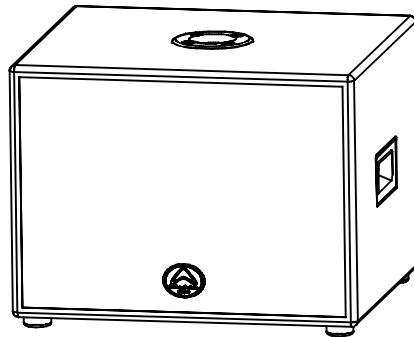


Titan™ Sub A12

Service Manual



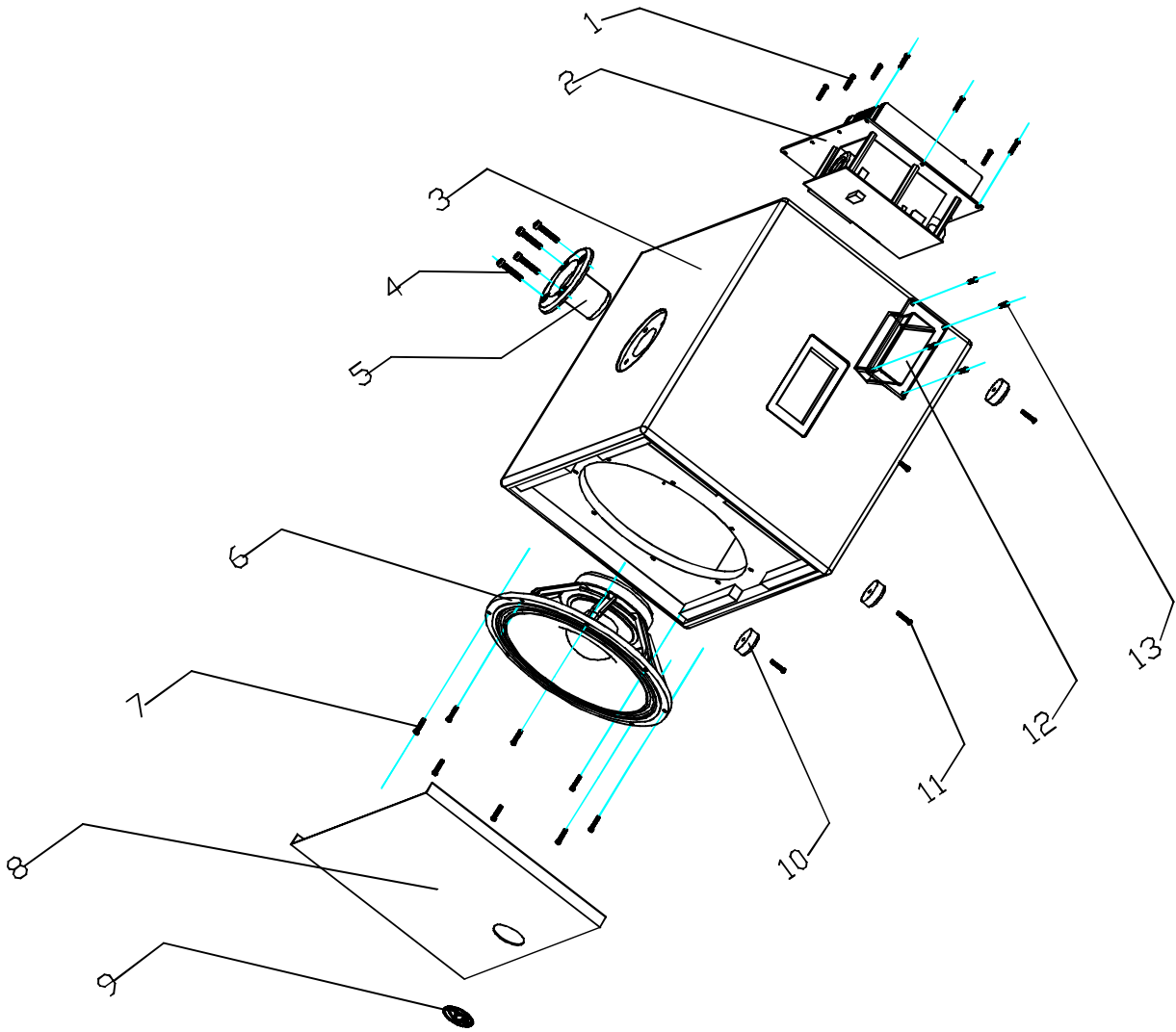
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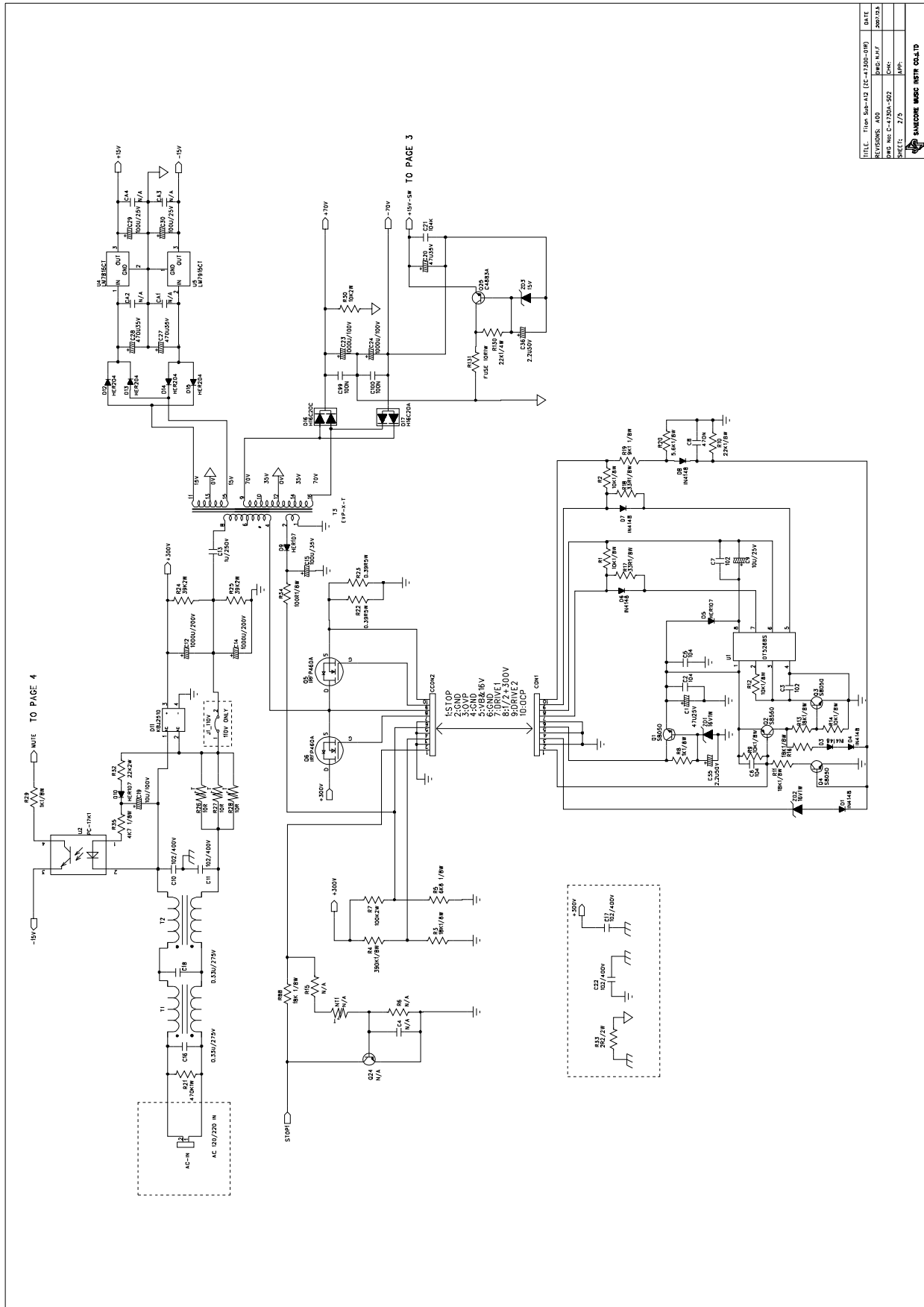
1. SPECIFICATIONS

