

Service
Service
Service



Service Manual

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DCM3020/12 have MK1 and MK2(page 30 onwards) SBOM, please base on below S/N to select correct service manual to repair product.

MK1 version: GC1A1116000001-GC1A1133019032 GC1B1133019033-GC1B1246091337

MK2 version: All S/N after GC1C1246091338



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Published by SW 1136 Service Audio Subject to modification

3141 785 36284

Version 1.4



PHILIPS

VERSION VARIATION

Type /Versions:		DCM3020		
Board in used:	Service policy	/05	/12	/55/79
		(EUROPE)	(EUROPE)	(LATAM)
Main BOARD		C	C	M/C
CD BOARD		C	C	M/C
Power BOARD		C	C	M/C
Ipod BOARD		C	C	M/C
Headphone JACK BOARD		C	C	M/C
USB BOARD		C	C	M/C
Tuner BOARD		C	C	M/C
Key BOARD		C	C	M/C
CD Door BOARD		C	C	M/C
Display BOARD		C	C	M/C
Type /Versions:		DCM3020		
Features	Feature difference	/05	/12	/55/79
RDS		√	√	√
VOLTAGE SELECTOR				
ECO STANDBY - DARK				
* TIPS : C -- Component Lever Repair. M -- Module Lever Repair √ -- Used				

<u>Description</u>	<u>Pos.</u>	<u>Description</u>	<u>Pos.</u>	
	1			
	2			
	3			
	4			
	5			
	6			
	7			
	8			
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16)			
	17			
	18)			
	19)			
	20)			
	21)			
	22)			
	23)			
	24)			
	25)			
	26)			
	27)			
28)				
<u>Battery location</u>				
NA				
<u>CABINET</u>				
Dimensions with Boxes (L XXX x W XXX x H XXX): mm	Material: XXX / XXX		38	
Dimensions without Boxes: XXX*XXX*XXX mm (LxWxH)	Finishing: XXX		39	
Weight (including packing): XXX kg	Unit in Mastercarton: N/A		40	
Weight (excluding packing and batteries): XXXkg	Units in Dealercarton: 1 set		41	
<u>INTERCONNECTION POSSIBILITIES</u>				
<u>Pos.</u>	<u>Connection/Function</u>	<u>Connector type</u>	<u>Electrical data (input or R.O.P)</u>	
<u>ACCESSORIES :</u>				
(1) REMOTE CONTROL				
(2) SPEAKER BOX (X2PCS)		(3) LINE IN CABLE		
<u>REMARKS :</u>				
Revise		SET SPECIFICATION		
		CD MICRO SYSTEM		
Name:		Date:2010-11-15	Tot.Sh.: 7	SHEET 1
Check:		Date:		

GENERAL DESCRIPTION											
CD PLAYER W/PLL RADIO AUX 2X60W											
LIFETIME(according to XUT-0026)											
5 Years											
PERFORMANCE CLASSES											
Class	Tuner	Supply+Amplifier	Loudspeaker Boxes	Cassette Recorder	DVD/CD						
I	X		X								
II		X			X						
III											
SAFETY requirements											
IEC60065											
RADIATION/IMMUNITY requirements(EMC)											
CLIMATIC requirements(according to UAN-D1590)											
ALL climates		:	+5°C	till	+40 °C						
MODERATE climates		:		till	°C						
POWER SUPPLY											
MAINS (AC)											
Version	/12										
AC Voltage	230V ± 10%										
Voltage Selection	NA										
Frequency	50 Hz										
POWER CONSUMPTION											
	DCM3020										
Operation (1/8 Prated,Nom AC input)	50W										
Standby(Demo Mode"Off",Nom AC input)	<3W										
ECO Standby(No FTD Display,Nom AC input)	<1W										
Q and R according to Product Division Rules <table style="width: 100%;"> <tr> <td style="width: 33%; text-align: center;">Quality</td> <td style="width: 33%; text-align: center;">0.4% (major)</td> <td style="width: 33%; text-align: center;">1.5%(minor)</td> </tr> <tr> <td style="text-align: center;">Reliability</td> <td style="text-align: center;">2.0% (C42)</td> <td></td> </tr> </table> Tested according to General Test Instruction UAN-D1591 Measured According to UAN-L1059 unless otherwise stated All not mentioned data, please refer to PQR XUW-0010-JUNE 2001						Quality	0.4% (major)	1.5%(minor)	Reliability	2.0% (C42)	
Quality	0.4% (major)	1.5%(minor)									
Reliability	2.0% (C42)										
DERIVED VERSION					APPROBATION						
REMARKS											
GENERAL SPECIFICATION											
Revise		CD MICRO SYSTEM		SET SPECIFICATION							
Name:		Date:2010-11-15	Tot.Sh.:	7 SHEET 2							
Check:		Date:									

SUPPLY + AF AMPLIFIER + LOUDSPEAKER (BOX SPECIFICATION)

Audio Signal Processing

LOUDNESS / S-BASS / PRESET EQUALIZER

Use AUX as input source with following setup conditions :

- 1)Input sinewave 500mV at 1kHz to L/R channel of AUX-IN socket
- 2)Set preset equalizer to flat mode
- 3)Adjust volume to get 500 mW at 8 ohm load at L/R speaker outputs.
- 4)The 500mW level will be used as 0dB reference.
- 5)Inject sine wave 500mV to AUX-in socket with frequencies indicated in Table 1:

Table 1 (Tolerance $\pm$ 3dB)

DIGITAL SOUND CONTROL (DSC) FREQUENCY RESPONSE(dB)

VOL STEP	Loudness(dB)		DBB(dB)
	100Hz	10KHz	100Hz
5	$\pm$ 3	$\pm$ 2	5 $\pm$ 3
10	$\pm$ 3	$\pm$ 2	15 $\pm$ 3
15	$\pm$ 3	$\pm$ 2	15 $\pm$ 3
25	$\pm$ 3	$\pm$ 2	5 $\pm$ 3
32(MAX)	0	0	$\pm$ 3

DSC	Frequency(Hz)	Response(dB)
Flat	100	0
	1K	0
	10K	0
Jazz	100	3 $\pm$ 2
	1K	1 $\pm$ 1
	10K	0 $\pm$ 3
Pops	100	8 $\pm$ 3
	1K	1 $\pm$ 2
	10K	4 $\pm$ 1
Rock	100	8 $\pm$ 2
	1K	2 $\pm$ 1
	10K	5 $\pm$ 2
Classic	100	3 $\pm$ 2
	1K	1 $\pm$ 1
	10K	0 $\pm$ 1

Revise

SET SPECIFICATION

CD MICRO SYSTEM

Name:

Date:2010-11-15

Tot.Sh.:

7

SHEET 3

Check:

Date:

TECHNICAL DESCRIPTION 2X60W					
GENERAL PART					
Output Stage Protection:		Temperature:		Yes;	
INDICATORS					
VFD DISPLAY W/BACK-LIGHT					
Power Standby Mode:					
ELECTRICAL DATA					
DSC:	NA	Support Disc CD-DA CD-R/RW MP3			
DBB	Yes				
IS:	NA				
MAX:	NA				
VEC:	NA				
Level Difference:	'+/-3 dB				
Tuner:	FM 67.5 kHz Modulation.				
CD:	-6 dB track(Audio Disc 1 ,Trk 35)				
Ipod&Iphone:	500mW				
Aux :	500mV; Rs=600Ω	Headphone Out: 2.5 mW - 2 dB , R Load = 32 ohm @ max			
Input Sensitivity (±3dB)for Rated Output Power at 1KHz		0dB, 1kHz CD			
Microphone Sens:	NA	Acoustic Hum Noise in dB (Volume = 1):		30dB (Euro & Nafta)	
Channel Difference:	3 dB			33dB (Apac & Latam)	
Hum (VOL1 to default value):	200 nW	ipod&iPhone Compatibility: iPod 5G, iPod nano 1G/2G/3G,			
Residual Noise (Volume Minimum) :	60 nW	Classic, iPod Touch, iPhone included 3GS Iphone4 Ipad			
Channel Separation:	40dB at 1KHz /35dB at 16KHz /30 dB at 20KHz	ipod&iPhone charging : 2100mA			
signal to noise ratio :	65 dBA	Shock sens.: >3g			
OUTPUT POWER(4 ohm Loading)					
Mains Operation :	$\begin{matrix} 2 \times \\ \wedge \end{matrix}$ 60W(NORMAL) At cold condition with 10%THD 1KHz $\begin{matrix} \wedge \\ 2 \end{matrix}$ 55W(LIMIT)				
Frequency Response	100Hz ~ 16KHz within +3/-3dB (@ REF output)				
LOUDSPEAKER(BOXES)					
Rated Impedance :	Left/Right:	4Ω @ 100 Hz ~ 15kHz			
Matrix:	NA				
REMARKS					
(*1) Deviations from PQR					
(*2) Electronical Parameters are to be measured at speaker terminal across ohm load with input singal in cd mode setting in DBB Off unless specified otherwise.					
Revise		CD MICRO SYSTEM		SET SPECIFICATION	
Name:	Date:2010-11-15	Tot.Sh.:	7	SHEET 4	
Check:	Date:				

TECHNICAL DESCRIPTION DVD MINI SYSTEM										
GENERAL PART										
WAVE Range(-/21)				TOLERANCE						
FM	87.5--108MHz		MHz							
AM	N/A									
AERIAL										
FM	PIGTAIL ANTENNA WIRE 1.2M									
INDICATORS										
VFD										
ELECTRICAL DATA										
N/A	Limit	Unit	FM		Nom	limit	unit			
N/A			-3dB Limiting Point		: 17	23.5	dB			
N/A			Amplification Reserve(*1)		: 0					
N/A			Distortion(RF 1 mV, Freq.Dev.75kHz)		: 2	3	%			
N/A			26dB Quieting Sensitivity		: 18	22	dBf			
N/A			Crosstalk (RF 1mV Freq. Dev.40kHz)		: 30	26	dB			
N/A			Search time		24~30	19~35	dBf			
N/A			St Turn-on Point Ratio/Quad Detectors		: NA		dBf			
N/A			Search Tuning Sensitivity		---	≤ 60	Sec			
N/A			AM Suppression I/P: 48~82dBf		30	25	dB			
N/A			Modulation Hum		: 55	45	dB			
N/A			8th, 9th, 10th Harmonics Whistle		: 40	35	dB			
N/A			Overall Frequency Response(63~12.5kHz)		0	±3	dB			
N/A			FM 46dB Quiying sensitivity (Stereo)		45	50	dbf			
N/A			FM S/N Ratio(A weighted) Mono input 68d		55	50	dB			
N/A			FM Adjacent Channel selectivity		20	25	dB			
N/A			FM Image Rejection		30	20	dB *			
N/A			FM Channel Seperantion 1K		28	20	dB			
Wave Range		SENS		Image Rejection	IF Rejection	Large Signal Handling	Selectivity S9/300kHz			
FM	Nom.		18	24	55	116 dBf	24			
	Lim.		22	20	50	108 dBf	20			
Units.		μV/m	dBf	dB	dB	mV/m	dB			
REMARKS										
Revise				CD MICRO SYSTEM			SET SPECIFICATION			
Name:				Date:2010-11-15		Tot.Sh.:		7	SHEET 5	
Check:				Date:						

Description		External DAC	
CD MECH:	DA11VF Sanyo		
Channel Unbalance		<±2dB (Vol 0 ~ -50dB)	
Frequency Response(+0.5/-1.0dB)		20Hz~20kHz	
Signal to Noise Ratio(A-weighted)		70dBA(Lim 65 dBA)	
THD Noise(20 ~20,000Hz)		0.5%(Lim 2%)	
(1kHz)		0.1% at -20dBFS	
Outband Attenuation		35dB	
Channel Separation	1K	40dB (Lim.30dB)	
	16K	35dB(Lim.25dB)	
	20K	30dB(Lim.25dB)	
Emphasis(switched automatically by CD 10)		15 / 50µs	

Mp3 performance	
description	
Bit rates	32K-320Kps
Sampling rates(MPEG-1 Layer 3)	32kHz/44.1KHz/48kHz
Joliet (8 character OSD display)	
Windows XP	
UDF basic (close format)	
Mp3 multisession	Directory resting Max 8 level, Max directory 32
Display filename/ID3	
255 folders/999songs	

ipod&iphone performance	
description	
Channel balance	Limit: 2dB
signal to noise ratio(unweighted)	Limit:60dB
Channel seperation	Limit:45dB
Max.volume noise(Bass off)	Limit:3mV
Max.volume noise(Bass off)	Limit:1mV
ipod&iphone Compatibility: iPod 5G, iPod nano 1G/2G/3G, iPodClassic, iPod Touch, iPhone&3G	
ipod&iphone charging : 1000mA	

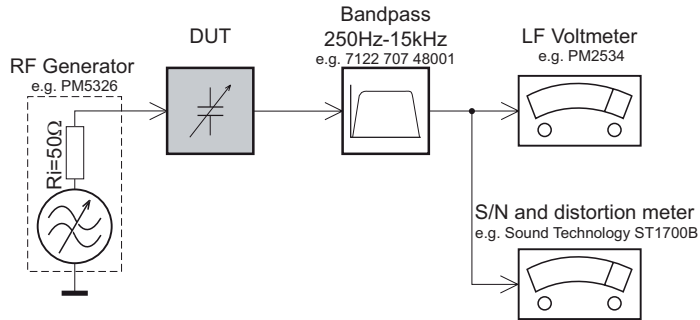
DVD PART			
Revise			SET SPECIFICATION
	CD MICRO SYSTEM		
Name:	Date:2010-11-15	Tot.Sh.:	7 SHEET 6
Check:	Date:		

TECHNICAL SPECIFICATION	
GENERAL PART	
Time Setting	: Clock and Timer
Timer Wakeup Mode	: CD / Tuner/Aux (Depend on power off source)
Remarks Time Setting	: 24 Hrs
Wake Up Volume Control	: No
Volume at Wakeup	: NC
No of Timer Settings	: 1
Clock Accuracy	: Lim. +/- 2 sec / day
RC operating distance	:
INDICATORS	
Display Type	: VFD
REMARKS	

VERSION OVERVIEW				
Tape PART SPECIFICATION				
Revise		CD MICRO SYSTEM	SET SPECIFICATION	
Name:	Date:2010-11-15	Tot.Sh.:	7	SHEET 7
Check:	Date:			

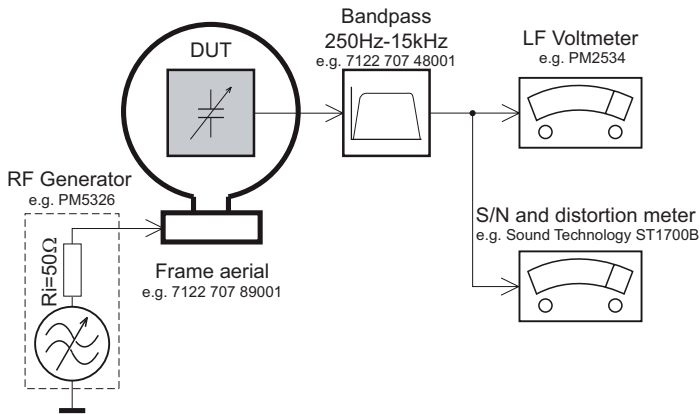
MEASUREMENT SETUP

Tuner FM



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

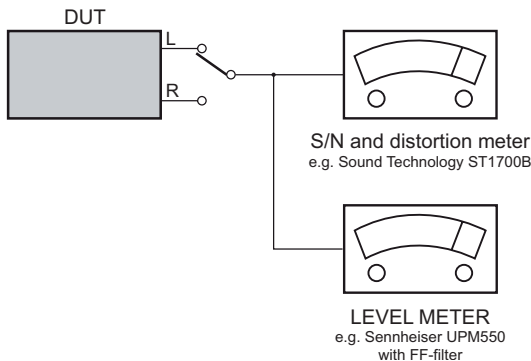
Tuner AM (MW,LW)



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).

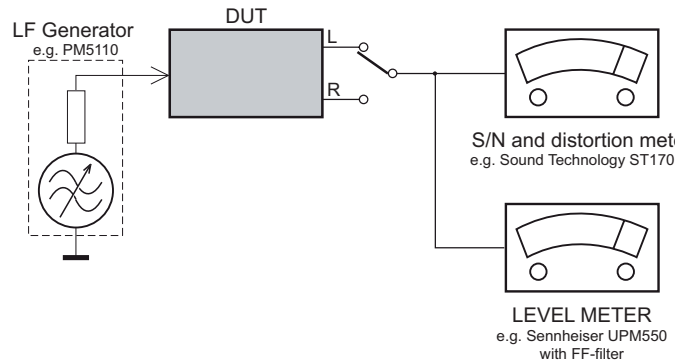
CD

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



Recorder

Use Universal Test Cassette **Cr02** SBC419 4822 397 30069
or Universal Test Cassette **Fe** SBC420 4822 397 30071



SERVICE AIDS

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



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 .

**CLASS 1
LASER PRODUCT**

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 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".

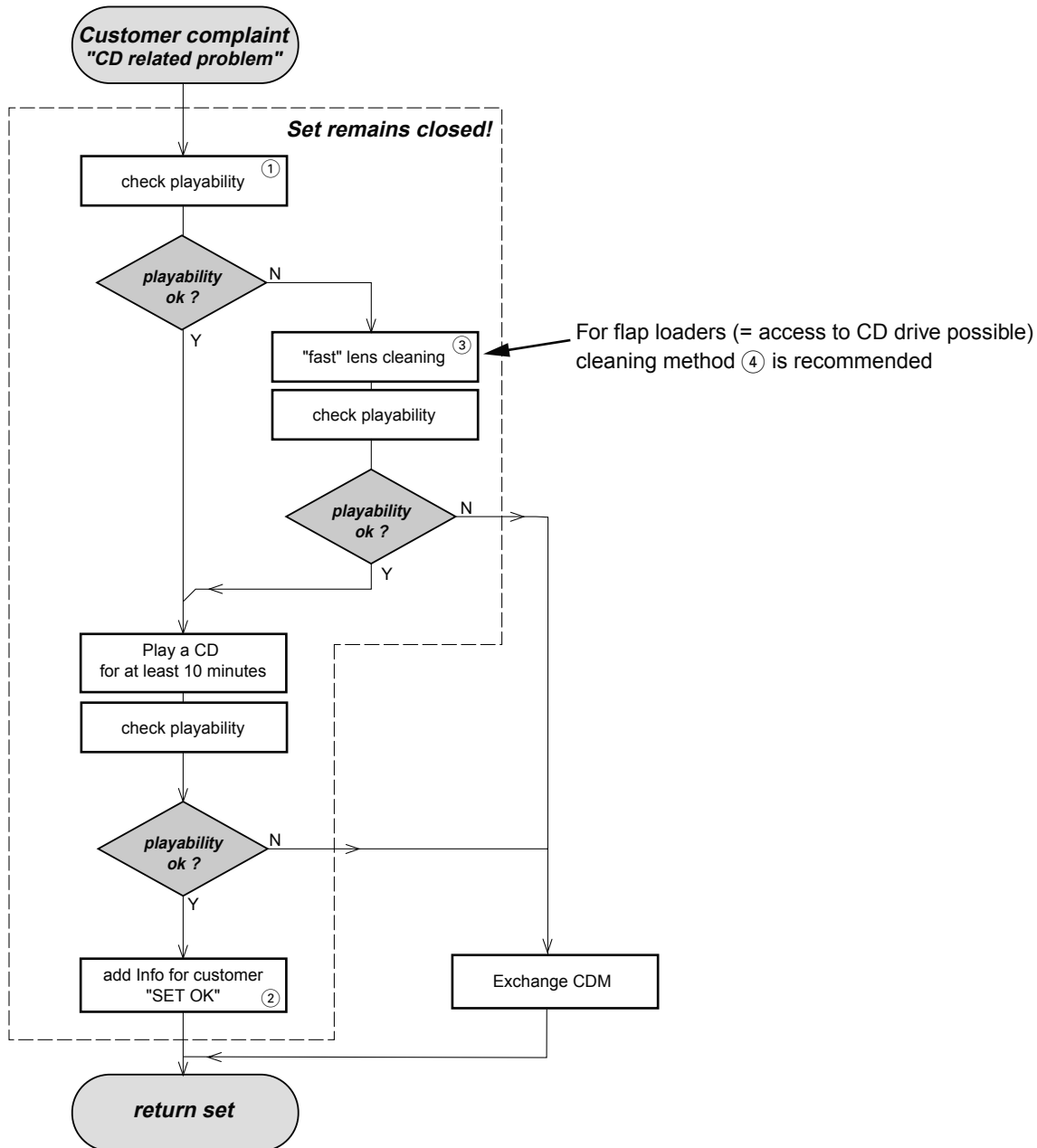
For additional questions please contact your local repair-helpdesk.

