

Service
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Service Manual



CONTENTS

Technical Specification..... 1-1..1-4

Version Variation..... 2-1

Safety Instruction..... 2-2

Block diagram..... 3-1

Wiring diagram 3-2

Circuit Diagram

Main, Radio, Display, Rectifier..... 4-1..4-8

Layout diagram

Main, Radio, Display, Rectifier..... 5-1 5-5

Explode Drawing..... 6-1



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Version 1.1



PHILIPS

TECHNICAL SPECIFICATION

GENERAL DESCRIPTION CDSM with Tuner , CD, USB Aux In, Headphone						
LIFETIME : 5 Years						
Class	Tuner	Supply + Amplifier	Loudspeaker Boxes	Recorder	USB	CD
I	X	X			X	X
II						
III						
SAFETY requirements						
Refer to the section of Version Overview						
RADIATION / IMMUNITY requirments (EMC)						
Refer to the section of Version Overview						
CLIMATIC requirements ALL climates : - 10 Degree till + 50 Degree						
PERFORMANCE CLASSES						
POWER SUPPLY						
MAINS (A.C.)	120/230Vac ± 15%	230 Vac ± 10 %	120V+/-15%	220V-10%,240+10%	99-146V, 196-264Vac	
Version	97 / 98	/12	/96	/73	55 / 77 / 78	
Voltage Selection	Yes	No	No	No	Yes	
Frequency	60 / 50Hz	50 Hz	60 Hz	50 Hz	60 / 50Hz	
DC operation / Backup Buffer						
Battery type :	R20 (UM1 / D-cell) x 6 (9V normal, 6.3V limit)					
POWER CONSUMER						
	MAINS (A.C.)	DC operation / Backup Buffer				
Standby :						
(DEMO mode " OFF "), NOM. A, INPUT						
Maximum :						
@ 1/8 Prated , NOM. A, INPUT		14W				
ECO Power mode :		N/A				

TECHNICAL SPECIFICATION

TECHNICAL DESCRIPTION			
2 x 2W matching LOUDSPEAKER of 2 x 8R. One INPUT SOURCE			
GENERAL PART			
OUTPUT stage Protection	: Yes	Temperature	: YES
		Shorcircuit	: Yes
INDICATORS			
Standby Mode Indicator	: LCD display off		
ECO Mode Indicator	: NA		
ELECTRICAL DATA			
DSC :	NA		
DBB	Yes	Hum (Volume Minimum)	0.5 uW
SIS :	N/A	Residual Noise (Volume Minimum)	0.06 uW
VAC :	N/A		
WOOX :	N/A		
INTERCONNECTS			
Input Sensitivity (± 3) rated output power at 1 kHz		Line Output Voltage (*1)	
Tuner	FM 67.5KHZ, AM80% Modulation(Limit :-6db)	Line Out (Left / Right)	N.A
CD	-6 dB track (Audio Disc 1 ,Trk 35)	Subwoofer Out	N.A
USB	-6 dB track (Copy from Audio Disc 1 ,Trk 35)	Headphone	2.5 mW +/-0.3mW , at R Load = 32 ohm @ max volume, 0dB, 1kHz CD
AUX	500mV	Digital Coaxial Out	N.A
Microphone	-6 dB track (Audio Disc 1 ,Trk 35)	Booster Out	N.A
OUTPUT POWER (* 1) At THD = 10% , 1KHz sinewave			
Main Operation	: 2.5W, 1 Channels (Lim: -1dB)	(At Cold Condition with 10% THD)	
DC Operation	: 2.5W, 1 Channels (Lim: -1dB)		
Frequency Response	: 125Hz - 14KHz	(At 500mW Output in flat Mode)	
LOUDSPEAKER (BOXES)			
Rated Impedance			
Left / Right : 6 Ohms at 125Hz to 16KHz			
Remarks			
(*1) Electrical parameters are to be measurement at speaker terminals across 6 Ohm load (pure resistor) with rated input signal in AUX mode; with DBB OFF			

TECHNICAL SPECIFICATION

TECHNICAL DESCRIPTION	
CLOCK PART	
Timer Setting	: NA
Timer Wakeup Mode	: NA
Remarks Time Setting	: NA
Volume at Wakeup	: NA
No of Timer Settings	: NA
Clock Accuracy	: NA
INDICATORS	
Display Type	: LCD
CD PART	
Channel Unbalance (250 to 10k Hz)	: <= 3dB
Frequency Response(±3dB) (@ volume max - 20dB and DBB off mode)	: 100Hz~10kHz
Signal to Noise Ratio(A-weighted)	: 62dBA(Lim 57 dBA)
THD (1kHz)	: 1.5%(Lim 2.0%)
THD (100 ~10kHz)	: 2%(Lim 3.0%)
Channel Separation(1K)	: 40dB (Lim. 26dB)
Channel Separation(10K)	: 30dB (Lim. 16dB)
CD Shock sens.	: 5kg
USB PART	
- Refer to Philips USB direct user requirement spec.	
DBB effect	
DBB	: 8+/- 2 dB at AUX 500mV, 1kHz

TECHNICAL SPECIFICATION

TECHNICAL DESCRIPTION							
GENERAL PART							
WAVE RANGE							
FM				Refer to version overview			
AM				Refer to version overview			
MW				Refer to version overview			
AERIAL							
FM		Telescope					
AM/MW		Ferrite					
INDICATORS : NA							
ELECTRICAL DATA							
A.M	Nom	Limit	Unit	F.M.	Nom	Limit	Unit
IF	450	± 3	kHz	IF	10.7	± 0.3	MHz
AGC figure of merit	30	25	dB	- 3 dB Limiting Point	17	25	dBf
Distortion (RF 50mV, m=80%)	3	5	%	Distortion (RF 1mV, Frq Dev.75 kHz)	3	5	%
				Stereo - 46 dB Quieting	48	51	dBf
				FM S/N Ratio(A weighted) Mono input 80dBf	55	50	dBa
Modulation Hum	45	40	dB	Modulation Hum	45	40	dB
				FM Channel Separation -400/1K/5K	21/25/18	18/20/15	dB
Search tuning sensitivity	48 - 72		dBuV/m	Search tuning sensitivity	24-32	19 - 35	dBf
Search tuning stop accuracy RF >= 1V/m RF >= a26 to 1V/m		+/- 1 0		Search Tuning Stop Accuracy RF: 91~120dBf R/F:31~91dBf		+/- 1 0	Step
Search Time		60	Sec.	Search Time		60	Sec.
Wave Range		Noise Limited Sensitivity 26 dB		Image Rejection	IF Rejection	Large Signal	
FM	Nom.	--	18	dBf	24	55	130dBf
	Lim.	--	22	dBf	20	50	125dBf
AM / MW	Nom.	--	64	dBuV/m	32	28	120 dBuV/m
	Lim.	--	72	dBuV/m	28	24	114 dBuV/m

2.0 SAFETY INSTRUCTIONS

(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 ditzelfde potentiaal.

(F) ATTENTION

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

(D) WARNUNG

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

(I) AVVERTIMENTO

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

(GB)

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

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

(NL)

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

**(F)**

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

(GB) Warning !

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

(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.

(S) Varning !

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

(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.

(SF) Varoitus !

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

"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."

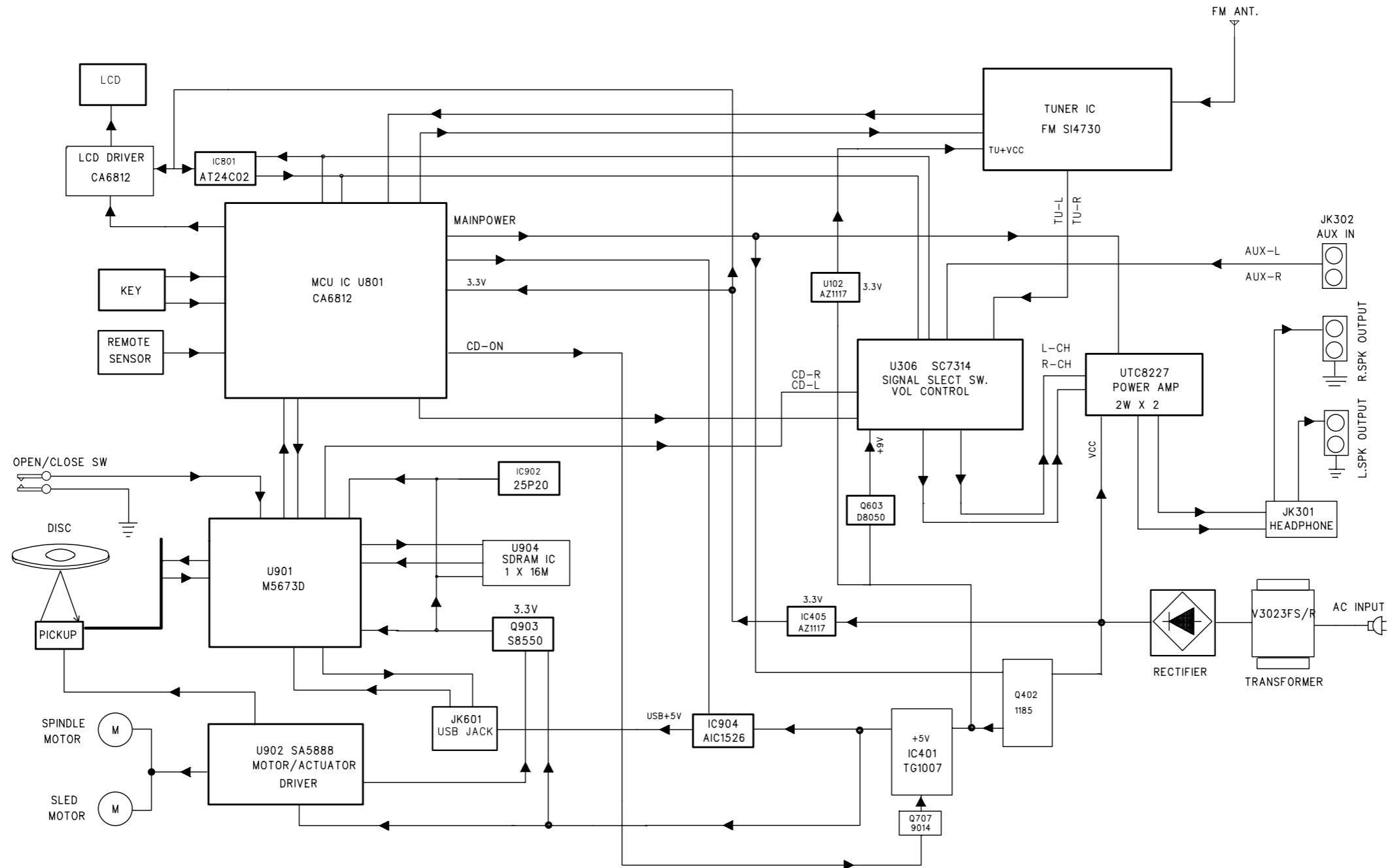
DK Advarsel !

