

Service Manual

DPR-45

DAB / FM / AM 3-BAND RECEIVER

CONTENTS

Specification.....	2-4
Block Diagram.....	5
PCB-A-E Top View.....	6
PCB-A-E Bottom View.....	7
PCB-B Top View.....	8
PCB-B Bottom View.....	9
PCB-C Top View.....	10
PCB-C Bottom View.....	11
Wiring Diagram.....	12
Troubleshooting Flow Chart.....	13-14
Electrical Parts List.....	15-18
Mechanical Parts List.....	19-20
Exploded Views.....	21
IC Circuit Block Diagram.....	22-27
Semiconductor Lead Identifications.....	28
IC and Transistor Voltage Chart.....	29-31
All Schematic Diagram.....	32

Specification

FM. ELECTRICAL PERFORMANCE

Model : DPR-45	Brand : SANGEAN			Date : 2014/5/14		
Temp : 25° C	R.H : 75%					
Test Item	Condition			Value		Unit
	Input	Output	freq	Nom.	Lim.	
Tuning Range		S/N=6dB	Min	87.5		MHz
		S/N=6dB	Max	108		
Max. Sensitivity		S/N=6dB	90	8	14	dBμ
			98	8	14	
			106	8	14	
Usable Sensitivity		S/N=30dB	90	14	20	dBμ
			98	14	20	
			106	14	20	
3db Limiting(1mV)	60dBμ		98MHz	20	26	dBμ
Min. output				1	3	mV
Auto scanning Stop Sens.				26	32	dBμ
Am. Suppression(1mV)					30	dB
S/N Ratio				50	44	dB
Audio Fidelity (-3dB W/50us pre emphasis)				90	120	
				15K	12K	
Current consumption (Batt=6V/Backlight off)		R.O		220	280	mA
Output Power 400Hz (75kHz Dev)	SPK Load 4Ω			1	0.7	W
Output Power 1KHz (75kHz Dev)	E.P Load 32Ω			3	1	mW
Equalizer	Vol Max EQ VR Mid 10KHz=0dB	Treble (10KHz)	L	-9	-7~ -13	dB
			R	+10	+8~ +14	
	Vol Max EQ VR Mid 100Hz=0dB	Bass (100Hz)	L	-9	-7~ -13	
			R	+11	+9~ +15	
T.H.D. (45KHz dev.)				1	2	%
Over load capacity				106	100	dBμ
Stereo separation				22	16	dB
Lowest Batt.Volt	60dBμ			3.8	4.2	V
Standby current consumption (Batt = 6V/Backlight off)				350		uV
Supply Voltage : AC 230V Batt 6V	R.O : 50mW			Load : SPK 4Ω EP L 32Ω		
Modulation : Dev.22.5kHz 1KHz (with 20KHz LPF)						
Remark :	Approved by :			Released / Tested by :		

Specification

DAB(BAND III) ELECTRICAL PERFORMANCE

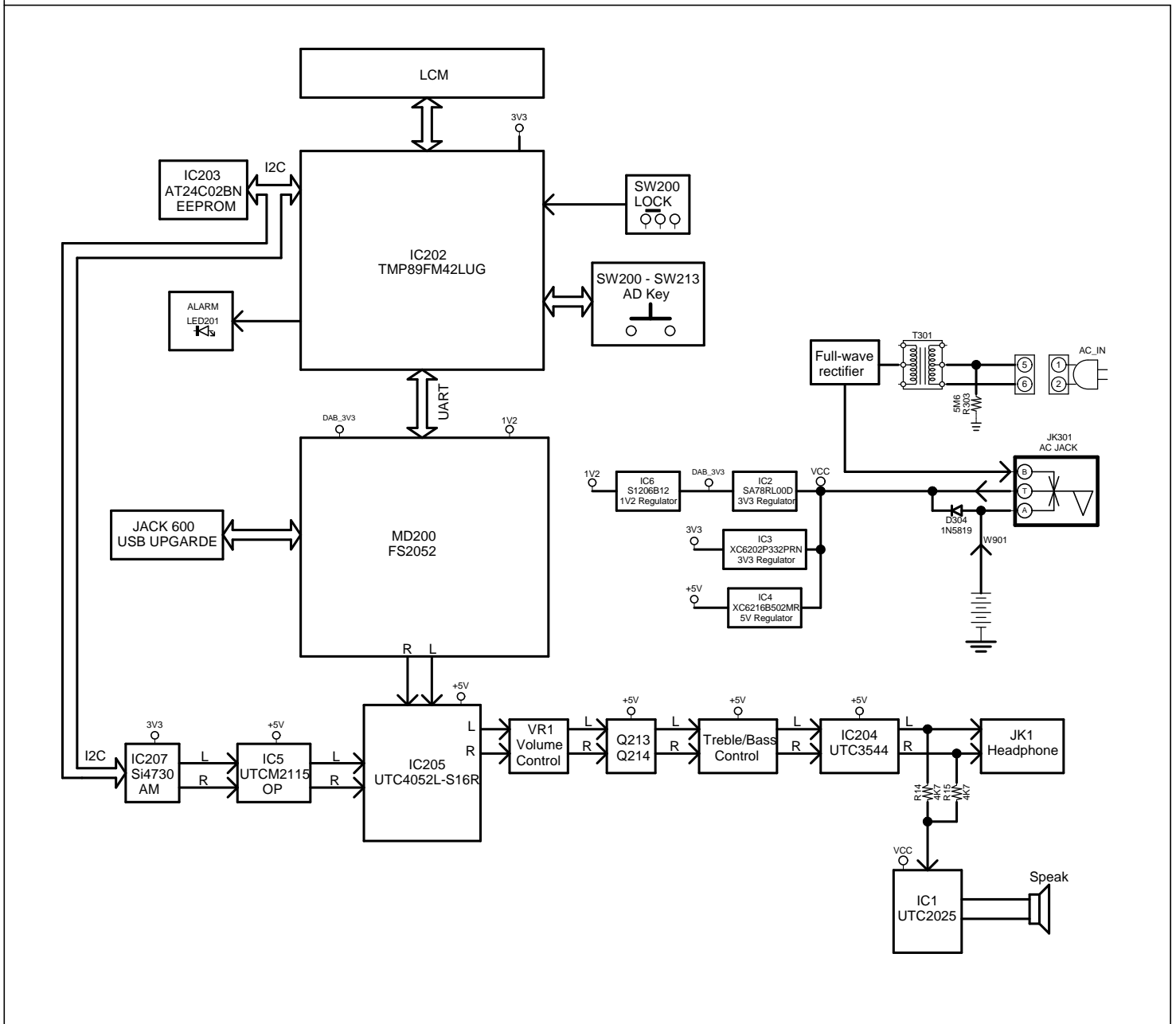
Model : DPR-45		Brand : SANGEAN		Date : 2014/5/14			
Temp : 25° C		R.H : 75%					
Test Item		Condition		CH	Nom.	Lim.	Unit
RF Freq. Range				Min	5A		CH
				Max	13F		CH
Adjacent Channel Selectivity		Fc : -70 dBm (Wanted channel) Fi : \geq -38 dBm (Unwanted channel) (Measurement to EN50248)		10A		32	dB
Far-off Selectivity		Fc : -70 dBm (Wanted channel) Fi : \geq -25 dBm FM 75KHz/dev. Fc \pm 5MHz (Unwanted channel) (Measurement to EN50248)		10A	50	42	dB
Sensitivity		Without pop noise		5A	-93	-90	dBm
				10A	-94	-91	dBm
				12B	-94	-91	dBm
				13F	-93	-90	dBm
Acquisition Selectivity		(Measurement to EN50248) Tunning tune		5A	-98	-94	dBm
				10A	-99	-94	dBm
				12B	-99	-95	dBm
				13F	-98	-95	dBm
S/N Ratio with 20KHz LPF		Without pop noise		10A	60	50	dB
Max. input Signal		Without pop noise		10A	0	-10	dBm
T.H.D. with 20KHz LPF		Input : -10dBm		10A	1	3	%
Channel Balance		Input : -10dBm		10A	1	\pm 2	dB
Current Consumption (Batt=6V/Backlight off)		Without pop noise		12B	200	260	mA
Supply Voltage : AC 230V Batt 6V		R.O : 50mW		Load : SPK 4 Ω EP 32 Ω			
Modulation : 1KHz with 20KHz LPF							
Channel	Freq.(MHz)		Channel	Freq.(MHz)			
5A	174.928		5B	176.640			
13F	239.200		12B	225.648			
10A	209.936		13E	237.488			
Remark :		Approved by :			Released / Tested by :		

Specification

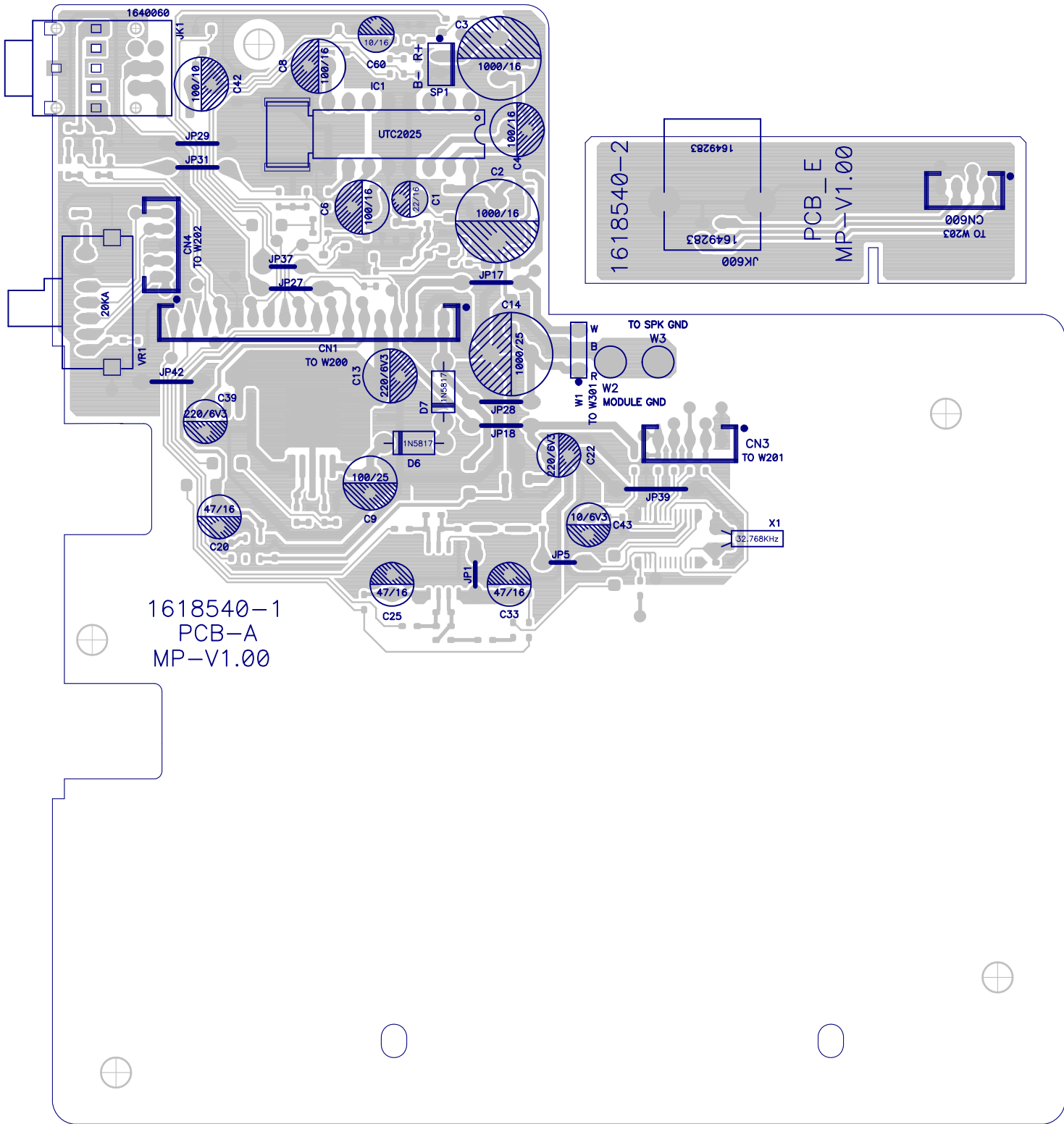
AM ELECTRICAL PERFORMANCE

Model : DPR-45		Brand : SANGEAN			Date : 2014/5/14	
Temp : 25° C		R.H : 75%				
Test Item	Condition			Value		Unit
	Input	Output	freq	Nom.	Lim.	
Tuning Range		S/N=6dB	Min.	522		KHz
		S/N=6dB	Max.	1710		
Max. Sensitivity		S/N=6dB	603KHz	40	46	dBμ/m
			999KHz	40	46	
			1404KHz	40	46	
Usable Sensitivity		S/N=20dB	603KHz	54	62	dBμ/m
			999KHz	52	60	
			1404KHz	50	58	
Selectivity(±10KHz)		S/N=6dB	999KHz	60	54	dB
T. H. D.		R.O		1	1.5	%
Auto Scanning Stop Sens.				52	58	dBμ
S/N Ratio				36	30	dB
Current Consumption (Batt=6V/Backlight off)		R.O		150	190	mA
Freq.Response(-6dB)	1K=0dB			100	200	Hz
				2.5	1.8	KHz
Output power (Mod 80%)	SPK Load 4Ω			1	0.7	W
Output Power 1KHz (Mod 80%)	E.P Load 32Ω			3	1	mW
Over Load Capacity	80%	10%THD		106	100	dBμ/m
Whistle Modulation(5mV/M)	74dBμ/m		2I/3IF		<15	%
Supply Voltage : AC 230V Batt 6V		R.O : 50mW			Load : SPK 4Ω EP 32Ω	
Modulation : Dev.30% 1KHz (with 20KHz LPF)						
Remark :		Approved by :			Released / Tested by :	