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 Disc7104 099 96611
 TR 3 (Fingerprint)
 TR 8 (600µ Black dot) **maximum at 01:00**

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

For all other sets
 use CD-DA SBC 444A4822 397 30245
 TR 14 (600µ Black dot) **maximum at 01:15**
 TR 19 (Fingerprint)
 TR 10 (1000µ wedge)

- playback of all these tracks without audible disturbance
 playing time for: 1000µ wedge ≥ 10 seconds
 Fingerprint ≥ 10 seconds
 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

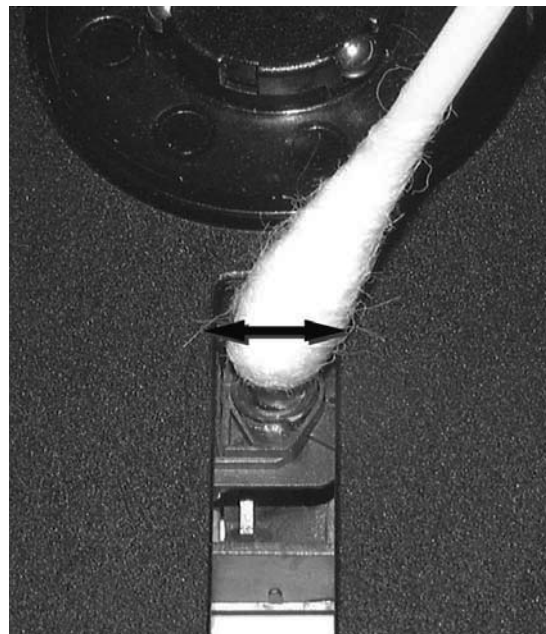
LIQUID LENS CLEANING

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.

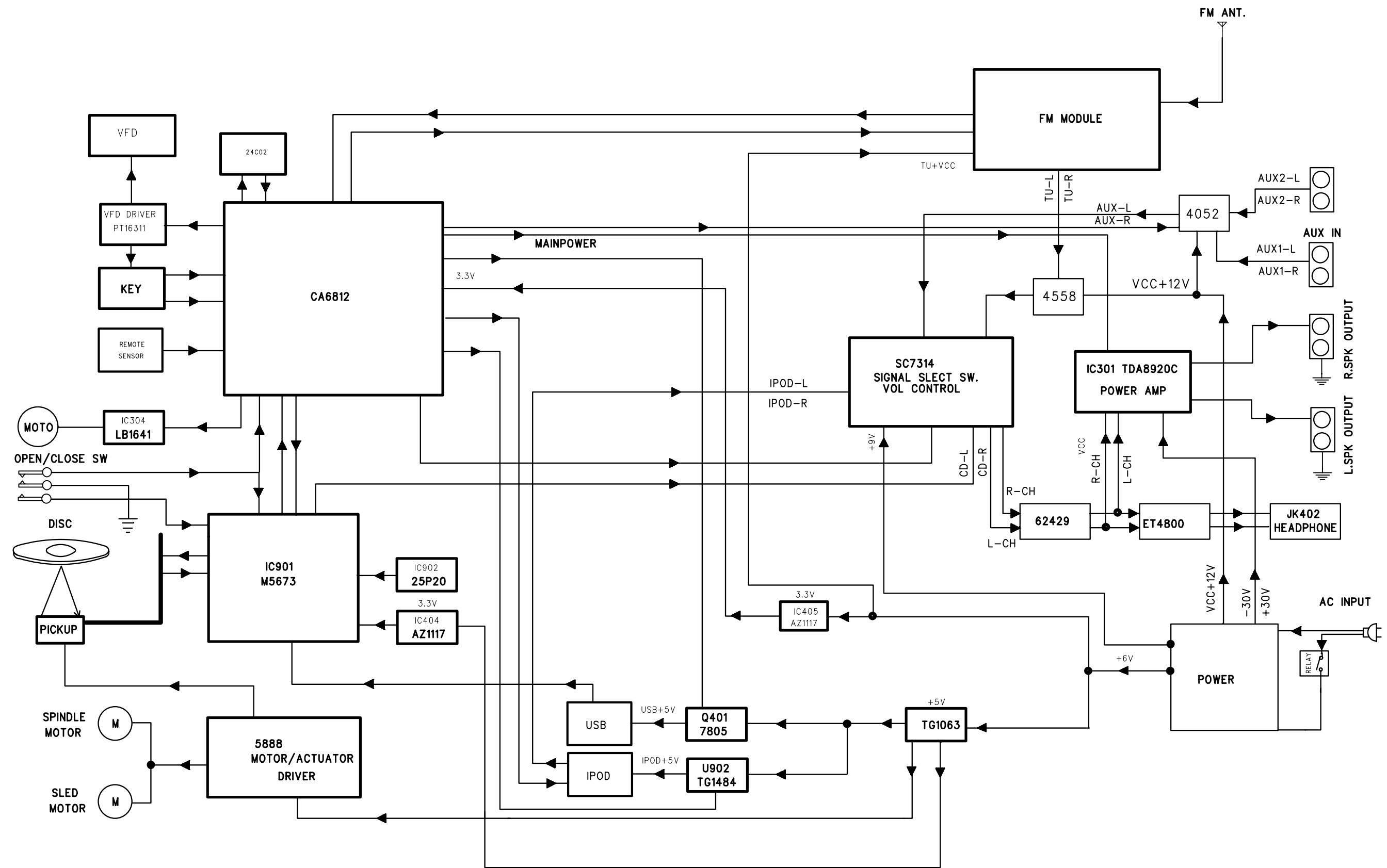
Because the material of the lens is synthetic and coated with a special anti-reflectivity layer, cleaning must be done with a non-aggressive cleaning fluid. It is advised to use "Cleaning Solvent

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.

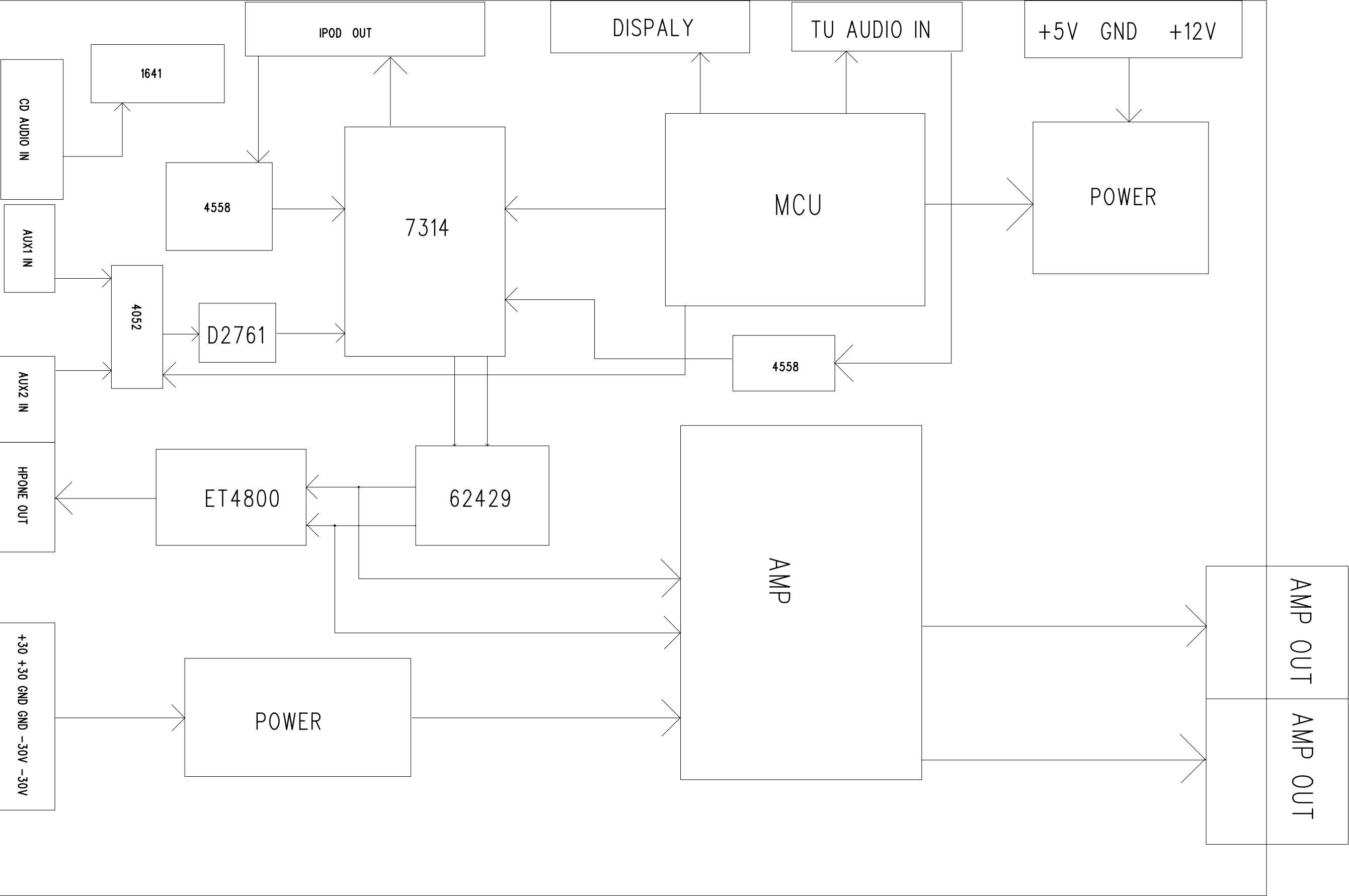
The direction of cleaning must be in the way as indicated in the picture below.



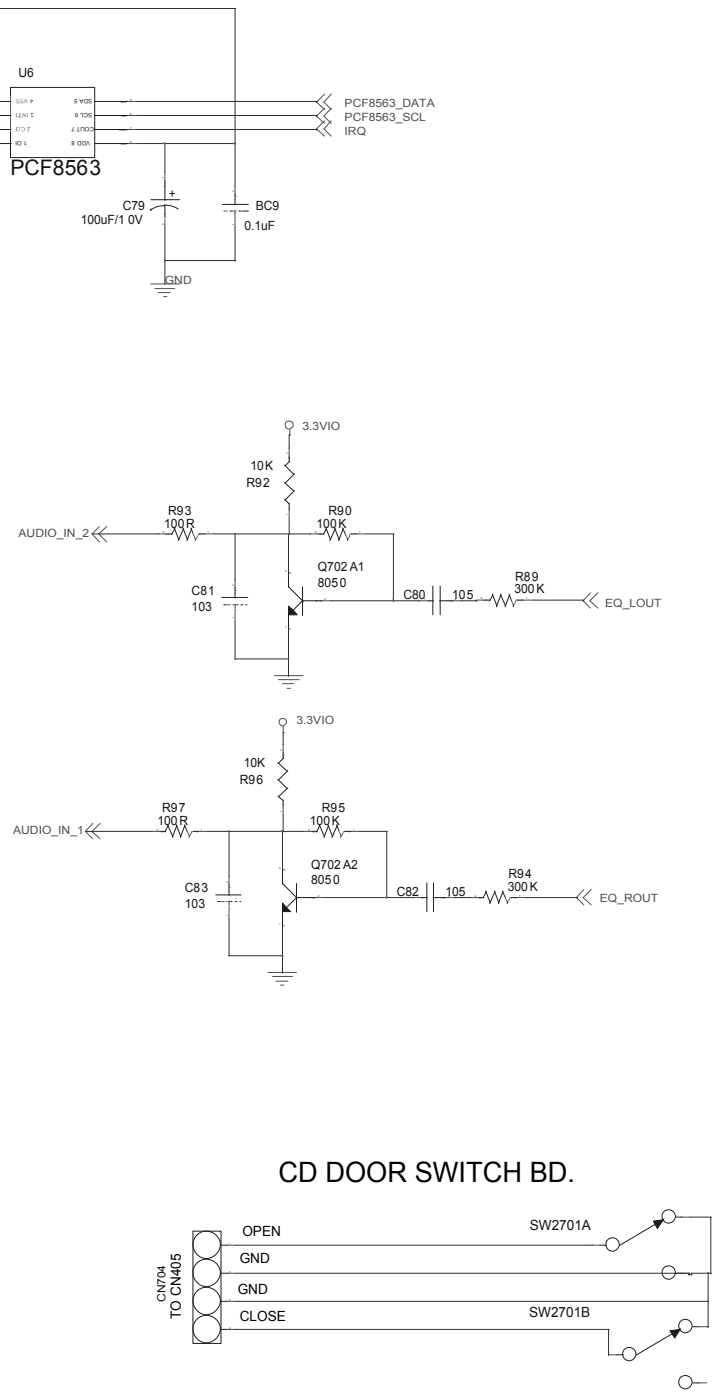
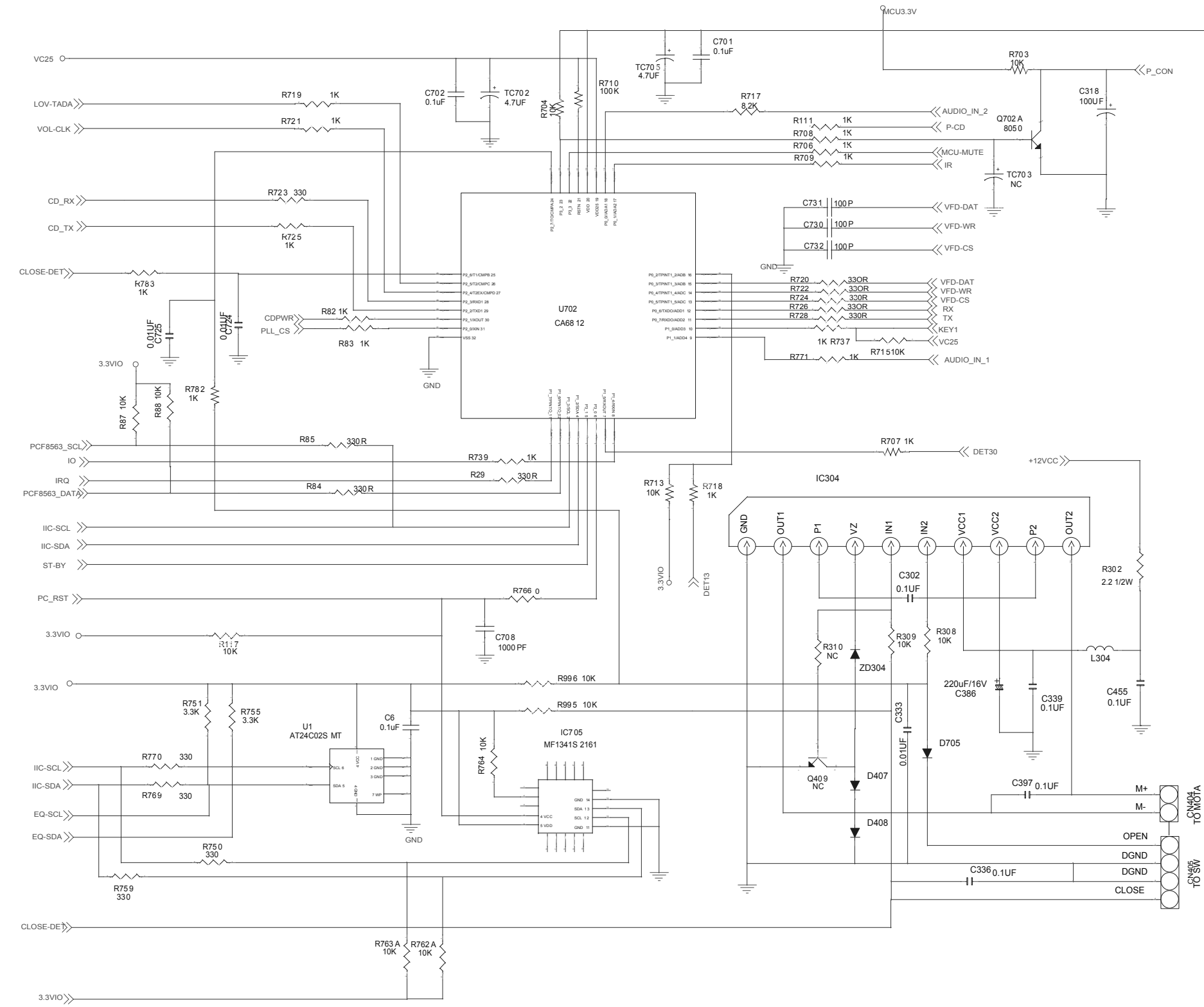
SET BLOCK DIAGRAM



