

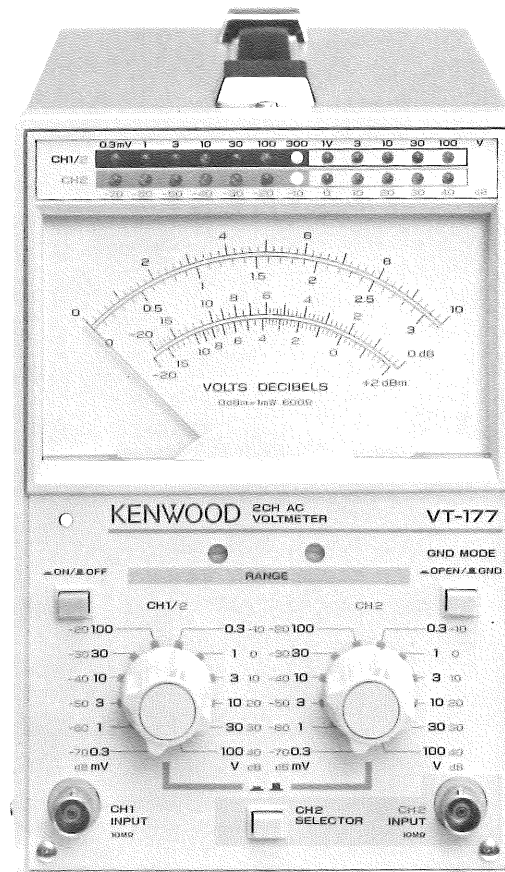
KENWOOD

2CH AC VOLTMETER

VT-177

SERVICE MANUAL

KENWOOD CORPORATION



WARNING

The following instructions are for use by qualified personnel only. To avoid electric shock, do not perform any servicing other than contained in the operating instructions unless you are qualified to do so.

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SPECIFICATIONS

[Meter Section]

Measurable voltages:	0.3 mV - 100 V in 12 ranges: 0.3 mV, 1 mV, 3 mV, 10 mV, 30 mV, 100 mV, 0.3 V, 1 V, 3 V, 10 V, 30 V and 100 V full scales.
dB:	- 90 to + 40 dB (0 dB = 1 V)
dBm:	- 90 to + 42 dBm (0 dBm = 1 mW, 600 Ω)
Error:	Within $\pm 3\%$ of full scale at 1 kHz.
Frequency response:	$\pm 10\%$ at 5 Hz - 1 MHz, $\pm 5\%$ at 10 Hz - 500 kHz and $\pm 3\%$ at 20 Hz - 200 kHz as $\pm 2\%$ at 30 Hz - 100 kHz referenced to 1 kHz response.
Input impedance:	10 M Ω $\pm 5\%$, with less than 45 pF parallel capacitance.
Survivable input voltage:	500 V (DC + AC peak) at 1 V - 100 V range 100 V (DC + AC peak) at 0.3 mV - 300 mV range
Stability:	Within $\pm 0.5\%$ of full scale for $\pm 10\%$ line voltage fluctuation.
Residual voltage:	Less than 30 μ V with input shorted on 0.3 mV range.
Crosstalk, Individual:	Less than - 80 dB with other input terminated with 600 Ω .
Interlock:	Less than - 50 dB with other input terminated with 600 Ω .

[Amplifier Section]

Gain:	Approx. 70 dB
Output voltage:	1 V _{rms} (full scale) $\pm 20\%$
Output impedance:	600 Ω $\pm 20\%$
Distortion:	Less than 1% at full scale. (Rated by signal-to-noise ratio in 0.3 mV, 1 mV, and 1 V ranges.)
Signal-to-noise ratio:	Over 40 dB at full scale. (Over 30 dB at 0.3 mV range)
Frequency response:	Within ± 3 dB at 5 Hz - 500 kHz.

[Environment]

Coefficient:	$\pm 0.08\%$ / $^{\circ}$ C
Temperature (Within specification):	10 to 40 $^{\circ}$ C (full operation): 0 to 50 $^{\circ}$ C
Relative humidity:	Less than 80%

[Power Supply Section]

Line voltage:	100/120/220/240 VAC $\pm 10\%$, 50/60 Hz
Power consumption:	Approx. 7 W

[Dimensions]

128 (138) W \times 190 (212) H \times 238 (268) D mm
Values in () include pro- trusions.

[Net Weight]

Approx. 3 kg

[Accessories]

Power cable:	1 pc.
Input cable:	BNC cord, 2 pcs.
Replacement fuse:	0.3 A 2 pcs. 0.5 A 2 pcs.
Instruction manual:	1 copy

SAFETY

SAFETY

Before connecting the instrument to a power source, carefully read the following information, then verify that the proper power cord is used and the proper line fuse is installed for power source. The specified voltage is shown at the fuse holder of the AC inlet. If the power cord is not applied for specified voltage, there is always a certain amount of danger from electric shock.

Line voltage

This instrument operates using ac-power input voltages that 100/120/220/240 V at frequencies from 50 Hz to 60 Hz.

Power cord

The ground wire of the 3-wire ac power plug places the chassis and housing of the oscilloscope at earth ground. Do not attempt to defeat the ground wire connection or float the oscilloscope; to do so may pose a great safety hazard. The appropriate power cord is supplied by an option that is specified when the instrument is ordered.

The optional power cords are shown as follows in Fig. 1.

Line fuse

The fuse holder is located on the rear panel and contains the line fuse. Verify that the proper fuse is installed by replacing the line fuse.

Voltage conversion

This oscilloscope may be operated from either a 100 V to 240 V, 50/60 Hz power source. Use the following procedure to change from 100 to 240 volt operation or vice versa.

1. Remove the fuse holder.
2. Replace fuse F 1 with a fuse of appropriate value, 0.5 amp for 100 VAC to 120 VAC operation, 0.3 amp for 220 VAC to 240 VAC operation.
3. Reinsert it for appropriate voltage range.
4. When performing the reinsertion of fuse holder for the voltage conversion, the appropriate power cord should be used. (See Fig. 1.)

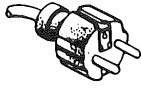

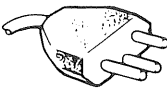
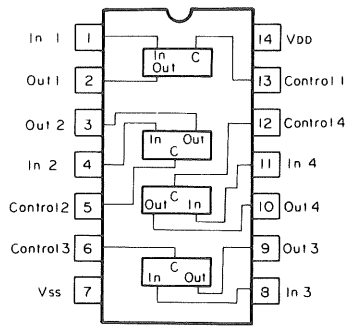
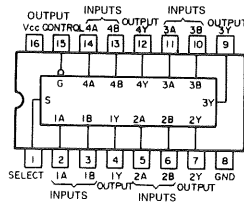
Plug configuration	Power cord and plug type	Factory installed instrument fuse	Line cord plug fuse	Parts No. for power cord set
	North American 120 volt/60 Hz Rated 15 amp (12 amp max; NEC)	0.5 A, 250 V Fast blow 6 × 30 mm	None	Cord: E30-1820-05
	Universal Europe 220 volt/50 Hz Rated 16 amp	North Europe 315 mA, 250 V Slow blow 5 × 20 mm Other Europe 0.3 A, 250 V Fast blow 6 × 30 mm	None	Cord: E30-1819-05
	U.K. 240 volt/50 Hz Rated 13 amp	0.3 A, 250 V Fast blow 6 × 30 mm	0.8 A Type C	—
	Australian 240 volt/50 Hz Rated 10 amp	0.3 A, 250 V Fast blow 6 × 30 mm	None	Cord: E30-1821-05
	North American 240 volt/60 Hz Rated 15 amp (12 amp max; NEC)	0.3 A, 250 V Fast blow 6 × 30 mm	None	—
	Switzerland 240 volt/50 Hz Rated 10 amp	0.3 A, 250 V Fast blow 6 × 30 mm	None	—

Fig. 1 Power Input Voltage Configuration

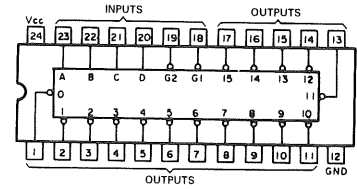
SEMICONDUCTORS



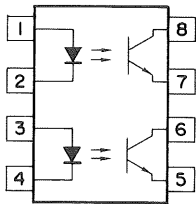
MC14066BCP



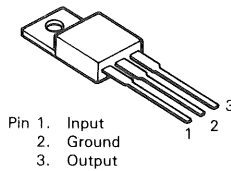
TC74HC257AP



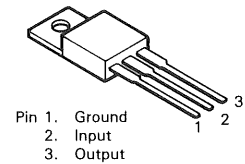
SN74159N



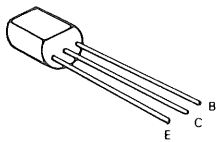
TLP521-2 (BL)



