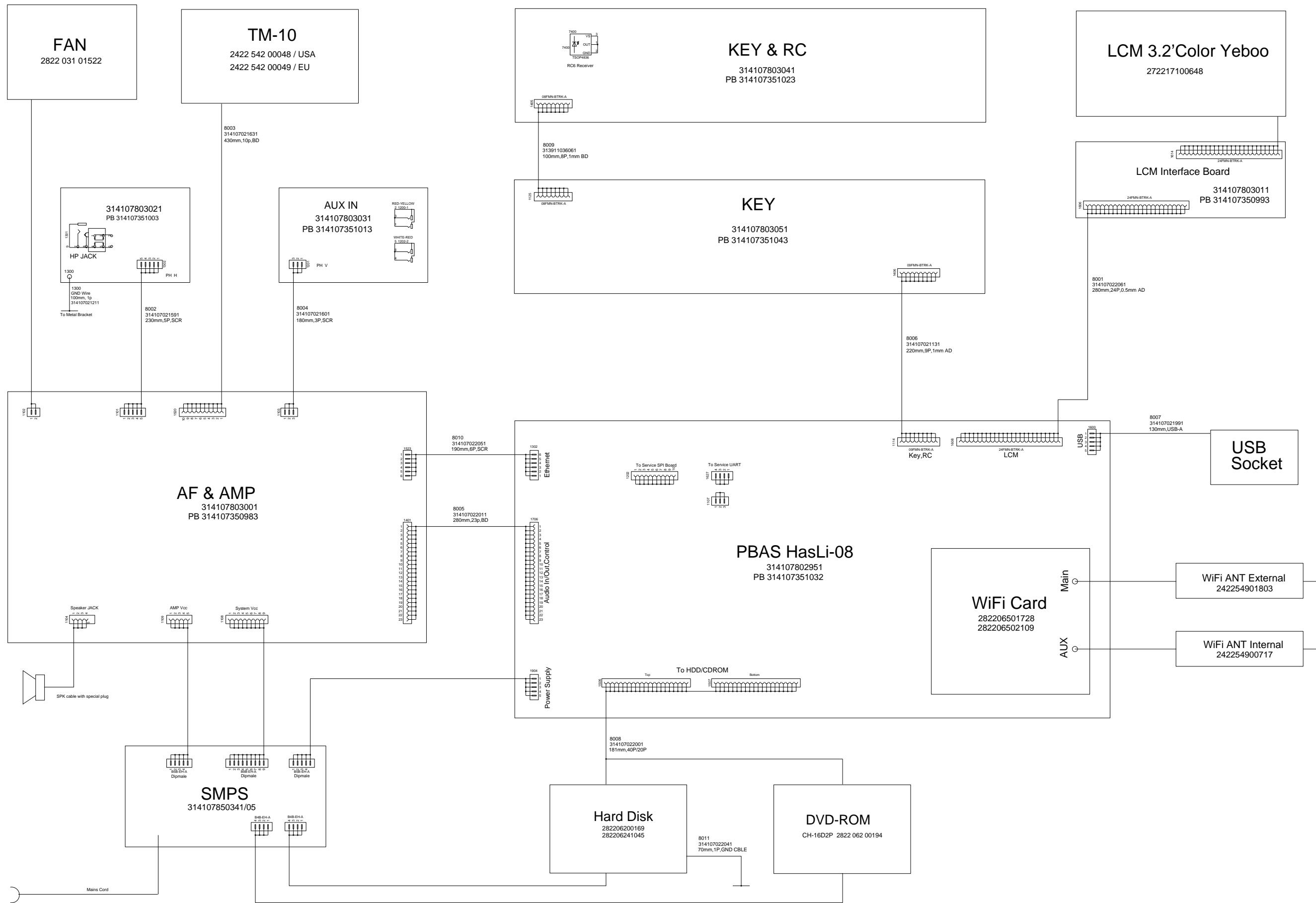
### 8. Tips - loader set as slave and HDD set as master.