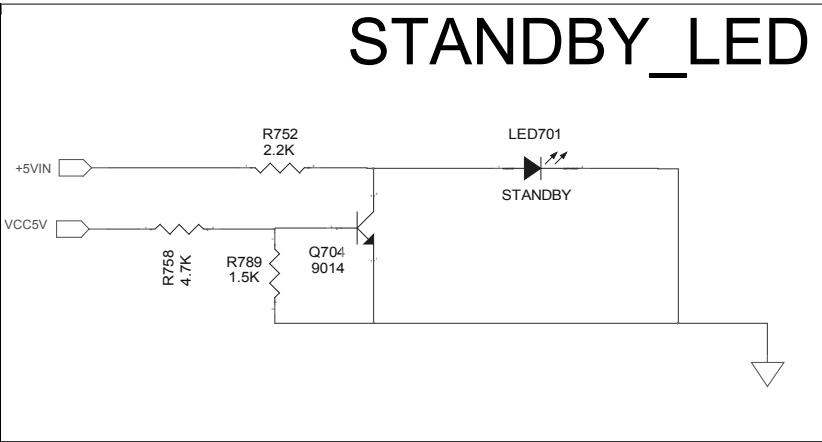
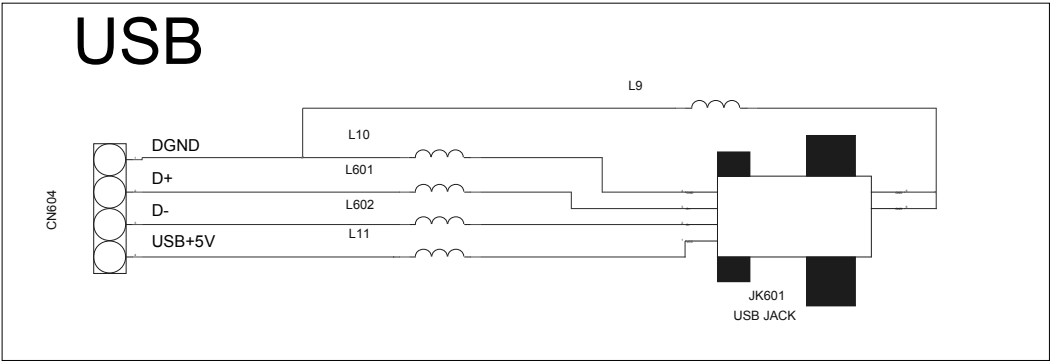
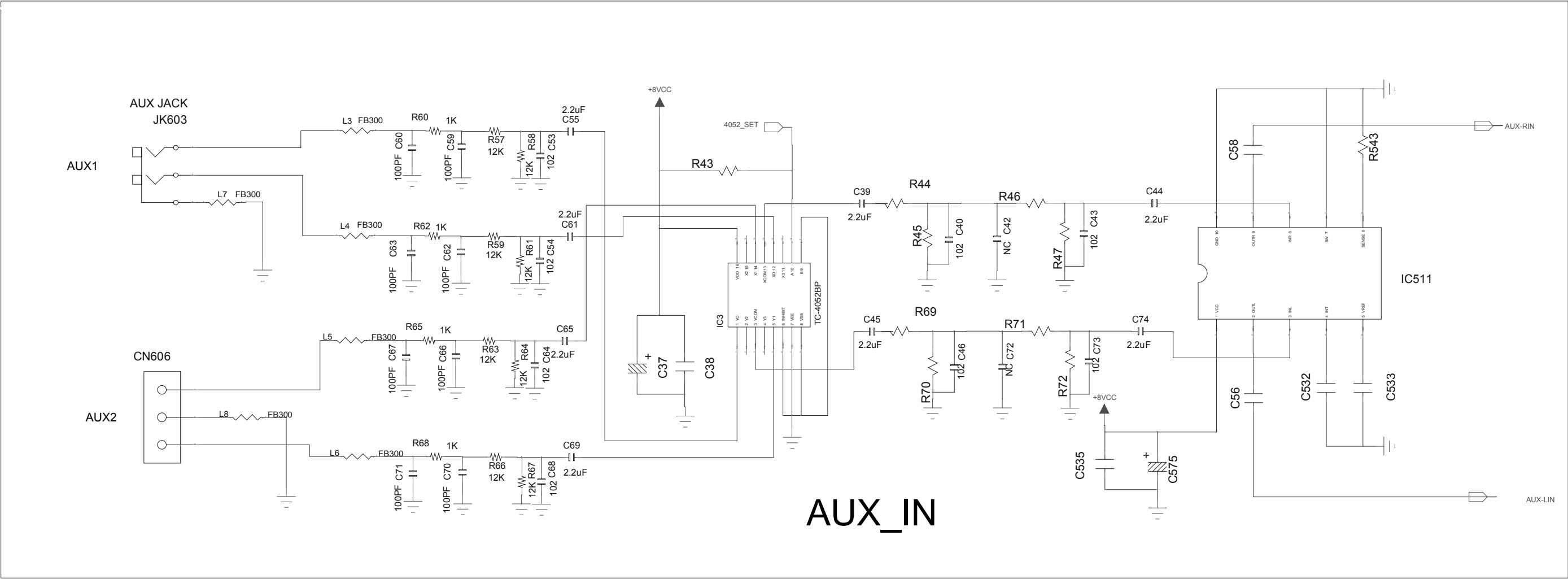
SET WIRING DIAGRAM



