

Service Manual

AD60VTH

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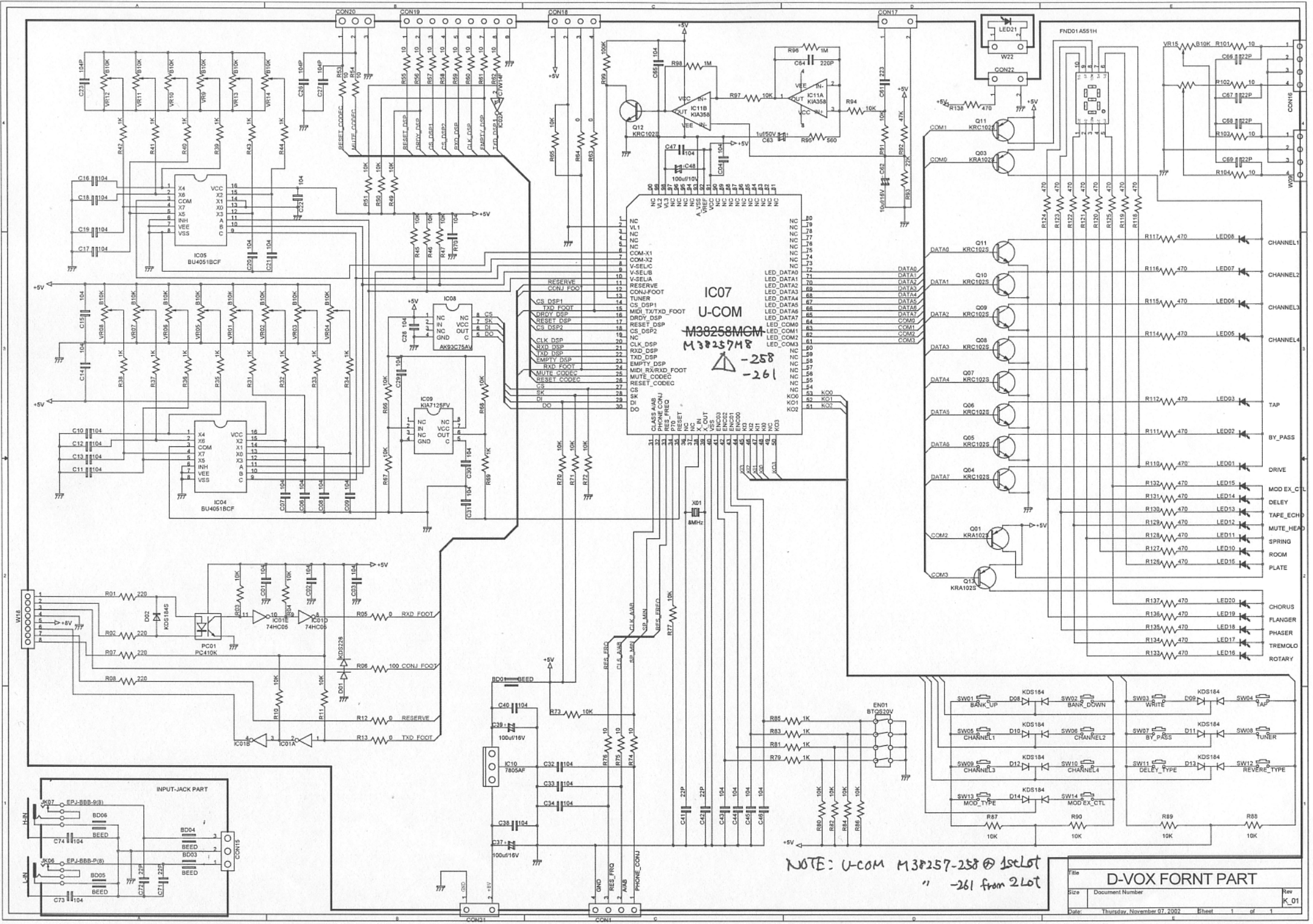
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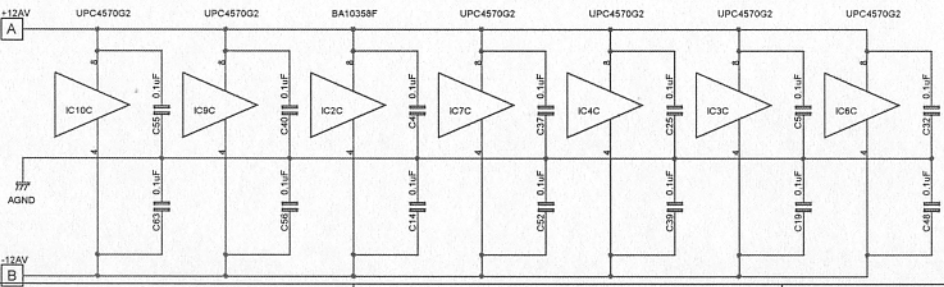
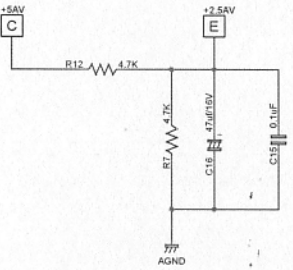
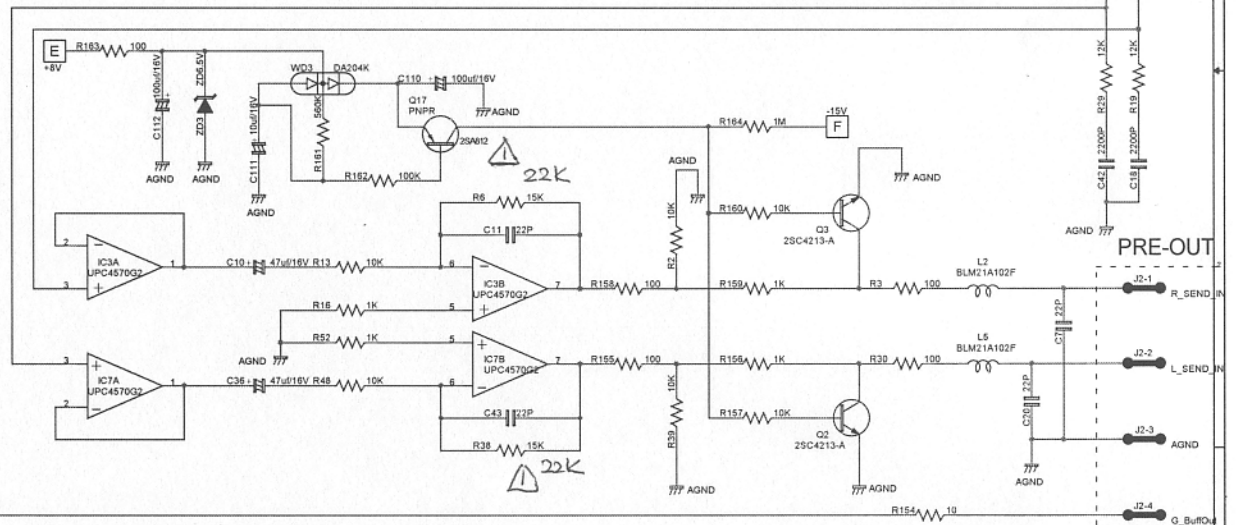
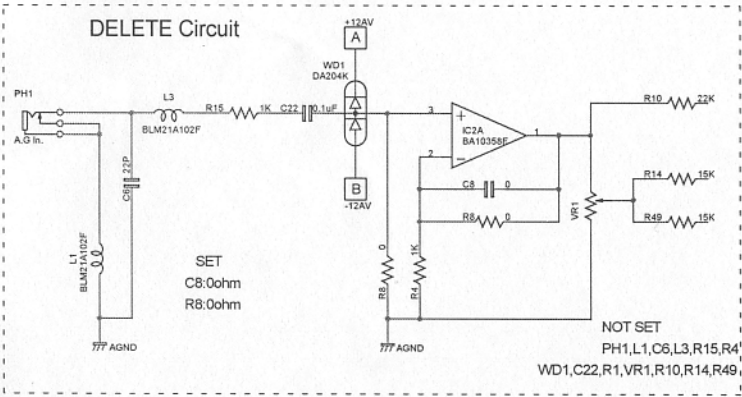
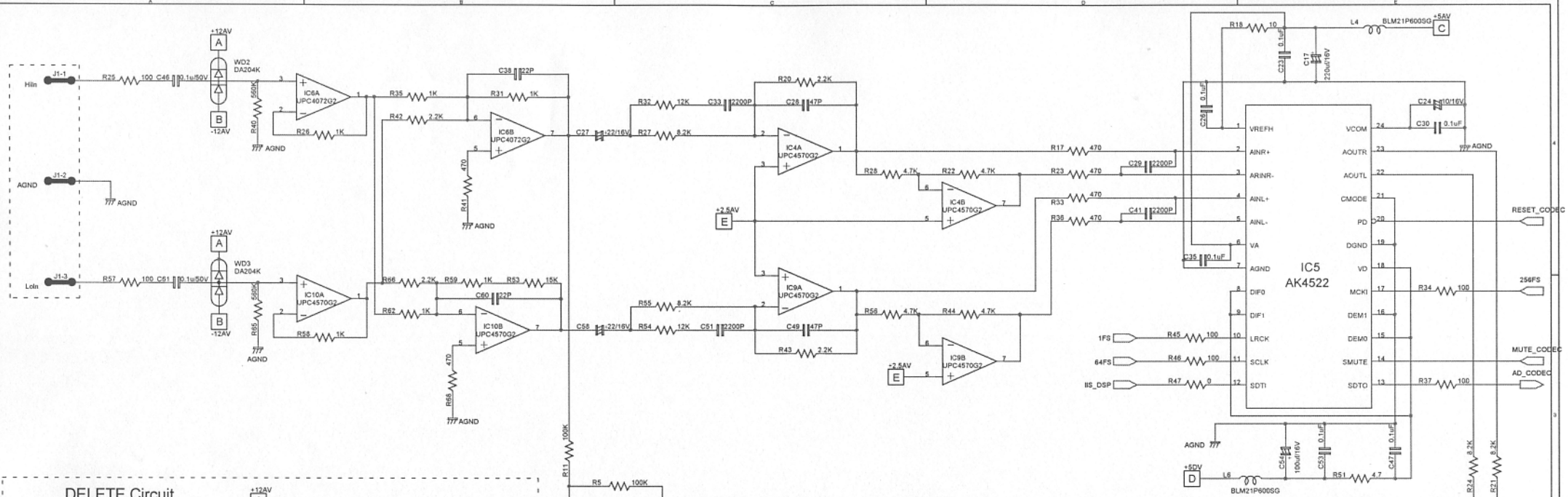
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2nd Edition