System Type	Reflex subwoofer
Frequency Response (+/-3dB)	55-200Hz
Enclosure Material	15mm MDF
Enclosure Colour	Grey
Frame material	steel frame
Size (mm / inches)	305mm / 12 "
Coil Size (mm / inches)	64.26mm / 2.5 "
Impedance	4 ohm
Speaker Pole Adapter	Yes
Inputs A & B - Type / Connection	Balanced Line Level inputs via two combo connectors
Output A & B Type / Connection	Balanced Line Level inputs via two combo connectors
Input Sensitivity	0.37V
High Pass Frequency Selection	150Hz
Phase Switch Selection	0° / 180°
Crossover Frequency	80Hz/100Hz/120Hz/150Hz/180Hz/200Hz (adjustable)
Speaker Level Input Impedance	
Speaker Level Input Connection	
Amplifier Power:	
Continuous	250W
Peak	500W
Power On Indicator	LED
Power On Protection	Power switch on / off mute
Thermal Protection	Amplifier shutdown, auto reset
Low Line Voltage Shut Down	60% Nominal line voltage
Driver Protection	Independent LF limiters
DC Protection	Yes
Short Protection	Yes
Clip Limiter:	Turns on approx 250W output
Limiter Indicator	Red LED
Power Indicator	Blue LED
Dimensions (mm / inches):	
Height	360.0mm/14.2 "
Width	493.0mm/19.4 "
Depth	431.0mm/16.9 "
Weight (Net) kg / lbs	22.31kg / 49.0lbs
Weight (Gross) kg / lbs	26.26kg / 57.8lbs