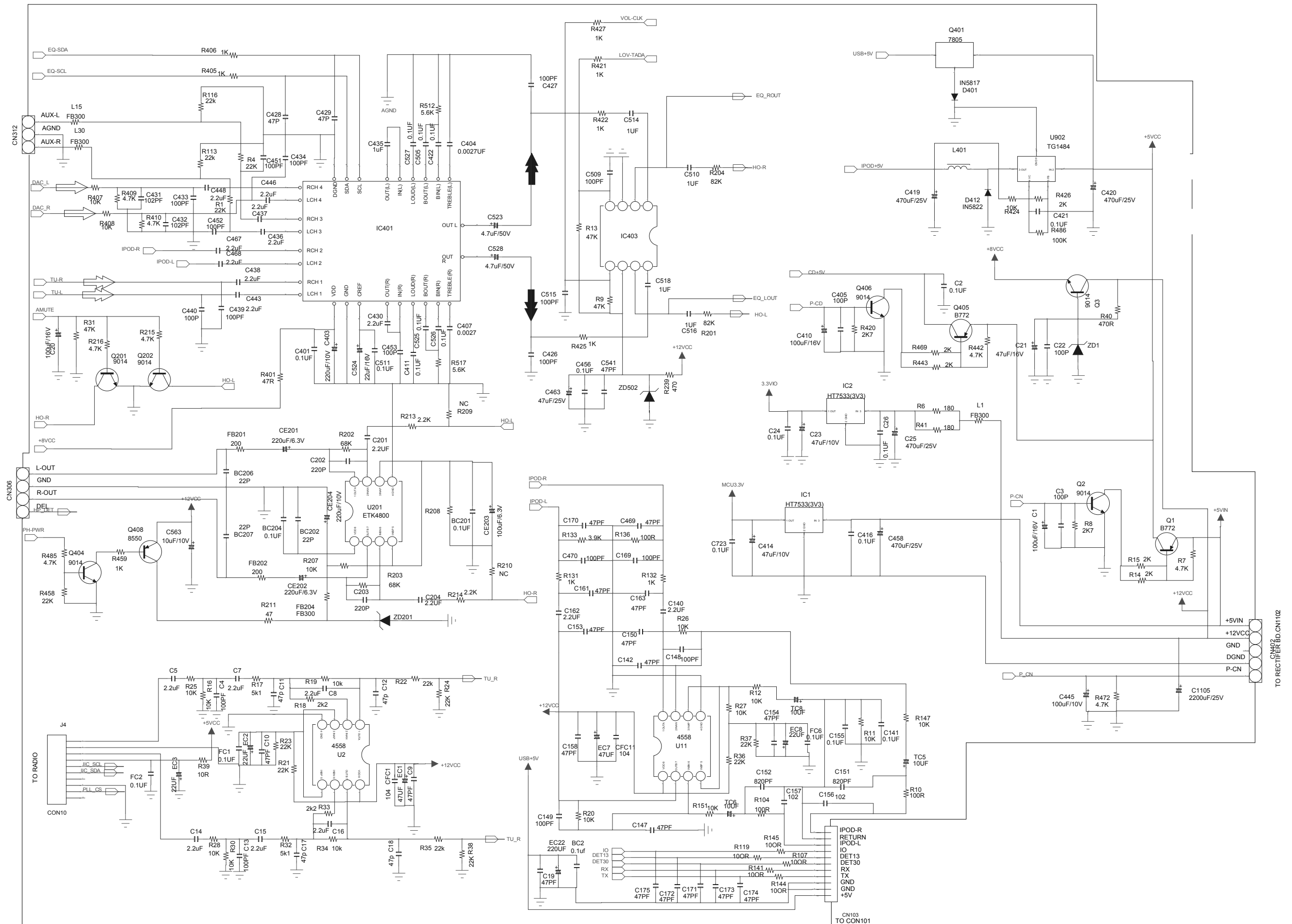
CIRCUIT DIAGRAM - MAIN BOARD
PART 1

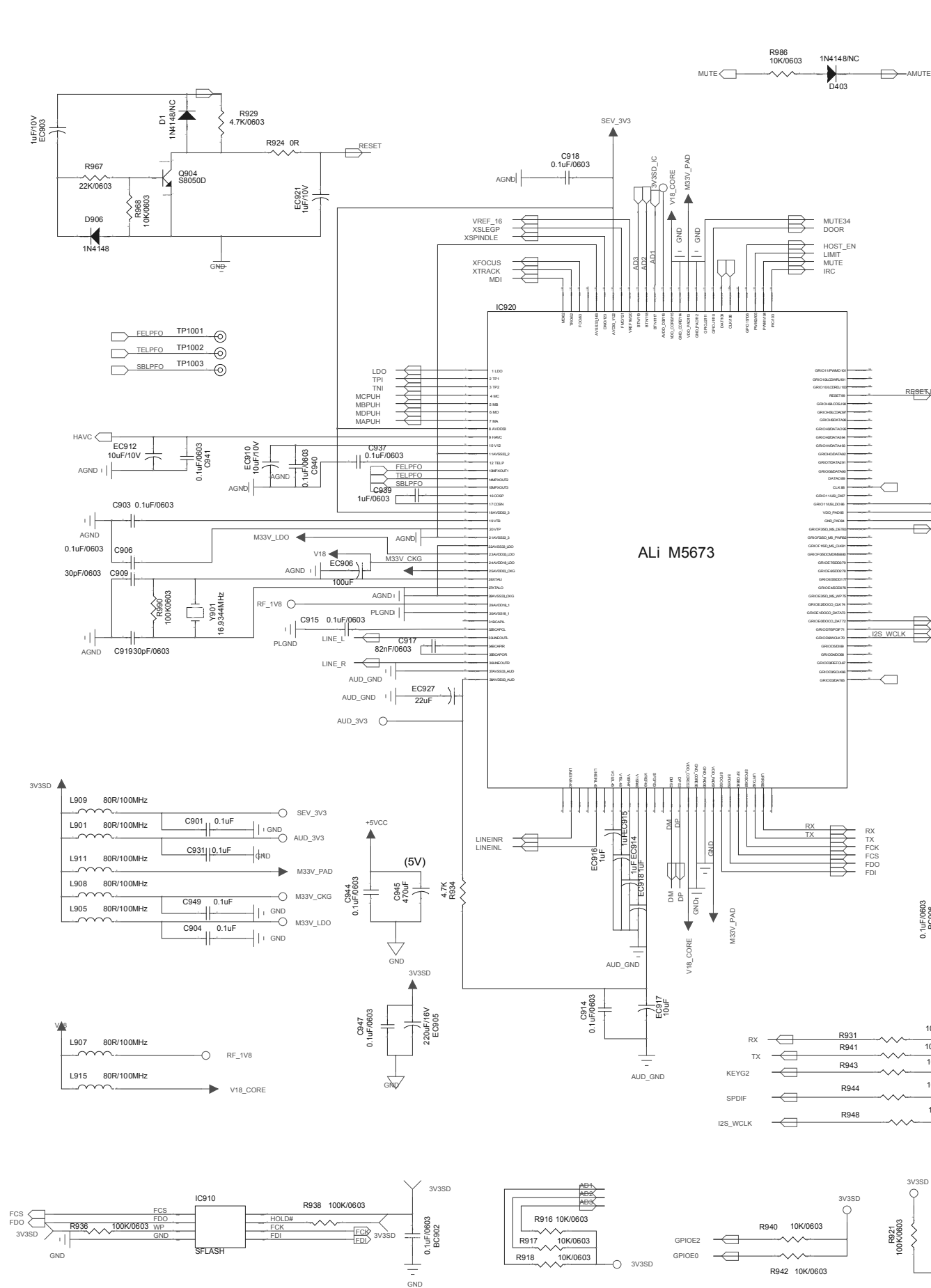


CIRCUIT DIAGRAM - MAIN BOARD
PART 2

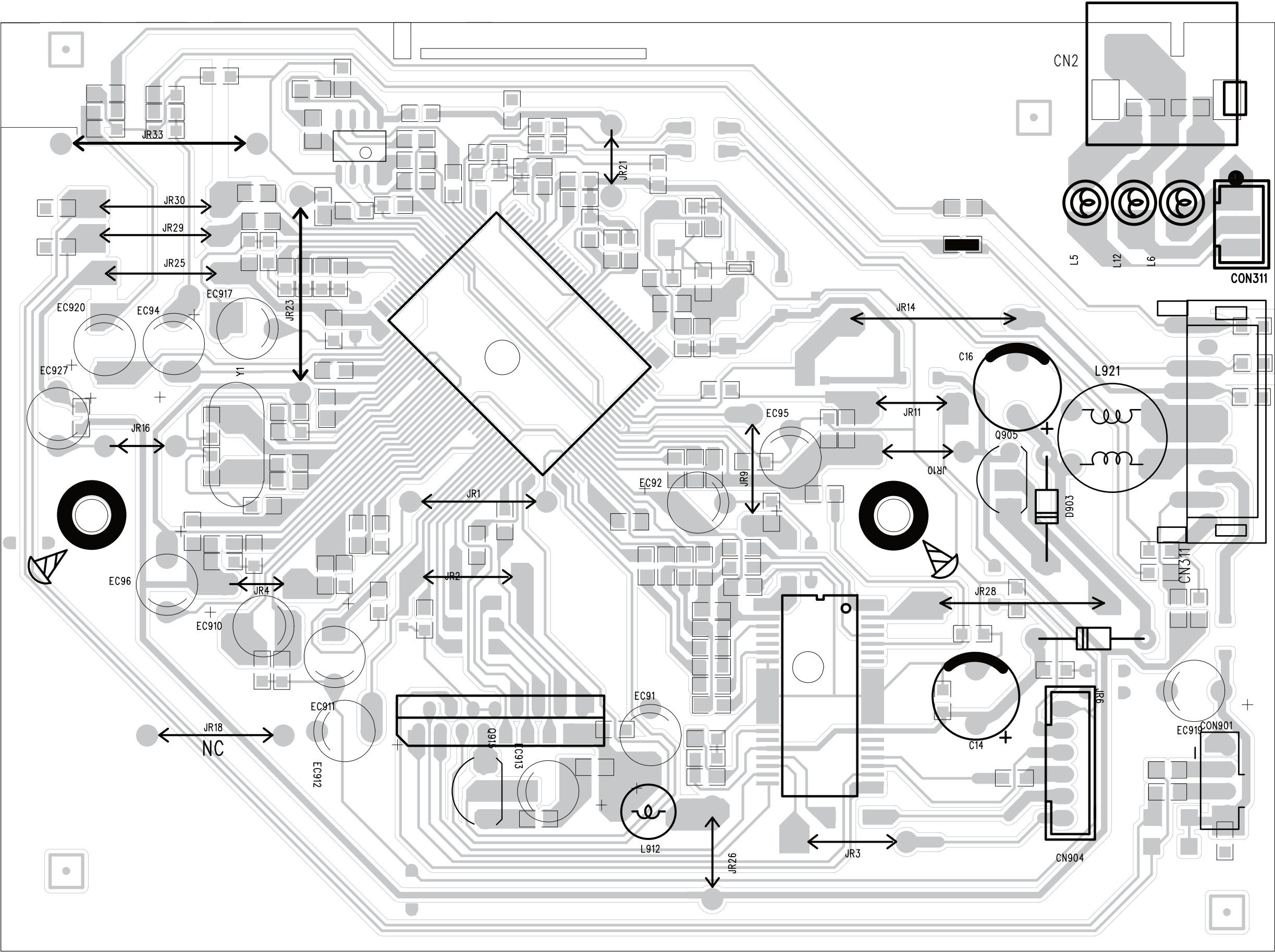


CIRCUIT DIAGARM - MAIN BOARD PART 3

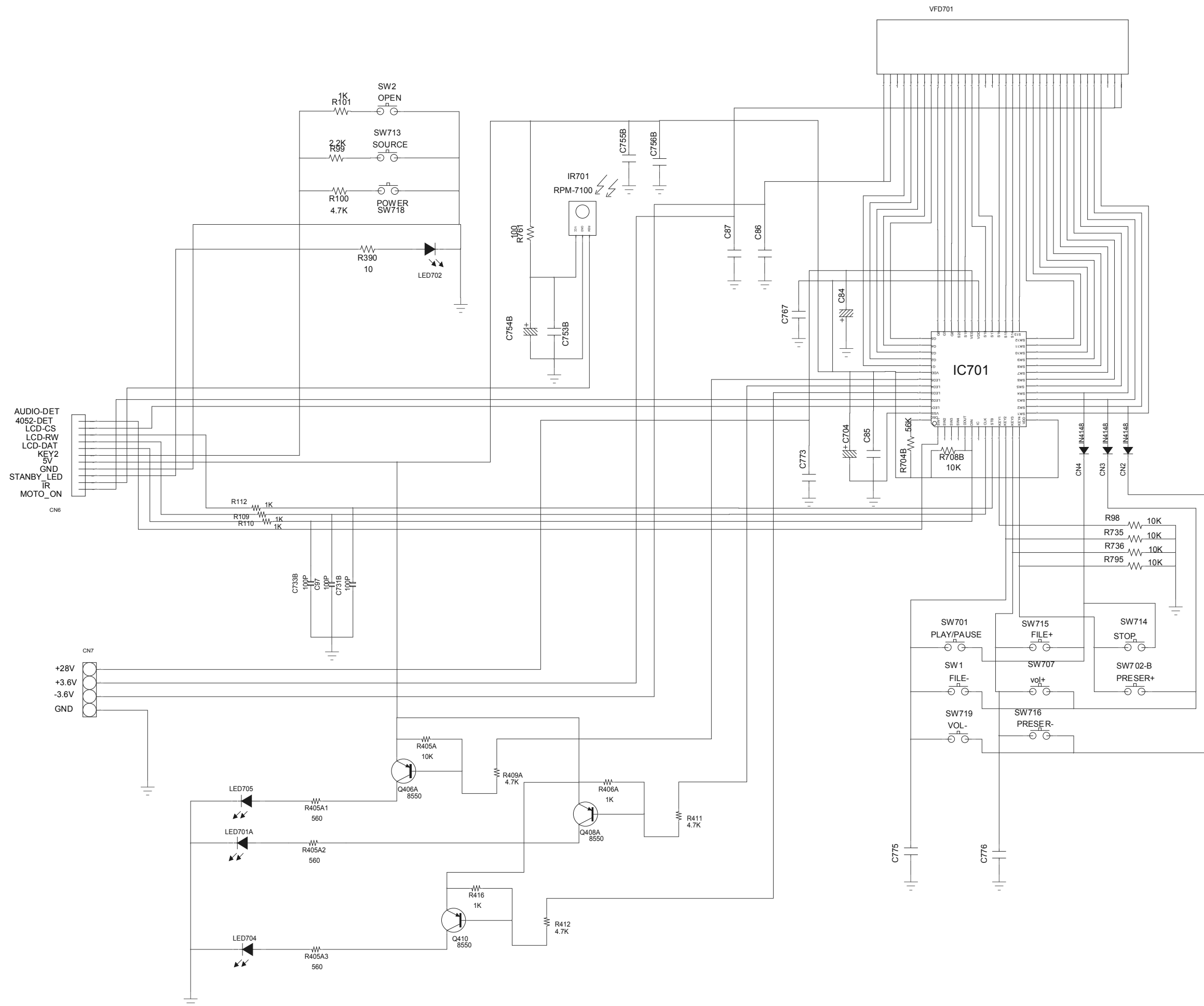




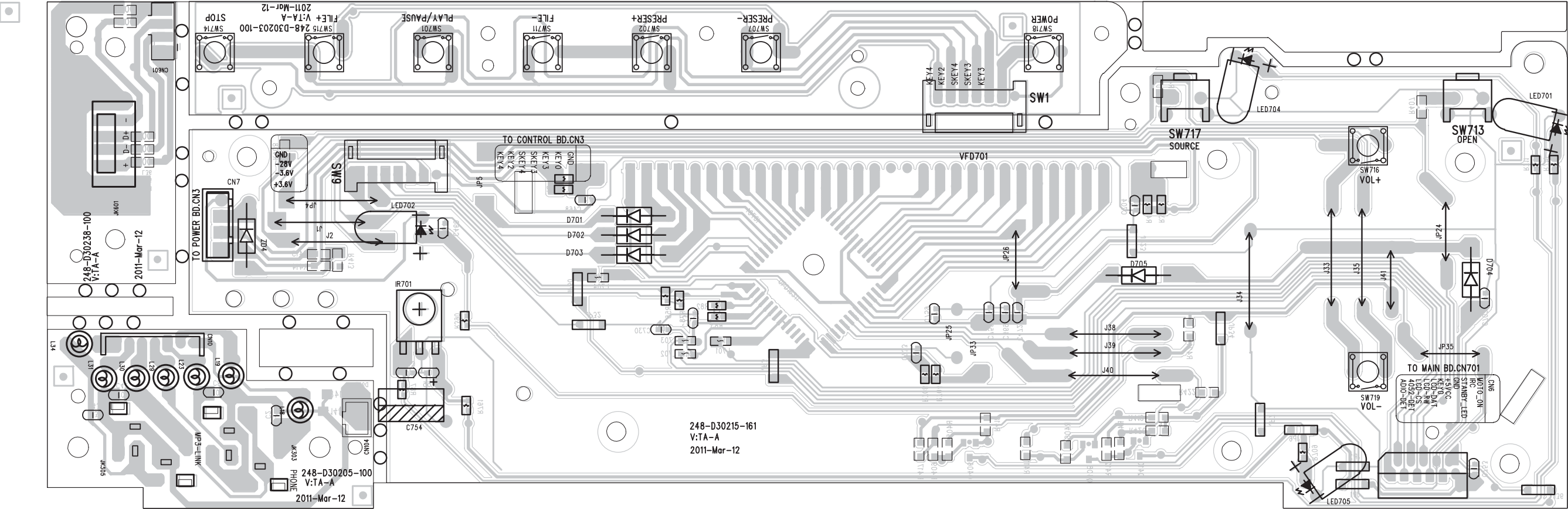
LAYOUT DIAGRAM - CD BOARD



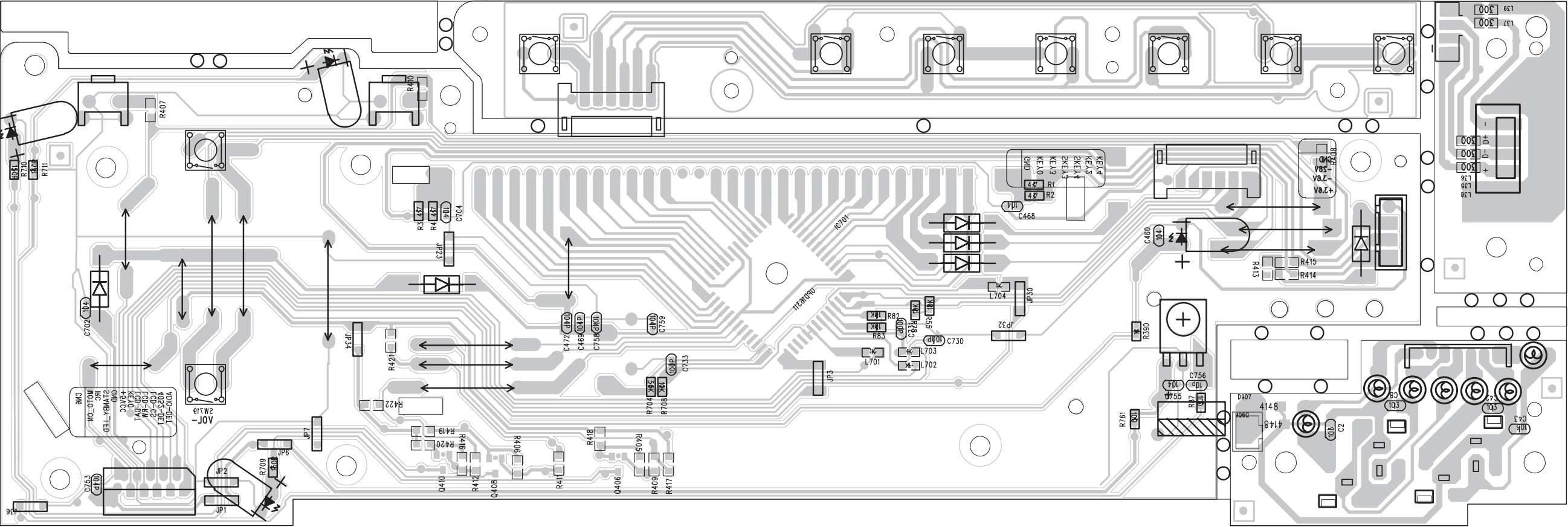
CIRCUIT DIAGRAM - DISPLAY/KEY/JACK/USB BOARD



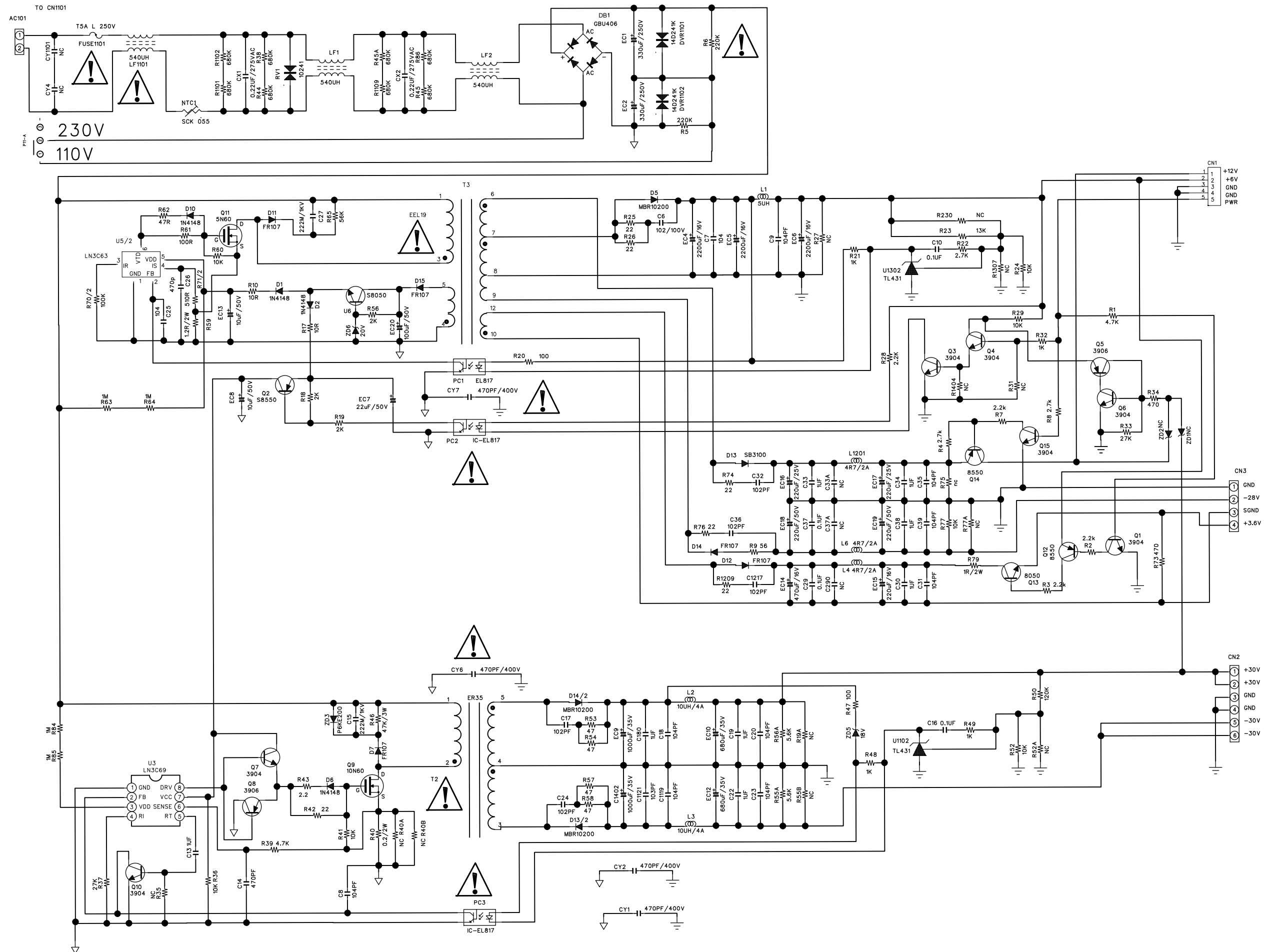
LAYOUT DIAGRAM - DISPLAY/KEY/JACK/USB BOARD
TOP SIDE



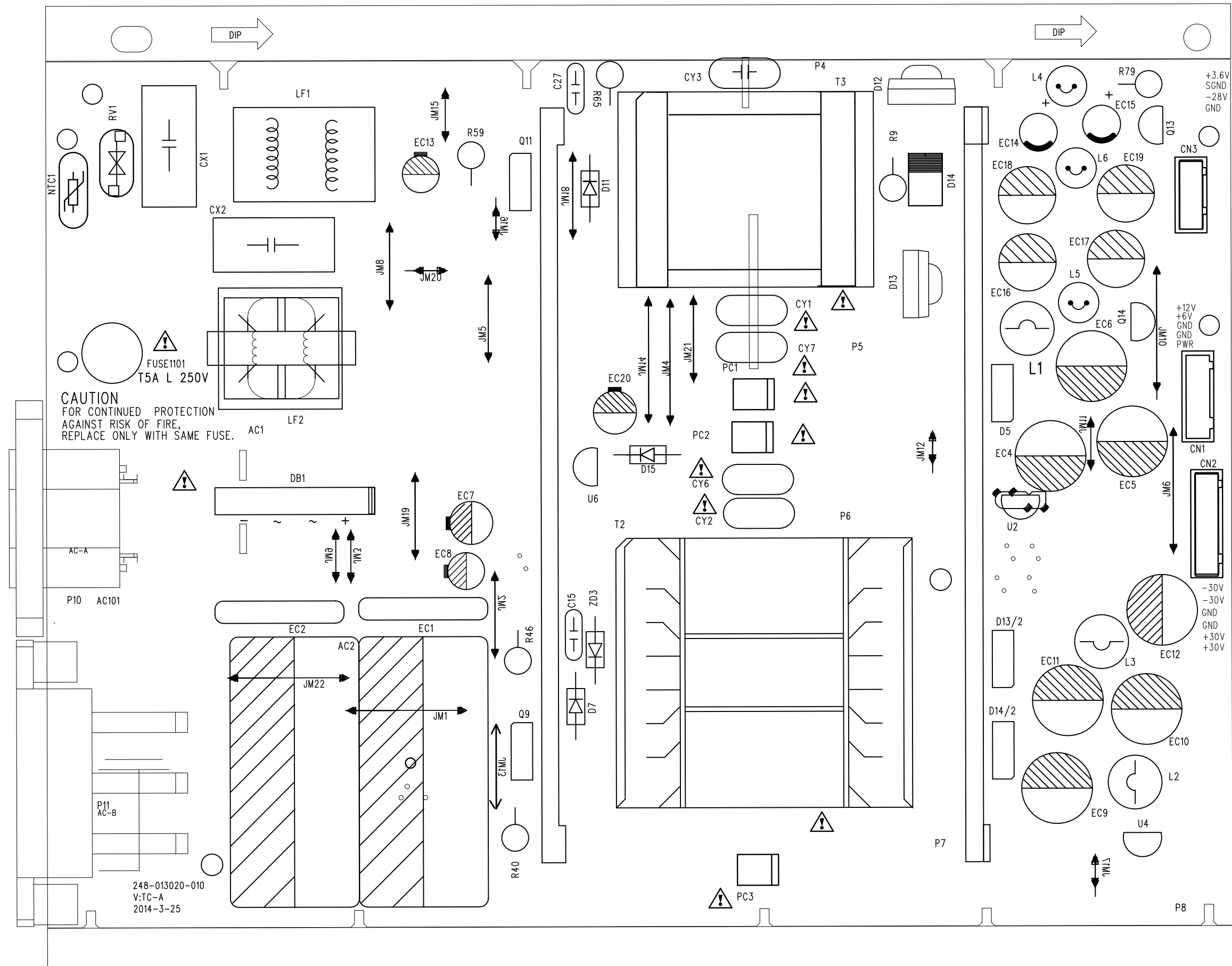
LAYOUT DIAGRAM - DISPLAY/KEY/JACK/USB BOARD
BOTTOM



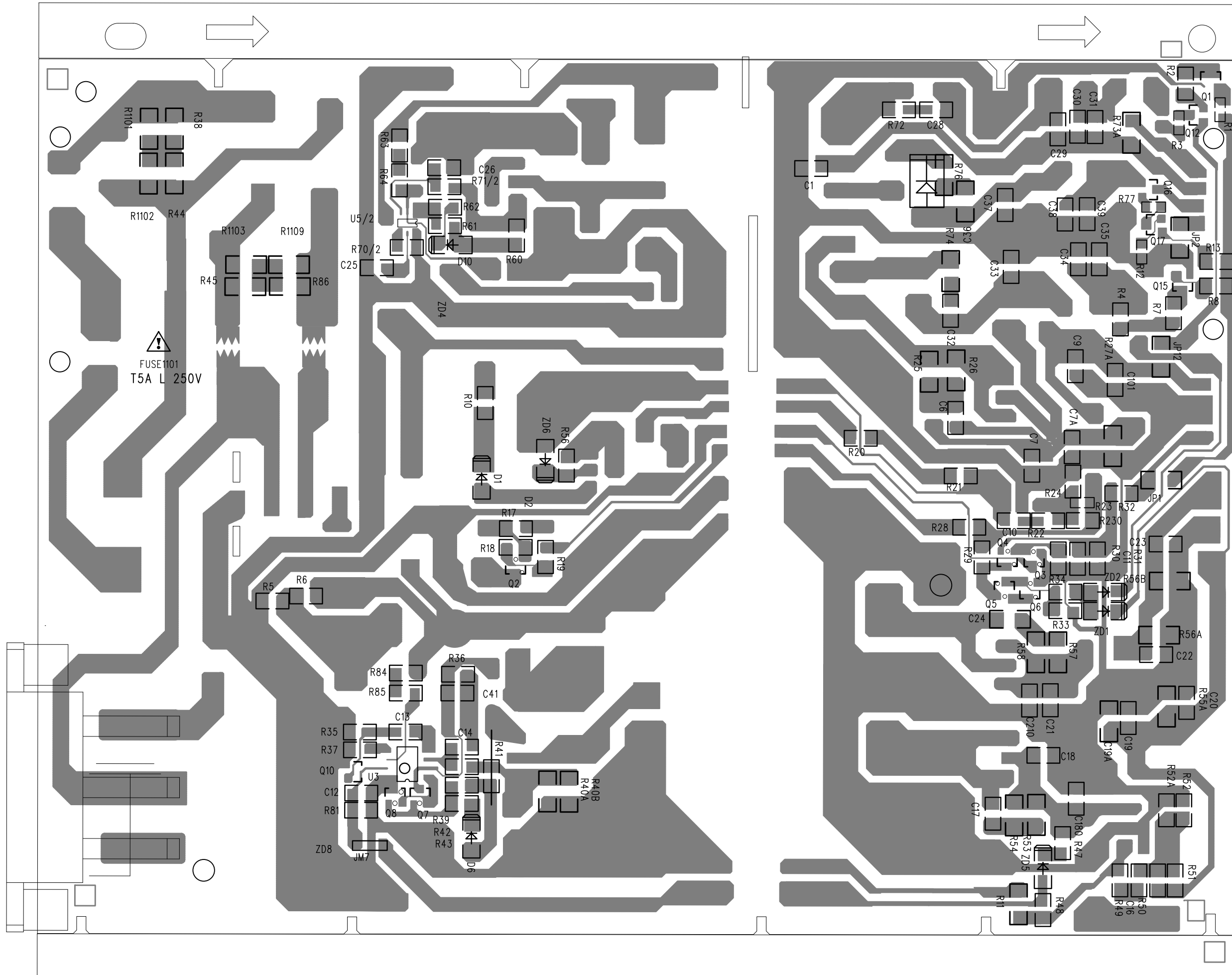
CIRCUIT DIAGRAM – SMPS POWER BOARD



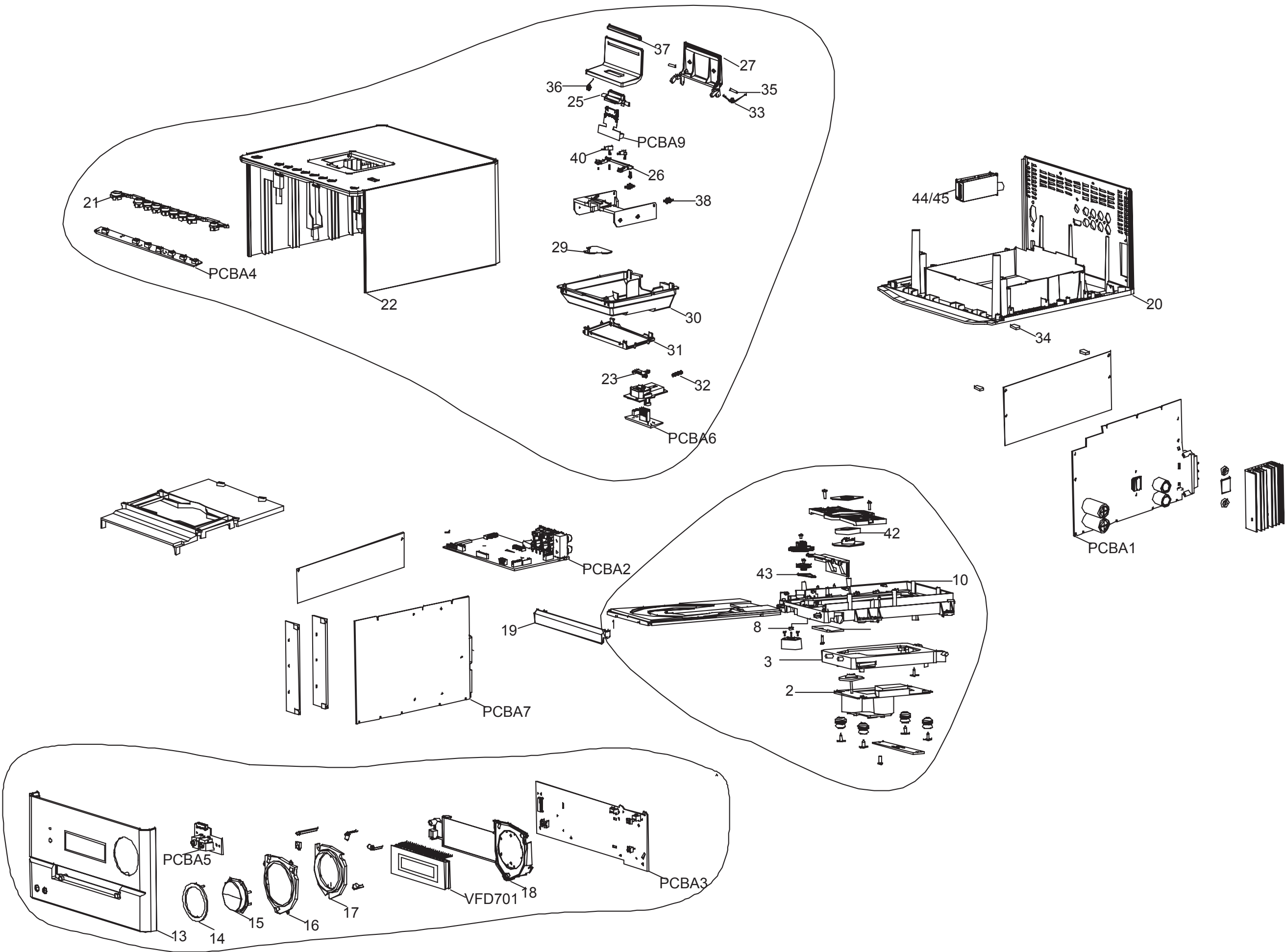
LAYOUT DIAGRAM - SMPS POWER BOARD TOP



LAYOUT DIAGRAM - SMPS POWER BOARD BOTTOM



EXPLODED VIEW DIAGRAM



Revision List

Revision List

- Version 1.1
 - * Initial Release
- Version 1.2
 - * Add /12 version
- Version 1.3
 - * Add /55 version
- Version 1.4
 - * Add /79 version

