

SERVICE MANUAL



680W 4/3/2 CHANNEL POWER AMPLIFIER

APX4361

SPECIFICATION

Class AB Amplifiers
680 Watts of Maximum Music Power
160W x 4 into 2 Ohms, @ < 0.2% THD
90W x 4 into 4 Ohms, @ < 0.05% THD
Mixed Mode Operation
Input Voltage Sensing
Precise Frequency Control
Variable Bass Boost; 0-15dB @ 45Hz
Independent Front / Rear Adjustable - 12db/Oct. High/Low Pass
Crossovers, 55Hz-600Hz or 530Hz-5.8kHz with the Crossover
Frequency Multiplier
Gold Plated Connectors; RCA/ Speaker/ Power
Speaker Level Input
Dimensions 12-1/4" x 10-1/8" x 2-3/8"

CONTENT

REF #	PART #	DESCRIPTION	QTY
1	35-00121-00	5P CONNECTOR H7755P-05 L-300mm	2
2	81-00347-05	BARCODE STICKER	1
3	74-00173-00	MOUNTING HOLDER	4
4	ST-RP440-20	TAPPING SCREW 4*20mm BLACK	4
5	78-00294-00	ZIPPER BAG #2 6*8.5CM	1
6	78-00294-01	ZIPPER BAG #4 8.5*12CM	1
7	78-00481-00	POLY BAG 35*50*0.06CM	1
8	79-00910-00	POLYFOAM 2008 DPX & APX	2
9	79-00917-00	GIFTBOX APX4361	1
10	80-00909-00	USER'S MANUAL APX4361	1

To Engineers in charge of Repair or Inspection of our products:

Before repair or inspection, make sure to follow the instructions so that customers and engineers in charge of repair or inspection can avoid suffering any risk or injury. Remodeling for which we shall not be liable. The onus of product liability (pl) shall not be our responsibility in cases where an accident or failure is as a result of unspecified parts being used or due to negligence during repair.

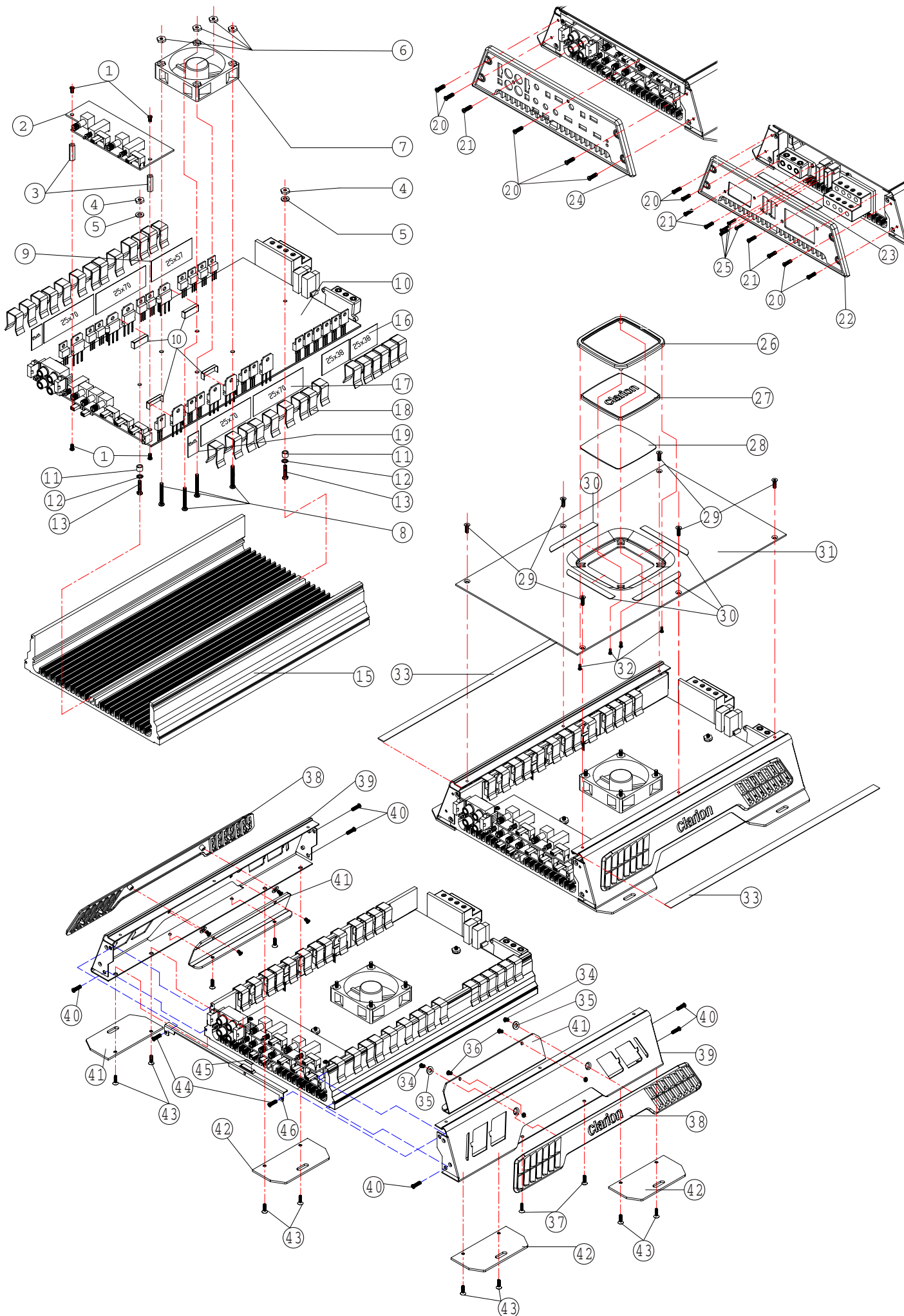
1. Use specified parts. The system uses parts with special safety features against Fire and voltage. Use only parts with equivalent characteristics when replacing them.
2. Place the parts and wiring back in their original positions after replacement or re-wiring. For proper circuit construction, use of insulation tubes, bonding, gaps to PWB, ETC, is involved. The wiring connection and routing to the PWB are specially planned using clamps to keep away from heated and high voltage parts. Ensure that they are placed back in their original positions after repair or inspection.
3. Check for safety after repair. Check that the screws parts and wires are put back securely in their original position after repair. Ensure for safety reasons there is no possibility of secondary problems around the repaired spots.
4. Caution in removal and making wiring connection to the parts for the automobile. Disconnect the battery terminal after turning the ignition key off. If wrong wiring connections are made with the battery connected, a short circuit and/or fire may occur.
5. Cautions regarding chips. Do not reuse removed chips even when no abnormality is observed in their appearance. Always replace them with new ones. The chip parts include resistors, capacitors, diodes, transistors, etc. The negative pole of tantalum capacitors is highly susceptible to heat, so use special care when replacing them and check the operation afterwards.
6. Cautions in handling flexible PWB before working with a soldering iron. Make sure that the iron tip temperature is around 270°C. Take care not to apply the iron tip repeatedly (more than 3 times) to the same patterns. Also take care not to apply the tip with force.
7. Turn the unit off during disassembly and parts replacement. Recheck all work before you apply power to the unit.

■TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
NO AUDIO	LOW OR NO REMOTE TURN-ON VOLTAGE	CHECK REMOTE CONNECTIONS AT AMPLIFIER AND SOURCE UNIT.
	BLOWN AMPLIFIER FUSE	REPLACE WITH NEW FAST-BLOW FUSE (SAME RATING).
	POWER WIRES NOT CONNECTED	CHECK BATTERY AND GROUND WIRING AT AMPLIFIER; ALSO CHECK BATTERY CONNECTIONS.
	SPEAKER LEADS SHORTED	CHECK SPEAKER CONTINUITY TO GROUND, IT SHOULD NOT SHOW A COMMON GROUND.
	SPEAKERS NOT CONNECTED OR ARE BLOWN	CHECK SPEAKER CONNECTIONS AT AMPLIFIER, MEASURE COIL IMPEDANCE.
AUDIO CYCLES ON AND OFF	THERMAL PROTECTION CIRCUITS ARE SHUTTING AMPLIFIER OFF	CHECK LOCATION FOR ADEQUATE VENTILATION; CONSULT AN AUTHORIZED CLARION AUDIO DEALER.
DISTORTED AUDIO.	GAIN IS NOT SET PROPERLY, OR DAMAGED SPEAKER CONES	REVIEW SETTING GAIN; INSPECT EACH SPEAKER CONE FOR SIGNS OF DAMAGE (I.E., FROZEN CONE, BURNING SMELL, ETC.)
AMPLIFIER FUSE KEEPS BLOWING	INCORRECT WIRING OR SHORT CIRCUIT	REVIEW INSTALLATION AND CHECK ALL WIRING CONNECTION.
WHINING OR TICKING NOISE IN THE AUDIO WITH ENGINE ON.	AMPLIFIER IS PICKING UP ALTERNATION NOISE OR RADIATED NOISE	TURN DOWN INPUT GAIN AND MOVE AUDIO CABLES AWAY FROM POWER WIRES. CHECK POWER AND GROUND CONNECTIONS ON AMPLIFIER AND INSTALL AN IN-LINE NOISE FILTER ON SOURCE UNIT'S POWER WIRE. ALSO CHECK THE ALTERNATOR AND /OR VOLTAGE. TEST FOR WEAK BATTERY OR ADD WATER TO BATTERY.

■EXPLODED VIEW / PARTS LIST

REF #	PART #	DESCRIPTION	Q'TY
1	SM-RP430-08	MACHINE SCREW M3.0*8mm TRUSS BLACK	4
2	11-00718-00	PCB APX4361 VR-BOARD 1.02	1
3	76-00441-00	POLY BAR HEX H-16	2
4	YH-00026-00	K/NUT6#-32TSZ	2
5	YH-00025-00	WASHER PW 4.2*10*1.0SZ	2
6	NM-OH330-00	NUT M3.0*P0.5	4
7	75-00001-01	FAN 60*15mm L-50mm +PIN	1
8	SM-RP430-20	MACHINE SCREW M3.0*20mm TRUSS BLACK	4
9	78-00475-00	MICA 25*57mm	1
10	11-00717-00	PCB APX4361-1.02	1
11	YH-00024-01	COPPER RING CU-COVER 6.3*4.5*4.0NO	2
12	YH-00029-00	WASHER BW 3.5*8*0.5SZ	2
13	YH-00027-00	SCREW H6#-32T*5/8SZ	2
14	74-00213-00	TRANSISTOR CLIP	4
15	77-00377-00	HEATSINK BLACK L=295mm D2251,A4361	1
16	78-00448-00	MICA 25*38mm	2
17	78-00317-00	MICA 25*70mm	4
18	74-00153-00	CLIP BLACK	28
19	78-00474-00	MICA 25*15mm	2
20	SM-VH430-08	MACHINE SCREW M3.0*8 PAN HEX BLACK	9
21	ST-VH430-10	TAPPING SCREW T3.0*10 PAN HEX BLACK	5
22	71-00758-00	REAR PANEL ABS	1
23	73-00181-00	DECORATION PLATE 8*90*1mm	1
24	71-00757-00	FRONT PANEL ABS	1
25	ST-RP420-08	TAPPING SCREW T2.0*8mm ROUND BLACK	4
26	75-00242-00	LOGO FRAME ABS	1
27	75-00241-00	LOGO ABS	1
28	76-00439-00	LIGHT GUIDE PLATE FR-1 0.25	1
29	SM-NF230-08	MACHINE SCREW M3.0*8mm FLAT HEX NI	6
30	78-00488-00	NON WOVEN	4
31	72-00495-01	TOP COVER L=297 印 640W	1
32	ST-RP420-05	TAPPING SCREW T2.0*5mm ROUND BLACK	4
33	78-00485-00	NON WOVEN 296*7.5*0.2mm	2
34	ST-RP430-04	TAPPING SCREW T3.0*4mm ROUND BLACK	4
35	YH-00028-00	WASHER 1*6.5*3.6mm	4
36	SM-VH430-04	MACHINE SCREW M3.0*4 PAN HEX BLACK	4
37	ST-NF430-06	TAPPING SCREW M3.0*6mm FLAT HEX BLACK	4
38	73-00176-00	VENTILATOR ABS BLACK	2
39	71-00743-00	SIDE PANEL L=297mm 2251,4361	2
40	ST-VH430-06	TAPPING SCREW T3.0*6 PAN HEX BLACK	6
41	74-00223-00	ALUMI PLATE L=140mm	2
42	74-00224-00	MOUNT FEET L=80mm W=40mm	4
43	SM-NF430-10	MACHINE SCREW M3.0*10mm FLAT HEX BLACK	8
44	ST-FQ430-08	TAPPING SCREW 0.5*3*8mm '+' FLAT BLACK	2
45	78-00487-00	NON WOVEN 20*6*0.2mm	5
46	73-00182-00	FRONT BRACKET CLARION	1