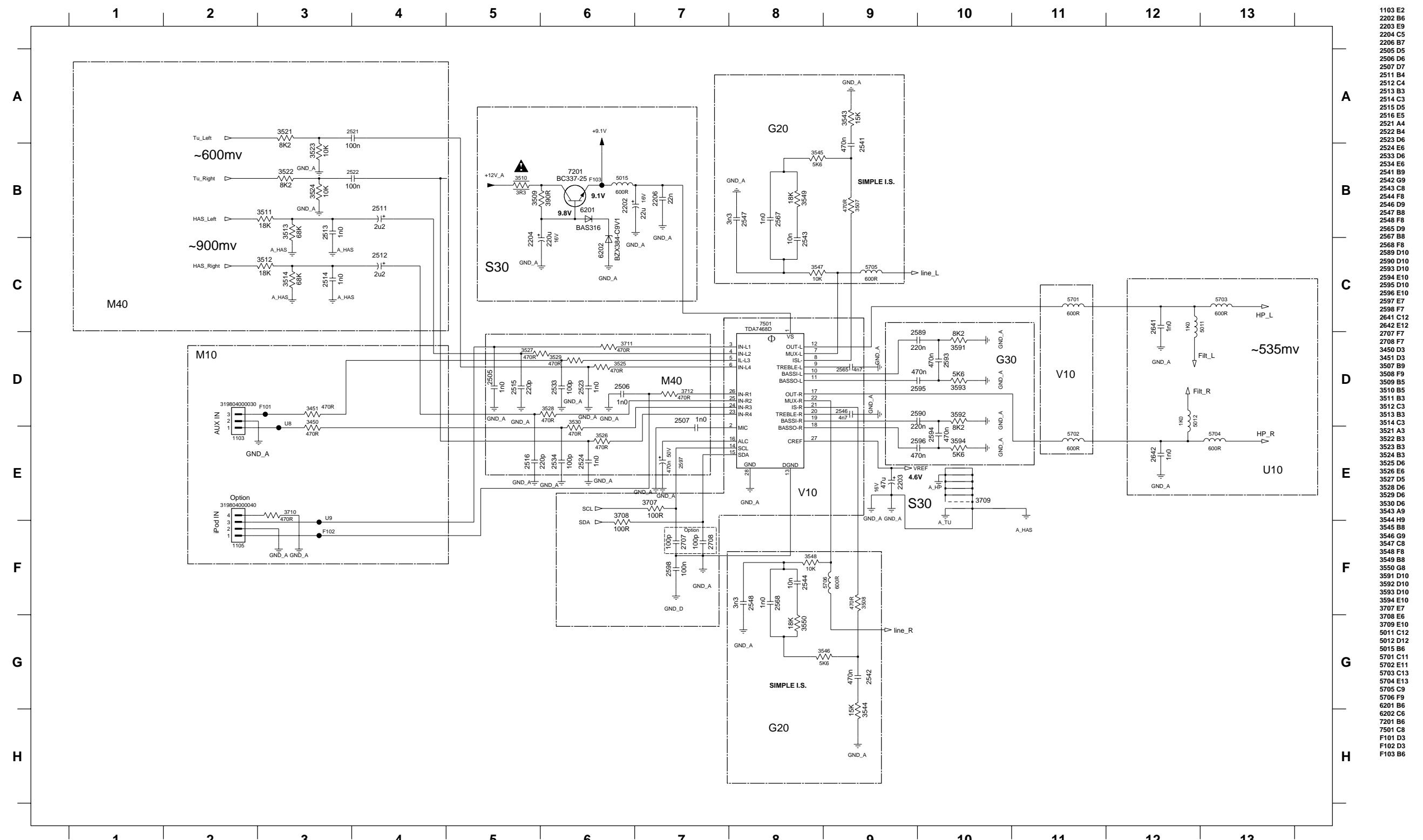
## Block Diagram



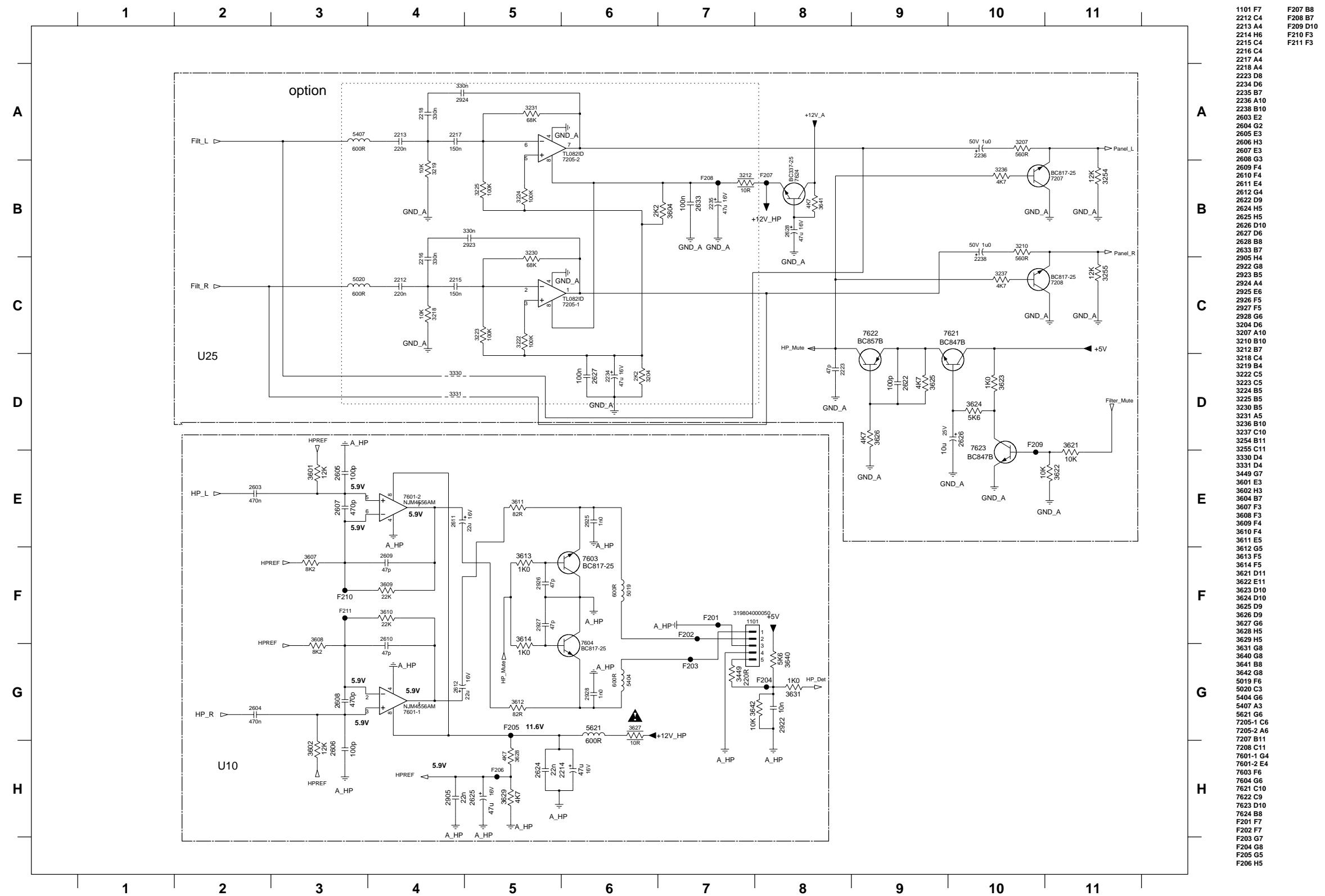
## Wiring Diagram



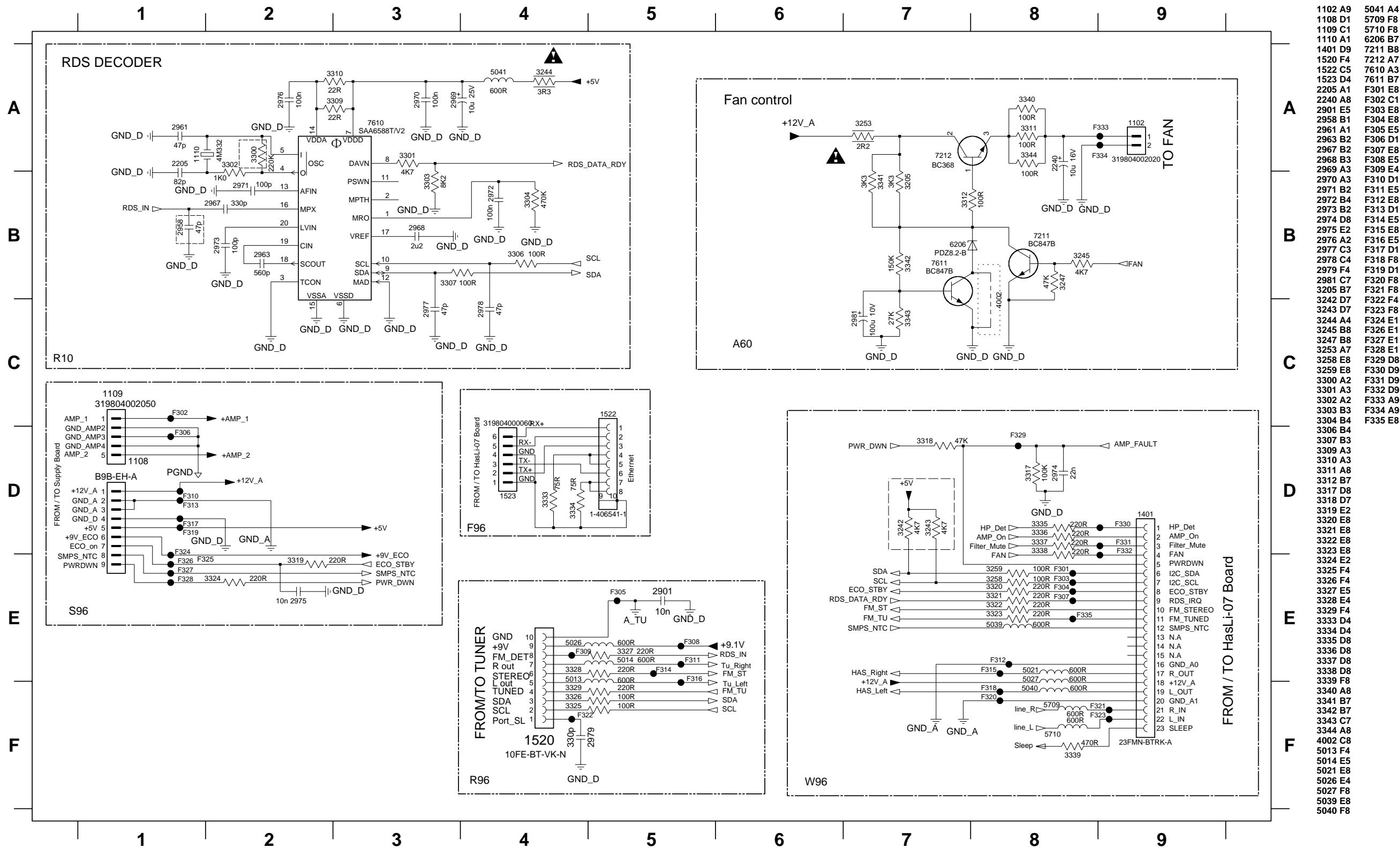
PB - AF/AMP - Circuit Diagram - Sheet1



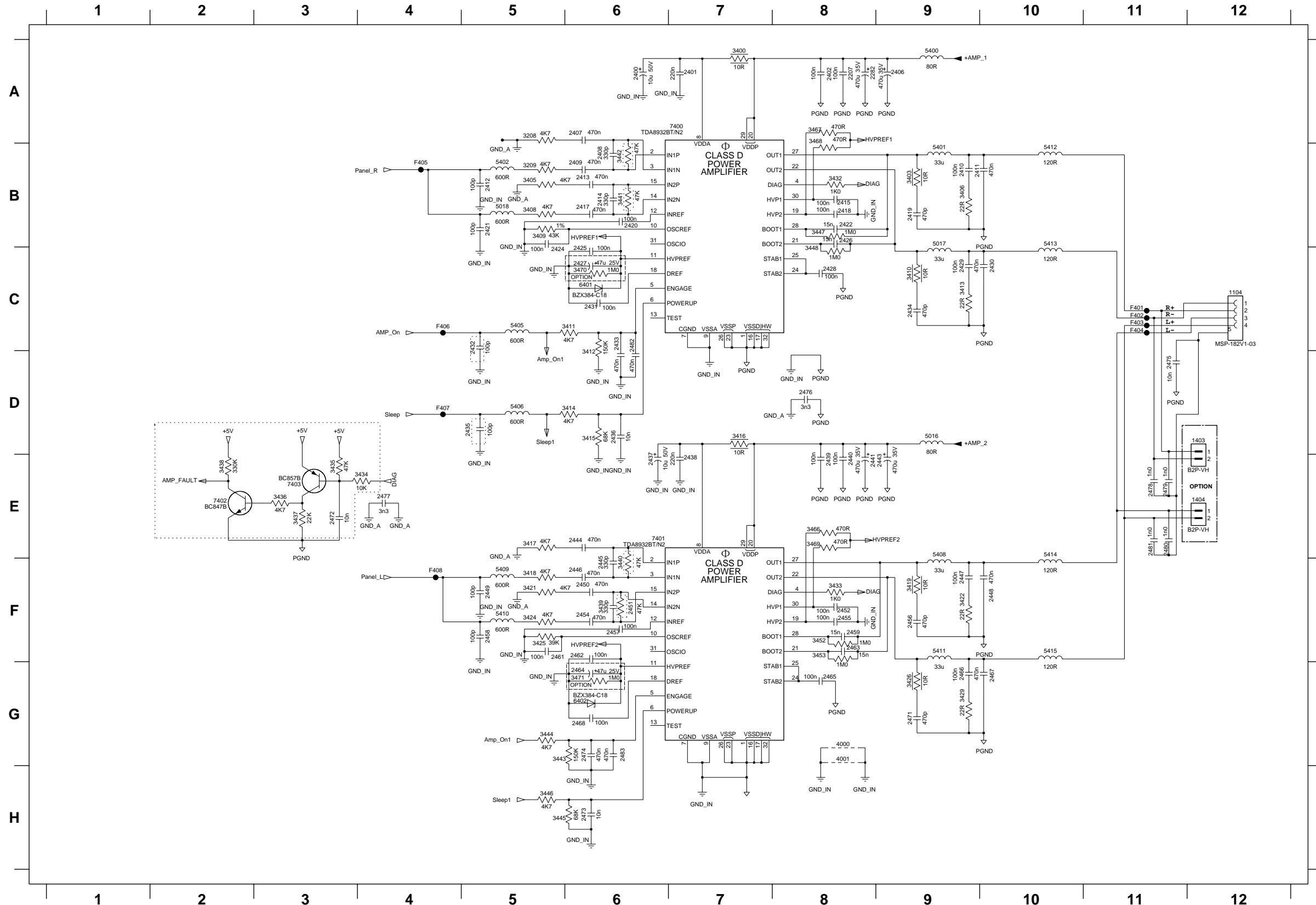
PB - AF/AMP - Circuit Diagram - Sheet2



PB - AF/AMP - Circuit Diagram - Sheet3

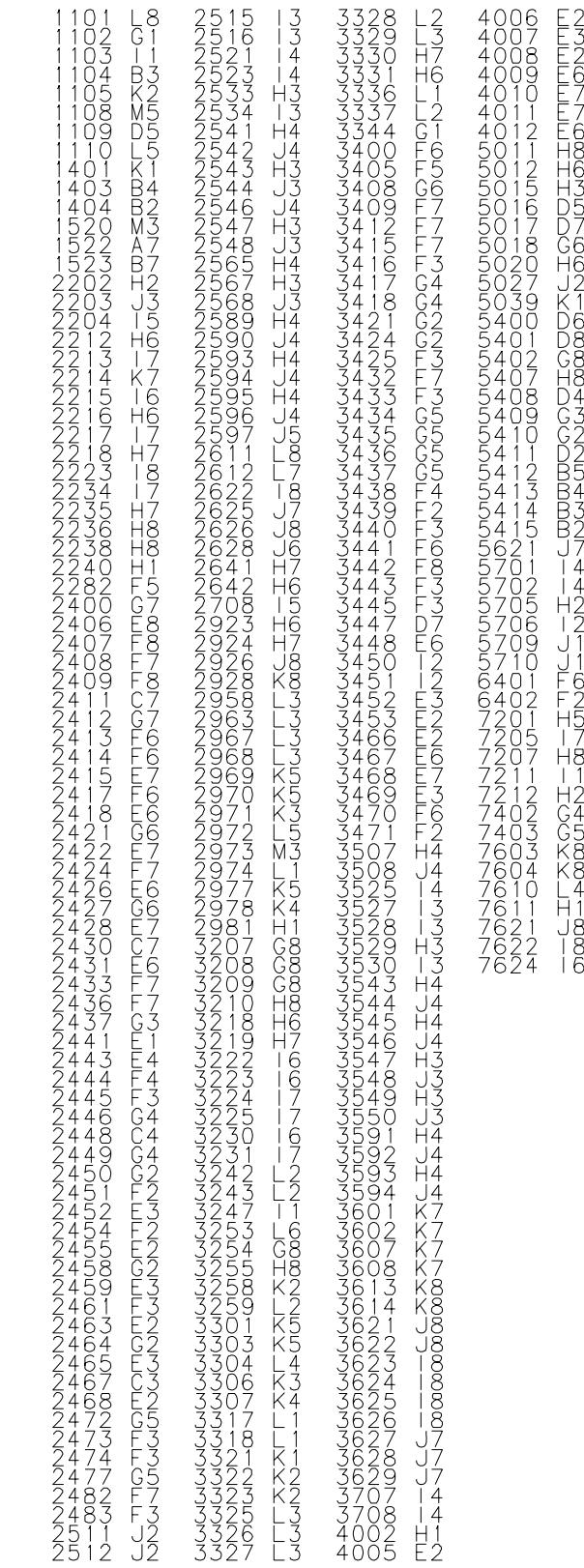
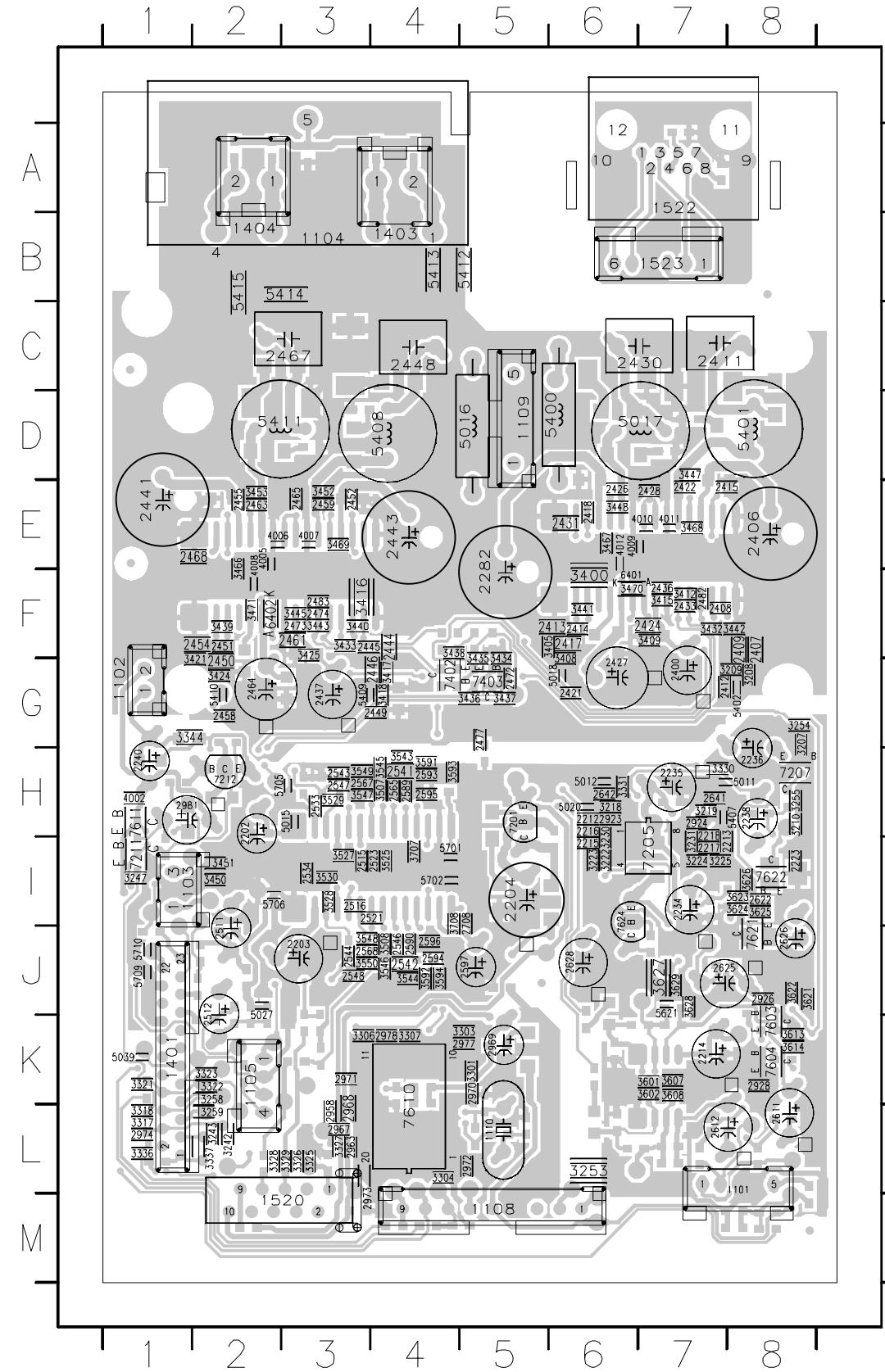


## PB - AF/AMP - Circuit Diagram - Sheet4

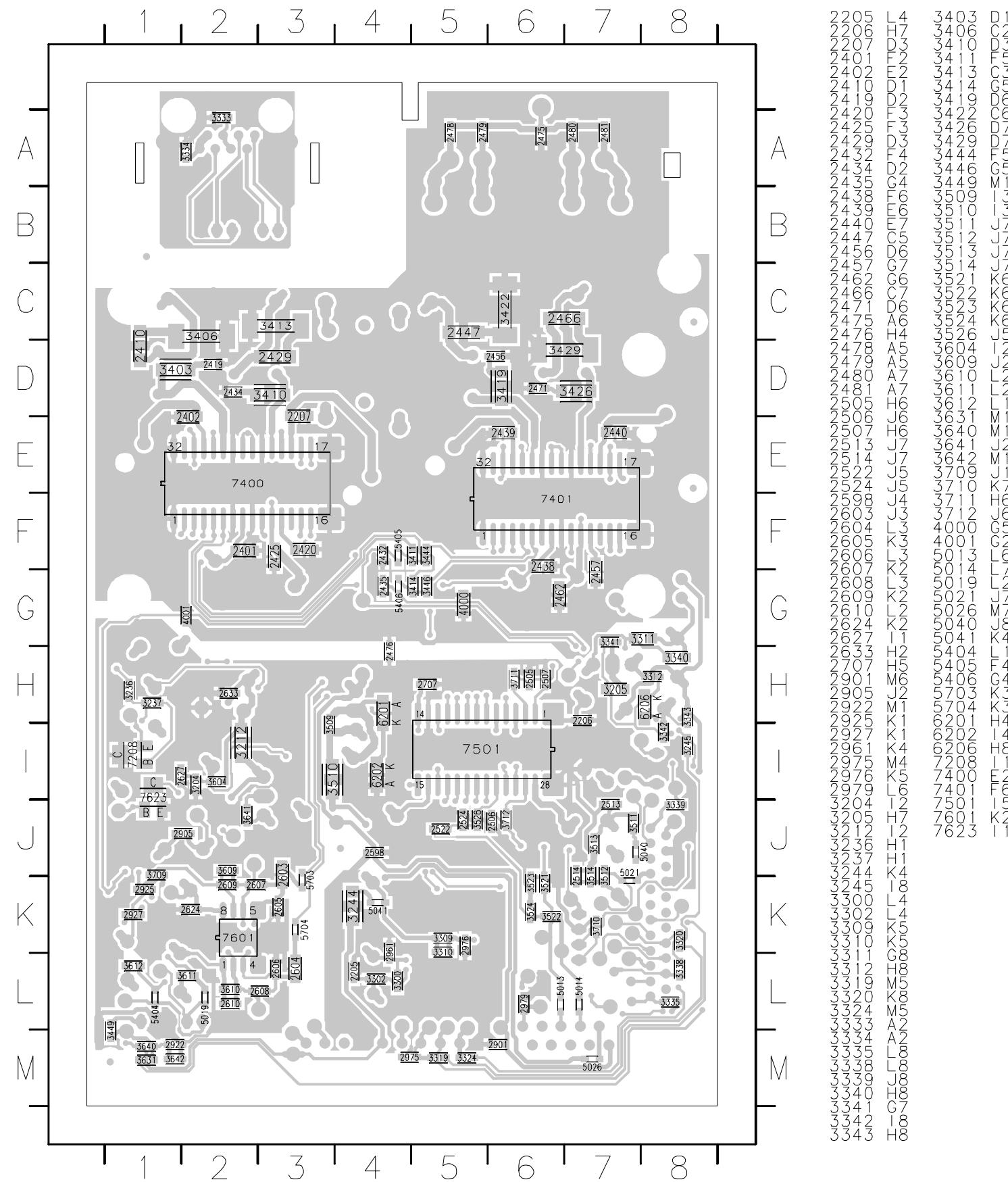


1104 C12	3421 F5
1403 D12	3422 F9
1404 E12	3424 F5
2207 A8	3425 F5
2282 A8	3426 G9
2400 A6	3429 G9
2401 A7	3432 B8
2402 A8	3433 F8
2406 A9	3434 E4
2407 A6	3435 E3
2408 B6	3436 E3
2409 B6	3437 E3
2410 B9	3438 E2
2411 B9	3439 F6
2412 B5	3440 F6
2413 B6	3441 B6
2414 B6	3442 B6
2415 B8	3443 G5
2417 B6	3444 G5
2418 B8	3445 H5
2419 B9	3446 H5
2420 B6	3447 B8
2421 B5	3448 B8
2422 B8	3452 F8
2424 C5	3453 F8
2425 C6	3462 C3
2426 B8	3463 C3
2427 C6	3464 C2
2428 C8	3465 C3
2429 C9	3466 E8
2430 C10	3467 A8
2431 C6	3468 A8
2432 C5	3469 E8
2433 C6	3470 C6
2434 C9	3471 G6
2435 D5	4000 G8
2436 D6	4001 G8
2437 E6	4004 D3
2438 E7	5016 D9
2439 E8	5017 B9
2440 E8	5018 B5
2441 E8	5400 A9
2443 E9	5401 B9
2444 E6	5402 B5
2445 F6	5405 C5
2446 F6	5406 D5
2447 F9	5408 E9
2448 F10	5409 F5
2449 F5	5410 F5
2450 F6	5411 F9
2451 F6	5412 B10
2452 F8	5413 C10
2454 F6	5414 F10
2455 F8	5415 F10
2456 F9	6401 C6
2457 F6	6402 G6
2458 F5	7400 A7
2459 F8	7401 E6
2461 F5	7402 E2
2462 F6	7403 E3
2463 F8	7408 C3
2464 G6	7409 C2
2465 G8	F401 C11
2466 G9	F402 C11
2467 G10	F403 C11
2468 G6	F404 C11
2471 G9	F405 B4
2472 E3	F406 C4
2473 H6	F407 D4
2474 G6	F408 F4
2475 D11	
2476 D8	
2477 E4	
2478 E11	
2479 E11	
2480 E11	
2481 E11	
2482 C6	
2483 G6	
2488 D2	
2489 D3	
3208 A5	
3209 B5	
3400 A7	
3403 B9	
3405 B5	
3406 B9	
3408 B5	
3409 B5	
3410 C9	
3411 C6	
3412 C6	
3413 C9	
3414 D6	
3415 D6	
3416 D7	
3417 E5	
3418 F5	
3419 F9	