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Published by RL 1451 Service Audio Subject to modification

3140 038 62570

Version 1.0



PHILIPS

VERSION VARIATION

Type /Versions:		DCM3020		
Board in used:	Service policy	/05	/12	/55/79
		(EUROPE)	(EUROPE)	(LATAM)
Main BOARD		C	C	M/C
CD BOARD		C	C	M/C
Power BOARD		C	C	M/C
Ipod BOARD		C	C	M/C
Headphone JACK BOARD		C	C	M/C
USB BOARD		C	C	M/C
Tuner BOARD		C	C	M/C
Key BOARD		C	C	M/C
CD Door BOARD		C	C	M/C
Display BOARD		C	C	M/C
Type /Versions:		DCM3020		
Features	Feature difference	/05	/12	/55/79
RDS		√	√	√
VOLTAGE SELECTOR				
ECO STANDBY - DARK				
* TIPS : C -- Component Lever Repair. M -- Module Lever Repair √ -- Used				

Description		External DAC	
CD MECH:	DA11VF Sanyo		
Channel Unbalance		<±2dB (Vol 0 ~ -50dB)	
Frequency Response(+0.5/-1.0dB)		20Hz~20kHz	
Signal to Noise Ratio(A-weighted)		70dBA(Lim 65 dBA)	
THD Noise(20 ~20,000Hz)		0.5%(Lim 2%)	
(1kHz)		0.1% at -20dBFS	
Outband Attenuation		35dB	
Channel Separation	1K	40dB (Lim.30dB)	
	16K	35dB(Lim.25dB)	
	20K	30dB(Lim.25dB)	
Emphasis(switched automatically by CD 10)		15 / 50µs	

Mp3 performance	
description	
Bit rates	32K-320Kps
Sampling rates(MPEG-1 Layer 3)	32kHz/44.1KHz/48kHz
Joliet (8 character OSD display)	
Windows XP	
UDF basic (close format)	
Mp3 multisession	Directory resting Max 8 level, Max directory 32
Display filename/ID3	
255 folders/999songs	

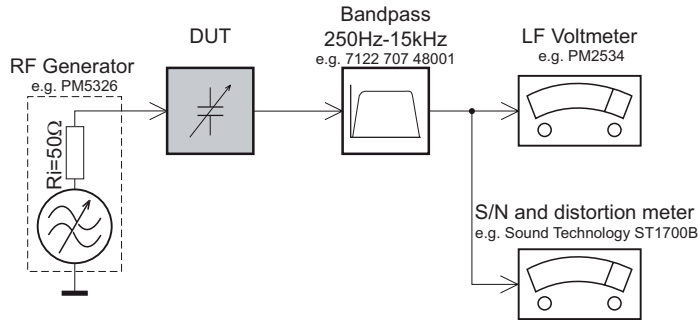
ipod&iphone performance	
description	
Channel balance	Limit: 2dB
signal to noise ratio(unweighted)	Limit:60dB
Channel seperation	Limit:45dB
Max.volume noise(Bass off)	Limit:3mV
Max.volume noise(Bass off)	Limit:1mV
ipod&iphone Compatibility: iPod 5G, iPod nano 1G/2G/3G, iPodClassic, iPod Touch, iPhone&3G	
ipod&iphone charging : 1000mA	

DVD PART			
Revise			SET SPECIFICATION
	CD MICRO SYSTEM		
Name:	Date:2010-11-15	Tot.Sh.:	7 SHEET 6
Check:	Date:		

TECHNICAL SPECIFICATION			
GENERAL PART			
Time Setting	:	Clock and Timer	
Timer Wakeup Mode	:	CD / Tuner/Aux (Depend on power off source)	
Remarks Time Setting	:	24 Hrs	
Wake Up Volume Control	:	No	
Volume at Wakeup	:	NC	
No of Timer Settings	:	1	
Clock Accuracy	:	Lim. +/- 2 sec / day	
RC operating distance	:		
INDICATORS			
Display Type	:	VFD	
REMARKS			
VERSION OVERVIEW			
Tape PART SPECIFICATION			
Revise		CD MICRO SYSTEM	SET SPECIFICATION
Name:		Date:2010-11-15	Tot.Sh.: 7 SHEET 7
Check:		Date:	

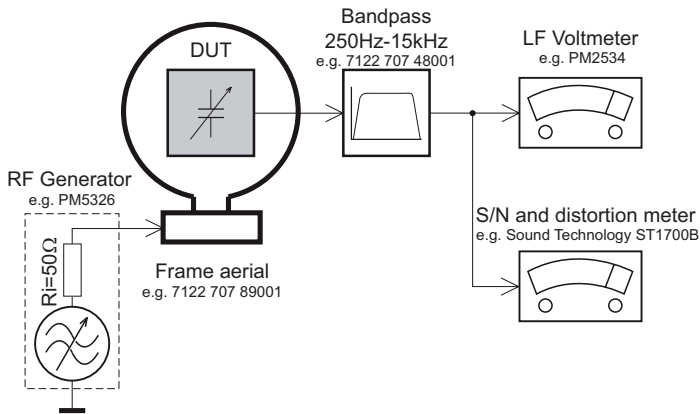
MEASUREMENT SETUP

Tuner FM



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

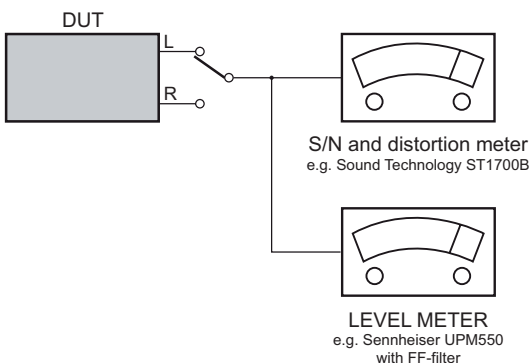
Tuner AM (MW,LW)



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).

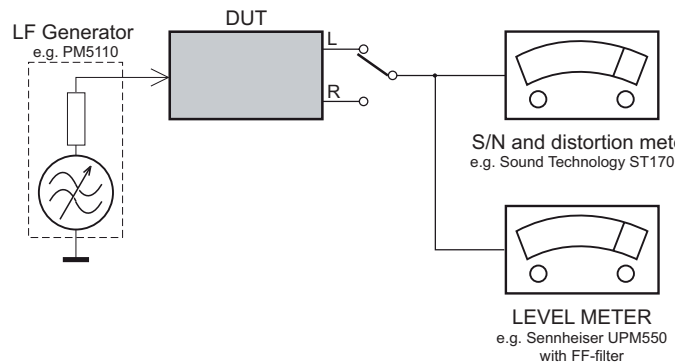
CD

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

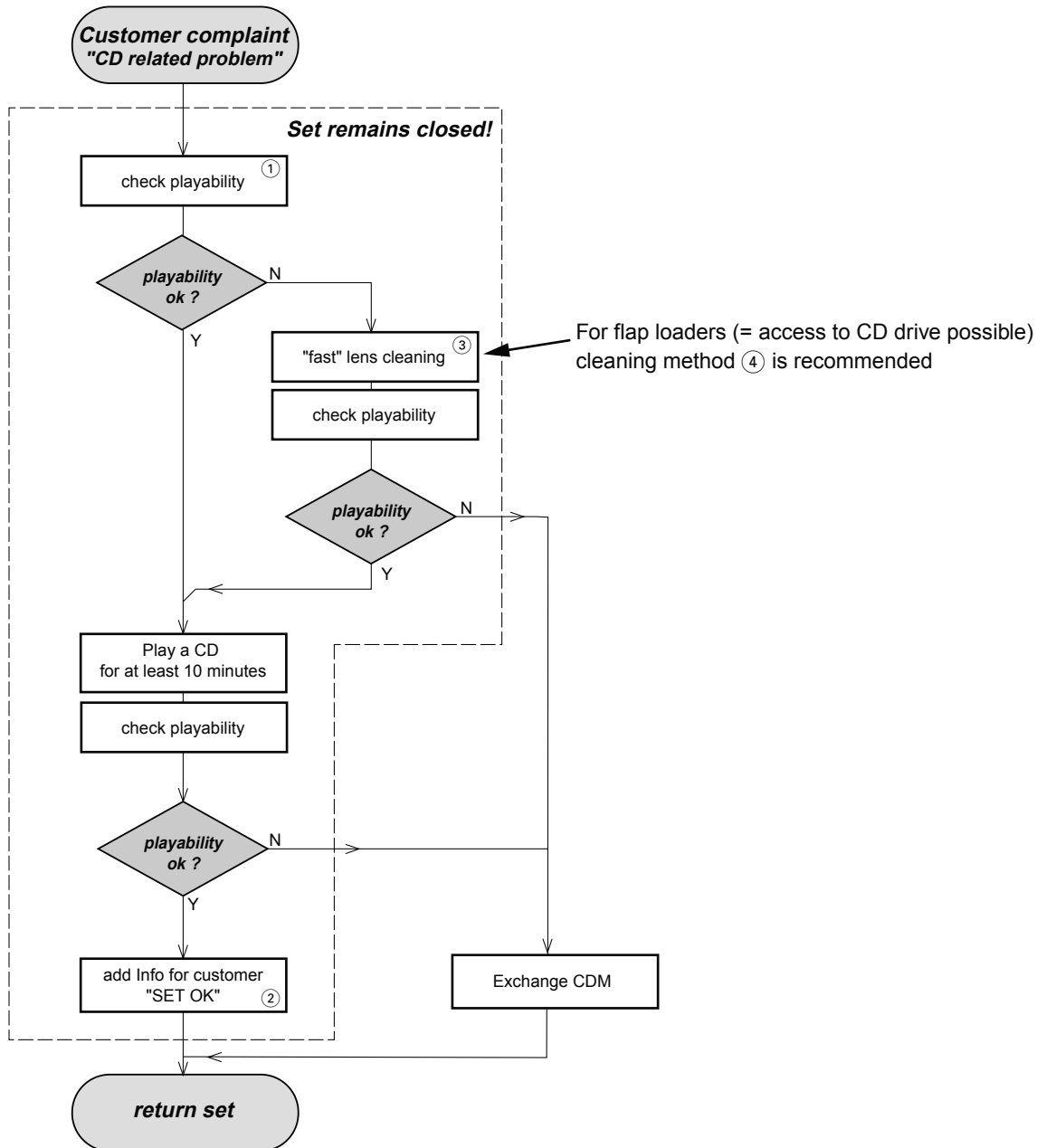


Recorder

Use Universal Test Cassette **Cr02** SBC419 4822 397 30069
or Universal Test Cassette **Fe** SBC420 4822 397 30071



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 Disc7104 099 96611
 TR 3 (Fingerprint)
 TR 8 (600µ Black dot) **maximum at 01:00**

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

For all other sets
 use CD-DA SBC 444A4822 397 30245
 TR 14 (600µ Black dot) **maximum at 01:15**
 TR 19 (Fingerprint)
 TR 10 (1000µ wedge)

- playback of all these tracks without audible disturbance
 playing time for: 1000µ wedge ≥ 10 seconds
 Fingerprint ≥ 10 seconds
 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

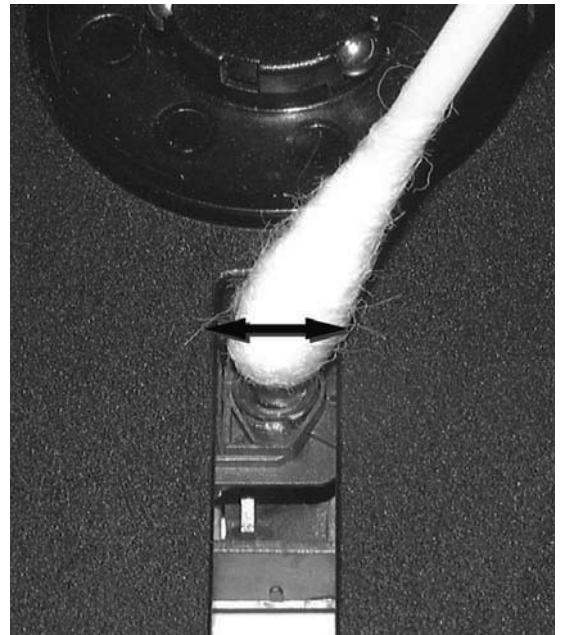
LIQUID LENS CLEANING

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.

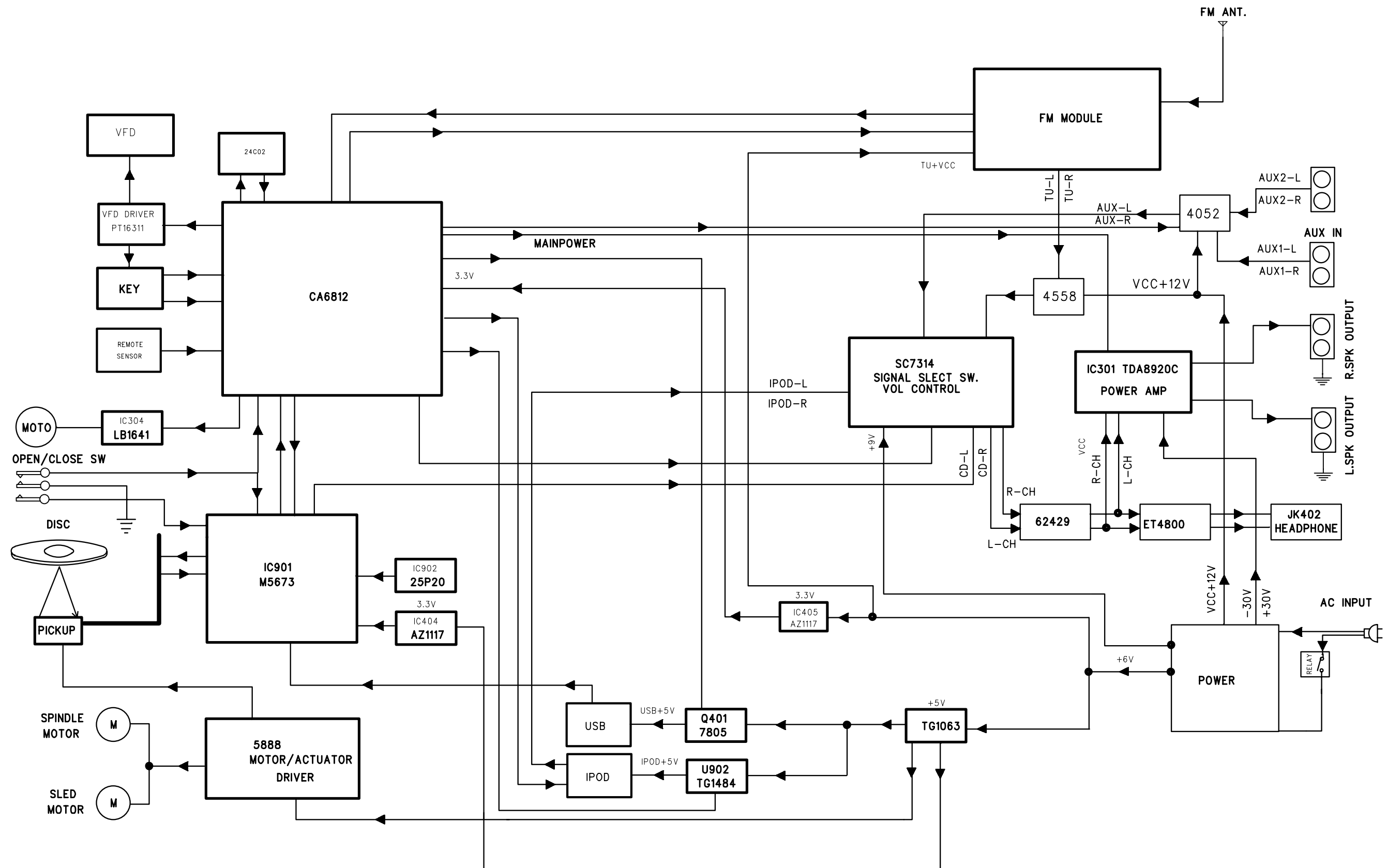
Because the material of the lens is synthetic and coated with a special anti-reflectivity layer, cleaning must be done with a non-aggressive cleaning fluid. It is advised to use "Cleaning Solvent

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.