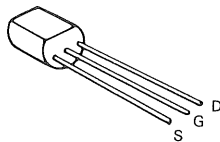
LM78M05CT



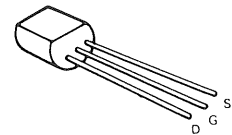
LM79M05CT



**2SA970 (BL)
2SA1015 (Y)
2SC945 (P)
2SC1815 (Y)
2SC1923 (O)**



2SK30A (Y)



2SK65A (M)

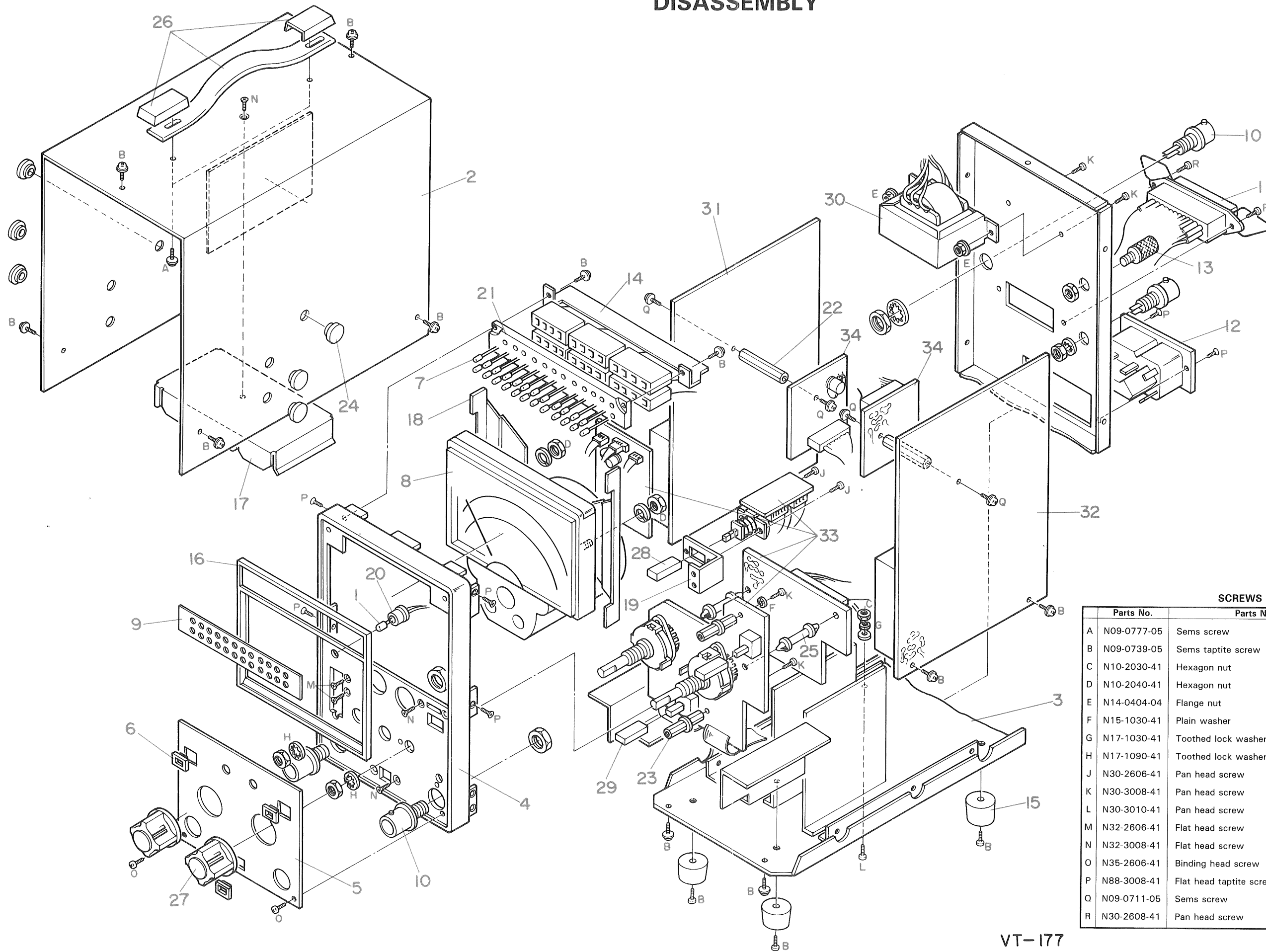
PARTS LIST

VT-177 UNIT

Y80-1400-00

REF.NO	PARTS NO	NAME & DESCRIPTION
	B41-0811-04	NAME PLATE,LINE VOLTAGE
	B50-7720-00	INSTRUCTION MANUAL,JAP./ENG.
	E30-1644-15	BS POWER CORD
	E30-1818-05	JIS POWER CORD
	E30-1819-05	CEE POWER CORD
	E30-1820-05	UL/CSA POWER CORD
	E30-1821-05	SAA POWER CORD
	E31-0564-05	WIRE ASS'Y(GND GREEN)
	E31-2308-05	WIRE ASS'Y;FOR RECEPTACLE
	E31-5723-05	WIRE ASS'Y:P8 TO P8
	E31-5724-15	WIRE ASS'Y:P5 TO LED
	E31-5725-05	WIRE ASS'Y:P5 TO P6
	E31-5726-05	WIRE ASS'Y:P4 TO P10
	E31-5727-05	WIRE ASS'Y:P4 TO P20
	E31-5728-05	WIRE ASS'Y:P2 TO BNC(OUTPUT)
	E31-5729-05	WIRE ASS'Y:P1 TO BNC(INPUT)
	E31-5730-05	WIRE ASS'Y:P7 TO P7
	E31-5731-05	WIRE ASS'Y:P1 TO JL1,BNC(INPUT)
	E31-5801-05	WIRE ASS'Y:P102,103 TO P1,2
	E31-5802-05	WIRE ASS'Y:P102,103 TO P1,2
	F05-3011-05	FUSE(6X30MM) 0.3A
	F05-3112-05	FUSE(5X20MM) 0.3AT
	F05-5013-05	FUSE(6X30MM) 0.5A
	F20-0610-04	INSULATOR 85MM X 75MM
	H01-5921-04	CARTON BOX
	H10-2802-02	FOAMED STYRENE PAD
	H20-1703-04	VINYL COVER
	J10-0427-03	BEZEL ASS'Y
	J19-1620-05	CORD KEEP
	J61-0049-05	WIRE BAND
	W03-2309-05	ACCESSORY CORD CA-41
1	AR4133S	LED (RED),POWER
2	A01-0823-32	CASE
3	A10-1433-32	CHASSIS
4	A20-2722-22	DIECAST PANEL
5	A21-1165-04	DECORATIVE PANEL
6	B07-0706-04	ESCUTCHEON
7	B30-0917-05	LED,24 PIECES
8	B31-0739-05	METER
9	B40-2930-04	NAME PLATE;MODEL NO.
10	E04-0253-15	BNC RECEPTACLE
11	E08-2481-05	RECEPTACLE
12A	E18-0365-05	AC SELECTOR WITH 6X30MM FUSE
12B	E18-0366-15	AC SELECTOR WITH 5X20MM FUSE
13	E21-0657-04	TERMINAL (GND)
14	F31-0603-14	BLACKET
15	J02-0363-04	RUBBER FOOT
16	J10-0428-03	BEZEL
17	J21-2840-04	PCB HOLDER
18	J21-2843-04	BLACKET FOR METER
19	J21-2844-04	BLACKET FOR SW
20	J21-2912-05	HOLDER FOR LED
21	J29-0503-04	GUIDE
22	J32-0829-04	BOSS
23	J32-0892-04	BOSS
24	J42-0038-04	BUSHING
25	J61-0503-05	BOARD SUPPORT
26	K01-0532-05	HANDLE
27	K21-0906-04	KNOB, FOR CHANNEL
28	K27-0506-04	BUTTON;ORANGE
29	K27-0531-04	BUTTON;LIGHT GRAY
30	L01-9877-05	POWER TRANSFORMER
31	X65-1370-03	MAIN UNIT(L)
32	X65-1370-04	MAIN UNIT(R)
33	X66-1070-03	PANEL UNIT
34	X77-1220-00	CONTROL UNIT