2.ASSEMBLY SKETCH



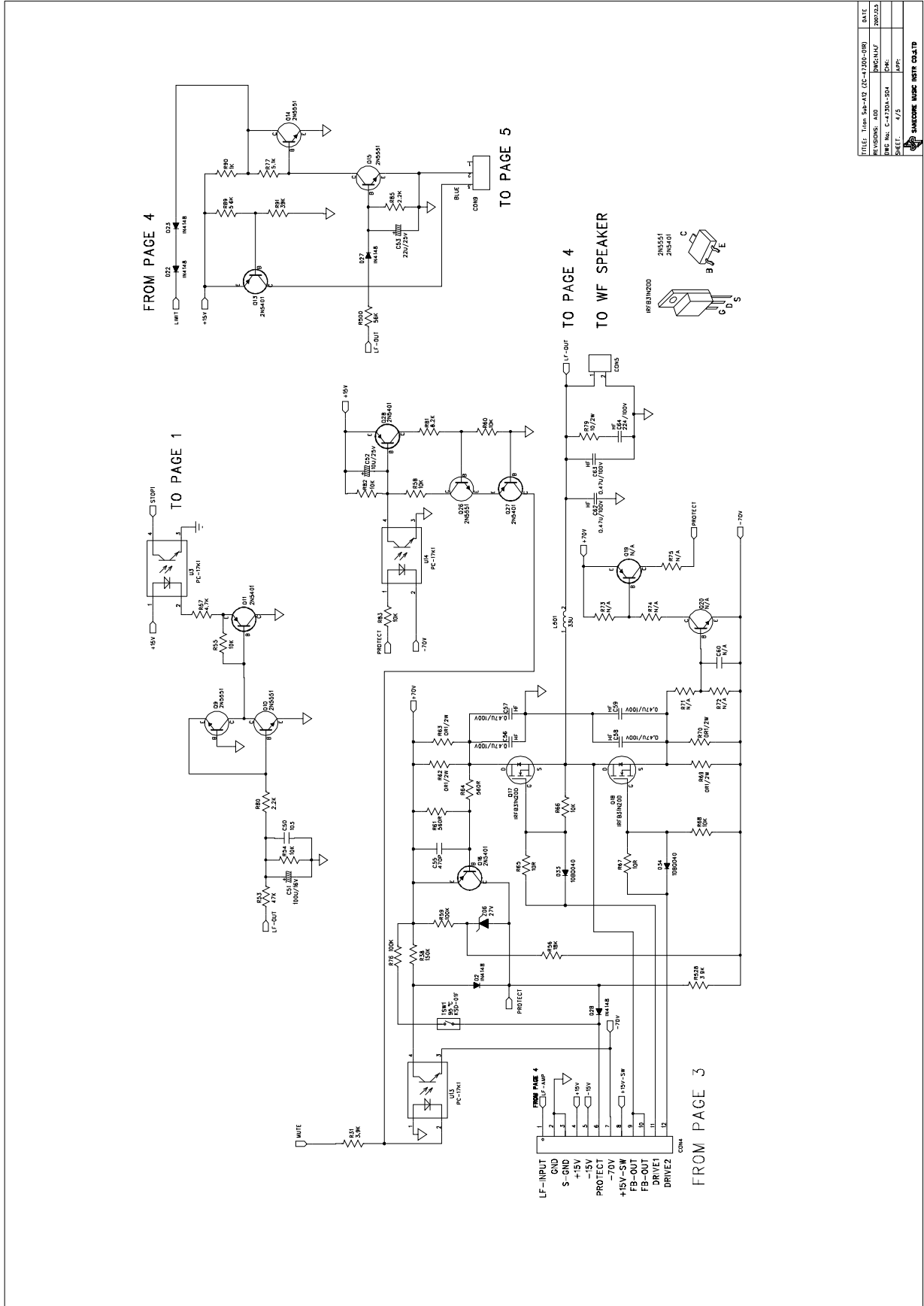
3. SCHEMATIC DIAGRAM



TITLE: Titan Sub-A12 (C-47300-019)	DATE
REVISED: ASD	Rev. N/A
Part No: C-47300-502	Chg.
SHEET: 7/5	APP.