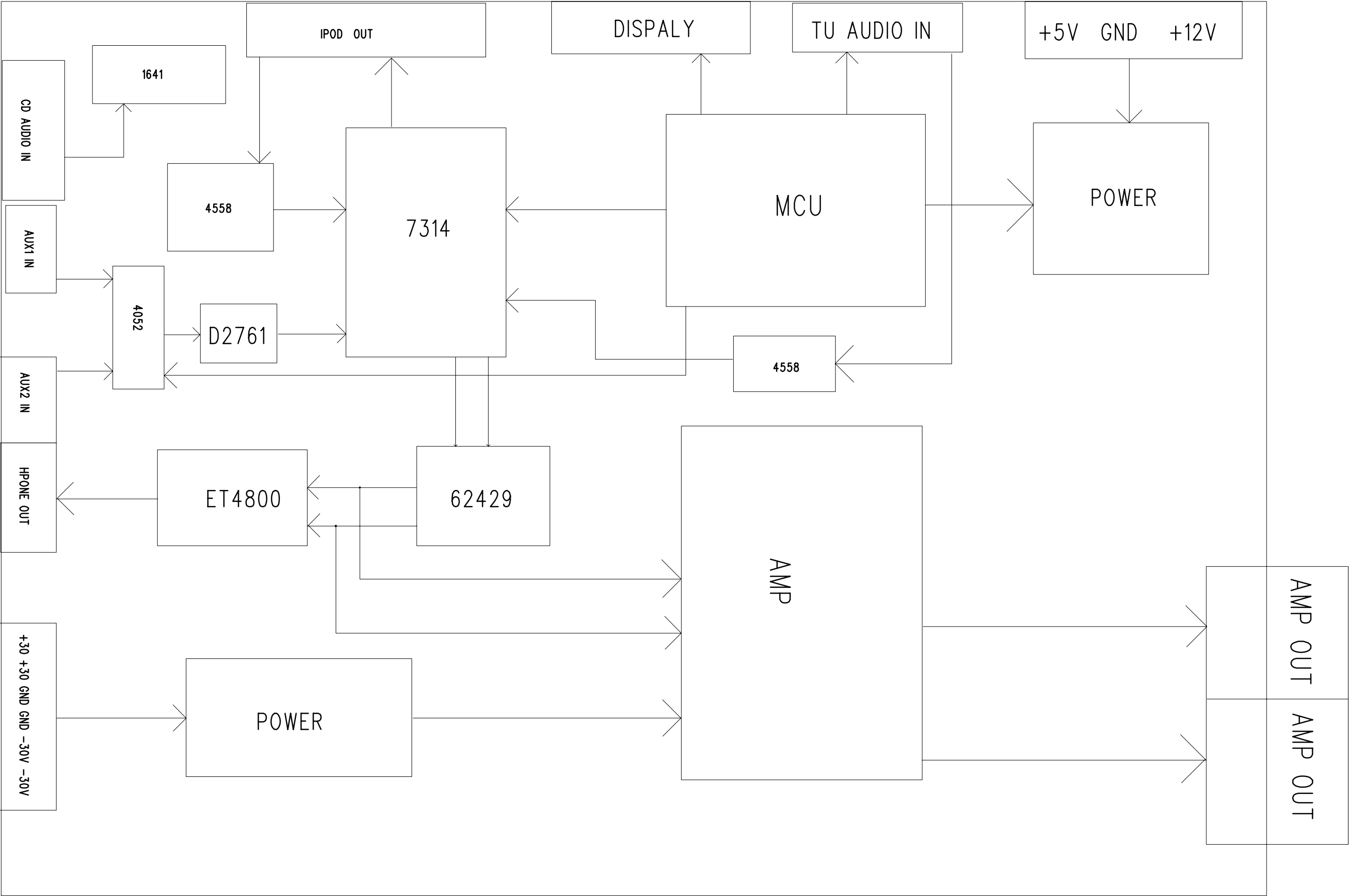
The direction of cleaning must be in the way as indicated in the picture below.

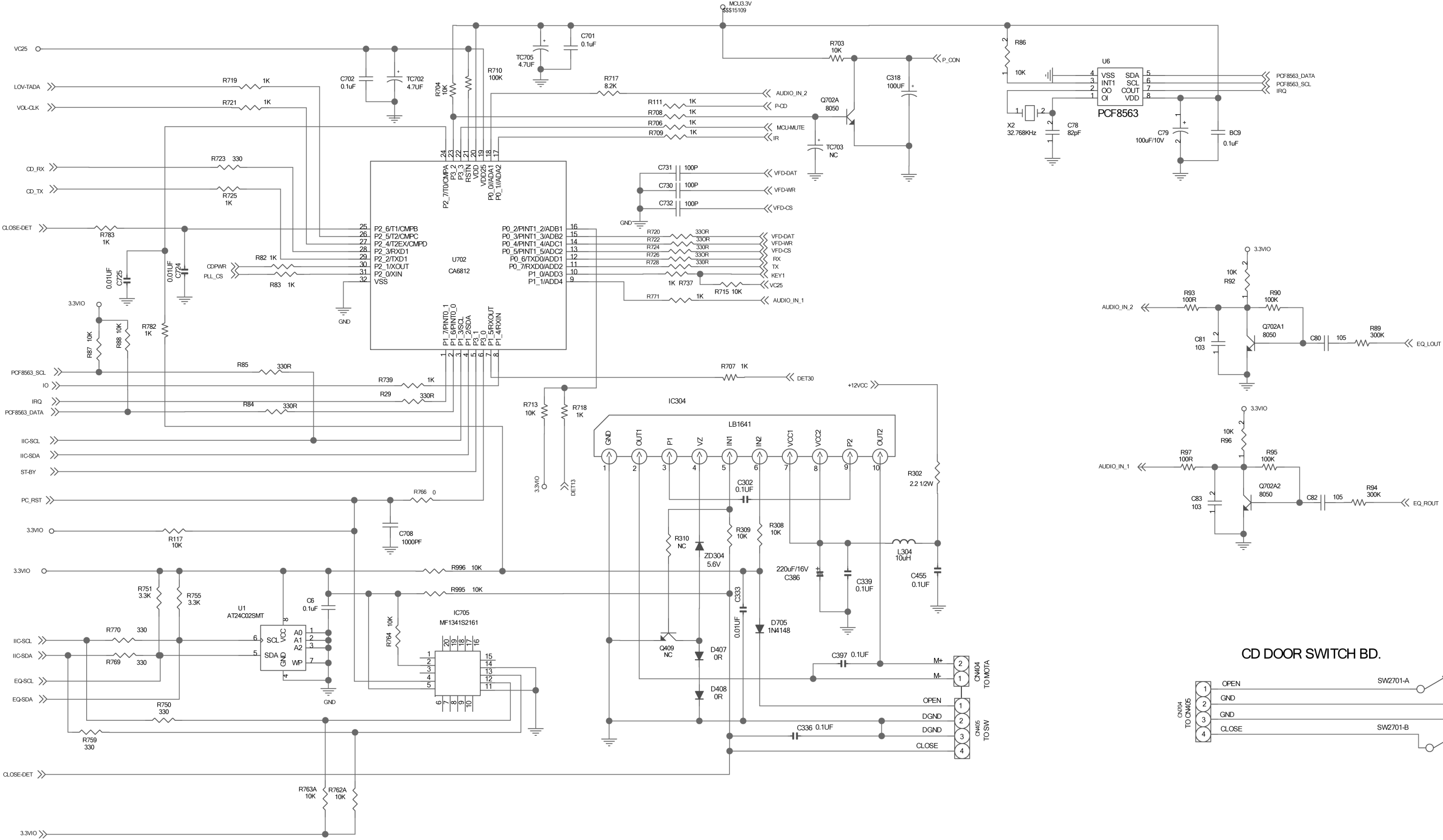


SET BLOCK DIAGRAM

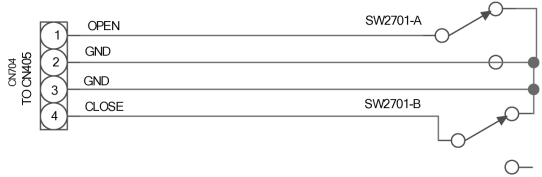


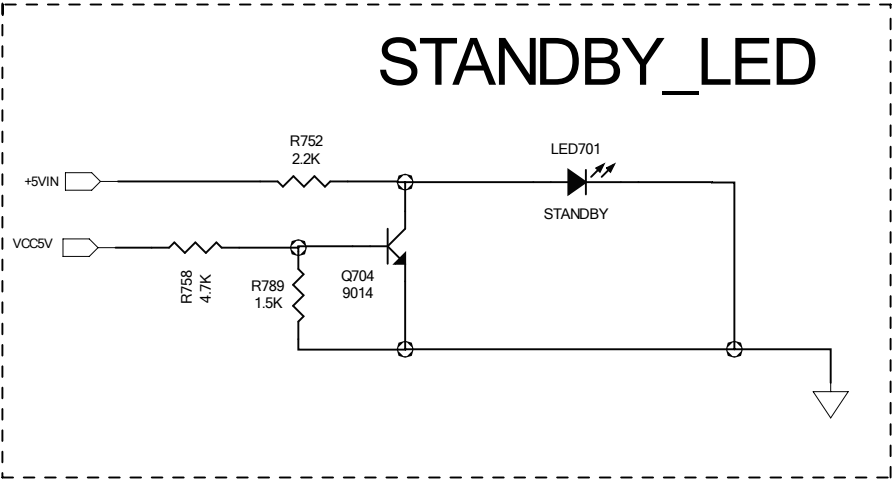
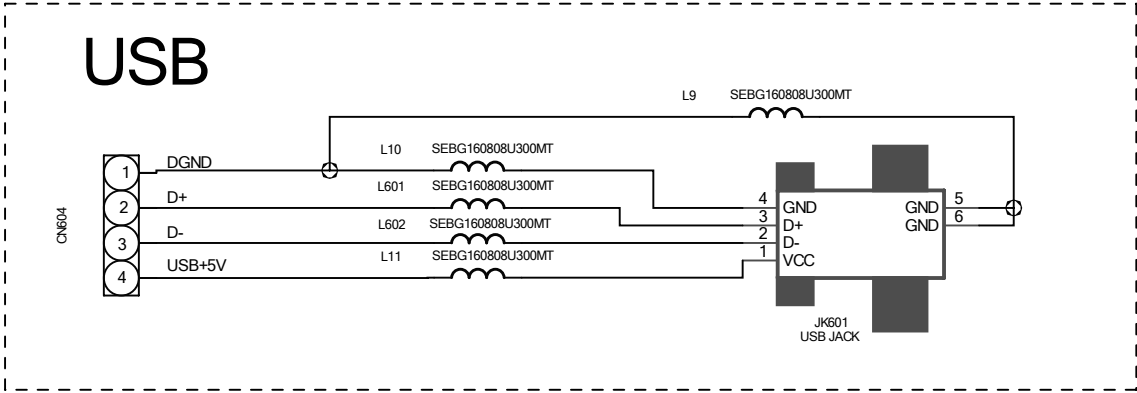
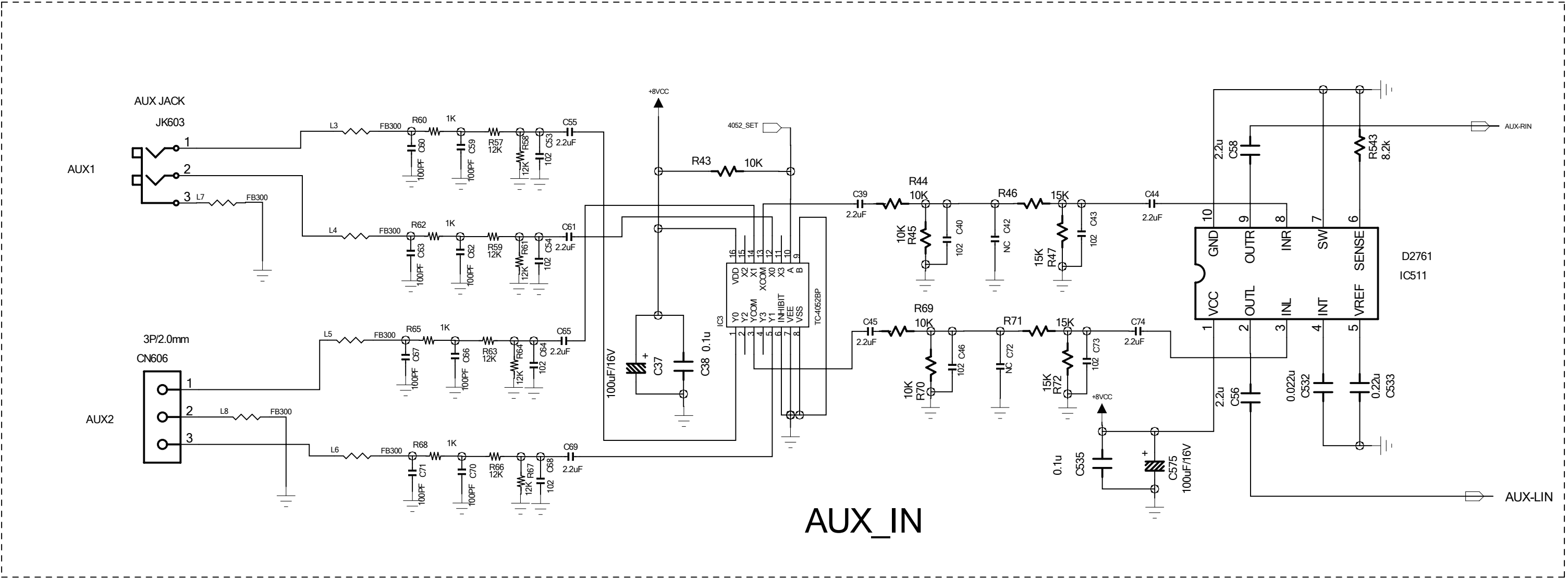
SET WIRING DIAGRAM



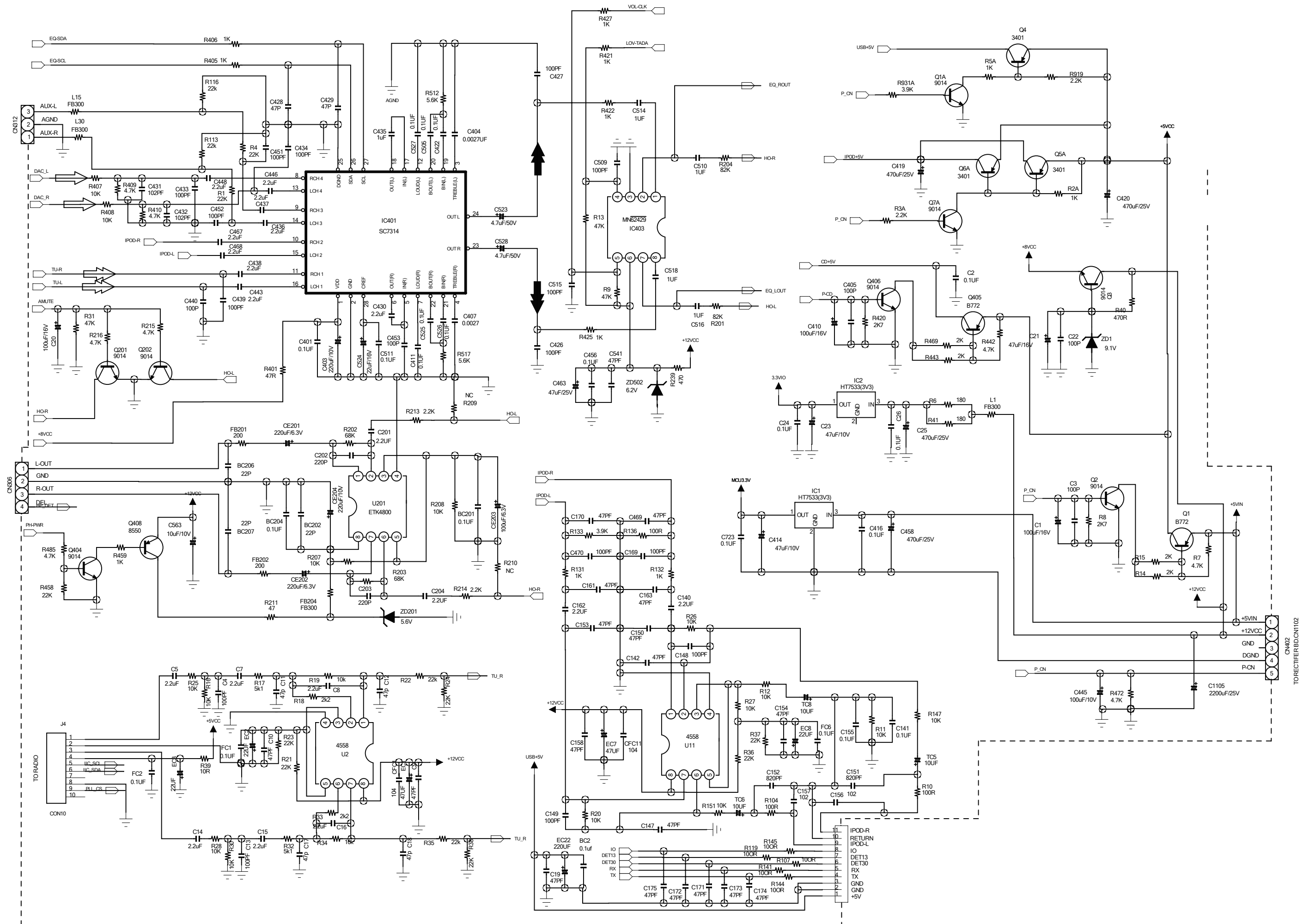


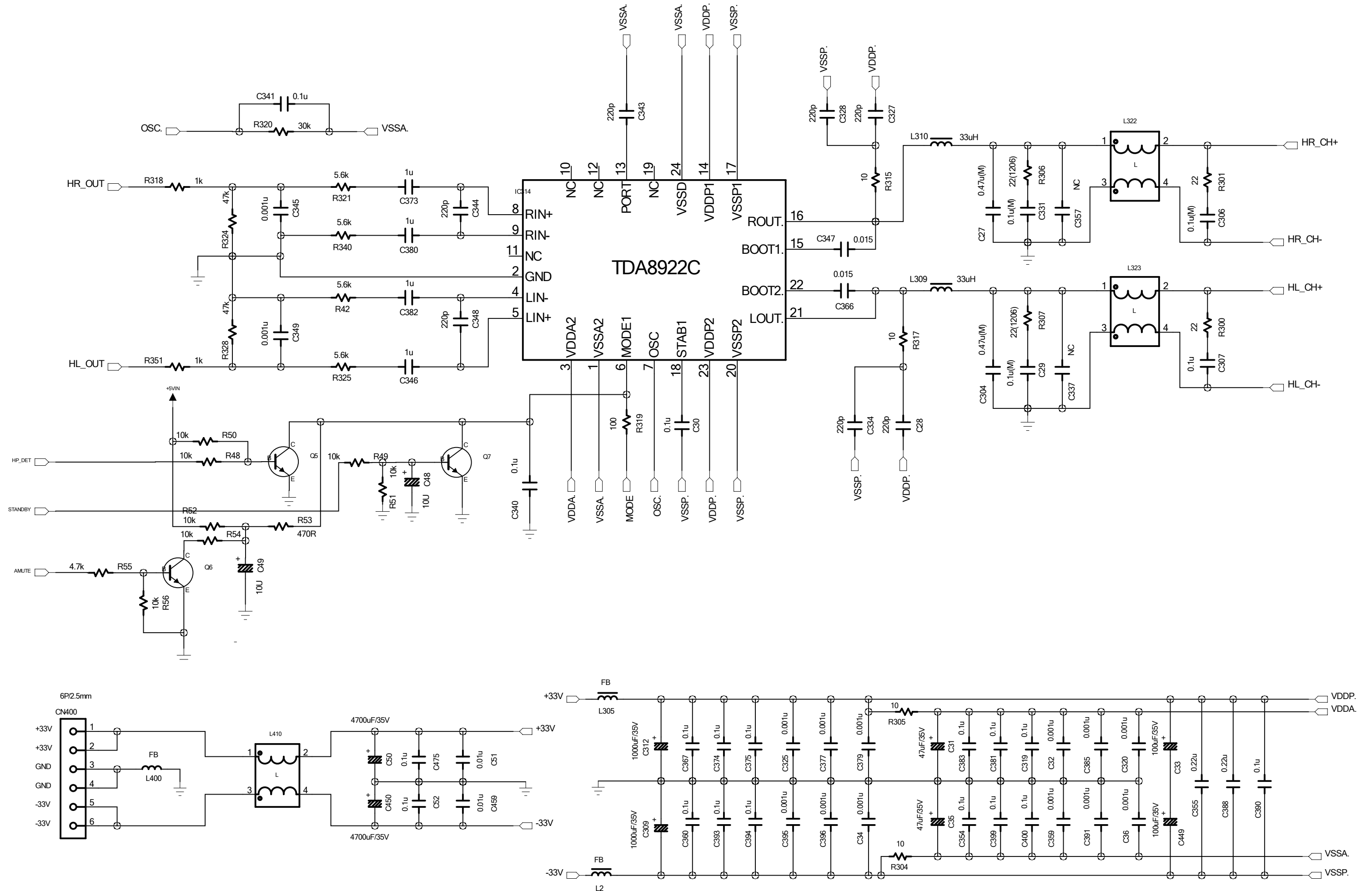
CD DOOR SWITCH BD.