DISASSEMBLY



SCREWS

Parts No.	Parts Name	Figure
A N09-0777-05	Sems screw (M4 × 6)	
B N09-0739-05	Sems taptite screw (3 × 8)	
C N10-2030-41	Hexagon nut (M3)	
D N10-2040-41	Hexagon nut (M4)	
E N14-0404-04	Flange nut (M3)	
F N15-1030-41	Plain washer (φ3)	
G N17-1030-41	Toothed lock washer (φ3)	
H N17-1090-41	Toothed lock washer (φ9)	
J N30-2606-41	Pan head screw (M2.6 × 6)	
K N30-3008-41	Pan head screw (M3 × 8)	
L N30-3010-41	Pan head screw (M3 × 10)	
M N32-2606-41	Flat head screw (M2.6 × 6)	
N N32-3008-41	Flat head screw (M3 × 8)	
O N35-2606-41	Binding head screw (M2.6 × 6)	
P N88-3008-41	Flat head taptite screw (3 × 8)	
Q N09-0711-05	Sems screw (M3 × 8)	
R N30-2608-41	Pan head screw (M2.6 × 8)	

VT-177

PARTS LIST

REF.NO	PARTS NO	NAME & DESCRIPTION	REF.NO	PARTS NO	NAME & DESCRIPTION
P008	E40-3238-05	PIN CONNECTOR 3 P	R150	RD14BB2C390J	RES. CARBON 39 5% 1/6W
P011	E40-3237-05	PIN CONNECTOR 2P	R151	RD14BB2E432J	RES. CARBON 4.3K 5% 1/4W
P101	E40-3751-05	PIN CONNECTOR 15P	R152	RD14BB2C220J	RES. CARBON 22 5% 1/6W
P102	E40-0811-05	PIN CONNECTOR 8P	R153	NO USE	
P103	E40-0811-05	PIN CONNECTOR 8P	R154	RD14BB2C220J	RES. CARBON 22 5% 1/6W
Q101	2SK68A(M)	FET, N-CHANNEL	R155	RD14BB2C272J	RES. CARBON 2.7K 5% 1/6W
Q102	2SK68A(M)	FET, N-CHANNEL	R156	RD14BB2E3R3J	RES. CARBON 3.3 5% 1/4W
Q103	2SA970(BL)	TR. SI, PNP	R157	RD14BB2C681J	RES. CARBON 680 5% 1/6W
Q104	2SC1923(O)	TR. SI, NPN	R158	RN14BK2C1692F	RES. METAL FILM 16.9K 1% 1/6W
Q105	2SA1015(Y)	TR. SI, PNP	R159	RN14BK2C3010F	RES. METAL FILM 301 1% 1/6W
Q106	2SA1015(Y)	TR. SI, PNP	R160	RD14BB2C681J	RES. CARBON 680 5% 1/6W
Q107	2SA1015(Y)	TR. SI, PNP	R161	RN14BK2C5230F	RES. METAL FILM 523 1% 1/6W
Q108	2SA1015(Y)	TR. SI, PNP	R162	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W
Q109	2SA1015(Y)	TR. SI, PNP	R163	RN14BK2C5230F	RES. METAL FILM 523 1% 1/6W
Q110	2SA1015(Y)	TR. SI, PNP	R164	RN14BK2C5900F	RES. METAL FILM 590 1% 1/6W
Q111	2SC1815(Y)	TR. SI, NPN	R165	RD14BB2E432J	RES. CARBON 4.3K 5% 1/4W
Q112	2SA970(BL)	TR. SI, PNP	R166	RD14BB2E432J	RES. CARBON 4.3K 5% 1/4W
Q113	2SA970(BL)	TR. SI, PNP	R167	RD14BB2C390J	RES. CARBON 39 5% 1/6W
Q114	2SC1923(O)	TR. SI, NPN	R168	RD14BB2C681J	RES. CARBON 680 5% 1/6W
Q115	2SC1923(O)	TR. SI, NPN	R169	RD14BB2C114J	RES. CARBON 110K 5% 1/6W
Q116	2SA970(BL)	TR. SI, PNP	R170	RD14BB2C683J	RES. CARBON 68K 5% 1/6W
Q117	2SA970(BL)	TR. SI, PNP	R171	RD14BB2C331J	RES. CARBON 330 5% 1/6W
Q118	2SC1923(O)	TR. SI, NPN	R172	RD14BB2C331J	RES. CARBON 330 5% 1/6W
Q119	2SA970(BL)	TR. SI, PNP	R173	RN14BK2C10R0F	RES. METAL FILM 10.0 1% 1/6W
Q120	2SA970(BL)	TR. SI, PNP	R177	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W
Q121	2SK30A(Y)	FET, N-CHANNEL	R178	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W
Q122	2SC1923(O)	TR. SI, NPN	R179	RD14BB2C331J	RES. CARBON 330 5% 1/6W
Q123	2SC1923(O)	TR. SI, NPN	R180	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W
Q124	2SK30A(Y)	FET, N-CHANNEL	R181	RD14BB2C201J	RES. CARBON 200 5% 1/6W
R101	R92-0744-05	RES. FIXED 9.99M 1% 1/2W	R182	RN14BK2C2871F	RES. METAL FILM 2.87K 1% 1/6W
R102	RN14BK2C9531F	RES. METAL FILM 9.53K 1% 1/6W	R183	RN14BK2C6191F	RES. METAL FILM 6.19K 1% 1/6W
R103	R92-1450-05	RES. SPECIAL POWER 6.8K 5% 1W	R184	NO USE	
R104	RD14BB2C681J	RES. CARBON 680 5% 1/6W	R185	RD14BB2C821J	RES. CARBON 820 5% 1/6W
R105	NO USE		R186	RD14BB2C161J	RES. CARBON 160 5% 1/6W
R106	RD14BB2E335J	RES. CARBON 3.3M 5% 1/4W	TC101	C05-0404-05	CAP. TRIMMER 10P
R107	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W	U101	MC14066BCP	IC, QUAD. ANALOG SW/QUAD. MPX
R108	RD14BB2C201J	RES. CARBON 200 5% 1/6W	U102	LM78M05CT	IC, POSITIVE VOLTAGE REGULATOR
R109	RD14BB2E102J	RES. CARBON 1K 5% 1/4W	U103	LM79M05CT	IC, NEGATIVE VOLTAGE REGULATOR
R110	RD14BB2E750J	RES. CARBON 75 5% 1/4W	VR101	R12-1545-05	RES. SEMI FIXED 1K B
R111	RN14BK2C1221D	RES. METAL FILM 1.22K 0.5% 1/6W	VR102	R12-0575-05	RES. SEMI FIXED 100 B
R112	RN14BK2C4500D	RES. METAL FILM 450 0.5% 1/6W			
R113	RN14BK2C60R0D	RES. METAL FILM 60.0 0.5% 1/6W			
R114	RN14BK2C2780D	RES. METAL FILM 278 0.5% 1/6W			
R115	RN14BK2C2780D	RES. METAL FILM 278 0.5% 1/6W			
R116	RN14BK2E1900D	RES. METAL FILM 190 0.5% 1/4W			
R117	RD14BB2C151J	RES. CARBON 150 5% 1/6W			
R118	RN14BK2C4110D	RES. METAL FILM 411 0.5% 1/6W			
R119	RN14BK2C4110D	RES. METAL FILM 411 0.5% 1/6W			
R120	RN14BK2C4110D	RES. METAL FILM 411 0.5% 1/6W			
R121	RD14BB2C150J	RES. CARBON 15 5% 1/6W			
R122	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W			
R123	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W			
R124	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W			
R125	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W			
R126	RD14BB2C114J	RES. CARBON 110K 5% 1/6W			
R127	RD14BB2C114J	RES. CARBON 110K 5% 1/6W			
R128	RD14BB2C114J	RES. CARBON 110K 5% 1/6W			
R129	RD14BB2C114J	RES. CARBON 110K 5% 1/6W			
R130	RD14BB2C114J	RES. CARBON 110K 5% 1/6W			
R131	RD14BB2C114J	RES. CARBON 110K 5% 1/6W			
R132	RD14BB2C114J	RES. CARBON 110K 5% 1/6W			
R133	RD14BB2C114J	RES. CARBON 110K 5% 1/6W			
R134	RD14BB2C114J	RES. CARBON 110K 5% 1/6W			
R135	RD14BB2C114J	RES. CARBON 110K 5% 1/6W			
R136	RD14BB2C114J	RES. CARBON 110K 5% 1/6W			
R137	RD14BB2C114J	RES. CARBON 110K 5% 1/6W			
R138	RD14BB2C334J	RES. CARBON 330K 5% 1/6W			
R139	RD14BB2C683J	RES. CARBON 68K 5% 1/6W			
R140	RD14BB2E432J	RES. CARBON 4.3K 5% 1/4W			
R141	RD14BB2C121J	RES. CARBON 120 5% 1/6W			
R142	RD14BB2E432J	RES. CARBON 4.3K 5% 1/4W			
R143	RD14BB2C272J	RES. CARBON 2.7K 5% 1/6W			
R144	RN14BK2C6191F	RES. METAL FILM 6.19K 1% 1/6W			
R145	RD14BB2C681J	RES. CARBON 680 5% 1/6W			
R146	RN14BK2C2900F	RES. METAL FILM 290 1% 1/6W			
R147	RD14BB2C121J	RES. CARBON 120 5% 1/6W			
R148	RD14BB2E3R3J	RES. CARBON 3.3 5% 1/4W			
R149	RD14BB2E432J	RES. CARBON 4.3K 5% 1/4W			