■ ELECTRICAL PART LIST (Main PCB)

PART #	DESCRIPTION	Q'TY	REF #
01-10001-73	RESISTOR 0.1 ohm 2W 5% MO	8	R30 R31 R32 R33 R262 R265 R263 R264
01-11002-22	RESISTOR 1.1 ohm 1/2W 5%	2	R233 R234
01-13000-22	RESISTOR 30 ohm 1/2W MO	1	R130
01-50000-85	RESISTOR 0 ohm 0805	1	R173
01-51010-85	RESISTOR 100 ohm 1% 0805	1	R180
01-51020-85	RESISTOR 1 K 1% 0805	22	R11 R26 R27 R28 R29 R63 R66 R76 R77 R78 R79 R89 R100 R101 R102 R103 R111 R115 R198 R201 R228 R232
01-51030-85	RESISTOR 10 K 1% 0805	7	R119 R123 R126 R158 R159 R166 R167
01-51040-85	RESISTOR 100 K 1% 0805	1	R150
01-51110-86	RESISTOR 110 ohm 1% 1206	1	R104
01-51230-86	RESISTOR 12.1 K 1% 0805	8	R58 R62 R70 R74 R190 R194 R202 R206
01-51430-85	RESISTOR 14 K 1% 0805	2	R138 R142
01-51530-87	RESISTOR 15.8 K 1% 0805	1	R163
01-51830-86	RESISTOR 18.2 K 1% 1206	1	R225
01-52010-85	RESISTOR 200 ohm 1% 0805	1	R227
01-52020-85	RESISTOR 2 K 1% 0805	18	R1 R20 R56 R60 R64 R65 R68 R72 R192 R196 R199 R200 R204 R208 R216 R229 R237 R239
01-52030-85	RESISTOR 20 K 1% 0805	25	R46 R47 R48 R49 R84 R85 R86 R87 R118 R132 R133 R137 R139 R143 R144 R145 R147 R149 R155 R164 R168 R170 R230 R258 R261
01-52200-85	RESISTOR 22.1 ohm 1% 0805	31	R3 R6 R7 R10 R13 R15 R55 R57 R59 R61 R67 R69 R71 R73 R125 R191 R193 R195 R197 R203 R205 R207 R209 R241 R245 R250 R253 R254 R257 R266 R269
01-52320-85	RESISTOR 2.37 K 1% 0805	4	R94 R95 R117 R127
01-52430-85	RESISTOR 24 K 1% 0805	8	R42 R43 R44 R45 R51 R52 R53 R54
01-52520-84	RESISTOR 2.5 K 1% 0805	4	R12 R14 R242 R246
01-53320-85	RESISTOR 3.32 K 1% 0805	1	R131
01-53530-85	RESISTOR 35.7 K 1% 0805	4	R141 R148 R160 R171
01-53630-85	RESISTOR 36.5 K 1% 0805	2	R140 R165
01-53910-85	RESISTOR 392 ohm 1% 0805	1	R215
01-53910-86	RESISTOR 392 ohm 1% 1206	2	R93 R182
01-53930-85	RESISTOR 39.2 K 1% 0805	1	R226
01-54710-85	RESISTOR 475 ohm 1% 0805	11	R4 R5 R8 R9 R152 R240 R249 R251 R252 R255 R256
01-54710-86	RESISTOR 475 ohm 1% 1206	1	R116
01-54720-85	RESISTOR 4.75 K 1% 0805	27	R106 R107 R108 R109 R121 R122 R128 R129 R154 R156 R157 R161 R162 R172 R174 R175 R177 R178 R181 R183 R184 R185 R187 R210 R211 R213 R214
01-54730-85	RESISTOR 47.5 K 1% 0805	3	R120 R124 R134
01-55001-85	RESISTOR 5.11 ohm 1% 0805	7	R243 R247 R248 R259 R260 R267 R268
01-55001-87	RESISTOR 5.1 ohm 1% 1206	10	R24 R25 R50 R75 R88 R90 R91 R92 R110 R112
01-55101-85	RESISTOR 5.11 K 1% 0805	1	R114
01-55310-85	RESISTOR 536 ohm 1% 0805	4	R105 R113 R135 R136
01-55618-85	RESISTOR 56.2 ohm 1% 0805	9	R34 R37 R38 R41 R151 R217 R220 R221 R224
01-55930-85	RESISTOR 59 K 1% 0805	8	R16 R17 R18 R19 R80 R81 R82 R83
01-56800-85	RESISTOR 681 ohm 1% 0805	9	R35 R36 R39 R40 R212 R218 R219 R222 R223
01-56820-85	RESISTOR 6.81 K 1% 0805	4	R2 R21 R236 R238
01-57530-85	RESISTOR 75 K 1% 0805	2	R146 R169
01-57820-87	RESISTOR 7.87 K 1% 1206	2	R186 R189
01-58220-85	RESISTOR 8.25 K 1% 0805	2	R153 R176
01-59010-85	RESISTOR 909 ohm 1% 0805	4	R22 R23 R231 R235
01-59020-85	RESISTOR 9.09 K 1% 0805	4	R96 R97 R98 R99
01-59320-85	RESISTOR 9.31 K 1% 0805	1	R244
02-21000-41	E/C 1uf 50V 5*11	9	C17 C18 C19 C20 C33 C46 C59 C60 C65
02-21001-41	E/C 10uf 50V 5*11	5	C15 C16 C21 C48 C122
02-21003-30	E/C 1000uf 25V 105° 10*20	2	C88 C91
02-21803-51	E/C 1800uf 35V LOW ESR 18*25	4	C58 C71 C80 C89
02-22202-32	E/C 220uf 25V 8*11	1	C76
02-24700-41	E/C 4.7uf 25V 105° 6.3*11	1	C87
02-24701-31	E/C 47uf 25V 105° 6.3*11	7	C5 C31 C32 C67 C93 C99 C123
02-24702-31	E/C 470uf 25V LOW ESR 10*15	2	C49 C50
02-26803-21	E/C 6800uf 16V LOW ESR 18*30	3	C84 C90 C107
04-20100-86	CERAMIC 10P/J 50V 0805	12	C35 C39 C97 C102 C26 C27 C28 C29 C40 C41 C42 C43
04-20270-85	CERAMIC 27P/J 50V 0805	1	C70
04-20330-86	CERAMIC 33P/J 50V 0805	2	C2 C47
04-20680-85	CERAMIC 68P/J 50V 0805	8	C9 C13 C52 C53 C54 C55 C124 C125
04-21020-85	CERAMIC 102/K 50V 0805	4	C36 C37 C100 C101