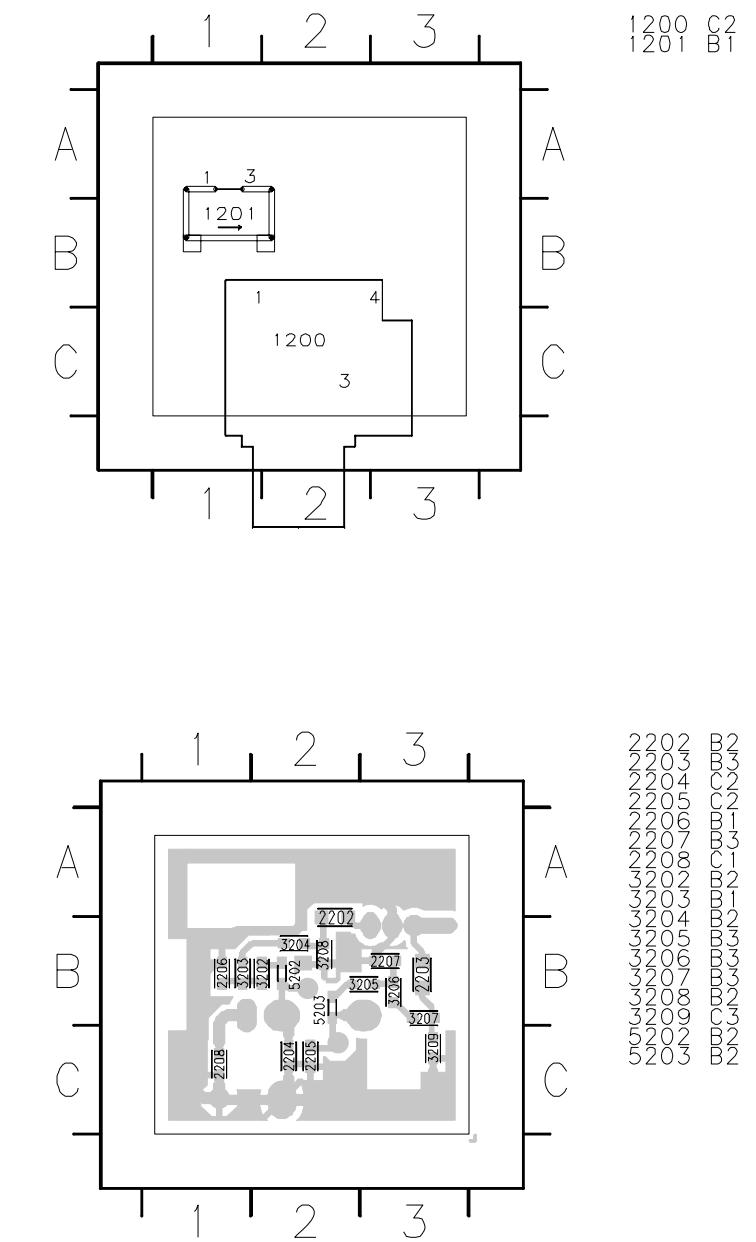
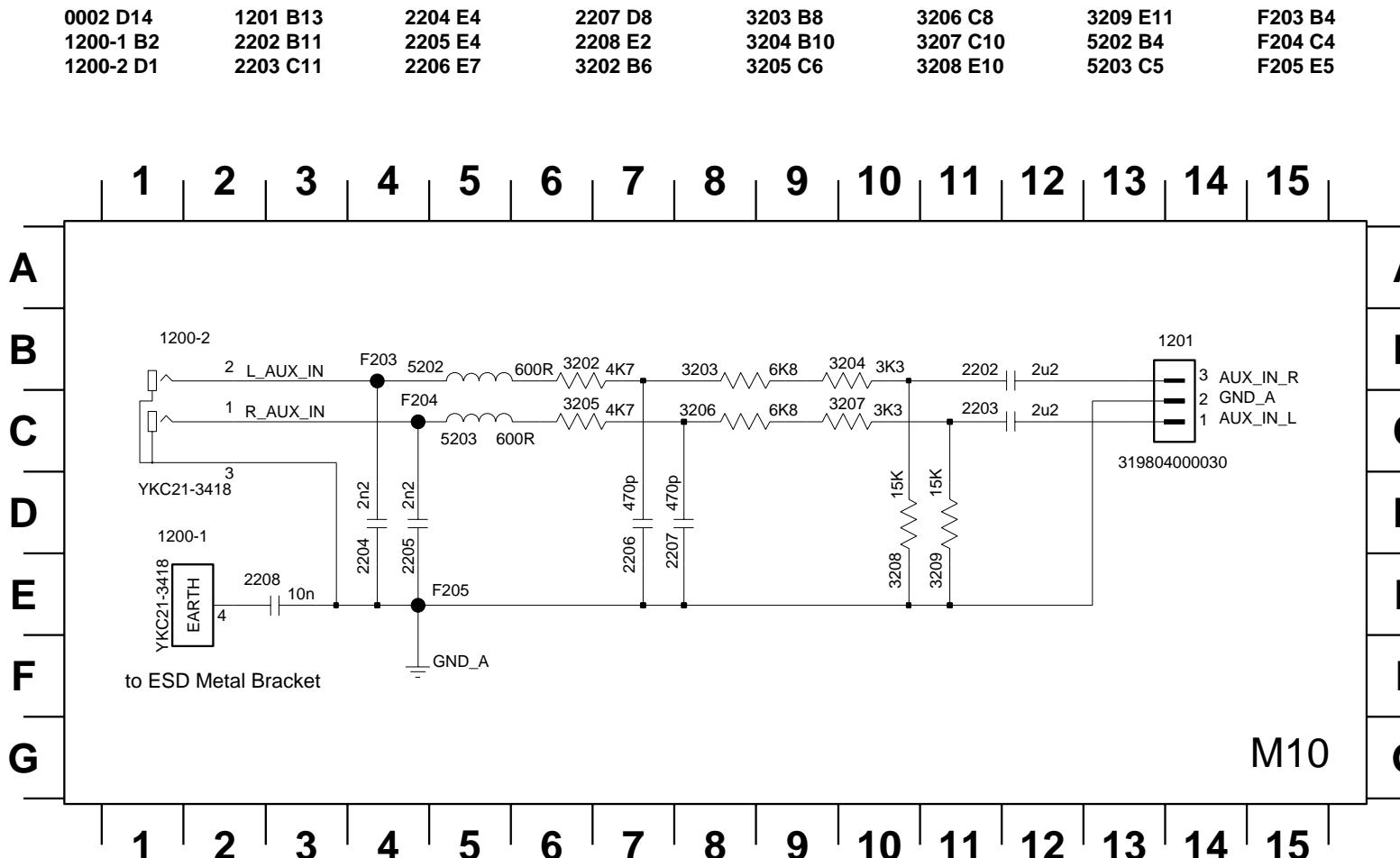
## PB - AF/AMP - Layout Diagram - TOP

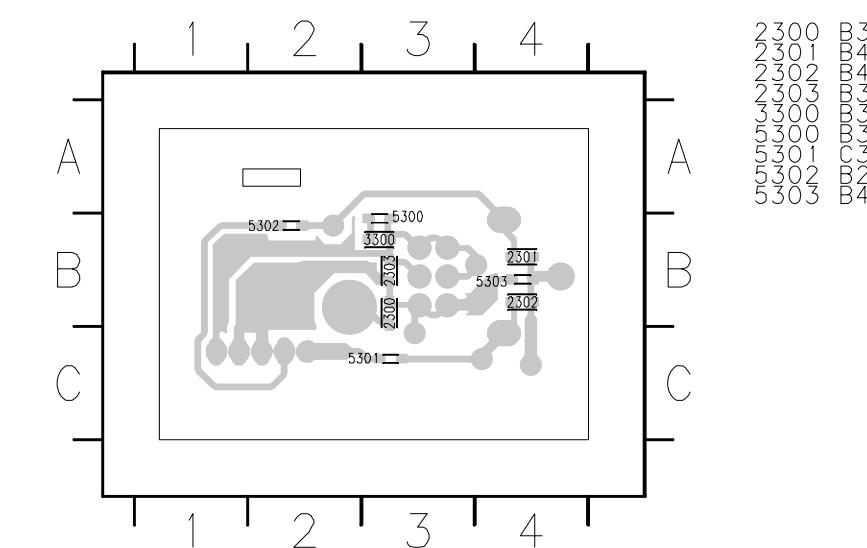
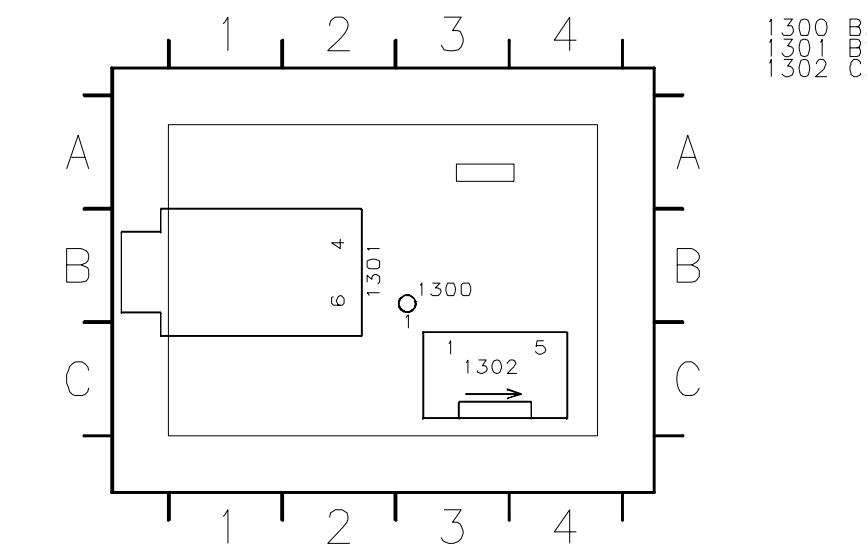
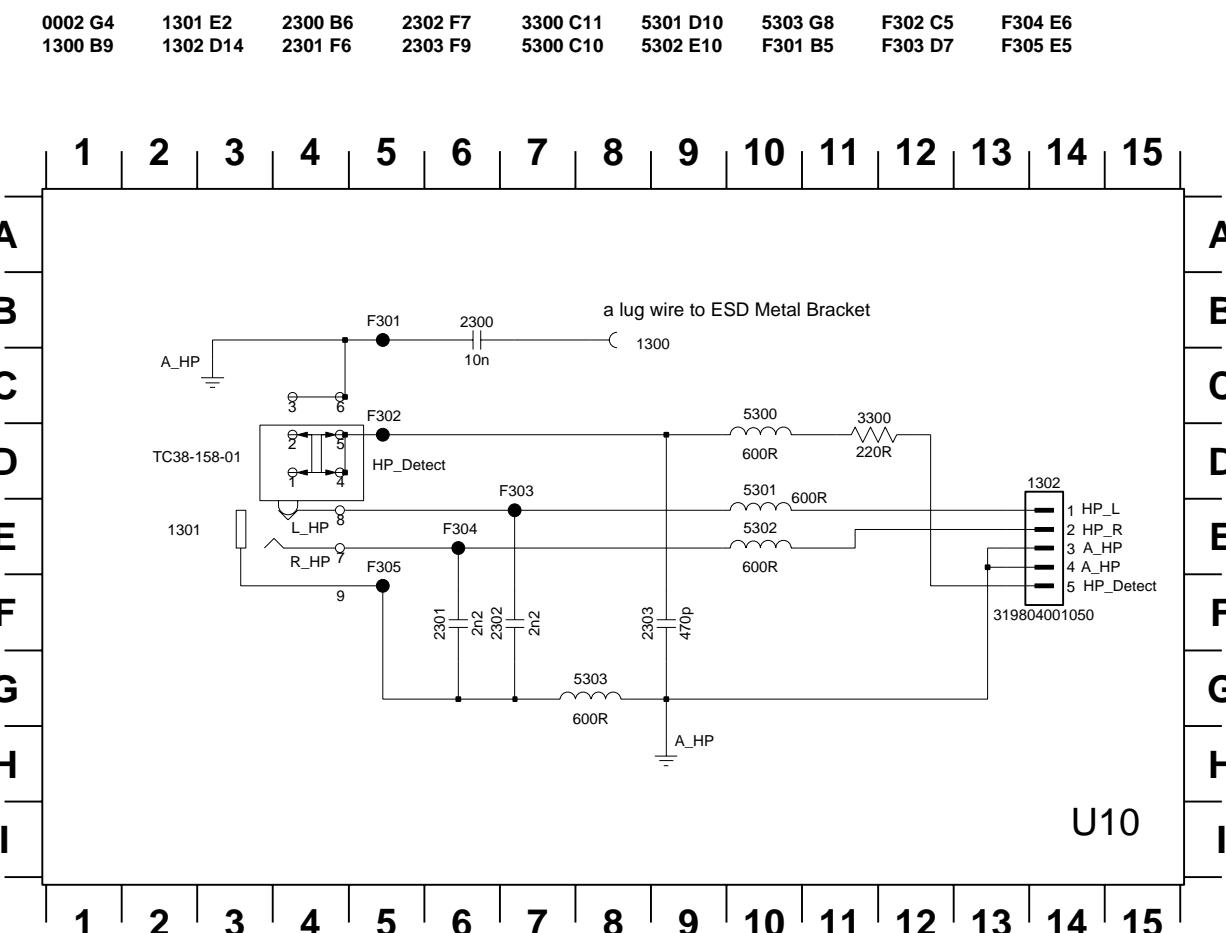