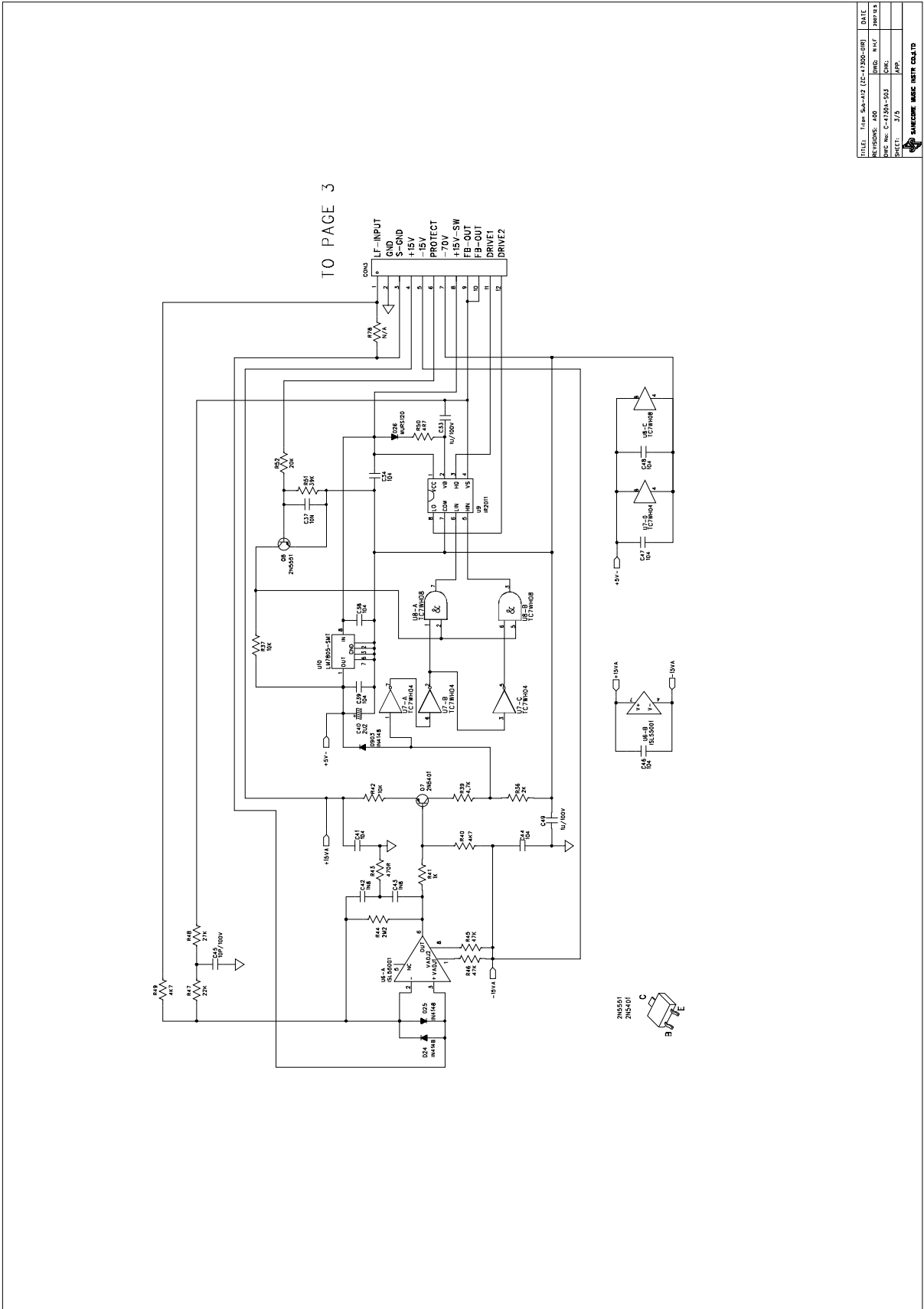
SMCONE INC. 1078 COLTD

4. SCHEMATIC DIAGRAM



TITLE: Titan Sub-A12 (C-4200-098)	DATE:
REVISIONS: A00	ENGINEER:
DWG No.: C-4200-094	CHK:
SHEET: 4/5	APP:
SAMSUNG ELECTRONICS CO., LTD.	

5. SCHEMATIC DIAGRAM

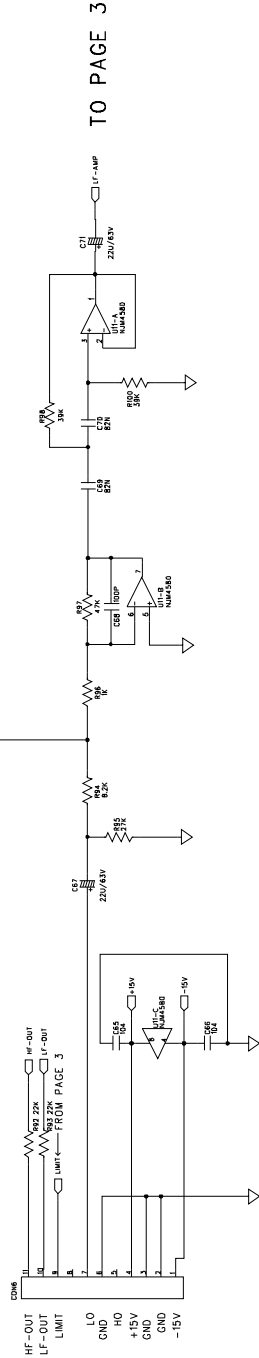


REVISED	DATE	BY	CHK
REVISED	2007.12.12	WJF	2007.12.12
DATE	2007.12.12	WJF	2007.12.12
CHK	2007.12.12	WJF	2007.12.12
DATE	2007.12.12	WJF	2007.12.12
CHK	2007.12.12	WJF	2007.12.12
DATE	2007.12.12	WJF	2007.12.12
CHK	2007.12.12	WJF	2007.12.12
DATE	2007.12.12	WJF	2007.12.12
CHK	2007.12.12	WJF	2007.12.12