Issued date: June 20, 2003

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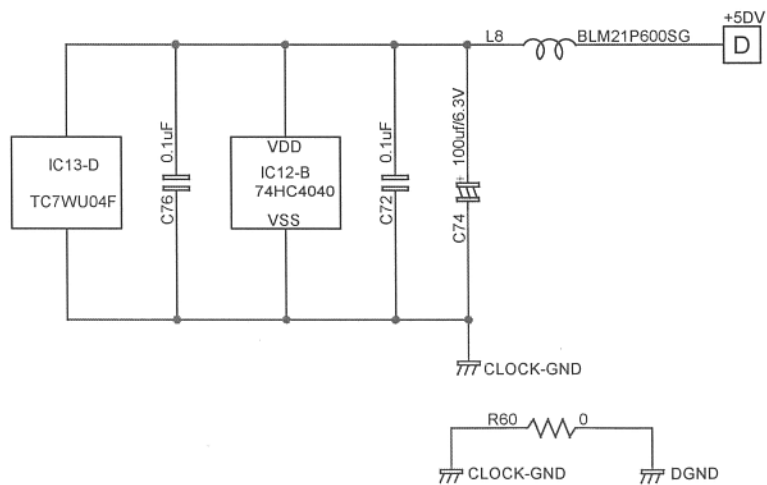
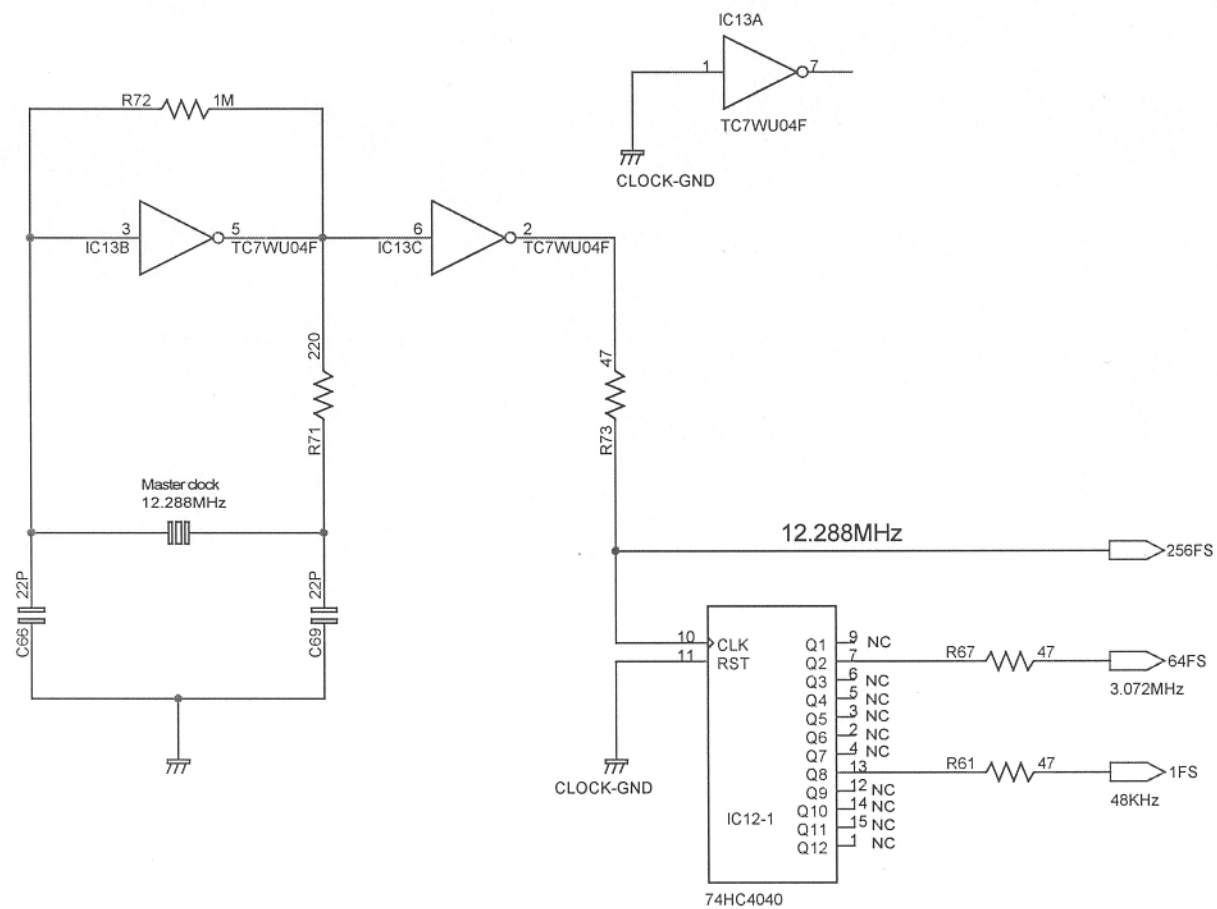