PB - AF/AMP - Layout Diagram - Bottom

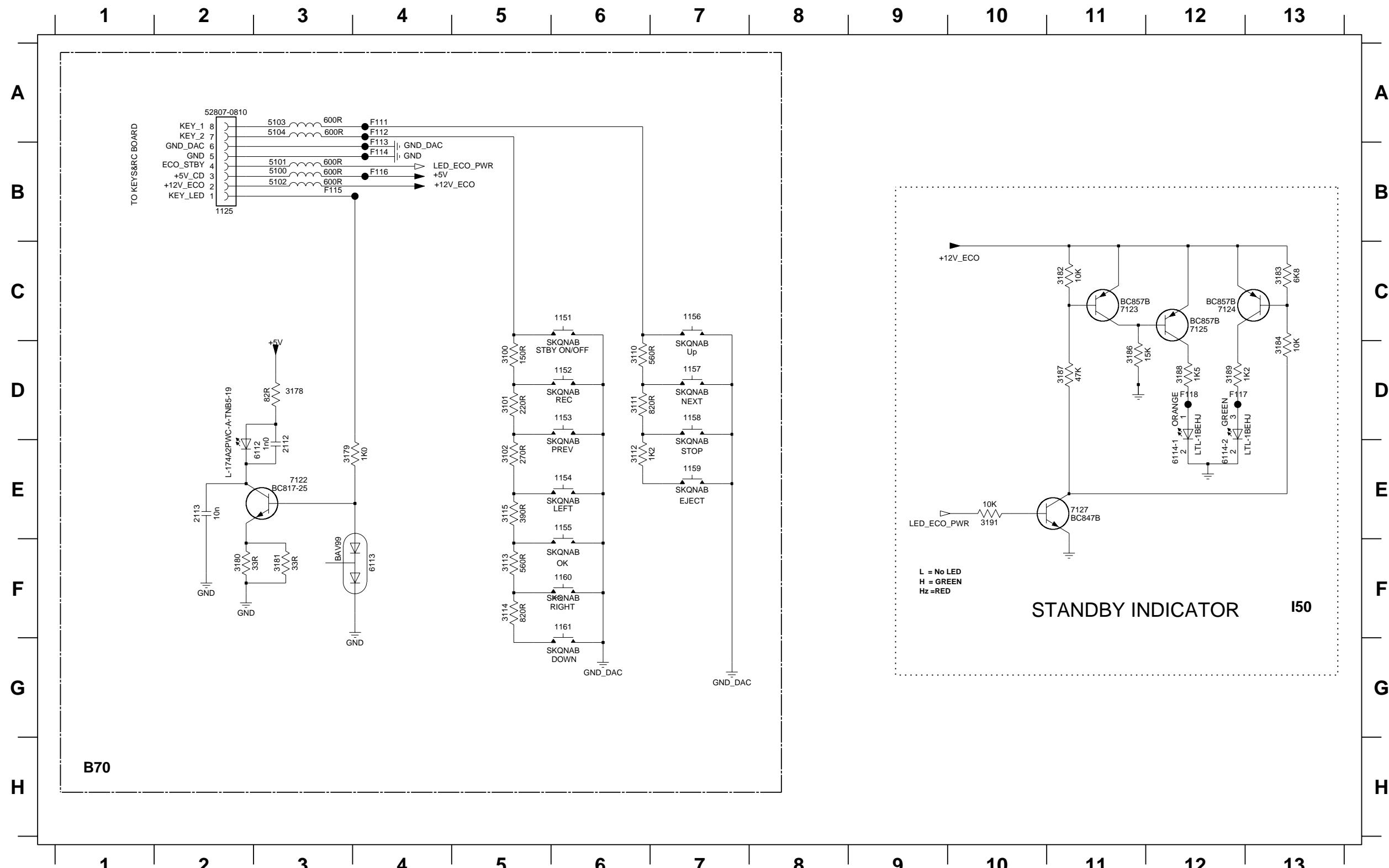


PB - AUX IN



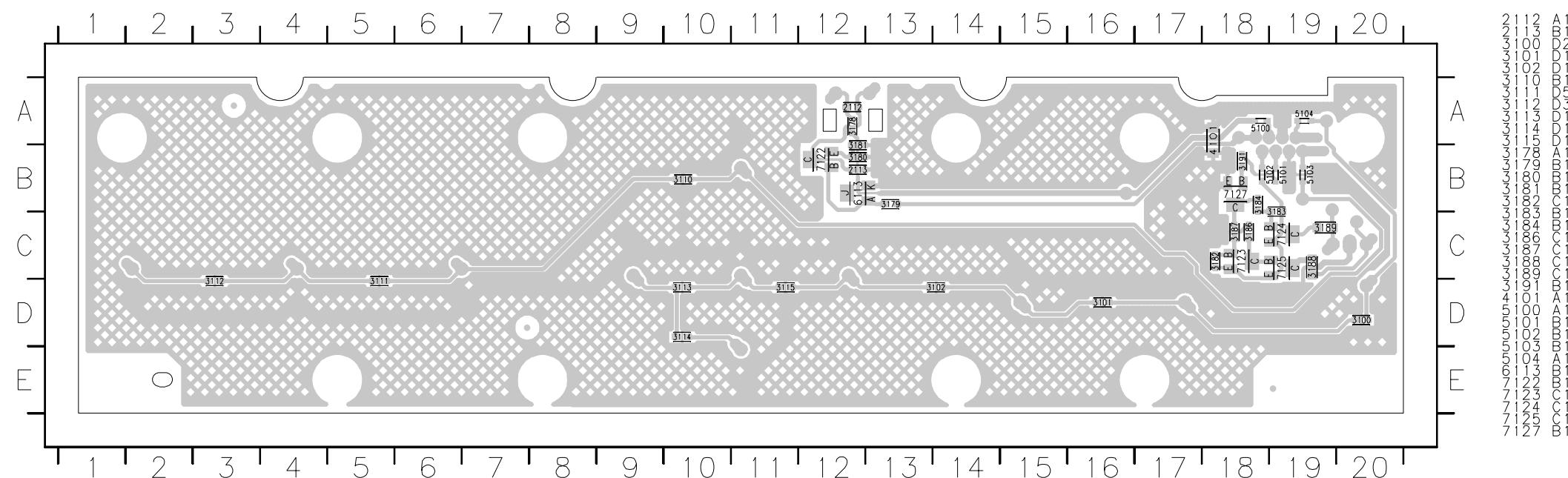
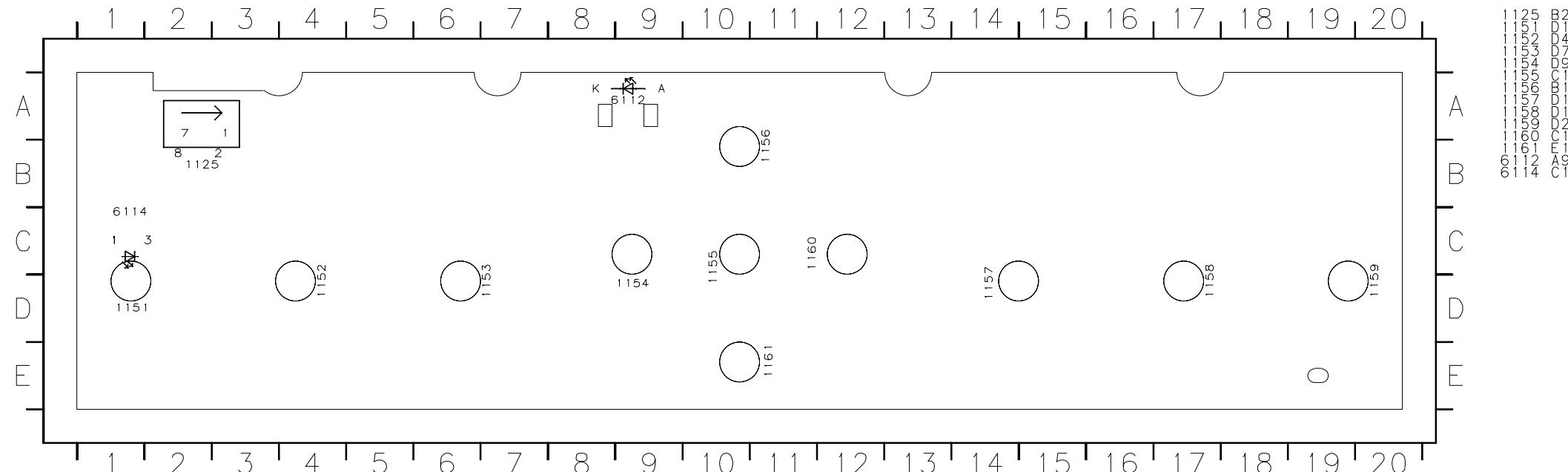
**PB - HEADPHONE**

## PB - Keys - Circuit Diagram



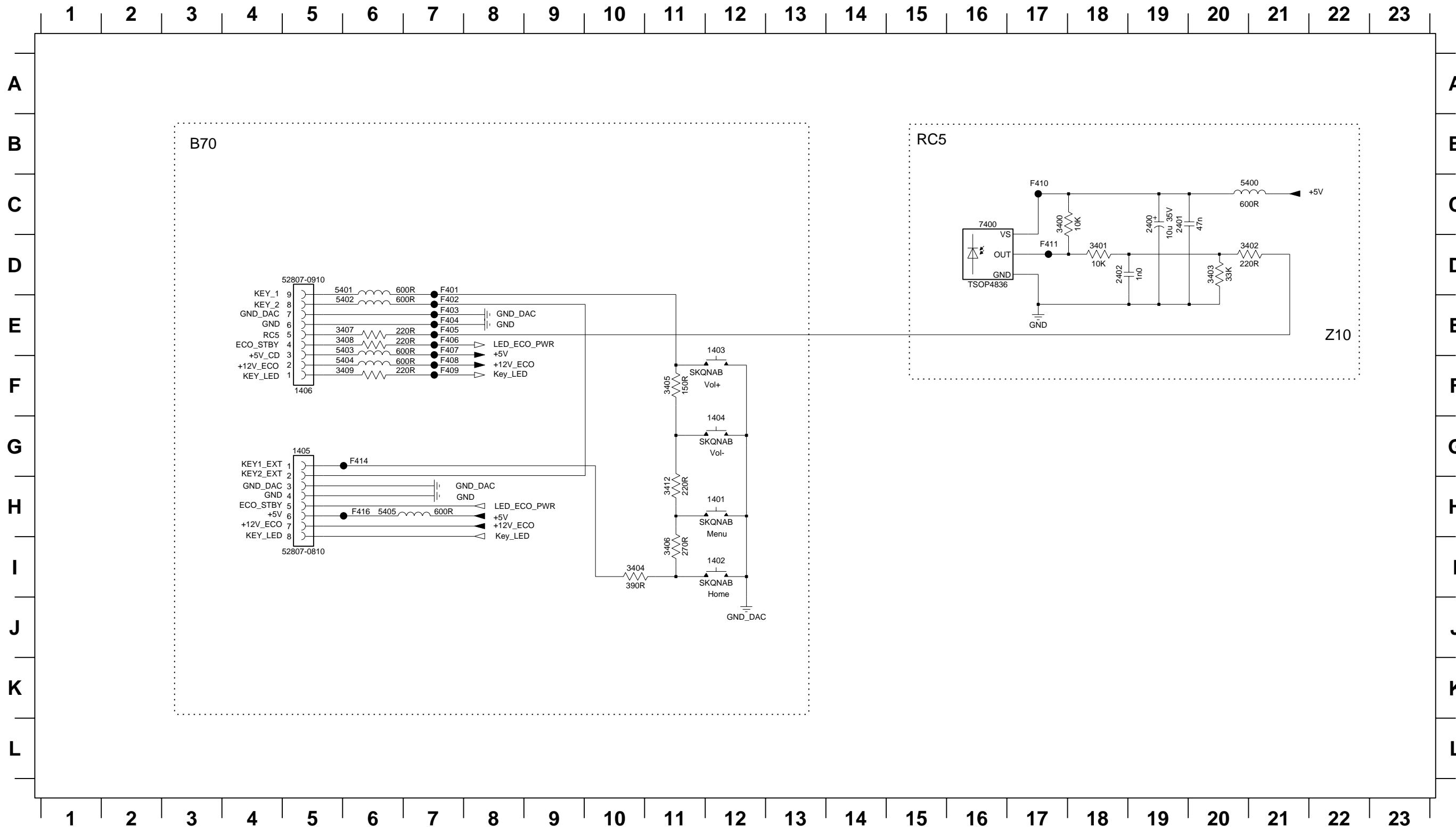
1125 B2  
1151 C6  
1152 D6  
1153 D6  
1154 E6  
1155 E6  
1156 C7  
1157 D7  
1158 D7  
1159 E7  
1160 F6  
1161 F6  
2112 E3  
2113 E2  
3100 D5  
3101 D5  
3102 E5  
3110 D6  
3111 D6  
3112 E6  
3113 F5  
3114 F5  
3115 E5  
3178 D3  
3179 E3  
3180 F2  
3181 F3  
3182 C11  
3183 C13  
3184 D13  
3186 D11  
3187 D11  
3188 D12  
3189 D12  
3191 E10  
5100 B3  
5101 B3  
5102 B3  
5103 A3  
5104 A3  
6112 E3  
6113 F4  
6114-1 D12  
6114-2 D12  
7122 E3  
7123 C11  
7124 C12  
7125 C12  
7127 E11  
F111 A4  
F112 A4  
F113 B4  
F114 B4  
F115 B3  
F116 B4  
F117 D12  
F118 D12

## PB - Keys - Layout Diagram

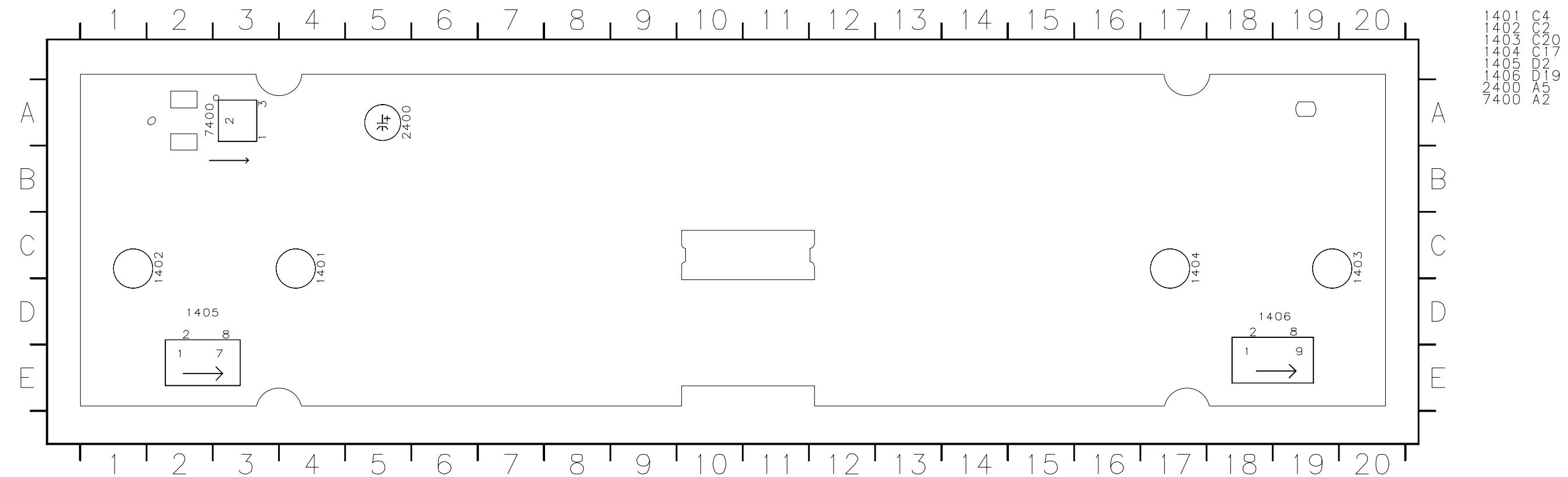


**PB - Keys&RC - Circuit Diagram**

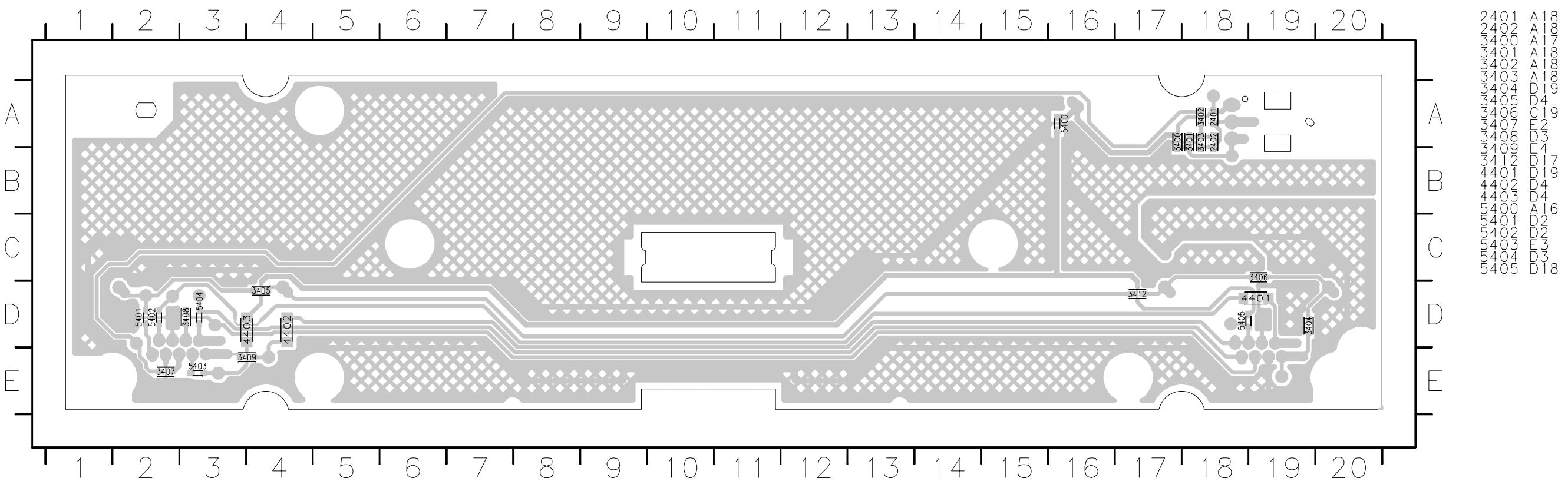
1401 H12	1403 E12	1405 G5	2400 C19	2402 D18	3401 D18	3403 D20	3405 F11	3407 E6	3409 F6	5400 C21	5402 E6	5404 F6	7400 C16	F402 E7	F404 E7	F406 E7	F408 F7	F410 C17	F414 G6
1402 I12	1404 G12	1406 F5	2401 C19	3400 C17	3402 D21	3404 I10	3406 I11	3408 E6	3412 H11	5401 D6	5403 E6	5405 H6	F401 D7	F403 E7	F405 E7	F407 E7	F409 F7	F411 D17	F416 H6

