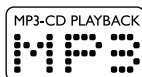


Service Service Service



Service Manual



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LCD + DC + MP3 + KEY board			
Circuit diagram	4-1		
Layout diagram.....	4-2 4-3		
MAIN board			
Circuit diagram	5-1		
Layout diagram.....	5-2..5-3		

Please according below S/N info to select correct SM to repair:

1: S/N start with AQ1XX, Please refer to DV1 SM.

2: S/N start with AQ2XX, Please refer to DV2 SM.

DV2 SM start with page 18

3: S/N start with AQ3XX, Please refer to DV3 SM that start from page 45

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Published by LZ1129 Service Audio Subject to modification

**CLASS 1
LASER PRODUCT**

3142 785 36560

Version 1.0



PHILIPS

GENERAL DESCRIPTION							
Micro Hi-Fi System with PLL Tuner , CD-MP3, USB 10W * 2							
MP3 LINK , Remote Control							
LIFETIME : 7 Years							
Class	Tuner	Supply + Amplifier	Loudspeaker Boxes	USB	CD	Clock	MP3 LINK
I			X				
II	X	X		X	X	X	X
III							
Page	9	4,5	4	6	7	8	10
SAFETY requirements							
Version	Safety			EMC			
/12/05/79	IEC60065			EN55013			
RADIATION / IMMUNITY requirments (EMC)							
CLIMATIC requirements							
ALL climates	: + 5 Dregree	till	+ 35 Degree				
MODERATE climates	: + N.A	till	N.A Degree				
PERFORMANCE CLASSES							
POWER SUPPLY							
MAINS (A.C.)		100/240 Vac(AC/DC Adaptor)					
Version		/12/05/79					
Voltage Selection		NO					
Frequency		60/50Hz					
POWER CONSUMER							
		MCM2050/12/05/79					
Stadby :							
(DEMO mode " OFF ") , NOM. A, INPUT							
Maximum :		/					
@ 1/8 Prated , NOM. A, INPUT							
ECO Power mode :		/					
Q and R according to Product Division Rules							
Quality	: 0.4 % (Major)	1.5 % (Mirror)					
Reliability	: 2.0 % (C 42)						
Tested according to General Test Instruction refer to PHILIPS standary (UAN -D1591)							
Measured according to PHILIPS standary (UAN - L1059) unless other wise stated							
All not mentioned date, please refer to PHILIPS standary (XUW - 0010 - jun 2001)							

TECHNICAL SPECIFICATION

TECHNIAL DESCRIPTION				
Total power 20W, matching LOUDSPEAKER of 2 x6 R. TWO INPUT SOURCE, (Digital Sound Control)				
GENERAL PART				
OUTPUT stage Protection		: Yes	Temperature	: YES
LoudSpeaker D.C. Protection		: Yes.	Shorcircuit	: Yes
INDICATORS				
Standby Mode Indicator		: LCD display Clock active, LED backlight turn ON		
ECO Mode Indiicator		: NC		
ELECTRICAL DATA				
DSC :	ON/OFF	Channel Differencer at -46dB	3	dB
DBB	ON/OFF	Hum (Volume Minimun -)	< 0.5	μW
SIS :	N/A	Residual Noise (Volume Minium)	0.06	μW
VAC :	N/A	Channel Separation (at 1 kHz)	≥ 35	dB
WOOX :	N/A	Signal / Noise (weighted)	≥ 55	dB
INTERCONNECTS				
Input Sensity(±2 dB)rated ouput power at 1 kHz and 10kHz.		Line Output Voltage (*1)		
Tuner	: FM MODE 75KZH /(CD -6dB)	Line Out (Left / Right)	N.A	
CD / USB	: 0 dB track (Audio Disc 1, Trk 35)	Subwoofer Out	N.A	
TAPE	: NC	Headphone	700mV+/-1dB, RL = 32Ω	
MP3 Link	: Nor: 500mV Lim: 350mV ~ 800mV CD 0dB	Digital Coaxial Out	N.A	
AUX IN	: NC	Booster Out	N.A	
OUTPUT POWER (* 1) At THD = 10% (Measured with 20Hz-22KHz filter),				
Power output (RMS)		channel	10W*2 +/-1dB (1*)	
LOUDSPEAKER (BOXES)				
Please to package document of Speaker Box Assy				
Rated Impedance				
: 6 Ohms at Bass driver,				
Remarks :Radio Power output (RMS) Limit:-3dB				
(* 1) Electrical parameters are to be measurement at specker terminals across 6 Ohm load (pure resistor)				
with rated input signal in AUX mode; DSC OFF mode with DBB OFF				
IS off unless specified otherwise				

TECHNICAL SPECIFICATION

AUDIO SIGNAL PROCESSING

Micro Hi-Fi System with PLL Tuner ,USB, CD-MP3, 10W/ TWO channel Universal Class D Power Amplifier

1) DSC (Digital Sound Control)

Input sinewave 500mV at 1kHz to R/L channel of MP3 Link socket

Set DSC to Flat mode

Adjust volume to obtain 500mW across 6 ohm load at R/L speaker output

The 500mW will be used as 0dB reference

	Tabel 1a (Tolerance ± 3 dB)				
	Frequency	DSC Modes with DBB Off VOL=20			
	100HZ	DSC ON	DSC OFF		
	10KHZ				

2) DBB (Dynamic Bass Boot)

Play CD testing signal of 1KHZ

Set DSC to OFF mode and switch off DBB

Adjust volume level will be as "18"

Tabel 2 (Tolerance ± 3 dB)						
	Frequency		DBB OFF	DBB ON		

TECHNIAL DESCRIPTION

USB

See also SH 190 USB Audio Module (300605)

Measurment are directly done at the coonector on the board

GENERAL PART

Measurement are directly done at the connector on CDC board

Description	Specification
Output Resistance	≤ 1.5 kOhm
Output Voltage RL = 33 k ohm ()dB, 1 KHz)	830mVrms +/- 1.5dB
Channel Unbalance	$\leq \pm 3$ dB
THD + Noise (0dB, 1KHz)	≤ 0.3 %
Channel Crosstalk (100Hz - 16,000 Hz)	≥ 35 dB
(0 dB, 1 KHz)	≥ 40 dB
Signal to Noise Ratio (0dB,1kHz)	≥ 60 dB (A - weighted)
(100 - 16,000 Hz)	≥ 55 dB (A - weighted)
Frequency Response (5dB+/- 3dB), reference 1kHz	100Hz - 16kHz

TECHNICAL SPECIFICATION

TECHNIAL DESCRIPTION				
CD + MP3 - Part Specifications				
CD mechnism refer to Philips standard specification				
GENERAL PART				
Measurement are directly done at the connector on CDC board				
Description	Extern	Nom	Lim	Unit
Output Resistance	No		< 100	Ohms
Output Voltage - Unloaded (0dB , 1 kHz)	No	0.5	± 1	Vrms
Channel Unbalance	No		< ± 2	dB
Frequency Response (125 Hz - 16 kHz)	No	5	± 3	dB
Signal to Noise Ratio (Unweighted)	Yes	60	50	dB
Signal to Noise Ratio (A - weighted)	Yes	65	55	dBA
Crosstalk (1kHz)	Yes	65	55	dB
Crosstalk (125Hz to 16kHz)	No	36	30	dB
Hum & Noise (*1)	No	400	500	nW
Emphasis	-	/	/	/

TECHNIAL DESCRIPTION			
MP3 Link			
MP3 Link Part			
	Nom.	Limit	Condition
SNR unwtd.	60dB	50dB	500mV 1KHz input
SNR wtd. dBA	62dBA	57dBA	500mV 1KHz input
Crosstalk (different source, 1KHz)	60dB	50dB	500mV input
Crosstalk (different source, 10KHz)	45dB	35dB	500mV input
L, R Channel Separation	36dB	30dB	500mV input
Frequency response (5+/-3dB)	100 to 10KHz (overall)		150mV input
THD (1KHz, 0dB)	2%	3%	500mV 1KHz input
AUX IN Part			
SNR unwtd.	/	/	/
SNR wtd. dBA	/	/	/
Crosstalk (different source, 1KHz)	/	/	/
Crosstalk (different source, 10KHz)	/	/	/
L, R Channel Separation	/	/	/
Frequency response (-3dB)	/	/	/
THD (1KHz, 0dB)	/	/	/

TECHNICAL SPECIFICATION

TECHNIAL DESCRIPTION									
TUNER using SI4705									
GENERAL PART									
WAVE RANGE				TOLERANCE			TUNING GRID		
FM 87.5 - 108.00 MHz (12/05/79)				Quartz Precision			50KHZ		
NC									
AERIAL									
FM : 75 OHM ANT									
MW : NC									
INDICATORS LCD DISPLAY									
ELECTRICAL DATA									
A.M		Nom	Limit	Unit	F.M.		Nom	Limit	Unit
					- 3 dB Limiting Point		: 17	23.5	dBf
Amplification Reverse		/	/	dB	Amplification Reverse		: 0	-4	dB
AGC Figure of Merit		/	/	dB	Distortion (RF 1mV, Frq Dev.75 kHz)		: 2	3	%
Distortion (RF 50mV, M 80%)		/	/	%	Stereo - 46 dB Quieting		: 46	49	dBf
IF		/	/	kHz	Crosstalk (RF1mV, Freq Dev.40kHz)		: 25	18	dB
					IF		/	/	MHz
Wave Range		Noise Limited Sensitivity 26 dB			Search tuning sensitivity dBf	IF Rejection dB	Large Signal	Selectivity S3 / S9 / 300kHz dB	
MW 600 kHz	Nom.	1500uV/M			/	/	/	/	
	Lim.	4000uV/M			/	/	/	/	
MW 1400 kHz	Nom.	1500uV/M			/	/	/	/	
	Lim.	4000uV/M			/	/	/	/	
FM 98 MHz	Nom.		18dBf		22 dBf	/	116 dBf	30	
	Lim.		22dBf		35 dBf	/	108 dBf	25	
TECHNIAL DESCRIPTION									
SOFTWARE IMPLEMENTED CLOCK / TIMER FUNCTION WITH 75.000kHz QUARTZ OSCILLATOR.									
GENERAL PART									
Timer Setting		:	Clock and Timer						
Timer Wakeup Mode		:	LAST SETTING (MODE)						
Remarks Time Setting		:	for 24hrs						
Volume at Wakeup		:	Last Setting						
No of Timer Settings		:	1						
Clock Accuracy		:	Normal: 0.5 sec/day			Limit : 1 sec/day			
INDICATORS									
Display Type		:	LCD						

VERSION VARIATION

[illegible]

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 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). 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 utilisées les pièces de rechange identiques à celles spécifiées.

(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.

(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.

"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."

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.

**(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.

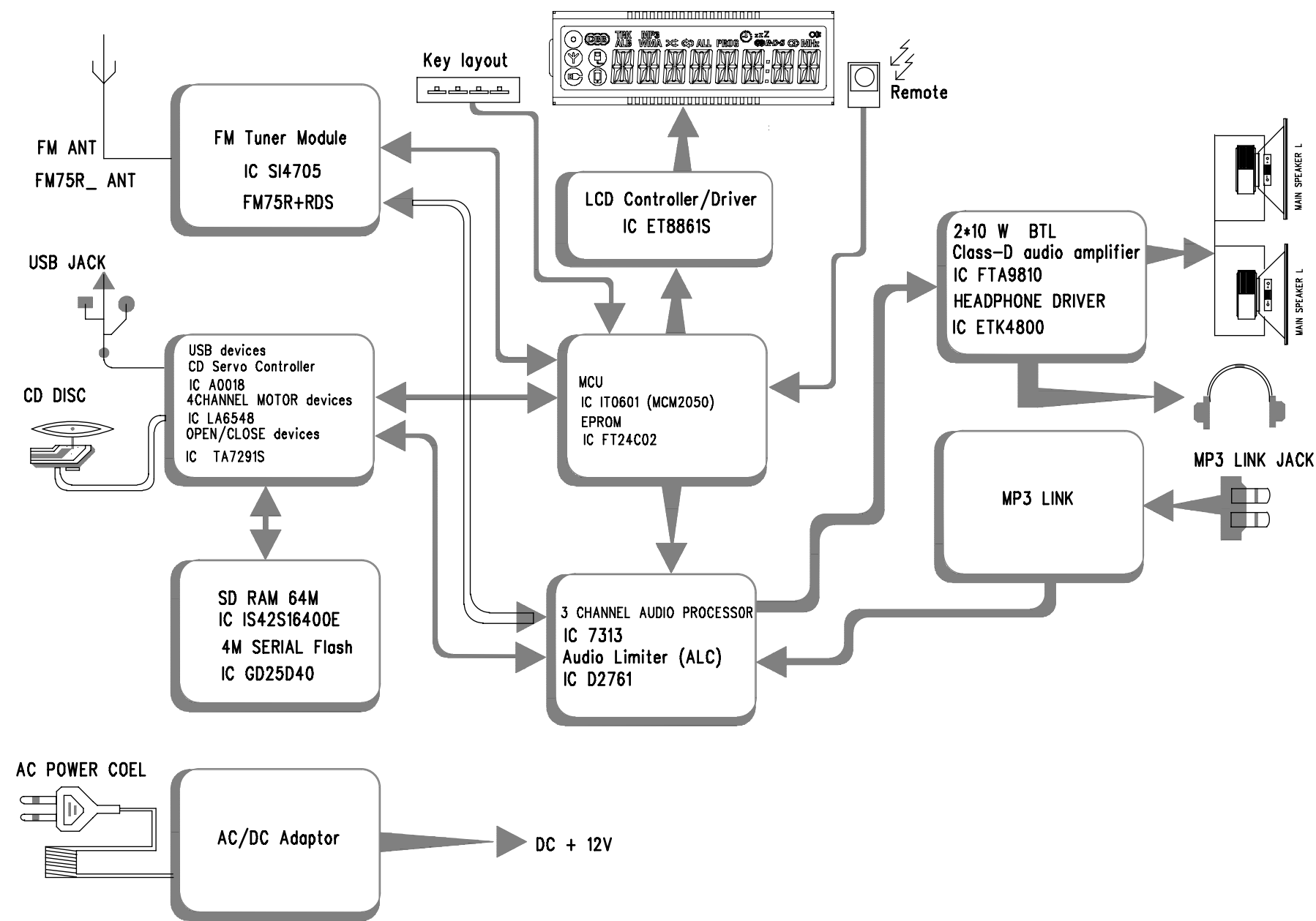
(SF) Varoitus !

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

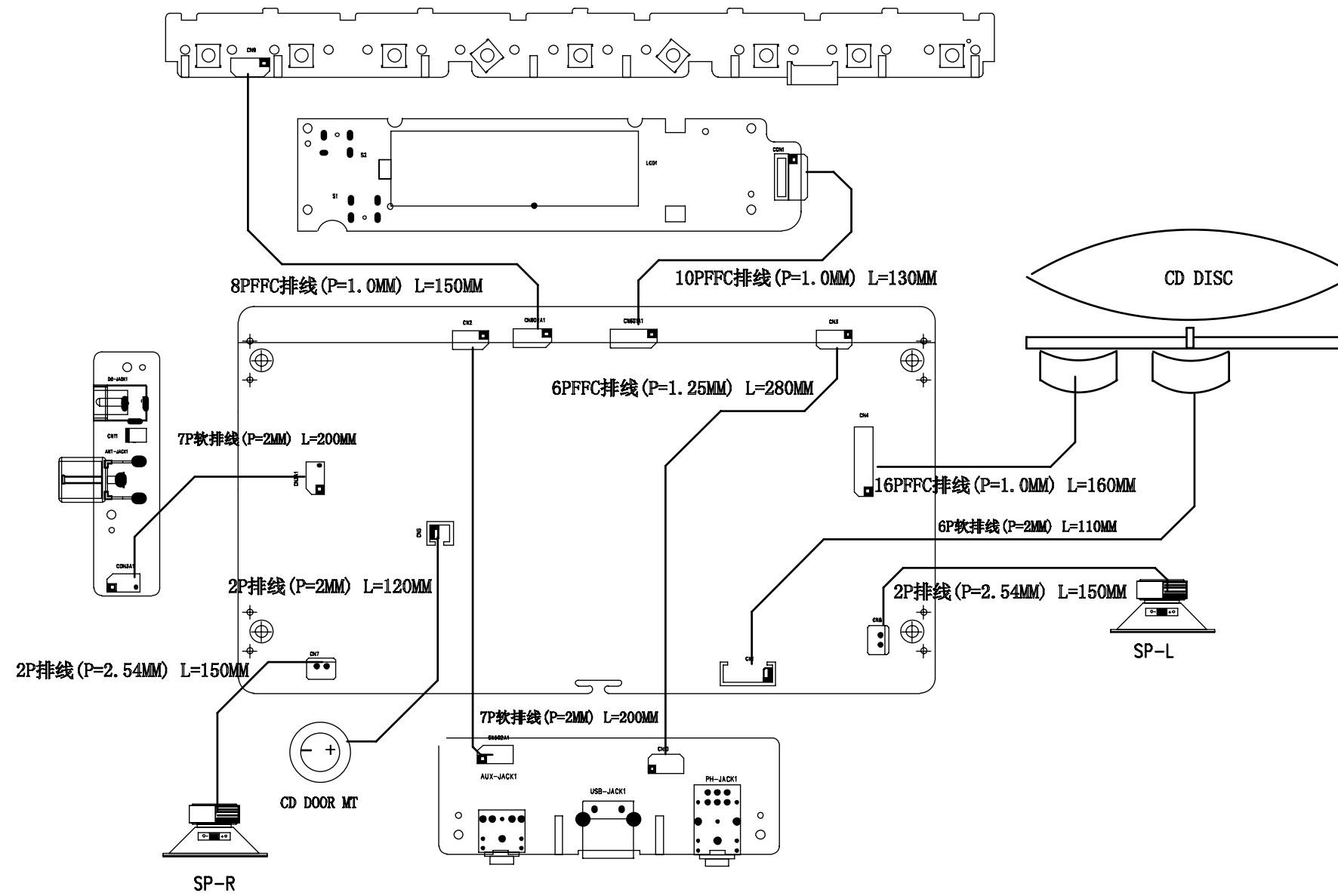
DK Advarsel !