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

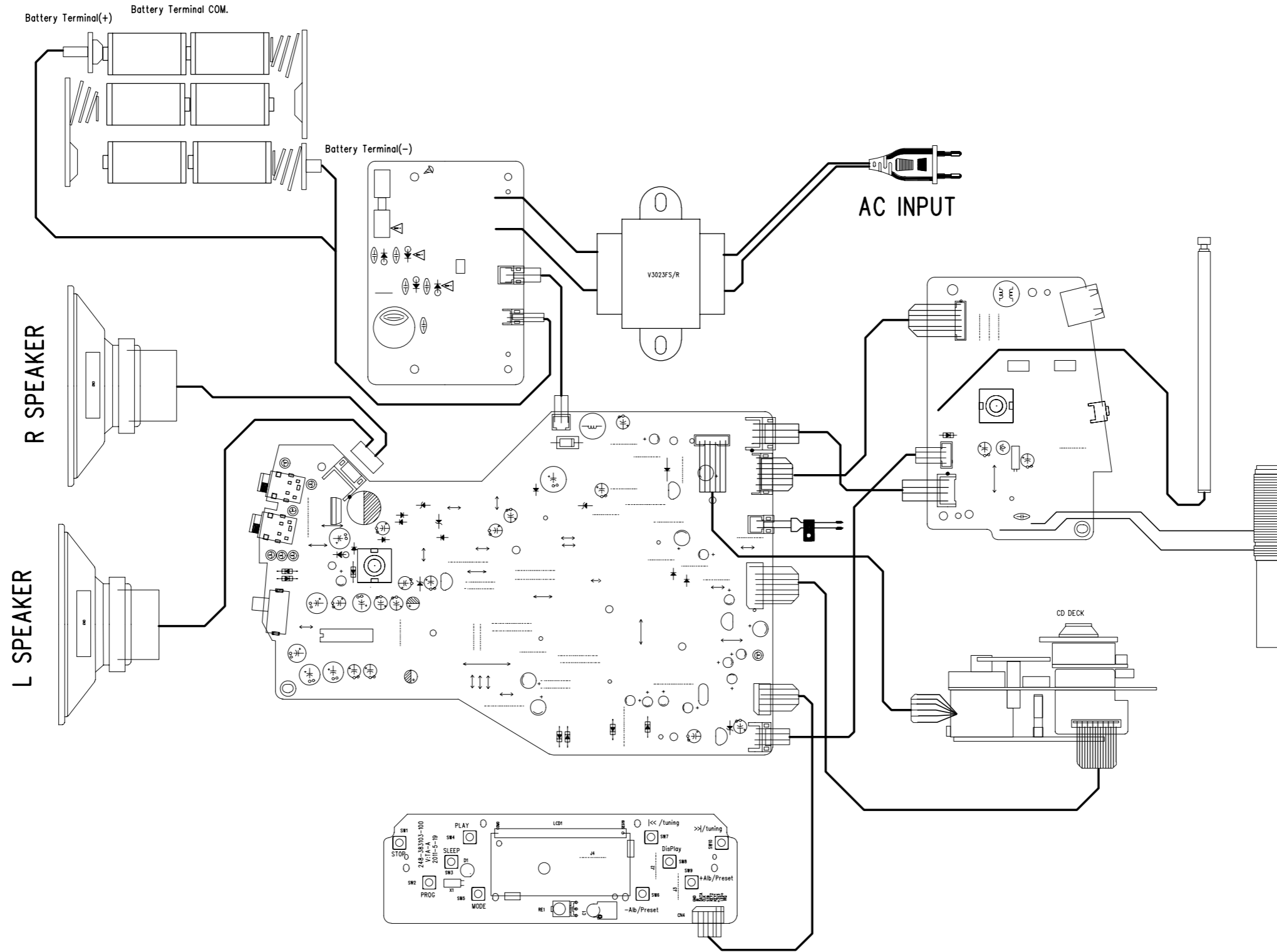
Caution: These servicing instructions are for use by qualified service personnel only.