NOTE: Δ R6,R8=15K \odot 1st Lot
 " = 22K from 2nd Lot

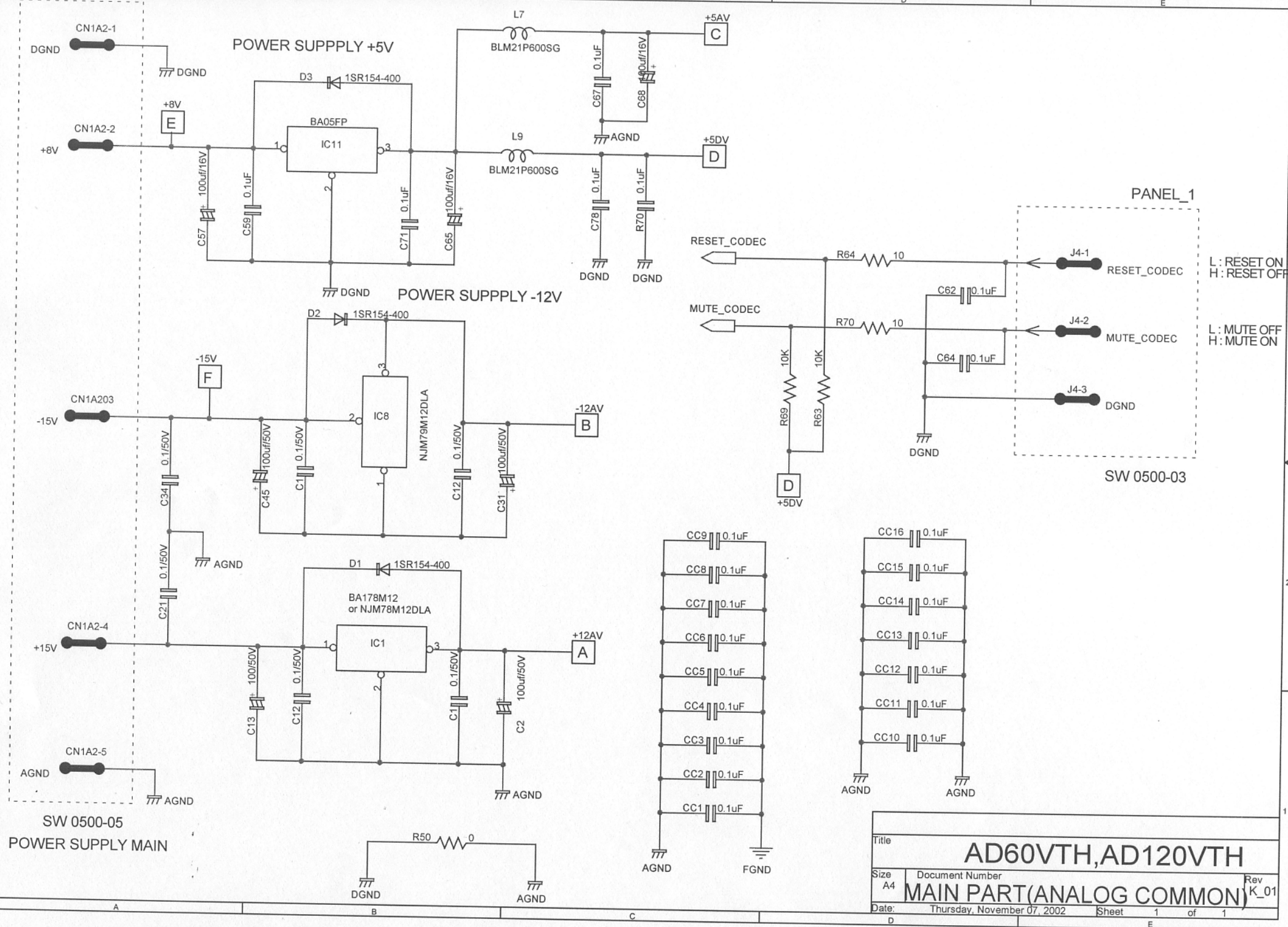
KLM-2228

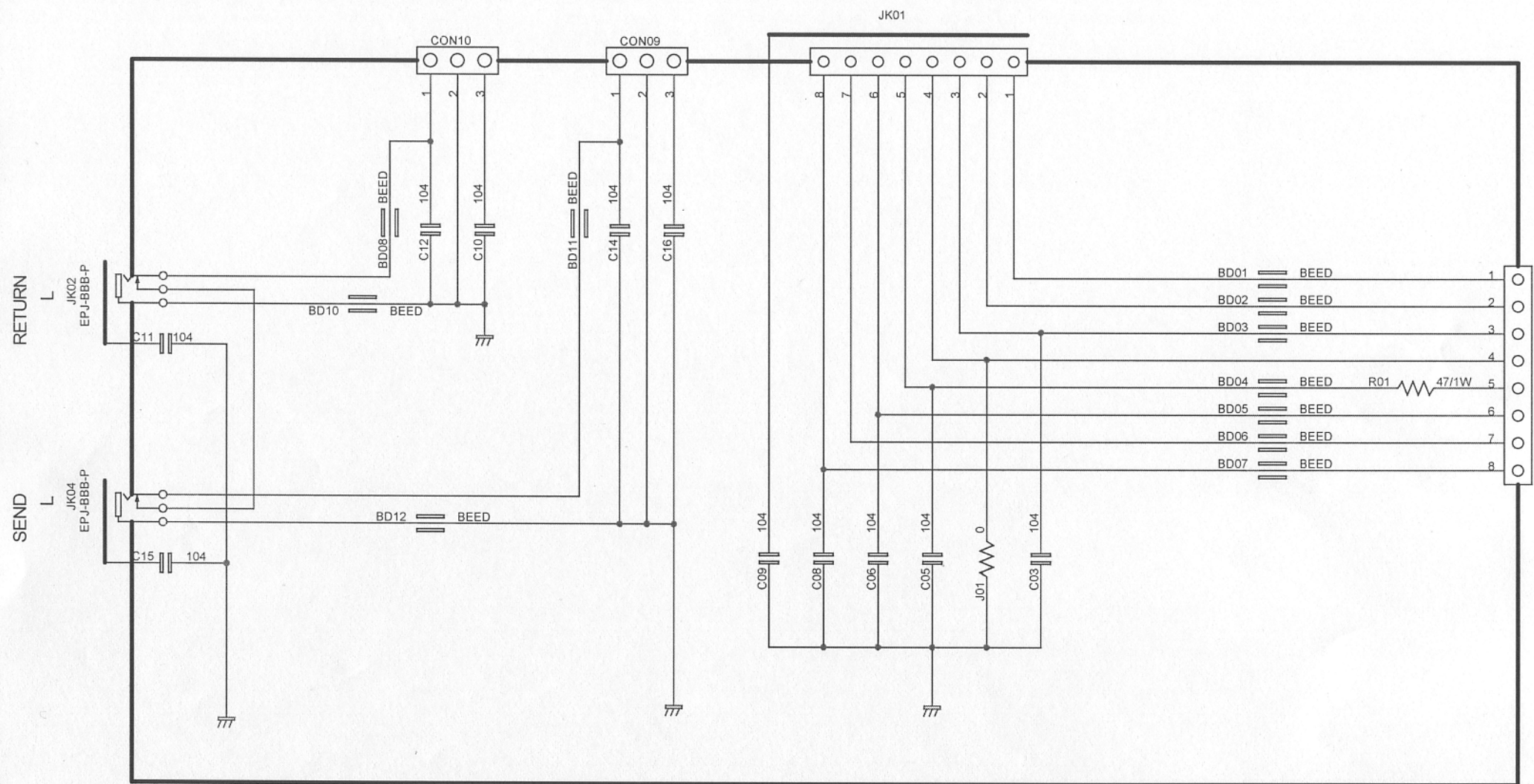
SAFETY CRITICAL COMPONENTS
 COMPONENTS MUST BE REPLACED
 WITH THE SAME TYPE AND
 RATING ONLY

File	AD60VTH,AD120VTH	Rev	K_01
Size	Document Number		
	MAIN PART(ANALOG-IN)		
Date	Thursday, November 07, 2002	Sheet	1 of 1

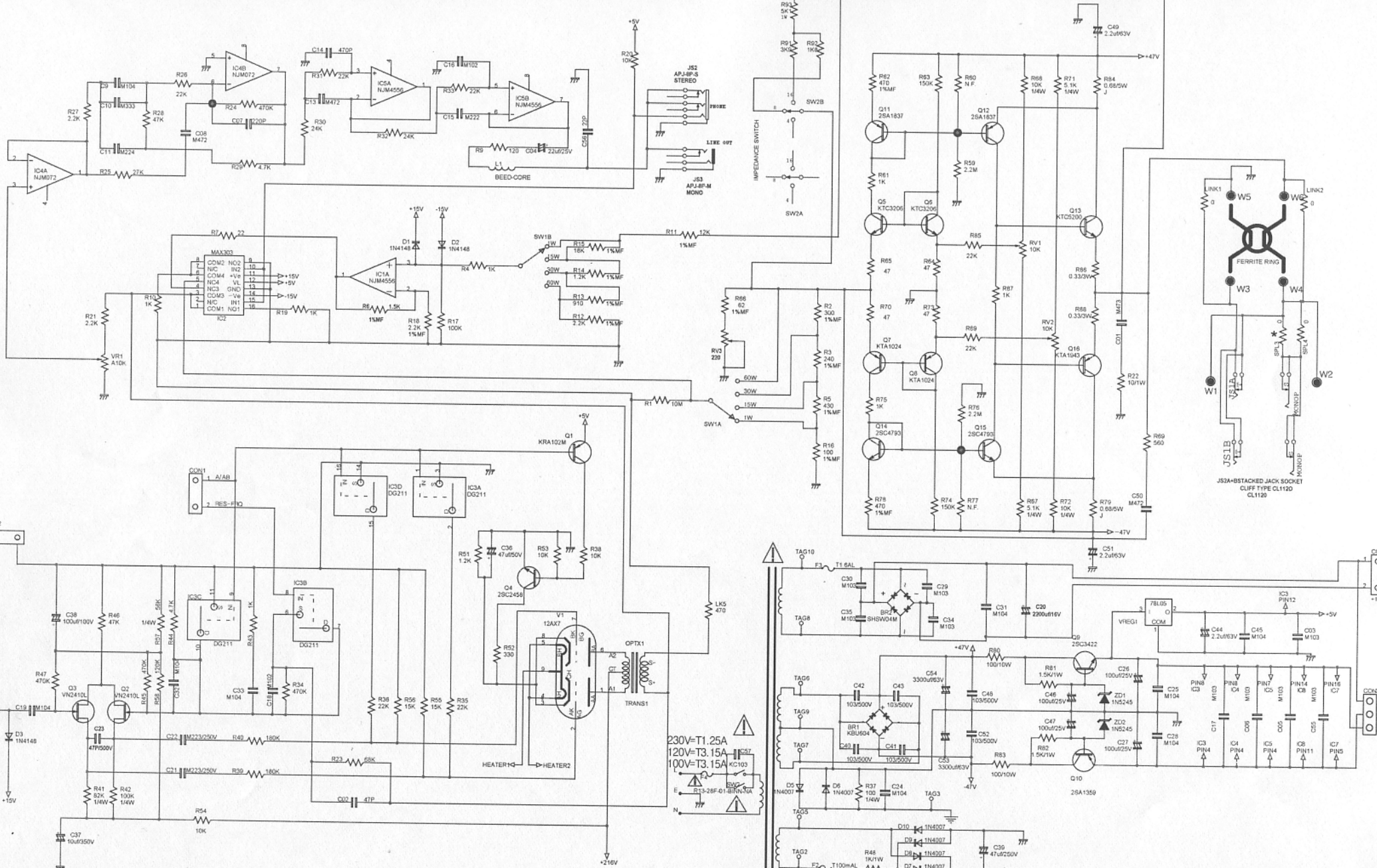


Title			AD60VTH,AD120VTH		
Size	Document Number		MAIN PART(CLOCK)		Rev
A4					K_01
Date:	Thursday, November 07, 2002		Sheet	1 of 1	