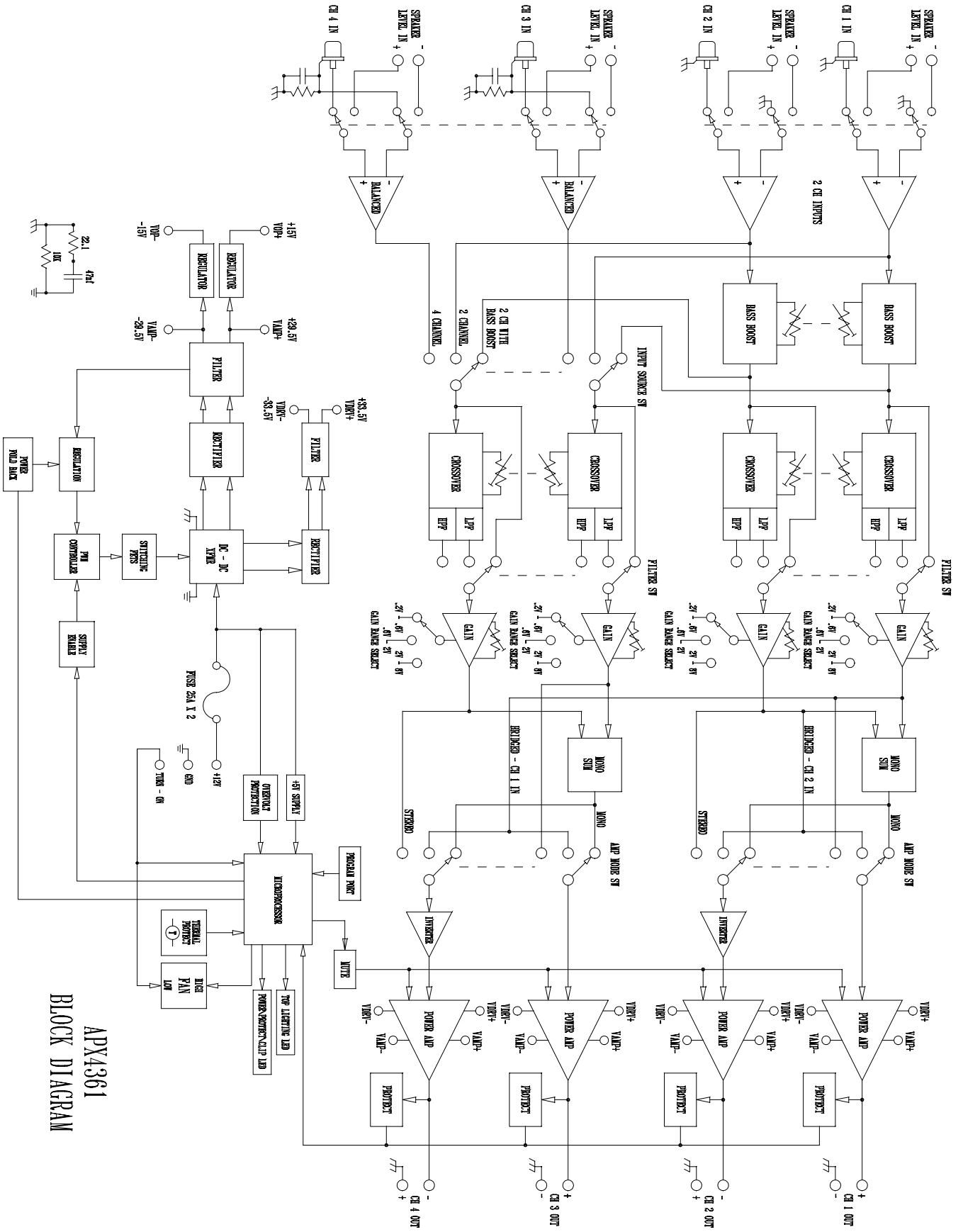
PART #	DESCRIPTION	Q'TY	REF #
04-21030-85	CERAMIC 103/K 50V 0805	2	C82 C95
04-21040-87	CERAMIC 104/Z 50V 0805	32	C1 C7 C11 C22 C23 C24 C25 C34 C38 C44 C45 C56 C57 C68 C77 C83 C86 C92 C96 C98 C103 C104 C108 C109 C110 C111 C112 C116 C119 C121 C129 C130
04-21500-85	CERAMIC 150P/J 50V 0805	8	C6 C8 C10 C12 C115 C117 C118 C120
04-21530-85	CERAMIC 153/K 50V 0805	1	C79
04-22720-85	CERAMIC 272/J 50V 0805	1	C126
04-22730-85	CERAMIC 273/K 50V 0805	4	C3 C4 C127 C128
04-23300-85	CERAMIC 330P/K 50V 0805	4	C61 C64 C62 C63
04-24720-86	CERAMIC 472/K 50V 0805	1	C72
04-24740-86	CERAMIC 474/Z 25V 0805	3	C73 C94 C105
06-00104-03	CAP MMYL ECQV 1H104JL 50V P=5	8	C14 C30 C51 C66 C75 C78 C81 C85
06-00393-00	CAP MMYL ECQB 1H393JF 50V P=5	2	C113 C114
06-00472-02	CAP MMYL ECQB 1H472JF 50V P=5	1	C74
07-00072-85	IC TL072CDR 'TI' SOIC SMD	2	U5 U9
07-00074-85	IC TL074CDR 'TI' SOIC SMD	4	U2 U3 U6 U8
07-00431-85	IC TL431IDBZR 'TI' SOT-23-3	1	U15
07-00716-00	IC PIC16F716-I/P ^	1	U4
07-00817-00	IC H11A817 'FSC'	3	U7 U13 U14
07-03525-85	IC SG3525AP SO16 SMD 'ST'	1	U16
07-05532-85	IC NJM5532M JRC SOIC SMD	3	U10 U11 U12
07-L7815-00	REGULATOR L7815CV TO-220 'ST'	1	U17
07-L7915-00	REGULATOR L7915CV TO-220 'ST'	1	U1
08-00031-00	TRANSISTOR TIP31C 4A/100V 'ST'	4	Q2 Q7 Q50 Q55
08-00032-00	TRANSISTOR TIP32C 4A/100V 'ST'	4	Q3 Q8 Q49 Q54
08-00035-00	TRANSISTOR TIP35C 25A/100V 'ST'	4	Q1 Q6 Q51 Q56
08-00036-00	TRANSISTOR TIP36C 25A/100V 'ST'	4	Q5 Q10 Q47 Q52
08-10006-01	TRANS MPSA06 TO-92 'ON'	4	Q4 Q9 Q48 Q53
08-10006-85	TR MMBTA06LT1 SOT-23 'ON'	17	Q11 Q12 Q17 Q18 Q21 Q22 Q25 Q26 Q27 Q30 Q33 Q34 Q37 Q38 Q42 Q44 Q45
08-10056-85	TR MMBTA56LT1 SOT-23 'ON'	9	Q19 Q20 Q23 Q24 Q29 Q31 Q32 Q35 Q36