6. SCHEMATIC DIAGRAM



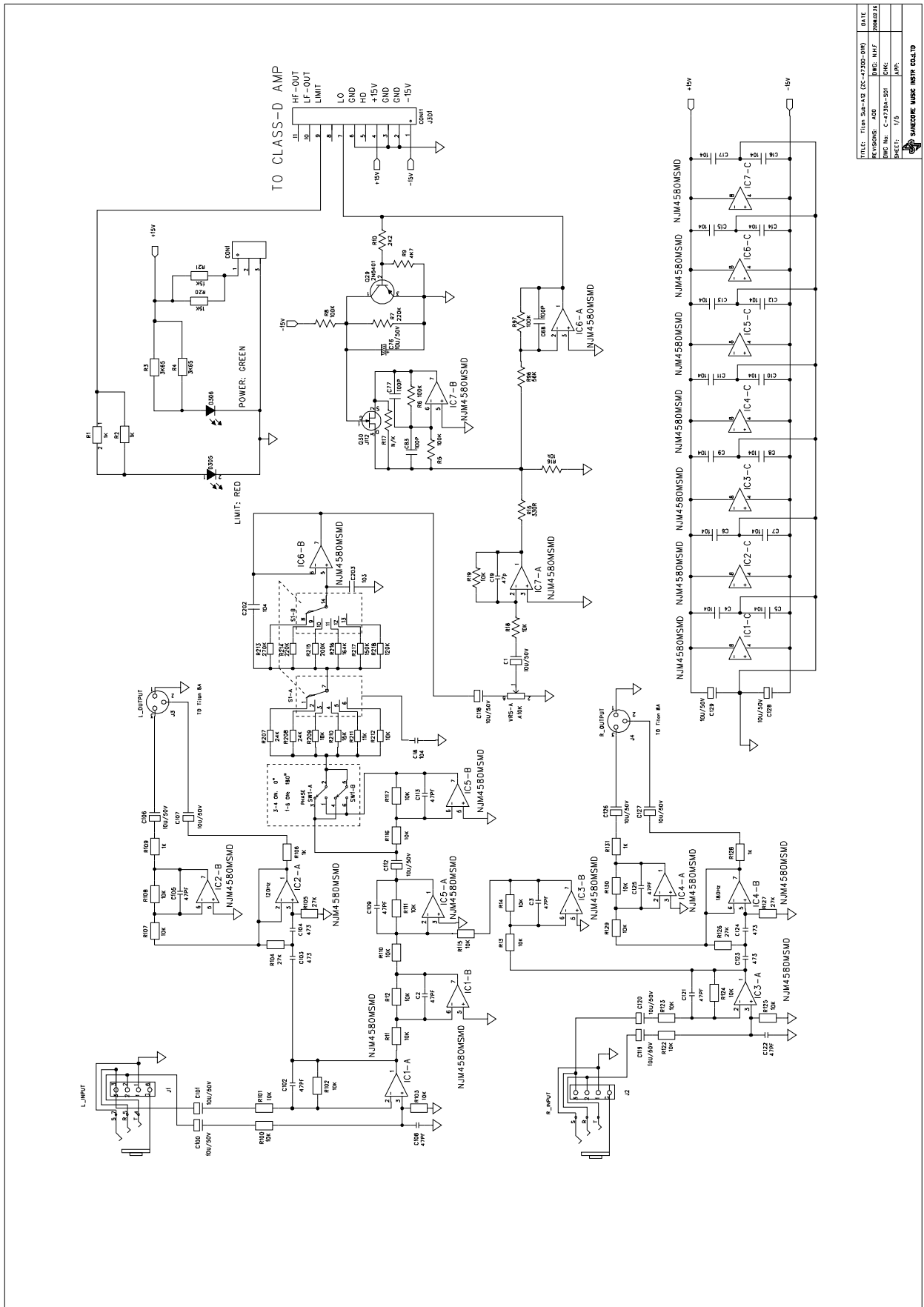
FROM PAGE 1



TO PAGE 3

TITLE	Titan Sub A12 (C-7700-000)	DATE	
SYMBOLS	ADD	REVISION	REV 0.2
FILE NO.	C-7700A-353	DRAWN	
CHECKED	9/8	DATE	
PANORAMA WASC WITH QUARTZ			

7. SCHEMATIC DIAGRAM



ITL: Titan Sub-A12 (IC-1350-08)	DATE
REV: 005	DESIGNER: NMF
REV: C-4790-001	CHKD
SHEET: 1/5	APP.
SANGHVI INSTR. CO., LTD.	

8.ASSEMBLY PARTS LIST

R/N	P/N	PART NAME	DESCRIPTION	QTY
1	537-4002300801AR	SCREW	MP(+) 4×30	10
2	ZC-47300-07R	AMPLIFIER		1
3	344-2142400001R	CABINET		1
4	534-6001400801AR	SCREW	MK(+) 6×40	4
5	259-2142500001R	SPEAKER STAND ADAPTER		1
6	ZD-70302-01R	WOOFER		1
7	537-5001250801AR	SCREW	MT(+) 5×25	8
8	310-2142400001R	FRONT GRILLE		1
9	313-2104900001R	LOGO		1
10	226-0380001515R	RUBBER FOOT		4
11	558-4001258061AR	SCREW	M4 $\times 25$	4
12	243-2009000001R	HANDLE		2
13	523-4013250601R	SCREW		8