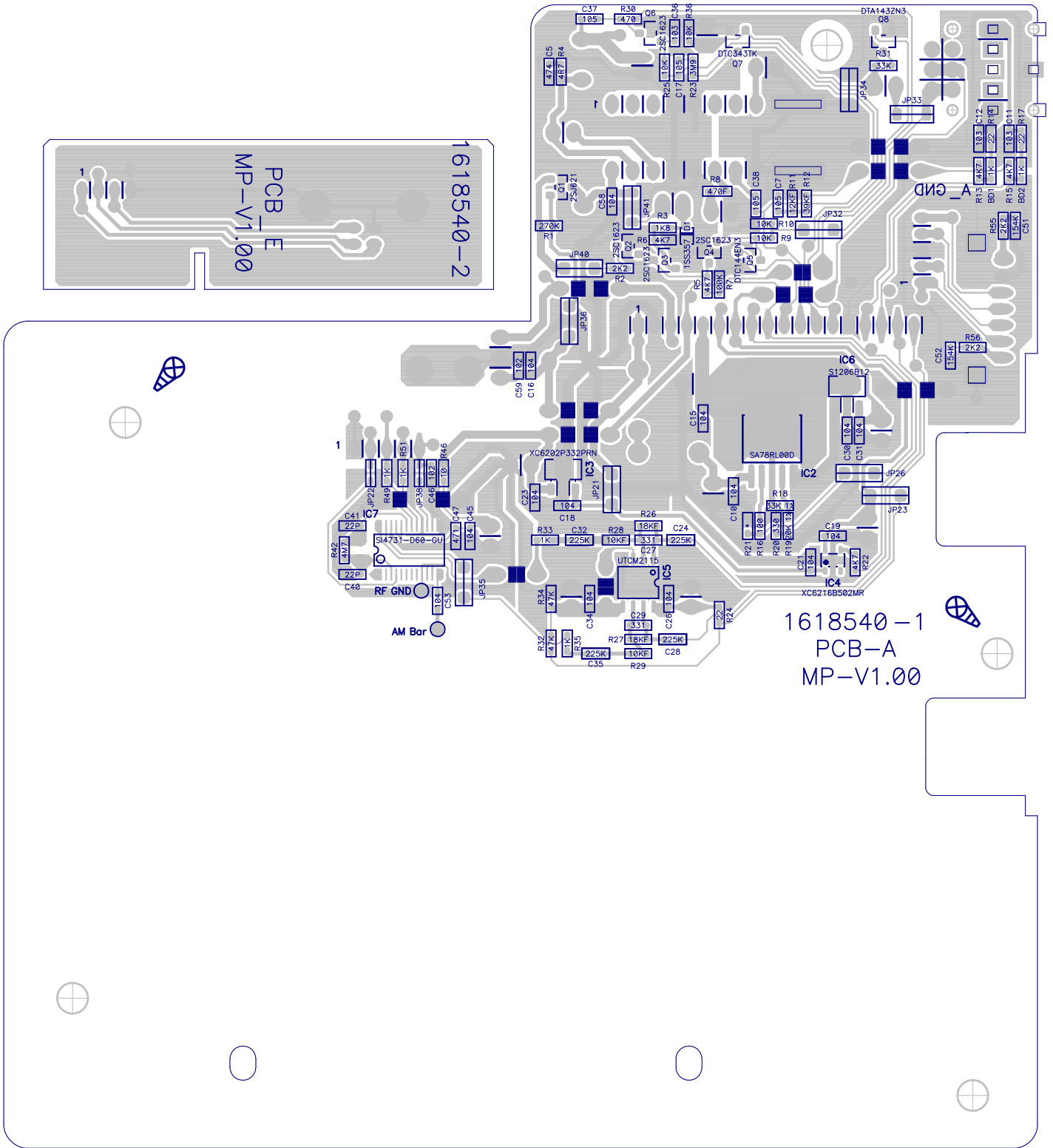
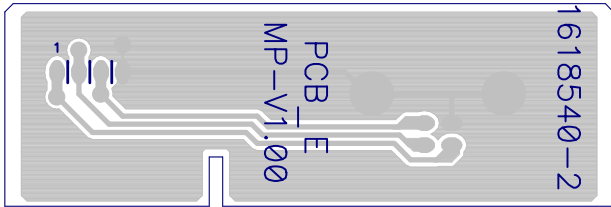
BLOCK DIAGRAM