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

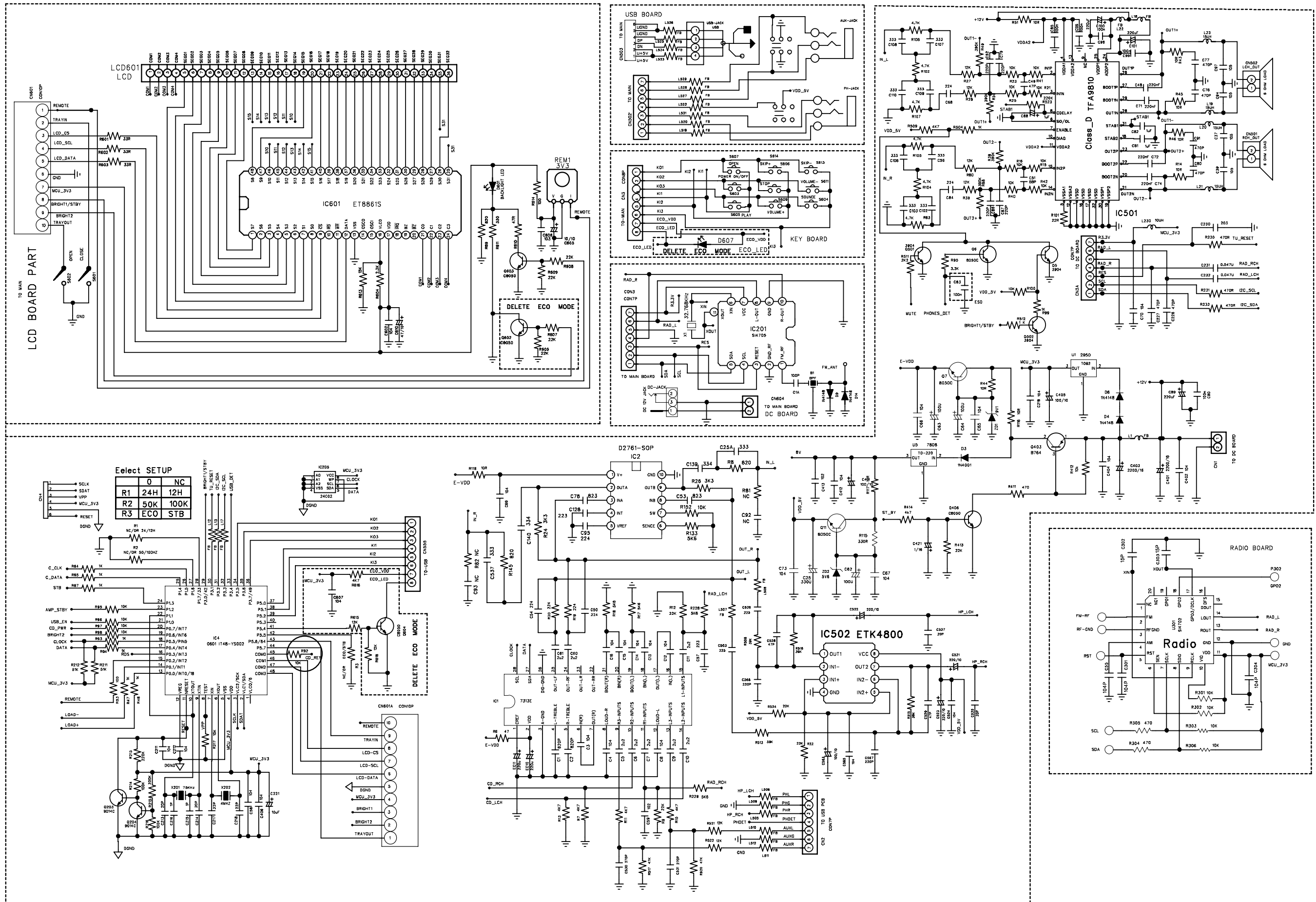
SET BLOCK DIAGRAM



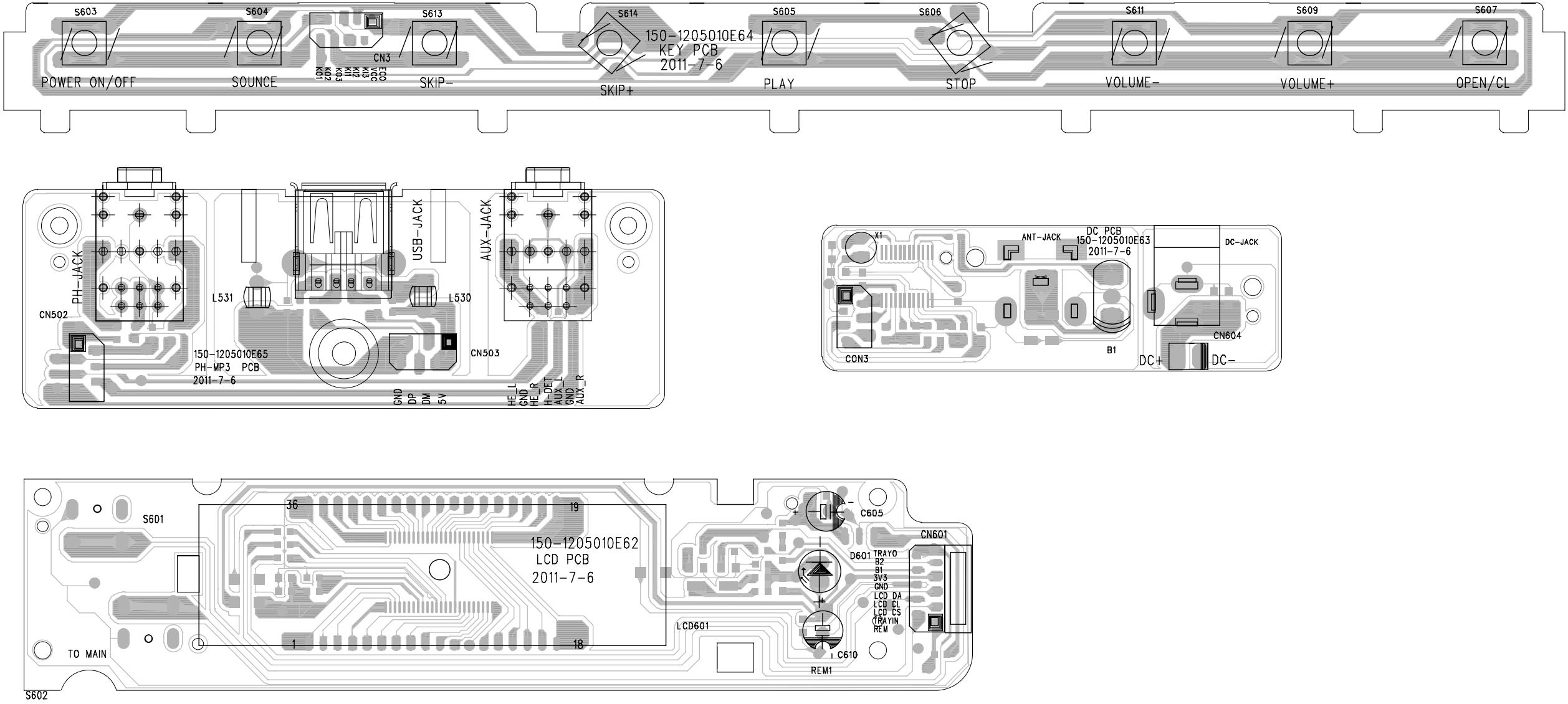
WIRE CONNECT DIAGRAM

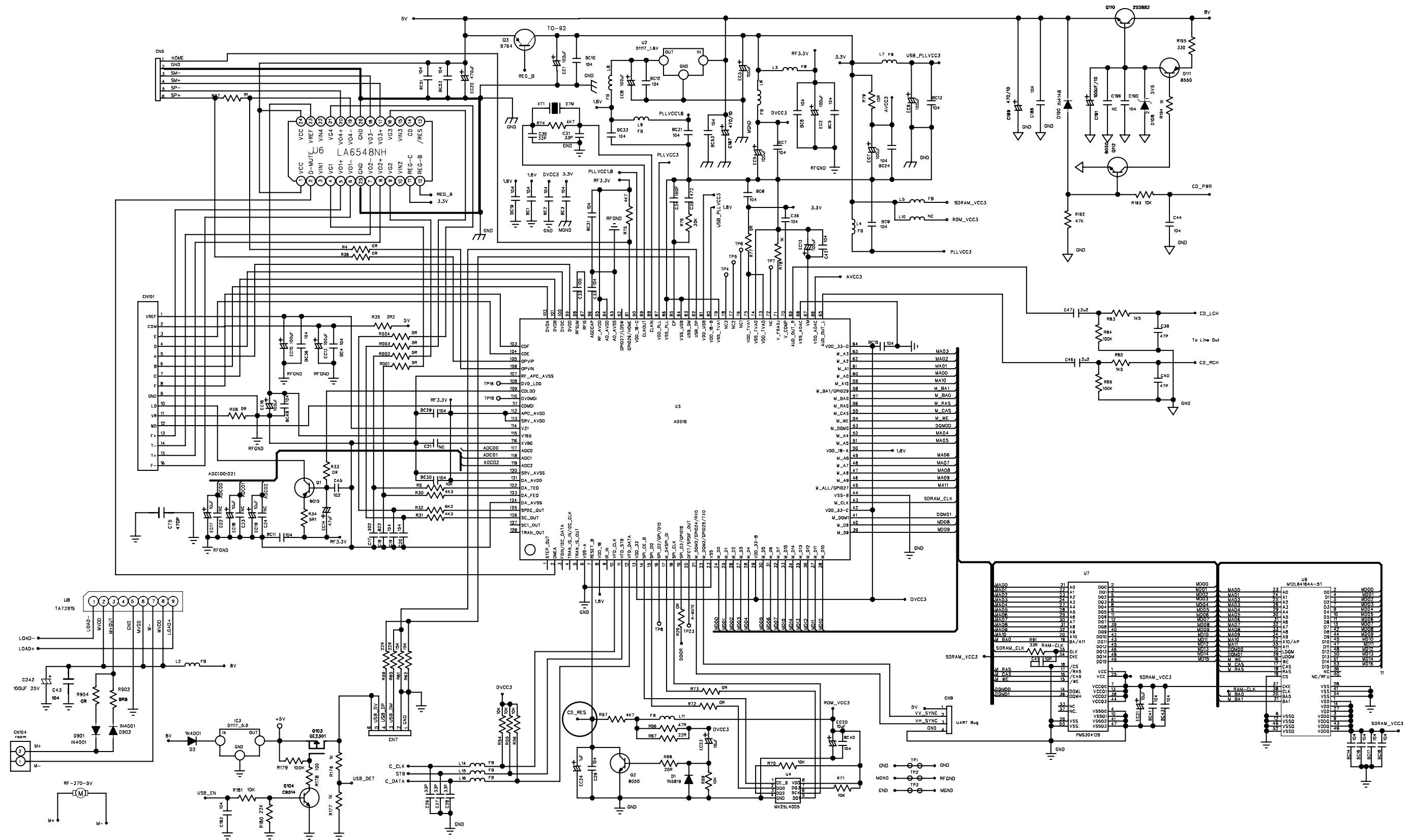


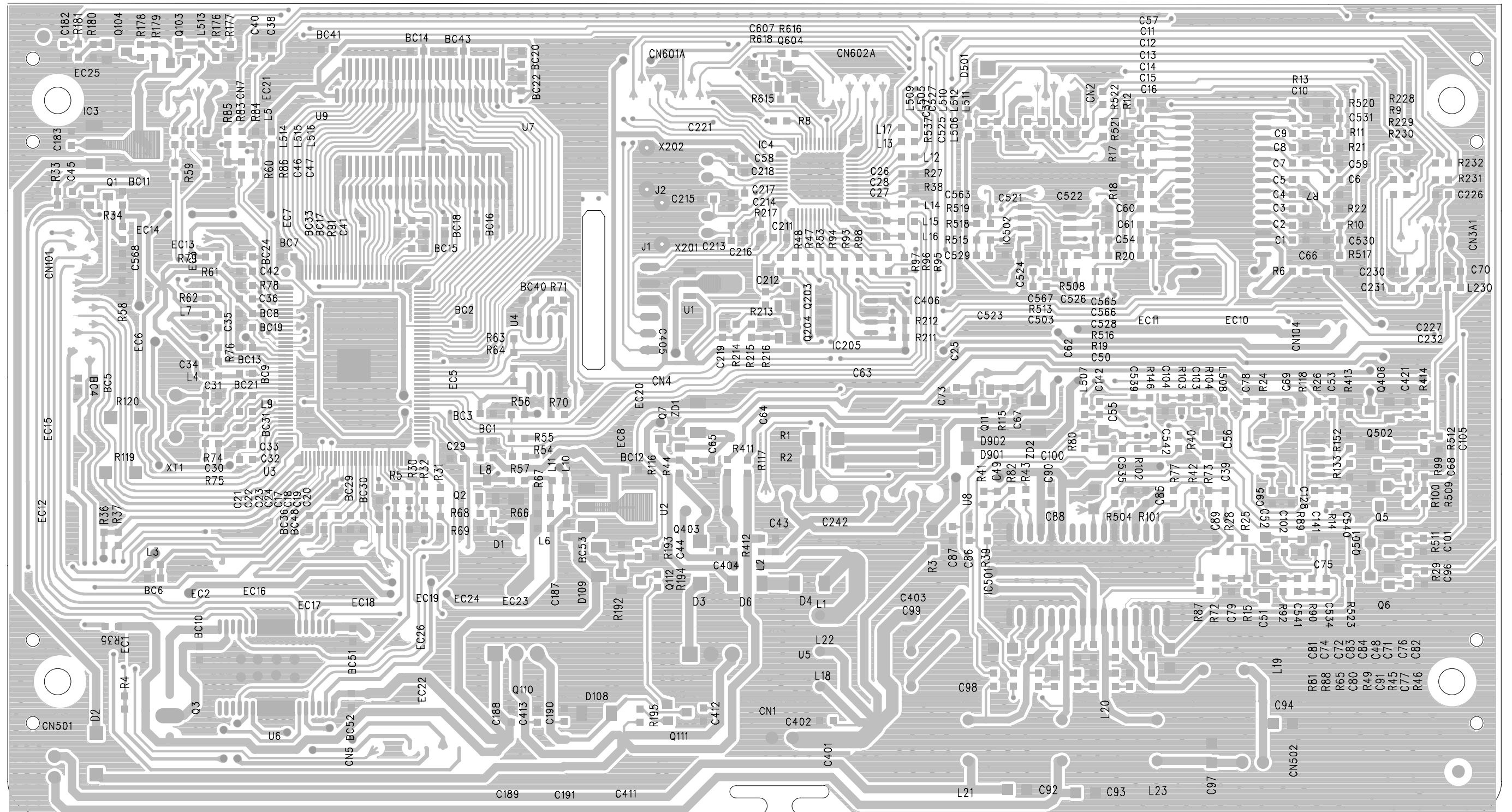
CIRCUIT DIAGRAM - LCD + DC + MP3 + KEY BOARD



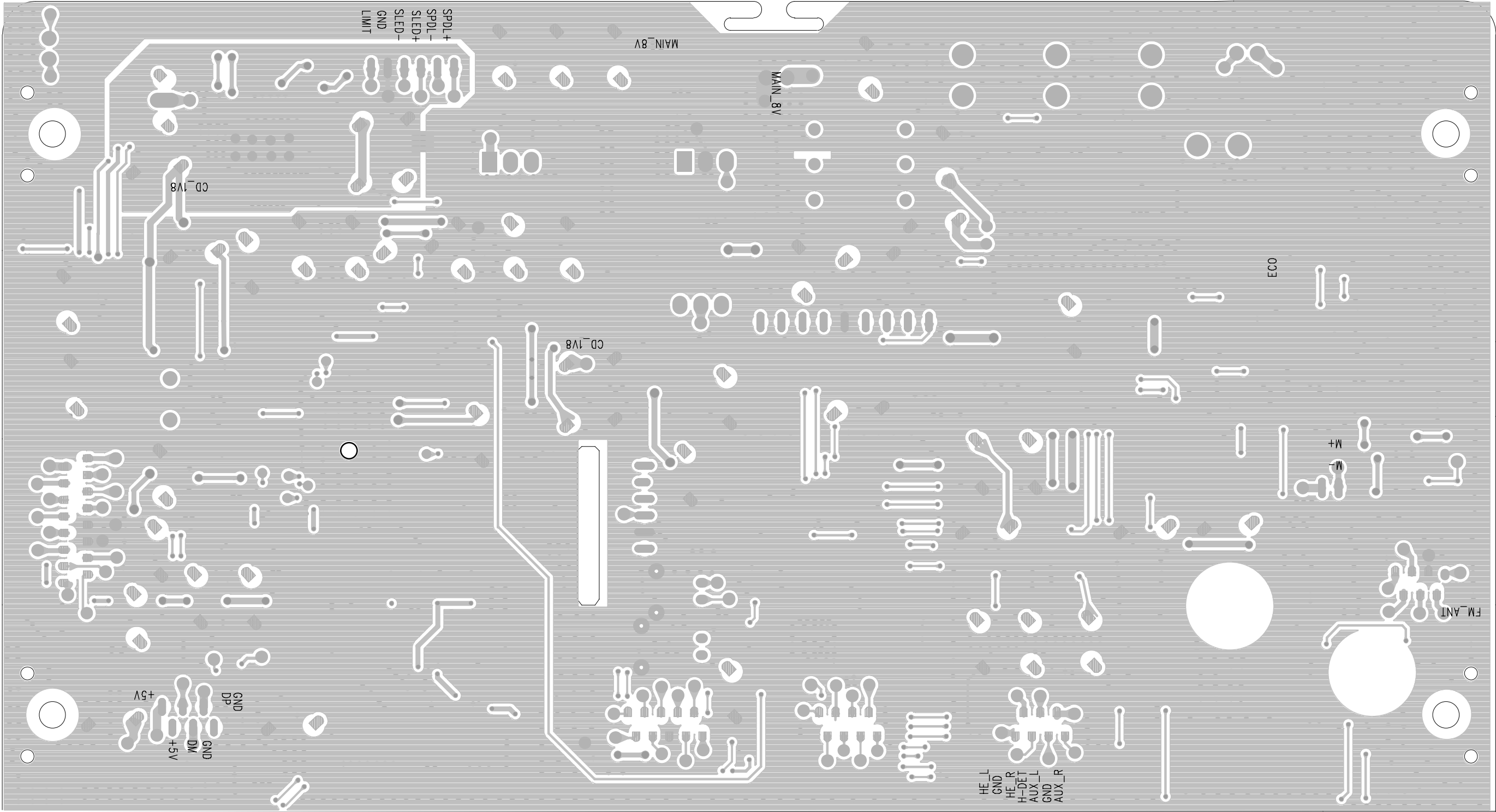
LAYOUT DIAGARM - LCD + DC + MP3 + KEY BOARD
TOP SIDE VIEW