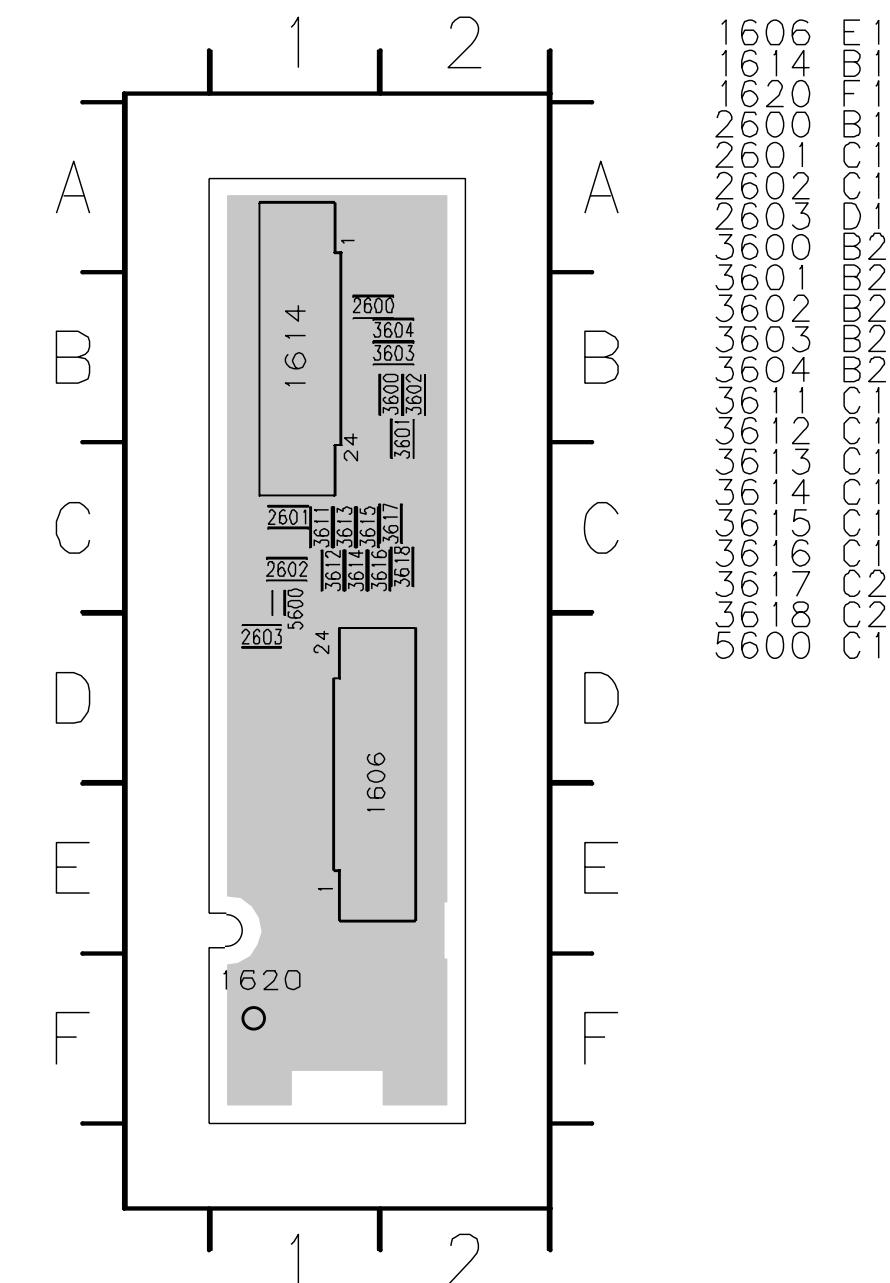
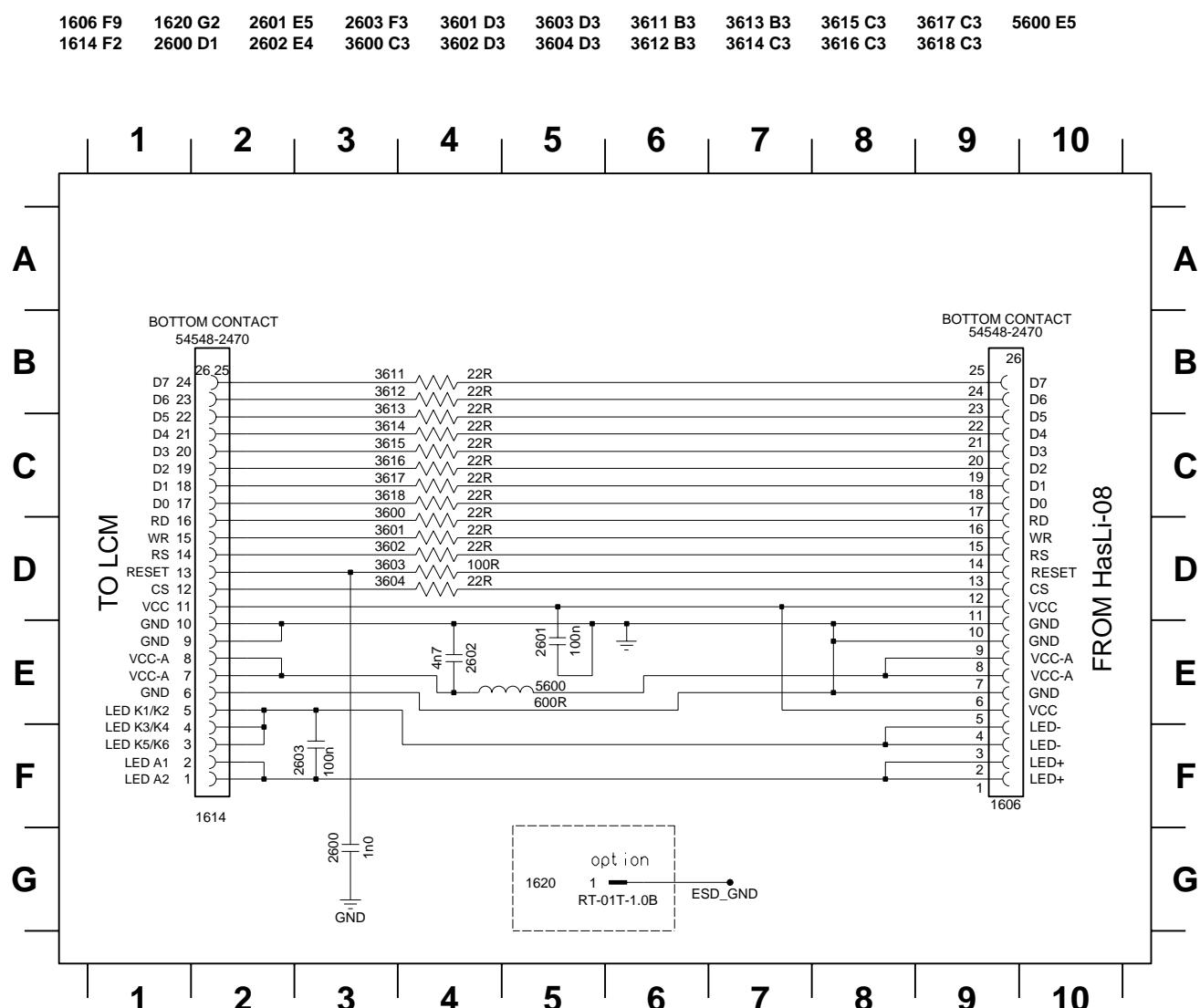