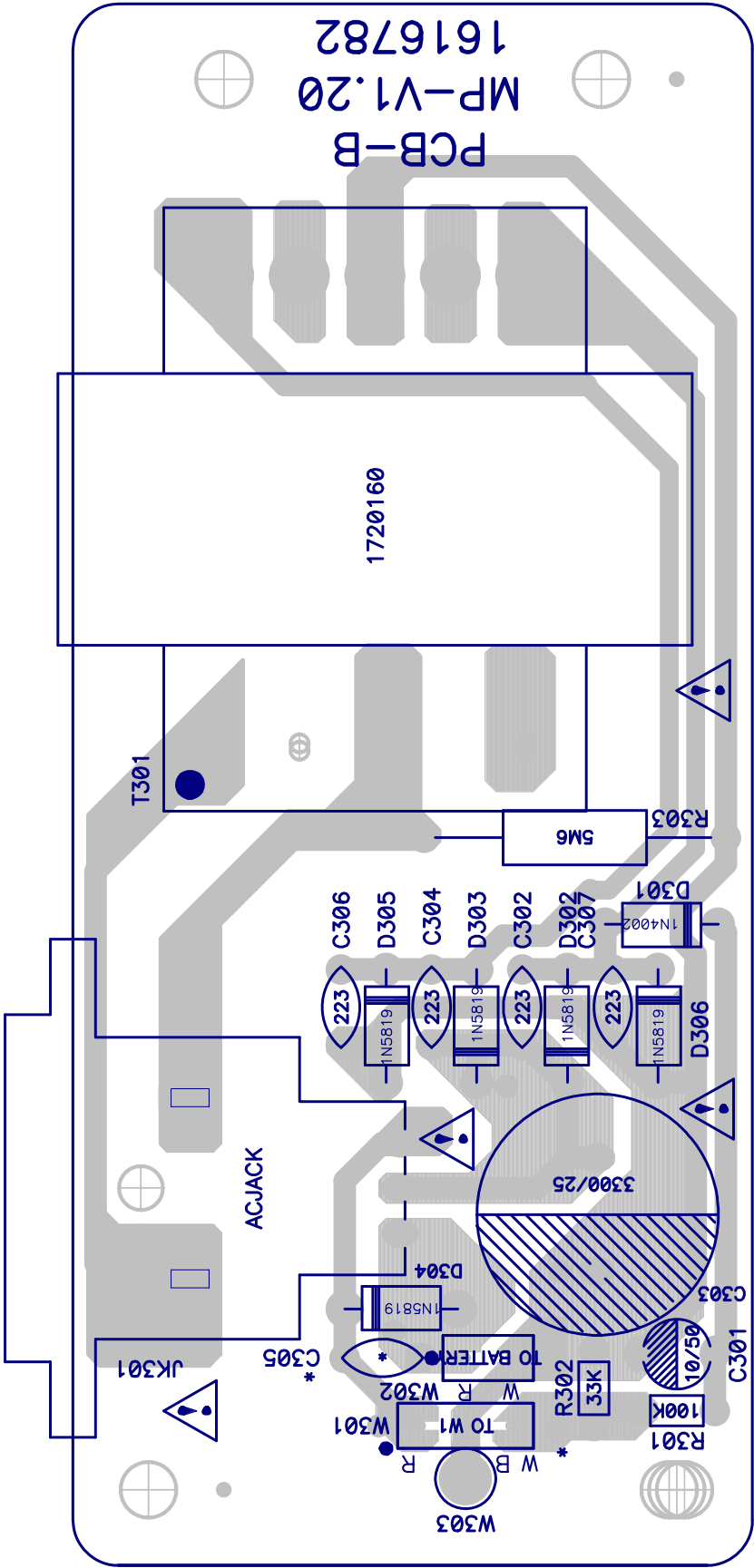
PCB-A-E TOP VIEW



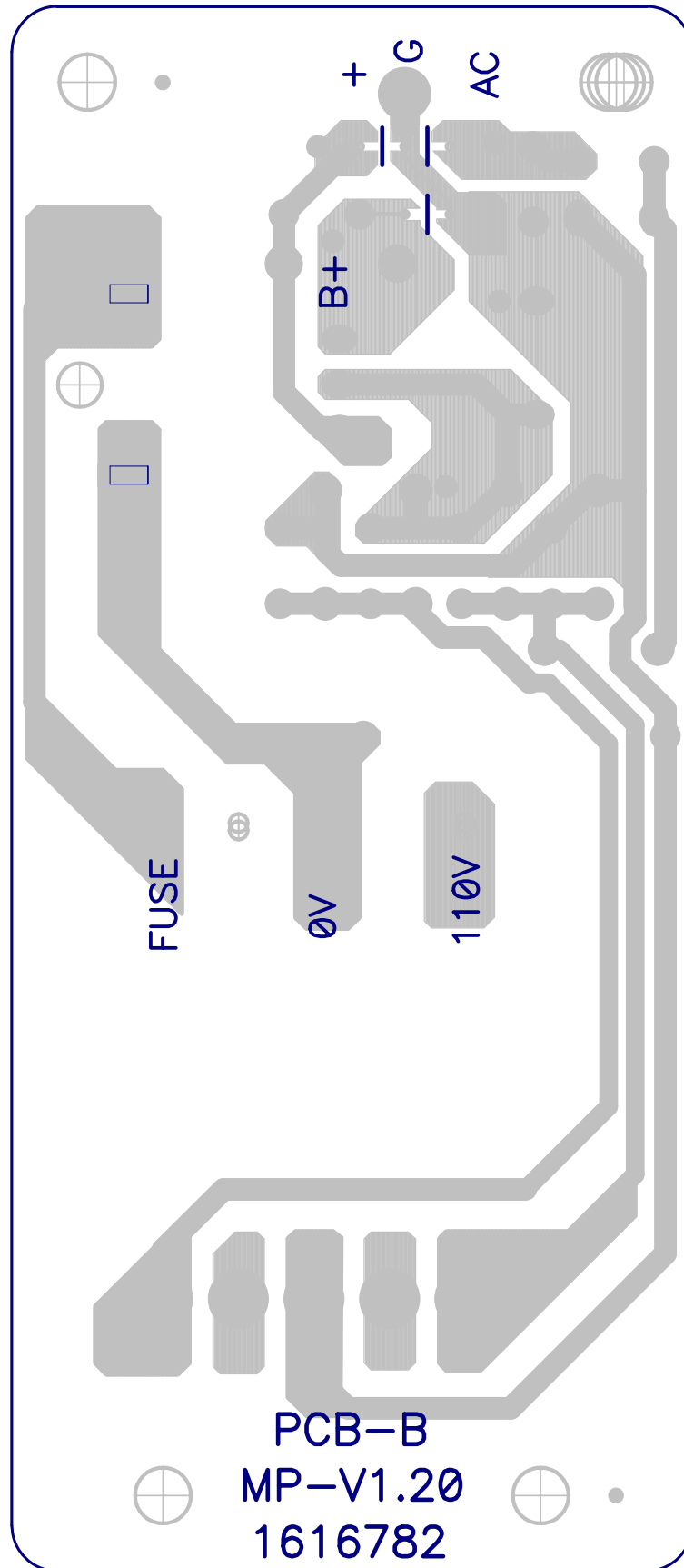
PCB-A-E BOTTOM VIEW



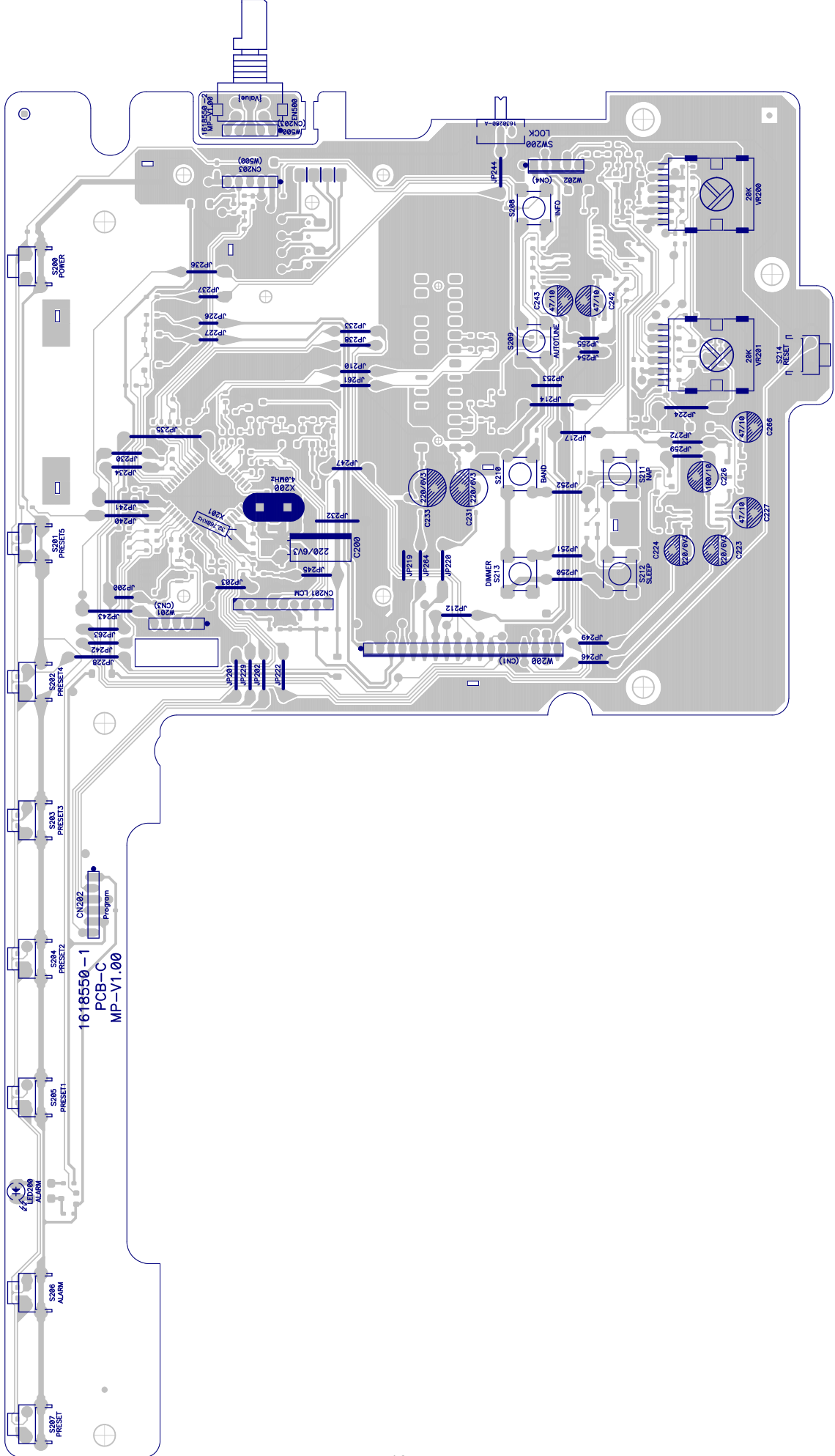
PCB-B TOP VIEW



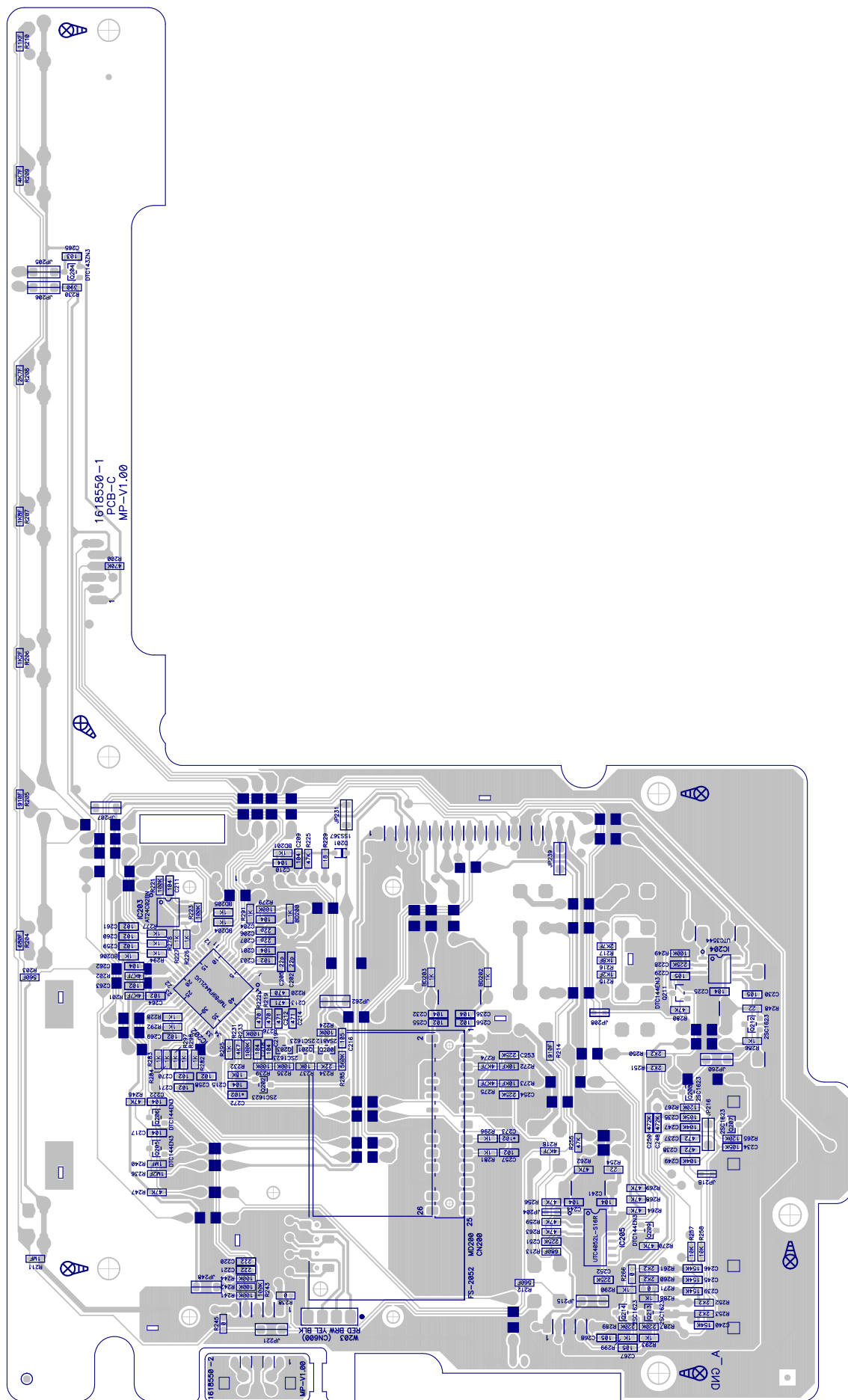
PCB-B BOTTOM VIEW



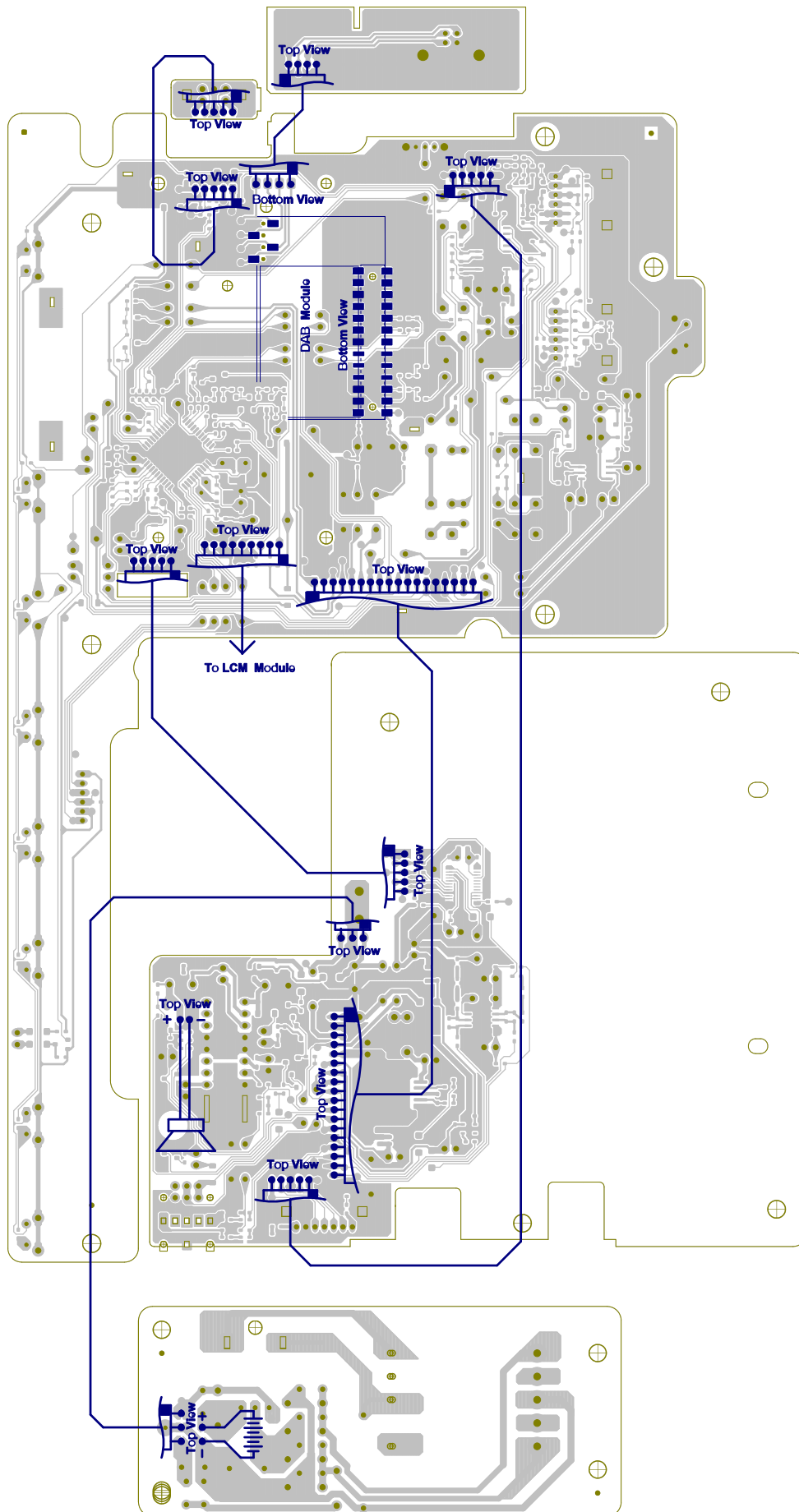
PCB-C TOP VIEW



PCB-C BOTTOM VIEW

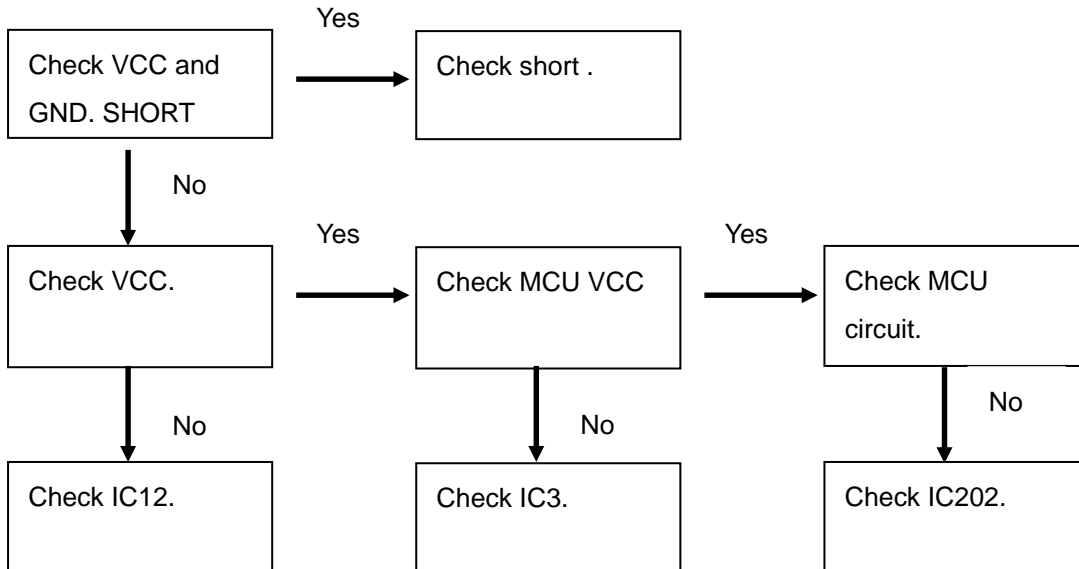


WIRING DIAGRAM

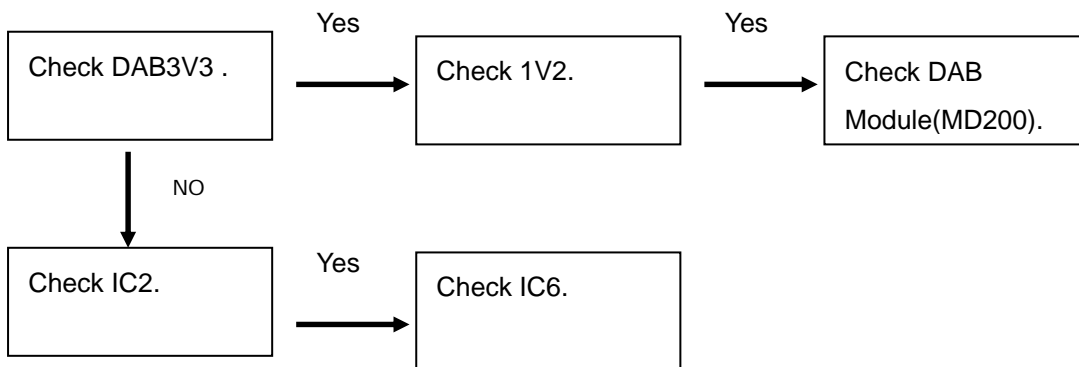


TROUBLESHOOTING FLOW CHART

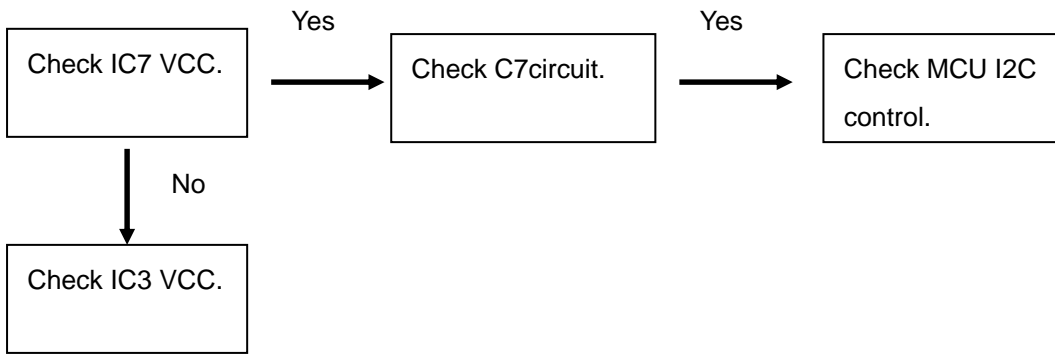
Power can not be turned on



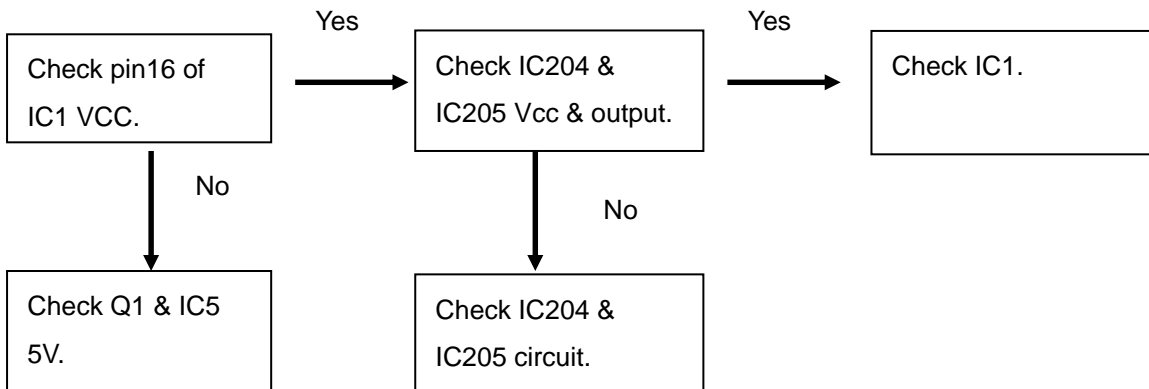
DAB & FM can not turn on



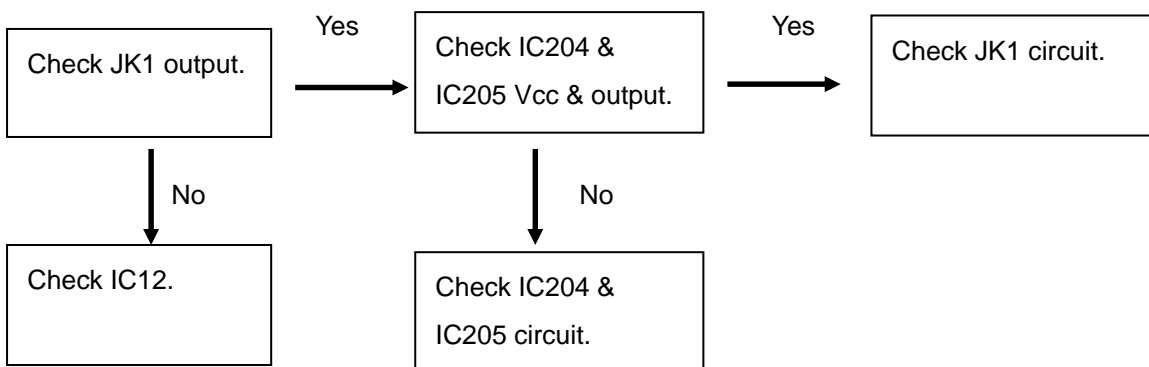
AM can not turn on



SPK can not be turned on



Earphone can not be turned on



ELECTRICAL PARTS LIST

000YF100C

DPR-45

Date : 2014/07/10

PART NO.	DESCRIPTION	Q'TY	REMARK
1001340	CH LSI TMP89FM42LUG LQFP-44	1	IC202,
1013794	CH IC GT24C02-2GLI-TR SOP-8	1	IC203,
1014660	CH IC UTC4052L-S16-R	1	IC205,
1014880	CH IC 6202P332PRN	1	IC3,
1015810	CH IC S-1206B12 SOT-89	1	IC6,
1016610	CH IC UTC M2115 SOP-8	1	IC5,
1017421	CH IC SA78RLXXD TO-252-5L	1	IC2,
1017632	CH IC Si4730-D60-GU/R SSOP24	1	IC7,
1017950	IC UTC2025 DIP-16	1	IC1,
1018170	CH IC UTC3544G-S08-R SOP-8	1	IC204,
1018230	CH IC XC6216B502MR-G SOT-25	1	IC4,
1020530	CH TR 2SA812-M6 SOT-23	1	Q200,
1022131T	CH TR 2SC DTC343TKT146-T	1	Q7,
1022560	CH TR 2SC1623-L6 SOT-23	4	Q2,Q3,Q4,Q6,
1022561	CH TR 2SC1623-L7 SOT-23	8	Q201,Q202,Q207,Q208,Q203,Q212,Q213,Q214,
1026140	CH TR DTC144EN3 SO-T23	5	Q5,Q205,Q206,Q209,Q211,
1026144	CH TR DTC143ZN3 SOT-23	1	Q204,
1026151	CH TR DTA143ZN3 SOT23	1	Q8,
1030380	CH FET 2SJ621 SC-96	1	Q1,
1041030T	DIODE IN4002T	1	D301,
1041192T	SCHOTTKY 1N5817-T DO-41	2	D6,D7,
1041204T	SCHOTTKY 1N5819-T DO-41	5	D302,D303,D305,D306,D304,
1041221	CH SCHOTTKY 1SS367 SOD-323	1	D201,
1046250	CH DIODE 1SS357	1	D1,
1050152	LED RED 3Ø 304IT3B-001/G94	1	LED200,
1111681	BAR ANT & COIL 1681 AM	1	ANT BAR,
1150311	CH BEAD 1K-1608	9	BD1,BD2,BD205,BD206, BD200,BD201,BD202,BD203,BD204,
1150470	CORE K5B RH 9.5x19.5x5	1	ANT_CORE,
131B203DC012	R-VR 20KAx2 RV142TF-20-20A	1	VR1,
131D203ED022	R-VR 20KBx2 RV112BCF-40-20A	2	VR200,VR201,
1616782	PCB B DPR-45 1.6T/1	1	
1618540	PCB A DPR-45A 1.6T/1	1	