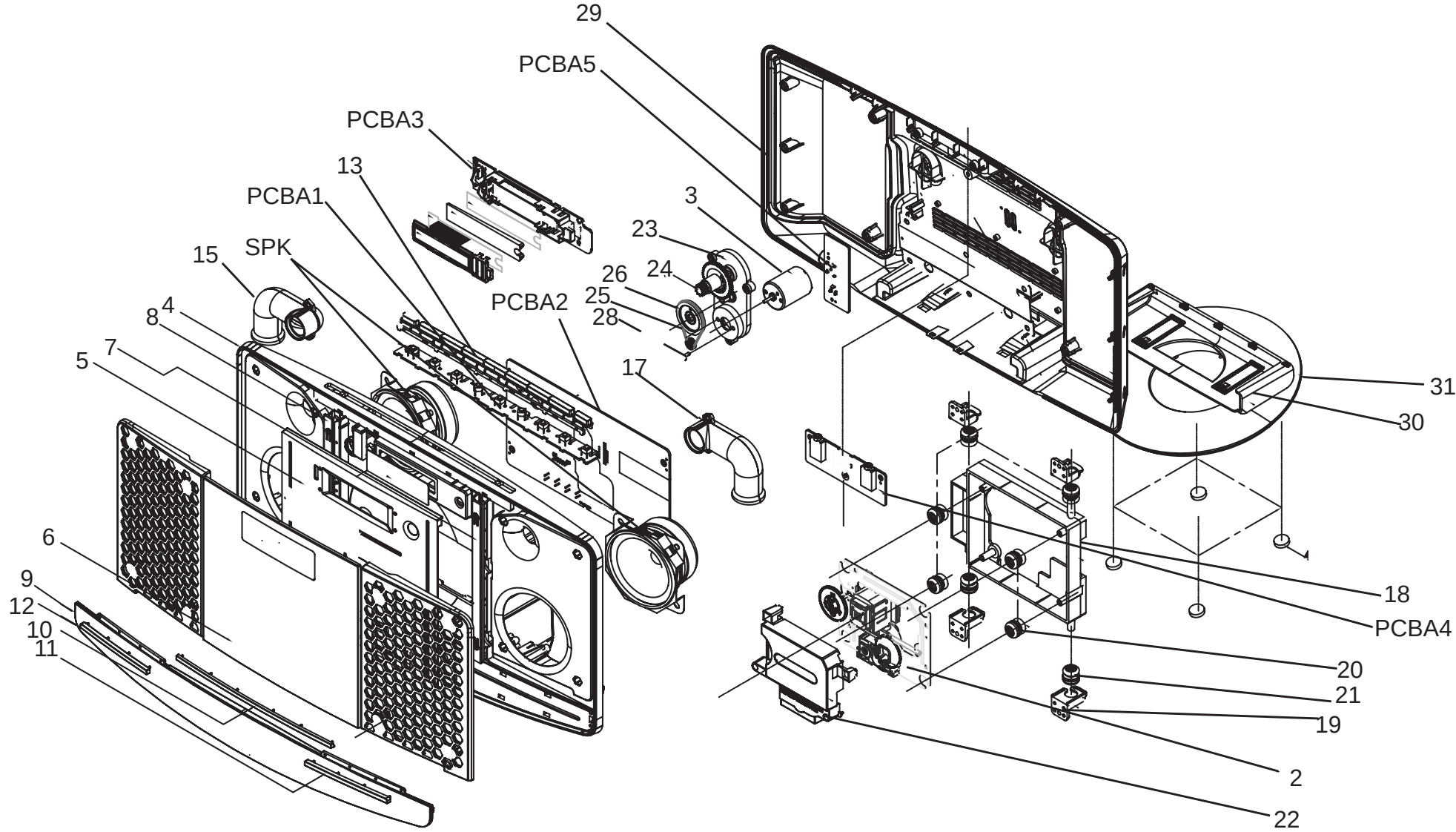




LAYOUT DIAGARM - MAIN BOARD
BOTTOM SIDE VIEW



EXPLODED VIEW DIAGRAM



Service Service Service



Service Manual



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**CLASS 1
LASER PRODUCT**

Published by Lynn wk1428 Subject to modification

3142 785 36560

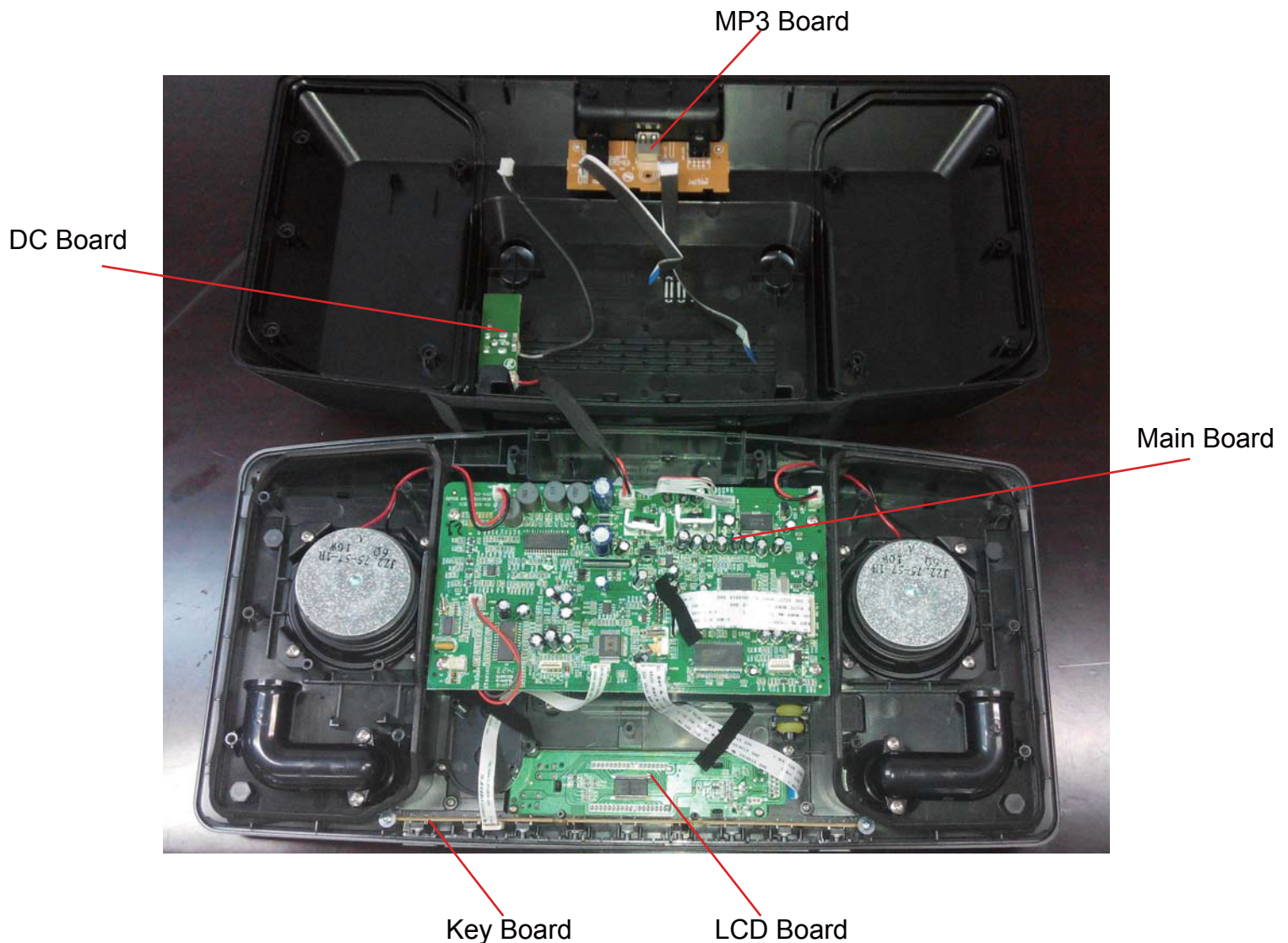
Version 3.0



PHILIPS

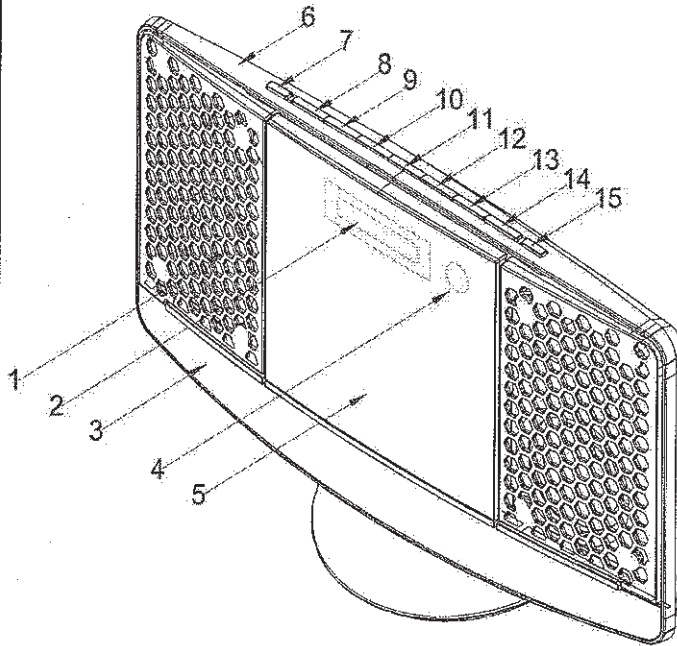
Location of PCBA & Version Variation 1-1

Type /Versions:		MCM2050
Board in used:	Service policy	12
MAIN BOARD		M+C
DC BOARD		M+C
MP3 BOARD		M+C
KEY BOARD		M+C
LCD BOARD		M+C
Type /Versions:		MCM2050
Features	Feature difference	12
RDS		
VOLTAGE SELECTOR		
ECO STANDBY - DARK		
* TIPS : C -- Component Lever Repair. M -- Module Lever Repair √ -- Used		



Technical specification 2-1

DEPICTION



Pos	Description	Page
1	SPEAKER GRILL	
2	LCD DISPLAY	
3	FRONT PANEL	
4	REMOTER SENSER	
5	CD DOOR LENS	
6	FRONT CABINET	
7	POWER	
8	SOURCE	
9	SKIP-	
10	SKIP+	
11	PLAY/PAUSE	
12	STOP	
13	VLO -	
14	VLO +	
15	OPEN/COLSE	
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		

CABINET

Diemensions with Boxes (wxhxd)	(W)620x(D)165x(H)250m	Material : HIPS / ABS / PMMA
Diemensions without Boxes (wxhxd)	(W)400x(D)97x(H)234mm	Finshing : Spray metallic black
Weight (inclusive packing)	4.2KG	Units in Masstercarton:1
Weight (exclusive packing & batery)		Units in Dealer carton : N/A

Remarks :

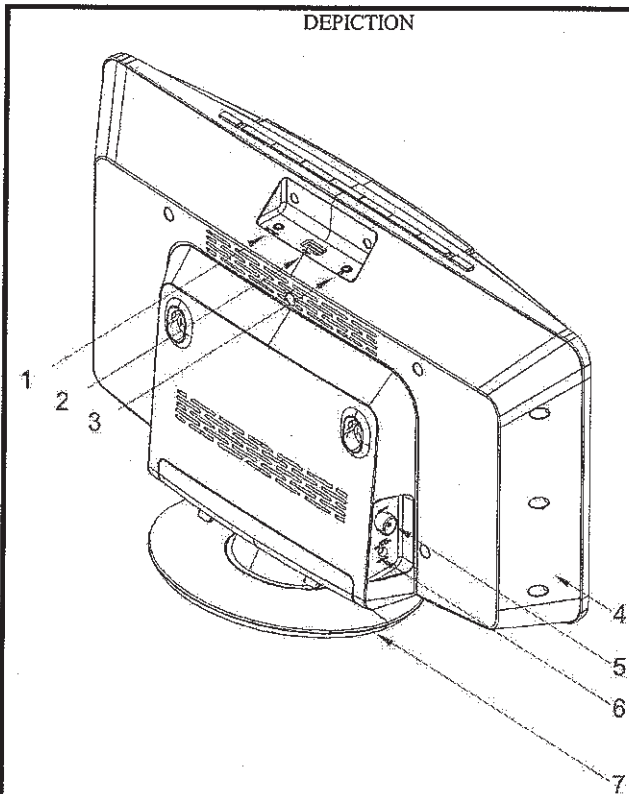
I			

Remark :

GENERAL PART 1 - FRONT PANNEL SPECIFICATION

Class No	MCM2050/12/05/79		Ver	Issued Date
			1	5/3/2011
			2	6/30/2011
			3	
NAME :CY-QIN	10	SH 190 - 1		A4
CHECK	6/30/2011	YUSAN INDUSTRIES LTD		

Technical specification 2-2



Pos	Description	Page
1	MP3 LINK SOCKET	
2	USB SOCKET	
3	HEADPHONE	
4	REAR CABINET	
5	75 Ω FM ANT SOCKET	
6	DC IN	
7	STAND	
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		

CABINET

Dimensions with Boxes (wxhxd) (W)620x(D)165x(H)250mm	Material :HIPS / ABS / PMMA
Dimensions without Boxes (wxhxd) (W)400x(D)97x(H)234mm	Finishing :Spray metallic black
Weight (inclusive packing) 4.2KG	Units in Mastercarton:1
Weight (exclusive packing & batery)	Units in Dealer carton : N/A

[illegible]

GENERAL PART 1 - BACK PANNEL SPECICFICATION

Class No		MCM2050/12/05/79		Ve	Issued Date
				1	5/3/2011
				2	6/30/2011
				3	
NAME : CY-QIN		10	SH 190 - 2		
		CHECK	DATE 2011-6-30	YUSAN INDUSTRIES LTD	

Technical specification 2-3

GENERAL DESCRIPTION

Micro Hi-Fi System with PLL Tuner , CD-MP3, USB 10W * 2
MP3 LINK , Remote Control

LIFETIME : 7 Years

Class	Tuner	Supply + Amplifier	Loudspeaker Boxes	USB	CD	Clock	MP3 LINK
I							
II	X	X		X	X	X	X
III							
Page	9	4,5		6	7	8	10

SAFETY requirements

Version	Safety	EMC
/12/05/79	IEC60065	EN55013

RADIATION / IMMUNITY requirments (EMC)

CLIMATIC requirements

ALL climates : + 5 Degree till + 35 Degree
MODERATE climates : + N.A till N.A Degree

PERFORMANCE CLASSES

POWER SUPPLY

MAINS (A.C.)	100/240 Vac(AC/DC Adaptor)	
Version	/12/05/79	
Voltage Selection	NO	
Frequency	60/50Hz	

POWER CONSUMER

	MCM2050/12/05/79	
Standby :	<1W	
(DEMO mode " OFF ") , NOM. A, INPUT		
Maximum :	/	
@ 1/8 Prated , NOM. A, INPUT	<15W	
ECO Power mode :	/	

Q and R according to Product Division Rules

Quality : 0.4 % (Major) 1.5 % (Mirror)
Reliability : 2.0 % (C 42)

Tested according to General Test Instruction refer to PHILIPS standard (UAN -D1591)

Measured according to PHILIPS standard (UAN - L1059) unless other wise stated

All not mentioned date, please refer to PHILIPS standard (XUW - 0010 - jun 2001)

DERIVED	REMARKS	APPROBATION

Remarks

GENERAL PART 1 - GENERAL SPECIFICATION

Class No		Ver	Issued Date
		1	5/3/2011
		2	6/30/2011
		3	
NAME :CY-QIN	10	SH 190 - 3	A4
CHECK	DATE:2011-6-30	YUSAN INDUSTRIES LTD	

MCM2050/12/05/79

Dai Jun

Technical specification 2-4

TECHNIAL DESCRIPTION

Total power 20W, matching LOUD SPEAKER of 2 x6 R. TWO INPUT SOURCE, (Digital Sound Control)

GENERAL PART

OUTPUT stage Protection : Yes Temperature : YES Shorecircuit : Yes
LoudSpeaker D.C. Protection : Yes.

INDICATORS

Standby Mode Indicator : LCD display Clock active, LED backlight turn ON
ECO Mode Indiicator : NC

ELECTRICAL DATA

DSC :	POP /JAZZ /ROCK /CLASSIC /FLAT	Channel Differencer at -46dB	3	dB
DBB	ON/OFF	Hum (Volume Minimun -)	< 0.5	μW
SIS :	N/A	Residual Noise (Volume Minium)	0.06	μW
VAC :	N/A	Channel Separation (at 1 kHz)	≥ 35	dB
WOOX :	N/A	Signal / Noise (weighted)	≥ 55	dB

INTERCONNECTS

Input Sensitivity(±2 dB)rated ouput power at 1 kHz and 10kHz. Line Output Voltage (*1)

Tuner	: FM MODE 75KZH /(CD +0/-3dB)	Line Out (Left / Right)	N.A
CD / USB	: 0 dB track (Audio Disc I, Trk 35)	Subwoofer Out	N.A
TAPE	: NC	Headphone	700mV+/-1dB, RL = 32Ω
MP3 Link	: Nor: 500mV Lim: 350mV ~ 800mV CD 0dB	Digital Coaxial Out	N.A
AUX IN	: NC	Booster Out	N.A

OUTPUT POWER (* 1) At THD = 10% (Measured with 20Hz-22KHz filter),

Power output (RMS)	channel *2	10W*2 +/-1dB (1*)

LOUDSPEAKER (BOXES)

Please to package document of Speaker Box Assy

Rated Impedance

: 6 Ohms at SPEAKER driver,

Remarks :Radio Power output (RMS) Limit:-3dB

(*1) Electrical parameters are to be measurement at specker terminals across 6 Ohm load (pure resistor)
with rated input signal in AUX mode; DSC OFF mode with DBB OFF
IS off unless specified otherwise

GENERAL PART 1 - TECHNICAL SPECIFICATION

Class No	<u>MCM2050/12/05/79</u>		Ver	Issued Date
			1	5/3/2011
			2	6/30/2011
			3	
NAME : CY-QIN		10	SH 190 - 4	A4
	CHECK	DATE : 2011-6-30	YUSAN INDUSTRIES LTD	

Technical specification 2-5

AUDIO SIGNAL PROCESSING

Micro Hi-Fi System with PLL Tuner, USB, CD-MP3, 10W/ TWO channel Universal Class D Power Amplifier

1) DSC (Digital Sound Control)

Input sinewave 500mV at 1kHz to R/L channel of MP3 Link socket

Set DSC to Flat mode

Adjust volume to obtain 500mW across 6 ohm load at R/L speaker output

The 500mW will be used as 0dB reference

Tabel 1a (Tolerance $\pm 3\text{dB}$)

Frequency	DSC Modes with DBB Off VOL=20			
	POP	JAZZ	ROCK	CLASSIC
100HZ	6DB	2DB	6DB	3DB
10KHZ	3DB	-2DB	5DB	2DB

2) DBB (Dynamic Bass Boost)

Play CD testing signal of 1KHZ

Set DSC to FLAT mode and switch off DBB

Adjust volume level will be as "18"

Tabel 2 (Tolerance $\pm 3\text{dB}$)

Frequency	DBB OFF	DBB ON		
100HZ	6DB	10DB		
10KHZ	6DB	6DB		

Remarks

GENERAL PART 1 - AUDIO SIGNAL SPECIFICATION (1)

Class No	<u>MCM2050/12/05/79</u>		<i>Dan Jun</i>		Ver	Issued Date
					1	5/3/2011
					2	6/30/2011
					3	
NAME :CY-QIN	10	SH 190 - 5				A4
CHECK	DATE : 2011-6-30	YUSAN INDUSTRIES LTD				

Technical specification 2-6

TECHNIAL DESCRIPTION

USB

See also SH 190 USB Audio Module (300605)

Measurment are directly done at the coonector on the board

GENERAL PART

Measurement are directly done at the connector on CDC board

Description	Specification
Output Resistance	$\leq 1.5 \text{ k}\Omega$
Output Voltage $R_L = 33 \text{ k}\Omega$ ()dB, 1 KHz)	830mVrms $\pm 1.5\text{dB}$
Channel Unbalance	$\leq \pm 3 \text{ dB}$
THD + Noise (0dB, 1Khz)	$\leq 0.3 \%$
Channel Crosstalk (100Hz - 16,000 Hz)	$\geq 35 \text{ dB}$
(0 dB, 1 KHz)	$\geq 40 \text{ dB}$
Signal to Noise Ratio (0dB, 1kHz)	$\geq 60\text{dBA}$ (A - weighted)
(100 - 16,000 Hz)	$\geq 55\text{dBA}$ (A - weighted)
Frequency Response (5dB $\pm$ 3dB), reference 1kHz *1	100Hz - 16kHz

Description	Specification

Remarks :

*1 Volume control Voltage For 20

USB SPECIFICATION

Class No	MCM2050/12/05/79	Dan Jun	Ver	Issued Date
			1	5/3/2011
			2	6/30/2011
			3	
NAME : CY_QIN	10	SH 190 - 6		A4
CHECK	DATE 2011-6-30	YUSAN INDUSTRIES LTD		

Technical specification 2-7

TECHNIAL DESCRIPTION

CD + MP3 - Part Specifications

CD mechnism refer to Philips standard specification

GENERAL PART

Measurement are directly done at the connector on CDC board

Description	Extern	Nom	Lim	Unit
Output Resistance	No		< 100	Ohms
Output Voltage - Unloaded (0dB , 1 kHz)	No	0.5	± 1	Vrms
Channel Unbalance	No		< ± 2	dB
Frequency Response (125 Hz - 16 kHz) *1	No	5	± 3	dB
Signal to Noise Ratio (Unweighted)	Yes	60	50	dB
Signal to Noise Ratio (A - weighted)	Yes	65	55	dBA
Crosstalk (1kHz)	Yes	65	55	dB
Crosstalk (125Hz to 16kHz)	No	<u>36</u>	<u>30</u>	dB
Hum & Noise	No	400	500	nW
Emphasis	-	/	/	/

Remark *1 Volume control Voltage For 20

CD / MP3 SPECIFICATION

Class No	MCM2050/12/05/79	<i>Dai Jun</i>	Ver	Issued Date
			1	5/3/2011
			2	6/30/2011
			3	
NAME :CY-QIN	10	SH 190 - 7		A4
CHECK	DATE :2011-6-30	YUSAN INDUSTRIES LTD		

Technical specification 2-8

TECHNIAL DESCRIPTION

CD + MP3 - Part Specifications

CD mechnism refer to Philips standard specification

GENERAL PART

Measurement are directly done at the connector on CDC board

Description	Extern	Nom	Lim	Unit
Output Resistance	No		< 100	Ohms
Output Voltage - Unloaded (0dB , 1 kHz)	No	0.5	± 1	Vrms
Channel Unbalance	No		< ± 2	dB
Frequency Response (125 Hz - 16 kHz) *1	No	5	± 3	dB
Signal to Noise Ratio (Unweighted)	Yes	60	50	dB
Signal to Noise Ratio (A - weighted)	Yes	65	55	dBA
Crosstalk (1kHz)	Yes	65	55	dB
Crosstalk (125Hz to 16kHz)	No	<u>36</u>	<u>30</u>	dB
Hum & Noise	No	400	500	nW
Emphasis	-	/	/	/

Remark *1 Volume control Voltage For 20

CD / MP3 SPECIFICATION

Class No	MCM2050/12/05/79	Dai Jun	Ver	Issued Date
			1	5/3/2011
			2	6/30/2011
			3	
NAME :CY-QIN	10	SH 190 - 7		A4
CHECK	DATE :2011-6-30	YUSAN INDUSTRIES LTD		

Technical specification 2-9

TECHNIAL DESCRIPTION

SOFTWARE IMPLEMENTED CLOCK / TIMER FUNCTION WITH 75.000kHz QUARTZ OSCILLATOR.