PARTS LIST

PANEL UNIT

(X66-1070-03)

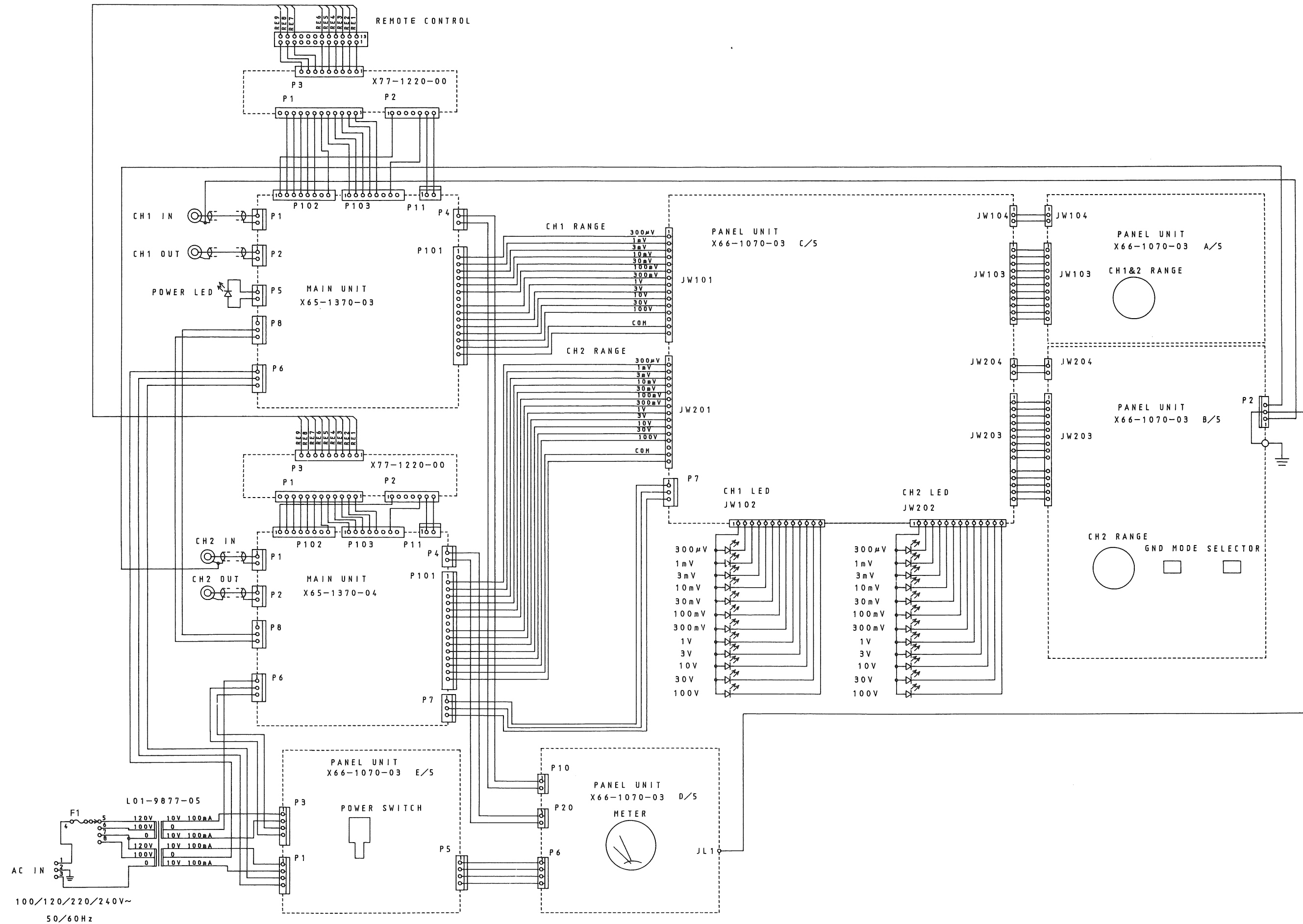
REF. NO	PARTS NO	NAME & DESCRIPTION	
	J25-5376-13	PCB (UNMOUNTED)	
	R92-0150-05	JUMPING RES.	ZERO OHM(10MM)
	R92-1061-05	JUMPING RES.	ZERO OHM (5MM)
JW101	E31-5790-05	LEAD WIRE WITH CONNECTOR	
JW102	E31-5799-05	LEAD WIRE WITH CONNECTOR	
JW103	E31-5735-05	LEAD WIRE WITH CONNECTOR	
JW104	E31-5737-05	LEAD WIRE WITH CONNECTOR	
JW201	E31-5791-05	LEAD WIRE WITH CONNECTOR	
JW202	E31-5800-05	LEAD WIRE WITH CONNECTOR	
JW203	E31-5736-05	LEAD WIRE WITH CONNECTOR	
JW204	E31-5737-05	LEAD WIRE WITH CONNECTOR	
P001	E40-3239-05	PIN CONNECTOR	4 P
P002	E40-3238-05	PIN CONNECTOR	3 P
P003	E40-3239-05	PIN CONNECTOR	4 P
P004	NO USE		
P005	E40-3239-05	PIN CONNECTOR	4 P
P006	E40-3239-05	PIN CONNECTOR	4 P
P007	E40-3238-05	PIN CONNECTOR	3 P
P010	E40-3237-05	PIN CONNECTOR	2P
P020	E40-3237-05	PIN CONNECTOR	2P
Q001	2SC945(P)	TR. SI, NPN	
R001	R90-0675-05	RES. NETWORK	12X47K 5%
R002	RD14BB2C472J	RES. CARBON	4.7K 5% 1/6W
R003	R90-0675-05	RES. NETWORK	12X47K 5%
R004	RD14BB2C821J	RES. CARBON	820 5% 1/6W
S001	S42-1502-05	PUSH SWITCH	
S002	S42-1502-05	PUSH SWITCH	
S003	S40-6501-05	PUSH SWITCH	
S101	S01-1518-05	ROTARY SWITCH	
S201	S01-1518-05	ROTARY SWITCH	
U001	TC74HC257AP	IC,QUAD 2-DATA SELECT./MPX<3-S	
U002	TC74HC257AP	IC,QUAD 2-DATA SELECT./MPX<3-S	
U003	TC74HC257AP	IC,QUAD 2-DATA SELECT./MPX<3-S	

CONTROL UNIT

(X77-1220-00)