1618550	PCB C DPR-45A 1.6T/1	1	
1620461	SPK 5" 4Ω 6W	1	
1630280	SLIDE SW.1P2C	1	SW200,
1630680	TACT SW 100±50gf 7mm	6	S208,S209,S210,S211,S212,S213,
1631012	TACT SW 100±50gf 3.85mm	5	S201,S202,S203,S204,S205,
1631022	TACT SW 1P1C SFKHHL1534	3	S200,S206,S207,
1631032	TACT SW 1P1C SFKHHLQ1914	1	S214,
1640060	JACK EP 3.5φ W/SW BLK	1	JK1,
1646021	JACK AC W/SW HJC-021-P	1	JK301,
1649283	JACK USB YUBB2ABC04A	1	JK600,

ELECTRICAL PARTS LIST

000YF100C

DPR-45

Date : 2014/07/10

PART NO.	DESCRIPTION	Q'TY	REMARK
1650150	X'TAL 32.768KHZ±10Ppm 2×6	2	X1,X201,
1650790	X'TAL 4M±20PPM AT-49	1	X200,
1700H2A04V073	CH HOUSING 2.54x4P-V	1	MD200:2,
1700H2A26V033	CH HOUSING 2.54x13Px2-V	1	MD200:1,
1701H2004V013	HOUSING 2x4P-V	1	CN600,
1701H2005V013	HOUSING 2x5P-V	2	CN4,CN3,
1701H2009V113	HOUSING 2x9P-V	1	CN201,
1701H2018V013	HOUSING 2x18P-V	1	CN1,
1701T2009V253	TIP 2x9P-V	1	TO LCM,
170312145050	CNT/W-A 120(2+5P)	1	W201,
17031514J010	CNT/W-A 150(2+18P)	1	W200,
170390045010	CNT/W-A 90(2+5P)	1	W202,
170680044030	CNT/W-S 80(2+4P)	1	W203,
170A15142040	W-A/2 150(6+6)	1	SP1,
170A261D201U	W-A/2 260(4+6)	1	W302,
170A301D301U	W-A/3 300(4+6)	1	W1,
170B35111010	W-C/1 350(3+3)	1	RF CABLE,
170C5001501U	W-FC/5 50(3+3)P=2	1	W500,
1721131	X'FM 230V 7.5V/0.6A EuP CE	1	T301,
1730121	EN/SW RE111F21B1-15F-20P	1	EN500,
1903043	LCD/M 0037A-HTGLWU-J DCR-200	1	
1905710	DAB/M VERONA DAB/+ DPR-45A CE	1	
1A0110110M10	W-A/1 110(3+3) BLK	1	W3,
1A0420050M10	W-A/1 50(3+3) BLK	1	W303,
1A0420080M10	W-A/1 80(3+3) BLK	1	A_GND,
1A8000010	W/JUMP 5(10)0.6mm	9	JP200,JP226,JP227,JP237,JP254, JP255,JP1,JP5,JP37,
1A8000030	W/JUMP 7.5(10)0.6mm	37	JP17,JP18,JP27,JP28,JP29,JP31,JP42, JP201,JP202,JP203,JP229,JP263, JP210,JP212,JP217,JP219,JP220, JP222,JP230,JP233,JP234,JP236, JP238,JP242,JP244,JP245,JP246, JP247,JP249,JP250,JP251,JP252, JP253,JP259,JP261,JP264,JP272,
1A8000040	W/JUMP 10(10)0.6mm	8	JP39,JP241,JP243, JP214,JP224,JP228,JP232,JP240,
1A8000090	W/JUMP 15(10)0.6mm	1	JP235,
1SYF0100	DPR-45A-P01.h16	1	
3A86C510B	AC CORD 1.9m CE BLK	1	
4222314T1	TU 223Z 50V Y5V-T	4	C302,C304,C306,C307,
44106347T2H0	EL 106M 16V 4x7-T 105	1	C60,
4410635AT2H0	EL 106M 16V 5x11-T 105	1	C43,
4410665AT1H0	EL 106M 50V 5x11-T 105	1	C301,