GENERAL PART

Timer Setting	:	Clock and Timer
Timer Wakeup Mode	:	LAST SETTING (MODE)
Remarks Time Setting	:	for 24hrs
Volume at Wakeup	:	Last Setting
No of Timer Settings	:	1
Clock Accuracy	:	Normal: 0.5 sec/day Limit : 1 sec/day

INDICATORS

Display Type	:	LCD

Remark

CLOCK / TIMMER SPECIFICATION

Class No		MCM2050/12/05/79		Ver	Issued Date
				1	5/3/2011
				2	6/30/2011
				3	
NAME :CY-QIN		10	SH 190 - 8		A4
		CHECK	DATE :2011-6-30	YUSAN INDUSTRIES LTD	

Technical specification 2-10

TECHNIAL DESCRIPTION

MP3 Link

MP3 Link Part

	Nom.	Limit	Condition
SNR unwt'd.	60dB	50dB	500mV 1KHz input
SNR wtd. dBA	62dBA	57dBA	500mV 1KHz input
Crosstalk (different source, 1KHz)	60dB	50dB	500mV input
Crosstalk (different source, 10KHz)	45dB	35dB	500mV input
L, R Channel Separation	36dB	30dB	500mV input
Frequency response 100HZ/10KHZ *1	5dB	+/-3dB	500mV input
THD (1KHz, 0dB)	2%	3%	500mV 1KHz input

AUX IN Part

SNR unwt'd.	/	/	/
SNR wtd. dBA	/	/	/
Crosstalk (different source, 1KHz)	/	/	/
Crosstalk (different source, 10KHz)	/	/	/
L, R Channel Separation	/	/	/
Frequency response (-3dB)	/	/	/
THD (1KHz, 0dB)	/	/	/

Description	Specification

Remarks :

*1 Volume control Voltage For 20

USB SPECIFICATION

Class No	MCM2050/12/05/79	Dai Jun	Ver	Issued Date	
			1	5/3/2011	
			2	6/30/2011	
			3		
NAME :CY-QIN		10	SH 190 - 10	A4	
CHECK	DATE :2011-6-30		YUSAN INDUSTRIES LTD		

Disassembly drawing 3-1

MCM2050 Disassembly Drawing

1. Loosen screws in rear cabinet



Loosen PA 1.7x10 and 11 star BT 3x12 screws in rear cabinet

Electric screw driver

Torque:

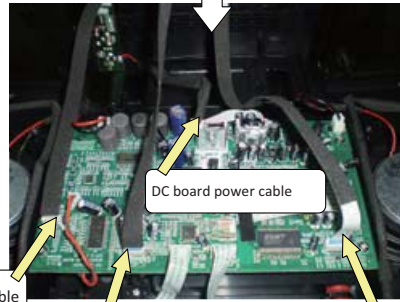
PA1.7 X 10 : 1.8 ± 0.3 kgf.cm

BT3 X 12 : 4.5 ± 0.5 kgf.cm

Note: make different screws put in different places

PA1. 7 x 10

2. Loosen rear cabinet and pull out the FFC cable and the power cord

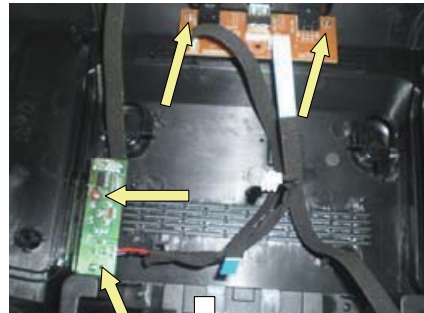


a. pull out the rear cabinet by hands and put well

b. pull out two USB board FFC cable and power cord, FFC cord from main board



3. Loosen USB board, DC skewer board



a. loosen two PA 2.3x8 screws of fixed USB board

b. loosen two PA 2.3x8 screws of fixed DC skewer board

c. loosen USB board, DC skewer board and then place well them separately.

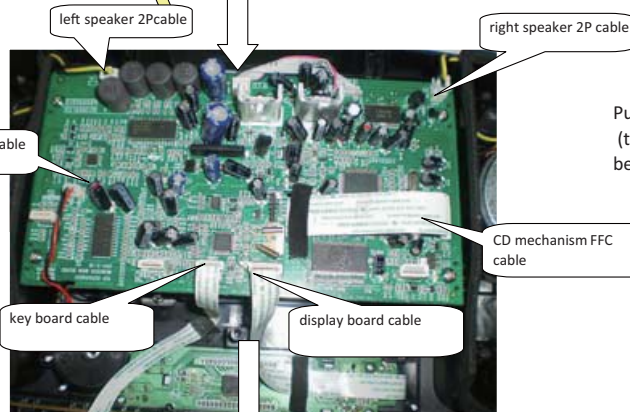
Electric screw driver

Torque:

2.0 ± 0.3 kgf.cm

Note: make different screws put in different places

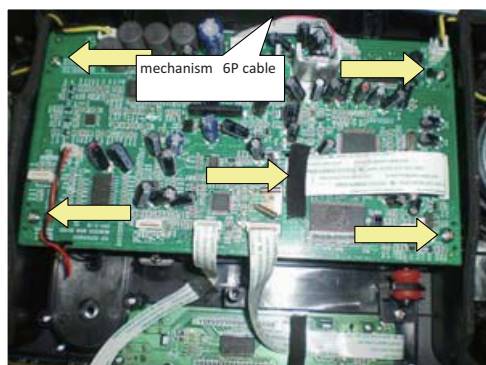
4. Pull the main board cable



Pull out cables in main board (to avoid mangle the cable, the hands should be as near as possible to the socket)



5. Disassemble main board



a. loosen four BA 3x10 screws on main board

b. tear off black velvet paper on the CD mechanism FFC cable and unplug the mechanism 6P cable

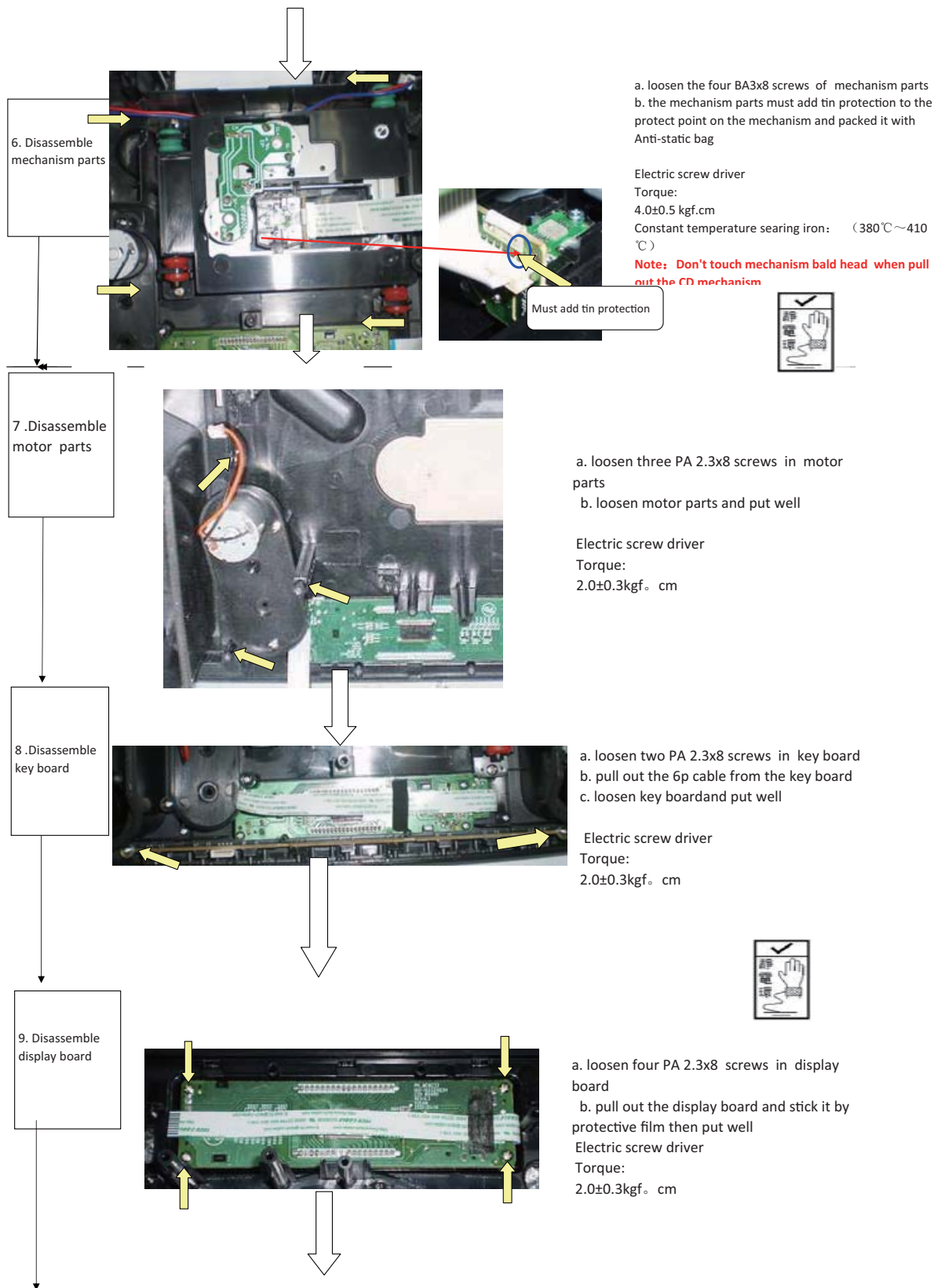
c. pull out the main board and put well

Electric screw driver

Torque:

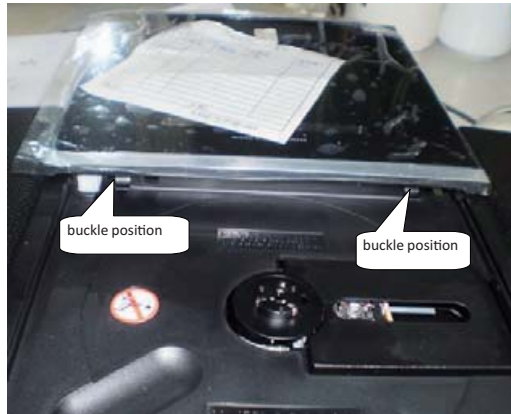
4.0 ± 0.5 kgf.cm

Disassembly drawing 3-2



Disassembly drawing 3-3

10. take the CD door



a. hold the CD door with the right hand, press CD door and buckling with the left hand, then press other side buckling and pull out the CD door gently

b. put the CD door well

as the below shows:



图1



图2

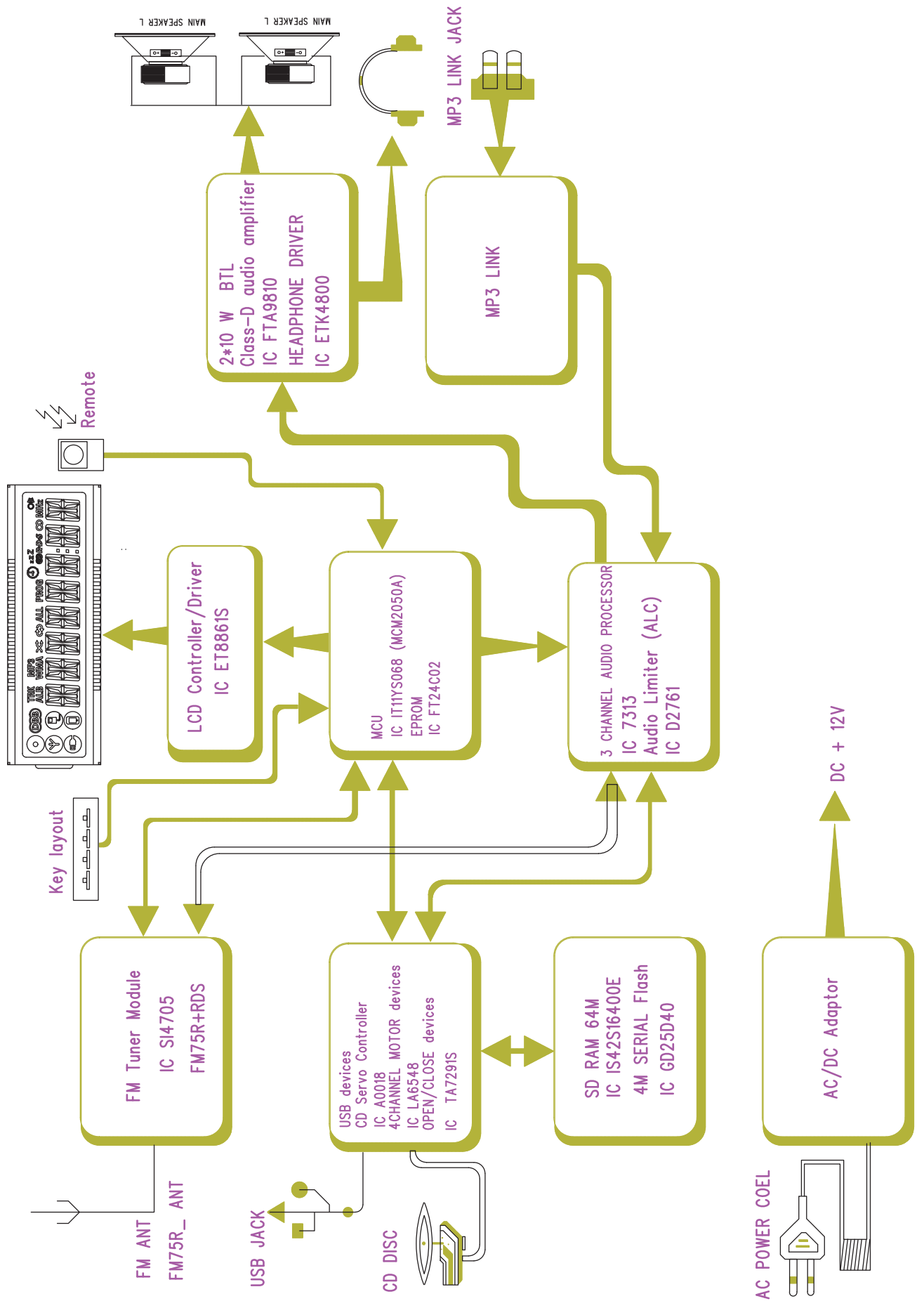
编制:杨桥秀

审核:何飏

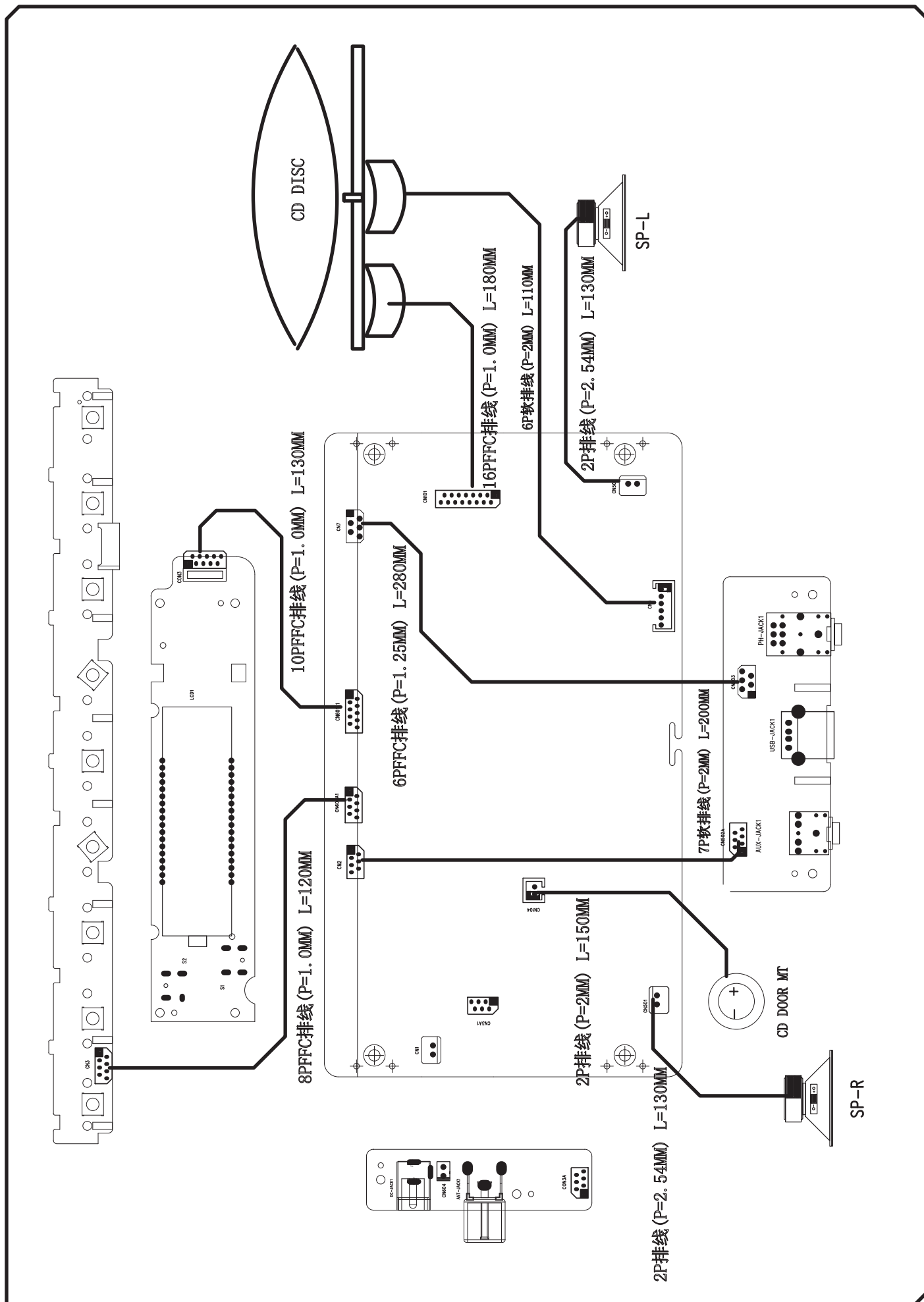
批准:王青春2014-7-1

Block diagram 4-1

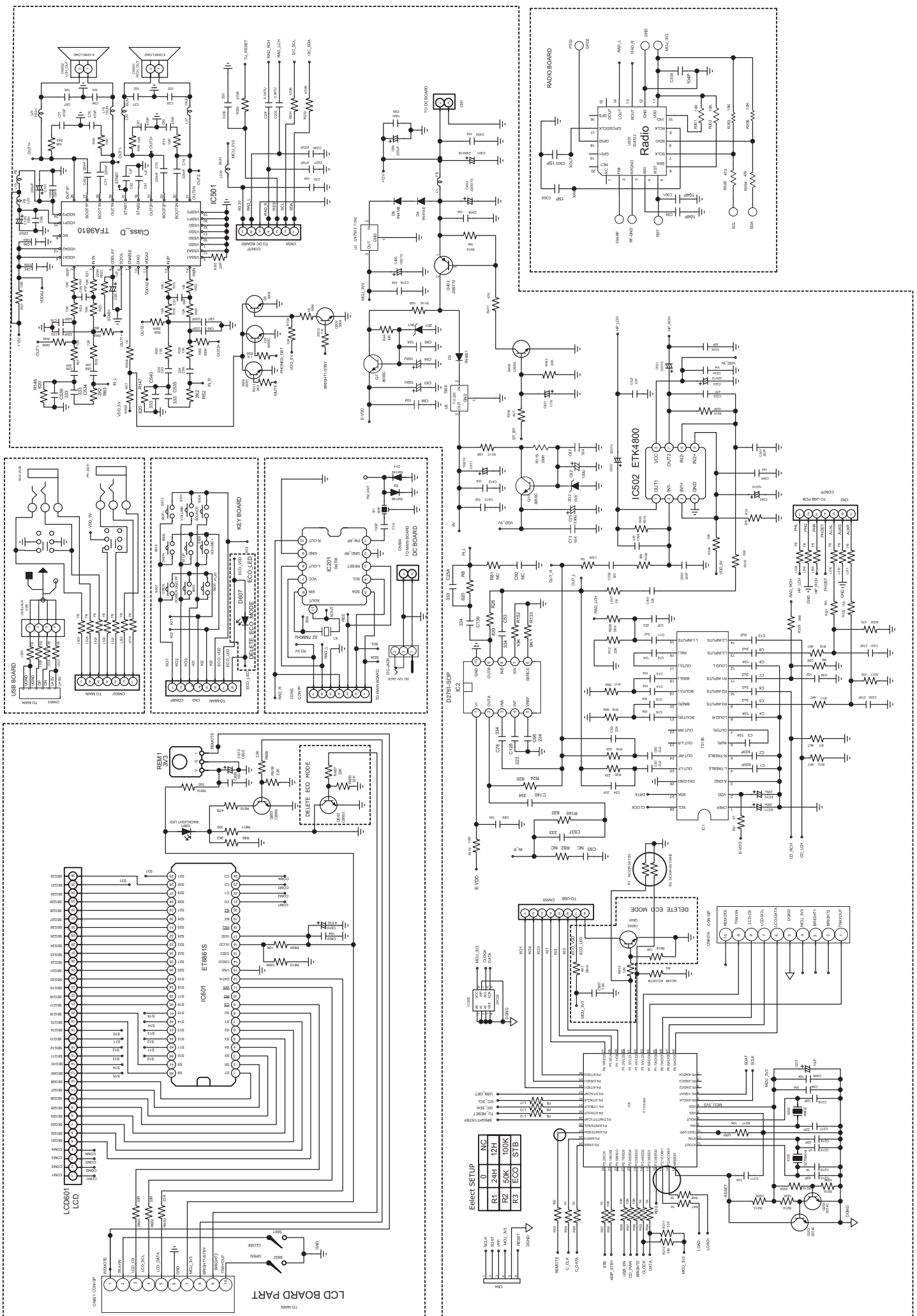
MCM2050A Block Diagram



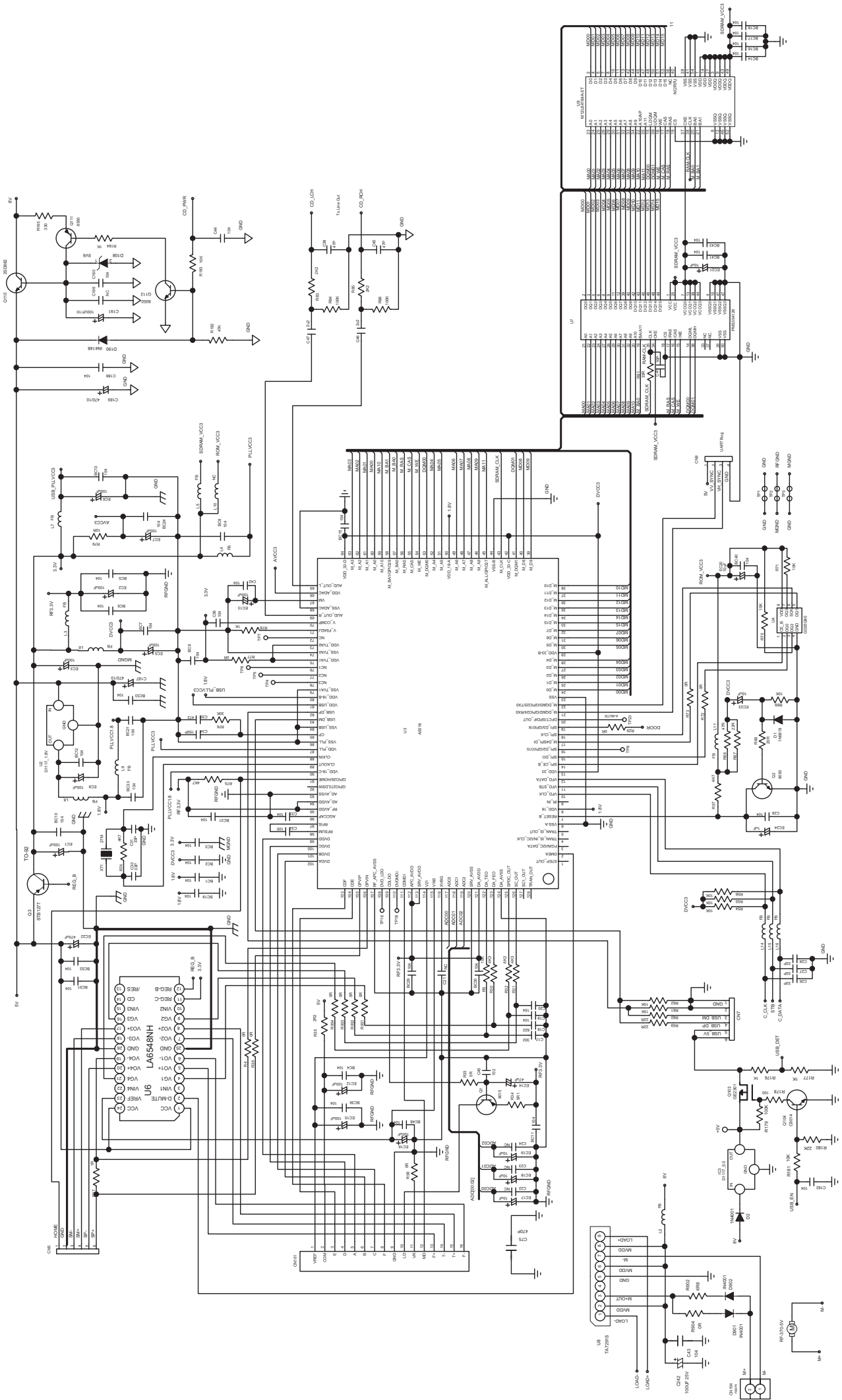
Wiring diagram 5-1

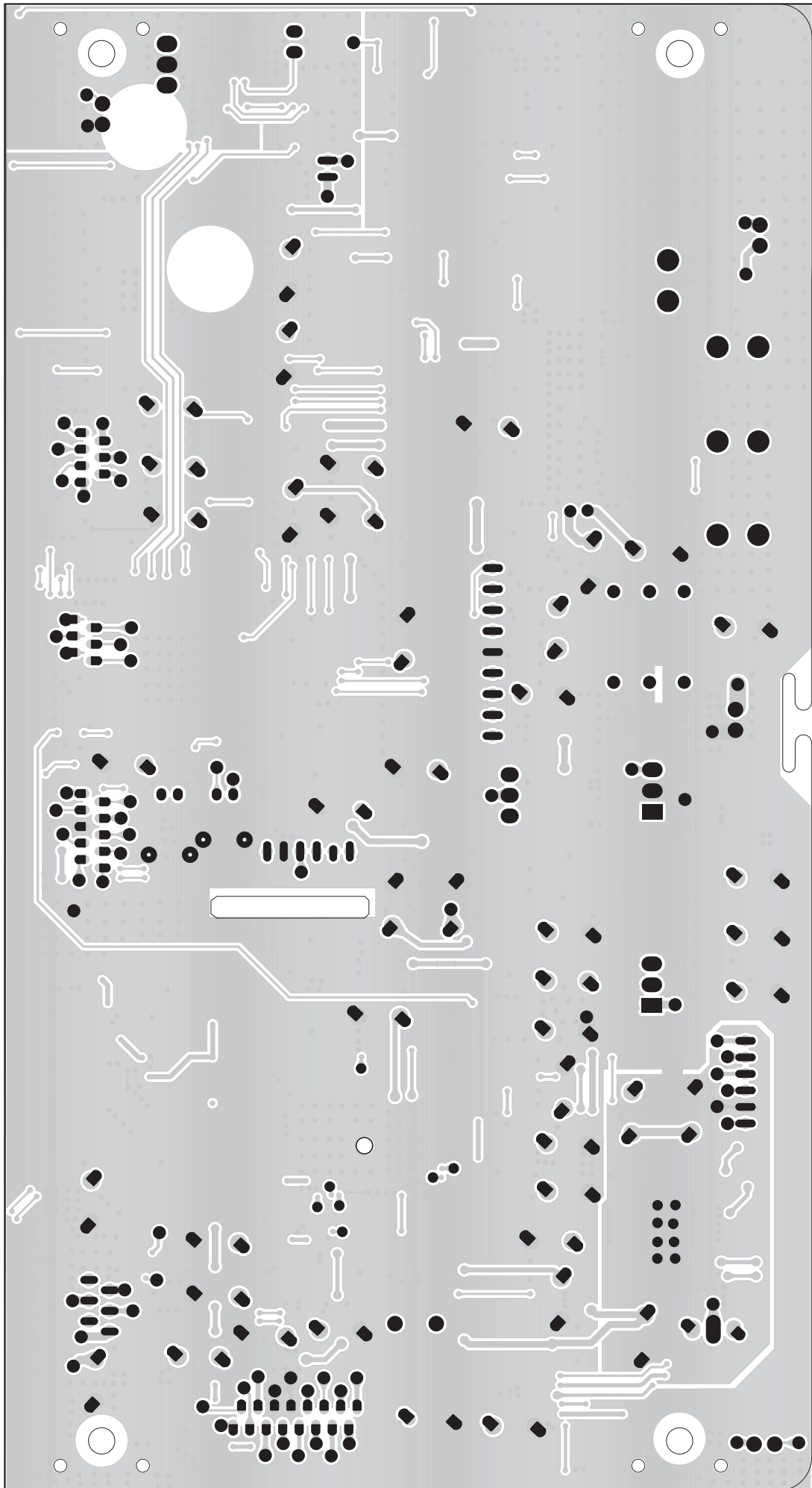


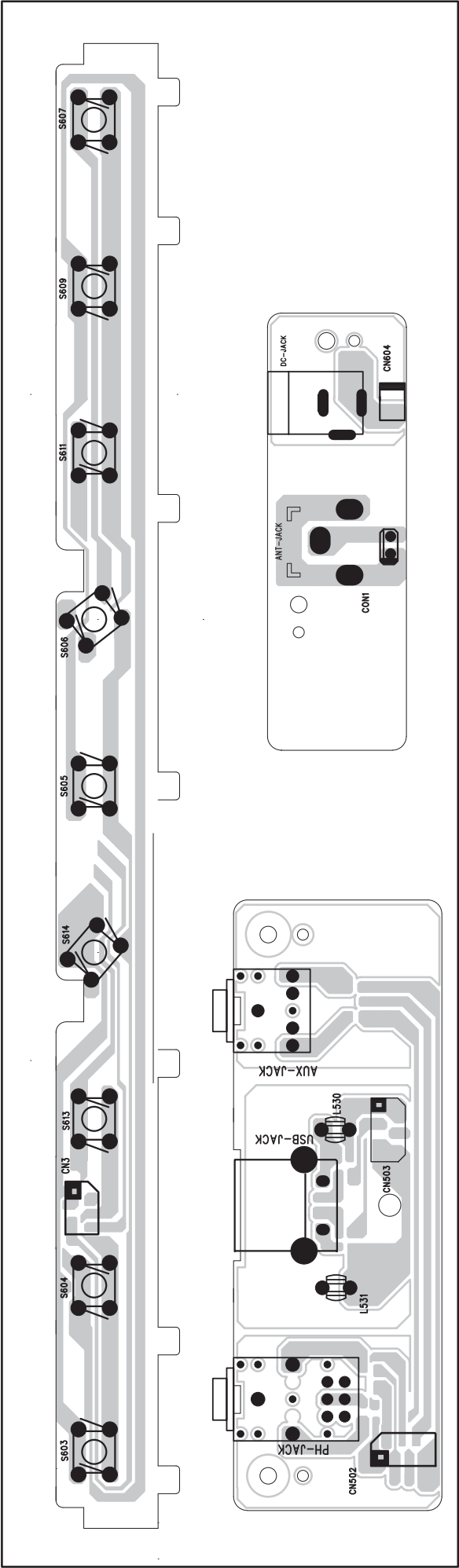
Circuit Diagram 6-1

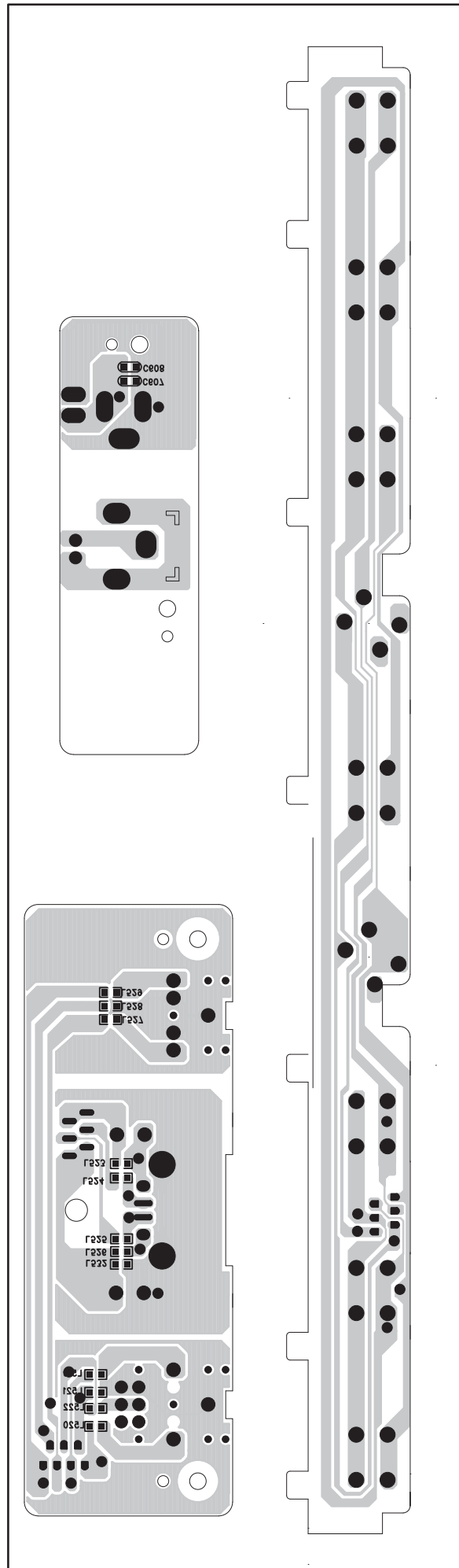


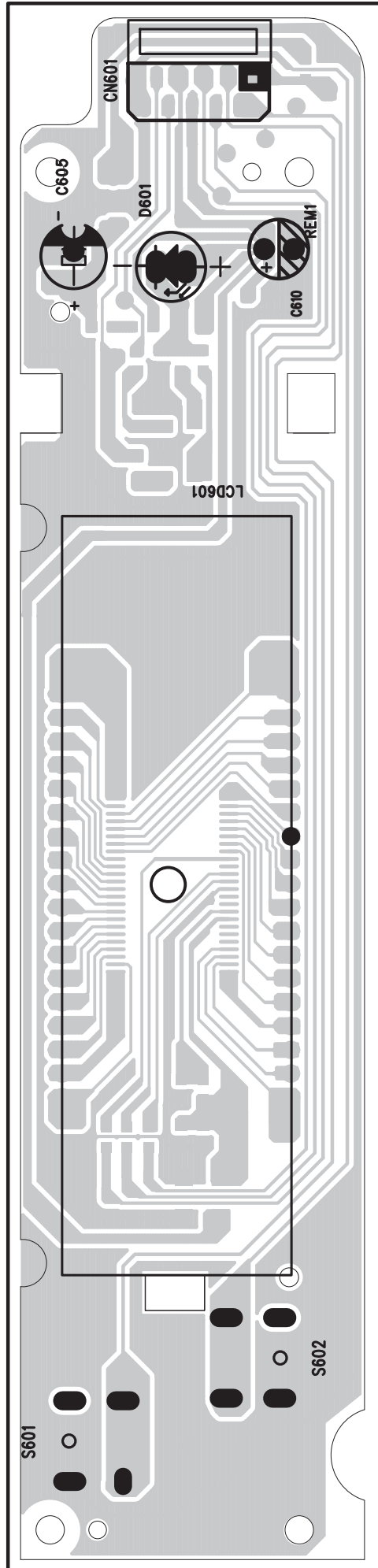
Circuit Diagram 6-2



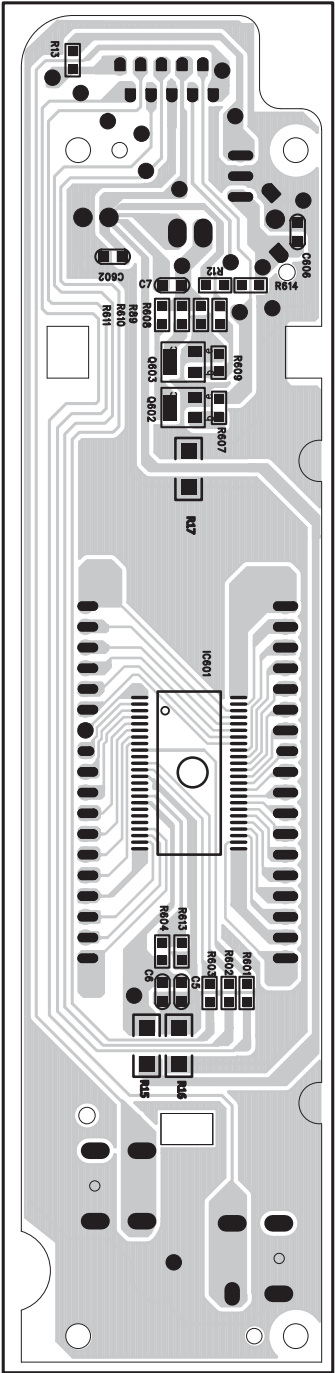






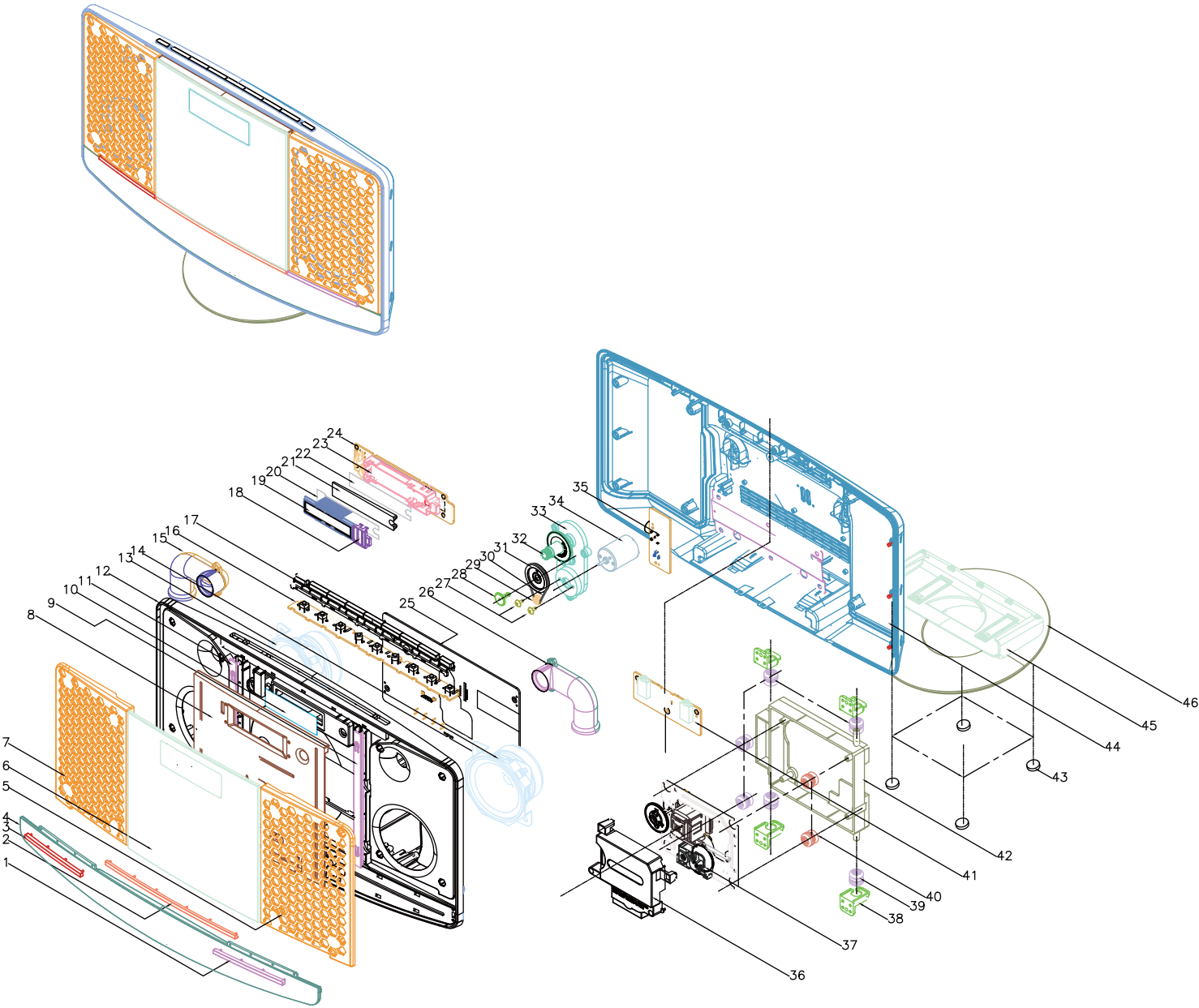


LCD BOARD BOTTOM LAYOUT drawing 7-6



Exploded drawing 8-1

MCM2050 12



Revision list

V1.0 2014 -07-09 initial release

Service Service Service



Service Manual

CONTENTS

Location of PCBA & Version Variation	1
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Block diagram	4
Wiring diagram	5
Circuit diagram	6
MAIN + KEY + DC + MP3 + LCD BOARD TOP & BOTTOM LAYOUT	7
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**CLASS 1
LASER PRODUCT**

Published by Lynn wk1453 Subject to modification

3142 785 36560

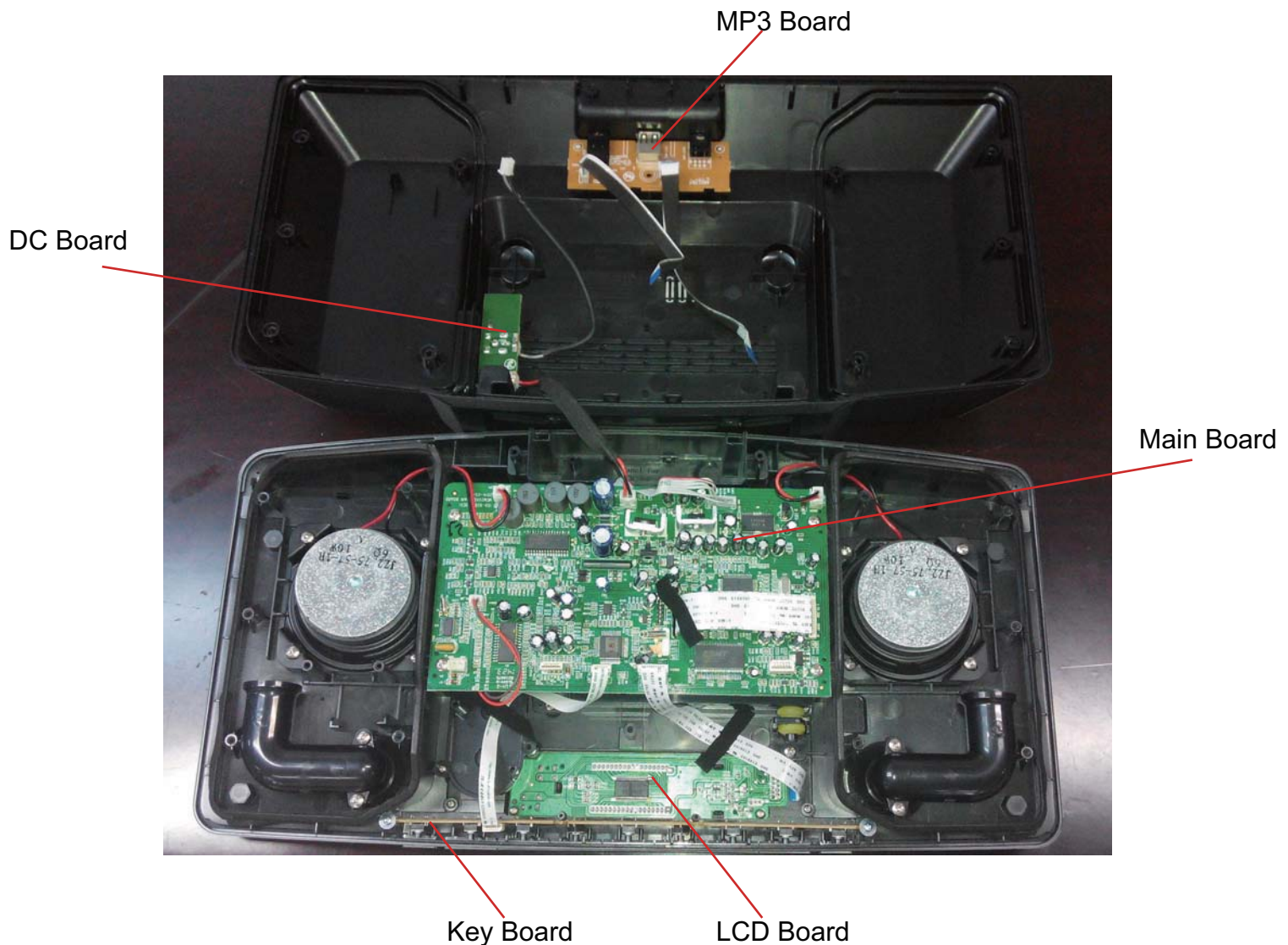
Version 1.0



PHILIPS

Location of PCBA & Version Variation 1-1

Type /Versions:		MCM2050
Board in used:	Service policy	05/12
MAIN BOARD		M+C
DC BOARD		M+C
MP3 BOARD		M+C
KEY BOARD		M+C
LCD BOARD		M+C
Type /Versions:		MCM2050
Features	Feature difference	05/12
RDS		
VOLTAGE SELECTOR		
ECO STANDBY - DARK		
* TIPS : C -- Component Lever Repair. M -- Module Lever Repair √ -- Used		



Technical specification 2-1

GENERAL DESCRIPTION							
Micro Hi-Fi System with PLL Tuner , CD-MP3, USB 10W * 2 MP3 LINK , Remote Control							
LIFETIME : 7 Years							
Class	Tuner	Supply + Amplifier	Loudspeaker Boxes	USB	CD	Clock	MP3 LINK
I							
II	X	X		X	X	X	X
III							
Page	9	4,5		6	7	8	10
SAFETY requirements							
Version	Safety			EMC			
/12/05/79	IEC60065			EN55013			
RADIATION / IMMUNITY requirments (EMC)							
CLIMATIC requirements							
ALL climates		: + 5 Degree	till	+ 35 Degree			
MODERATE climates		: + N.A	till	N.A Degree			
PERFORMANCE CLASSES							
POWER SUPPLY							
MAINS (A.C.)				100/240 Vac(AC/DC Adaptor)			
Version				/12/05/79			
Voltage Selection				NO			
Frequency				60/50Hz			
POWER CONSUMER							
				MCM2050/12/05/79			
Stadby :				<1W			
(DEMO mode " OFF ") , NOM. A, INPUT							
Maximum :				/			
@ 1/8 Prated , NOM. A, INPUT				<15W			
ECO Power mode :				/			
Q and R according to Product Division Rules							
Quality		: 0.4 % (Major)		1.5 % (Mirror)			
Reliability		: 2.0 % (C 42)					
Tested according to General Test Instruction refer to PHILIPS standary (UAN -D1591)							
Measured according to PHILIPS standary (UAN - L1059) unless other wise stated							
All not mentioned date, please refer to PHILIPS standary (XUW - 0010 - jun 2001)							
DERIVED		REMARKS		APPROBATION			
Remarks							
GENERAL PART 1 - GENERAL SPECIFICATION							
Class No						Ver	Issued Date
						1	5/3/2011
						2	6/30/2011
						3	
NAME :CY-QIN		10		SH 190 - 3		A4	
	CHECK	DATE:2011-6-30		YUSAN INDUSTRIES LTD			

Technical specification 2-2

TECHNIAL DESCRIPTION

Total power 20W, matching LOUD SPEAKER of 2 x6 R. TWO INPUT SOURCE, (Digital Sound Control)

GENERAL PART

OUTPUT stage Protection : Yes Temperature : YES Shorecircuit : Yes
LoudSpeaker D.C. Protection : Yes.

INDICATORS

Standby Mode Indicator : LCD display Clock active, LED backlight turn ON
ECO Mode Indicator : NC

ELECTRICAL DATA

DSC :	POP /JAZZ /ROCK /CLASSIC /FLAT	Channel Differencer at -46dB	3	dB
DBB	ON/OFF	Hum (Volume Minimum -)	< 0.5	μW
SIS :	N/A	Residual Noise (Volume Minium)	0.06	μW
VAC :	N/A	Channel Separation (at 1 kHz)	≥ 35	dB
WOOX :	N/A	Signal / Noise (weighted)	≥ 55	dB

INTERCONNECTS

Input Sensitivity(±2 dB)rated ouput power at 1 kHz and 10kHz. Line Output Voltage (*1)

Tuner	: FM MODE 75KZH /(CD +0/-3dB)	Line Out (Left / Right)	N.A
CD / USB	: 0 dB track (Audio Disc 1, Trk 35)	Subwoofer Out	N.A
TAPE	: NC	Headphone	700mV+/-1dB, RL = 32Ω
MP3 Link	: Nor: 500mV Lim: 350mV ~ 800mV CD 0dB	Digital Coaxial Out	N.A
AUX IN	: NC	Booster Out	N.A

OUTPUT POWER (* 1) At THD = 10% (Measured with 20Hz-22KHz filter),

Power output (RMS)	channel *2	10W*2 +/-1dB (1*)

LOUDSPEAKER (BOXES)

Please to package document of Speaker Box Assy

Rated Impedance

: 6 Ohms at SPEAKER driver,