08-10647-01	TRANS 2SB647 1A TO-92	4	Q13 Q15 Q39 Q41
08-10667-01	TRANS 2SD667 1A TO-92	4	Q14 Q16 Q40 Q43
08-26715-00	TR MPS651G 'ON' 2N6715 TO-237	1	Q28
08-26726-00	TR MPS751G 'ON' 2N6726 TO-237	1	Q46
08-50N06-00	FET FQP50N06 TO-220AB 'FAIRCHILD'	6	M1 M2 M3 M4 M5 M6
09-00051-85	ZENER 5.1V DL-35 miniMELF	1	DZ1
09-00099-85	DIODE BAV99LT1G 70V SOT23 ^	4	D11 D12 D17 D18
09-04934-85	DL4934-MELF 1A 100V SMD	2	D13 D14
09-14001-85	DIODE 1N4001TB miniMELF SMD	2	D15 D16
09-14148-85	DIODE 1N4148-SOD80 miniMELF	14	D5 D6 D7 D8 D9 D10 D19 D20 D22 D23 D24 D25 D26 D27
09-15401-01	1N5402 3A/200V DC-201AD	1	D21
09-20060-85	ZENER 6V DL-35 miniMELF	1	DZ2
09-20100-85	ZENER 10V DL-35 miniMELF	1	DZ3
09-20510-85	ZENER 51V DL-35 miniMELF	2	DZ4 DZ5
09-40008-00	MUR820PBF or U08A20C 'MOSPEC'	4	D1 D2 D3 D4
13-00207-00	TRIM-6-VERT-500 500 ohm ^	4	VR1 VR2 VR6 VR7
13-00208-00	POT TRIM-6MM-VERT-220ohm ^	1	V1
13-11003-00	TH 100K NTC 6mm DIA	2	TH1 TH2
15-20203-29	B20K*2 F09125G B20Kb L15KQA	3	VR3 VR4 VR5
18-00159-00	SW-4P2T JFPB-41S-A(N)	2	SW1 SW2
18-00863-00	SWITCH EG-2315A 2P3T	2	SW6 SW7
18-30001-01	SW SV65020F-0203-6H-01-FN	3	SW3 SW4 SW5
19-00302-03	LED BLUE 1L0345FB12E0CF001 ^	6	LED1 LED2 LED3 LED4 LED5 LED6
19-00335-00	LED 3mm RED 1L0341S11A0TE001 ^	1	LED7
19-00338-00	LED 3mm BLUE 1L034FB12C0TE001 ^	1	LED7
20-00128-00	INDUCTOR 1KW T157-52 CORE	1	L3
20-00184-00	OUTPUT COIL SE-1000-ZIB	4	L1 L2 L4 L5
20-00244-00	TRANSFORMER APX4360-01	1	X1
24-00316-00	LED HOLDER 3mm 90° LED-306	1	LED7
26-00348-00	CABLE GRAY 13PIN 60mm 3*3	1	J5
30-00115-00	2P BASE XH 2.5 180°	1	J3
30-00289-00	5P BASE XH PH2.0 180°	1	J4
32-00656-04	SLL-KOR-4P*2 BLACK "+"	1	J2
32-00658-09	KOR-3P BLACK "+"	1	J6