11-2

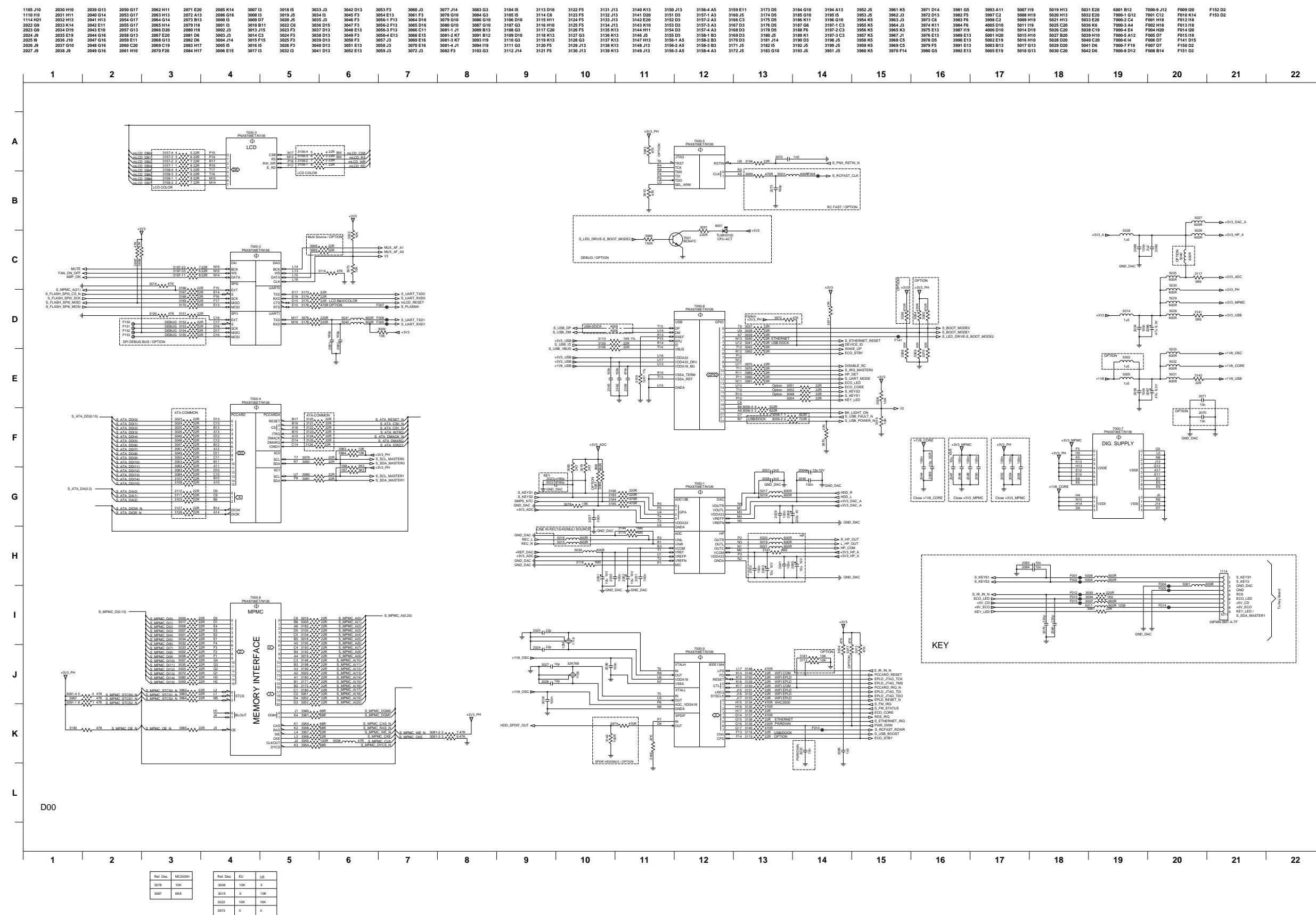
**PB - Keys&RC - Layout Diagram**

11-2



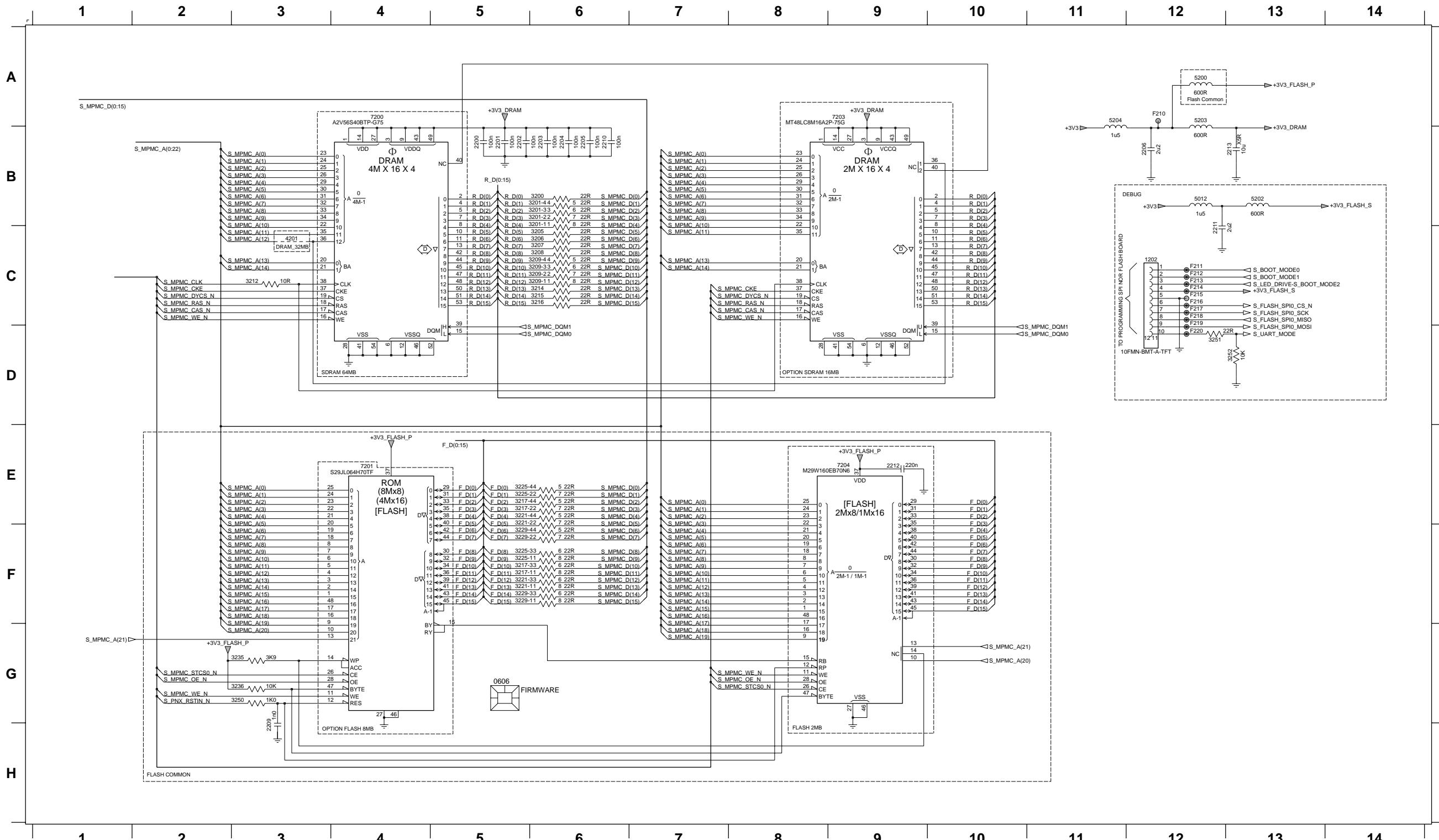
**PB - LCD Interface**

## PB HasLI-08 - Circuit Diagram - CPU Core Part



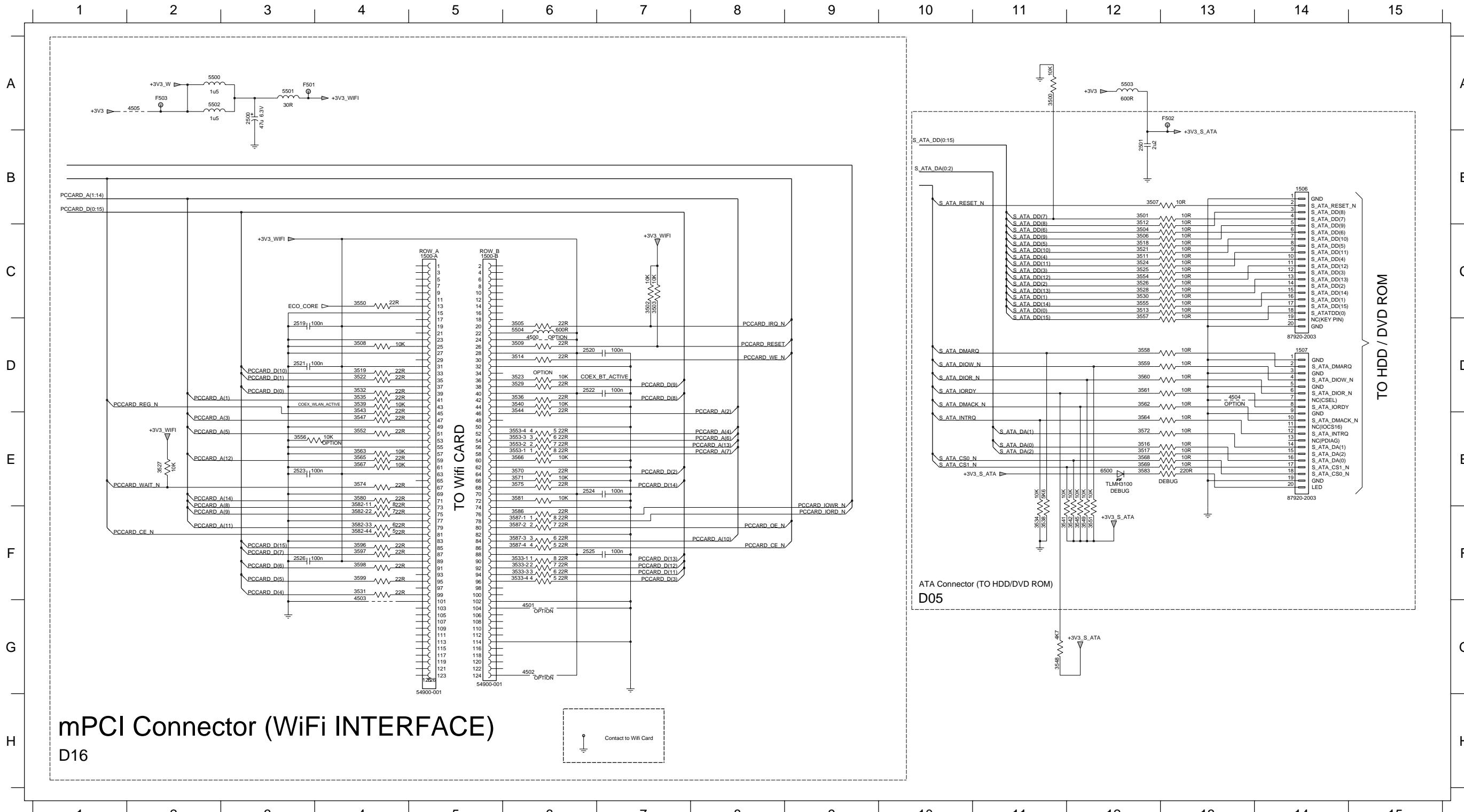
## PB HasLI-08 - Circuit Diagram - FLASH &amp; SDRAM Part

0606 G5	2201 B5	2204 B6	2209 H3	2212 E9	3201-1 C6	3201-4 B6	3207 C6	3209-2 C6	3212 C3	3216 C6	3217-3 F5	3221-2 F5	3225-1 F5	3225-4 E5	3229-3 F5	3236 G3	3252 D13	5200 A12	5204 A11	7203 A9	F211 C12	F214 C12	F217 C12	F220 D12
1202 C12	2202 B5	2205 B6	2210 B6	2213 B13	3201-2 B6	3205 C6	3208 C6	3209-3 C6	3214 C6	3217-1 F5	3221-3 F5	3225-2 F5	3229-1 F5	3229-4 F5	3250 G3	4201 C3	5202 B13	7200 A4	7204 E9	F212 C12	F215 C12	F218 C12	F219 C12	
2200 B5	2203 B6	2206 B12	2211 C12	3201-3 B6	3206 C6	3209-1 C6	3209-4 C6	3215 C6	3217-2 E5	3221-1 F5	3221-4 E5	3225-3 F5	3229-2 F5	3235 G3	3251 D12	5012 B12	5203 A12	7201 E4	F210 A12	F213 C12	F216 C12	F219 C12		



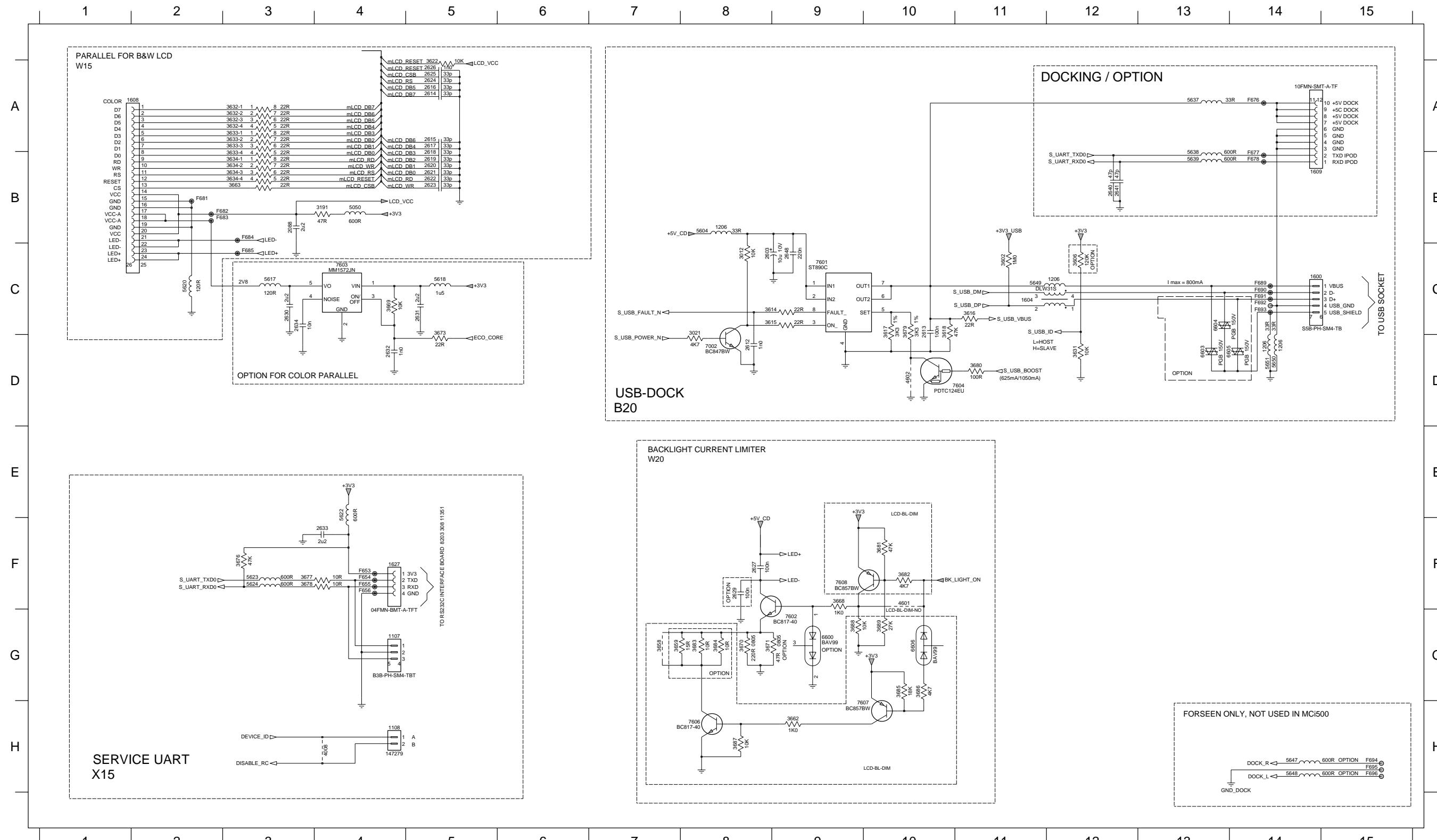
## PB HasLI-08 - Circuit Diagram - mPCI &amp; ATA Connector Part

1500-A C5	2500 A3	2521 D3	2525 F6	3502 C7	3506 C12	3511 C12	3516 E12	3521 C12	3525 C12	3529 D6	3533-1 F6	3534 F11	3539 D4	3543 E4	3548 G11	3552 E4	3553-4 E6	3557 D12	3561 D12	3566 E4	3569 E12	3574 E4	3582-1 F4	3583 E12	3587-3 F6	3598 F4	4502 G6	5500 A2	5504 D6	F503 A2
1500-B C5	2501 B12	2522 D6	2526 F3	3503 C7	3507 B12	3512 C12	3517 E12	3522 D4	3526 C12	3530 C12	3532-2 F6	3535 D4	3540 D6	3544 E6	3549 F12	3553-1 E6	3554 C12	3558 D12	3562 D12	3566 E6	3570 E6	3575 E6	3582-2 F4	3586 F6	3587-4 F6	3599 F4	4503 G4	5501 A3	6500 E12	
1500-B 14	2519 D3	2523 E3	3500 A11	3504 C12	3508 D4	3513 C12	3518 C12	3523 D6	3527 E2	3531 F4	3533-3 F6	3536 D6	3541 F11	3545 F12	3550 C4	3553-2 E6	3555 C12	3559 D12	3563 E4	3567 E4	3571 E6	3575 E4	3582-3 F4	3587-1 F6	3596 F4	4500 D6	4504 D13	5502 A2	F501 A3	
1507 D14	2520 D6	2524 E6	3501 B12	3505 D6	3509 D6	3514 D6	3524 C12	3528 C12	3532 D4	3538 F11	3542 F12	3547 E4	3551 F12	3553-3 E6	3556 E3	3556 E3	3560 D12	3564 E12	3568 E12	3572 E12	3581 E6	3582-4 F4	3587-2 F6	3597 F4	4501 G6	4505 A2	5503 A12	F502 A13		