9.ELECTRONIC PARTS LIST

R/N	P/N	PART NAME	DESCRIPTION	QTY	LOCATION
1	019-0556122001R	POWER LED	BLUE	1	
2	031-4200510121R	FUSE	T3.15A 250V 5*20mm	1	
3	042-1003005001R	POWER SWITCH	RF-1003TV-5AC250V	1	
4	044-2600000000R	POWER SOCKET	RF-2004	1	
5	055-0311022133R	RIBBON CABLE	11PIN L=300MM	1	
6	055-0402030333R	RIBBON CABLE	UL1617 18# 2PIN	1	
7	055-1303600333R	RIBBON CABLE	C-022-4 L=600 24#	1	
8	060-0180120100R	WIRE	1617#18 BROWN	1	
9	060-0180120300R	RIBBON CABLE	BLUE 18# C-022-8	1	
10	060-0180151004R	RIBBON CABLE	C-022-6 L=150 18#	1	
11	071-1100000000R	CABLE TIES	100MM YJ-100	8	
	088-1472414500R	POWER BOARD		1	
1	001-1002203010R	RESISTOR	1K 1/8W F	1	R8
2	001-1003203010R	RESISTOR	10K 1/8W F	5	R1 2 9 12 14
3	001-1803203010R	RESISTOR	18K 1/8W F	3	R11 13 16
4	001-2203203010R	RESISTOR	22K 1/8W F	1	R10
5	001-3300103050R	RESISTOR	33 OHM 1/8W J	2	R17 18
6	001-5602103050R	RESISTOR	5.6K 1/8W J	1	R20
7	001-9102203010R	RESISTOR	9.1K 1/8W F	1	R19
8	006-1004061194R	CAPACITOR	10uF 100V	1	C9
9	006-2291051163R	CAPACITOR	2.2UF/50V 10%	1	C35
10	006-4700051251R	CAPACITOR	47uF 35V	1	C1
11	014-1020100002R	CAPACITOR	AMZ 0.001UF 50V 5%	2	C3 7
12	014-4740311028R	CAPACITOR	MKS2 470nF 100V 10%	1	C8
13	017-1124000000R	IC	IR2153D DIP-8 IR	1	U1
14	018-3408050115R	TRANSISTOR	SS8050 TO-92	3	Q1 3 4
15	018-3408550115R	TRANSISTOR	SS8550C TO-92	1	Q2
16	057-2545011241R	JACK	24P BLACK	0.5	CON1
17	067-1104148000R	DIODE	IN4148	6	D1 3 4 6 7 8
18	067-2200107000R	DIODE	HER107 JAL	1	D5
19	067-3305246000R	ZENER	16V 1/2W IN5246	2	ZD1 2
20	007-0108062060R	CAPACITOR	0.1UF 50V	3	C2 5 6
21	053-1407001676R	POWER PCB	FR-4 1.6 10Z	1	
	088-1472415500R	AMP BOARD		1	
1	057-2545011241R	JACK	24P BLACK	0.5	CON3
2	002-1002032010R	RESISTOR	1K 1/8W 1% 0805	1	R41
3	002-1003032010R	RESISTOR	10KOHM 1/8W 1% 0805	2	R37 42
4	002-2003032010R	RESISTOR	20KOHM 1/8W 1% 0805	1	R52
5	002-2003403010R	RESISTOR	2K 0805 1% 0.125W	1	R36

10.ELECTRONIC PARTS LIST

6	002-2203032010R	RESISTOR	22K 1/8W 1% 0805	1	R47
7	002-2205032010R	RESISTOR	2.2M 1/8W 1% 0805	1	R44
8	002-2703032010R	RESISTOR	27K 1/8W 1% 0805	1	R48
9	002-3903032010R	RESISTOR	39K 1/8W 1% 0805	1	R51
10	002-4701032010R	RESISTOR	470 OHM 1/8W 1% 0805	1	R43
11	002-4702032010R	RESISTOR	4.7K 1/8W 1% 0805	3	R40 49 39
12	002-4703032010R	RESISTOR	47KOHM 1/8W 1% 0805	2	R45 46
13	002-4709032010R	RESISTOR	4.7OHM 1/8W 1% 0805	1	R50
14	007-1001052093R	CAPACITOR	10PF 100V 5%	1	C45
15	007-1003062090R	CAPACITOR	103/100V 0805 10%	1	C37
16	007-1004052060R	CAPACITOR	100nF 50V 5% 0805	8	C34 38 39 41 44 46 47 48
17	007-1014063090R	CAPACITOR	1U/100V 10% 1206	2	C33 49
18	007-1802052060R	CAPACITOR	1.8NF 50V 5%	2	C42 43
19	010-2251602010R	CAPACITOR	T450A12251CMAP1	1	C40
20	017-5220000001R	IC	L78L05ABD SO-8 ST	1	U10
21	017-7070000000R	IC	IR2011S PBF 8PIN	1	U9
22	017-7110000000R	IC	ISL55001BZ SO-8	1	U6
23	017-7120000000R	IC	TC7WH08FU 8PIN	1	U8
24	017-7130000000R	IC	TC7WH04FU 8PIN	1	U7
25	018-2905401227R	TRANSISTOR	2N5401S SOT-23 KEC	1	Q7
26	018-2905551227R	TRANSISTOR	2N5551S SOT-23 KEC	1	Q8
27	019-0012003103R	DIODE	MURS120T3	1	D26
28	053-1407001610R	AMP BOARD	FR-4	1	
29	067-2204148110R	DIODE	ST LL4148 SMD1206	3	D24 25 903
	088-1473000000R	POWER BOARD		1	
1	001-0393108050R	RESISTOR	39K 2W 5%	2	R24 25
2	001-0398810050R	RESISTOR	0.39R 5W 5%	2	R22 23
3	001-1000207051R	RESISTOR	10R FMF 1W 5%	1	R131
4	001-1000308050R	RESISTOR	10 OHM 2W J	1	R79
5	001-1001105050R	RESISTOR	100 OHM 1/4W J	1	R34
6	001-1002203010R	RESISTOR	1K 1/8W F	1	R29
7	001-1003308050R	RESISTOR	10K 2W J	1	R30
8	001-1004208050R	RESISTOR	100K2W 5%	1	R7
9	001-1008708050R	RESISTOR	0.1 OHM 2W 5%	4	R62 63 69 70
10	001-1803203010R	RESISTOR	18K 1/8W F	1	R3
11	001-2203208010R	RESISTOR	22K 2W 1%	1	R32
12	001-2209308050QR	RESISTOR	2R2 2W 5%	1	R33
13	001-3904203010R	RESISTOR	390KOHM 1/8W F	1	R4
14	001-4702203010R	RESISTOR	4.7K 1/8W F	1	R35
15	001-4703107050R	RESISTOR	470K 1W 5%	1	R21