PART #	DESCRIPTION	Q'TY	REF #
32-00668-00	JACK 4P WSP-244VS-03	1	J1
34-00150-00	5P BASE H7755R-05 L-100mm	2	L+ L- R+ R- GND
76-00239-00	FUSE HOLDER JEF-703E	2	FH1 FH2
76-00276-01	FUSE ATC-40A 'UL' AMBER	2	FH1 FH2
76-00407-00	TEST PIN JT-1P-CIW	4	TP1 TP2 TP3 TP4
78-00284-00	SILICONE TUBE 2mm*6mm	16	Q1 Q5 Q6 Q10 Q47 Q51 Q52 Q56
78-00323-00	SILICONE TUBE 1mm*10mm	8	Q4 Q9 Q48 Q53
78-00348-00	SILICONE TUBE 1mm*8mm	42	U1 Q2 Q3 Q7 Q8 D1 D2 D3 D4 U17 Q49 Q50 Q54 Q55 TH2 M1 M2 M3 M4 M5 M6
78-00479-00	SILICONE TUBE 1mm*22mm	12	LED1 LED2 LED3 LED4 LED5 LED6

■ ELECTRICAL PART LIST (VR Board)

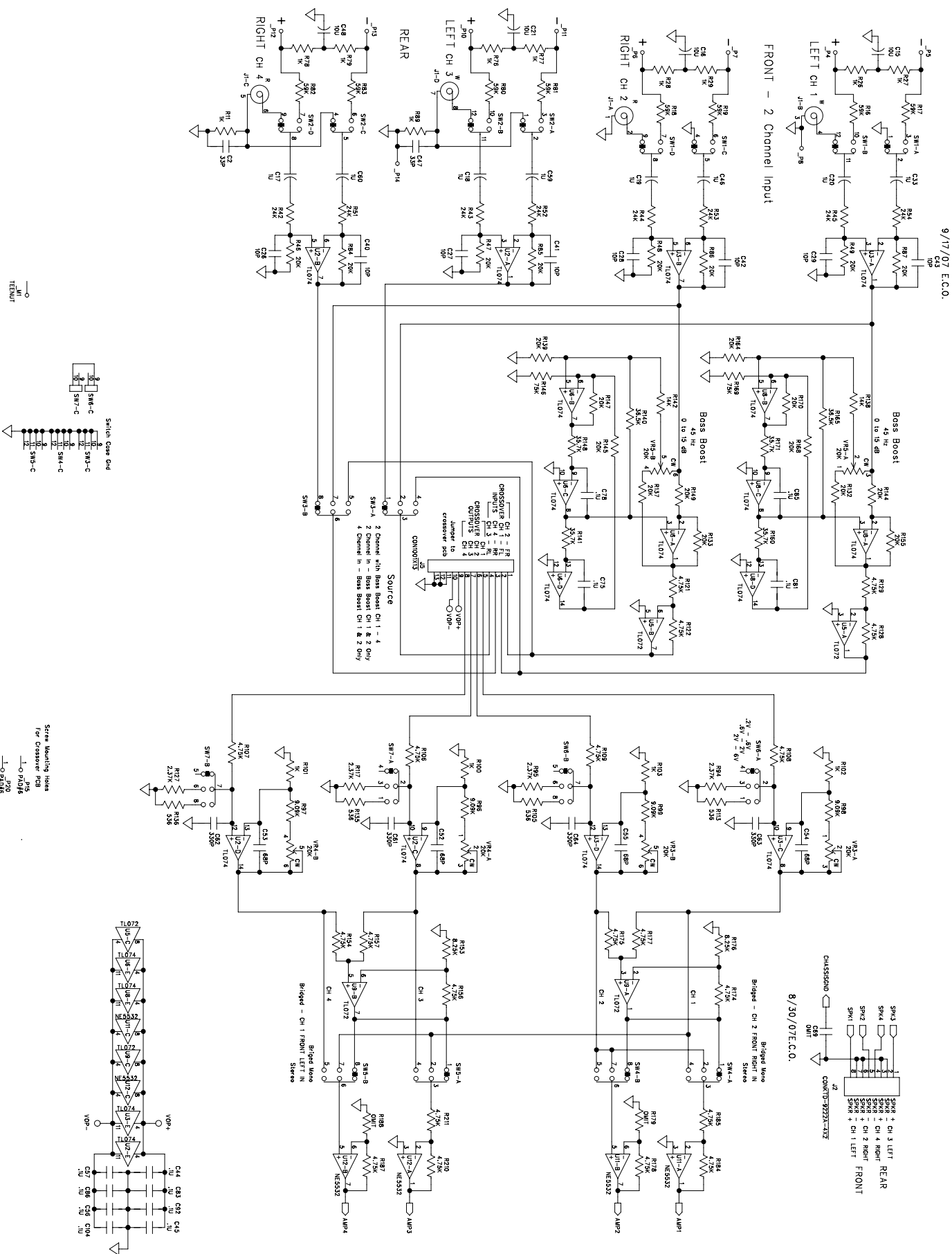
PART #	DESCRIPTION	Q'TY	REF #
01-51420-85	RESISTOR 1.43 K 1% 0805	4	R8 R14 R22 R30
01-52020-85	RESISTOR 2 K 1% 0805	16	R5 R6 R7 R9 R11 R13 R15 R16 R21 R23 R24 R25 R27 R29 R31 R32
01-53520-85	RESISTOR 3.48 K 1% 0805	4	R10 R12 R26 R28
01-54720-85	RESISTOR 4.75 K 1% 0805	8	R1 R2 R3 R4 R17 R18 R19 R20
04-20680-85	CERAMIC 68P/J 50V 0805	8	C1 C2 C5 C6 C15 C16 C19 C20
04-21040-87	CERAMIC 104/Z 50V 0805	4	C3 C4 C17 C18
06-00562-00	CAP MMYL ECQB 1H562JF 50V P=5	8	C7 C8 C13 C14 C21 C22 C27 C28
06-00563-00	CAP MMYL ECQB 1H563JF 50V P=5	8	C9 C10 C11 C12 C23 C24 C25 C26
07-00072-85	IC TL072CDR 'TI' SOIC SMD	2	U2 U4
07-00074-85	IC TL074CDR 'TI' SOIC SMD	2	U1 U3
15-40050-11	C50K*4 F09145G C50Kb L15KQA	2	VR1 VR2
18-00159-00	SW-4P2T JFPB-41S-A(N)	2	S1 S2
18-30001-01	SW SV65020F-0203-6H-01-FN	2	SW1 SW2