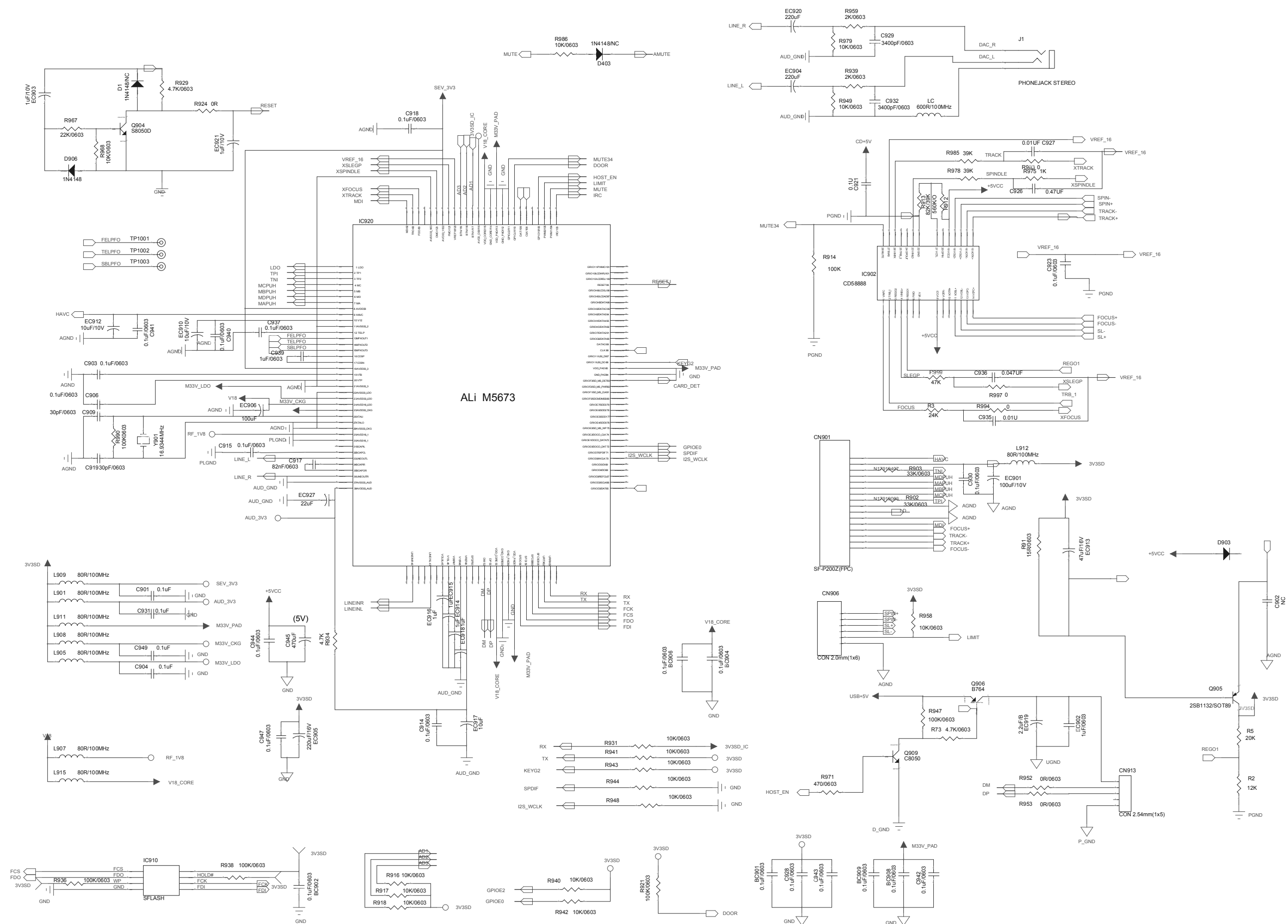


CIRCUIT DIAGARM - MAIN BOARD

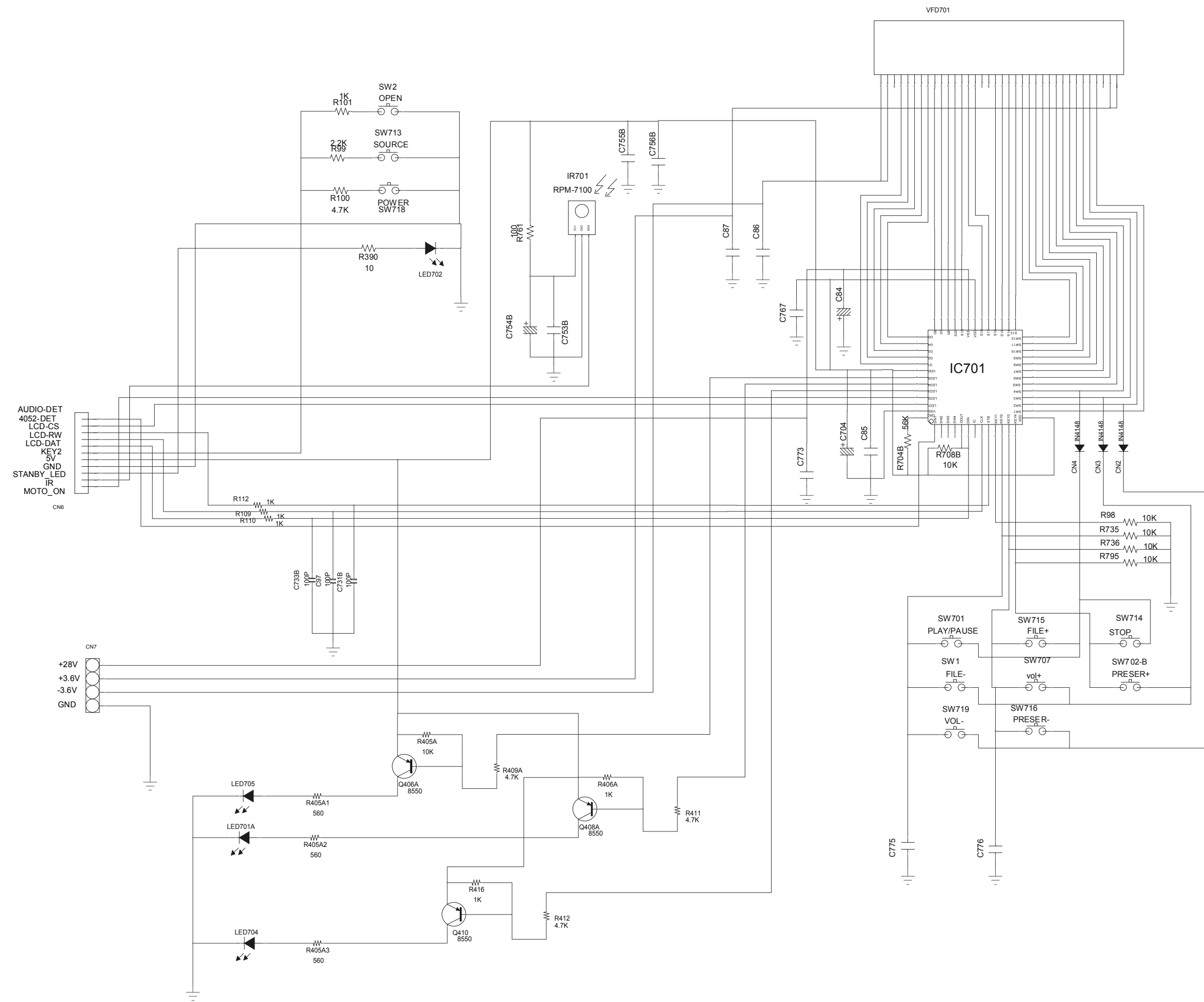




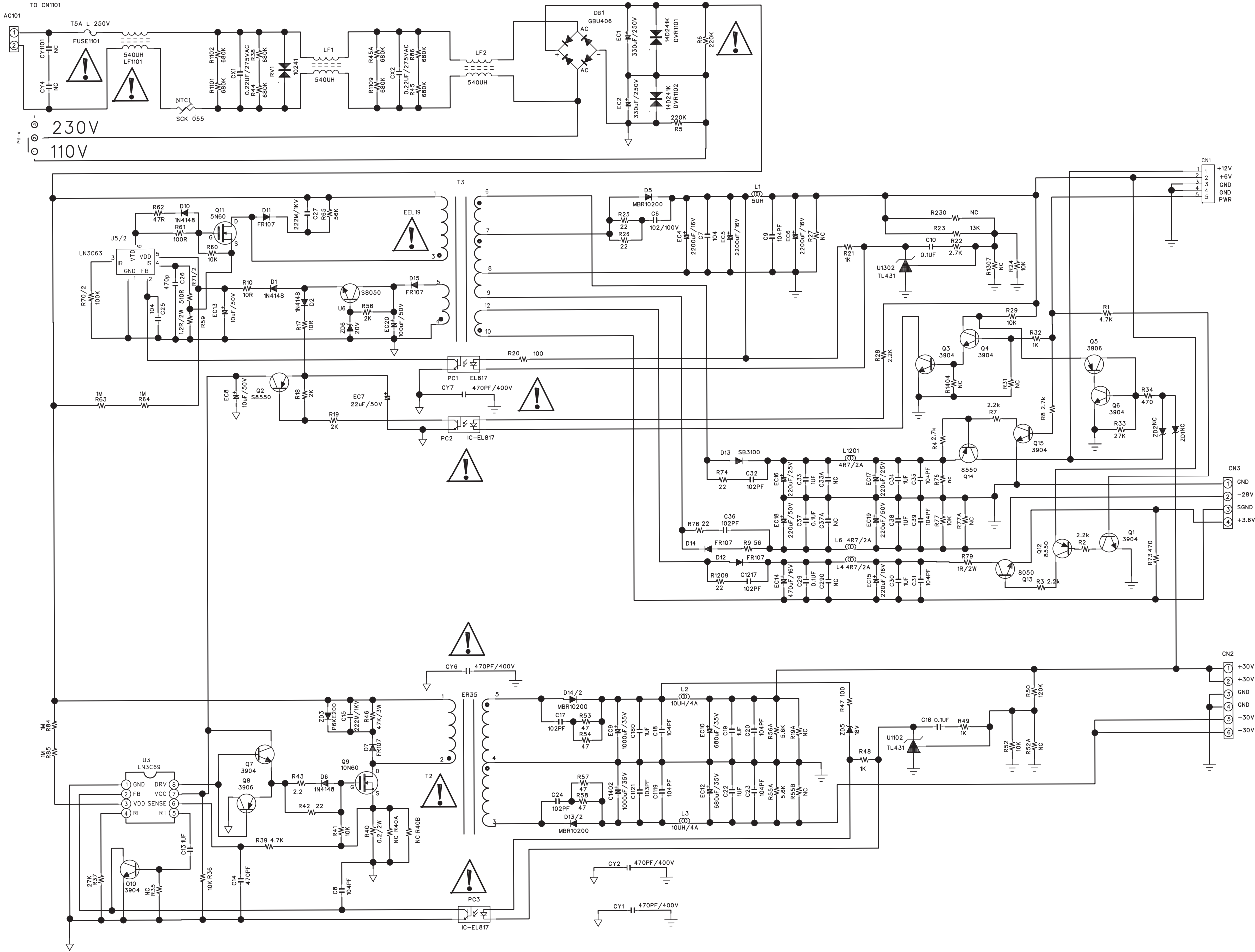
CIRCUIT DIAGRAM - CD BOARD



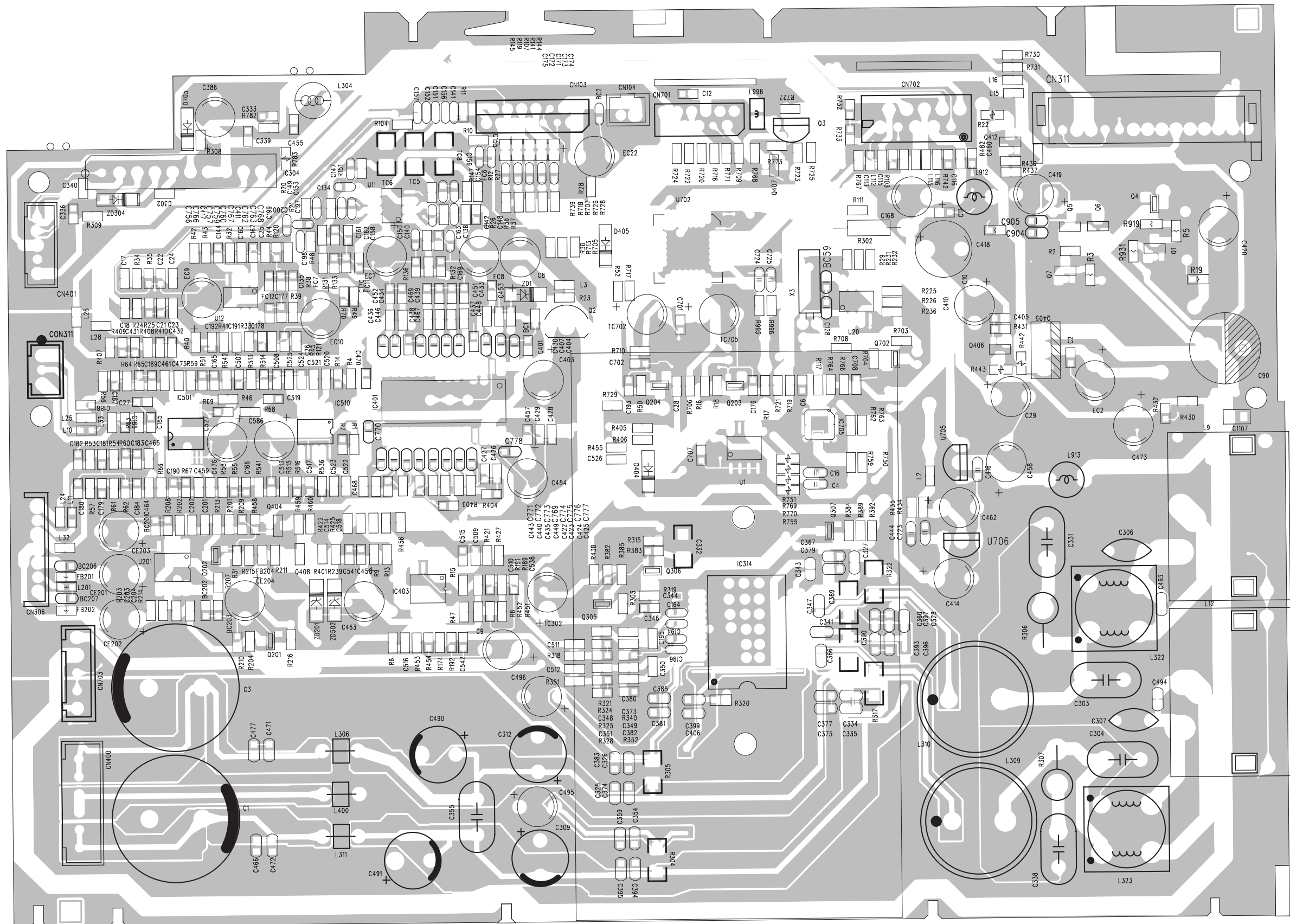
CIRCUIT DIAGRAM - DISPLAY/KEY/JACK/USB BOARD