Remarks :Radio Power output (RMS) Limit:-3dB

(*1) Electrical parameters are to be measurement at speaker terminals across 6 Ohm load (pure resistor)
with rated input signal in AUX mode; DSC OFF mode with DBB OFF
IS off unless specified otherwise

GENERAL PART I - TECHNICAL SPECIFICATION

Class No	<u>MCM2050/12/05/79</u>		Ver	Issued Date
			1	5/3/2011
			2	6/30/2011
			3	
NAME : CY-QIN		10	SH 190 - 4	A4
CHECK	DATE : 2011-6-30	YUSAN INDUSTRIES LTD		

Technical specification 2-3

AUDIO SIGNAL PROCESSING

Micro Hi-Fi System with PLL Tuner, USB, CD-MP3, 10W/ TWO channel Universal Class D Power Amplifier

1) DSC (Digital Sound Control)

Input sinewave 500mV at 1kHz to R/L channel of MP3 Link socket

Set DSC to Flat mode

Adjust volume to obtain 500mW across 6 ohm load at R/L speaker output

The 500mW will be used as 0dB reference

Tabel 1a (Tolerance $\pm 3dB$)

Frequency	DSC Modes with DBB Off VOL=20			
	POP	JAZZ	ROCK	CLASSIC
100HZ	6DB	2DB	6DB	3DB
10KHZ	3DB	-2DB	5DB	2DB

2) DBB (Dynamic Bass Boost)

Play CD testing signal of 1KHZ

Set DSC to FLAT mode and switch off DBB

Adjust volume level will be as "18"

Tabel 2 (Tolerance $\pm 3dB$)

Frequency	DBB OFF	DBB ON		
100HZ	6DB	10DB		
10KHZ	6DB	6DB		

Remarks

GENERAL PART 1 - AUDIO SIGNAL SPECIFICATION (1)

Class No				Ver	Issued Date
	<u>MCM2050/12/05/79</u>			1	5/3/2011
				2	6/30/2011
				3	
NAME : CY-QIN	10	SH 190 - 5			A4
CHECK	DATE : 2011-6-30	YUSAN INDUSTRIES LTD			

Dan Jun

Technical specification 2-4

TECHNIAL DESCRIPTION

USB

See also SH 190 USB Audio Module (300605)

Measurment are directly done at the coonector on the board

GENERAL PART

Measurement are directly done at the connector on CDC board

Description	Specification
Output Resistance	$\leq 1.5 \text{ k}\Omega$
Output Voltage $R_L = 33 \text{ k}\Omega$ ()dB, 1 KHz)	830mVrms +/- 1.5dB
Channel Unbalance	$\leq \pm 3 \text{ dB}$
THD + Noise (0dB, 1Khz)	$\leq 0.3 \%$
Channel Crosstalk (100Hz - 16,000 Hz)	$\geq 35 \text{ dB}$
(0 dB, 1 KHz)	$\geq 40 \text{ dB}$
Signal to Noise Ratio (0dB, 1kHz)	$\geq 60 \text{ dBA}$ (A - weighted)
(100 - 16,000 Hz)	$\geq 55 \text{ dBA}$ (A - weighted)
Frequency Response (5dB+/- 3dB), reference 1kHz *1	100Hz - 16kHz

Description	Specification

Remarks :

*1 Volume control Voltage For 20

USB SPECIFICATION

Class No		MCM2050/12/05/79	<i>Dan Jun</i>	Ver	Issued Date
				1	5/3/2011
				2	6/30/2011
				3	
NAME : CY_QIN			10	SH 190 - 6	A4
	CHECK	DATE 2011-6-30		YUSAN INDUSTRIES LTD	

Technical specification 2-5

TECHNIAL DESCRIPTION

CD + MP3 - Part Specifications

CD mechnism refer to Philips standard specification

GENERAL PART

Measurement are directly done at the connector on CDC board

Description	Extern	Nom	Lim	Unit
Output Resistance	No		< 100	Ohms
Output Voltage - Unloaded (0dB , 1 kHz)	No	0.5	± 1	Vrms
Channel Unbalance	No		< ± 2	dB
Frequency Response (125 Hz - 16 kHz) *1	No	5	± 3	dB
Signal to Noise Ratio (Unweighted)	Yes	60	50	dB
Signal to Noise Ratio (A - weighted)	Yes	65	55	dBA
Crosstalk (1kHz)	Yes	65	55	dB
Crosstalk (125Hz to 16kHz)	No	<u>36</u>	<u>30</u>	dB
Hum & Noise	No	400	500	nW
Emphasis	-	/	/	/

Remark *1 Volume control Voltage For 20

CD / MP3 SPECIFICATION

Class No	MCM2050/12/05/79	Dai Jun	Ver	Issued Date
			1	5/3/2011
			2	6/30/2011
			3	
NAME :CY-QIN	10	SH 190 - 7		A4
CHECK	DATE :2011-6-30	YUSAN INDUSTRIES LTD		

Technical specification 2-6

TECHNIAL DESCRIPTION

CD + MP3 - Part Specifications

CD mechnism refer to Philips standard specification

GENERAL PART

Measurement are directly done at the connector on CDC board

Description	Extern	Nom	Lim	Unit
Output Resistance	No		< 100	Ohms
Output Voltage - Unloaded (0dB , 1 kHz)	No	0.5	± 1	Vrms
Channel Unbalance	No		< ± 2	dB
Frequency Response (125 Hz - 16 kHz) *1	No	5	± 3	dB
Signal to Noise Ratio (Unweighted)	Yes	60	50	dB
Signal to Noise Ratio (A - weighted)	Yes	65	55	dBA
Crosstalk (1kHz)	Yes	65	55	dB
Crosstalk (125Hz to 16kHz)	No	<u>36</u>	<u>30</u>	dB
Hum & Noise	No	400	500	nW
Emphasis	-	/	/	/

Remark *1 Volume control Voltage For 20

CD / MP3 SPECIFICATION

Class No	MCM2050/12/05/79	Dai Jun	Ver	Issued Date
			1	5/3/2011
			2	6/30/2011
			3	
NAME :CY-QIN	10	SH 190 - 7		A4
CHECK	DATE :2011-6-30	YUSAN INDUSTRIES LTD		

Technical specification 2-7

TECHNIAL DESCRIPTION

SOFTWARE IMPLEMENTED CLOCK / TIMER FUNCTION WITH 75.000kHz QUARTZ OSCILLATOR.