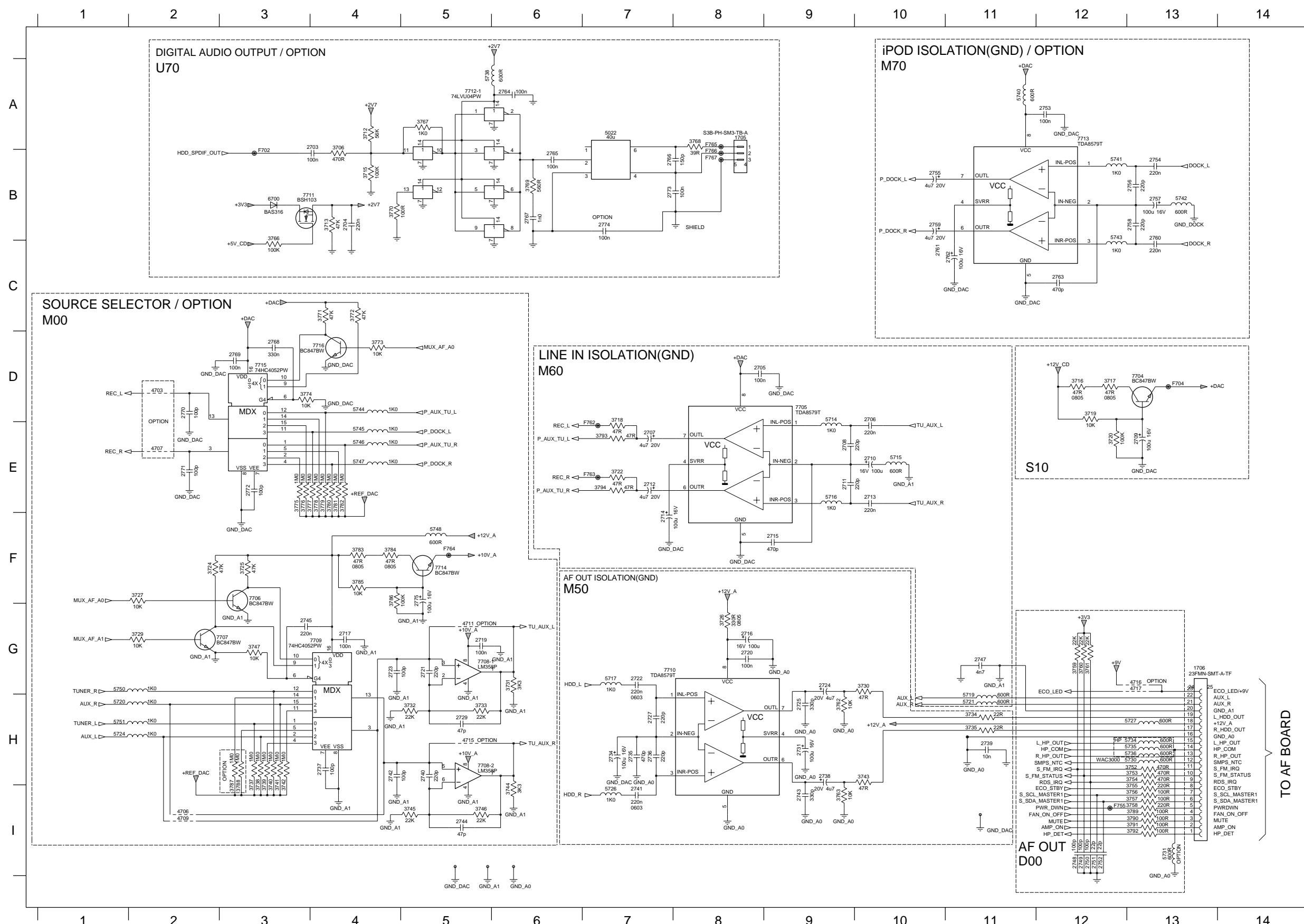


## PB HasLI-08 - Circuit Diagram - I/O Interface Part

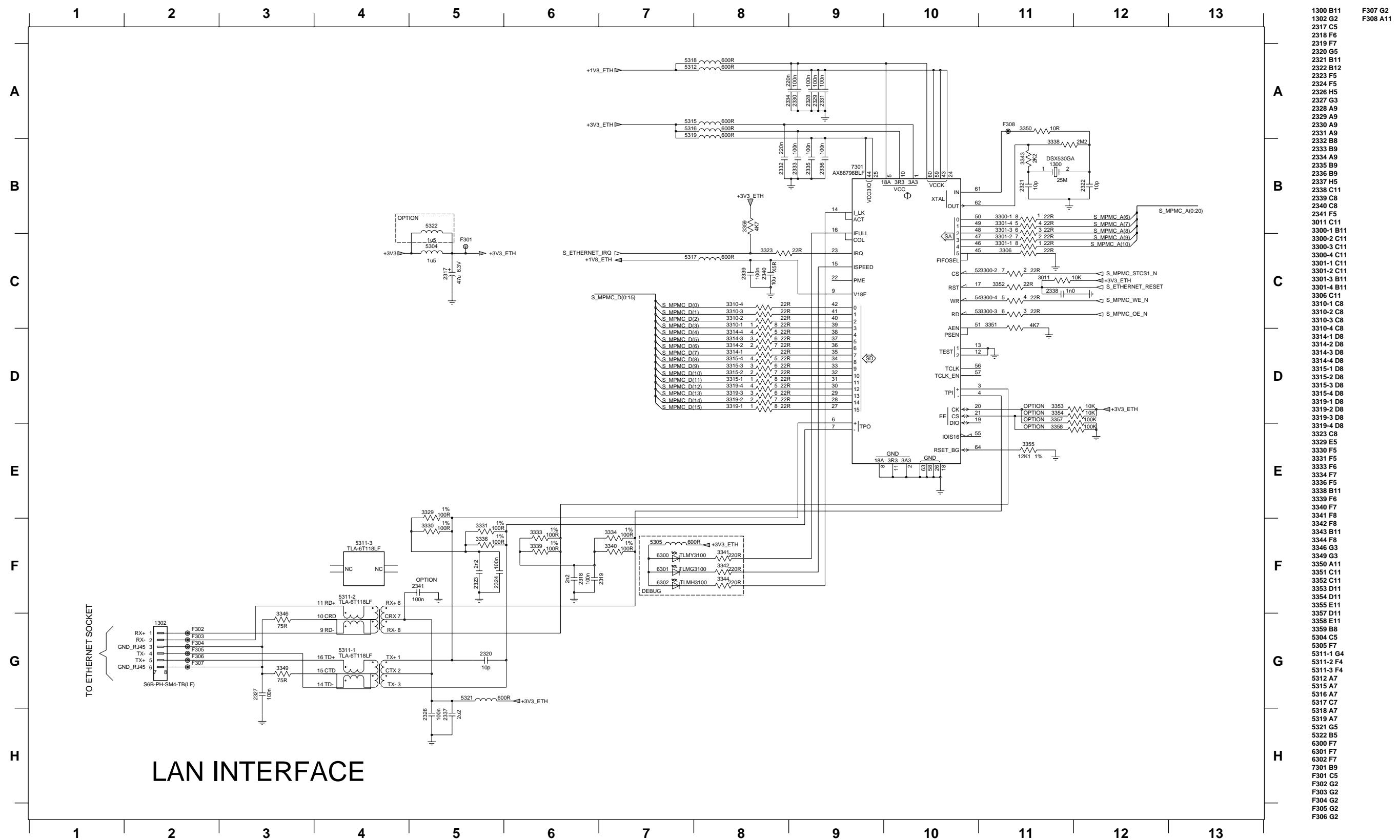
1107 G4	1609 B14	2613 C10	2618 B5	2623 B5	2629 F8	2634 C3	3021 C8	3615 C8	3631 D12	3633-1 A3	3634-2 B3	3662 H9	3671 G8	3679 C10	3684 G8	3689 G10	5804 B8	5823 F3	5847 H14	6600 G9	7002 D8	7606 H8	F655 F4	F681 B2	F689 C14	F694 H15
1108 H4	1627 F4	2614 A5	2619 B5	2624 A5	2630 C3	3101 B4	3616 C11	3632-1 A3	3633-2 A3	3634-3 B3	3663 B3	3663 F3	3673 C5	3680 D11	3685 G10	4609 H4	5817 C3	5824 F3	5848 H14	6603 D13	7601 C9	7607 G10	F656 F4	F682 B2	F690 C14	F695 H15
1600 C14	2086 G3	2615 A5	2620 B5	2625 A5	2631 G5	2641 B12	3602 C11	3617 C10	3632-2 A3	3633-3 A3	3634-4 B3	3669 F9	3676 F3	3681 F10	3686 G10	4601 F10	5818 C5	5837 A13	5849 C11	6604 D13	7602 G8	7608 F9	F676 A14	F683 B2	F691 C14	F696 H15
1604 C11	2603 C8	2616 A5	2621 B5	2626 A5	2632 D4	2648 C9	3606 C12	3618 C10	3632-3 A3	3633-4 B3	3638 G7	3669 C4	3677 F3	3682 F10	3687 H8	4602 D10	5820 C2	5838 B13	5850 D14	6605 D14	7603 C4	F653 F4	F677 B14	F684 B3	F692 C14	
1608 A2	2612 D8	2617 A5	2622 B5	2627 F8	2633 F4	3012 C8	3614 C8	3622 A5	3634-1 B3	3635 G7	3670 G8	3678 F3	3683 G8	3688 G9	5050 B4	5622 E4	5639 B13	5651 D14	6606 G10	7604 D11	F654 F4	F678 B14	F685 C3	F693 C14		



## PB HasLI-08 - Circuit Diagram - AF Part

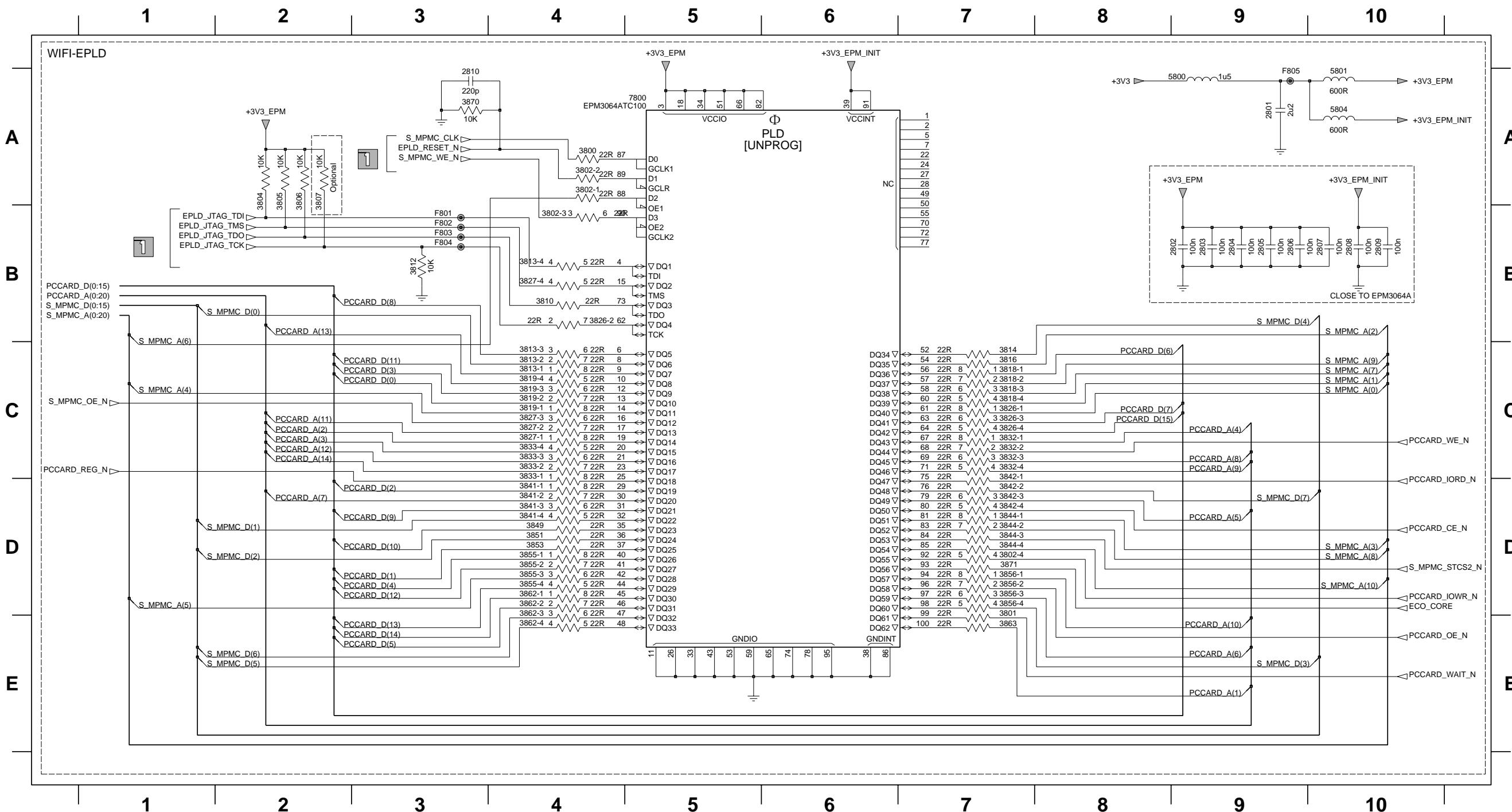


## PB HasLI-08 - Circuit Diagram - ETHERNET Part

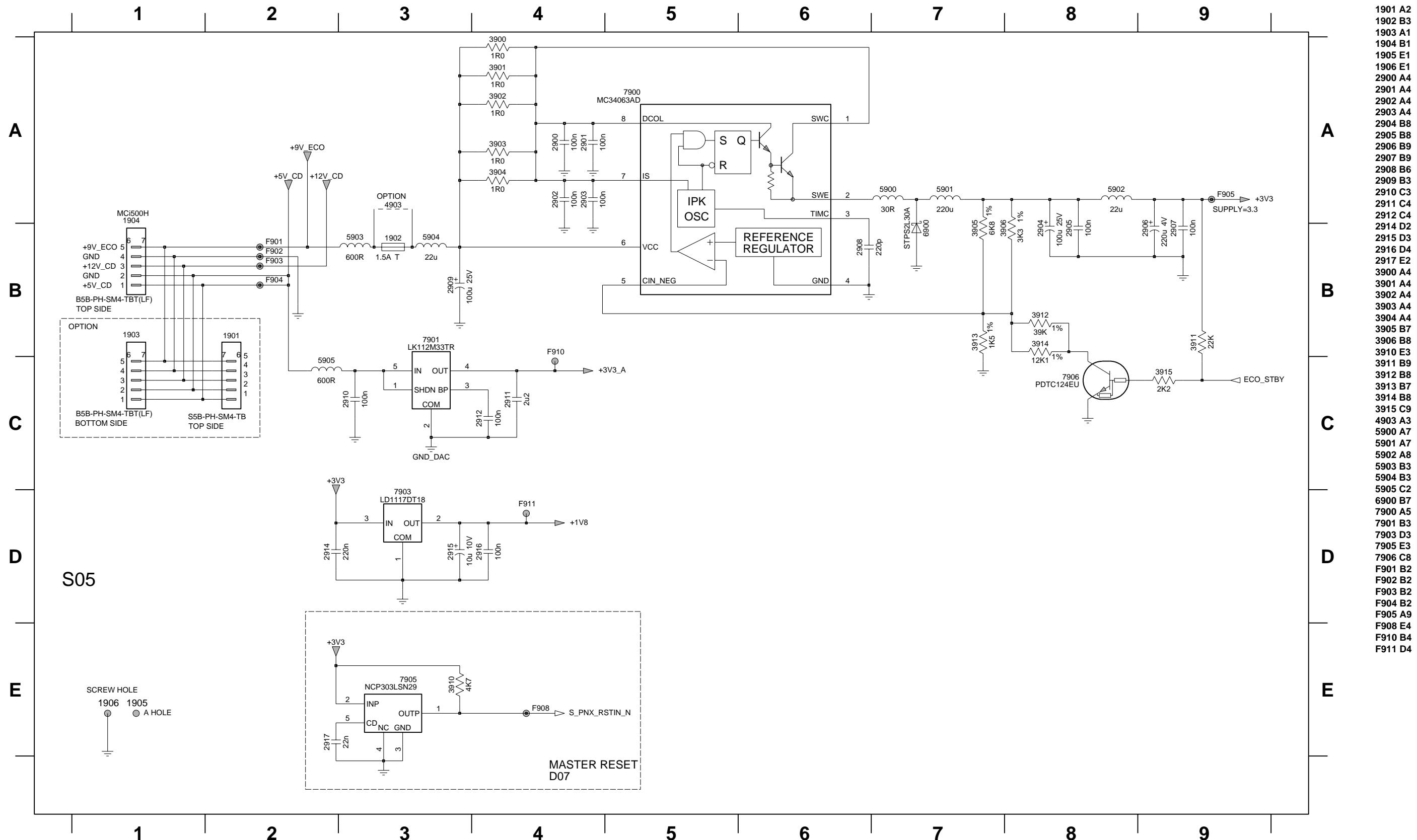


## PB HasLI-08 - Circuit Diagram - CPLD Part

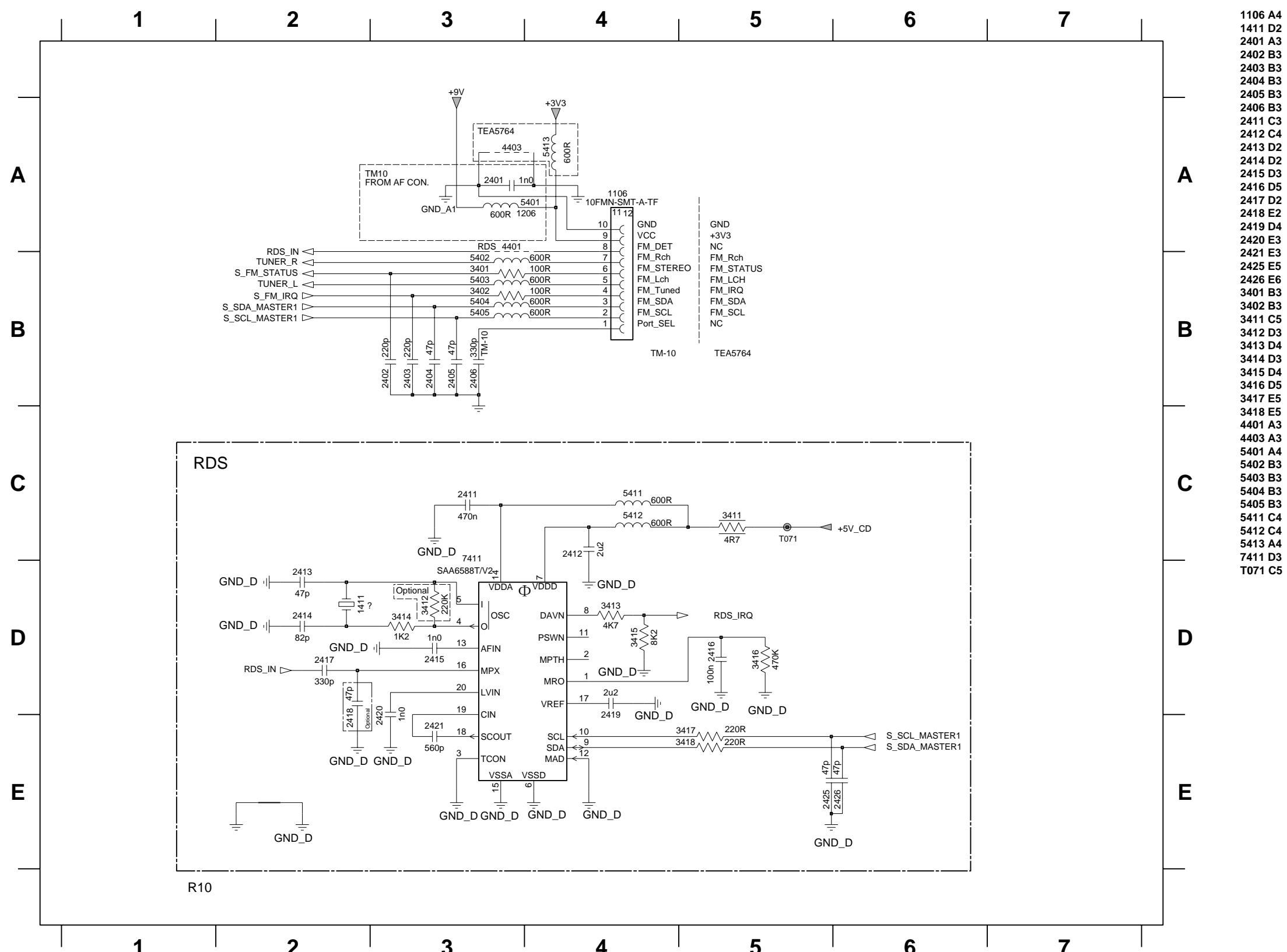
2801 A9	2806 B9	3800 A4	3802-4 D7	3810 B4	3813-4 B4	3818-3 C7	3819-4 C4	3827-1 C4	3832-2 C7	3833-3 C4	3841-4 D4	3844-1 D7	3851 D4	3855-4 D4	3862-1 D4	3870 A3	7800 A5	F805 A9
2802 B9	2807 B10	3801 E7	3804 A2	3812 B3	3814 C7	3818-1 C4	3819-1 C4	3826-1 C7	3827-2 C4	3832-3 C7	3833-4 C4	3842-1 D7	3844-2 D7	3853 D4	3856-1 D7	3862-2 D4	3871 D7	F801 B3
2803 B9	2808 B10	3802-1 A4	3805 A2	3813-1 C4	3816 C7	3819-2 C4	3826-2 C4	3827-3 C4	3832-4 C7	3841-1 D4	3842-2 D7	3844-3 D7	3855-1 D4	3856-2 D7	3862-3 E4	5800 A9	F802 B3	
2804 B9	2809 B10	3802-2 A4	3806 A2	3813-2 C4	3818-1 C7	3819-2 C4	3826-3 C7	3827-4 B4	3833-1 D4	3841-2 D4	3842-3 D7	3844-4 D7	3855-2 D4	3856-3 D7	3862-4 E4	5801 A10	F803 B3	
2805 B9	2810 A3	3802-3 B4	3807 A2	3813-3 C4	3818-2 C7	3819-3 C4	3826-4 C7	3832-1 C7	3833-2 C4	3841-3 D4	3842-4 D7	3849 D4	3855-3 D4	3856-4 D7	3863 E7	5804 A10	F804 B3	