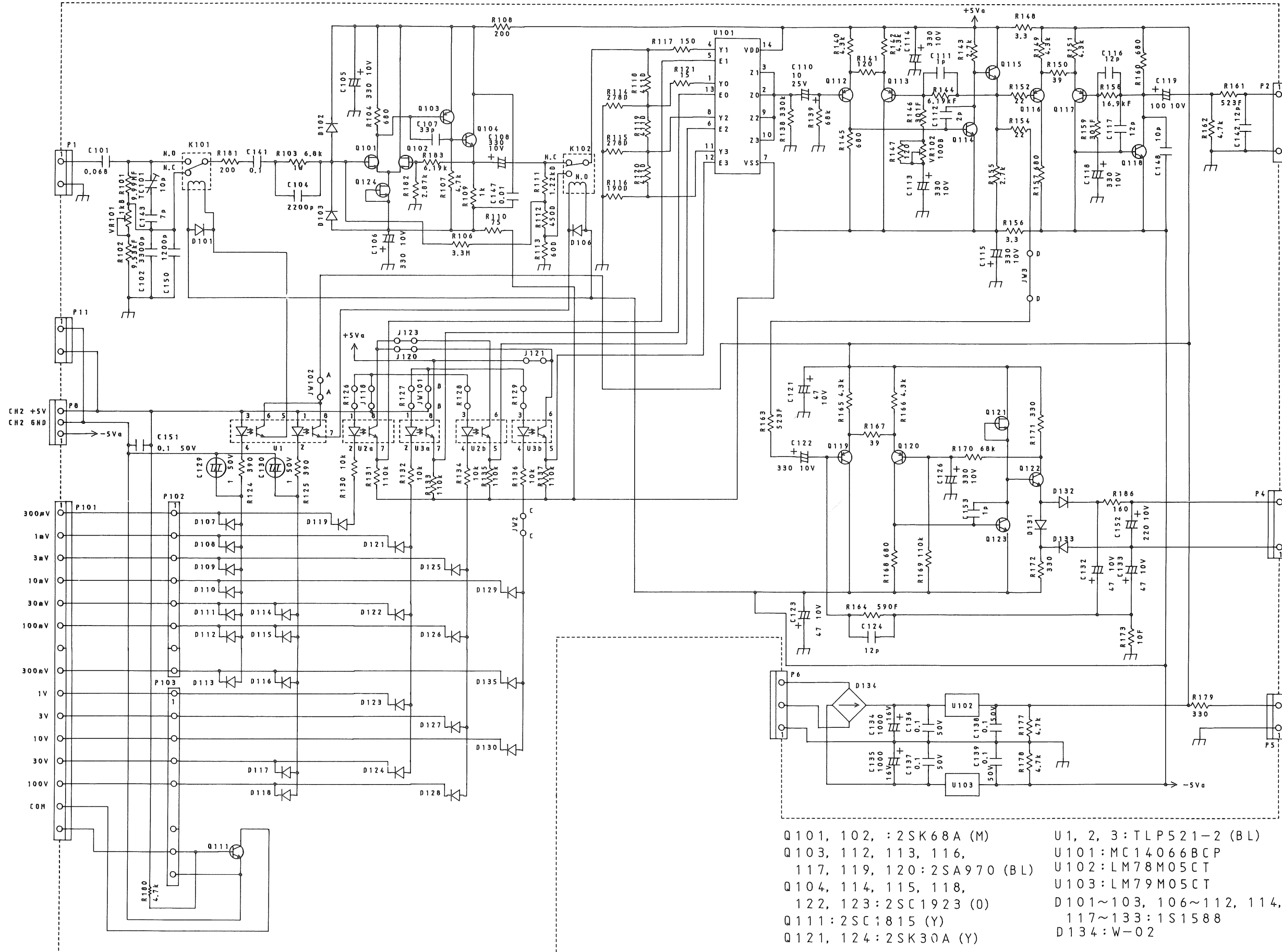
REF. NO	PARTS NO	NAME & DESCRIPTION		
	J25-2957-13	PCB (UNMOUNTED)		
	R92-0150-05	JUMPING RES.	ZERO OHM(10MM)	
C001	CE04EW1A220M	CAP. ELECTRO	22	20% 10V
C002	CE04EW1A220M	CAP. ELECTRO	22	20% 10V
C003	CE04EW1A220M	CAP. ELECTRO	22	20% 10V
C004	CE04EW1A220M	CAP. ELECTRO	22	20% 10V
IC001	SN74159N	IC, 4-16 DECORD./DE-MPX(O/C)		
P001	E40-1273-05	PIN CONNECTOR	12P	
P002	E40-0773-05	PIN CONNECTOR	7P	
P003	E40-0973-05	PIN CONNECTOR	9P	
R001	RD14BB2E333J	RES. CARBON	33K	5% 1/4W
R002	RD14BB2E333J	RES. CARBON	33K	5% 1/4W
R003	RD14BB2E333J	RES. CARBON	33K	5% 1/4W
R004	RD14BB2E333J	RES. CARBON	33K	5% 1/4W
R005	RD14BB2E333J	RES. CARBON	33K	5% 1/4W
R006	RD14BB2E333J	RES. CARBON	33K	5% 1/4W

SCHEMATIC DIAGRAM



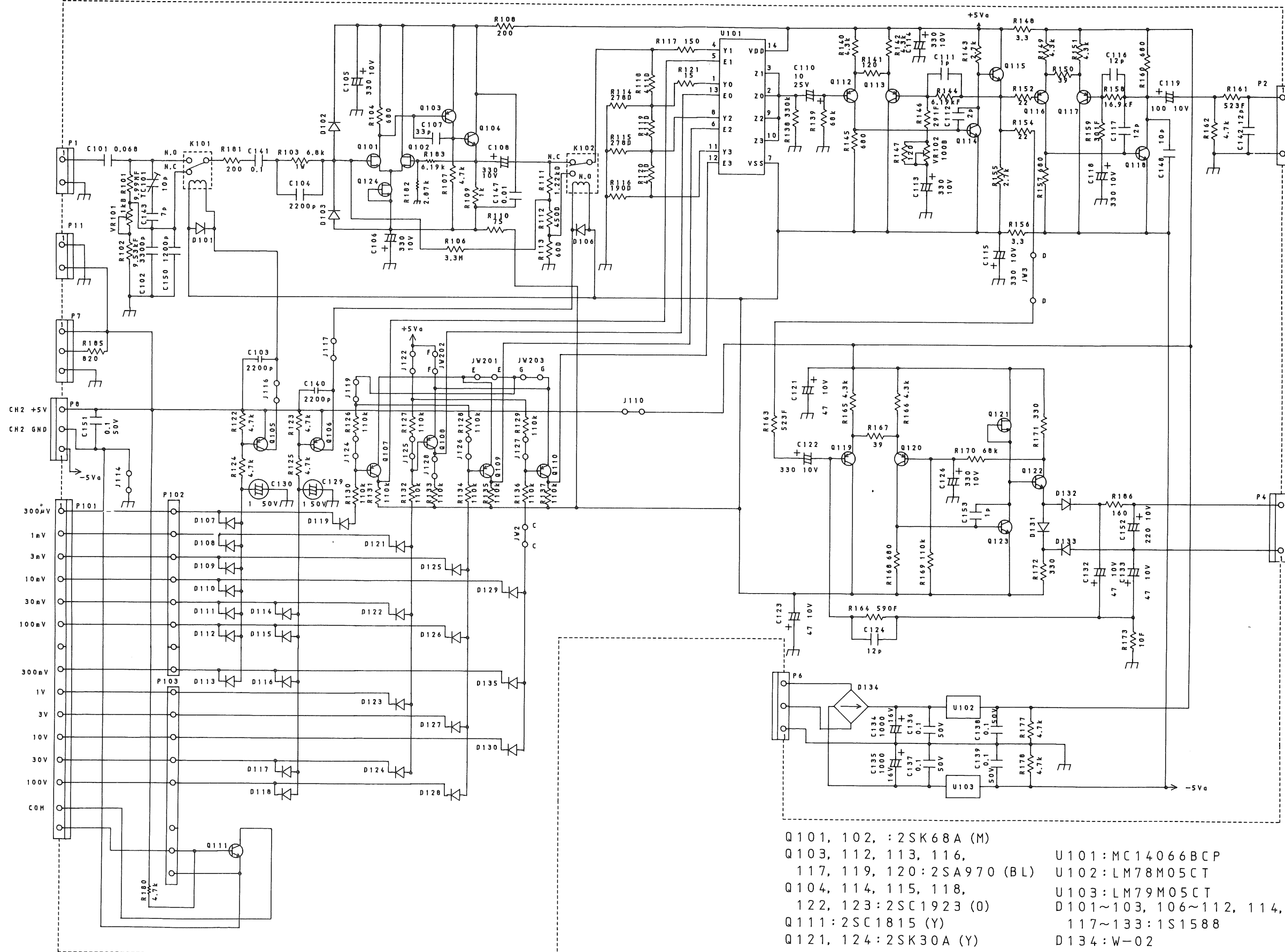
SCHEMATIC DIAGRAM

MAIN UNIT (L) (X65-1370-03)