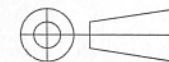


Title			
JACK PART(AD60VTH)			
Size	Document Number		Rev
A4			K_01
Date:	Wednesday, October 30, 2002	Sheet	1 of 1



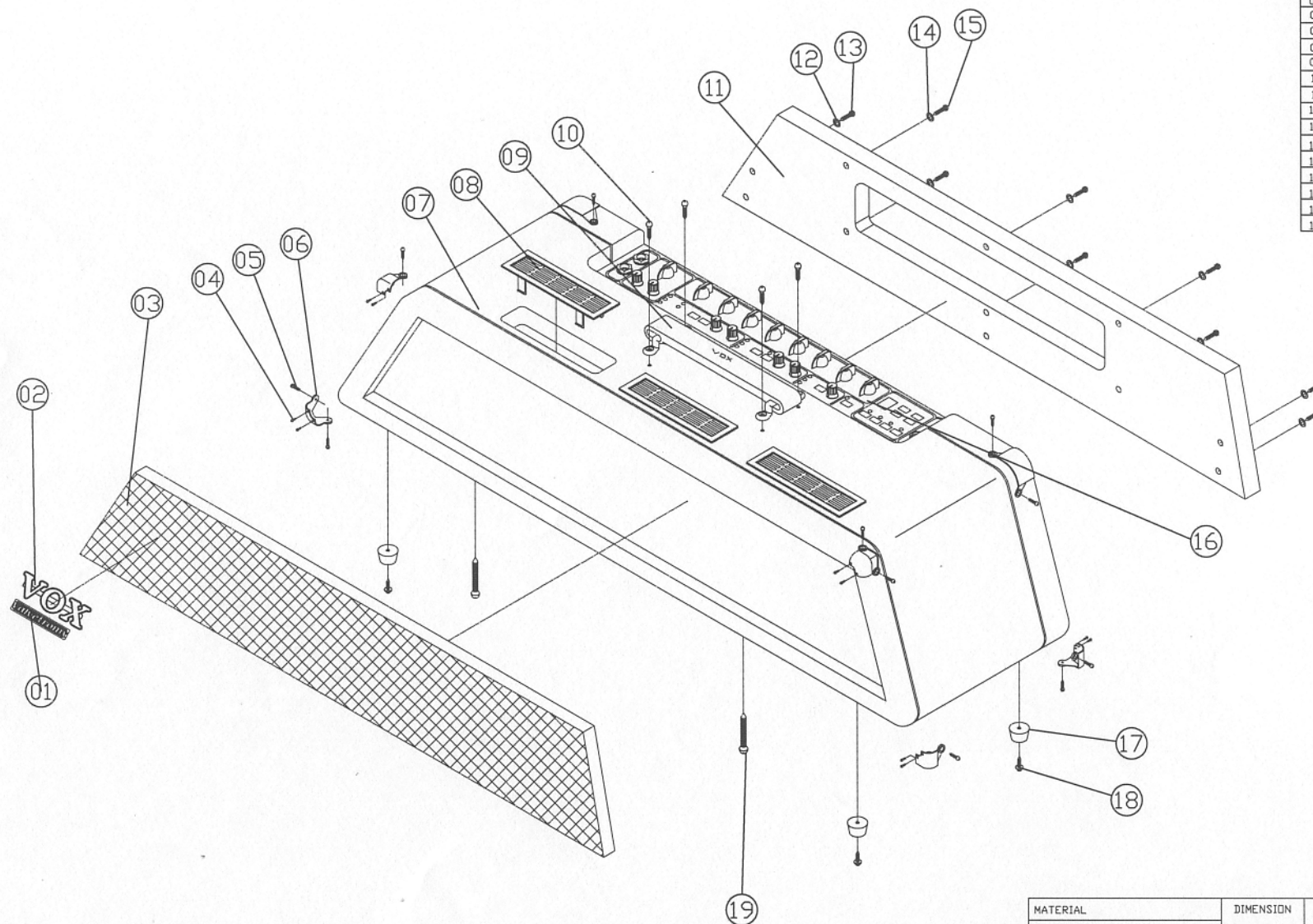
SAFETY CRITICAL COMPONENTS
COMPONENTS MUST BE REPLACED
WITH THE SAME TYPE AND
RATING ONLY


AD60VTH		
Size	Document Number	Rev
Date	Wednesday, October 30, 2002	Rev K_01

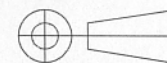


THIRD ANGLE PROJECTION

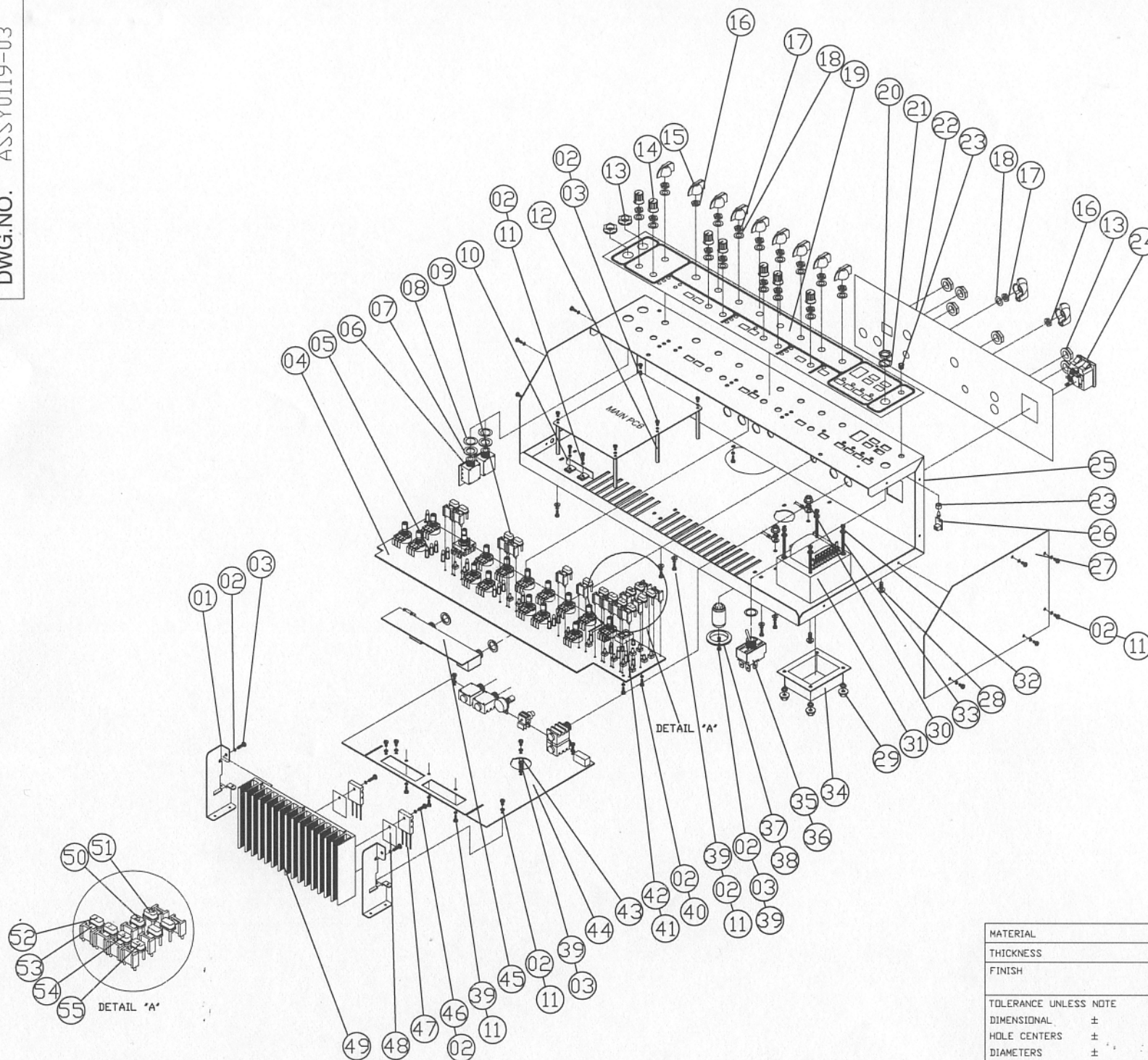
NO	DESCRIPTION	SPECIFICATION	Q'TY
01	EMBLEM	ABS(VALBE TRONIX)	1
02	BRAND MARK	VOXXGOLD-LARGE	1
03	NET PANEL	PB 9t	1
04	SCREW	ø2x8 PH BK 1	16
05	SCREW	ø3.5x13 DH BK 1	16
06	CORNER	NYLON 6	8
07	WOODEN CABINET	MDF 18t	1
08	VENT GRILL	ABS	3
09	HANDLE BAR	PVC	1
10	SCREW	M4x20 DH NI	4
11	BACK PANEL	PB 15t	1
12	PLATE WASHET	ø12xø4X0.5 BK	5
13	SCREW	ø4x30 TH BK 1	5
14	PLATE WASHET	ø12xø5X0.5 BK	6
15	SCREW	M5x25 TH BK	6
16	CHASSIS ASS'Y		1
17	RUBBER FOOT	NBR(MIDDLE)	4
18	SCREW	ø3.5x18 WITH WASHER BK 1	4
19	SCREW	M5x50 TH BK	4