PB HasLI-08 - Circuit Diagram - SUPPLY Part

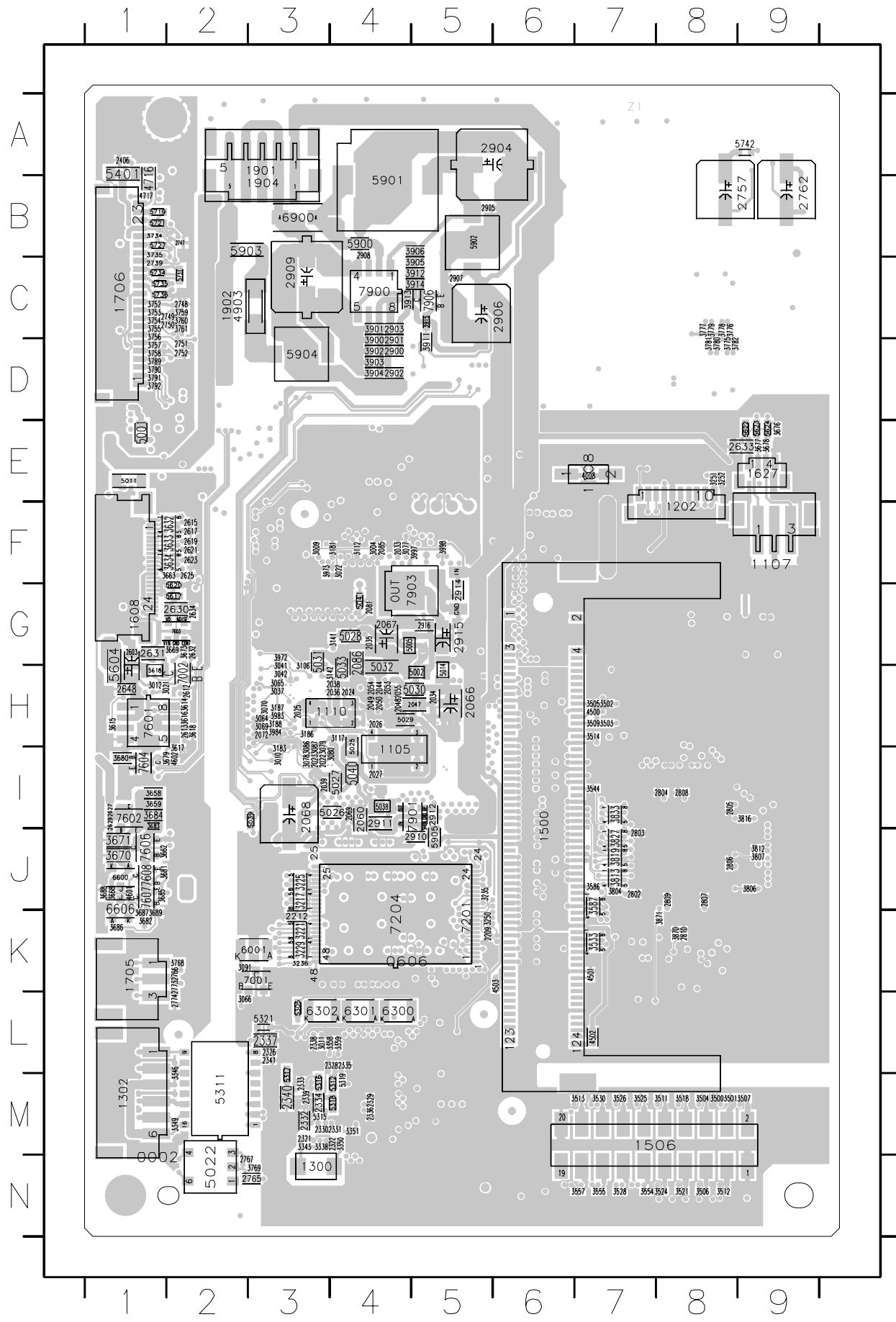


## PB HasLI-08 - Circuit Diagram - TUNER Part

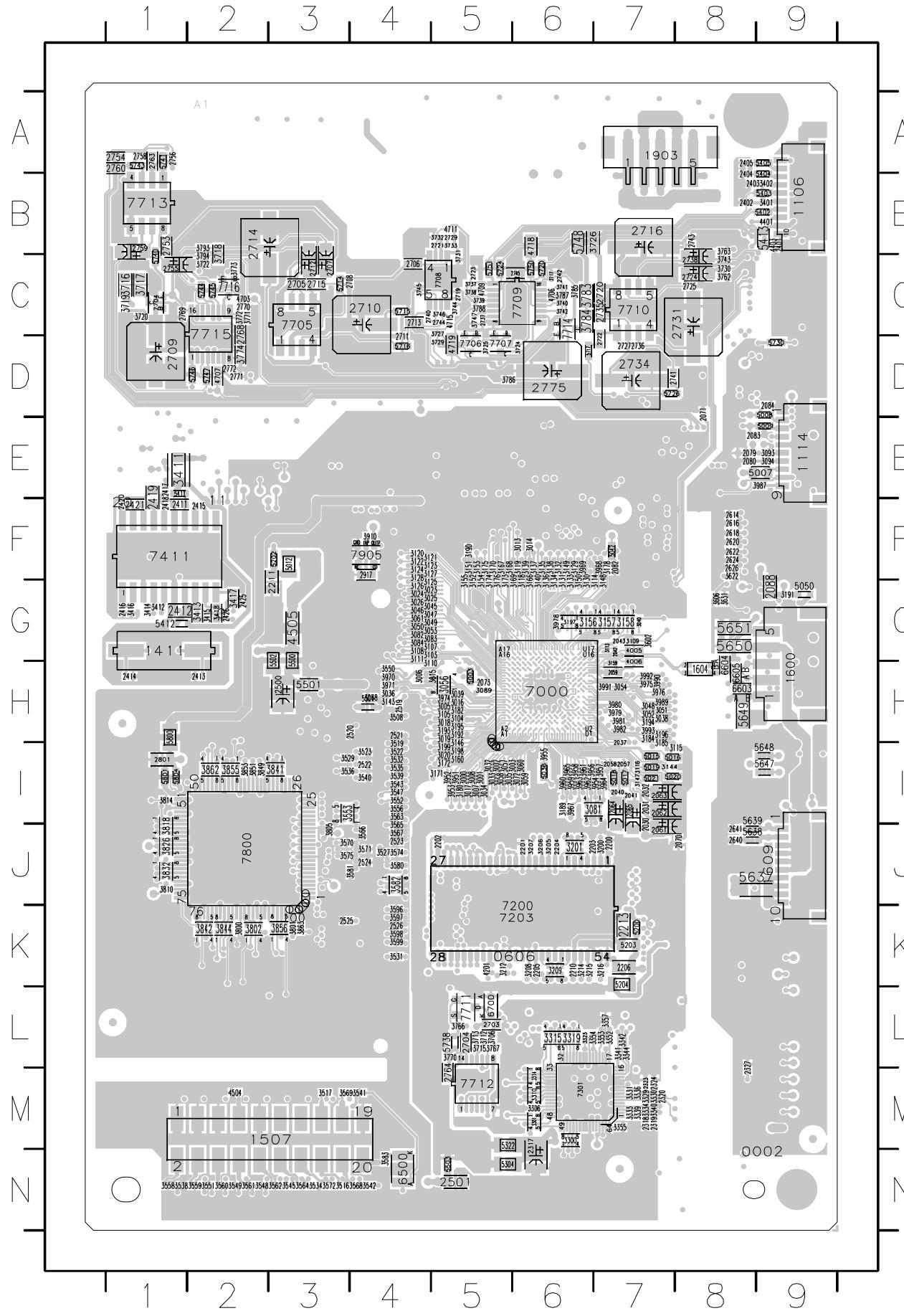


FORSEEN ONLY, NOT USED IN MCi500

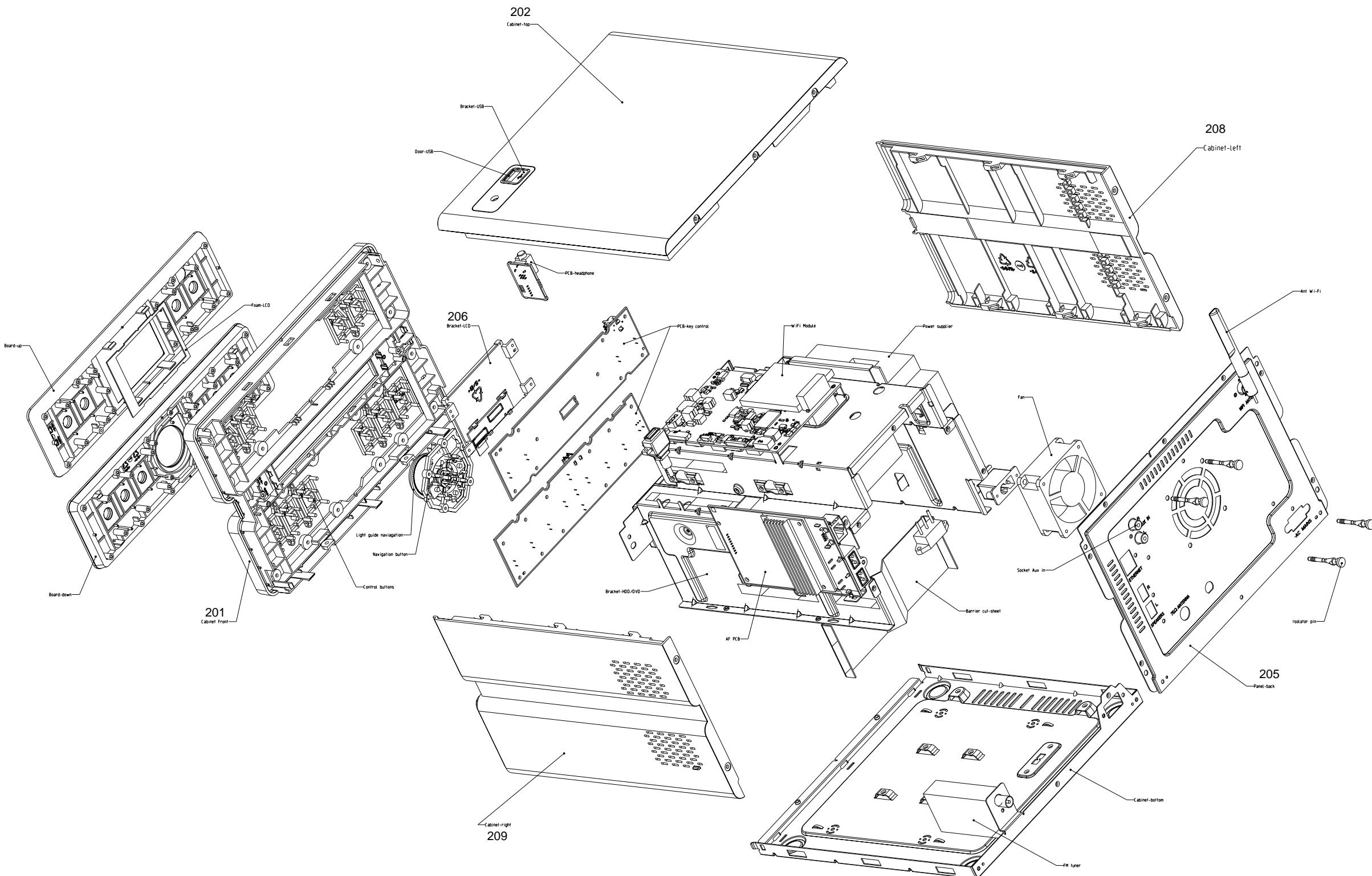
PB HasLI-08 - Layout Diagram - TOP



PB HasLI-08 - Layout Diagram - BOTTOM



## Explode Diagram



**ACCESSORIES PARTS LIST**

456	242207600687	ANT FM DIP SD-2380 B
457	314107870361	CD ROM INSTALL SW MCI500H (/05)
457	314107870301	INSTALLER-SW(CDR) WAC-3500D/12(/12)
460	313923816391	RC2023622/01
469	242207098147	MAINSCORD UK 2A5 1M5 DET 2P B(/05)
469	242207098151	MAINSCORD EUR 2A5 1M5 DET 2P B(/12)
470	314107850351	BOX SPK ASSY MCI500H/12

**MISCELLANEOUS PARTS LIST**

201	314107751571	CABINET FRONT ASSY MCI500H/12
202	314107751601	TOP PRE-ASSY MCI500H
205	314107120881	PANEL BACK MCI500H/12
206	314107405081	LCD BRACKET MCI500H/12
208	314107405091	CABINET-LEFT MCI500H/12
209	314107405101	CABINET-RIGHT MCI500H/12
210	314107405121	DOOR-CD-LITEON MCI500H/12(314107405131)
210	314107405131	DOOR-CD-TEAC MCI500H/12
239	314107120901	BRACKET-ETHERNET MCI500H
247	314107403851	HOLDER ANTENNA WAC3500D
1002	282203101522	FAN 12VDC 0.8W 3100RPM B
1003		MOD HasLi-08 MCI500H/12
1000	314107050481	HDD 3.5" 160GB+SW V1.0 MCI500H
1001	314107802951	PBAS HasLi-08 (TFT) MCI500H/12
1002	282206502109	WMOD WIFI MPCI PM101_US B
1004	314107850341	MODULE SMPS MCI500H/05
1005	242254200049	TUN FM ENG07826QF EUR B
1006	314107050441	DVDROM 16D2P+FW EPT4 WAC3500D
1007	272217100648	LCD MODULE YB-TG240320C16D Y
1008	242207600717	ANT WIFI 2450MHZ 50R Y
1009	242254901803	ANT WIFI WAS7500 B
1010	314107803001	PBAS 4 - AF/AMP MCI500H
1011	314107803011	PBAS 3 - LCD Interface MCI500H
1020	314107803021	PBAS 7 - Headphone MCI500H
1021	314107803031	PBAS 8 - AUX in MCI500H
1022	314107803041	PBAS 9 - Keys & RC MCI500H
1023	314107803051	PBAS 6 - Keys MCI500H
8001	314107022061	FFC 24P/280/24P 0.5MM AD
8003	314107021631	FFC 10P/430/10P BD 1.25mm
8005	314107022011	FFC FOIL 23P/280/23P 1MM BD
8006	314107021131	FFC FOIL 09P/220/09P AD 1MMP
8007	314107021991	CBLE 5P PH/130/USB-A (REC)
8009	313911036061	FFC FOIL 08P/100/08P BD 1MMP

**Note:** Only these parts mentioned in the list are normal service parts.