BLOCK DIAGRAM



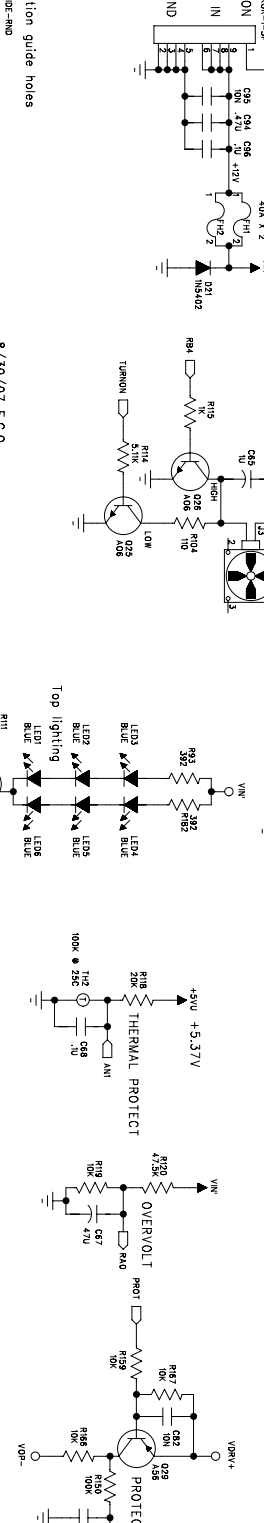
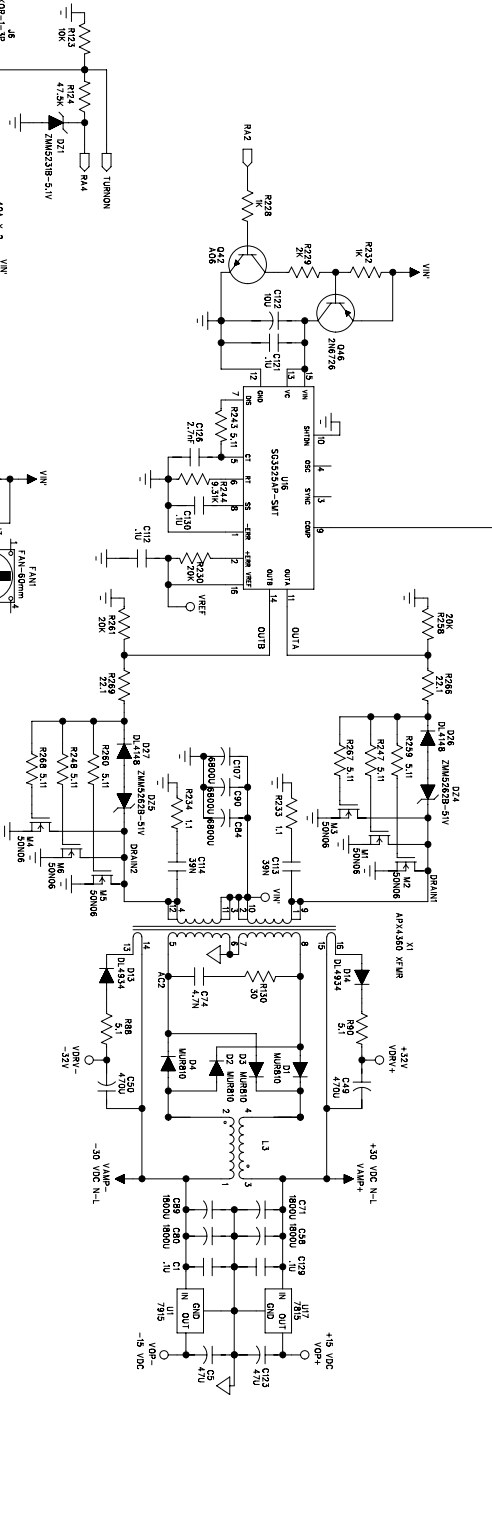
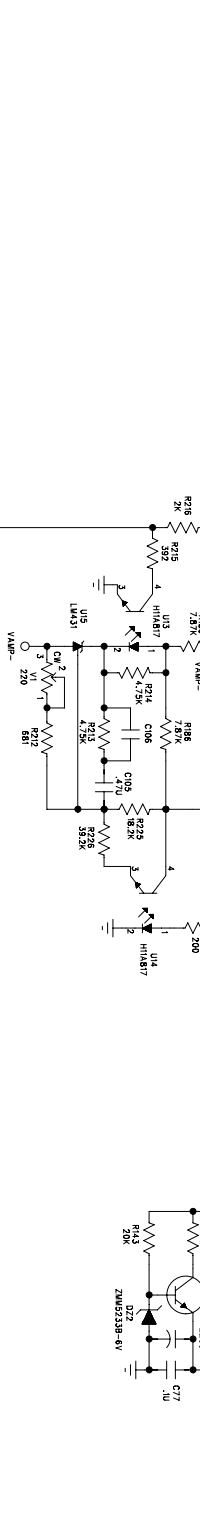
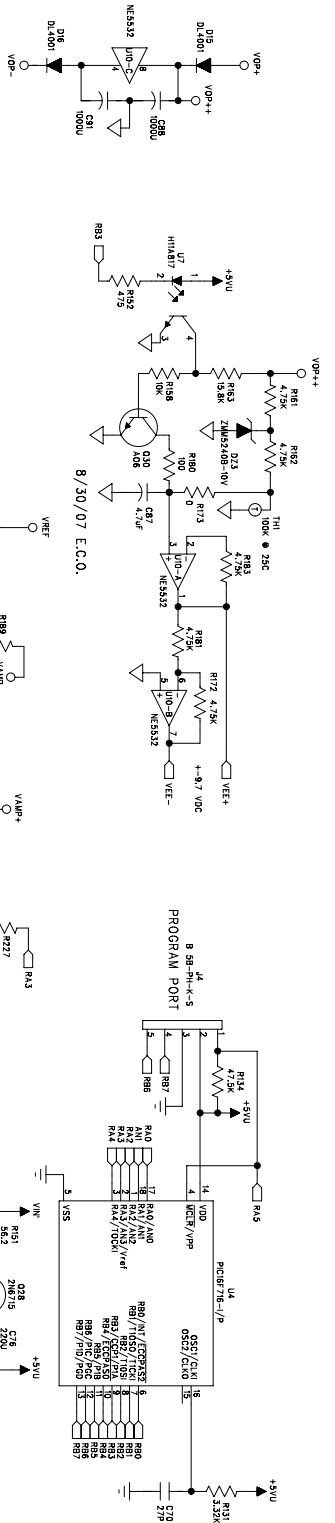
APX4361
BLOCK DIAGRAM