SCHEMATIC DIAGRAM

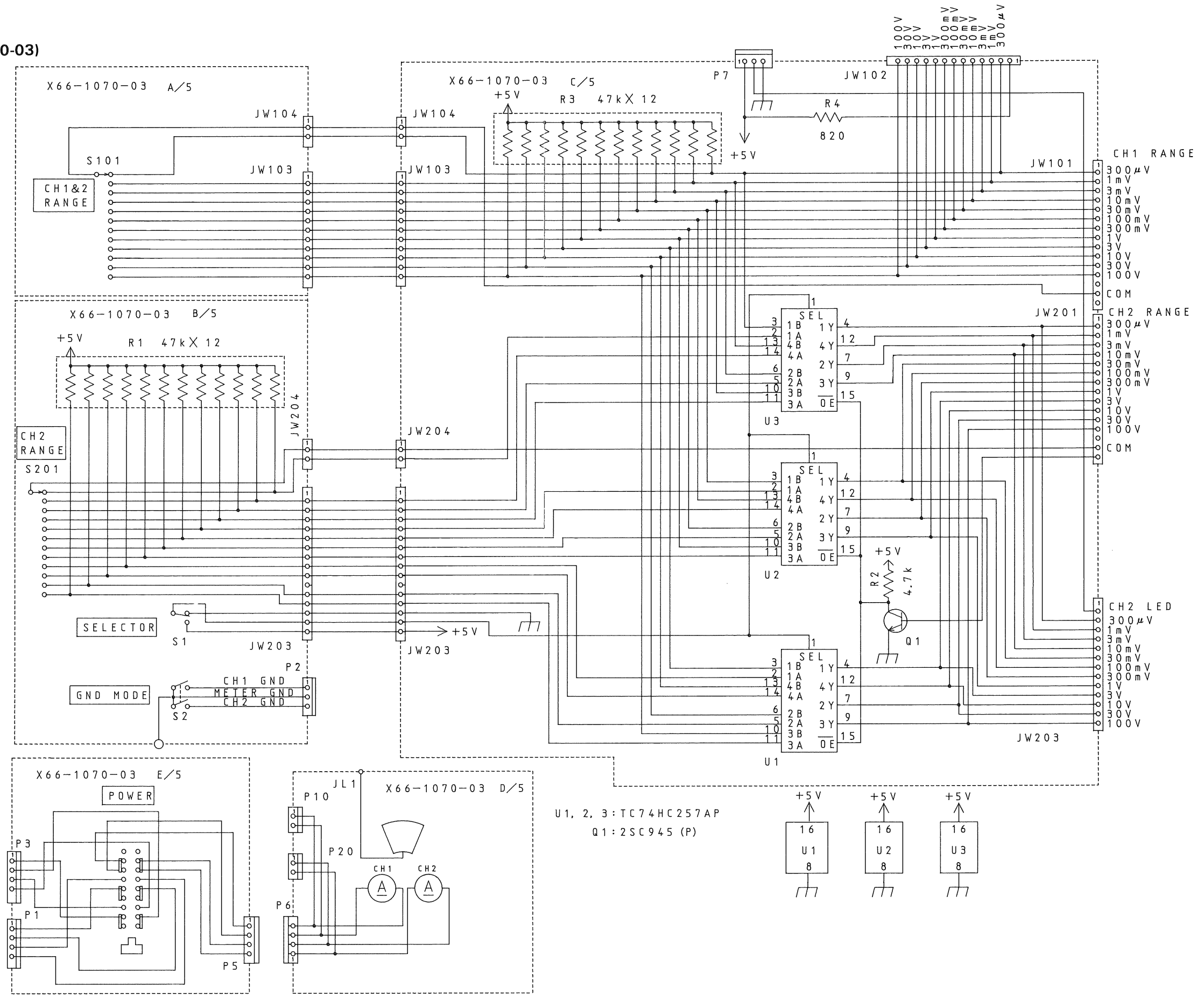
MAIN UNIT (R) (X65-1370-04)



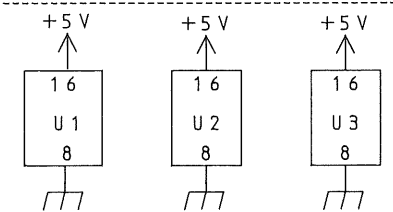
- | | |
|----------------------------|------------------------------|
| Q101, 102, : 2SK68A (M) | U101: MC14066BCP |
| Q103, 112, 113, 116, | U102: LM78M05CT |
| 117, 119, 120: 2SA970 (BL) | U103: LM79M05CT |
| Q104, 114, 115, 118, | D101~103, 106~112, 114, 115, |
| 122, 123: 2SC1923 (O) | 117~133: 1S1588 |
| Q111: 2SC1815 (Y) | D134: W-02 |
| Q121, 124: 2SK30A (Y) | |
| Q105, 106, 107, 108, | |
| 109, 110: 2SA1015 (Y) | |

SCHEMATIC DIAGRAM

PANEL UNIT (X66-1070-03)

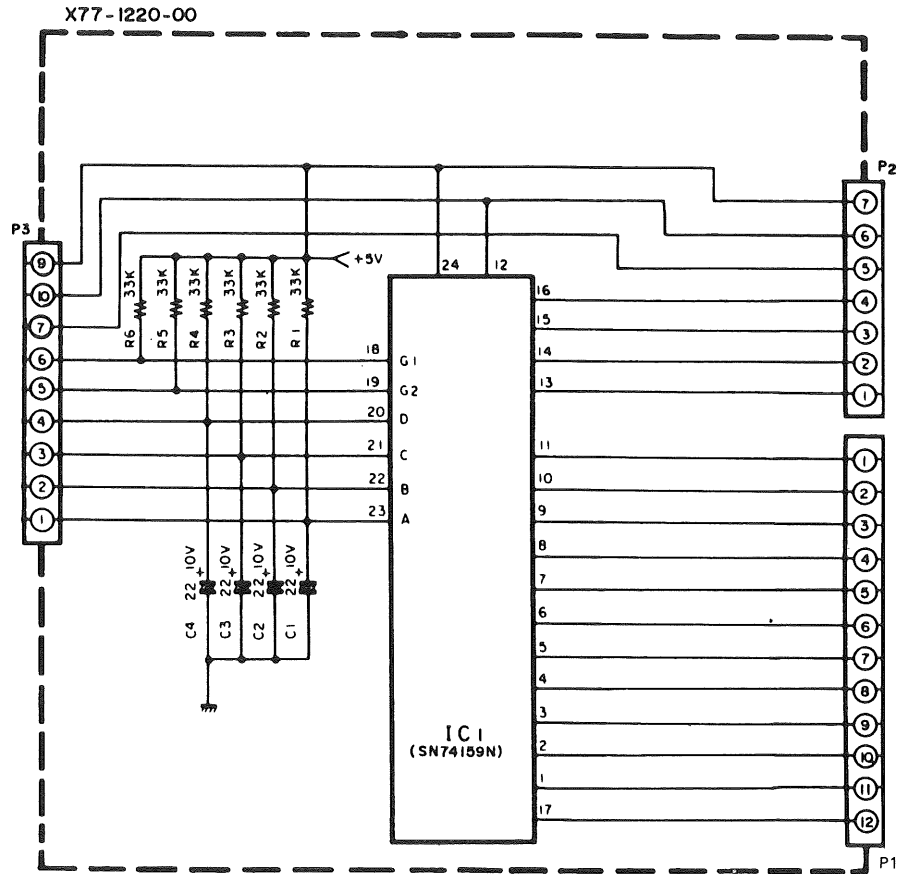


U1, 2, 3: TC74HC257AP
Q1: 2SC945 (P)