11.ELECTRONIC PARTS LIST

16	001-6802203010R	RESISTOR	6.8K 1/8W F	1	R5
17	004-3307000000R	RESISTOR	10D-20	2	R26 27
18	006-1004061194R	CAPACITOR	10uF 100V	1	C19
19	006-1006051243R	CAPACITOR	10UF/25V	1	C52
20	006-1014060533R	CAPACITOR	SVP101M1CE05ME2	1	C51
21	006-1014061153AR	CAPACITOR	100UF/25V 20%	2	C29 30
22	006-1014081153AR	CAPACITOR	100UF/35V 20%	1	C15
23	006-1021174293R	CAPACITOR	1000U/100V/20%	2	C23 24
24	006-1024304109R	CAPACITOR	1000UF/200V	2	C12 14
25	006-2201061173R	CAPACITOR	22uF/63V	2	C67 71
26	006-2204051143AR	CAPACITOR	22UF/25V	1	C53
27	006-2291051163R	CAPACITOR	2.2UF/50V	1	C36
28	006-4700051251R	CAPACITOR	47uF 35V	1	C20
29	006-4714102053AR	CAPACITOR	470UF/35V	2	C27 28
30	008-1021040005R	CAPACITOR	102PF 400V M	4	C10 11 17 22
31	013-2240320503R	CAPACITOR	220NF100V	1	C64
32	013-3304025005R	CAPACITOR	334/275V J	2	C16 18
33	014-1040311028R	CAPACITOR	MKS2 100nF 100V 10%	2	C99 100
34	014-1050411006R	CAPACITOR	1UF/250V 10%	1	C13
35	016-4741112201R	CAPACITOR	0.47UF/100V P=15mm	6	C56 57 58 59 62 63
36	017-0190000000R	IC	NJM7815FA TO-220F	1	U4
37	017-1830000000R	IC	KIA7915 TO-220	1	U5
38	018-0304883113R	TRANSISTOR	2SC4883A TO-220F	1	Q25
39	018-4404229225R	FIELD EFFECT TRANSISTOR	IRFP4229T0-247AC	2	
40	018-7000460125R	FIELD EFFECT TRANSISTOR	IRFP460A TO-247AC	2	Q5 6
41	022-1040041316R	TRANSFORMER	EC40	1	
42	026-3334000170R	INDUCTOR	33UH	1	
43	034-1119992508R	BRIDGE RECTIFIER	RBV2510	1	D11
44	056-0102224400R	JACK	JS3962-2P-WAFER	1	CON5
45	056-0103003300R	POWER SOCKET	2PIN 3.96PH	1	AC- IN
46	056-4111221100R	POWER SOCKET	PIN=2.54MM 11PIN	1	CON6
47	066-0095010000R	SWITCH	TO-2P	1	TSW1
48	067-2200107000R	DIODE	HER107 JAL	2	D9 10
49	067-2200207000R	DIODE	HER204	4	D12 13 14 15
50	067-2201620000R	DIODE	F16C20C	1	D16
51	067-2201620001R	DIODE	F16C20A	1	D17
52	067-3304744000R	ZENER	1N4744A 15V-1W	1	ZD3
53	071-1100000000R	CABLE TIES	100MM YJ-100	2	
54	080-0210012016R	INDUCTOR	13.6MH 0.8MM 230V	2	T1 2
57	002-1000032010R	RESISTOR	10 OHM 1/8W 1% 0805	2	R65 67