MATERIAL	DIMENSION	SCALE	TITLE	SHEET
THICKNESS	mm	N/S	CABINET ASS'Y	1 of 1
FINISH	MODEL		DWG NO.	VER.
	AD-60VTH		ASSY0119-04	A
TOLERANCE UNLESS NOTE	DRAWN	DATE	 Kimanson Instruments CO., Ltd.	
DIMENSIONAL ±	JEAHUYN KIM	2002.10.22		
HOLE CENTERS ±	CHECKED	DATE		
DIAMETERS ±	APPROVED	DATE		
ANGULAR ±				



THIRD ANGLE PROJECTION



NO	DESCRIPTION	SPECIFICATION	Q'TY
01	HEAT SINK BRACKET	EGI 1.2t	2
02	SPRING WASHER	ø3	36
03	SCREW	M3x8 BH BK	20
04	FRONT PCB ASS'Y		1
05	LED SUPPORT	PLASTIC 10mm	19
06	JACK PCB		1
07	JACK WASHER	FIBER	4
08	JACK GROUND	TIN 0.2t	4
09	TACT KNOB	ABS	8
10	REGULATION PCB		1
11	SCREW	ø3x8 BH BK 2 V-CUT	22
12	PCB SUPPORT	BRASS 47.5mm	5
13	JACK NUT	ABS	8
14	ROUND KNOB	ABS	7
15	KNOB	ABS(CHICKEN HEAD)	11
16	NUT	M9	2
17	VOLUME NUT	M7	9
18	VOLUME WASHER	ø7	9
19	FRONT PANEL	PVC 0.5t HAIRLINE	1
20	POWER S/W NUT	M12	1
21	POWER S/W WASHER	ø12	1
22	REAR PANEL	PVC 0.5t	1
23	LED BUSHING	ø5	1
24	AC CONNECTOR	SC-BF-21	1
25	MAIN CHASSIS	EGI 1.2t	1
26	LED PCB		1
27	CHASSIS COVER	EGI 1.2t	2
28	SCREW	M4x10 WITH WASHER	2
29	FLANGE NUT	M4	6
30	TDS WASHER	ø4 INTERNAL	2
31	POWER TRANS		1
32	WASHER	PDM ø4	8
33	SCREW	M4x65 WITH WASHER	4
34	TRANS COVER	TRC0003-1	1
35	SPRING WASHER	ø12	1
36	POWER SWITCH		1
37	VACUUM TUBE	12Ax7	1
38	TUBE COVER	NBR	1
39	PLATE WASHER	ø3 BK	22
40	SCREW	M3x8 BH NI	2
41	SEGMENT		1
42	SEGMENT SPACER	6mm	2
43	PCB SPACER	30mm BRASS	4
44	POWER PCB ASS'Y		1
45	JACK PCB ASS'Y		1
46	SCREW	M3x10 BH NI	2
47	IC		2
48	INSULATE SPACER	MICA	2
49	HEAT SINK	AL EXTRUSION	1
50	TACT KNOB ▲	ABS	1
51	TACT KNOB ▼	ABS	1
52	TACT KNOB(1)	ABS	1
53	TACT KNOB(2)	ABS	1
54	TACT KNOB(3)	ABS	1
55	TACT KNOB(4)	ABS	1

MATERIAL	DIMENSION	SCALE	TITLE	SHEET
THICKNESS	mm	N/S	CHASSIS ASS'Y	1 of 1
FINISH	MODEL		DWG NO.	VER.
	AD-60VTH		ASSY0119-03	A
TOLERANCE UNLESS NOTE	DRAWN	DATE	 Kimanson Instruments CO., Ltd.	
DIMENSIONAL ±	JEAHUYN KIM	2002.10.22		
HOLE CENTERS ±	CHECKED	DATE		
DIAMETERS ±	APPROVED	DATE		
ANGULAR ±				

FRONT PCB

INPUT
JACK
PCB

MAIN PCB

JACK PCB

MAIN POWER PCB

LED
PCB

HEAT SINK

9861

KC103P

SW

BLK

WHT

W1

BRNORG BRNORG BLU BLU BLK REDRED

CHASSIS GND

TAG1

TAG4

TAG2

TAG6

8192W 51017N

TAG3

TAG5

TAG7

TAG8

CON5A

-15V

-47V

CON6A

+15V

-15V

+47V

CON7X

QX8

CON9X

QX9

CON3

+15V

CON4

DGND

+8V

CON1

RES

AVAB

IN

GND

CON2

L_SEND_IN

GND

CON10

L_VL_IN

GND

CON13

DGND

RXD_DSP

TXD_DSP

CON1_FOOT

DGND

+8V

DV

[reserve]

AGND

+15V

-15V

+8V

DGND

CON1A2

RESET_DSP

DRDY_DSP

CS_DSP1

CS_DSP2

RXD_DSP

CLK_DSP

EMPTY_DSP

TXD_DSP

DGND

reset_dsp

mute_codec

[DGND]

(R_SEND_IN)

L_SEND_IN

AGND

G_BUMD4

G_BOND

J2

J4

J6

J1

J3

J5

J7

J9

J11

J13

J15

J17

J19

J21

J23

J25

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How to start and operate the test mode:

REV CH1	: AD60VTH Full Test
REV CH1 DWN	: AD60VTH Full Test (LEVEL, TUNER, FC I/F Skip)
REV CH1 UP	: AD60VTH External Test only
REV CH2	: AD120VTH Full Test
REV CH2 DWN	: AD120VTH Full Test (LEVEL, TUNER, FC I/F Skip)
REV CH2 UP	: AD120VTH External Test only
BYP CH4	: Audio Test (A/D D/A Thru)

Operation during the test mode:

Internal Test

CH1+CH3	: Re-checking of the steps in error
CH1+CH4	: Skipping the errors
CH1+DWN	: Re-checking of the steps in error
CH1+UP	: Skipping the steps in errors and proceed to the next item.

External Test

CH4	: STEP UP
CH3	: Re-checking of the steps in error
UP	: ITEM UP
DOWN	: ITEM DOWN

Conditions when starting the test mode:

- Loop the following jacks with cables respectively
(AD60VTH) SEND L - INPUT HI, SEND R - INPUT LO
(AD120VTH) SEND L - INPUT HI/LO
- Connect a VC-4 (foot controller) to the product respectively

PART LIST-B

MODEL: AD60VTH(FRONT PART)

DATE : 2002, 8, 22.

