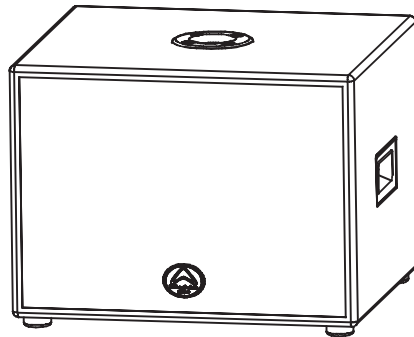


Titan™ Sub A12

Service Manual



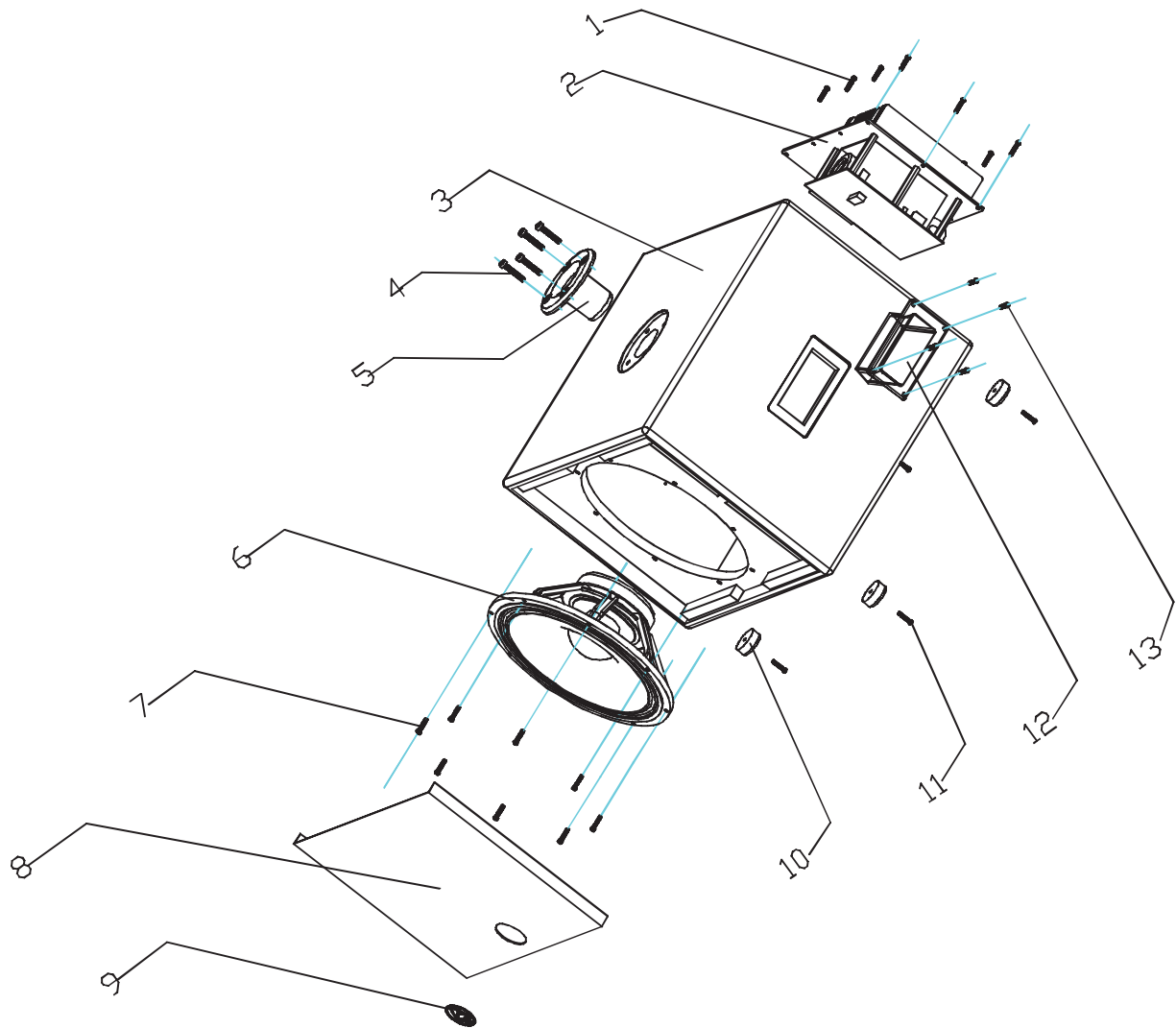