12.ELECTRONIC PARTS LIST

58	002-1000033050R	RESISTOR	1206 10R 1/8W 5%	1	D28
59	002-1002032010R	RESISTOR	1K 1/8W 1% 0805	2	R90 96
60	002-1003032010R	RESISTOR	10KOHM 1/8W 1% 0805	8	R54 55 58 60 66 68 82 83
61	002-1004032010R	RESISTOR	100KOHM 1/8W 1% 0805	2	R5 6 8 97
62	002-1504032050R	RESISTOR	150K 0805 1/8W	1	R217
63	002-1803032010R	RESISTOR	18K 1/8W 0805 1%	1	R209
64	002-2202032010R	RESISTOR	2.2K 1/8W 1% 0805	2	R10
65	002-2203032010R	RESISTOR	22K 1/8W 1% 0805	3	R92 93 130
66	002-2703032010R	RESISTOR	27K 1/8W 1% 0805	1	R95
67	002-3902032010R	RESISTOR	3.9KOHM 1/8W 1% 0805	2	R528 31
68	002-3903032010QR	RESISTOR	39K 1/8W 1% 0805	1	R91
69	002-4702032010R	RESISTOR	4.7K 1/8W 1% 0805	2	R57 59
70	002-4703032050R	RESISTOR	47K 0805 1/8W	4	R53 97 98 100
71	002-5102032010R	RESISTOR	5.1KOHM 1/8W 1% 0805	1	R77
72	002-5601032010R	RESISTOR	560OHM 1/8W 1% 0805	2	R61 64
73	002-5602032010R	RESISTOR	5.6KOHM 1/8W 1% 0805	1	R89
74	002-5603032050R	RESISTOR	56K 0805	1	R500
75	002-8202032010R	RESISTOR	8.2K 1/8W 1% 0805	2	R81 94
76	007-0108062060R	CAPACITOR	0.1UF 50V	1	C21
77	007-1001032060R	CAPACITOR	100PF 50V 5% 0805	1	C68
78	007-1003062090R	CAPACITOR	103/100V 0805 10%	1	C50
79	007-1004052060R	CAPACITOR	100nF 50V 5% 0805	4	C65 66 69 70
80	007-4701062060R	CAPACITOR	470PF CP50V 10% 0805	1	C55
81	017-5270000001R	IC	NJM4580M NJM-DMP8	1	U11
82	018-2905401227R	TRANSISTOR	2N5401S SOT-23 KEC	5	Q11 13 16 27 28
83	018-2905551227R	TRANSISTOR	2N5551S SOT-23 KEC	5	Q9 10 14 15 26
84	053-1407001600R	PCB	FR-4 1.6 20Z 190*125	1	
85	067-2204148110R	DIODE	ST LL4148 SMD1206	4	D2 22 23 27
86	067-3305279000R	DIODE	180V DO-35	1	ZD6
87	067-6600040110R	DIODE	10BQ040 SMB	2	D33 34
	088-1473000001R	SIGNAL BOARD		1	
1	006-1001051163R	CAPACITOR	SM10uF 50V 10%	14	C1 76 100 101 106 107 112 118 119 120 126-129
2	018-2800112115R	FIELD EFFECT TRANSISTOR	J112G TO-92	1	Q30
3	019-0311122001R	LED	204HD/E-A RED	1	D305
4	019-0322122001R	LED	LED GREEN	1	D306
5	020-1032120325R	POTENTIOMETER	RD16K12D0094-10K	1	VR5
6	044-4470000000R	POWER SOCKET	LA1114-6P	2	J1 2
7	048-3000000000R	POWER SOCKET	NYS143 J3Y1 3pin	2	J3 4
8	056-4103220000R	POWER SOCKET	1136S-3P	1	CON1
9	056-4111221100R	POWER SOCKET	PIN=2.54MM 11PIN	1	J301

13.ELECTRONIC PARTS LIST

10	002-1002032010R	RESISTOR	1K 1/8W 1% 0805	6	R1 2 106 109 128 131
11	002-1003032010R	RESISTOR	10KOHM 1/8W 1% 0805	25	R11 12 13 14 16 18 19 100 102 103 107 108 110 111 115 116 117 122 123 124 125 129 130 212
12	002-1004032010R	RESISTOR	100KOHM 1/8W 1% 0805	4	R5 6 8 97
13	002-1103032010QR	RESISTOR	11K 1/8W 1% 0805	1	R211
14	002-1204032050R	RESISTOR	120K 0805 1/8W	1	R218
15	002-1503032010R	RESISTOR	15K 1/8W 1% 0805	3	R20 21 210
16	002-1504032050R	RESISTOR	150K 0805 1/8W	1	R217
17	002-1654022010R	RESISTOR	0805 165K 1/10W	1	R216
18	002-1803032010R	RESISTOR	18K 1/8W 0805 1%	1	R209
19	002-2004032010R	RESISTOR	200KOHM 1/8W 1% 0805	1	R215
20	002-2202032010R	RESISTOR	2.2K 1/8W 1% 0805	1	R10
21	002-2204032050R	RESISTOR	220K 0805 1/8W	2	R7 214
22	002-2402032050R	RESISTOR	24K 0805 1/8W	2	R207 208
23	002-2703032010R	RESISTOR	27K 1/8W 1% 0805	4	R104 105 126 127
24	002-2704042010R	RESISTOR	270K 0805 1% 0.25W	1	R213
25	002-3301032010R	RESISTOR	330OHM 1/8W 1% 0805	1	R15
26	002-3651012010R	RESISTOR	3.65K 1% 0805	2	R3 4
27	002-4702032010QR	RESISTOR	4.7K 1/8W 1% 0805	1	R9
28	002-5603032050R	RESISTOR	56K 0805 1/8W	1	R96
29	007-1001062060R	CAPACITOR	100PF CP50V 10% 0805	3	C68 77 83
30	007-1003052060R	CAPACITOR	SMD10nF 50V 10%0805	1	C203
31	007-1004052060R	CAPACITOR	100nF 50V 5% 0805	16	C4-18 202
32	007-4700052060R	CAPACITOR	47PF 50V 5% 0805	11	C2 3 19 102 105 108 109 113 121 122 125
33	007-4703052060QR	CAPACITOR	47nF 50V 10% 0805	4	C103 104 123 124
34	017-5270000001R	IC	NJM4580M NJM-DMP8	7	IC1-7
35	018-2905401227R	TRANSISTOR	2N5401S SOT-23 KEC	1	Q29
36	053-1473000000R	PCB	FR-4 T1.6 0.8*101	1	
37	089-0500000012R	SWITCH	SS-22F20-G12	1	SW1
38	097-0701200000R	SWITCH	SR2512-0206-26F1A	1	S1
39	221-1472410000R	LED HOLDER	M5*22.5mm,WHITE	2	D305 306