GENERAL PART

Timer Setting	:	Clock and Timer
Timer Wakeup Mode	:	LAST SETTING (MODE)
Remarks Time Setting	:	for 24hrs
Volume at Wakeup	:	Last Setting
No of Timer Settings	:	1
Clock Accuracy	:	Normal: 0.5 sec/day Limit : 1 sec/day

INDICATORS

Display Type	:	LCD

Remark

CLOCK / TIMMER SPECIFICATION

Class No		MCM2050/12/05/79		Ver	Issued Date
				1	5/3/2011
				2	6/30/2011
				3	
NAME :CY-QIN		10	SH 190 - 8		A4
		CHECK	DATE :2011-6-30	YUSAN INDUSTRIES LTD	

Technical specification 2-8

TECHNIAL DESCRIPTION

MP3 Link

MP3 Link Part

	Nom.	Limit	Condition
SNR unwt'd.	60dB	50dB	500mV 1KHz input
SNR wtd. dBA	62dBA	57dBA	500mV 1KHz input
Crosstalk (different source, 1KHz)	60dB	50dB	500mV input
Crosstalk (different source, 10KHz)	45dB	35dB	500mV input
L, R Channel Separation	36dB	30dB	500mV input
Frequency response 100HZ/10KHZ *1	5dB	+/-3dB	500mV input
THD (1KHz, 0dB)	2%	3%	500mV 1KHz input

AUX IN Part

SNR unwt'd.	/	/	/
SNR wtd. dBA	/	/	/
Crosstalk (different source, 1KHz)	/	/	/
Crosstalk (different source, 10KHz)	/	/	/
L, R Channel Separation	/	/	/
Frequency response (-3dB)	/	/	/
THD (1KHz, 0dB)	/	/	/

Description	Specification

Remarks :

*1 Volume control Voltage For 20

USB SPECIFICATION

Class No		MCM2050/12/05/79	Don Jun	Ver	Issued Date	
				1	5/3/2011	
				2	6/30/2011	
				3		
NAME :CY-QIN			10	SH 190 - 10		A4
		CHECK	DATE :2011-6-30	YUSAN INDUSTRIES LTD		

Disassembly drawing 3-1

MCM2050 Disassembly Drawing

1. Loosen screws in rear cabinet



Loosen PA 1.7x10 and 11 star BT 3x12 screws in rear cabinet

Electric screw driver

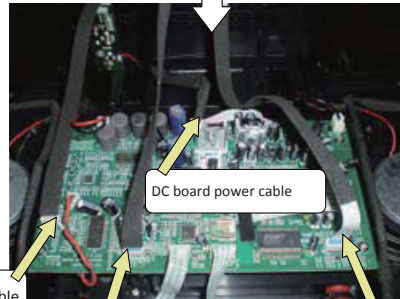
Torque:

PA1.7 X 10 : 1.8 ± 0.3 kgf.cm

BT3 X 12 : 4.5 ± 0.5 kgf.cm

Note: make different screws put in different places

2. Loosen rear cabinet and pull out the FFC cable and the power cord



a. pull out the rear cabinet by hands and put well

b. pull out two USB board FFC cable and power cord, FFC cord from main board

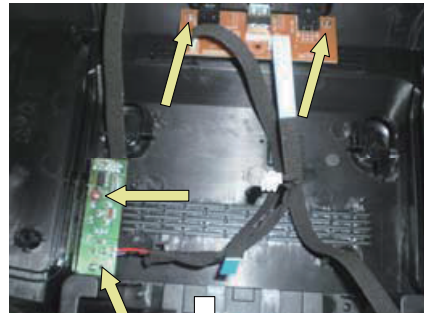
DC board radio cable

USB board AUX cable

USB cable



3. Loosen USB board, DC skewer board



a. loosen two PA 2.3x8 screws of fixed USB board

b. loosen two PA 2.3x8 screws of fixed DC skewer board

c. loosen USB board, DC skewer board and then place well them separately.

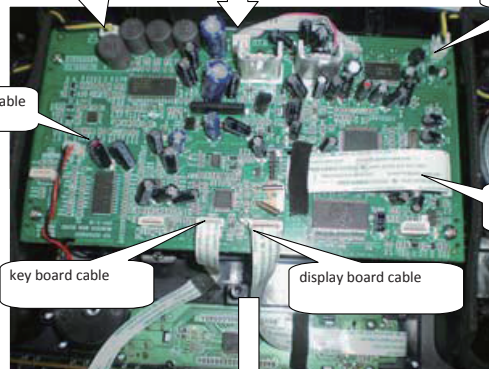
Electric screw driver

Torque:

2.0 ± 0.3 kgf.cm

Note: make different screws put in different places

4. Pull the main board cable



left speaker 2P cable

right speaker 2P cable

motor cable

key board cable

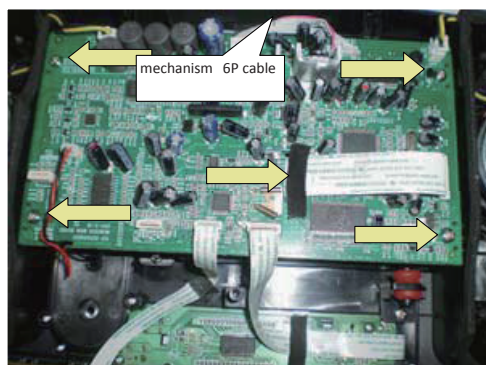
display board cable

CD mechanism FFC cable

Pull out cables in main board
(to avoid mangle the cable, the hands should be as near as possible to the socket)



5. Disassemble main board



mechanism 6P cable

a. loosen four BA 3x10 screws on main board

b. tear off black velvet paper on the CD mechanism FFC cable and unplug the mechanism 6P cable

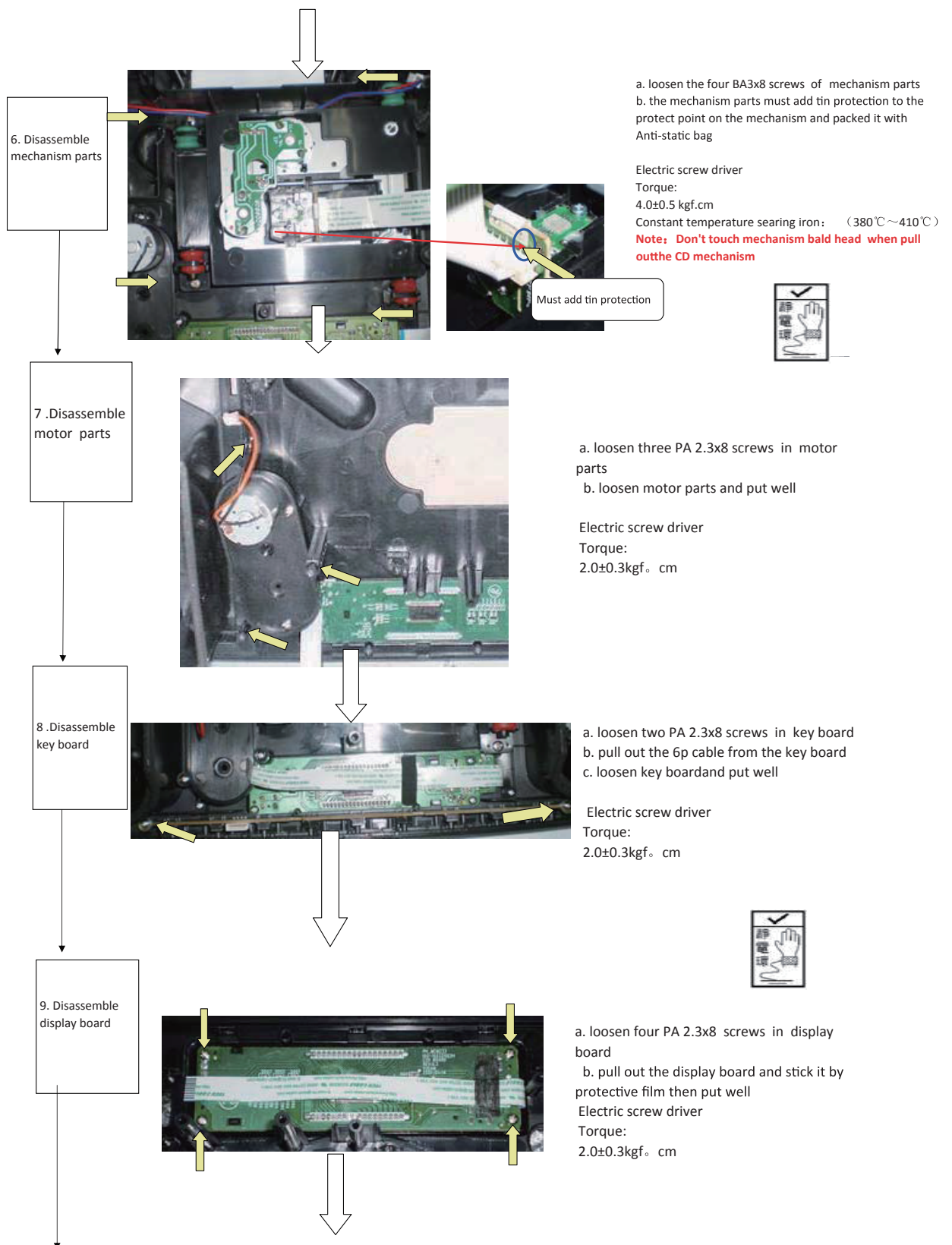
c. pull out the main board and put well

Electric screw driver

Torque:

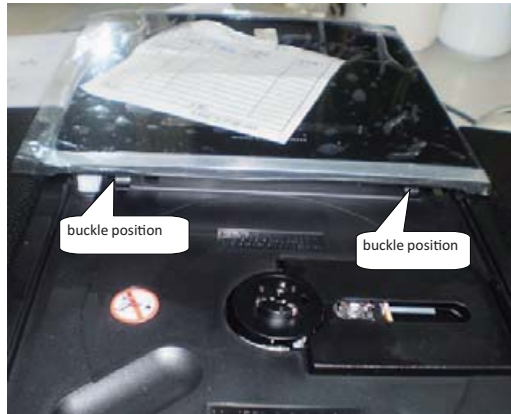
4.0 ± 0.5 kgf.cm

Disassembly drawing 3-2



Disassembly drawing 3-3

10. take the CD door



a. hold the CD door with the right hand, press CD door and buckling with the left hand, then press other side buckling and pull out the CD door gently

b. put the CD door well

as the below shows:



图1



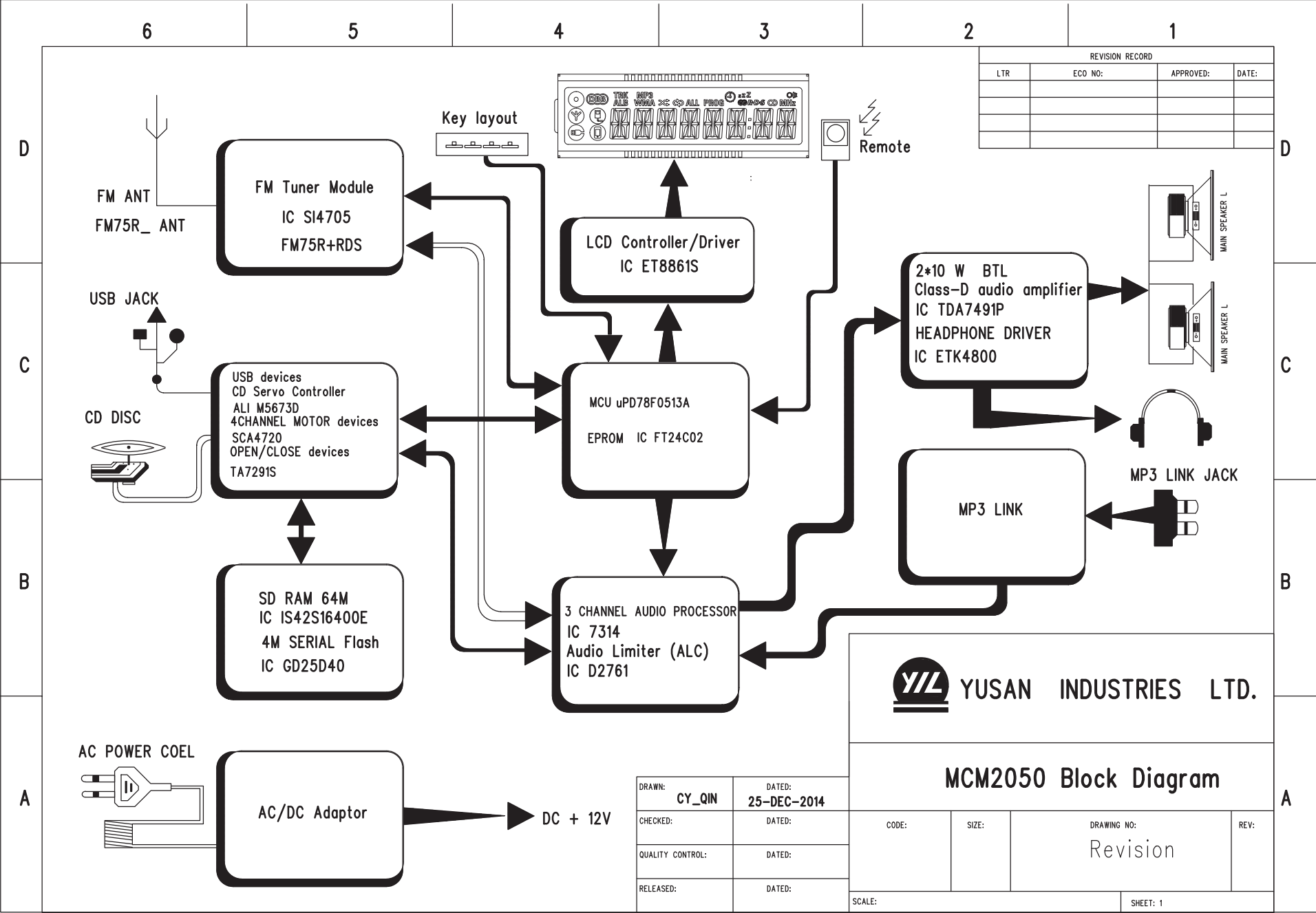
图2

编制:杨桥秀

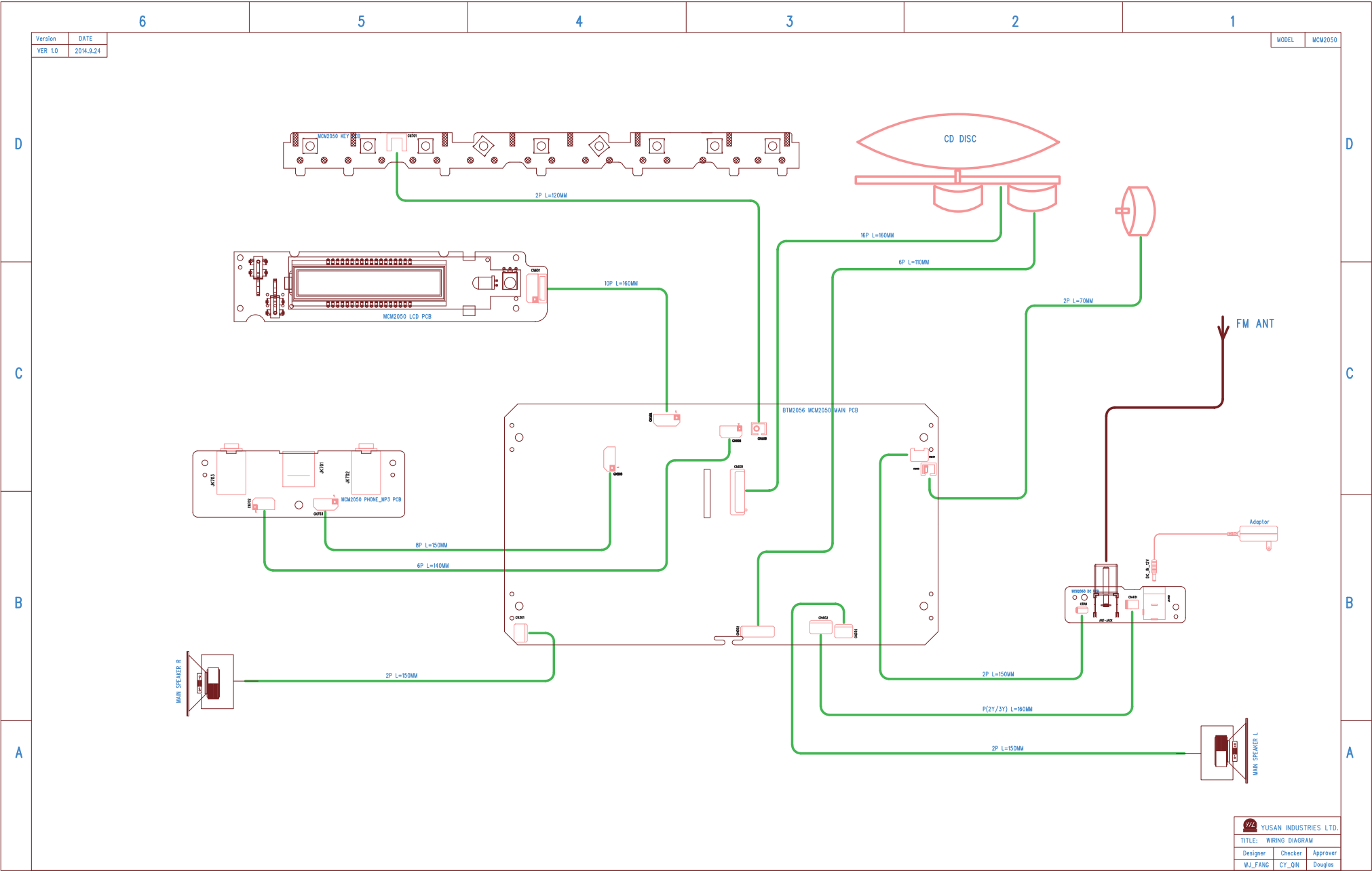
审核:何飏

批准:王青春2014-7-1

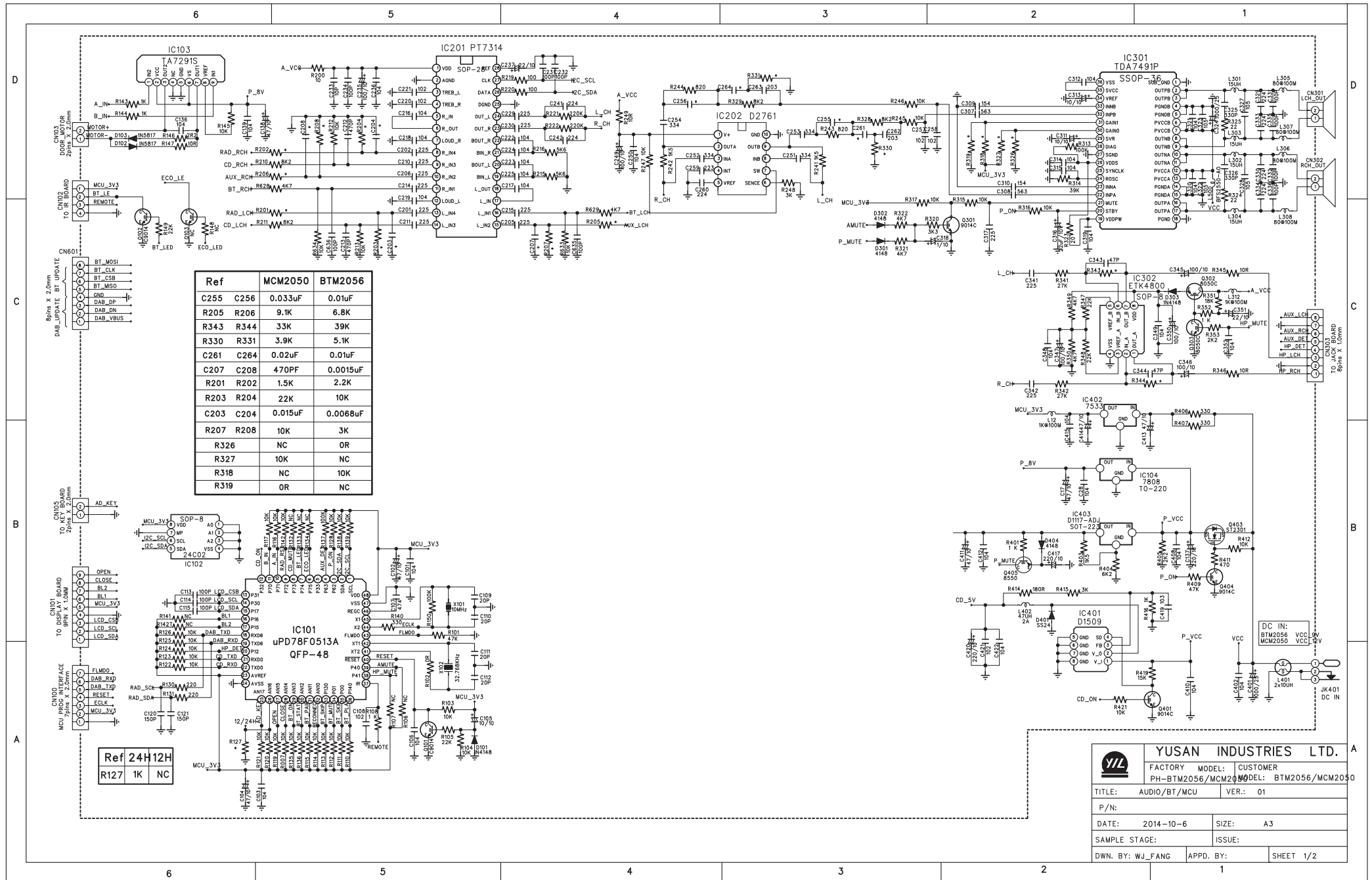
Block diagram 4-1



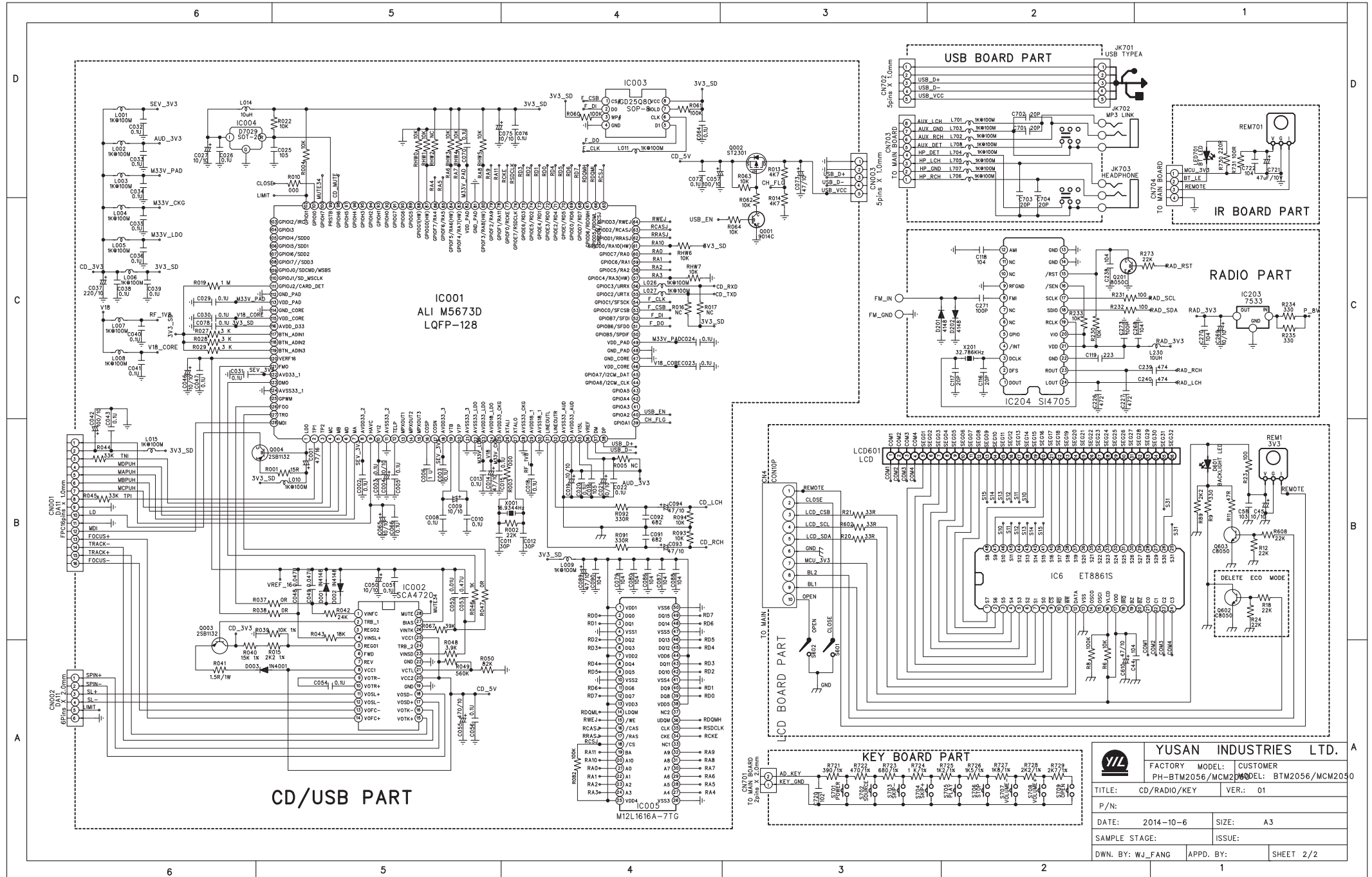
Wiring diagram 5-1



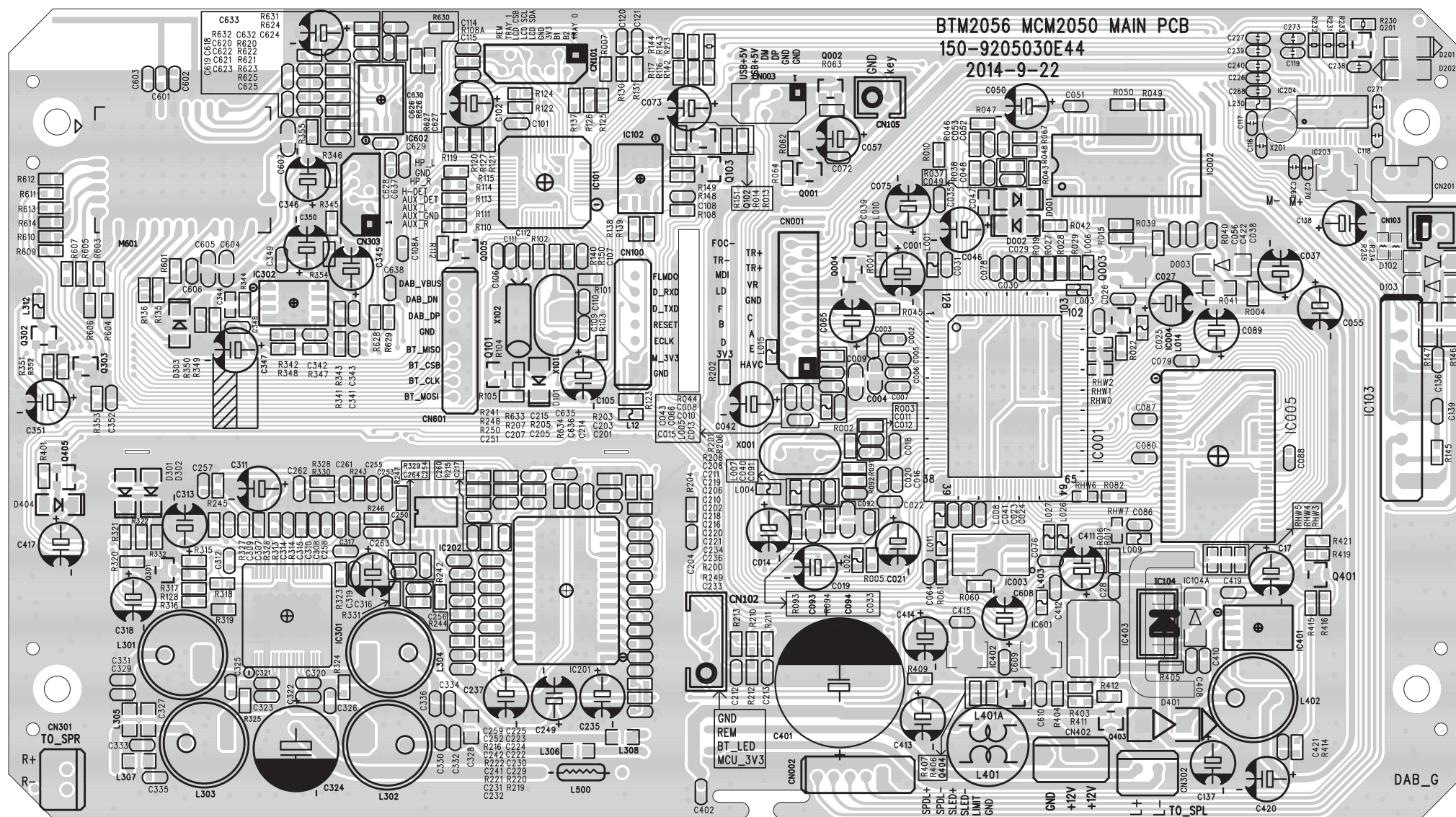
Circuit Diagram 6-1



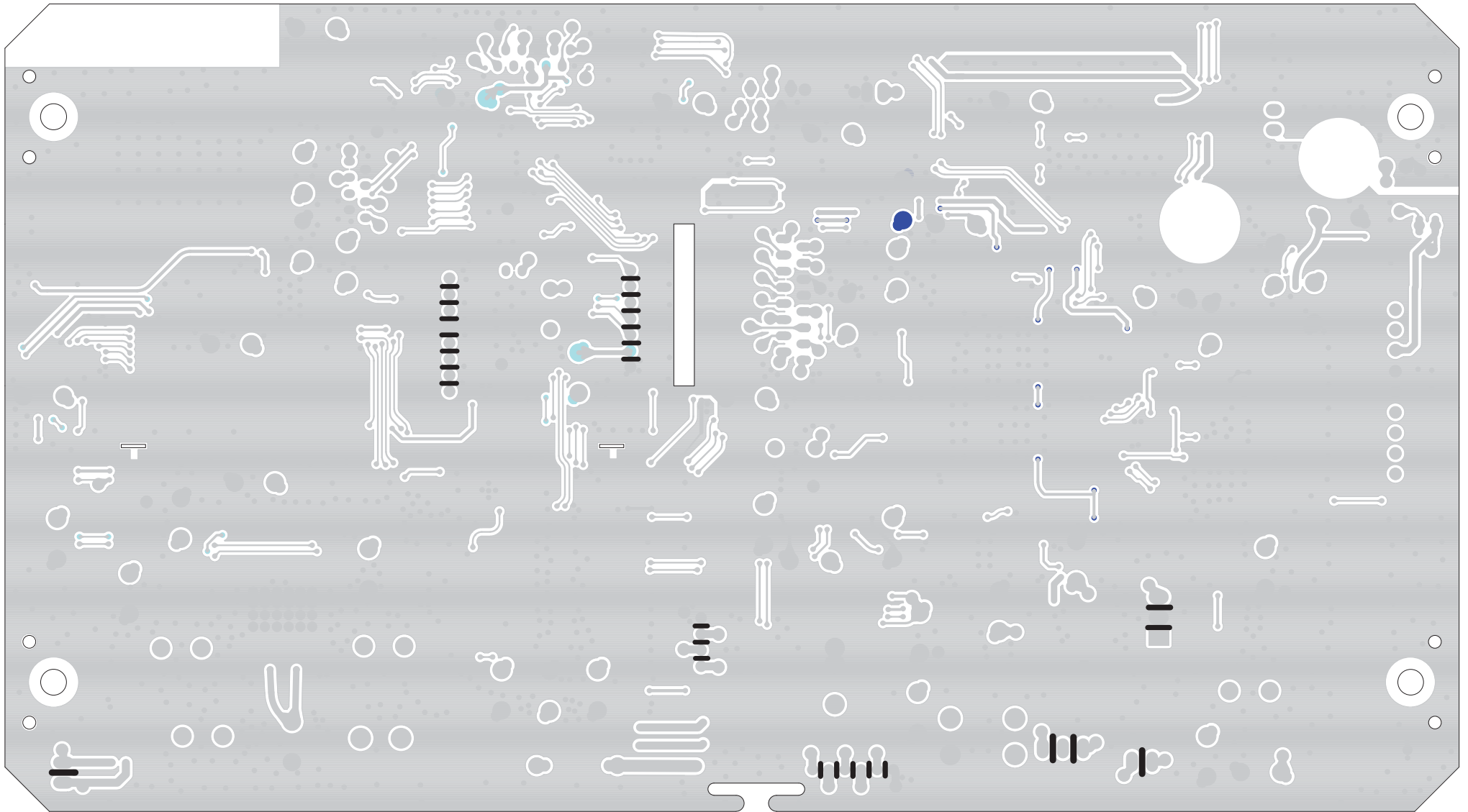
Circuit Diagram 6-2



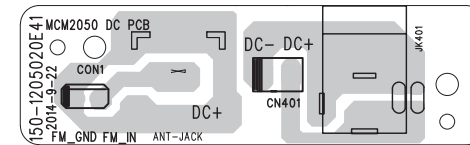
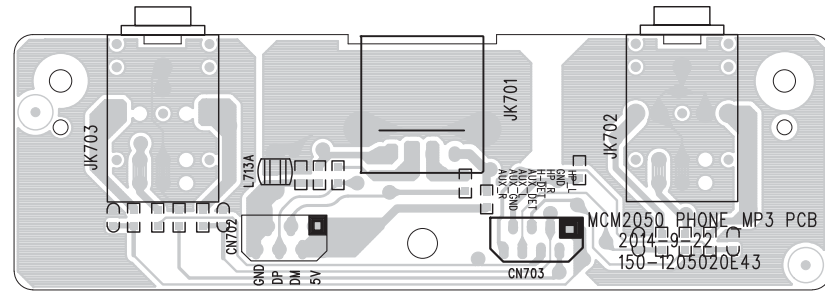
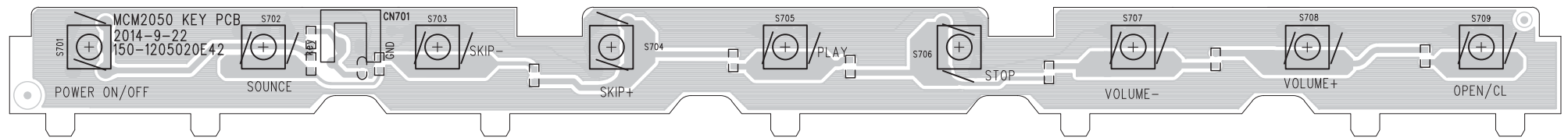
MAIN BOARD TOP LAYOUT DRAWING 7-1



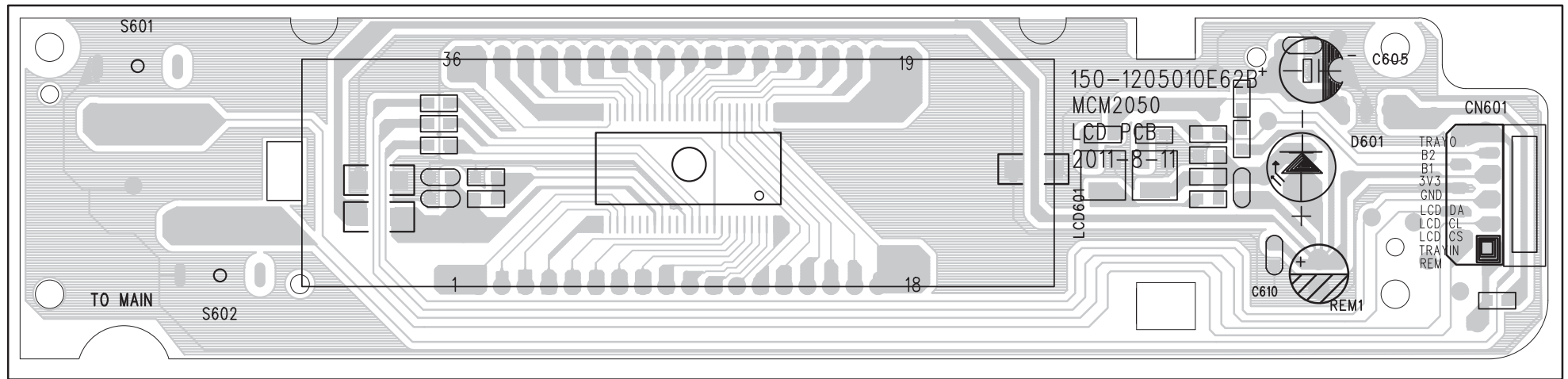
MAIN BOARD BOTTOM LAYOUT DRAWING 7- 2



KEY+DC+MP3 BOARD TOP & BOTTOM LAYOUT 7-3

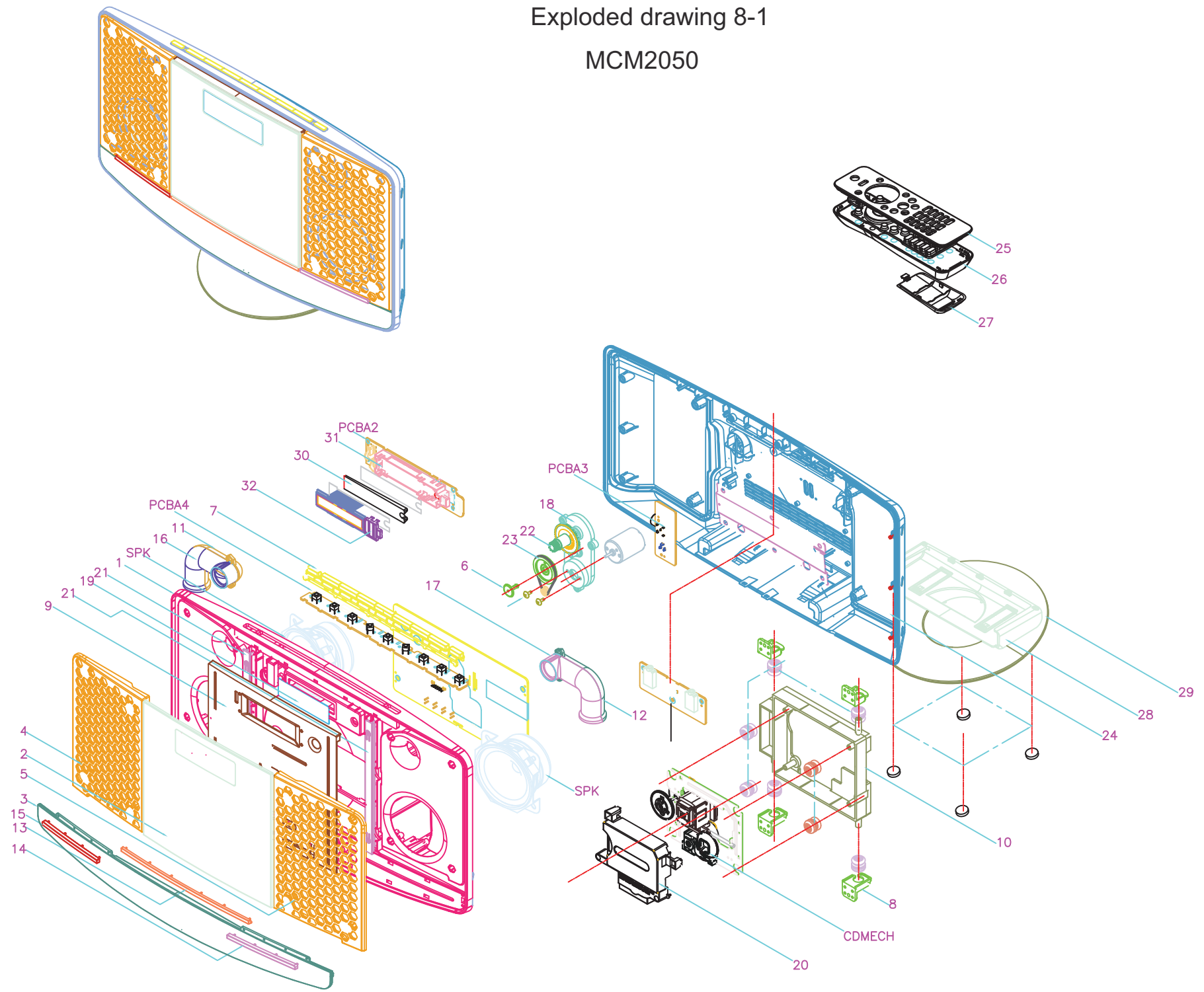


LCD BOARD TOP & BOTTOM LAYOUT 7-4



Exploded drawing 8-1

MCM2050



Revision list

V1.0 2014 -12-30 initial release