NO	Q'TY	PART CODE	PART DETAILS	SPECIFICATION	DESCRIPTION
1	1	*V909000013	U1	PWB010601D	PCB 420x99x1.6t FR-4 PWB010601D
2	1	(SET PCB)	U2	PWB010601E	PCB 56x30x1.6t FR-4 PWB010601E
3	2	*V903200005	IC4, IC5	BU4051BCF	8-CHANNEL ANALOG MULTIPLEXER ,(T)
4	1	320011223	IC6	M38257M8-261	M-COM M38257M8-261 ,(T)
5	1	*V903200007	IC11	BA10358	DUAL GROUND SENSER OP-AMP DA10358 ,(T)
6	1	*V903200008	IC10	KIA7805AF	VOLTAGE REGULATOR KIA7805AF ,(T)
7	1	*V903200009	IC8	AK93C75AV	8KIT SERIAL C-MOS EEPROM ,(T)
8	1	*V903200010	IC9	KIA7125FV	SYSTEM RESETTNG KIA7125FV ,(T)
9	1	*V903200011	IC1	74HC05	HEX INVERTER 74HC05 ,(T)
10	1	*V903200012	IC2	TC7S14FU	SCHMITT INVERTER TC7S14FU ,(T)
11	4	*V903010012	Q1,Q2,Q3,Q13	KRA102S	DIGITAL TRANSISTOR PNP KRA102S ,(T)
12	9	*V903010013	Q4,Q5,Q6,Q7,Q8,Q9,Q10,Q11,Q12	KRC102S	DIGITAL TRANSISTOR NPN KRC102S ,(T)
13	1	*V903010014	D01	KDS226S	HIGH SPEED SWITCHING DIODE KDS226S ,(T)
14	8	*V903010015	D02,D08,D09,D10,D11,D12,D13,D14	KDS184S	HIGH SPEED SWITCHING DIODE KDS184S ,(T)
15	1	*V903120007	FND1	A551H	LED DISPLAY A551H
16	1	*V903350001	X01	8 MHz	CRYSTAL 8 MHz
17	2	*V904020002	BD01,BD02	BEED	CHIP BEED CORE ,(T)
18	4	*V904020001	BD03,BD04,BD05,BD06	SAT2550L	AXIAL BEED CORE
19	1	334000600	PC01	PC410K	PHOTO COUPLERS PC410K ,(T)
20	1	*V904530007	EN01	BTQS20V	ENCORD SWITCH BTQS20V
21	2	*V904540014	JK06,JK07	APJ-8P-M	PHONE JACK MONO APJ-8P-M
22	13	*V903620009	VR1,VR2,VR3,VR4,VR5,VR6,VR7,VR8,VR9,VR10,VR11,VR12,VR13	RV1600-40-15S-B10K-C0	POTENTIOMETER RV1600-40-15S-B10K-C0 MONO
23	1	*V903620012	VR15	RV1600-40-15S-A10K-C0	POTENTIOMETER RV1600-40-15S-A10K-C0 MONO
24	1	*V903620011	VR14	RV1600-40-15S-B10K-C11	11 CLICK VOLUME RV1600-40-15S-B10K-C11
25	14	*V904530008	SW1,SW2,SW3,SW4,SW5,SW6,SW7,SW8, SW9,SW10,SW11,SW12,SW13,SW14	ST-1101B	TACT SWITCH ST-1101B 9.5 m/m
26	19	*V903120001	LED1,LED2,LED3,LED5,LED6,LED7,LED8,LED9,LED10,LED11,LED12,LED13,LED14,LED15,LED16, LED17,LED18,LED19,LED20	KLR124	LED RED 3 pi KLR124
27	1	*V903120003	LED21	KLR114	LED RED 5 pi KLR114
28	1	No Supply	C63	1uf/50V	CHEMICAL CONDENSOR 50V SS 1 uf
29	1	No Supply	C62	10uf/16V	CHEMICAL CONDENSOR 16V SS 10 uf
30	1	No Supply	C48	100uf/10V	CHEMICAL CONDENSOR 10V SS 100 uf
31	2	No Supply	C37,C39	100uf/16V	CHEMICAL CONDENSOR 16V SS 100 uf
32	4	No Supply	C41,C42,C66,C68	22P	CHIP CERAMIC CAPACITOR 1608 J 22 pf ,(T)
33	1	No Supply	C64	221	CHIP CERAMIC CAPACITOR 1608 J 220 pf ,(T)
34	1	No Supply	C61	223	CHIP CERAMIC CAPACITOR 1608 J 0.022 uf ,(T)
35	39	No Supply	C01,C02,C03,C04,C06,C07,C08,C09,C10,C11,C12,C13,C14,C15,C16,C17,C18,C19,C20,C21,C22,C23,C26,C27,C28,C29,C30,C31,C32,C33,C34,C40,C43,C44,C45,C46,C47,C65,C70	104	CHIP CERAMIC CAPACITOR 1608 J 0.1 uf ,(T)
36	2	No Supply	C71,C72	22P	CERAMIC CAPACITOR 50V 22 pf
37	3	No Supply	C38,C73,C74	104	CERAMIC CAPACITOR 50V 0.1 uf
38	5	No Supply	R05,R12,R13,R63,R64	000 ohm	CHIP RESISTOR 1608 1/10 WATT J 0 ohm ,(T)
39	15	No Supply	R53,R54,R55,R56,R57,R58,R59,R60,R61,R62,R74,R75,R76,R101,R103	10 ohm	CHIP RESISTOR 1608 1/10 WATT J 10 ohm ,(T)
			R62,R74,R75,R76,R101,R103		
40	1	No Supply	R06	100 ohm	CHIP RESISTOR 1608 1/10 WATT J 100 ohm ,(T)
41	4	No Supply	R01,R02,R07,R08	220 ohm	CHIP RESISTOR 1608 1/10 WATT J 220 ohm ,(T)
42	28	No Supply	R110,R111,R112,R114,R115,R116,R117,R118,R119,R120,R121,R122,R123,R124,R125,R126,R127,R128,R129,R130,R131,R132,R133,R134,R135,R136,R137,R138	470 ohm	CHIP RESISTOR 1608 1/10 WATT J 470 ohm ,(T)
43	1	No Supply	R95	560 ohm	CHIP RESISTOR 1608 1/10 WATT J 560 ohm ,(T)
44	19	No Supply	R31,R32,R33,R34,R35,R36,R37,R38,R39,R40,R41,R42,R43,R44,R69,R79,R81,R83,R85	1K ohm	CHIP RESISTOR 1608 1/10 WATT J 1K ohm ,(T)
45	30	No Supply	R03,R04,R10,R11,R45,R46,R47,R49,R50,R51,R65,R66,R67,R68,R70,R71,R72,R73,R77,R80,R82,R84,R86,R87,R88,R89,R90,R91,R94,R97	10K ohm	CHIP RESISTOR 1608 1/10 WATT J 10K ohm ,(T)
46	1	No Supply	R93	22K ohm	CHIP RESISTOR 1608 1/10 WATT J 22K ohm ,(T)
47	1	No Supply	R92	47K ohm	CHIP RESISTOR 1608 1/10 WATT J 47K ohm ,(T)
48	1	No Supply	R99	100K ohm	CHIP RESISTOR 1608 1/10 WATT J 100K ohm ,(T)
49	2	No Supply	R96,R98	1M ohm	CHIP RESISTOR 1608 1/10 WATT J 1M ohm ,(T)
50	2	*V904700004	CON17,CON22	2P ANGLE WAFER	2P ANGLE WAFER 2mm PITCH
51	1	*V904752003	W09	2P ANGLE CONNECTOR	SHIELD WIRE UL1533 AWG26 GRY 240mm
52	1	*V904752003	CON01	2P ANGLE CONNECTOR	FLAT WIRE UL1007 AWG 26 BLK.WHT 250mm
53	1	*V904752003	CON16	2P ANGLE CONNECTOR	SHIELD WIRE UL1533 AWG26 GLY 190mm
54	1	*V904752003	CON21	2P ANGLE CONNECTOR	FLAT WIRE UL1007 AWG26 BLK,WHT 300mm
55	1	*V904752003	W22	2P ANGLE CONNECTOR	FLAT WIRE UL1007 AWG26 BLK,WHT 120mm
56	1	*V904753005	CON15	3P ANGLE CONNECTOR	SHIELD WIRE UL2547 AWG26 GLY 90mm
57	1	*V904753005	CON20	3P ANGLE CONNECTOR	FLAT WIRE UL1007 AWG26 BLK,WHT,WHT 265mm
58	1	*V904752009	W13	8P ANGLE CONNECTOR	WIRE UL1007 AWG26 BLK,WHT,WHT 180mm
59	1	*V904752005	CON19	9P ANGLE CONNECTOR	WIRE UL1007 AWG26 BLK,WHT,WHT 250mm

PART LIST

MODEL: AD60VTH(JACK PART)

DATE : 2002, 8, 22.

N0	Q'TY	PART CODE	PART DETAILS	SPECIFICATION	DESCRIPTION
1	1	*V909000011	U1	PWB010601C ASSY	PCB 141x99x1.6t FR-1 PWB010601C
2	2	*V904540014	JK02,JK04	APJ-8P-M	PHONE JACK MONO APJ-8P-M
3	1	*V904540012	JK01	JM37115-LO	MODULAR JACK JM37115-LO
4	11	*V904020001	BD01, BD02, BD03, BD04, BD05, BD06, BD07, BD08, BD10, BD11, BD12	SAT2550L	AXIAL BEED CORE SAT2550L(T)
5	2	No Supply	C10,C14	22P	CERAMIC CAPACITOR 50V J 22 pf ,(T)
6	7	No Supply	C03, C05, C08, C09, C13, C15	104	CERAMIC CAPACITOR 50V J 0,1 uf ,(T)
7	1	No Supply	R01	47/1W	CARBON RESISTOR 1 WATT 47 OHM ,(T)
8	1	No Supply	J01		JUMPER WIRE 0,6 pi 10 m/m ,(T)
9	1	No Supply	CON09	2P ANGLE CONNECTOR	SHIELD WIRE UL1533 AWG26 GLY 260mm
10	1	*V904700001	CON10	2P WAFER	2P WAFER 2mm PICH
11	1	*V904700003	CON13	8P WAFER	8P WAFER 2mm PICH

PARTS LIST

MODEL: AD60VTH(POWER PART)

DATE : 2002. 11. 05.