SCHEMATIC DIAGRAM

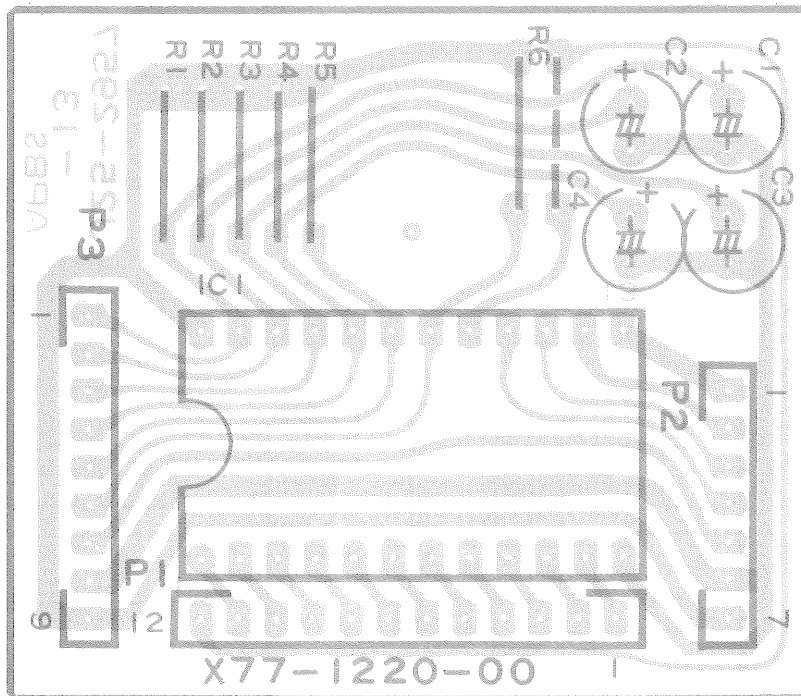
CONTROL UNIT (X77-1220-00)



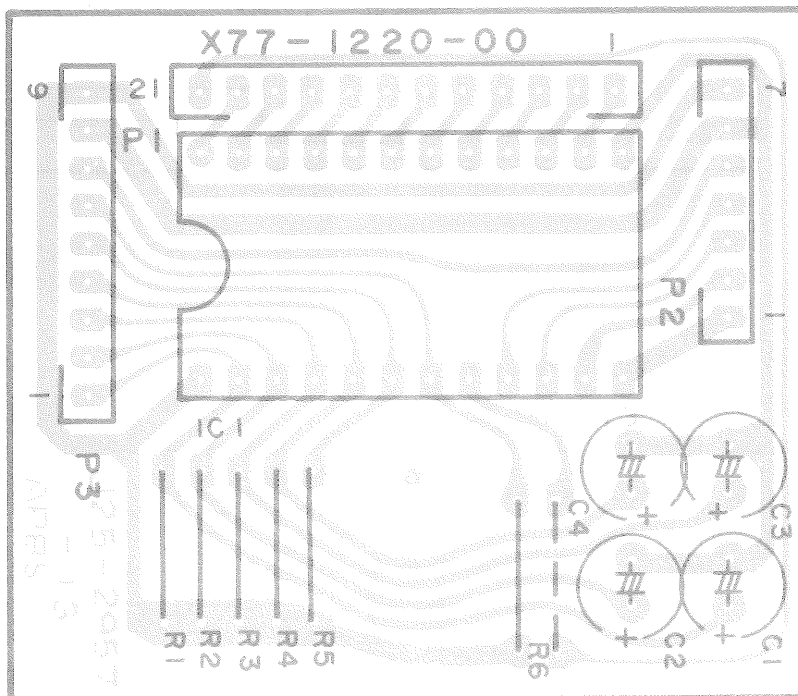
P.C. BOARD

CONTROL UNIT (X77-1220-00)