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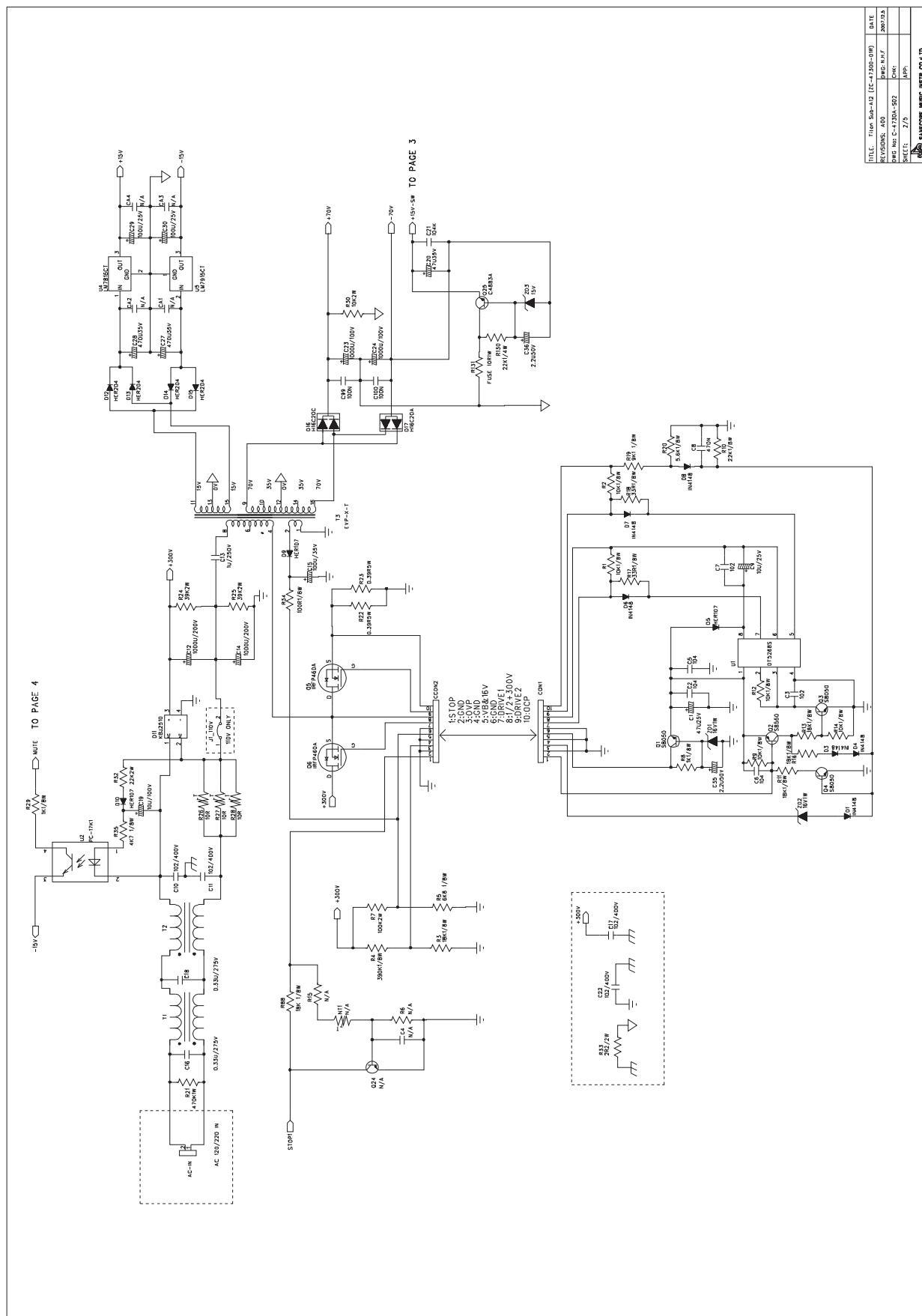