NO	Q'TY	PART CODE	PART DETAILS	SPECIFICATION	DESCRIPTION
1	1	*Y905000001	U1	PWB20925A ASST	PCB 247x190x1.6t CMI PWB20925A
2	2	*Y901200013	IC01,IC05	NJM4556	OPAMP NJM4556 or MS216
3	1	*Y904300011	IC02	DM043	ANALOGUE SWITCH DUAL SPST MAX303/DG403
4	1	*Y903000005	IC03	DS211	ANALOGUE SWITCH DS211
5	1	*Y901200015	IC04	NJM072	OPAMP NJM072
6	2	*Y903000002	Q02,Q03	VN2410L	MOSFET VN2410L ,(T)
7	1	*Y903010002	Q10	2SA1359-Y	TRANSISTOR PNP 2SA1359-Y
8	2	*Y903010003	Q11,Q12	2SA1837	TRANSISTOR PNP 2SA1837
9	1	*Y903010004	Q04	KTC3198-Y	TRANSISTOR NPN 2SC2458 or KTC3198-Y ,(T)
10	1	*Y903010005	QX9	2SC3422-Y	TRANSISTOR NPN 2SC3422 or KTD600-Y
11	2	*Y903010006	Q14,Q15	2SC4793	TRANSISTOR NPN 2SC4793
12	2	*Y903010007	Q07,Q08	8TA1024-Y	TRANSISTOR PNP 8TA1024-Y ,(T)
13	2	*Y903010008	Q16	2SA1943-O	TRANSISTOR PNP 2SA1943-O
14	2	*Y903010009	Q05,Q06	KTC3206-Y	TRANSISTOR NPN KTC3206-Y ,(T)
15	1	*Y903010010	Q13	2SC3200-O	TRANSISTOR NPN 2SC3200-O
16	1	*Y903010011	Q01	K8A102M	PNP-DIGITAL TRANSISTOR TYPE K8A102M ,(T)
17	1	*Y903210002	VRE001	78L05	VOLTAGE REGULATOR 78L05 ,(T)
18	6	*Y903111001	D05,D06,D07,D08,D09,D10	1N4007	SILICON RECTIFIERS DIODE 1N4007 ,(T)
19	4	*Y90321002	D01,D02,D03,D04	1N4148	SILICON SWITCHING DIODE 1N4148 ,(T)
20	1	*Y903111008	BR01	KBU604	BRIDGE RECTIFIER DIODE KBU604
21	1	*Y903111009	BR02	SHS904M	BRIDGE RECTIFIER DIODE SHS904M
22	2	*Y903111010	ZD01,ZD02	1N5245	ZENER DIODE 15V 0.5W 1N5245 ,(T)
23	1	*Y905000002	V01	12AX7	TUBE VACUUM TUBE 12AX7
24	1	*Y905000001	VJ1	VT9-PT-2	TUBE SOCKET VT9-PT-2
25	1	*Y901010017	P01	250V T10mAL	FUSE TIME LAG 250V T10mAL
26	1	*Y901010018	P02	250V T110mAL	FUSE TIME LAG 250V T110mAL
27	1	*Y901010019	P03	250V T1.6AL	FUSE TIME LAG 250V T1.6AL
28	6	*Y901300009	F01A,F01B,F02A,F02B,F03A,F03B	0751-0110	FUSE CLIP 0751-0110(OD TYPE) ,(T)
29	1	*Y904500001	J801	0425550L	AXIAL BRED CORE 0425550L ,(T)
30	1	*Y904540016	J801	CL1120	PHONE JACK (STACKED), CL1120
31	1	*Y904540014	J801,J803	APJ-8P-M	PHONE JACK APJ-8P-M (MONO)
32	1	*Y904540015	J802	APJ-8P-S	PHONE JACK APJ-8P-S (STEREO)
33	1	*Y904500012	V801	RS1600-20-15S-A10K-C0	POTENTIOMETER RS1600-20-15S-A10K-C0 MONO
34	2	*Y903630004	RV01,RV02	B10K	SEMI POTENTIOMETER 10m/m B10K
35	1	*Y903630005	RV03	R220 ohm	SEMI POTENTIOMETER 10m/m R220 ohm
36	1	*Y904500017	SW01	RS-2401-15SP-20	ROTARY SWITCH 2C4P RS-2401-15SP-20
37	1	*Y904050013	OPTX1	OPT48	OUTPUT TRANS
38	1	*Y904050015	T1	AD60-DJ	POWER TRANS AD60-DJ
39	1	*Y904050016	SW03	AD60-DU	POWER TRANS AD60-DU
		*Y904050017		AD60-DE	POWER TRANS AD60-DE
		*Y904050018		AD60-DAU1	POWER TRANS AD60-DAU
		*Y904050009		CL7500	POWER SWITCH 330V,240V = CL7500
40	1	*Y904500003	SW02	R13-28P-01-BINN-MA	POWER SWITCH 100V,120V = R13-28P-01-BINN-MA
41	1	*Y904700000	AC01	TSS-2324	SLIDE SWITCH 2324, TSS-2324
42	1	*Y904700000	AC01	SC-8P-21	AC CONNECTOR SC-8P-21
43	1	600005301	AC02	EXP30(SVT)-16A	AC POWER CORD 100V=
44	1	*Y904000104	EXP30(SVT)-16A	EXP4819R-16A	AC POWER CORD 120V=8V=EXP4819R-16A
45	1	*Y903300015	F04	FUSE 100V=250V/T3.15AL	FUSE 100V=250V/T3.15AL
46	1	*Y903300016		FUSE 120V=250V/T3.15AL	FUSE 120V=250V/T3.15AL
47	1	*Y903300016		FUSE 230V=250V/T1.25AL	FUSE 230V=250V/T1.25AL
48	1	No Supply	C56	22P	CERAMIC CAPACITOR 50V J 22 pf ,(T)
49	1	No Supply	C02	47P	CERAMIC CAPACITOR 50V J 47 pf ,(T)
50	1	No Supply	C07	221P	CERAMIC CAPACITOR 50V J 220 pF ,(T)
51	1	No Supply	C14	471P	CERAMIC CAPACITOR 50V J 470 pF ,(T)
52	1	No Supply	C23	47P/500V	CERAMIC CAPACITOR 500V J 47 pF ,(T)
53	6	No Supply	C40,C41,C42,C43,C48,C52	101/500V	CERAMIC CAPACITOR 500V J 0.01 uf ,(T)
54	1	No Supply	C51	KC103	CERAMIC CAPACITOR AC 400V J 0.01 uf ,(T)
55	2	No Supply	C16,C18	M102	PLASTIC FILM CAPACITOR 100V PP 0.001 uf ,(T)
56	1	No Supply	C15	M222	PLASTIC FILM CAPACITOR 100V PP 0.0022 uf ,(T)
57	4	No Supply	C05,C13,C50	M472	PLASTIC FILM CAPACITOR 100V PP 0.0047 uf ,(T)
58	9	No Supply	C01,C05,C06,C17,C29,C30,C34,C35,C55	M103	PLASTIC FILM CAPACITOR 100V PP 0.01 uf ,(T)
59	1	No Supply	C10	M333	PLASTIC FILM CAPACITOR 100V PP 0.033 uf ,(T)
60	1	No Supply	C01	M473	PLASTIC FILM CAPACITOR 100V PP 0.047 uf ,(T)
61	1	No Supply	C10,C19,C24,C25,C28,C31,C32,C33,C45	M104	PLASTIC FILM CAPACITOR 100V PP 0.1 uf ,(T)
62	1	No Supply	C11	M224	PLASTIC FILM CAPACITOR 100V PP 0.22 uf ,(T)
63	2	No Supply	C21,C22	M223/250V	METAL POLYPROPYLENE CAPACITOR 250V MP 0.22 uf
64	3	No Supply	C44,C49,C51	2.2uf/63V	CHEMICAL CONDENSOR 63V 2.2 uf ,(T)
65	1	No Supply	C04	10uf/250V	CHEMICAL CONDENSOR 100V 10 uf
66	1	No Supply	C04	22uf/25V	CHEMICAL CONDENSOR 25V 22 uf ,(T)
67	1	No Supply	C36	47uf/50V	CHEMICAL CONDENSOR 50V 47 uf ,(T)
68	1	No Supply	C39	47uf/350V	CHEMICAL CONDENSOR 350V 47uf
69	4	No Supply	C26,C27,C46,C47	100uf/25V	CHEMICAL CONDENSOR 25V 100 uf ,(T)
70	1	No Supply	C38	100uf/100V	CHEMICAL CONDENSOR 100V 100 uf
71	1	No Supply	C20	220uf/16V	CHEMICAL CONDENSOR 16V 2200 uf
72	2	No Supply	C03,C54	330uf/63V	CHEMICAL CONDENSOR 63V 3300 uf
73	1	No Supply	R07	22 ohm	CARBON RESISTOR 1/6 WATT J 22 ohm ,(T)
74	4	No Supply	R64,R65,R70,R73	47 ohm	CARBON RESISTOR 1/6 WATT J 47 ohm ,(T)
75	1	No Supply	R09	120 ohm	CARBON RESISTOR 1/6 WATT J 120 ohm ,(T)
76	1	No Supply	R52	330 ohm	CARBON RESISTOR 1/6 WATT J 330 ohm ,(T)
77	1	No Supply	R69	560 ohm	CARBON RESISTOR 1/6 WATT J 560 ohm ,(T)
78	7	No Supply	R04,R10,R19,R43,R61,R75,R87	1K ohm	CARBON RESISTOR 1/6 WATT J 1K ohm ,(T)
79	1	No Supply	R21	1.2K ohm	CARBON RESISTOR 1/6 WATT J 1.2K ohm ,(T)
80	2	No Supply	R21,R37	2.2K ohm	CARBON RESISTOR 1/6 WATT J 2.2K ohm ,(T)
81	2	No Supply	R29,R44	4.7K ohm	CARBON RESISTOR 1/6 WATT J 4.7K ohm ,(T)
82	4	No Supply	R20,R38,R53,R54	10K ohm	CARBON RESISTOR 1/6 WATT J 10K ohm ,(T)
83	7	No Supply	R45,R51,R53,R55,R56,R58,R59	22K ohm	CARBON RESISTOR 1/6 WATT J 22K ohm ,(T)
84	2	No Supply	R55,R56	15K ohm	CARBON RESISTOR 1/6 WATT J 15K ohm ,(T)
85	3	No Supply	R30,R32	24K ohm	CARBON RESISTOR 1/6 WATT J 24K ohm ,(T)
86	1	No Supply	R33	27K ohm	CARBON RESISTOR 1/6 WATT J 27K ohm ,(T)
87	2	No Supply	R28,R46	47K ohm	CARBON RESISTOR 1/6 WATT J 47K ohm ,(T)
88	1	No Supply	R23	68K ohm	CARBON RESISTOR 1/6 WATT J 68K ohm ,(T)
89	1	No Supply	R17	100K ohm	CARBON RESISTOR 1/6 WATT J 100K ohm ,(T)
90	1	No Supply	R50	120K ohm	CARBON RESISTOR 1/6 WATT J 120K ohm ,(T)
91	2	No Supply	R61,R74	150K ohm	CARBON RESISTOR 1/6 WATT J 150K ohm ,(T)
92	2	No Supply	R39,R40	180K ohm	CARBON RESISTOR 1/6 WATT J 180K ohm ,(T)
93	4	No Supply	R24,R31,R44,R45,R47	470K ohm	CARBON RESISTOR 1/6 WATT J 470K ohm ,(T)
94	2	No Supply	R59,R76	2.2M ohm	CARBON RESISTOR 1/6 WATT J 2.2M ohm ,(T)
95	1	No Supply	R01	10M ohm	CARBON RESISTOR 1/6 WATT J 10M ohm ,(T)
96	1	No Supply	R16	100 ohm	1K METAL FILM RESISTOR 1/6 WATT F 100 ohm ,(T)
97	1	No Supply	R02	240 ohm	1K METAL FILM RESISTOR 1/6 WATT F 240 ohm ,(T)
98	1	No Supply	R03	300 ohm	1K METAL FILM RESISTOR 1/6 WATT F 300 ohm ,(T)
99	1	No Supply	R05	430 ohm	1K METAL FILM RESISTOR 1/6 WATT F 430 ohm ,(T)
100	1	No Supply	R66	62 ohm	1K METAL FILM RESISTOR 1/6 WATT F 62 ohm ,(T)
101	3	No Supply	R62,R78,LK5	470 ohm	1K METAL FILM RESISTOR 1/6 WATT F 470 ohm ,(T)
102	1	No Supply	R13	910 ohm	1K METAL FILM RESISTOR 1/6 WATT F 910 ohm ,(T)
103	1	No Supply	R14	1.2 Kohm	1K METAL FILM RESISTOR 1/6 WATT F 1.2K ohm ,(T)
104	2	No Supply	R12,R18	2.2 Kohm	1K METAL FILM RESISTOR 1/6 WATT F 2.2K ohm ,(T)
105	1	No Supply	R06	1.5 Kohm	1K METAL FILM RESISTOR 1/6 WATT F 1.5K ohm ,(T)
106	1	No Supply	R11	12 Kohm	1K METAL FILM RESISTOR 1/6 WATT F 12K ohm ,(T)
107	1	No Supply	R15	18 Kohm	1K METAL FILM RESISTOR 1/6 WATT F 18K ohm ,(T)
108	1	No Supply	R81	3.9 Kohm	1K METAL FILM RESISTOR 1/6 WATT F 3.9 Kohm ,(T)
109	1	No Supply	R92	1.8 Kohm	1K METAL FILM RESISTOR 1/6 WATT F 1.8 Kohm ,(T)
110	1	No Supply	R37	100 ohm	CARBON RESISTOR 1/4 WATT J 100 ohm ,(T)
111	2	No Supply	R67,R71	5.1K ohm	CARBON RESISTOR 1/4 WATT J 5.1K ohm ,(T)
112	2	No Supply	R68,R72	10K ohm	CARBON RESISTOR 1/4 WATT J 10K ohm ,(T)
113	1	No Supply	R57	56K ohm	CARBON RESISTOR 1/4 WATT J 56K ohm ,(T)
114	1	No Supply	R41	82K ohm	CARBON RESISTOR 1/4 WATT J 82K ohm ,(T)
115	1	No Supply	R40	100K ohm	CARBON RESISTOR 1/4 WATT J 100K ohm ,(T)
116	1	No Supply	R22	10/1W	METAL OXIDE RESISTOR 1 WATT 10 ohm
117	2	No Supply	R49,R50	100/1W	METAL OXIDE RESISTOR 1 WATT 100 ohm
118	1	No Supply	R03	5.1K/1W	METAL OXIDE RESISTOR 1 WATT 5.1 Kohm
119	1	No Supply	R48	1K/1W	METAL OXIDE RESISTOR 1 WATT 1K ohm
120	2	No Supply	R81,R82	1.5K/1W	METAL OXIDE RESISTOR 1 WATT 1.5K ohm
121	2	No Supply	R86,R88	0.12/1W	WIRE WOUND RESISTOR 3 WATT J 0.33 ohm
122	2	No Supply	R79,R84	0.48/1W	WIRE WOUND RESISTOR 5 WATT J 0.48 ohm
123	2	No Supply	R80,R83	100/10W	WIRE WOUND RESISTOR 10 WATT J 100 ohm
124	9	*Y904750001	TA01,TA02,TA04,TA05,TA06,TA07,TA09,TA09,TA010	GP881191-2	POWER TERMINAL GP881191-2
125	3	*Y904700001	CON01,CON02,CON04	2m/m pitch	2P WAFER
126	1	*Y904700002	CON03	2m/m pitch	3P WAFER
127	1	*Y904750001	CON03	150m/m	3P FLAT WIRE UL1007 AWG26 150mm
128	2	*Y904750016	CON7X1,CON6A1,CON9X1,CON5A1	170 m/m	3P FLAT WIRE UL1007 AWG26 170mm
129	1	*Y904750001	TA03	360 m/m	RING/TER WIRE UL1015 AWG18 GRN 360m/m
130	1	*Y904751009	W1	150 m/m	RING/TER WIRE UL1015 AWG18 GRN-YEL 150m/m
131	1	*Y904751009	W5	150 m/m	250/TER WIRE UL1617 AWG22 BLK 150m/m
132	1	No Supply		1500m/m	MONO PIG
133	1	No Supply	LK34	17 m/m	JUMPER WIRE 0.6 pi 17 m/m ,(T)
134	1	No Supply	LK42	15 m/m	JUMPER WIRE 0.6 pi 15 m/m ,(T)
135	2	No Supply	LK23,LK24	12 m/m	JUMPER WIRE 0.6 pi 12 m/m ,(T)
136	6	No Supply	LK1K1,LK1K2,LK16,LK17,LK38,LK39	10 m/m	JUMPER WIRE 0.6 pi 10 m/m ,(T)
137	31	No Supply	LK3,LK4,LK6,LK7,LK9,LK10,LK11,LK12,LK13,LK14,LK15,LK18,LK19,LK20,LK21,LK23,LK25,LK26,LK27,LK28,LK29,LK30,LK31,LK32,LK33,LK35,LK36,LK37,LK40,LK41,SP11	8 m/m	JUMPER WIRE 0.6 pi 8 m/m ,(T)
138	1	No Supply			BOND
139	2	*Y90430003		7D 3P	INSULATE SPACER WIDA TO 3P
140	4	*Y90430004		P-520-02	RESISTOR SUPPORT P-520-02
141	13	No Supply		100m/m	CABLE TIE 100m/m

PART CODE	SPECIFICATION	DESCRIPTION	REMARK
001222800	KLM-2228	PCB ACC'Y 166x126.5x1.6f FR-4	DSP BOARD