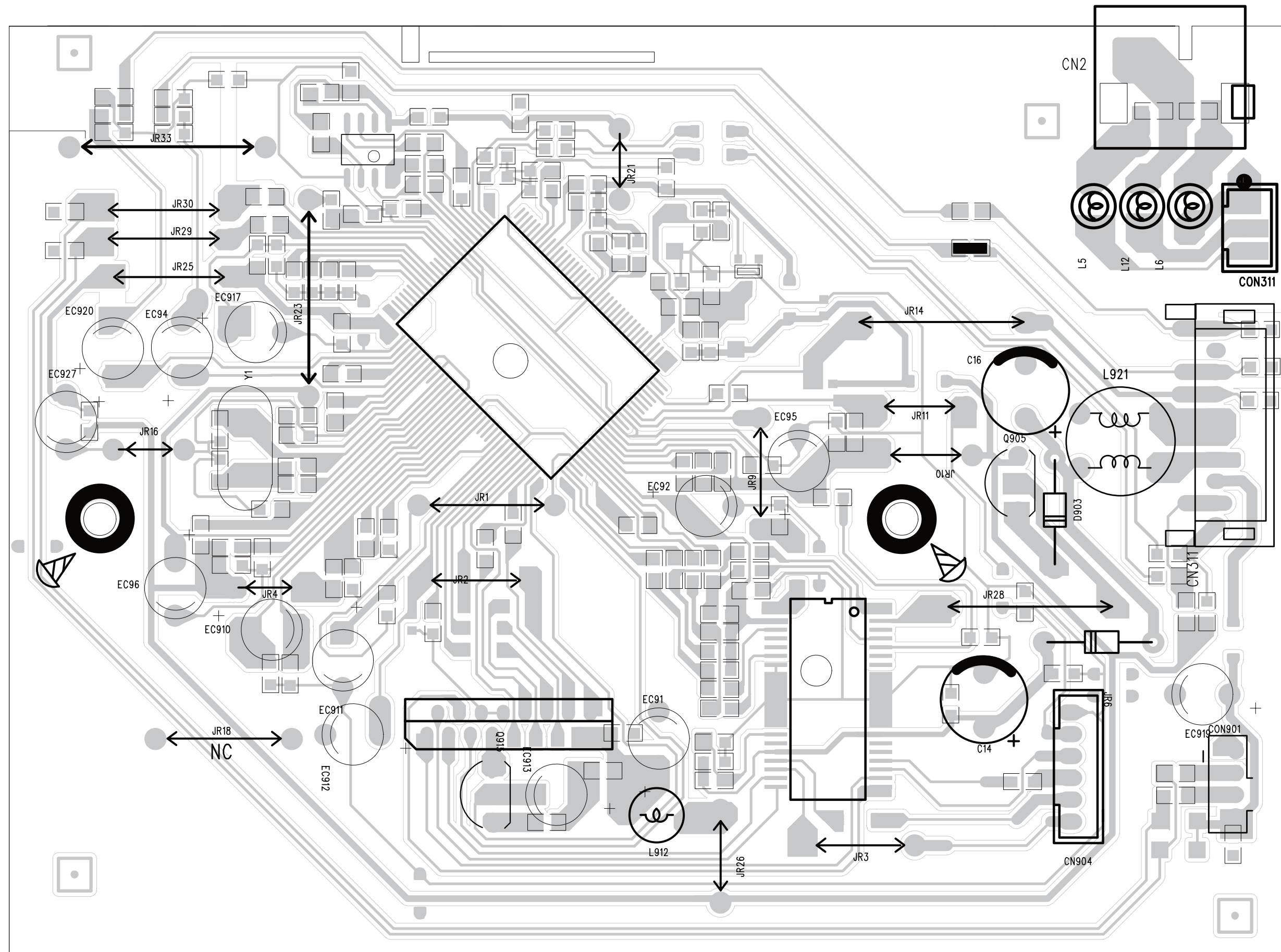
CIRCUIT DIAGRAM - SMPS POWER BOARD



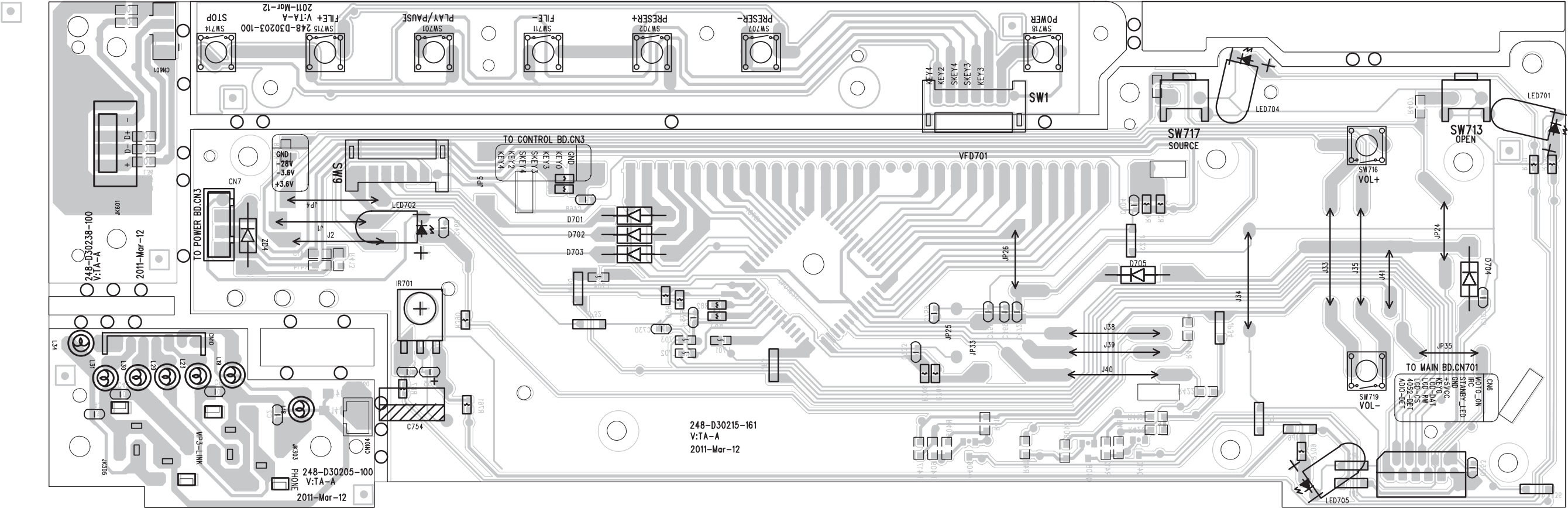
LAYOUT DIAGRAM – MAIN BOARD



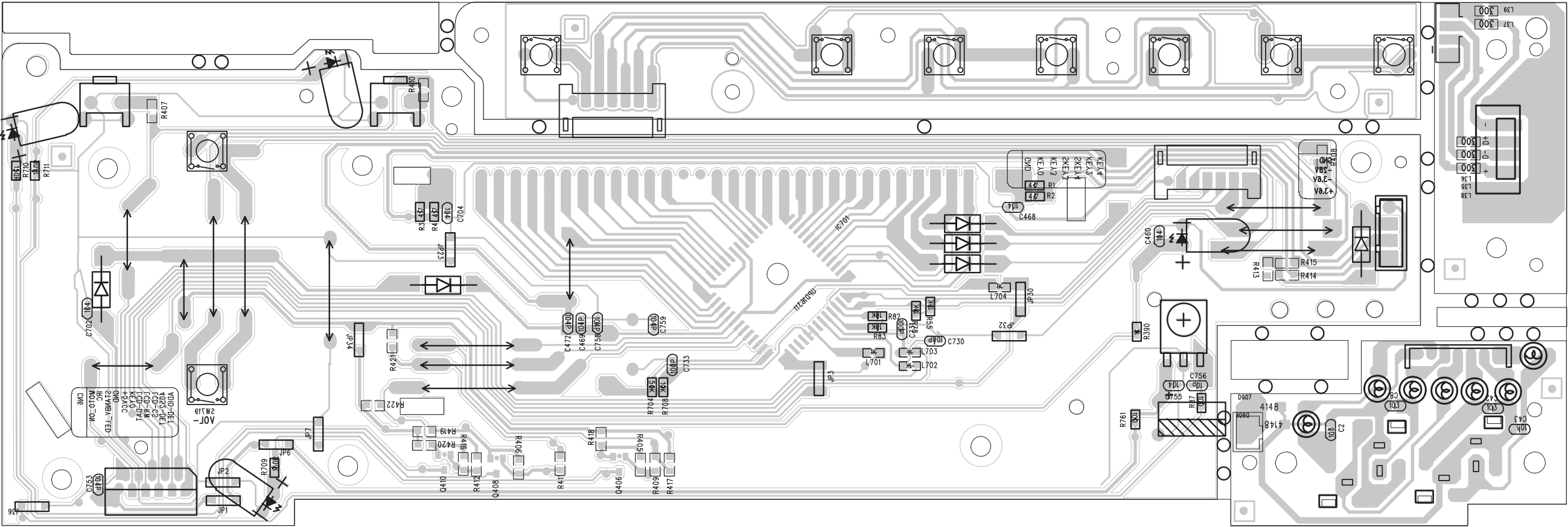
LAYOUT DIAGRAM - CD BOARD



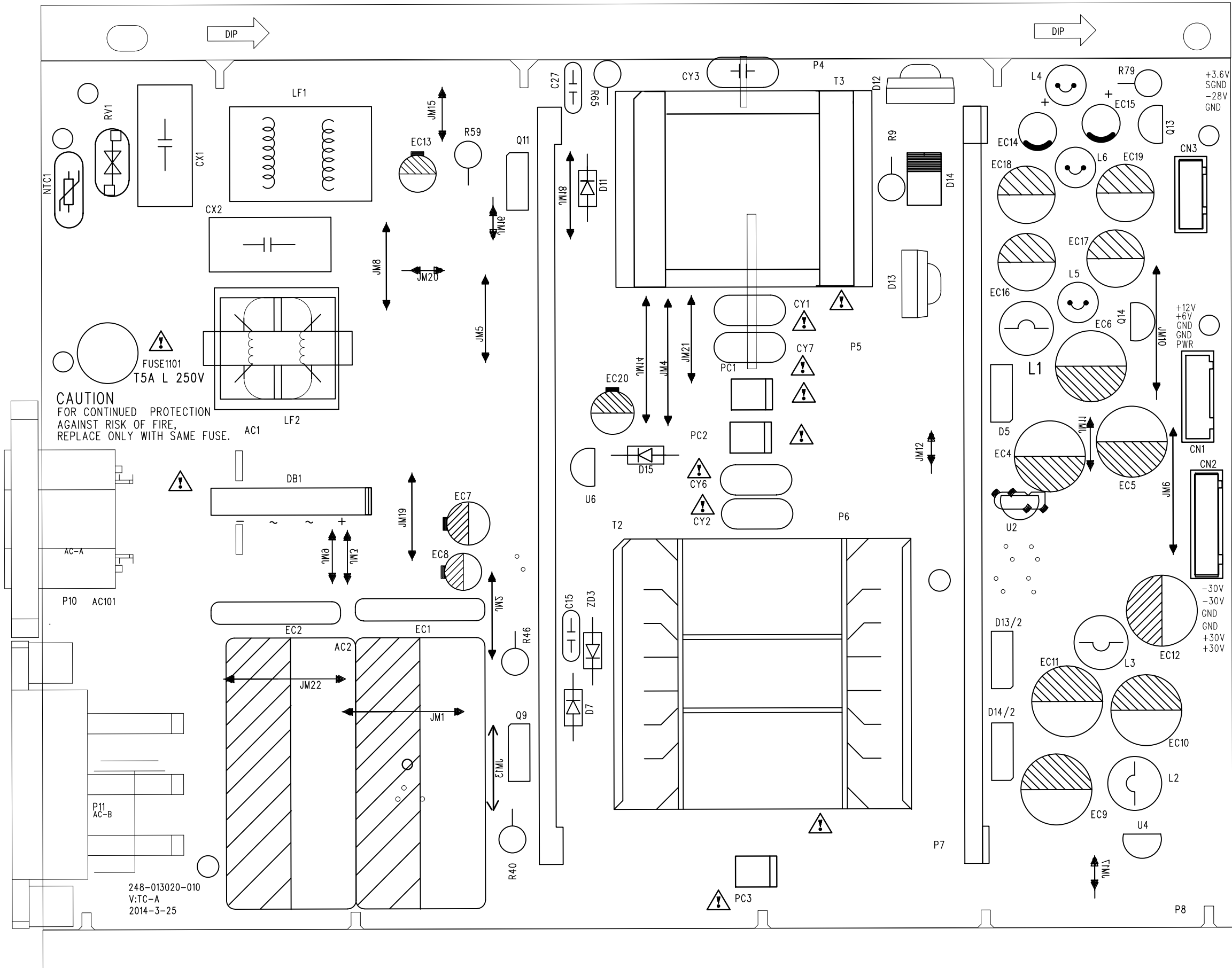
LAYOUT DIAGRAM - DISPLAY/KEY/JACK/USB BOARD TOP SIDE



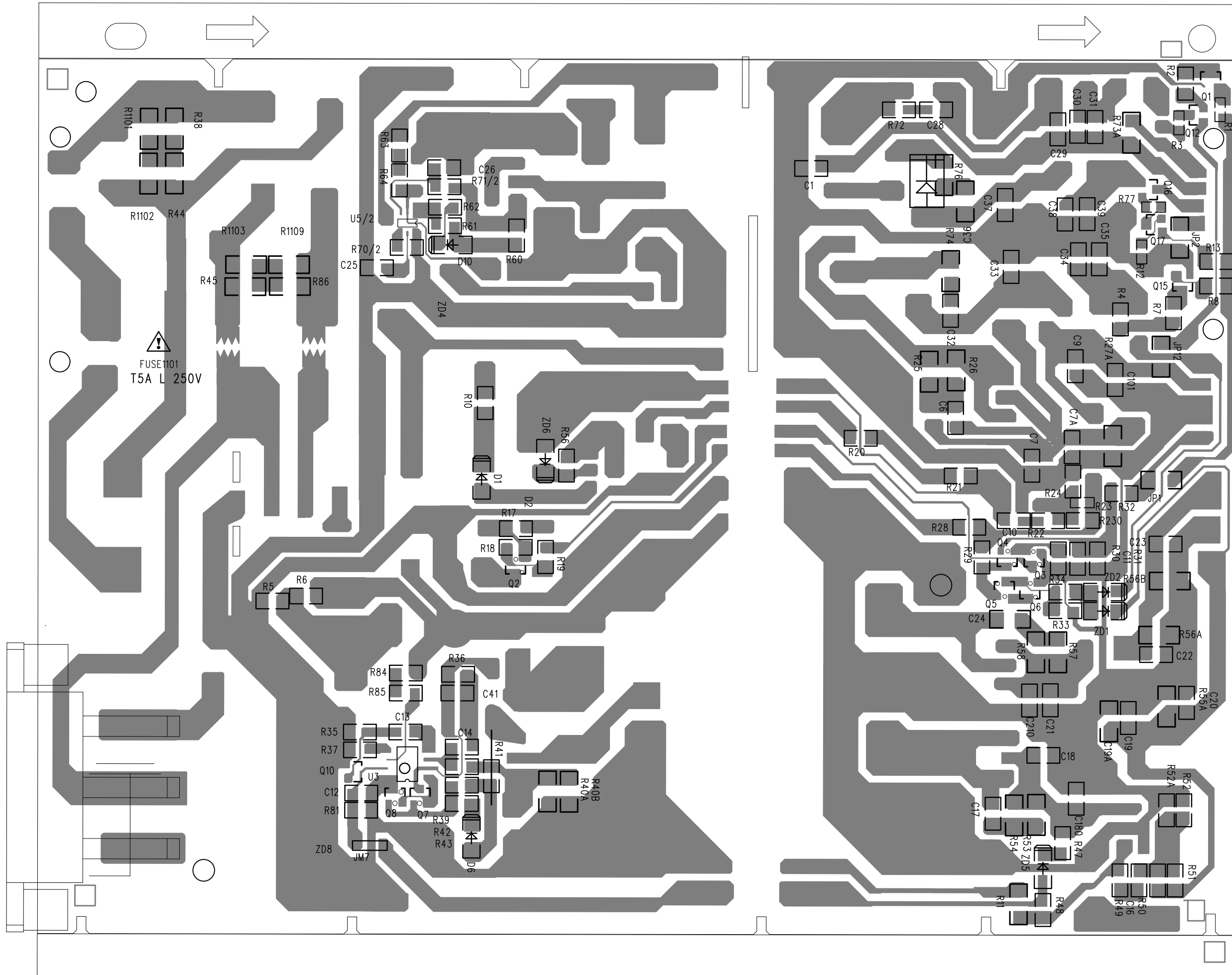
LAYOUT DIAGRAM - DISPLAY/KEY/JACK/USB BOARD BOTTOM



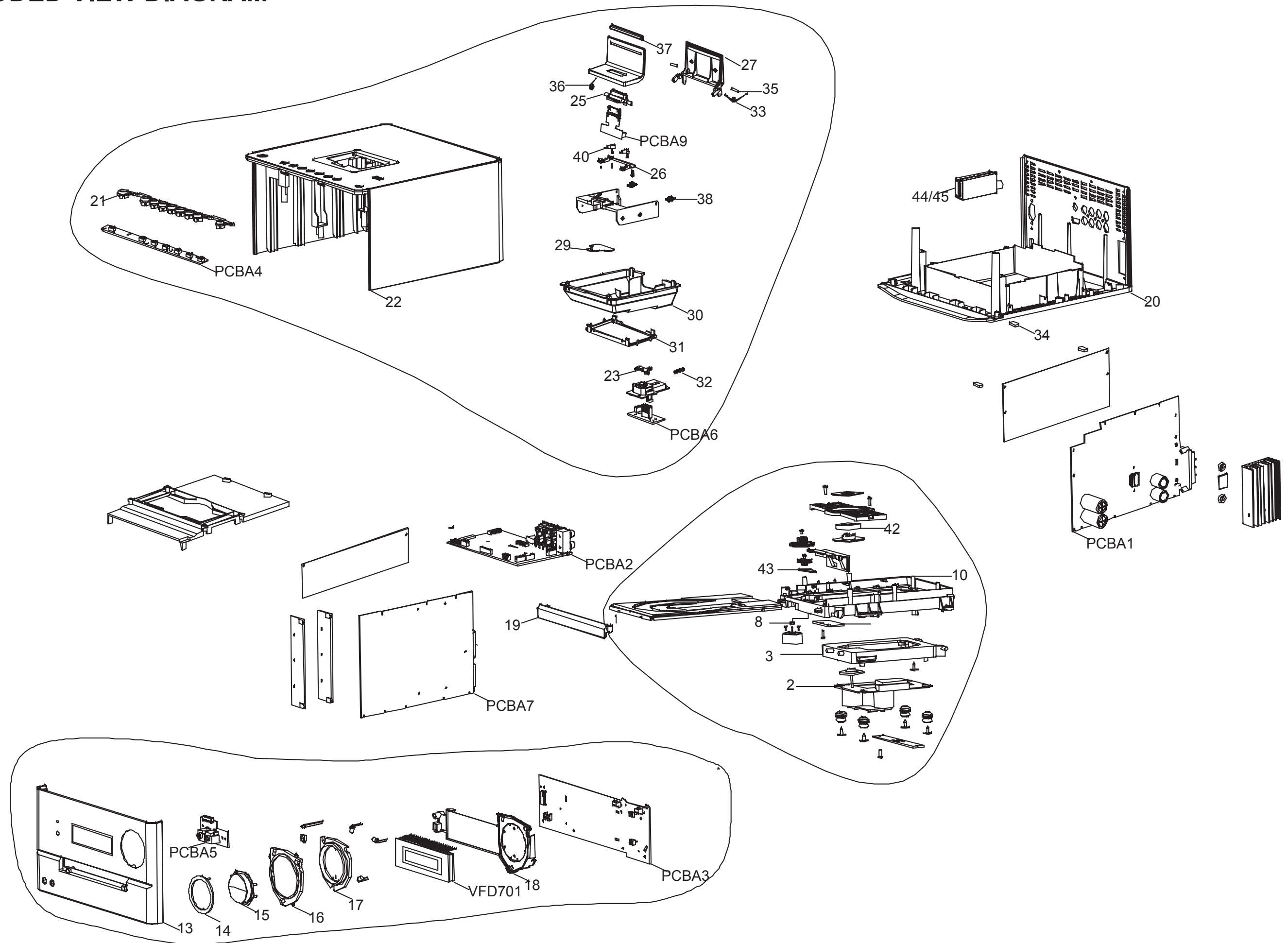
LAYOUT DIAGRAM - SMPS POWER BOARD TOP



LAYOUT DIAGRAM - SMPS POWER BOARD BOTTOM



EXPLODED VIEW DIAGRAM



Revision List

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Version 1.0

* Initial Release