Parts side view



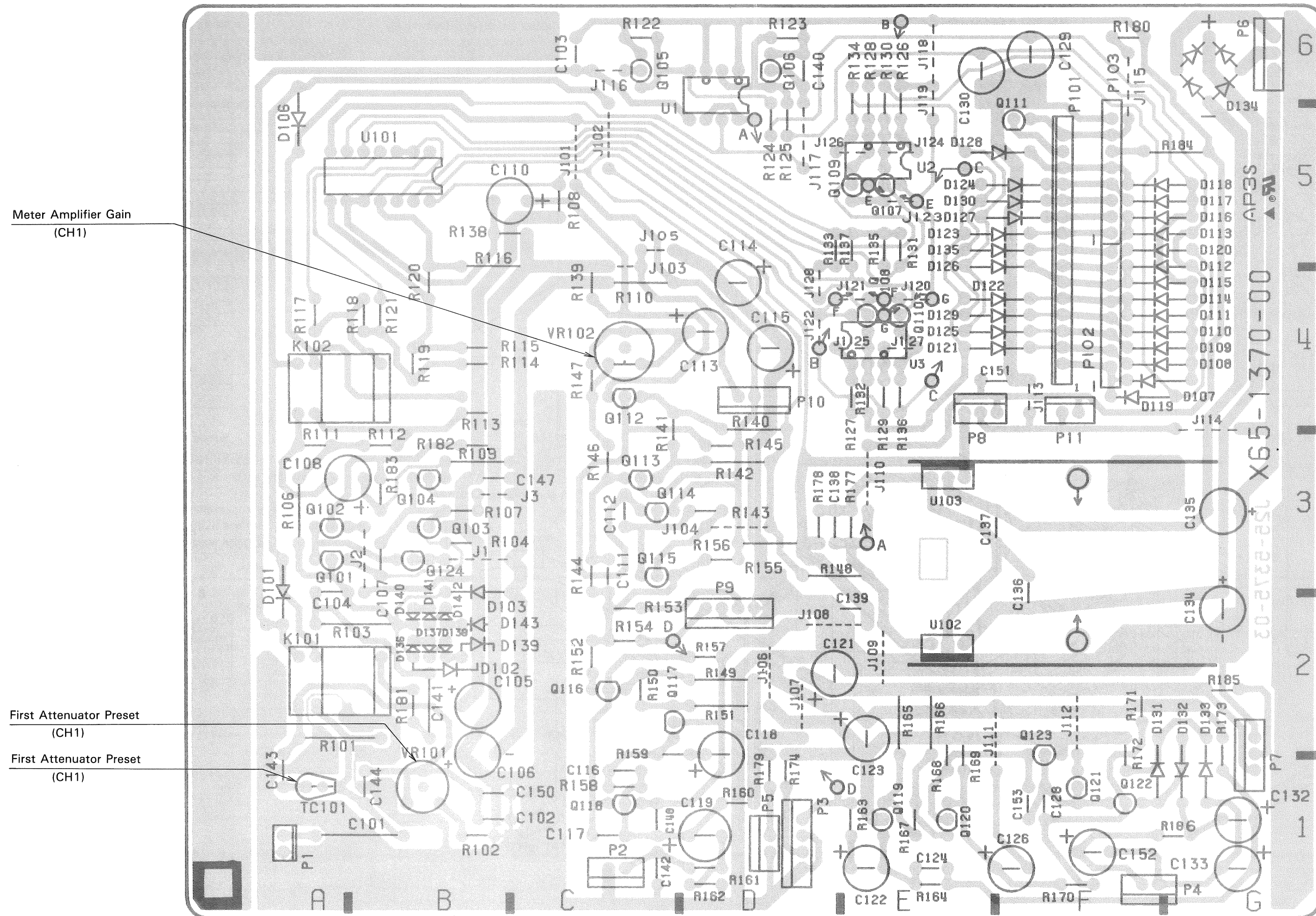
Pattern side view



P.C. BOARD

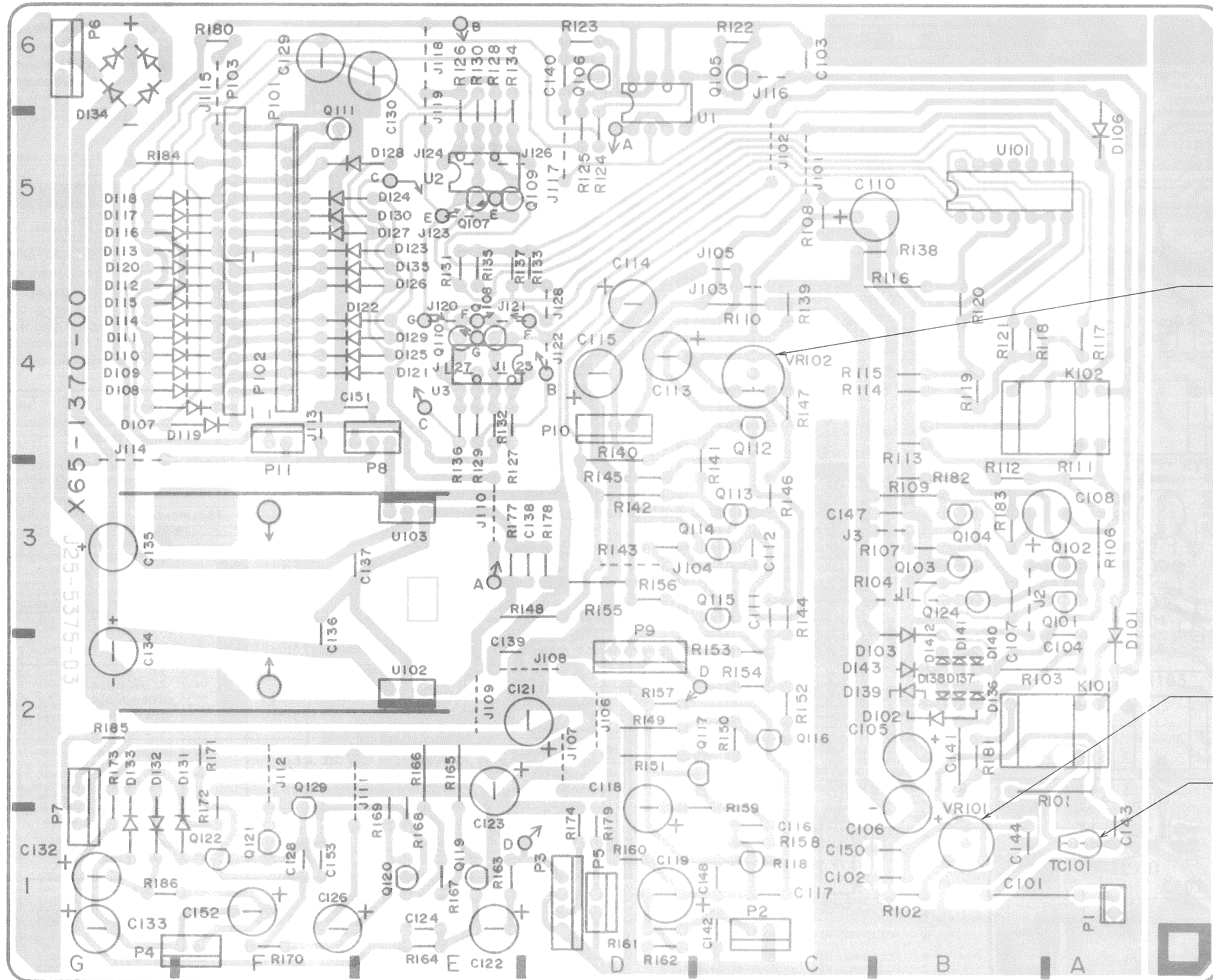
MAIN UNIT (L)

Parts side view



P.C. BOARD

Pattern side view



Meter Amplifier Gain
(CH2)

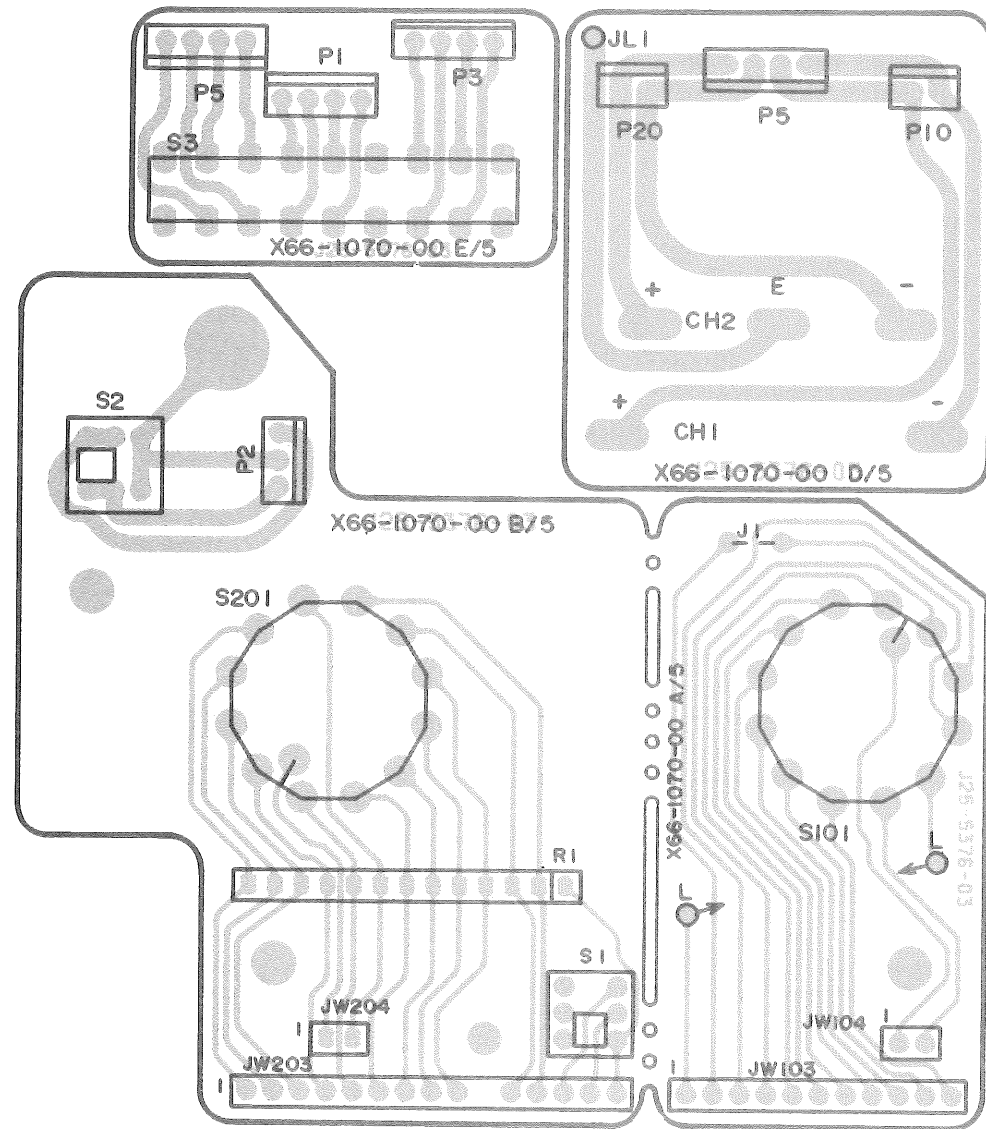
First Attenuator Preset
(CH2)

First Attenuator Preset
(CH2)

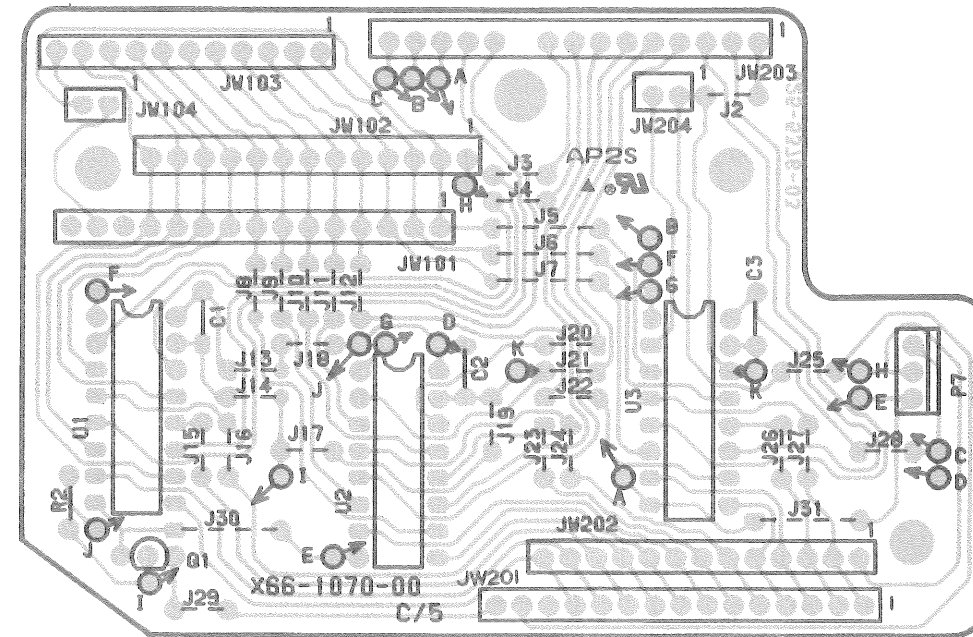
P.C. BOARD

PANEL UNIT (X66-1070-03)

Pattern side view



Parts side view



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KENWOOD CORPORATION
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