ELECTRICAL PARTS LIST

000YF100C

DPR-45

Date : 2014/07/10

PART NO.	DESCRIPTION	Q'TY	REMARK
44107257T2H0	EL 107M 10V 5x7-T 105	1	C226,
44107367T0H0	EL 107M 16V 6.3x7-T 105	5	C4,C42,C6,C8,C9,
441083ADT0H0	EL 108M 16V 10x14-T 105	2	C2,C3,
441084AHT0H0	EL 108M 25V 10x21-T 105	1	C14,
44226347T2H0	EL 226M 16V 4x7-T 105	1	C1,
4422715AT2H0	EL 227M 6.3V 5x11-T 105	4	C13,C22,C39,C200,
44227165T0H0	EL 227M 6.3V 6.3x5-T 105	4	C223,C224,C231,C233,
443384DKU0H0	EL 338M 25V 16x26 105	1	C303,
44476257T2H0	EL 476M 10V 5x7-T 105	4	C227,C242,C243,C266,
44476357T2H0	EL 476M 16V 5x7-T 105	3	C20,C25,C33,
5410261	CH CC 102K 50V X7R-C	15	C59,C46,C264, C255,C256,C257,C258,C259,C260, C261,C269,C270,C271,C203,C263,
5410361	CH CC 103K 50V X7R-C	4	C11,C12,C36,C265,
5410461	CH CC 104K 50V X7R-C	14	C10,C15,C16,C18,C19,C21,C23, C26,C30,C31,C34,C45,C53,C58,
5410467	CH CC 104K 25V X7R-C	18	C201,C209,C210,C211,C215,C217, C218,C219,C222,C225,C232,C236, C241,C244,C247,C249,C204,C262,
5410556	CH CC 105Z 16V Y5V-C	11	C7,C17,C37,C38,C268, C229,C230,C234,C235,C216,C267,
5415466	CH CC 154K 16V X7R-C	6	C51,C52,C239,C240,C245,C246,
5422001	CH CC 220J 50V NPO-C	6	C40,C41,C202,C205,C206,C207,
5422261	CH CC 222K 50V X7R-C	2	C220,C221,
5422590	CH CC 225K 10V X5R-C	9	C24,C28,C32,C35, C228,C251,C252,C253,C254,
5433101	CH CC 331J 50V NPO-C	2	C27,C29,
5447101	CH CC 471J 50V NPO-C	1	C47,
5447161	CH CC 471K 50V X7R-C	3	C212,C213,C214,
5447261	CH CC 472K 50V X7R-C	4	C237,C238,C248,C250,
5447466	CH CC 474K 16V X7R-C	1	C5,
60100104T	RD 1/8W 100KJ-T	1	R301,
60100333T	RD 1/8W 33KJ-T	1	R302,
61301000	CH RD 0J-0603	9	JP22,JP38,R266,R271, JP204,JP208,JP218,R238,R245,
61301100	CH RD 10J-0603	1	R46,
61301101	CH RD 100J-0603	1	R16,
61301102	CH RD 1KJ-0603	25	R49,R33,R35,R51,R297,R298,R299, R226,R227,R228,R277,R278,R281, R282,R283,R284,R286,R288,R290, R291,R292,R293,R294,R295,R296,
61301103	CH RD 10KJ-0603	7	R10,R25,R36,R9,R237,R257,R258,
61301104	CH RD 100KJ-0603	14	R7,R244,R224,R233,R235,R239,R241, R249,R276,R279,R221,R223,R243,R242,
61301124	CH RD 120KJ-0603	2	R265,R267,

ELECTRICAL PARTS LIST

000YF100C

DPR-45

Date : 2014/07/10

PART NO.	DESCRIPTION	Q'TY	REMARK
61301180	CH RD 18J-0603	1	R229,
61301182	CH RD 1K8J-0603	1	R3,
61301183	CH RD 18KJ-0603	1	R232,
61301220	CH RD 22J-0603	5	R14,R17,R24,R248,R254,
61301222	CH RD 2K2J-0603	9	R2,R55,R56, R250,R251,R252,R253,R260,R261,
61301223	CH RD 22KJ-0603	1	R234,
61301224	CH RD 220KJ-0603	2	R287,R289,
61301274	CH RD 270KJ-0603	1	R1,
61301331	CH RD 330J-0603	1	R20,
61301333	CH RD 33KJ-0603	1	R31,
61301391	CH RD 390J-0603	1	R230,
61301395	CH RD 3M9J-0603	1	R23,
61301471	CH RD 470J-0603	4	R30, R219,R220,R222,
61301472	CH RD 4K7J-0603	6	R5,R6,R13,R15,R22,R231,
61301473	CH RD 47KJ-0603	15	R32,R34,R280, R225,R246,R247,R255,R256,R259, R262,R263,R264,R268,R269,R270,
61301474	CH RD 470KJ-0603	1	R200,
61301475	CH RD 4M7J-0603	1	R42,
613014R7	CH RD 4R7J-0603	1	R4,
61301564	CH RD 560KJ-0603	1	R285,
61321103	CH RD 10KF-0603	2	R28,R29,
61321105	CH RD 1MF-0603	2	R211,R240,
61321113	CH RD 11KF-0603	1	R210,
61321122	CH RD 1K2F-0603	2	R206,R215,
61321123	CH RD 12KF-0603	1	R11,
61321125	CH RD 1M2F-0603	1	R236,
61321182	CH RD 1K8F-0603	2	R207,R216,
61321183	CH RD 18KF-0603	2	R26,R27,
61321203	CH RD 20KF-0603	1	R19,
61321272	CH RD 2K7F-0603	2	R208,R217,
61321333	CH RD 33KF-0603	1	R18,
61321393	CH RD 39KF-0603	1	R12,
61321471	CH RD 470F-0603	1	R8,
61321472	CH RD 4K7F-0603	6	R201,R202,R209,R218,R274,R275,
61321473	CH RD 47KF-0603	2	R272,R273,
61321561	CH RD 560F-0603	2	R203,R212,
61321681	CH RD 680F-0603	2	R204,R213,
61321911	CH RD 910F-0603	2	R205,R214,
61501000	CH RD 0J-1206	21	JP21,JP23,JP26,JP32,JP33,JP34, JP35,JP36,JP40,JP41, JP205,JP206,JP207,JP215,JP216, JP221,JP231,JP239,JP248,JP260, JP262,

MECHANICAL PARTS LIST

000YF100C

DPR-45

Date:2014/7/16

Ref no	PART NO.	DESCRIPTION	Q'TY	DWG NO.	REMARK
1	2000C100100	HOL BARNT	1	A4-PRD3-22A	
2	2100B10110A	ROTARY KNOB RING	2	A4-330-38	TUNE KNOBx1/VOLUME KONBx1
3	2100C100400	BATTERY CONTACT(+)(-)	1	A4-PRD3-35A	REAR CABINET
4	2100C100500	BATTERY CONTACT(+)	1	A4-PRD3-19A	REAR CABINET
5	2100C100600	BATTERY SPRING ASS'Y	1	A4-PRD3-34A	REAR CABINET
6	2100C100800	HEAT SINK	1	A4-PRD3-37A	PCB A
7	2100VN0010A	GROUND PLATE	1	A3-VN-01	REAR CABINET
8	2100VN00300	METAL PLATE	1	A4-VN-05	REAR CABINET
9	2100VN00400	SHIELD COVER	1	A3-VN-06	PCB C
10	22005600000	P.C.B. HEMELON	3	A4-066-1313	PCB Ax1/TREBLEx1/BASSx1
11	2200C100100	FIBER SPACER 33x25x1(B)	3	A4-PRD3-28A	FRONT CABINETx2/TRANSX1
12	2200J600100	HEMELON 36x6x0.3	1	A4-YB10-29	REAR CABINET
13	2200L400200	HEMELON	7	A4-523-40	FUNC KNOBx2/PRESET KNOBx5
14	2200U700100	HEMELON 6.0*4*0.3t	1	A4-U7-11	PCB C&SLIDE SWITCH
15	2300C100200	BATTERY SPONGE	1	A4-PRD3-29A	BATTERY COVER
16	2300C100300	NEP SPACER	1	A4-PRD3-23A	FIBER SPACER
17	2300C100400	DOUBLE TAPE (L)	1	A4-PRD3-31A	PRESET KNOB
18	2300C100500	DOBULE TAPE (S)	2	A4-PRD3-32A	POWER KNOBx1/ALARM KNOBx1
19	2300C100800	EVA SPONGE	2	A4-PRD3-38A	HOL BARNT
20	2300C101200	EVA(L)	1	A4-PRD3-49	PRESET KNOB
21	2300C101300	EVA(S)	1	A4-PRD3-50	ALARM KNOB
22	2300J800500	SPACE EVA(B)	1	A4-YB-80-29	PCB C&SHIELD COVER
23	2300S400100	EVA 35x2x0.5t	2	A4-S4-20A	LCD(LEFT&RIGHT)
24	2300SN00100	DOUBLE TAPE	1	A4-SN-13A	FRONT CABINET
25	2300SN00200	DOUBLE TAPE	1	A4-SN-13A	FRONT CABINET
26	2300TY01000	EVA 60x4x0.5t	2	A4-TY-36	LCD(UP&DOWN)
27	2300VN00100	DOUBLE TAPE 85x16	1	A4-VN-02	GROUND PLATE
28	2300VN00300	DOUBLE TAPE	1	A4-VN-07	GROUND PLATE
29	3240790000010	FOOT RUBBER(BLK)	4	A4-R737-1699	FRONT CABINETx2/REAR CABINETx2
30	2400F10000A	RUBBER SPACER	2	A4-PRD3-43A	POWER KNOBx1/ALARM KNOBx1
31	2400VN00100	RUBBER 6.5x4x3t	1	A4-VN-08	REAR CABINET
32	2500C100010	LED HOLDER	1	PG LED3-5B	PCB C
33	2500PP00010	PCB SUPPORT 6mm	2	PG MCD2-6	PCB C
34	2500SF00110	PCB SUPPORT 6mm	2	PG MCF-6	PCB C
35	29S06310001	SCREW JMB 3x10(ZK)	1		ROD ANT
36	29S16310001	SCREW PTB 3x10(ZK)	14		SPEAKERx4/PCB Cx6/PCB Ax2 PCB Bx2
37	29S16320001	SCREW PTB 3x20(ZK)	6		REAR CABINET&FRONT CABINET
38	3010C11000110	FRONT CABINET(BLK)	1	A1-PRD3-13A/14A	
39	3030C120A0020	REAR CABINET	1	A1-PRD3-15A/16A	
40	3050C1000004A	DISPLAY WINDOW	1	A3-PRD3-09A	
41	3052C10000010	DISPLAY WINDOW	1	A4-PRD3-18A	
42	3090650000010	KNOB HOLDER	1	A4-818-1401	
43	3100C10000090	ALARM KNOB(BLK)	1	A2-PRD3-17A	
44	3101C100A0040	FUNC KNOB	1	A2-PRD3-11A	
45	3102C10000010	PRESET KNOB	1	A2-PRD3-10A	
46	3103C10000010	ROTARY KNOB	2	A4-PRD3-06A	
47	3104C10000040	TUNE KNOB(BLK)	1	A4-PRD3-07A	
48	3105C100A0040	VOLUME KNOB(BLK)	1	A4-PRD3-08A	

MECHANICAL PARTS LIST

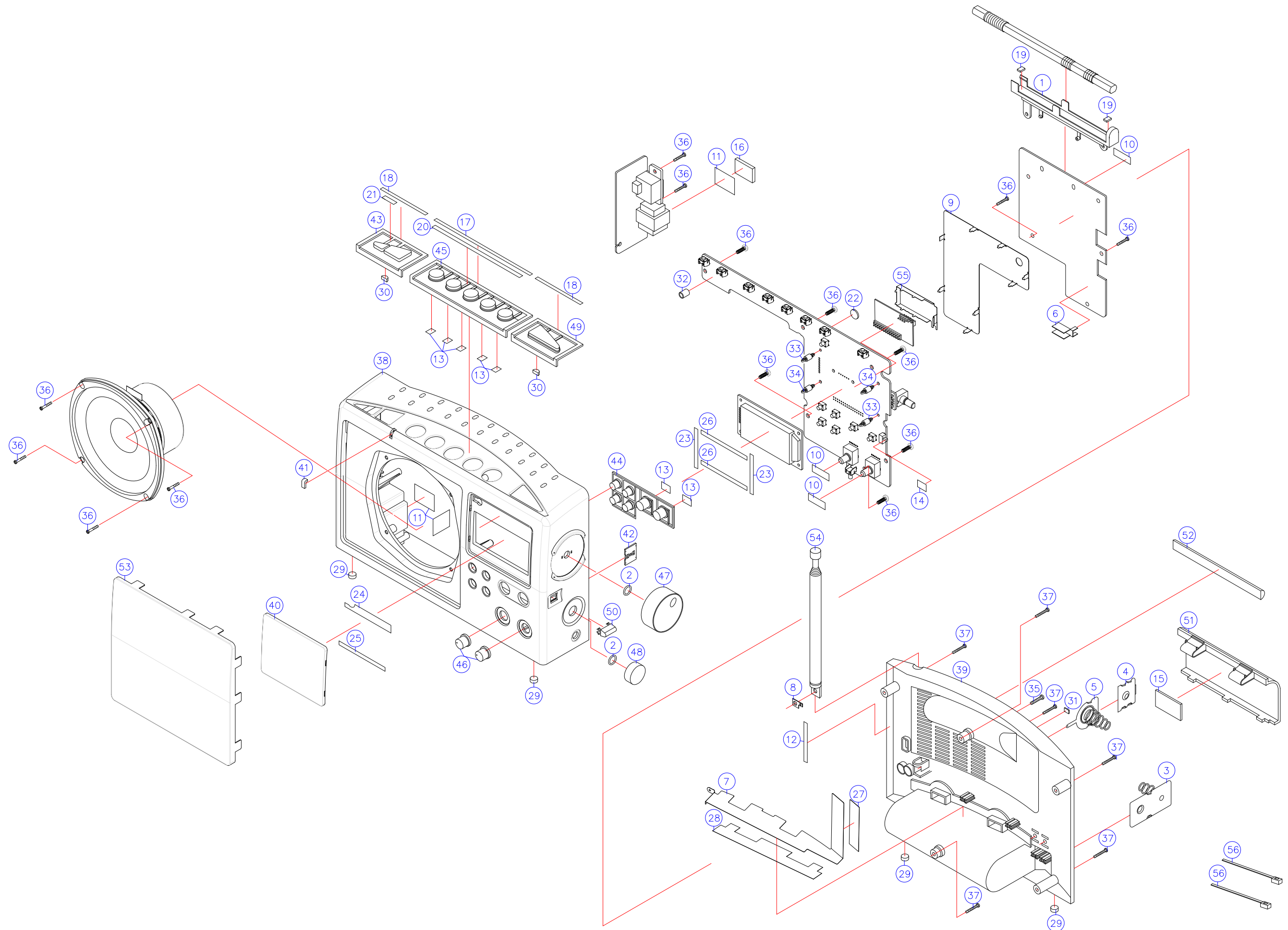
000YF100C

DPR-45

Date:2014/7/16

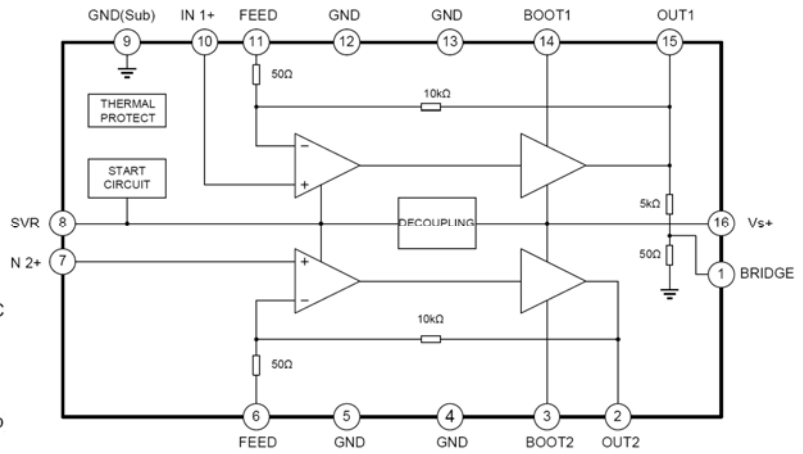
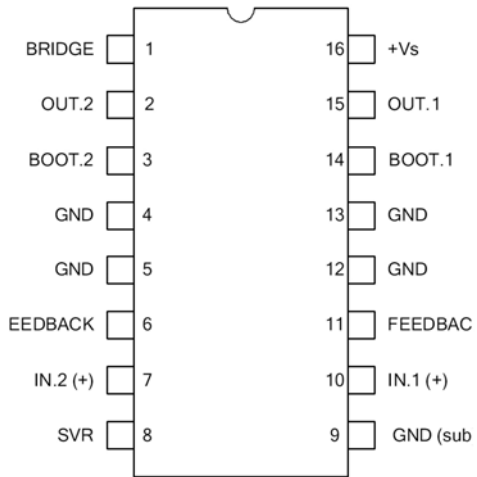
Ref no	PART NO.	DESCRIPTION	Q'TY	DWG NO.	REMARK
49	3106C10000090	POWER KNOB(RED)	1	A2-PRD3-17A	
50	310G650000010	SLIDE KNOB A	1	A4-818-1397	
51	3120C10000030	BATTERY COVER	1	A3-PRD3-05A	
52	3140C10000010	HANDLE	1		
53	3230C50000020	SPEAKER GRILL	1	A3-PRD3L-01A	
54	3270SN0000020	ROD ANT	1	A3-SN-04A	
55	2100WF01000	MODULE SHIELDING	1	A4-WF-21	PCB C
56	25000000010	W/TIES 100mm	2		

EXPLODED VIEWS

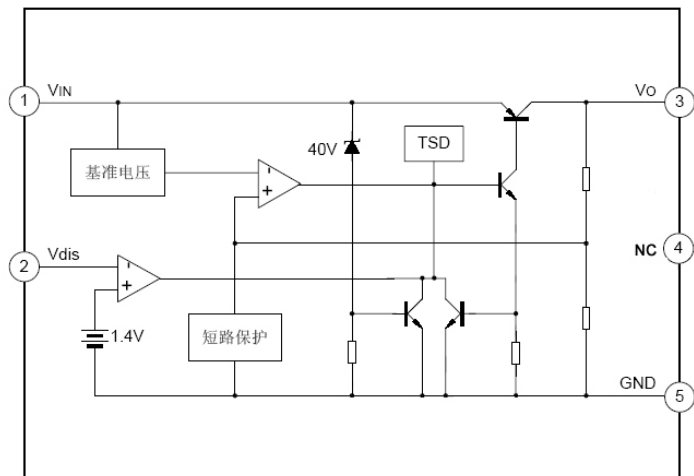
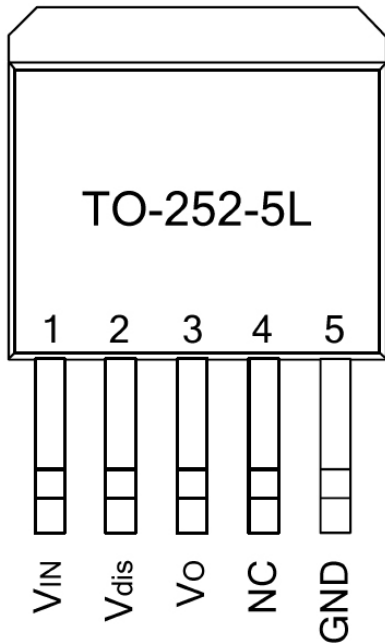


IC CIRCUIT BLOCK DIAGRAM

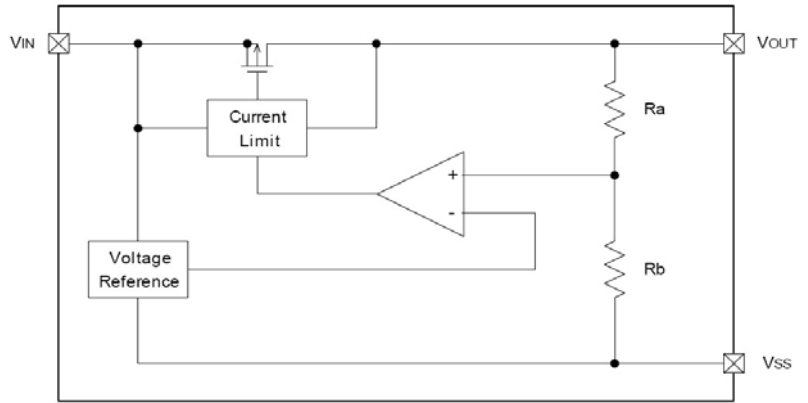
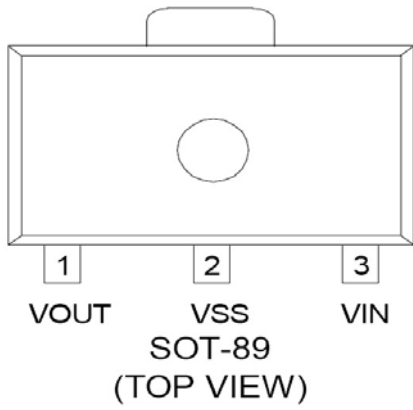
1. IC1— UTC2025 DIP



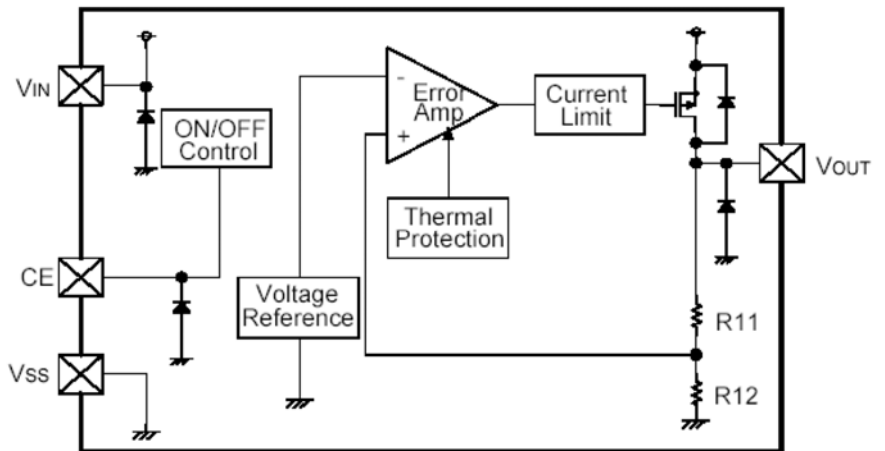
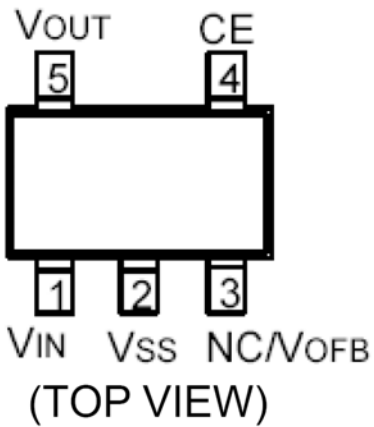
2. IC2 — SA78RLXXD TO-252-5L



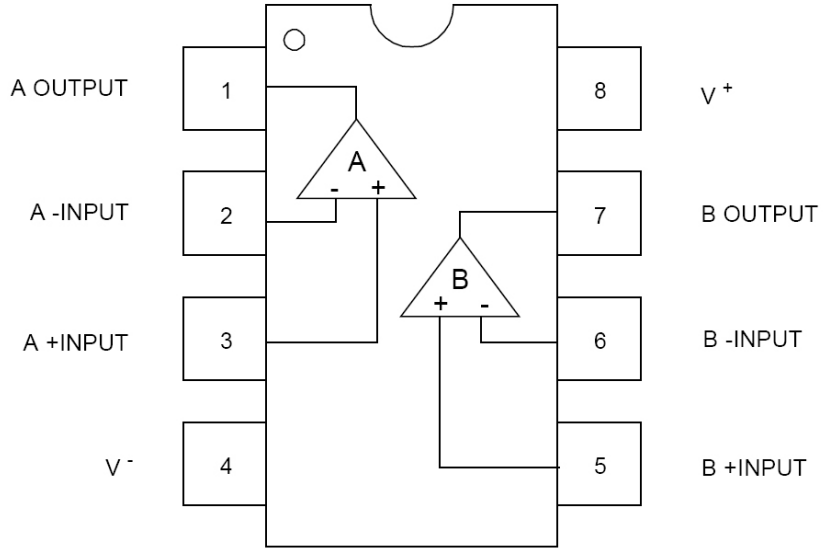
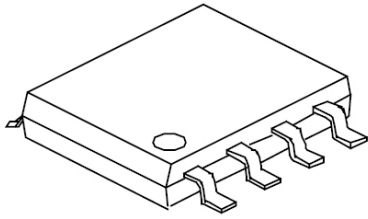
3. IC3 — XC6202P332PRN



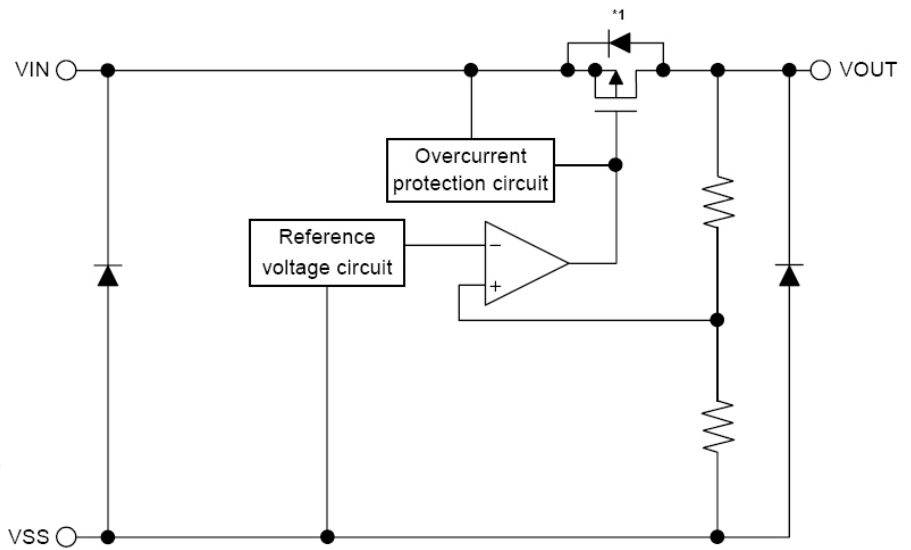
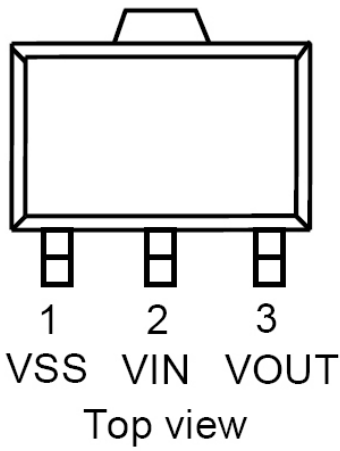
4. IC4 — XC6216B502MR



5. IC5 — UTCM2115

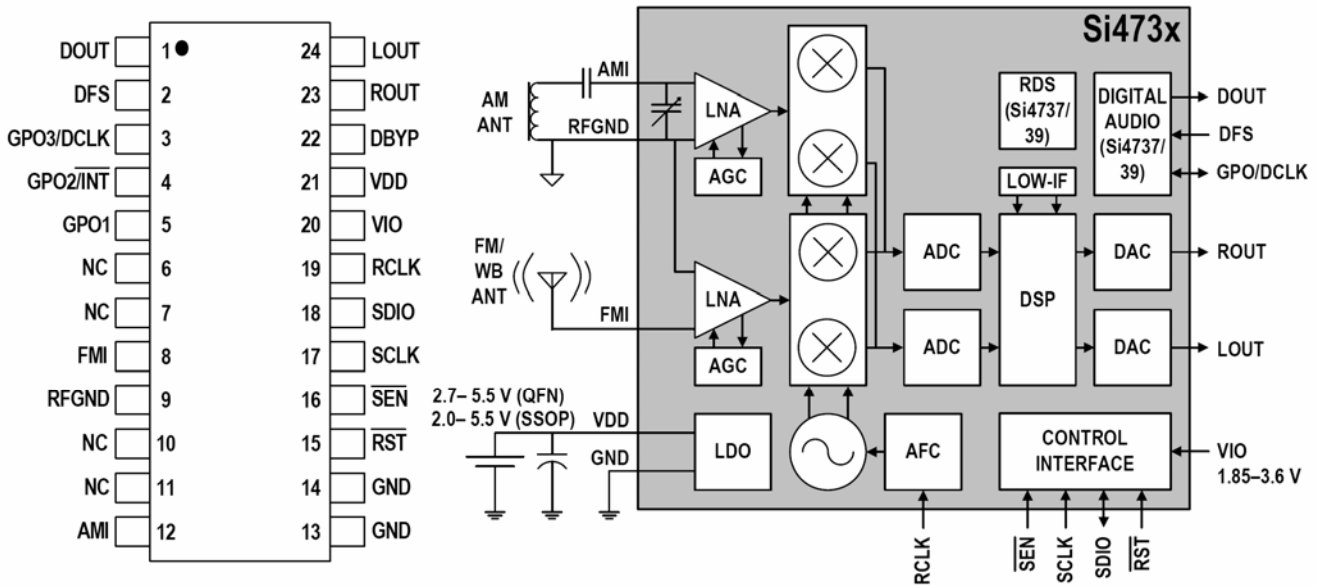


6. IC6 — S-1206B12

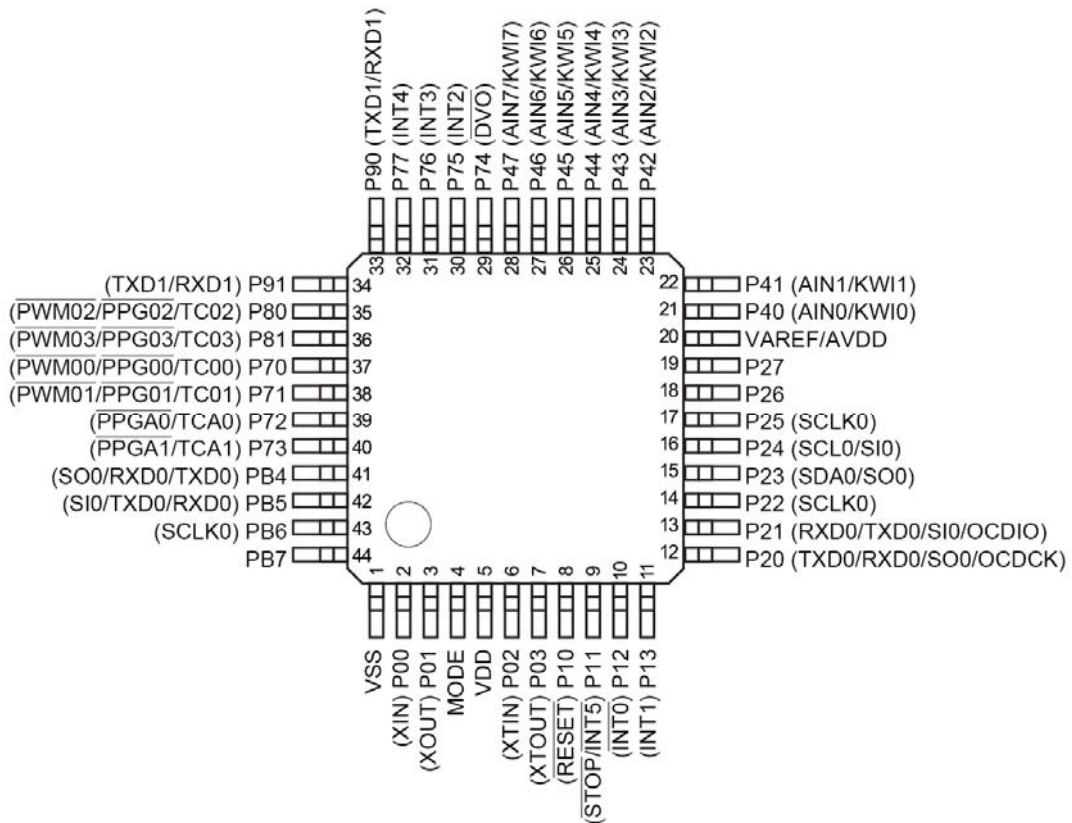


*1. Parasitic diode

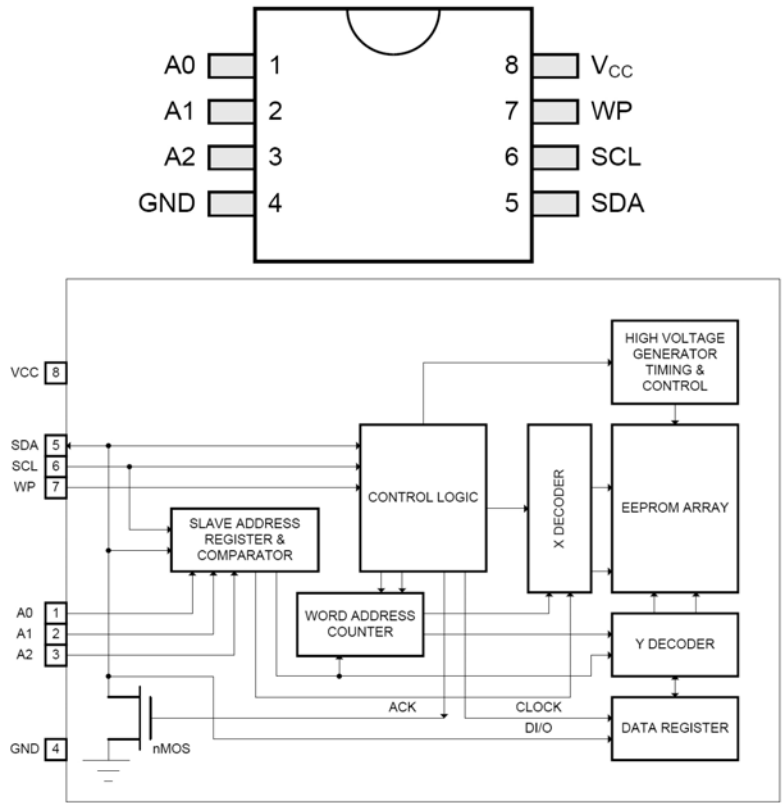
7. IC7 — Si4730-D60-GU/R



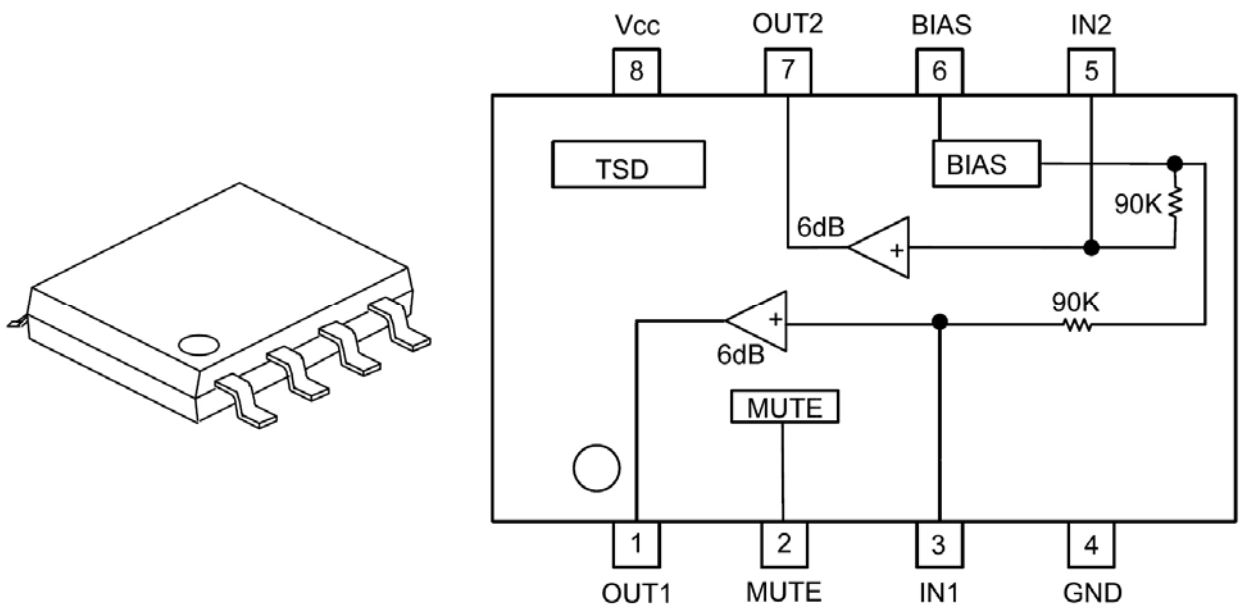
8. IC202 — TMP89FM42LUG LQFP



9. IC203 — GT24C02



10. IC204 — UTC3544G



11. IC205 — UTC4052L

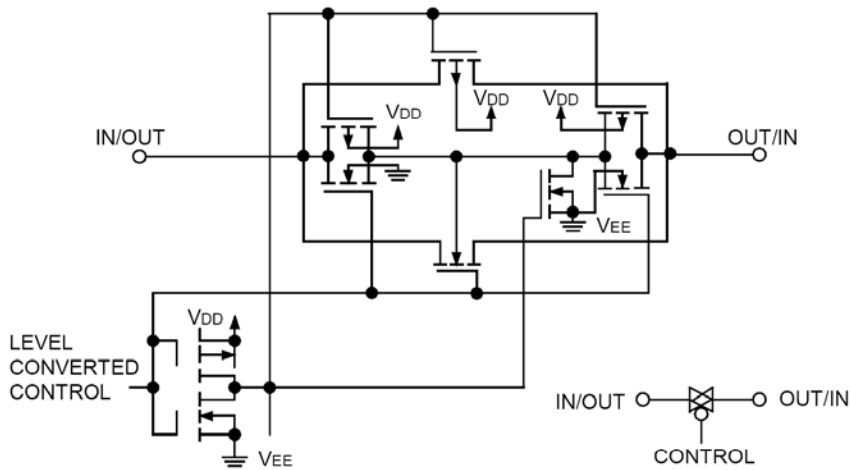
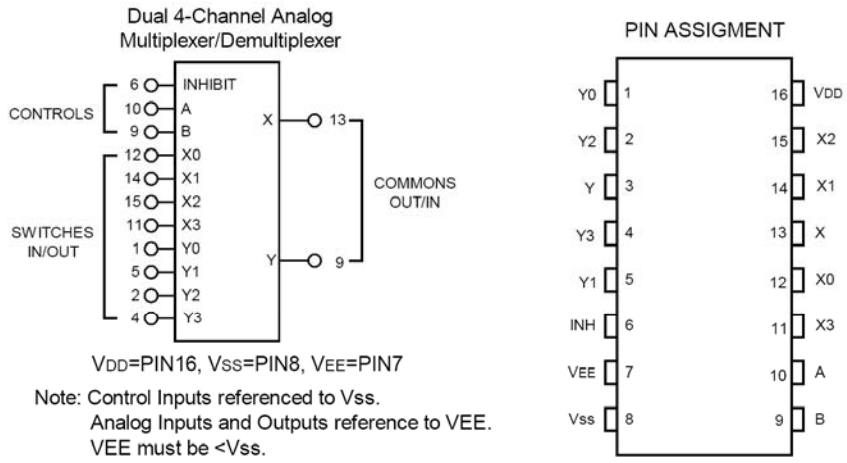


Figure 1. Switch Circuit Schematic

TRUTH TABLE

Control Inputs			ON Switches	
Inhibit	Select		Y0	X0
	B	A		
0	0	0	Y0	X0
0	0	1	Y1	X1
0	1	0	Y2	X2
0	1	1	Y3	X3
1	X	X	None	

* X=Don't Care

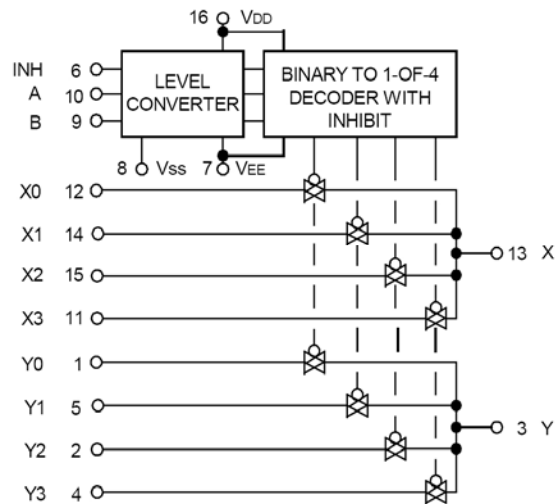
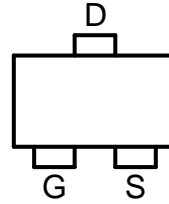
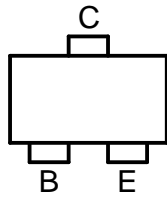


Figure 2. Functional Diagram

SEMICONDUCTOR LEAD IDENTIFICATIONS

Transistors

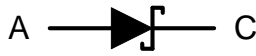


2SA812	DTC144EN3
DTC343TKT	DTC143ZN3
2SC1623	DTA143ZN3

2SJ621

(E: Emitter C: Collector B: Base S: Source G: Gate D: Drain)

Diodes



1N4002

1N5817

1SS367

1N5819

1SS357

(A: Anode C: Cathode)

IC AND TRANSISTOR VOLTAGE CHART

IC1 — UTC2025 DIP

PIN	FM	DAB	AM	PIN	FM	DAB	AM
1	0	0	0	9	0	0	0
2	2.98	2.98	2.98	10	0	0	0
3	5.95	5.95	5.95	11	0.55	0.55	0.55
4	0	0	0	12	0	0	0
5	0	0	0	13	0	0	0
6	0.55	0.55	0.55	14	5.95	5.95	5.95
7	0	0	0	15	2.95	2.95	2.95
8	5.97	5.97	5.97	16	6.01	6.01	6.01

IC2 — SA78RLXXD

PIN	FM	DAB	AM
1	5.42	5.42	5.98
2	3.11	3.11	0
3	3.29	3.29	0
4	1.25	1.25	0
5	0	0	0

IC4 — XC6216B502MR

PIN	FM	DAB	AM
1	6.03	6.03	6.03
2	0	0	0
3	1.50	1.50	1.50
4	2.63	2.63	2.63
5	5.00	5.00	5.00

IC6 — S-1206B12

PIN	FM	DAB	AM
1	0	0	0
2	3.29	3.29	0
3	1.20	1.20	0

IC3 — 6202P332PRN

PIN	FM	DAB	AM
1	3.32	3.32	3.32
2	0	0	0
3	6.01	6.01	6.01

IC5 — UTC M2115

PIN	FM	DAB	AM
1	2.52	2.52	2.52
2	2.52	2.52	2.52
3	2.52	2.52	2.52
4	0	0	0
5	2.52	2.52	2.52
6	2.52	2.52	2.52
7	2.52	2.52	2.52
8	4.93	4.93	4.93

IC7 — Si4730-D60-GU/R

PIN	FM	DAB	AM	PIN	FM	DAB	AM
1	1.10	1.10	0	13	0	0	0
2	1.05	1.05	0	14	0	0	0
3	1.38	1.38	0	15	0	0	3.12
4	0	0	3.16	16	0	0	0
5	1.78	1.78	1.60	17	3.11	3.11	3.09
6	0	0	0.50	18	3.11	3.11	3.09
7	0	0	0.60	19	0	0	1.57
8	0	0	0	20	3.32	3.32	3.16
9	0	0	0	21	3.32	3.32	3.16
10	0	0	0	22	0.78	0.78	0
11	0	0	0	23	0	0	0.74
12	0	0	0.44	24	0.78	0.78	0.74

IC203 — GT24C02-2GLI

PIN	FM	DAB	AM	PIN	FM	DAB	AM
1	0	0	0	5	3.11	3.11	3.11
2	0	0	0	6	3.11	3.11	3.11
3	0	0	0	7	0	0	0
4	0	0	0	8	3.11	3.11	3.11

IC202 — TMP89FM42LUG LQFP

PIN	FM	DAB	AM	PIN	FM	DAB	AM	PIN	FM	DAB	AM
1	0	0	0	16	3.11	3.11	3.11	31	3.08	3.08	3.08
2	1.14	1.14	1.14	17	0	0	0	32	3.13	3.13	0
3	1.40	1.40	1.40	18	0	0	0	33	3.12	3.12	0
4	3.13	3.13	0	19	0	0	0	34	3.11	3.11	0
5	0.77	0.77	3.12	20	3.13	3.13	3.13	35	0	0	0
6	1.42	1.42	0.78	21	3.12	3.12	3.12	36	0	0	0
7	3.11	3.11	3.11	22	3.13	3.13	3.13	37	0	0	0
8	0	0	0	23	2.56	2.56	2.56	38	0	0	0
9	0	0	0	24	0	0	0	39	0	0	0
10	0	0	0	25	3.12	3.12	3.12	40	0	0	0
11	0	0	0	26	0	0	0	41	3.12	3.12	3.12
12	0	0	0	27	0	0	0	42	3.12	3.12	3.12
13	0	0	0	28	0	0	3.13	43	3.13	3.13	3.13
14	0	0	0	29	3.08	3.08	3.08	44	0	0	0
15	3.11	3.11	3.11	30	0	0	0				

IC204 — UTC3544G

PIN	FM	DAB	AM
1	1.69	1.69	1.69
2	2.52	2.52	2.52
3	1.67	1.67	1.67
4	0	0	0
5	1.67	1.67	1.67
6	1.70	1.70	1.70
7	1.69	1.69	1.69
8	4.11	4.11	4.11

IC205 — UTC4052L

PIN	FM	DAB	AM	PIN	FM	DAB	AM
1	2.48	2.48	2.48	9	4.97	4.97	0
2	0	0	0	10	4.97	4.97	0
3	2.48	2.48	2.48	11	2.48	2.48	2.48
4	2.48	2.48	2.48	12	2.48	2.48	2.48
5	0	0	0	13	2.48	2.48	2.48
6	0	0	0	14	0	0	0
7	0	0	0	15	0	0	0
8	0	0	0	16	4.99	4.99	4.99

MD

PIN	FM	DAB	AM	PIN	FM	DAB	AM	PIN	FM	DAB	AM
1	1.19	1.19	0	11	0	0	0	21	3.21	3.21	0
2	3.25	3.25	0	12	3.23	3.23	0	22	0	0	0
3	0	0	0	13	3.23	3.23	0	23	0	0	0
4	0	0	0	14	0	0	0	24	0	0	0
5	0	0	0	15	3.21	3.21	0	25	2.48	2.48	0
6	0	0	0	16	3.23	3.23	0	26	2.47	2.47	0
7	0	0	0	17	3.21	3.21	0	27	0	0	0
8	3.23	3.23	0	18	3.21	3.21	0	28	0	0	0
9	0	0	0	19	0	0	0	29	0	0	0
10	0	0	0	20	3.16	3.16	0	30	0	0	0

Transistor

	PIN	FM	DAB	AUX
Q1	B	0	0	0
	C	6.01	6.01	6.01
	E	6.01	6.01	6.01
Q2	B	0.66	0.66	0.66
	C	0	0	0
	E	0	0	0
Q3	B	0	0	0
	C	0.66	0.66	0.66
	E	0	0	0
Q4	B	0	0	0
	C	0.66	0.66	0.66
	E	0	0	0
Q5	B	0	0	0
	C	0	0	0
	E	0	0	0
Q6	B	0	0	0
	C	3.30	3.30	3.30
	E	0	0	0
Q7	B	0	0	0
	C	0	0	0
	E	0	0	0
Q8	B	0	0	0
	C	0	0	0
	E	0	0	0

	PIN	FM	DAB	AUX
Q200	B	3.14	3.14	3.14
	C	0	0	0
	E	3.14	3.14	3.14
Q201	B	0	0	0
	C	3.11	3.11	3.11
	E	0	0	0
Q202	B	0	0	0
	C	1.20	1.20	1.20
	E	0	0	0
Q203	B	0	0	0
	C	0	0	0
	E	0	0	0
Q204	B	0	0	0
	C	3.32	3.32	3.32
	E	0	0	0
Q205	B	0	0	0
	C	2.60	2.60	2.60
	E	0	0	0
Q206	B	0	0	0
	C	3.10	3.10	3.10
	E	0	0	0

	PIN	FM	DAB	AUX
Q207	B	0.63	0.63	0.63
	C	1.08	1.08	1.08
	E	0	0	0
Q208	B	0.63	0.63	0.63
	C	1.08	1.08	1.08
	E	0	0	0
Q209	B	0	0	0
	C	4.97	4.97	4.97
	E	0	0	0
Q211	B	0	0	0
	C	3.59	3.59	3.59
	E	0	0	0
Q212	B	4.97	4.97	4.97
	C	4.99	4.99	4.99
	E	4.31	4.31	4.31
Q213	B	3.55	3.55	3.55
	C	4.99	4.99	4.99
	E	2.96	2.96	2.96
Q214	B	3.55	3.55	3.55
	C	4.99	4.99	4.99
	E	2.96	2.96	2.96

ALL SCHEMATIC DIAGRAM