To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

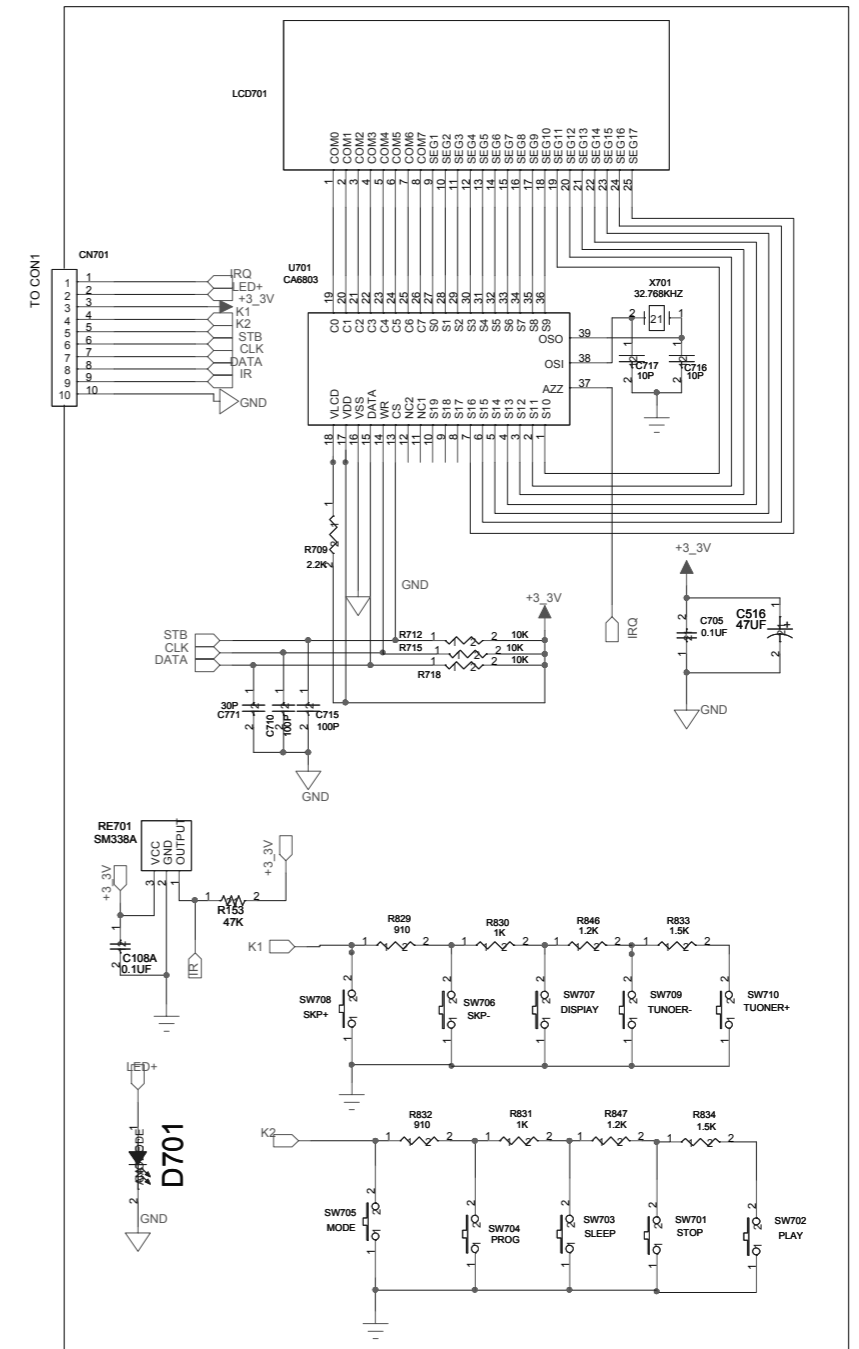
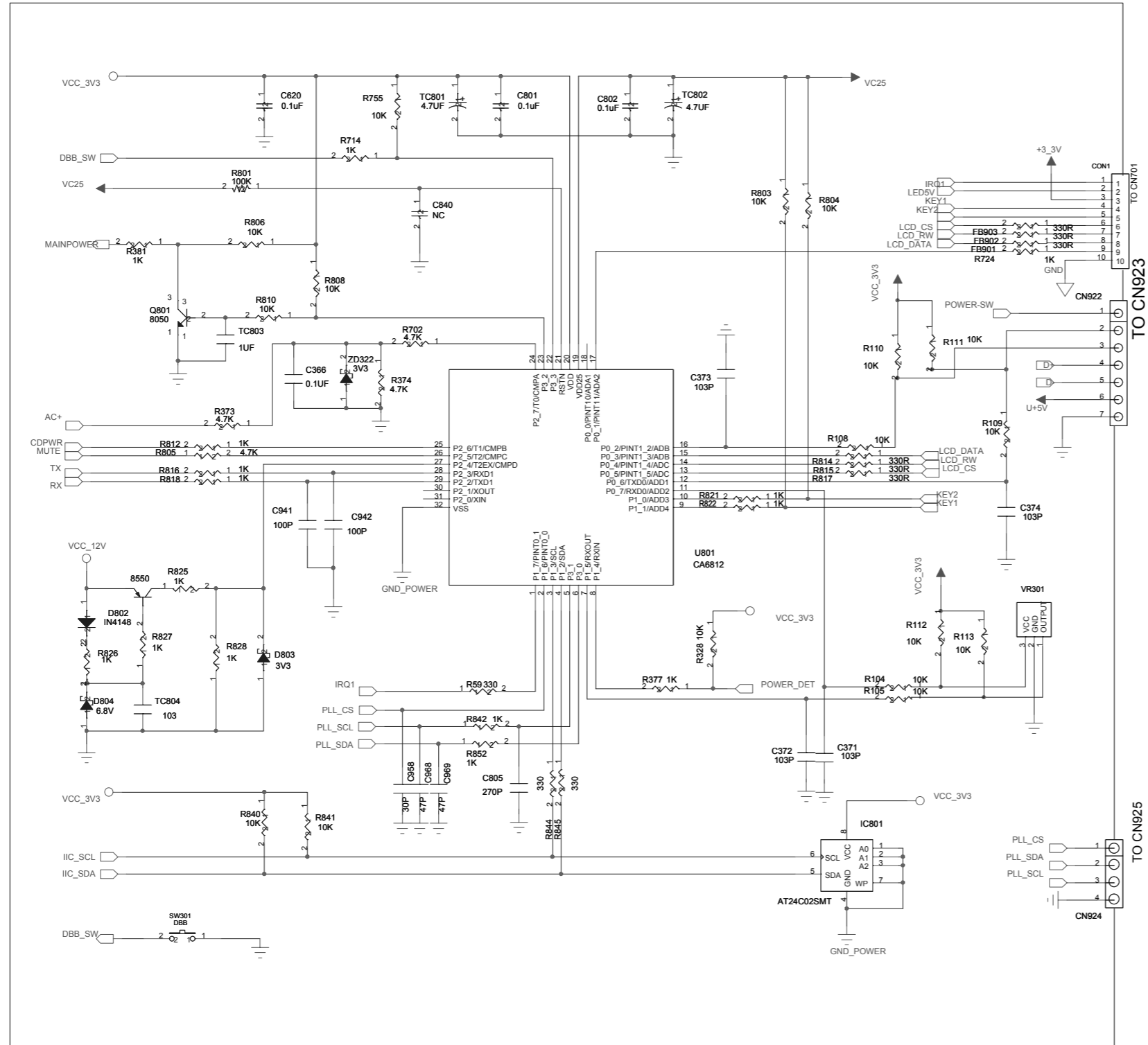
SET BLOCK DIAGRAM



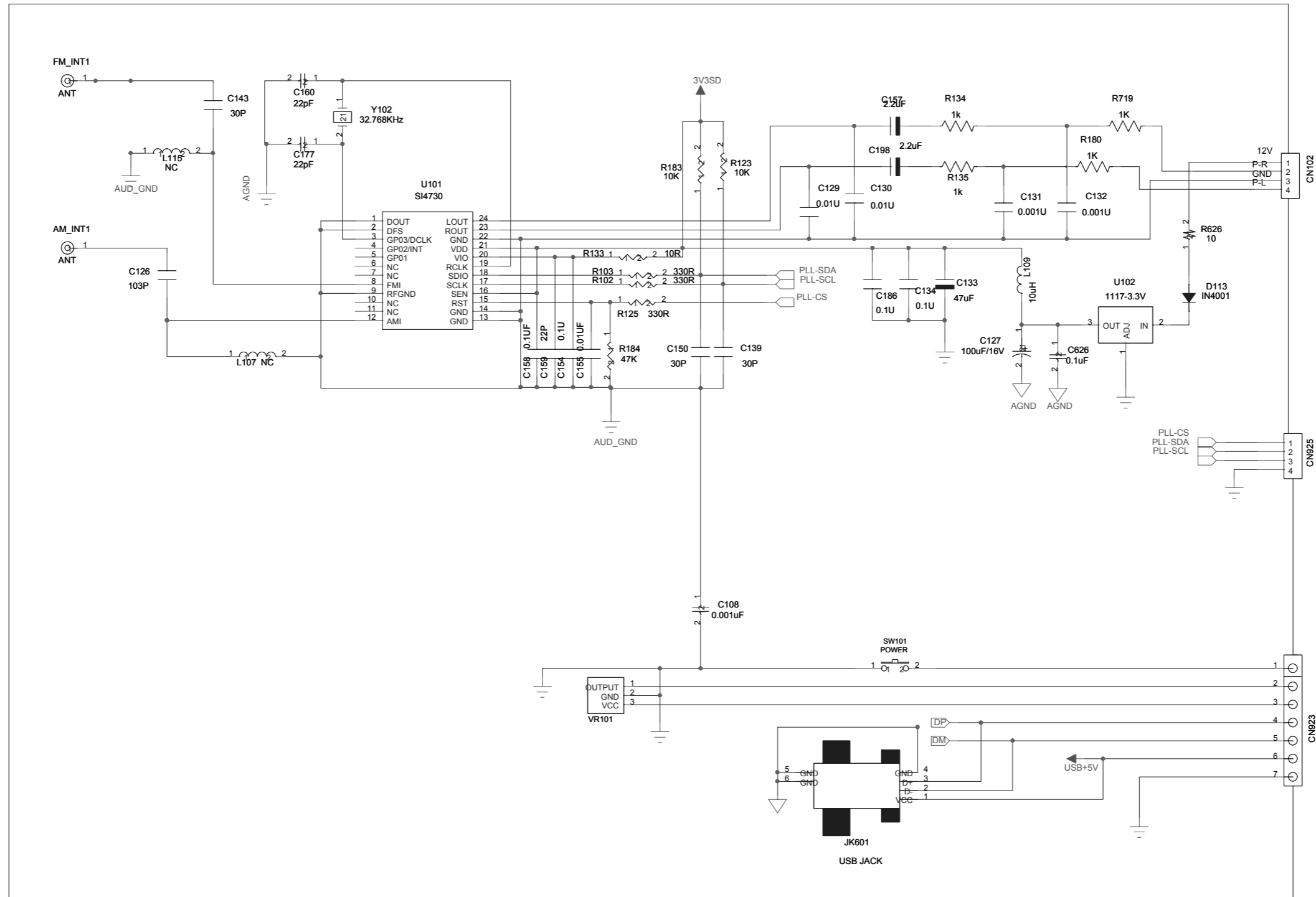
WIRE CONNECT DIAGRAM



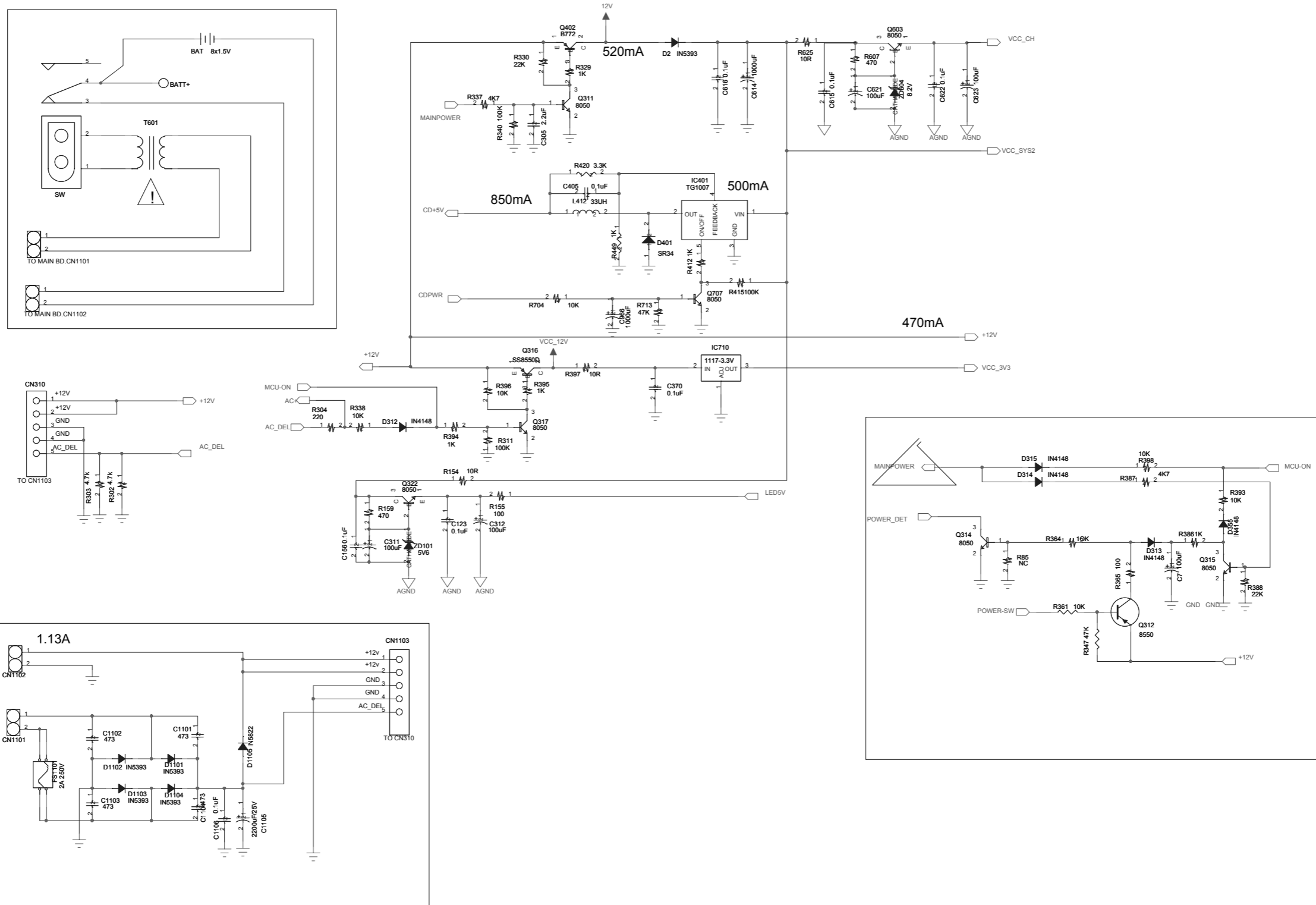
CIRCUIT DIAGRAM -MAIN + Display BOARD



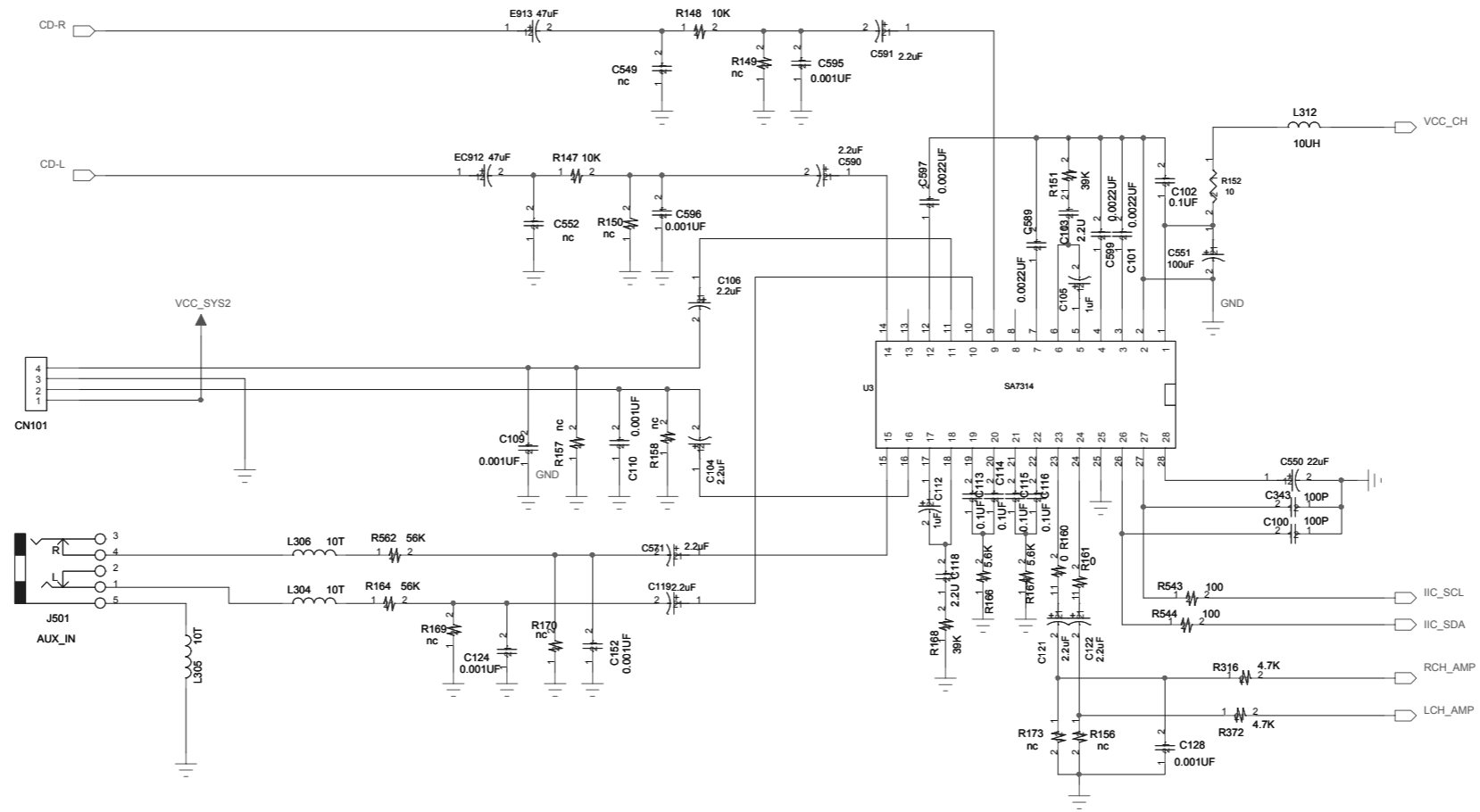
CIRCUIT DIAGARM -radio BOARD PART 2



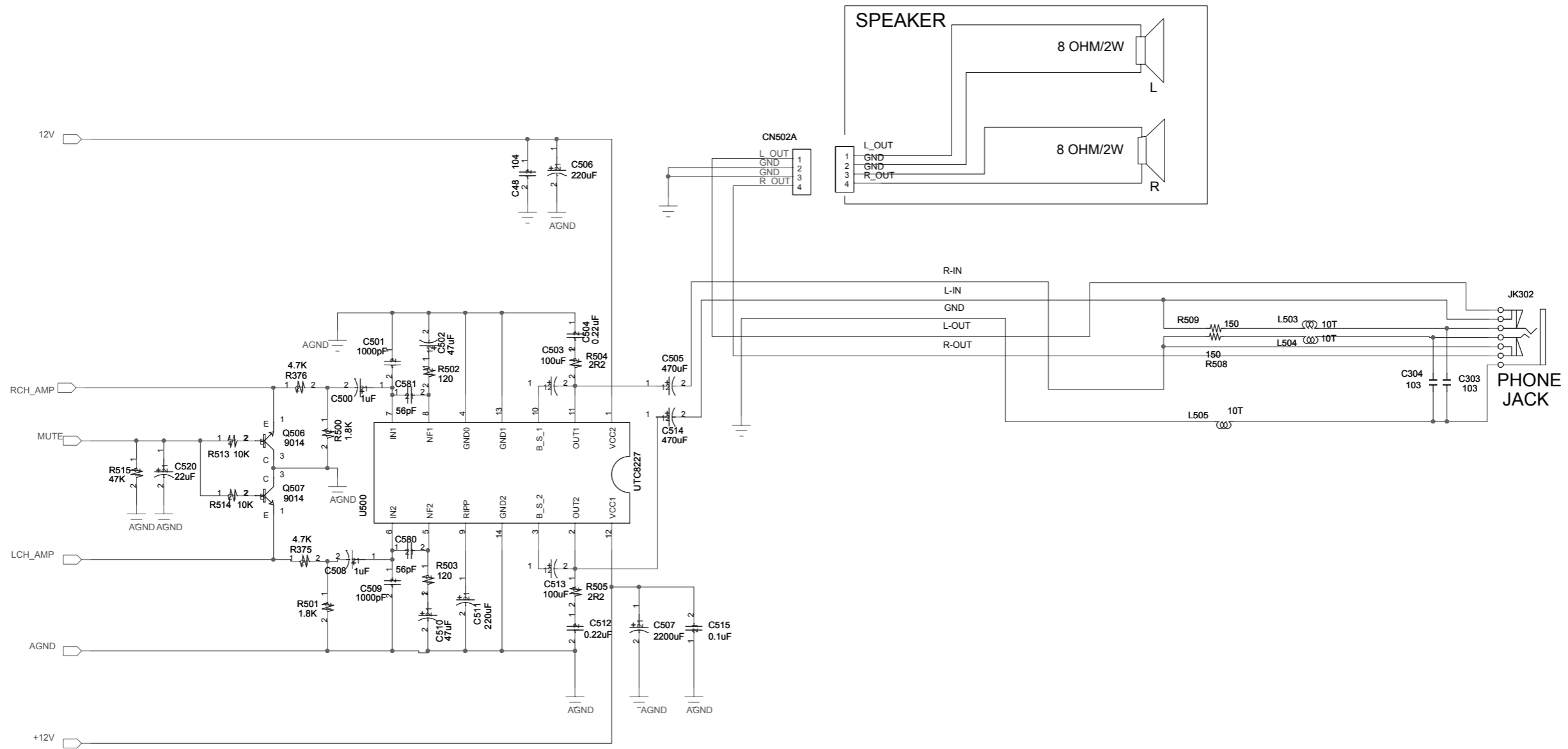
CIRCUIT DIAGRAM -MAIN + Rectifier BOARD



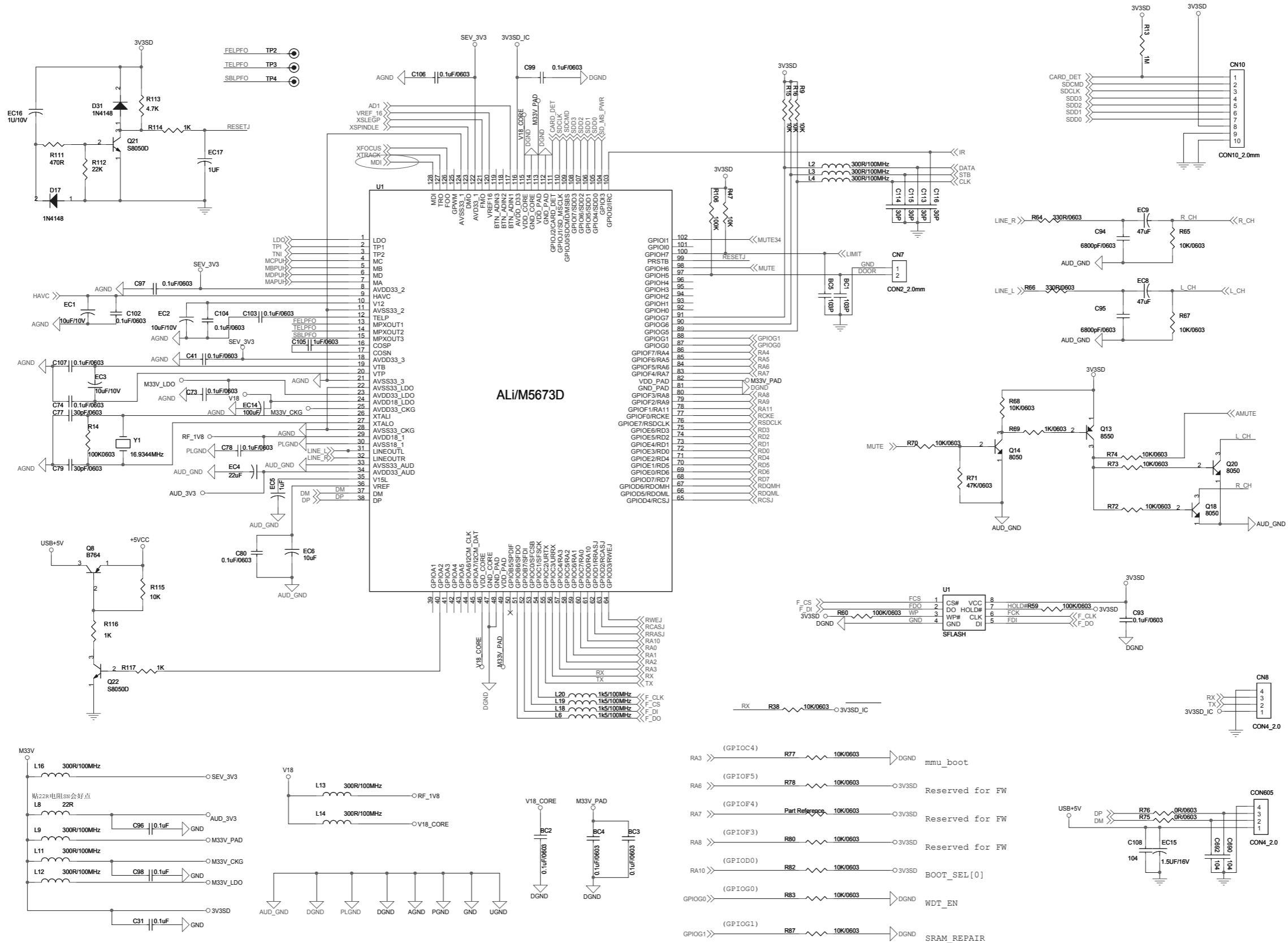
CIRCUIT DIAGRAM -MAIN BOARD



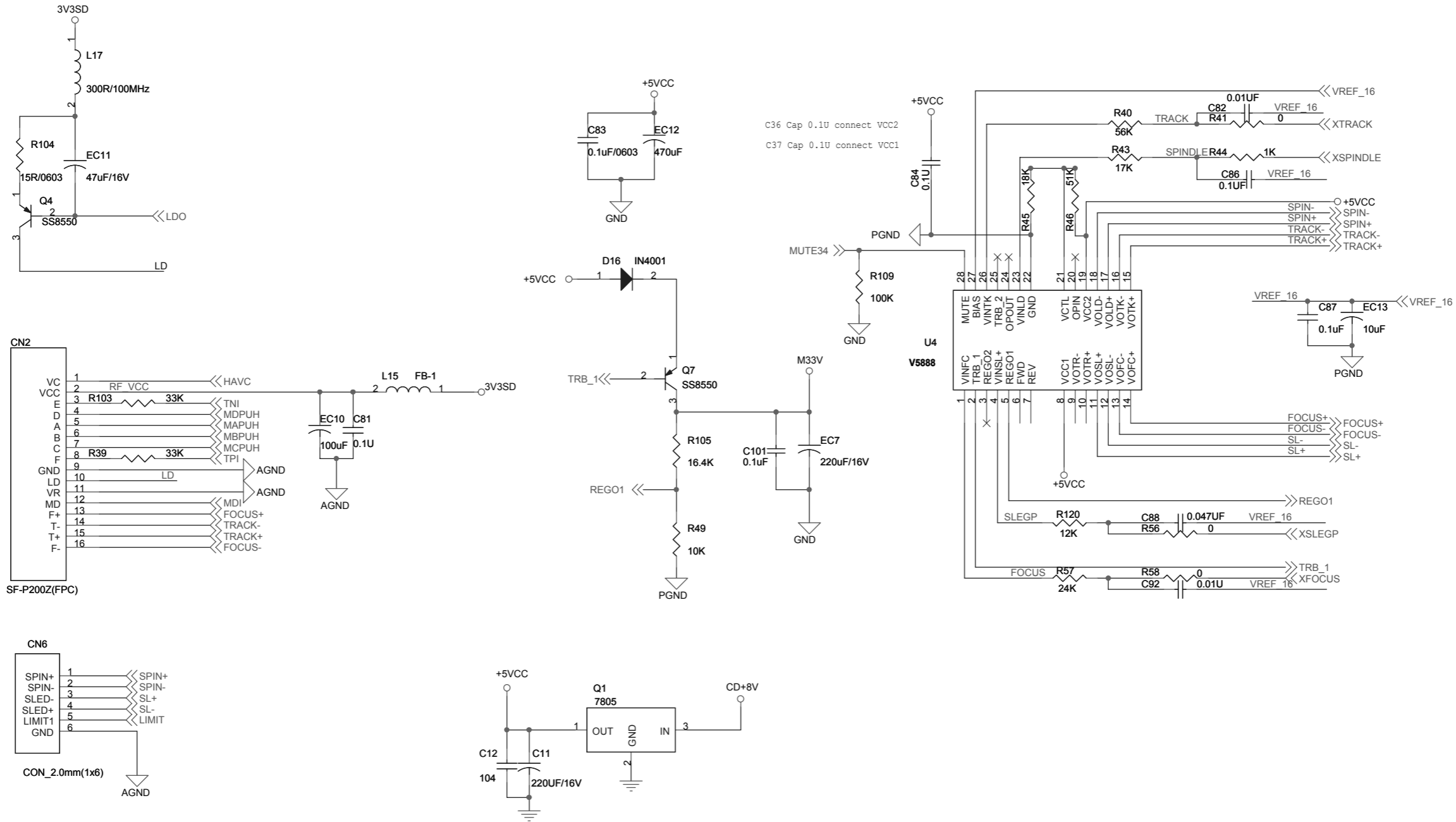
CIRCUIT DIAGRAM -MAIN BOARD



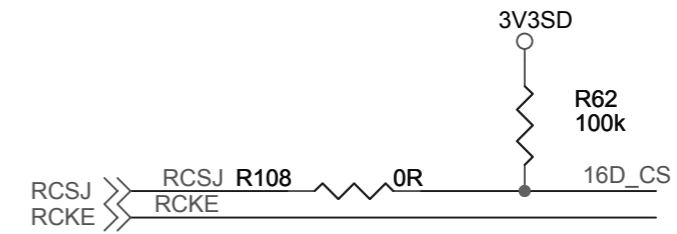
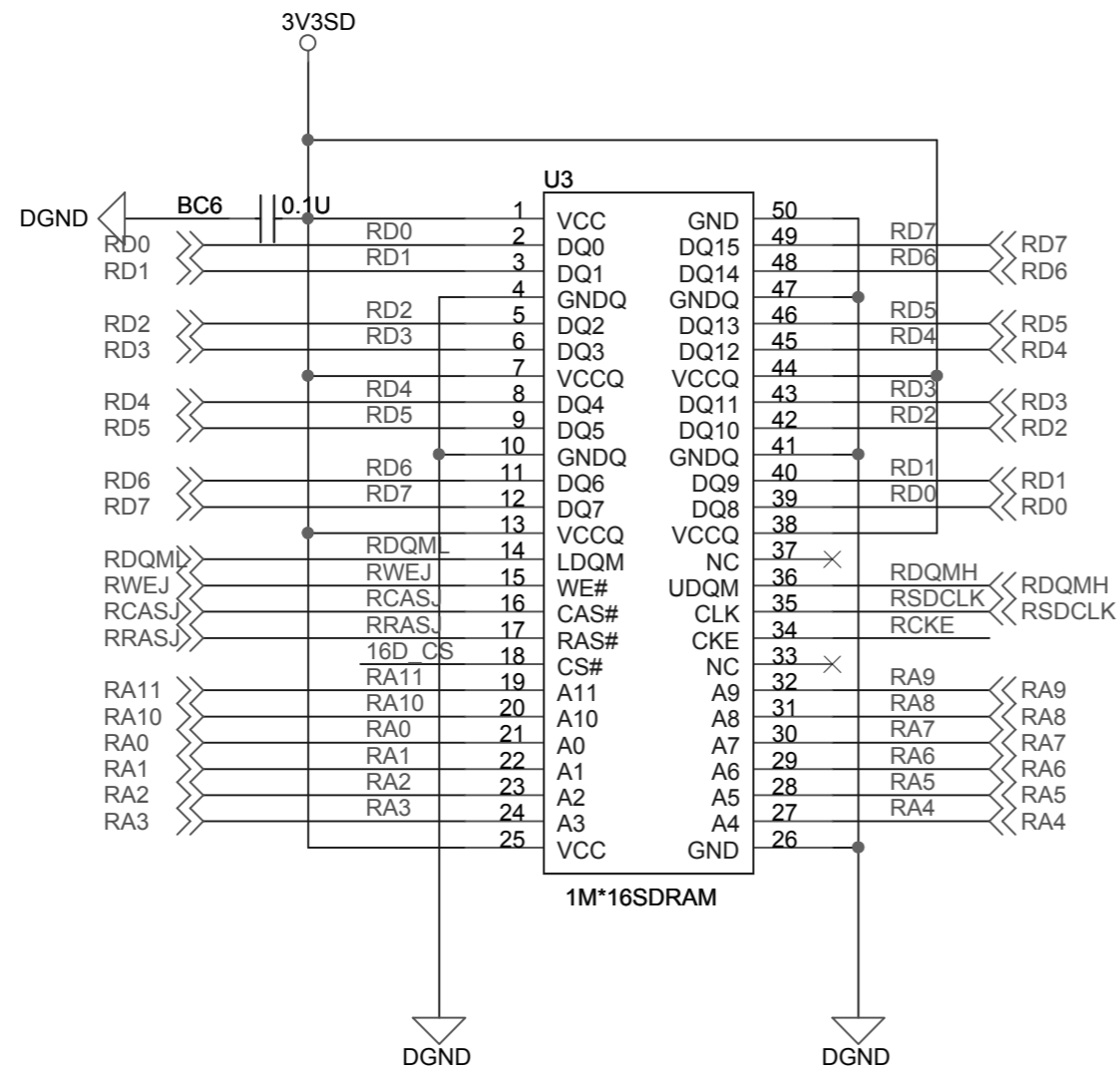
CIRCUIT DIAGRAM -MAIN BOARD



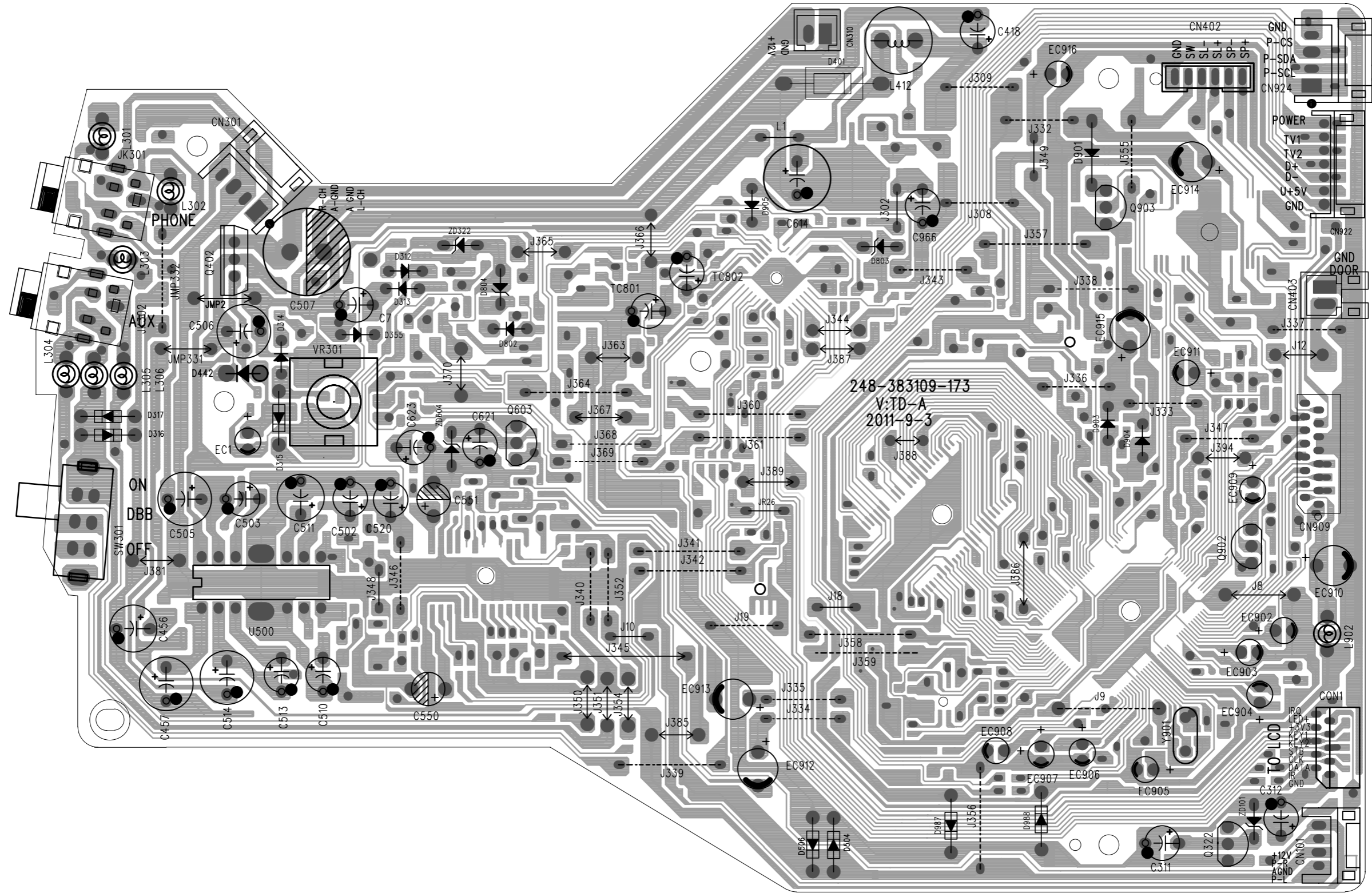
CIRCUIT DIAGRAM -MAIN BOARD



CIRCUIT DIAGRAM -MAIN BOARD



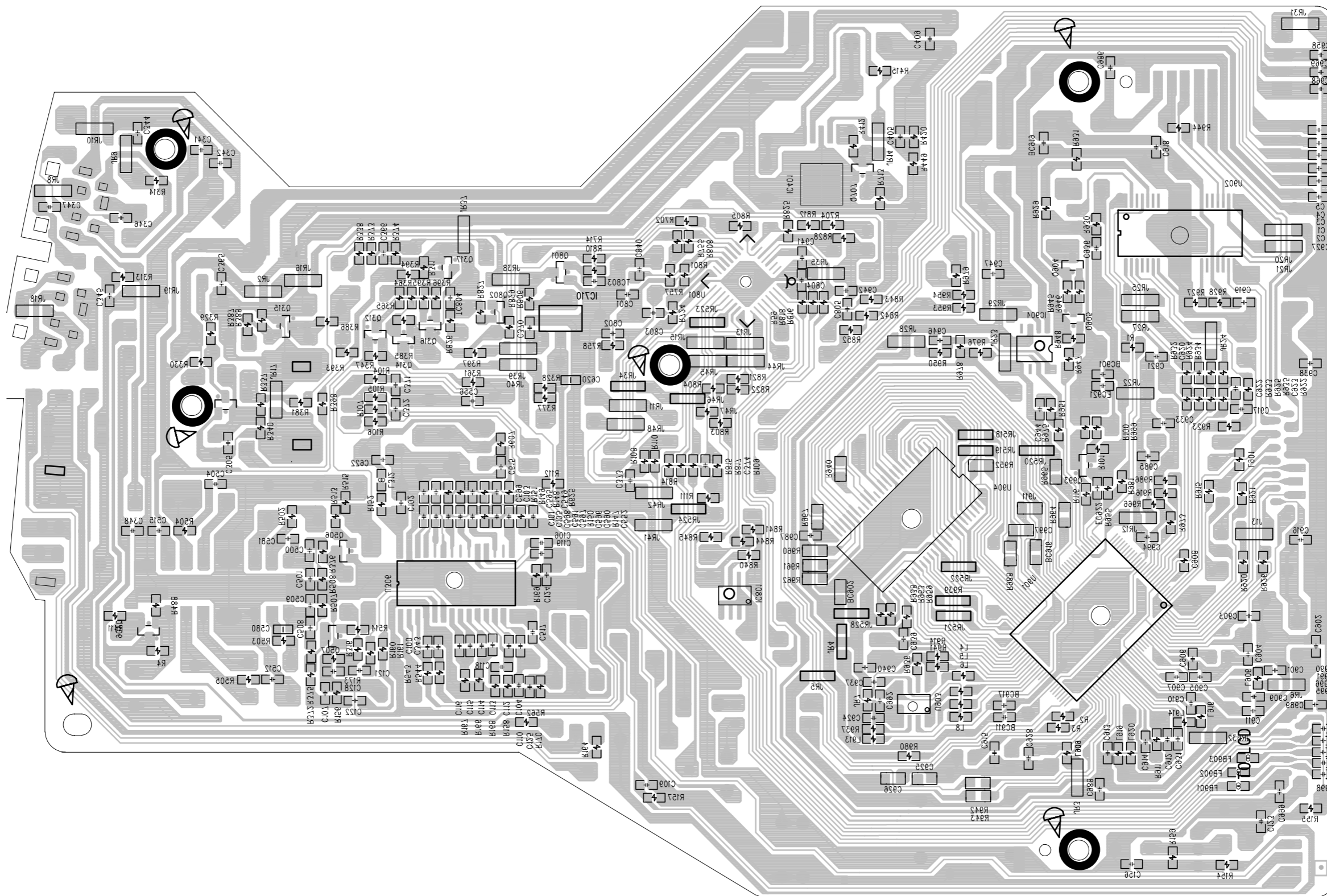
LAYOUT DIAGRAM -MAIN BOARD
TOP SIDE VIEW



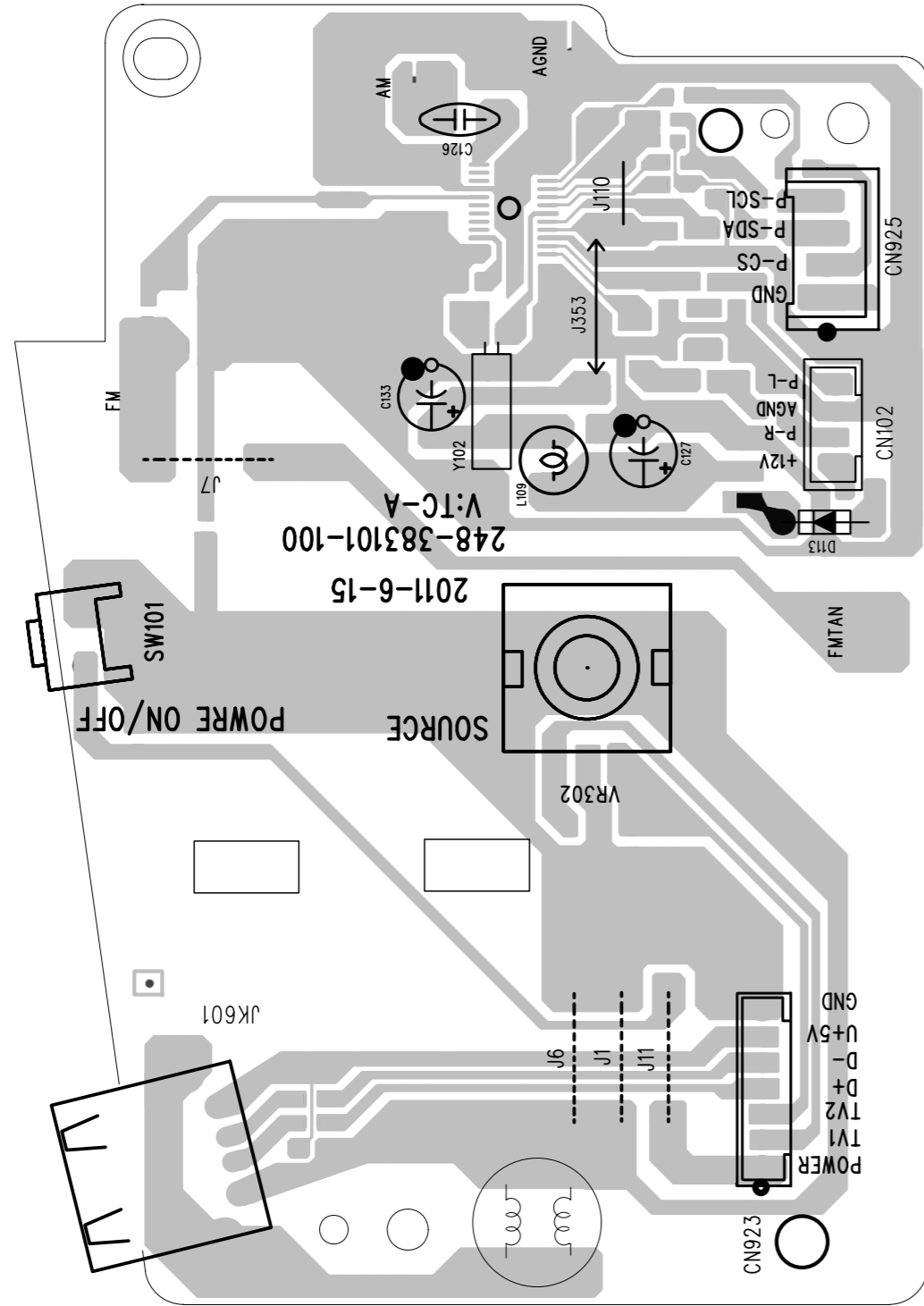
LAYOUT DIAGRAM - MAIN BOARD
BOTTOM SIDE VIEW

5-2

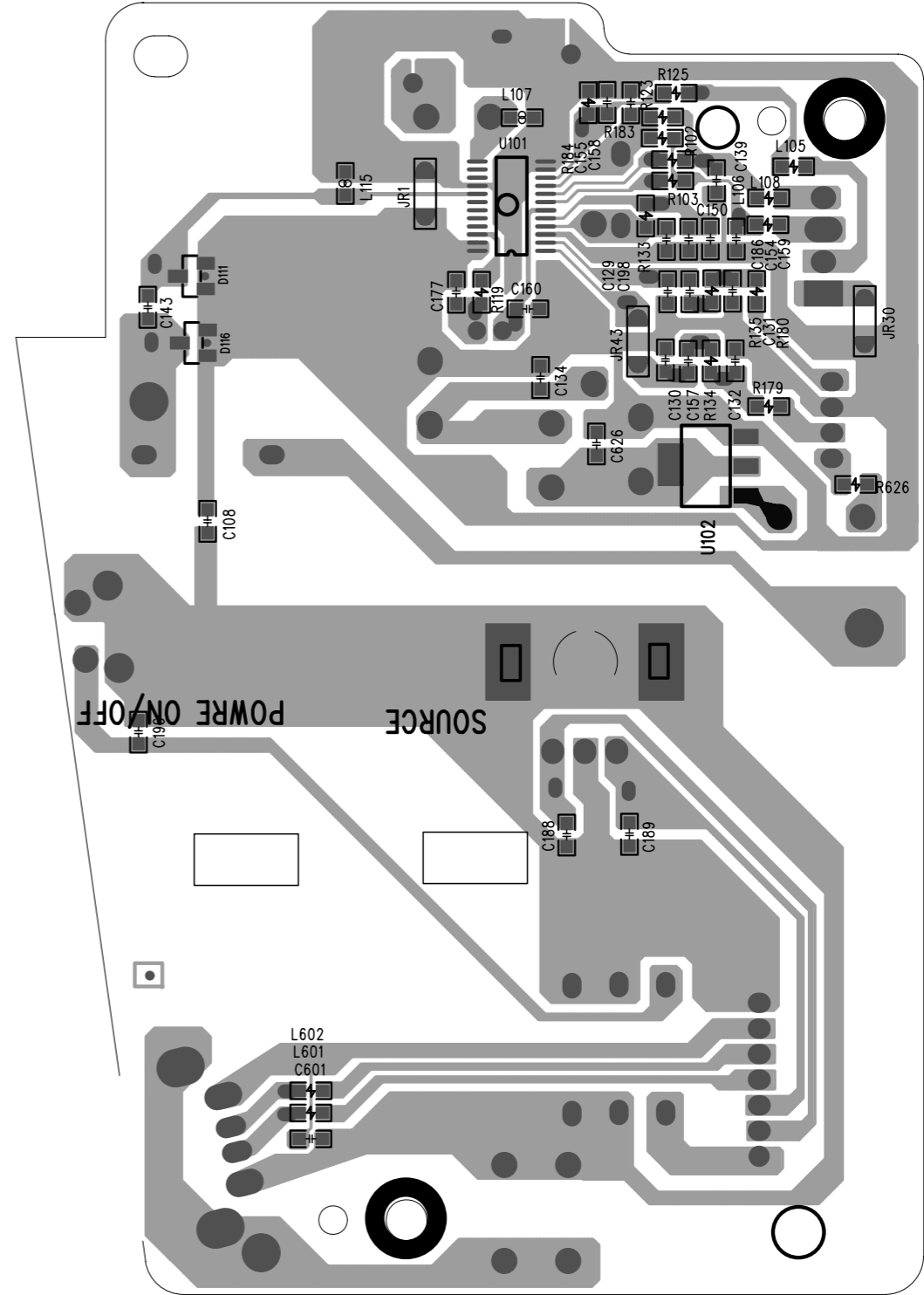
5-2



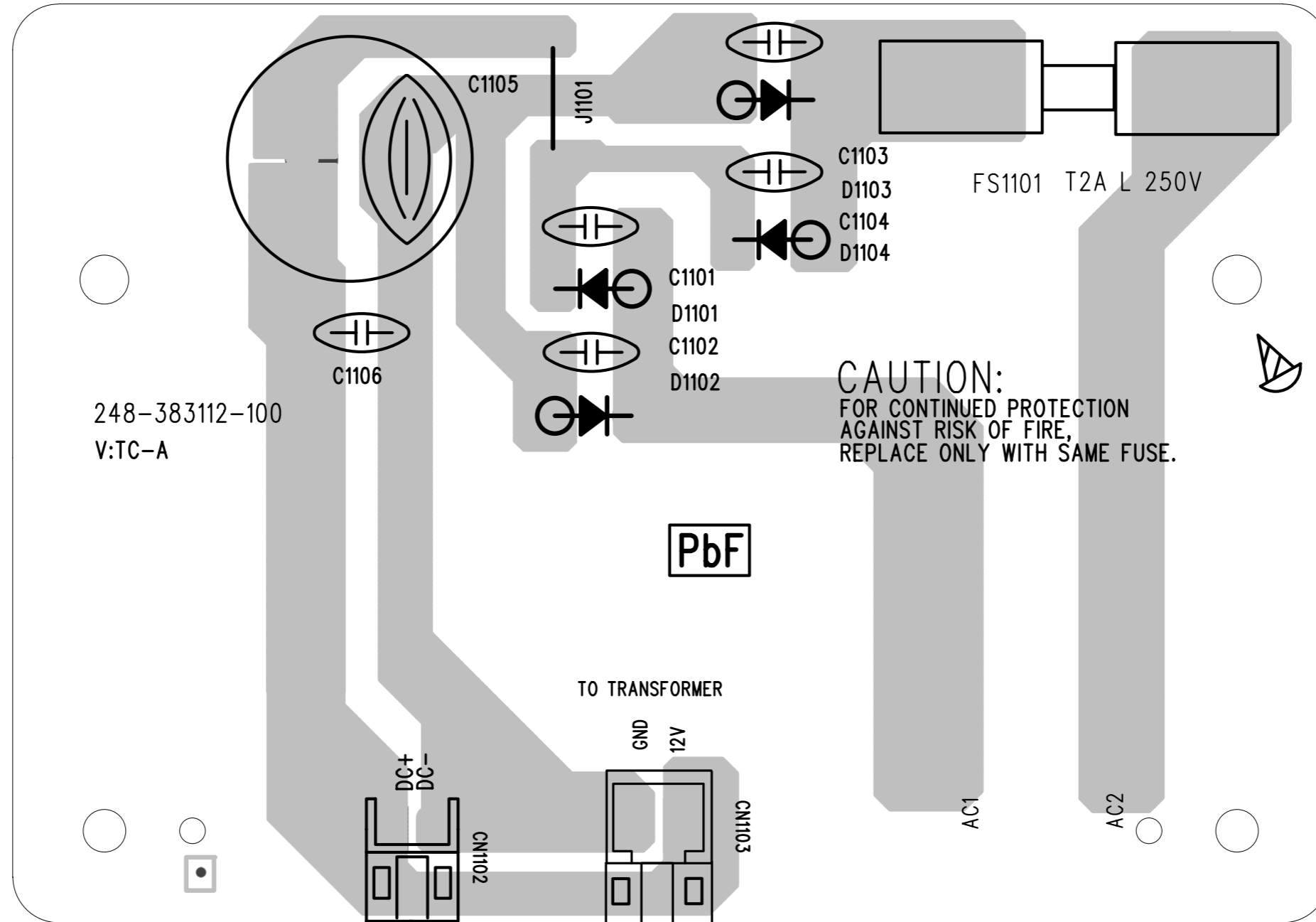
LAYOUT DIAGARM -Radio BOARD
TOP VIEW



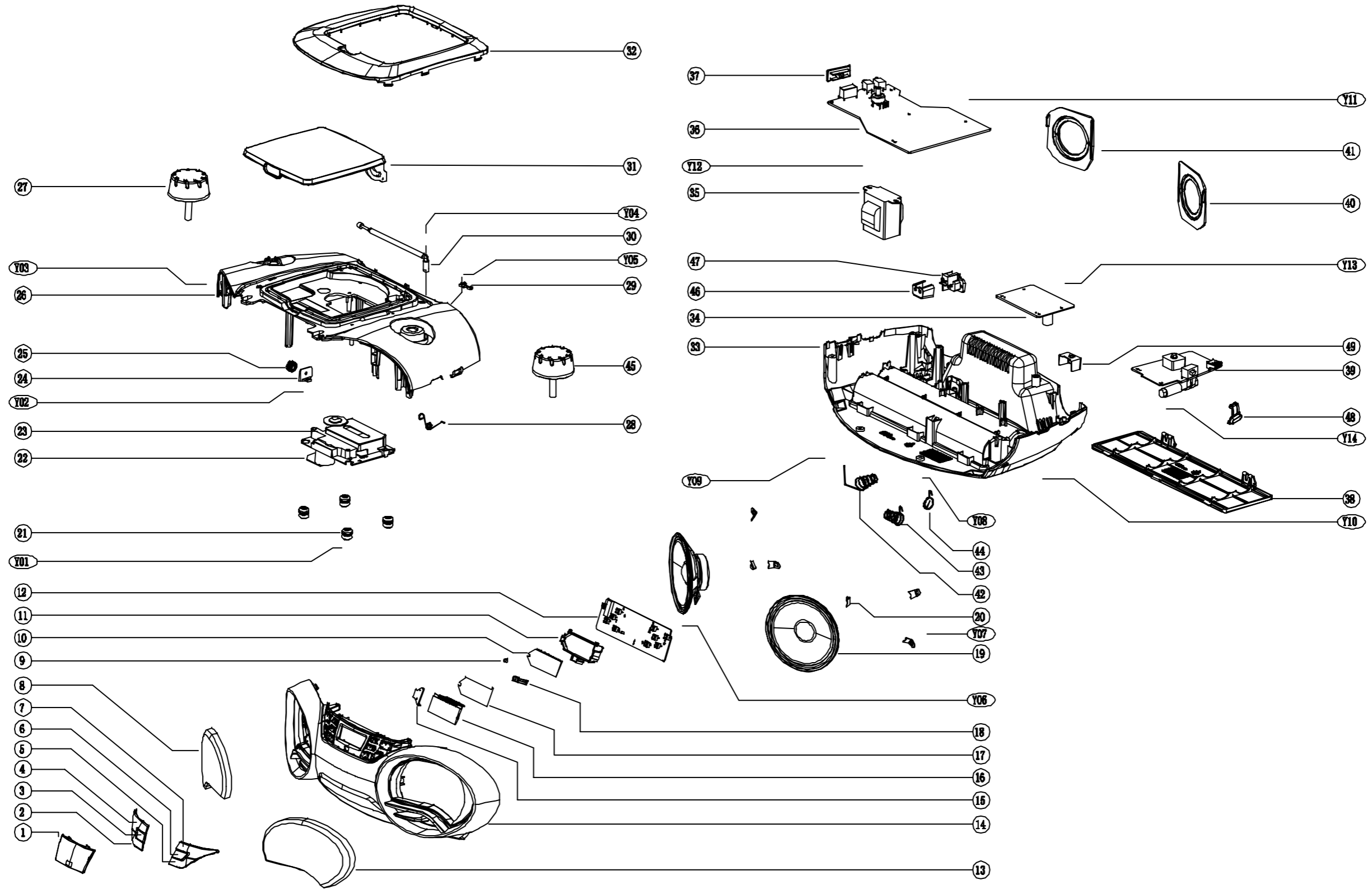
LAYOUT DIAGARM -Radio BOARD
BOTTOM VIEW



LAYOUT DIAGARM -Rectifier BOARD
TOP VIEW



EXPLODED VIEW DIAGRAM



7.0 REVISION LIST

Version 1.0

- Initial release

Version 1.1

- Add /96 version