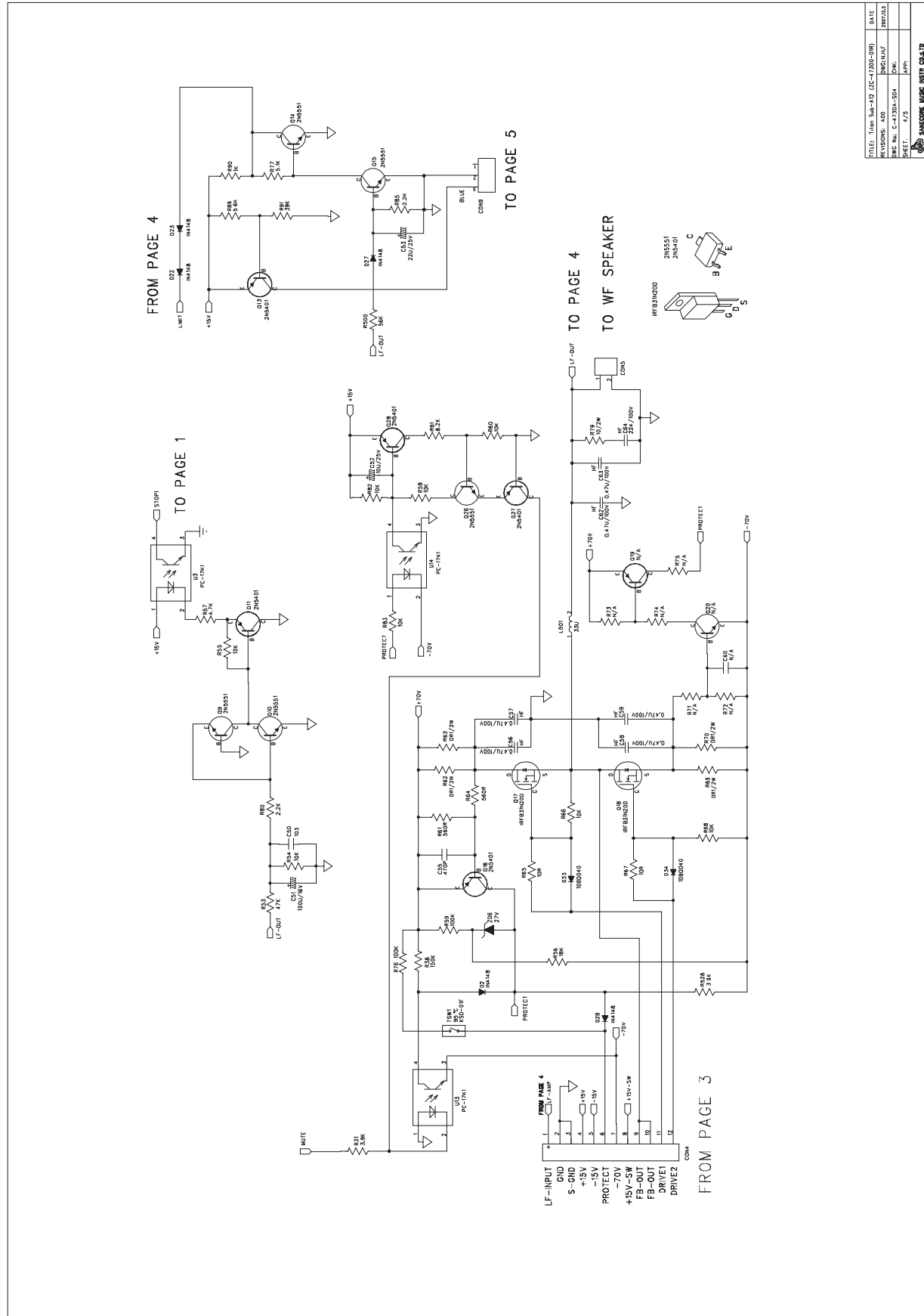
1.SPECIFICATIONS

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



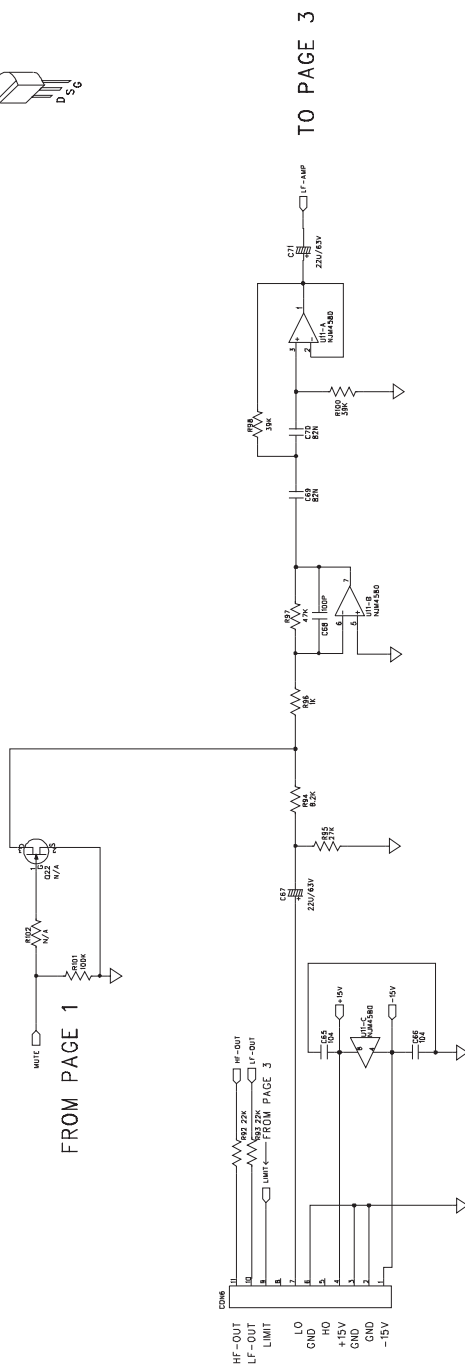




Titan™ Sub A12



Titan™ Sub A12

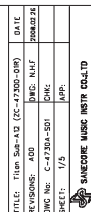


TO PAGE 3

TITLE: Titan Sub-A12 (2C-47500-01M)		DATE
REVISIONS	A00	DWG: M.H.F
DWG No: C-4750A-S05		CHK
SHEET: 5/6		APP.

 SNAMECOE MUSIC INSTR CO., LTD

REFERENCES



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*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 T0-92	3	Q1 3 4
15	018-3408550115R	TRANSISTOR	SS8550C T0-92	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	47K0HM 1/8W 1% 0805	2	R45 46
13	002-4709032010R	RESISTOR	4.70HM 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 S0-8 ST	1	U10
21	017-7070000000R	IC	IR2011S PBF 8PIN	1	U9
22	017-7110000000R	IC	ISL55001IBZ S0-8	1	U6
23	017-7120000000R	IC	TC7WH08FU 8PIN	1	U8
24	017-7130000000R	IC	TC7WH04FU 8PIN	1	U7
25	018-2905401227R	TRANSISTOR	2N5401S S0T-23 KEC	1	Q7
26	018-2905551227R	TRANSISTOR	2N5551S S0T-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 T0-220F	1	U4
37	017-1830000000R	IC	KIA7915 T0-220	1	U5
38	018-0304883113R	TRANSISTOR	2SC4883A T0-220F	1	Q25
39	018-4404229225R	FIELD EFFECT TRANSISTOR	IRFP4229T0-247AC	2	
40	018-7000460125R	FIELD EFFECT TRANSISTOR	IRFP460A T0-247AC	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	T0-2P	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	IN4744A 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	10K0HM 1/8W 1% 0805	8	R54 55 58 60 66 68 82 83
61	002-1004032010R	RESISTOR	100K0HM 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	3.9K0HM 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	5.1K0HM 1/8W 1% 0805	1	R77
72	002-5601032010R	RESISTOR	5600HM 1/8W 1% 0805	2	R61 64
73	002-5602032010R	RESISTOR	5.6K0HM 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