■CIRCUIT DIAGRAM (Main PCB)





RA0:	Overvoltage
RA1:	Thermistor
RA2:	Programmable
RA3:	Power feedback
RA4:	Turn on detect
RA5:	Program Port
RB0:	Protection
RB1:	LED red
RB2:	LED blue
RB3:	LED blue
RB4:	For high speed
RB5:	Top logo lights
RB6:	Program Port
RB7:	Program Port



Auto insertion guide holes

12 AL-GUIDE-HD
13 AL-GUIDE-HD
14 AL-GUIDE-HD
15 AL-GUIDE-HD
16 AL-GUIDE-HD

8/30/07 E.C.O.

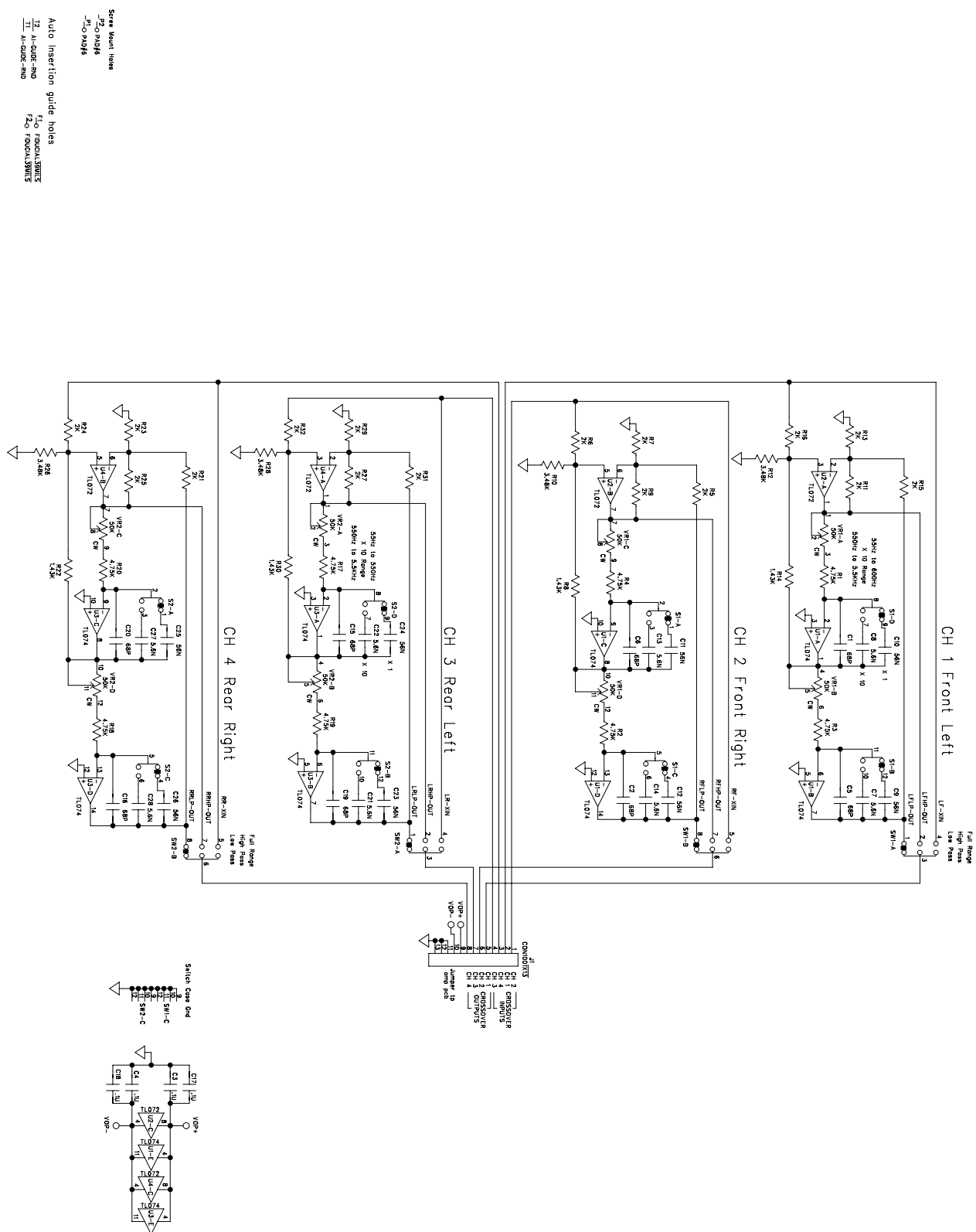
8/30/07 E.C.O.

COMPONENT

COMPONENT

COMPONENT

■CIRCUIT DIAGRAM (VR Board)



PRINTED WIRING BOARD:

