

SPECIFICATIONS

Performance	
Input Sensitivity	
PHONO	2.5 mV/47 kΩ
TUNER/TAPE/CD/VIDEO	200 mV/47 kΩ
Signal-to-Noise Ratio (IHF-A)	
PHONO	80 dB for 2.5 mV input
TUNER/TAPE/CD/VIDEO	101 dB
Phono Maximum Input Level	100 mV, T.H.D. 0.3% at 1 KHz
Total Harmonic Distortion	
20 Hz to 20 KHz	0.005% at rated output
Loudness Control	+8 dB at 100 Hz (at -30 dB VOLUME Level)
Graphic equalizer control	
(60 Hz, 150 Hz, 400 Hz, 1 KHz, 2.4 KHz, 6 KHz, 15 KHz)	±10 dB
Output Voltage and Impedance	
Tape REC	200 mV/220Ω
PRE OUT	1 V/2.2 kΩ
General	
Power Consumption	15 W
AC outlets	
SWITCHED	
	For USA and Canada: 2; (Total 680 W, 5.6 A max.)
	For other countries: 2; (Total 420 W)
Dimensions	
	W: 440 mm (17.5/6")
	H: 85 mm (3.3/8")
	D: 277 mm (10.7/8")
Weight (Net)	3.8 Kg (8.4 lb)
Note:	
KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.	

Accessories

Remote control unit.....1 (A70-0590-05) (A09-0086-08): Battery Cover	AC plug adaptor.....1 (except for some areas) For the unit with a European AC plug in areas other than Europe. (E03-0115-05)
Battery ("AAA" or "R03").....4	Overlay sheet.....1 (G16-0756-08)
Audio cord.....1 (E30-0615-05)	System control cord.....1 (E30-1392-05)

KENWOOD CORPORATION

Shinjogu, Shinjuya Building, 17-5, 2-chome Shinjuya, Shinjyuku-ku, Tokyo 150, Japan

KENWOOD U.S.A. CORPORATION
2201 East Dominguez Street, Long Beach, CA 90810,
550 Clark Drive, Mount Olive, NJ 07828, U.S.A.

KENWOOD ELECTRONICS CANADA INC.
6070 KESTREL ROAD, MISSISSAUGA, ONTARIO L5T 1S8

TRIO-KENWOOD U.K. LIMITED
KENWOOD House, Dwight Road, Watford, Herts. WD1 8EB United Kingdom

KENWOOD ELECTRONICS BENELUX N.V.
Machielssiestrauweg, 418 B, 1930 Zaventem, Belgium

KENWOOD ELECTRONICS DEUTSCHLAND GMBH
Reimbucker-Str. 15, 6056 Hausenstamm, Germany

TRIO-KENWOOD FRANCE S.A.
13, Boulevard Ney, 75018 Paris, France

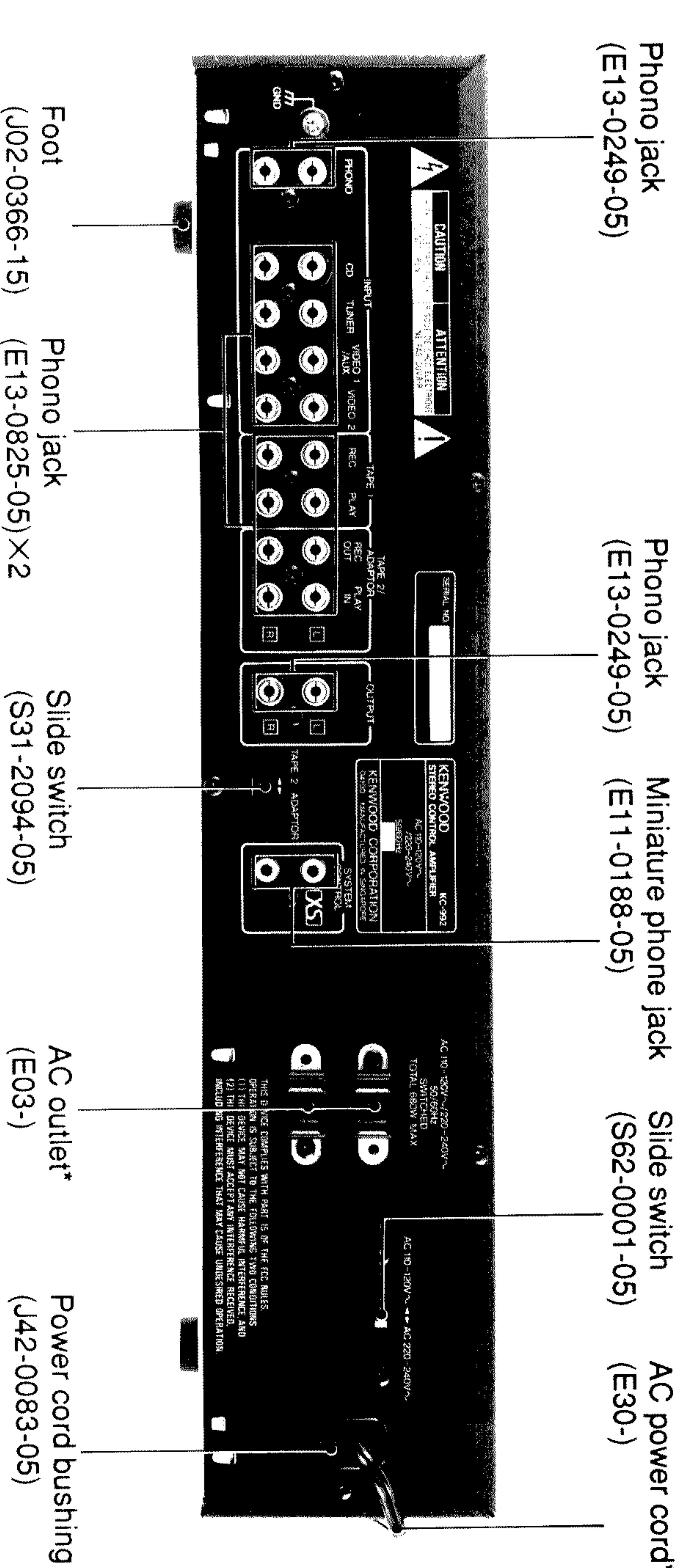
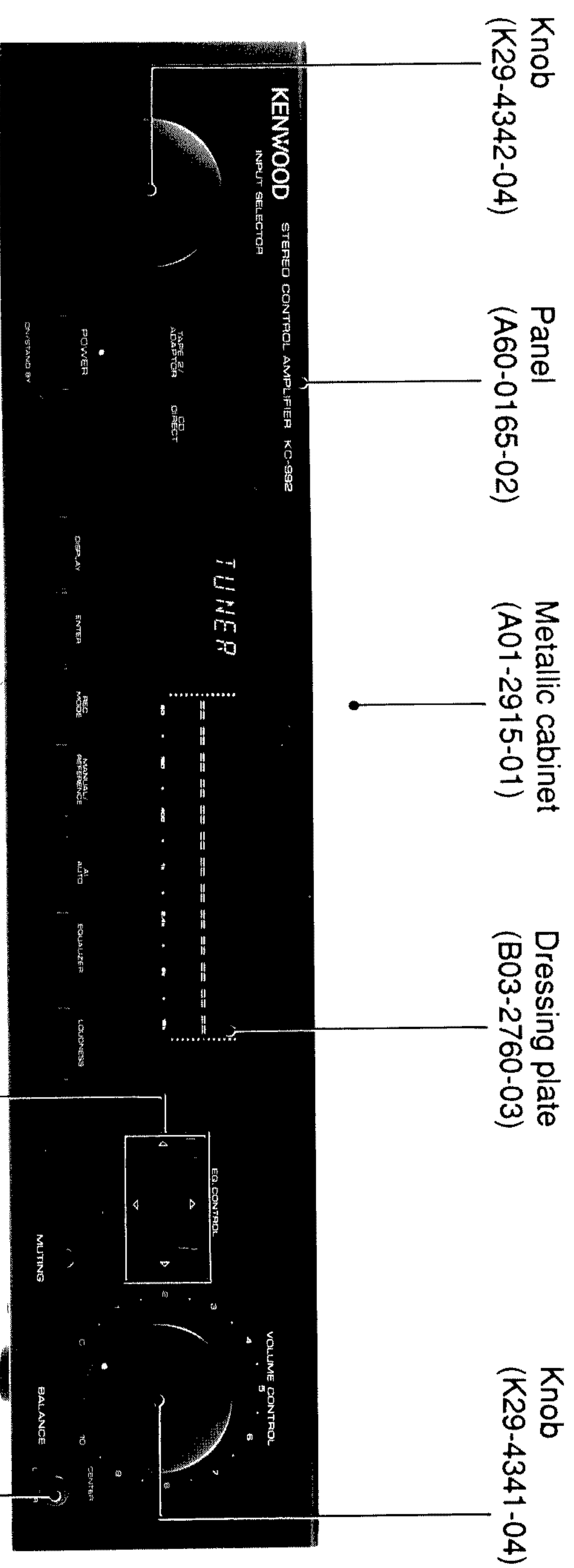
KENWOOD LINEAR S.P.A.
20125 MILANO, VIA ARBE, 50, ITALY

KENWOOD ELECTRONICS AUSTRALIA PTY. LTD. (A.C.N. 001 499 074)
P.O. Box 504, 8 Fingtree Drive, Australia Centre, Homebush, N.S.W. 2140, Australia

KENWOOD & LEE ELECTRONICS, LTD.
Wang Kee Building, 4th Floor, 34-37, Connaught Road, Central, Hong Kong

STEREO CONTROL AMPLIFIER KC-992 SERVICE MANUAL

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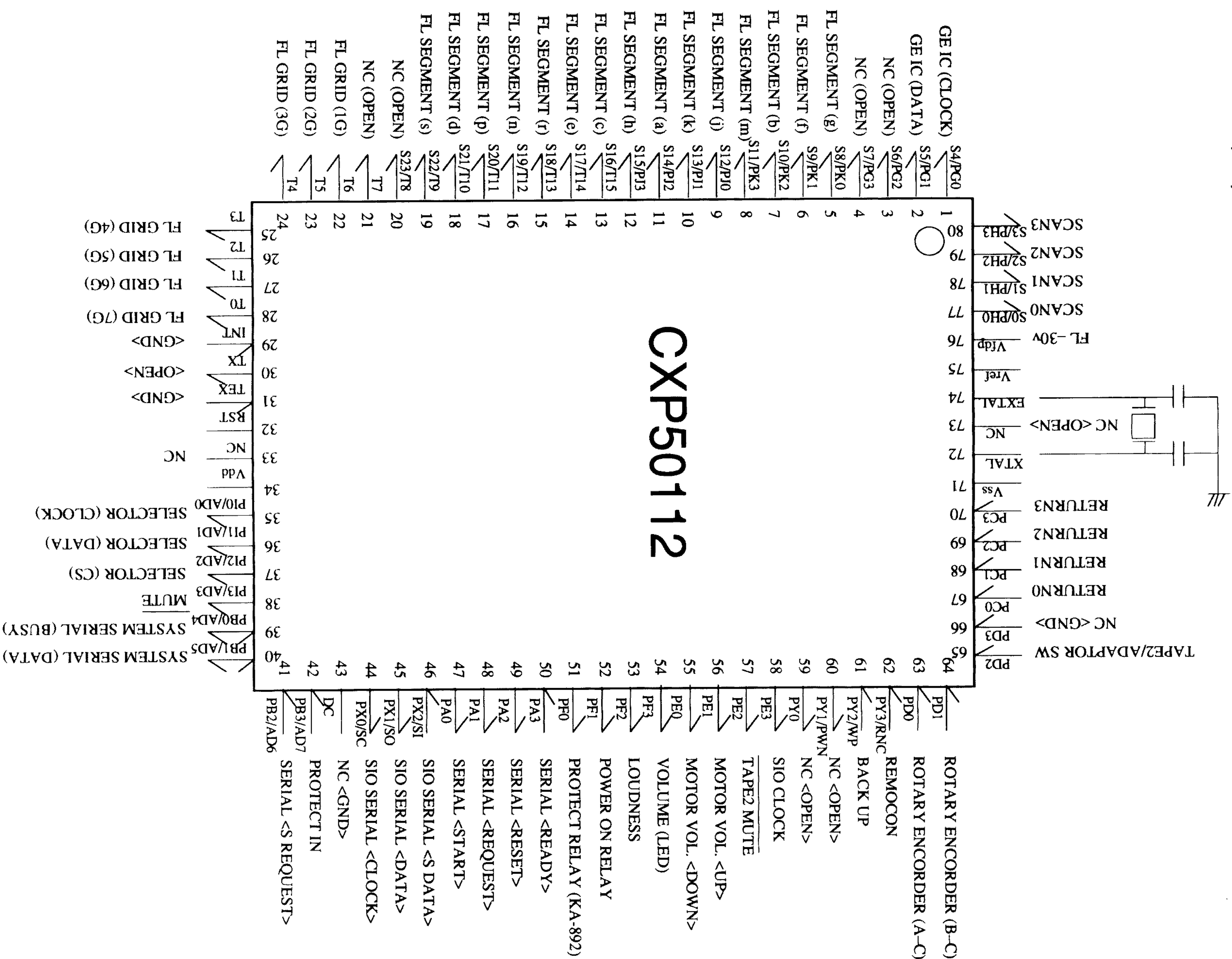


* Refer to parts list on page 26.

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Micro Processor Diagram
 Main μ -com
 CXP-50112-373Q (IC1)



Supplied Remote Controller Table

The supplied remote controller model and method of packaging varies according to system grade and destination market.

K	P	M, X, Y
RC-992	RC-160	RC-160
OR		
RC-160		

Selected by the distributor according to the grade of the system and placed inside the outer carton (not supplied with the amplifier).
 Supplied with the amplifier.

The RC-992 is a general system remote controller.

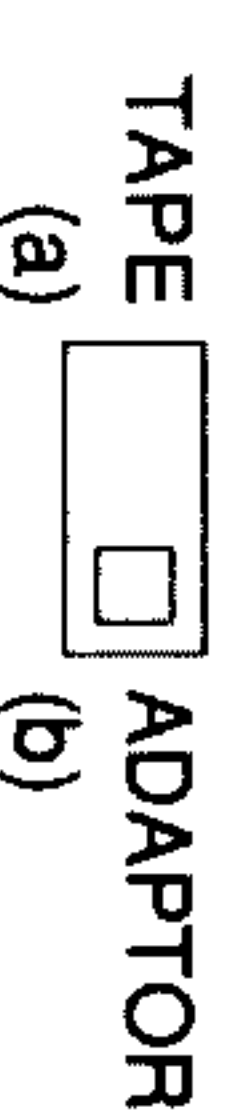
The RC-160 is a system remote controller with running function.

Protection circuit

While the protection circuit is operating, the indicator's alphanumeric display section flashes "-----". The protection circuit operates when it detects power transistor over-current or output section DC drift.

Explanation of Back Panel Switch

This switches the input/output function of the TAPE 2/ ADAPTOR.



- (a) Conventional tape monitor function
- (b) When this switch is set to the ADAPTOR side, it operates as follows:

- When the front panel TAPE 2/ADPT switch is turned on, the MAIN VR lowers once to zero and then rises again, stopping near the middle.
- While ① is in progress, no keys function besides the power switch.
- While the TAPE 2/ADPT switch is on, the MAIN VR cannot be remote-controlled; other functions work normally.
- When the TPAE 2/ADPT switch is turned off, the MAIN VR automatically lowers to zero, and henceforth all functions, including MAIN VR, work normally.

This function was included with the surround processors SS-592 and SS-992 in mind and is irrelevant except when used with these two surround processors.

CIRCUIT DESCRIPTION

Pin Description main μ -com CXP50112-373Q (IC1)

Pin No.	Pin Name	I/O	Name	Description
1	S4/PG0	O	GE IC CLOCK (NUJ7305)	GE IC CLOCK output
2	S5/PG1	O	GE IC DATA (NUJ7305)	GE IC DATA output
3	S6/PG2	-	NC (OPEN)	
4	P7/PG3	-	NC (OPEN)	
5	S8/PK0	O	FL SEGMENT (g)	FL segment (g)
6	S9/PK1	O	FL SEGMENT (f)	FL segment (f)
7	S10/PK2	O	FL SEGMENT (b)	FL segment (b)
8	S11/PK3	O	FL SEGMENT (m)	FL segment (m)
9	S12/PJ0	O	FL SEGMENT (j)	FL segment (j)
10	S13/PJ1	O	FL SEGMENT (k)	FL segment (k)
11	S14/PJ2	O	FL SEGMENT (a)	FL segment (a)
12	S15/PJ3	O	FL SEGMENT (h)	FL segment (h)
13	S16/T15	O	FL SEGMENT (c)	FL segment (c)
14	S17/T14	O	FL SEGMENT (e)	FL segment (e)
15	S18/T13	O	FL SEGMENT (r)	FL segment (r)
16	S19/T12	O	FL SEGMENT (n)	FL segment (n)
17	S20/T11	O	FL SEGMENT (p)	FL segment (p)
18	S21/T10	O	FL SEGMENT (d)	FL segment (d)
19	S22/T9	O	FL SEGMENT (s)	FL segment (s)
20	S23/T8	-	NC (OPEN)	
21	S23/T7	-	NC (OPEN)	
22	S23/T6	O	FL GRID (1G)	FL grid (1G)
23	S23/T5	O	FL GRID (2G)	FL grid (2G)
24	S23/T4	O	FL GRID (3G)	FL grid (3G)
25	S23/T3	O	FL GRID (4G)	FL grid (4G)
26	S23/T2	O	FL GRID (5G)	FL grid (5G)
27	S23/T1	O	FL GRID (6G)	FL grid (6G)
28	S23/T0	O	FL GRID (7G)	FL grid (7G)
29	INT	I	NC (GND)	External interrupt (No used)
30	TX	-	NC (OPEN)	32KHz T/C clock output (No used)
31	TEX	I	NC (GND)	32KHz T/C clock input (No used)
32	RST	I/O		Microprocessor reset
33	NC	-		
34	VDD	-		Power supply
35	PI0/AD0	O	SERECTOR (CLOCK)	Serector (TC9162/TC9163) CLOCK output
36	PI1/AD1	O	SERECTOR (DATA)	Serector (TC9162/TC9163) DATA output
37	PI2/AD2	O	SERECTOR (CS)	Serector (TC9162/TC9163) CS output
38	PI3/AD3	O	MUTE	MUTE output
39	PB0/AD4	I/O	SERIAL (BUSY)	Serial "BUSY"
40	PB1/AD5	I/O	SERIAL (DATA)	Serial "DATA"
41	PB2/AD6	I	SERIAL (SLAVE REQUEST)	Serial "S REQUEST" (communication)
42	PB3/AD7	I	PROTECT IN	Protection input
43	EC	-	NC (GND)	
44	PX0/SC	O	SIO CLOCK	SIO serial CLOCK (communication)

CXP50112-373Q (IC1)

CIRCUIT DESCRIPTION

Pin No.	Pin Name	I/O	Name	Description
45	PX1/SO	O	SIO DATA OUT	SIO serial DATA (communication)
46	PX2/SI	I	SIO DATA IN	SIO serial DATA (communication)
47	PA0	O	SERIAL (START)	Serial "START" (communication)
48	PA1	O	SERIAL (REQUEST)	Serial "REQUEST" (communication)
49	PA2	O	SERIAL (RESET)	Serial "RESET" (communication)
50	PA3	I	SERIAL (READY)	Serial "READY" (communication)
51	PF0	O	PROTECTION RELAY	Not used
52	PF1	O	POWER ON RELAY	Power on relay
53	PF2	-	NC (GND)	
54	PF3	O	MASTER VOLUME (LED)	LED
55	PE0	O	MOTOR VOLUME <DOWN>	Motor volume "DOWN" output
56	PE1	O	MOTOR VOLUME <UP>	Motor volume "UP" output
57	PE2	O	TAPE 2 MUTE	TAPE 2 MUTE output
58	PE3	O	SERIAL SIO (CLOCK OUT)	SIO external CLOCK output
59	PY0	-	NC (OPEN)	
60	PY1/PWM	-	NC (OPEN)	
61	PY2/WP	I	BACK UP	Backup input
62	PY3/RMC	I	REMOCON	Remote control signal input
63	PD0	I	ROTARY ENCODER (A-C)	Rotary encoder input pin
64	PD1	I	ROTARY ENCODER (B-C)	Rotary encoder input pin
65	PD2	I	TAPE2/ADAPTOR	TAPE 2/Adaptor selector switch input pin
66	PD3	-	NC (GND)	
67	PC0	I	RETURN 0	Key return 0
68	PC1	I	RETURN 1	Key return 1
69	PC2	I	RETURN 2	Key return 2
70	PC3	I	RETURN 3	Key return 3
71	VSS	-		GND
72	XTAL	-		CLOCK output
73	NC	-	NC (OPEN)	
74	EXTAL	I		CLOCK input
75	VREF	-		Voltage detection reference voltage pin (No used)
76	VFDP	-		FL load power supply pin
77	S0/PH0	O	SCAN 0	Key scan 0
78	S1/PH1	O	SCAN 1	Key scan 1
79	S2/PH2	O	SCAN 2	Key scan 2
80	S3/PH3	O	SCAN 3	Key scan 3

CIRCUIT DESCRIPTION

Test Mode Specifications

As shown below, this unit has three test modes:

- TEST 1.....Test mode using the main unit's keys
- TEST 2.....RAM contents initial setting mode
- TEST 3.....Test mode using serial terminal

Additional: The RAM contents are returned to initial settings by unplugging from the AC power outlet during TEST 1 and TEST 3 modes.

Setting methods

- 1) TEST 1: Plug into the AC power outlet while pressing the CD DIRECT key
- 2) TEST 2: Plug into the AC power outlet while pressing the ENTER key
- 3) TEST 3: With POWER OFF, transmit serial code TEST ON (71H) ON (71H)

Usage methods

All the FLs and LED indicators go on during 1). Initial settings and POWER OFF mode (shipping mode) during 2). Serial actuations (shown in table on separate sheet) conducted during 3).

- 1) TEST 1 (Operation through the main unit's keys)
 - a) Operate any key to cancel all the FL and LED indicators that go on.
 - b) MASTER VOLUME
The following keys are applied to VOLUME UP / STOP / DOWN, operating as follows:
 VOLUME UP = continuous increase with the control UP key.
 VOLUME STOP = stops UP/DOWN with the LEFT/RIGHT key.
 VOLUME DOWN = continuous decrease with the control DOWN key.

c) Graphic equalizer
Input of the EQ. ON key causes the following modes to repeat.

- Equalizer OFF
- ↑ Equalizer ON (Level ALL MINIMUM)
- ↓ Equalizer ON (Level ALL FLAT)
- ← Equalizer ON (Level ALL MAXIMUM)

2) TEST 3 (Serial pin operation)
Normally the received serial code is sent just as it is. However, the following codes are exceptions:

TEST OFF (70H)	Serial code not sent
TEST ON (71H)	Serial code not sent
POWER (8CH)	System ON/OFF code (25H/26H) sent
SELECTOR [PHONO] (80H)	Position code (73H) sent
SELECTOR [CD] (81H)	Position code (74H) sent
SELECTOR [TUNER] (82H)	Position code (72H) sent
SELECTOR [TAPE1] (83H)	Position code (76H) sent
SELECTOR [TAPE2] (84H)	ON OFF code ON/OFF=(7DH/7EH) sent
SELECTOR [VIDEO1] (87H)	Position code (7AH) sent
SELECTOR [VIDEO2] (88H)	Position code (77H) sent

Master volume

Uses the Volume UP (8FH)/DOWN (8EH) keys and continues to work when one transmission is carried out. Also, when stopping KEY OFF (90H) is sent. Note: Only the color-differentiated codes on the separate serial code chart operate.

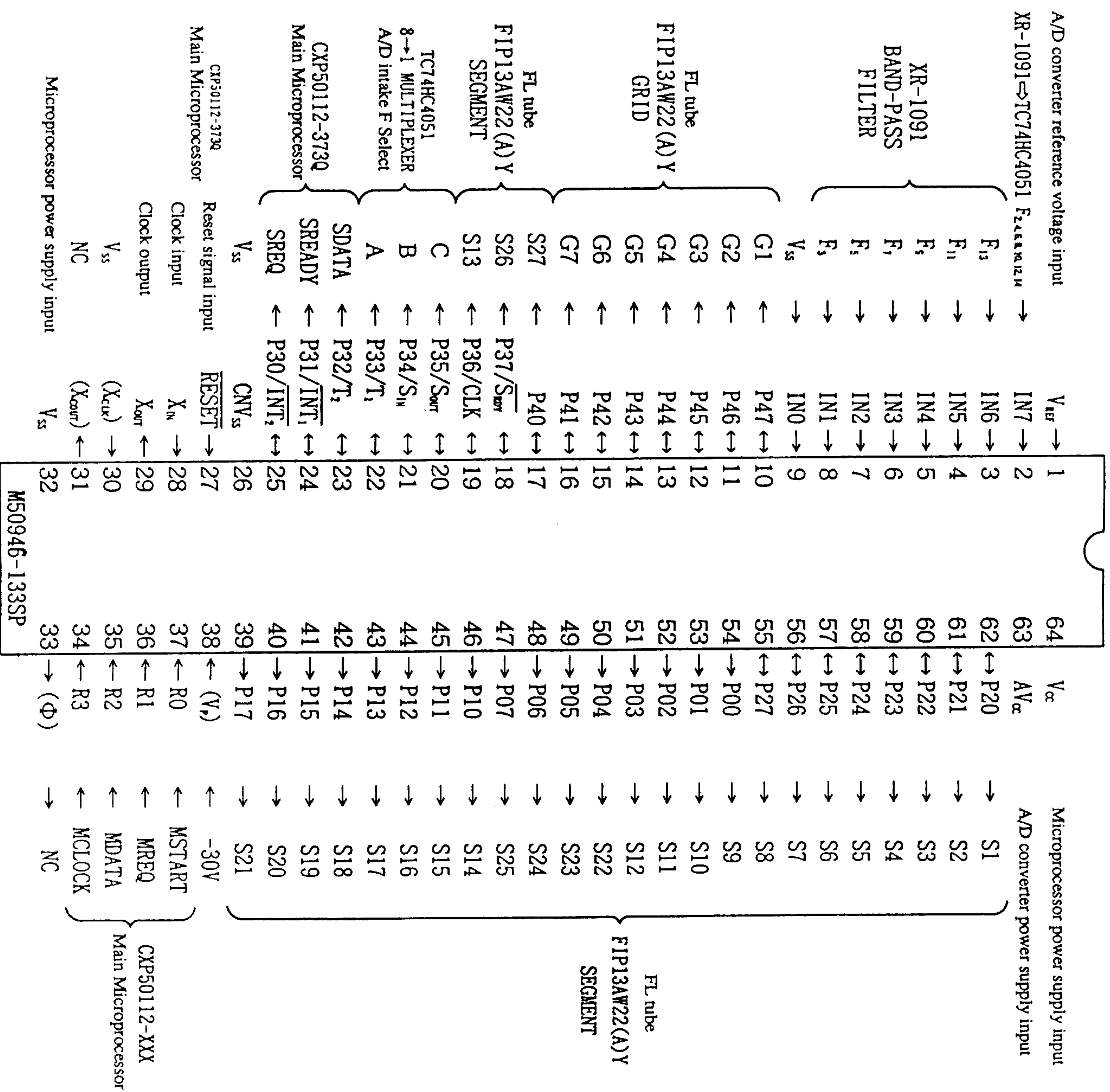
Test Mode Serial Codes

CIRCUIT DESCRIPTION

TYPE FUNC.	GRAPHIC EQUALIZER				TUNER			AMPLIFIER							CD	
	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	32Hz UP	32Hz DOWN	EQ REC ON/OFF	R1	0/10	AUTO/MANU	CLEAR	TEST OFF	PHONO	KEY OFF	DELAY TIME MIN	VISUAL FIX	SP.A			
1	55Hz UP	55Hz DOWN	DISP 2	R2	1	P.SCAN	ADJUST	TEST ON	CD/LD	UP/DOWN third stage OFF	DELAY TIME MAX	1	SP.B			
2	90Hz UP	90Hz DOWN		R3	2	ENTER (MEMORY)	PROGRAM PRO1		TUNER	UP/DOWN third stage ON	PRESENCE LEVE MIN	2	LOUDNESS			<input checked="" type="checkbox"/> / <input checked="" type="checkbox"/> PLAY/PAU
3	150Hz UP	150Hz DOWN	DISP (Roh)	R4	3	KEY OFF	SLEEP		(TAPE A) TAPE 1	Initial condition setting	PRESENCE LEVE MAX	3	SUBSONIC FILTER			<input type="checkbox"/> STOP
4	240Hz UP	240Hz DOWN	DISP (Loh)	R5	4	Test frequency setting	EXE		(TAPE B) TAPE 2	FL LED full illumination	CENT MOD ON/OFF	4	ADPT/ TAPE3			CHECK
5	400Hz UP	400Hz DOWN		FLAT	5	Initial condition setting	DISPLAY		AV/AUX	DECK adjustment mode setting	TEST ON/OFF	5	BYPASS			CLEAR
6	620Hz UP	620Hz DOWN	REC MODE	POWER	6	FL LED full illumination	C.CHECK		DAT	CD.SOURCE DIRECT	TEST TONE MOD	BASS CON DOWN	DSP			OPEN/ CLOSE
7			REAK HOL ON/OFF	EQ ON/OFF	7	DIRECT	PRO2		(VIDEO) VIDEO 1	DAT DIRECT	WOOFER ON/OFF	BASS CONTL UP	DOLBY 3STEREO			SKIP UP
8	1kHz UP	1kHz DOWN	UP/DOWN third stage ON	M1	8	DIGIT			VIDEO 2	CD REC	CENTER LEVE MIN		DOLBY PRO LOGI			SKIP DOWN
9	1.6kHz UP	1.6kHz DOWN	UP/DOWN third stage OFF	M2	9	CHARATER			VIDEO 3	FRONT /REAR	CENTER LEVE MAX		LINE STRAIGHT			P-MODE
A	2.6kHz UP	2.6kHz DOWN	Initial condition setting	M3	POWER	SNDC			VDP	SURROUND ON/OFF	MEMORY SAVE	TITLE ON/OFF	INPUT LEVEL -			SPACE
B	4.2kHz UP	4.2kHz DOWN	EQ test memory settings	M4	BAND	P.SCAN-			AUX	SURROUND MODE	MEMORY OUT	TITLE SHIFT	INPUT LEVEL +			TIME DISPLAY
C	6.8kHz UP	6.8kHz DOWN	FL.LD full illumination	M5	(FM) BAND	+10			POWER	REAR LEVE MIN	REAR BAL -ANC Roh	TITLE → (R)	DSP LOGIC			+10
D	10kHz UP	10kHz DOWN		MEMORY	(AM) BAND				MUTE	REAR LEVE MAX	REAR BALLANCE	TITLE ← (L)	REAR LEV (MID)			EDIT
E	16kHz UP	16kHz DOWN		DISPLAY	(LW/TV) BAND				MAIN VOL DOWN	MOTOR VL ALL DOWN	REC OUT SEL VID1	TITLE SET	CENT LEV (MID)			RANDOM
F			KEY OFF	REVERSE	UP				MAIN VOL UP	MOTOR VL ALL UP	MENU	DSPS	PRESENCE LEV (MID)			REPEAT

- : After receiving code, a code that issues the SEL CODE, SYSTEM ON/OFF code.
- : After receiving code, a code that issues the same code as the input code.
- : After receiving code, a code that issues no code.

Microprocessor Pin Layout Diagram
GE control and display μ-com M50946-133SP (IC2)



Pin Description sub μ-com M50946-133SP (IC2)

Pin No.	Pin Name	I/O	Name	Description
1	VREF		VREF	A/D converter reference power supply input
2	IN7	I	F2, F4, F6, F8, F10, F12, F14	Analog signal input through the multiplexer TC74HC4051 F2: 63Hz, F4: 160Hz, F6: 400Hz, F8: 1KHz, F10: 2.5KHz, F12: 6.3KHz, F14: 16KHz
3	IN6	I	F13	10KHz analog signal input (signal input directly from the filter circuit)
4	IN5	I	F11	3.9KHz analog signal input (signal input directly from the filter circuit)
5	IN4	I	F9	1.5KHz analog signal input (signal input directly from the filter circuit)
6	IN3	I	F7	625Hz analog signal input (signal input directly from the filter circuit)
7	IN2	I	F5	250Hz analog signal input (signal input directly from the filter circuit)
8	IN1	I	F3	98Hz analog signal input (signal input directly from the filter circuit)
9	IN0	I	VSS	Unused (analog input pin)
10	P47	O	G1	FL tube grid G1 (Pin number 77) drive signal input H: on L: off
11	P46	O	G2	FL tube grid G2 (Pin number 76) drive signal input H: on L: off
12	P45	O	G3	FL tube grid G3 (Pin number 75) drive signal input H: on L: off
13	P44	O	G4	FL tube grid G4 (Pin number 74) drive signal input H: on L: off
14	P43	O	G5	FL tube grid G5 (Pin number 73) drive signal input H: on L: off
15	P42	O	G6	FL tube grid G6 (Pin number 72) drive signal input H: on L: off
16	P41	O	G7	FL tube grid G7 (Pin number 71) drive signal input H: on L: off
17	P40	O	S27	FL tube segment S27 (Pin number 44) drive signal input H: on L: off
18	P37 (SRDY)	O	S26	FL tube segment S26 (Pin number 43) drive signal input H: on L: off
19	P36 (CLK)	O	S13	FL tube segment S13 (Pin number 42) drive signal input H: on L: off
20	P35 (Sout)	O	C	Multiplexer TC74HC4051 control signal output (TC74HC4051: F2, 4, 6, 8, 10, 12, 14 for analog signal selection)
21	P34 (Sin)	O	B	Multiplexer TC74HC4051 control signal output
22	P33 (T1)	O	A	Multiplexer TC74HC4051 control signal output
23	P32 (T2)	O	SDATA	Sub microprocessor serial DATA signal output
24	P31 (INT1)	O	SREADY	Sub microprocessor serial DATA communicability signal output
25	P30 (INT2)	O	SREQ	Sub microprocessor serial DATA send request signal output H: data communications possible L: data communications impossible H: Sub microprocessor DATA send request L: others
26	CNVSS		VSS	Unused (microprocessor internal mode switching)
27	RESET	I	RESET	Reset signal detect H: others L: reset
28	XIN	I	XIN	System clock input (4.0MHz resonator)
29	XOUT	O	XOUT	System clock input (4.0MHz resonator)
30	XOCIN	I	VSS	Unused (clock input pin)
31	XOCOUT	O	NC	Unused (clock output pin)
32	VSS			GND
33	Φ	O	NC	Unused (system clock 1/4 cycle output)
34	R3	I	MCLOCK	Main microprocessor serial DATA communications CLOCK signal input
35	R2	I	MDATA	Main microprocessor serial DATA signal input
36	R1	I	MREQ	Main microprocessor serial DATA send request signal input H: Main microprocessor DATA send request L: others
37	R0	I	MSTART	Main microprocessor serial DATA communications start signal input H: Main-Sub data communications start L: others
38	VP	I	-30V	PULL DOWN V input -30V
39	P17	O	S21	FL tube segment S21 (Pin number 45) drive signal input H: on L: off
40	P16	O	S20	FL tube segment S20 (Pin number 46) drive signal input H: on L: off

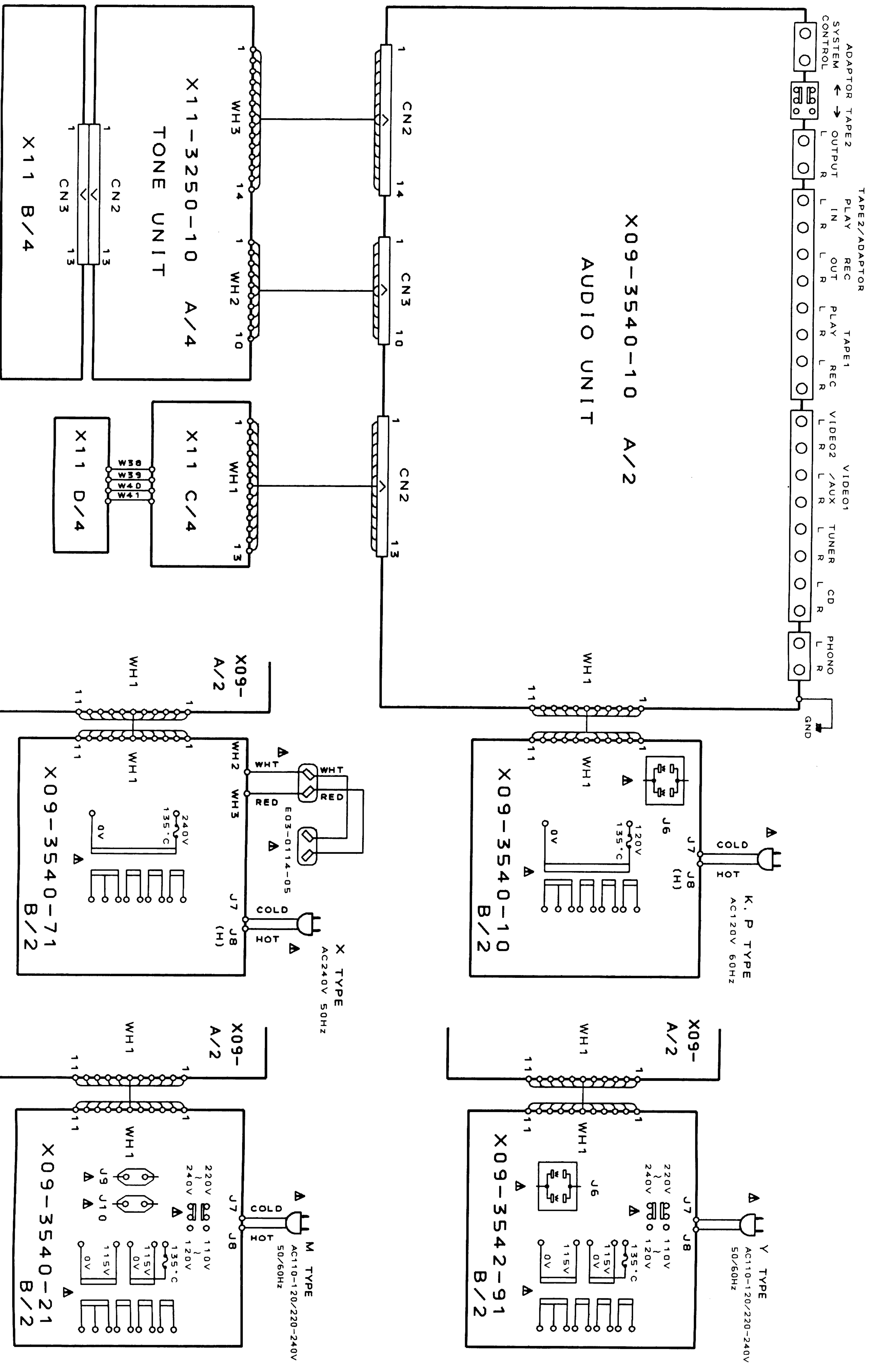
CIRCUIT DESCRIPTION

M50940-133SP (IC2)

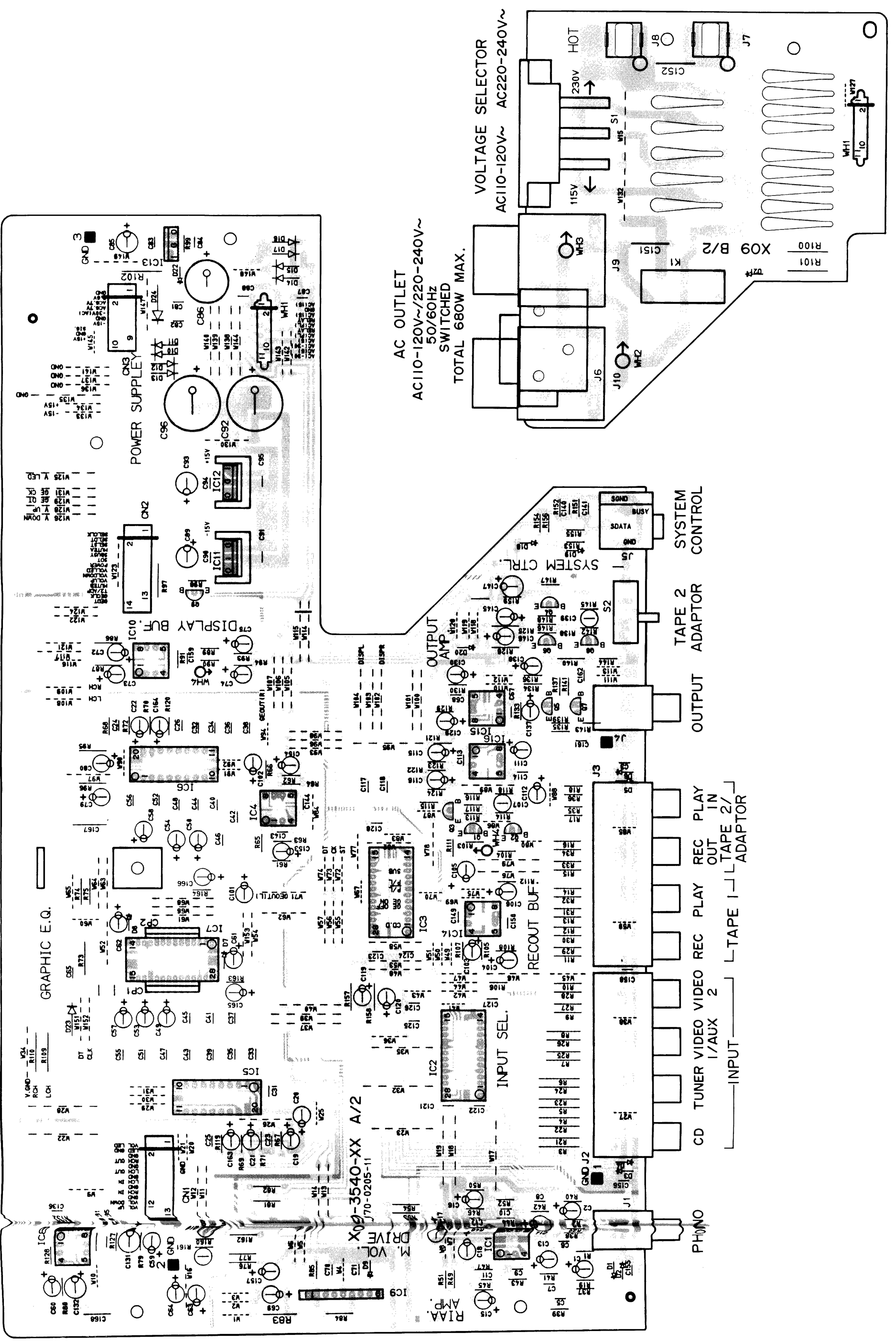
Pin No.	Pin Name	I/O	Name	Description
41	P15	O	S19	FL tube segment S19 (Pin number 47) drive signal input H: on L: off
42	P14	O	S18	FL tube segment S18 (Pin number 48) drive signal input H: on L: off
43	P13	O	S17	FL tube segment S17 (Pin number 49) drive signal input H: on L: off
44	P12	O	S16	FL tube segment S16 (Pin number 50) drive signal input H: on L: off
45	P11	O	S15	FL tube segment S15 (Pin number 51) drive signal input H: on L: off
46	P10	O	S14	FL tube segment S14 (Pin number 52) drive signal input H: on L: off
47	P07	O	S25	FL tube segment S25 (Pin number 53) drive signal input H: on L: off
48	P06	O	S24	FL tube segment S24 (Pin number 54) drive signal input H: on L: off
49	P05	O	S23	FL tube segment S23 (Pin number 55) drive signal input H: on L: off
50	P04	O	S22	FL tube segment S22 (Pin number 56) drive signal input H: on L: off
51	P03	O	S12	FL tube segment S12 (Pin number 57) drive signal input H: on L: off
52	P02	O	S11	FL tube segment S11 (Pin number 58) drive signal input H: on L: off
53	P01	O	S10	FL tube segment S10 (Pin number 59) drive signal input H: on L: off
54	P00	O	S9	FL tube segment S09 (Pin number 60) drive signal input H: on L: off
55	P27	O	S8	FL tube segment S08 (Pin number 61) drive signal input H: on L: off
56	P26	O	S7	FL tube segment S07 (Pin number 62) drive signal input H: on L: off
57	P25	O	S6	FL tube segment S06 (Pin number 63) drive signal input H: on L: off
58	P24	O	S5	FL tube segment S05 (Pin number 64) drive signal input H: on L: off
59	P23	O	S4	FL tube segment S04 (Pin number 65) drive signal input H: on L: off
60	P22	O	S3	FL tube segment S03 (Pin number 66) drive signal input H: on L: off
61	P21	O	S2	FL tube segment S02 (Pin number 67) drive signal input H: on L: off
62	P20	O	S1	FL tube segment S01 (Pin number 68) drive signal input H: on L: off
63	AVcc		AVcc	A/D converter power supply input +5V
64	Vcc		Vcc	Microprocessor power supply input +5V

WIRING DIAGRAM

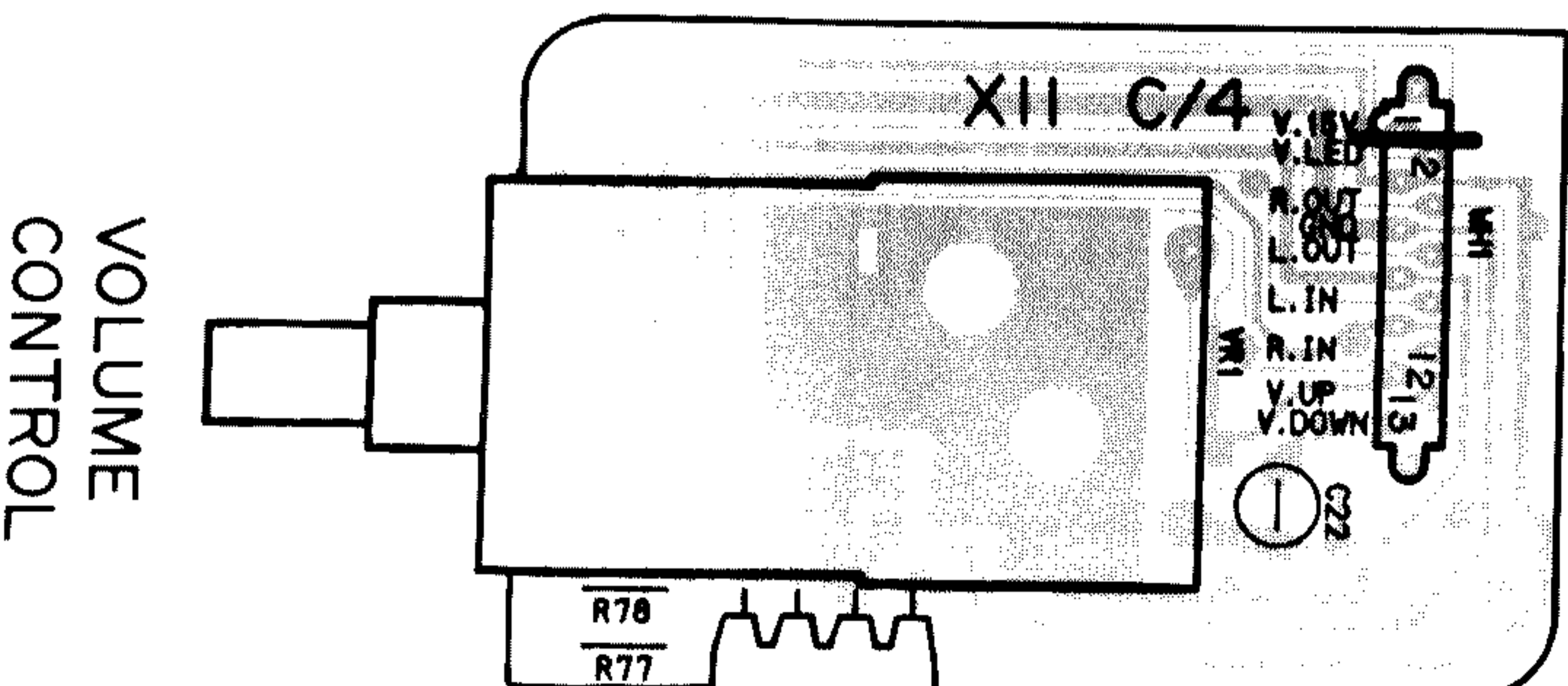
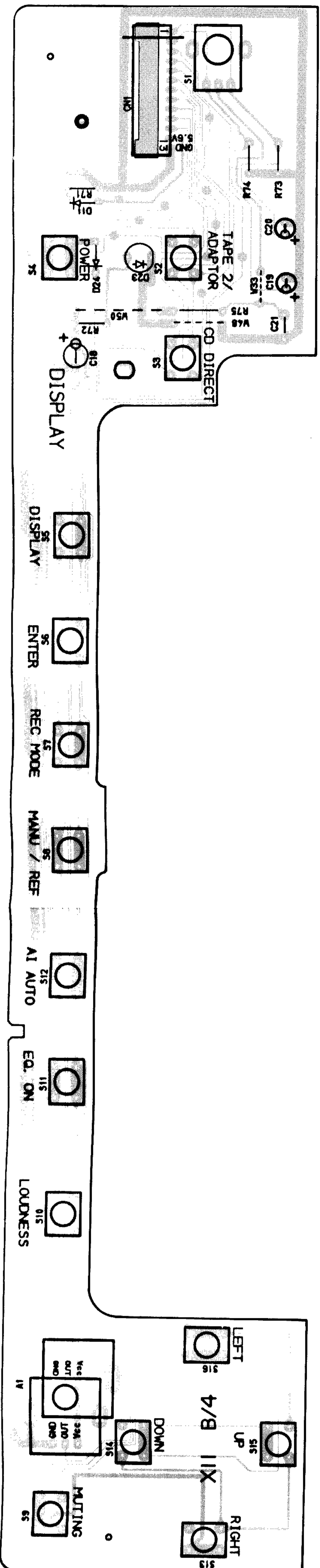
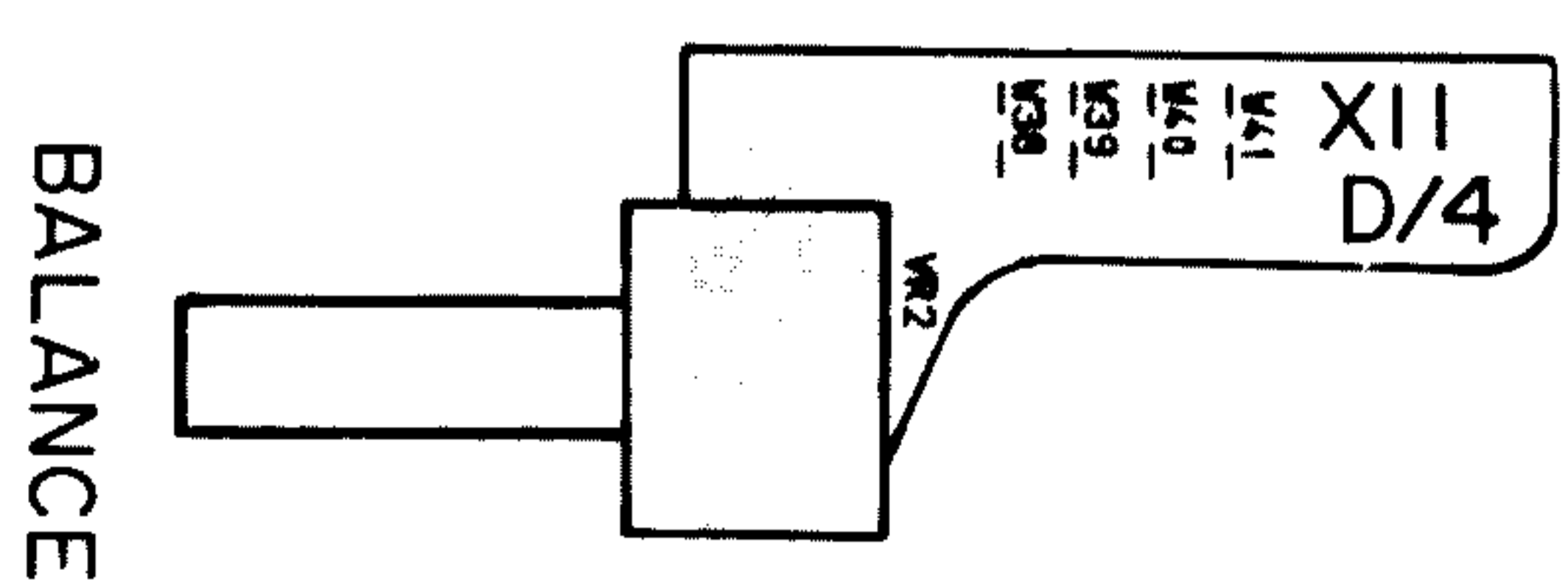
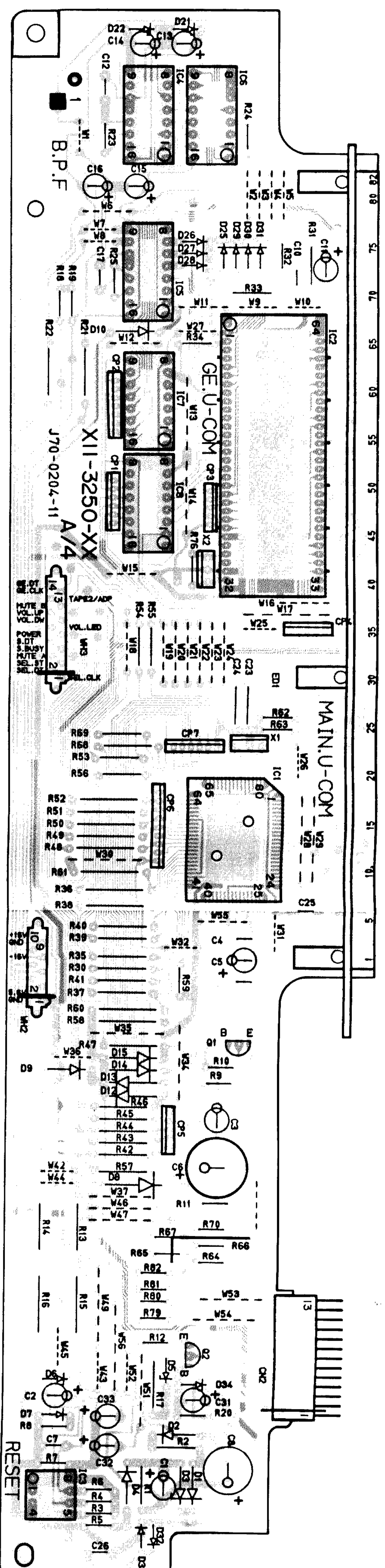
WIRING DIAGRAM



PC BOARD (component side view)

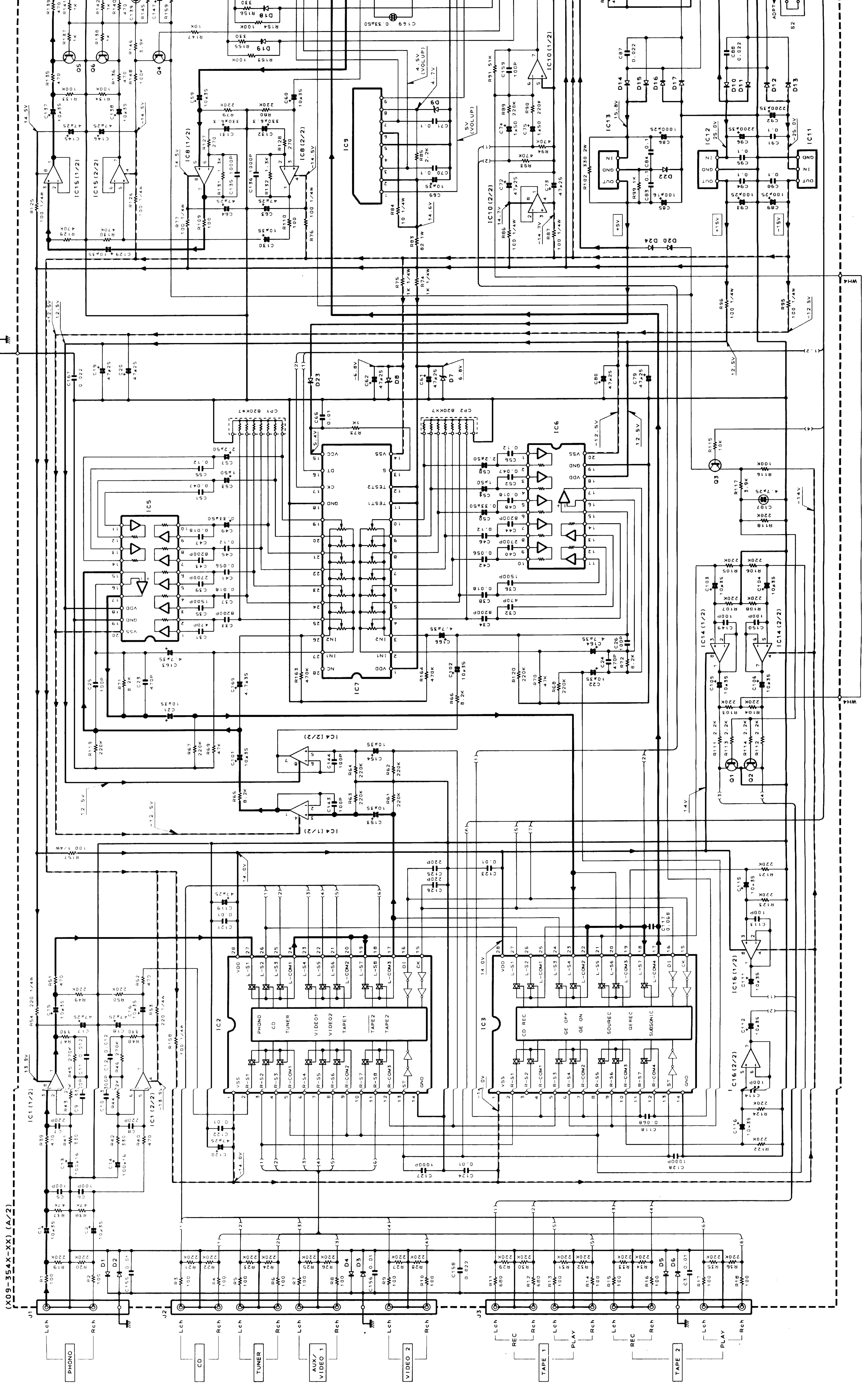


PC BOARD (Component side view)



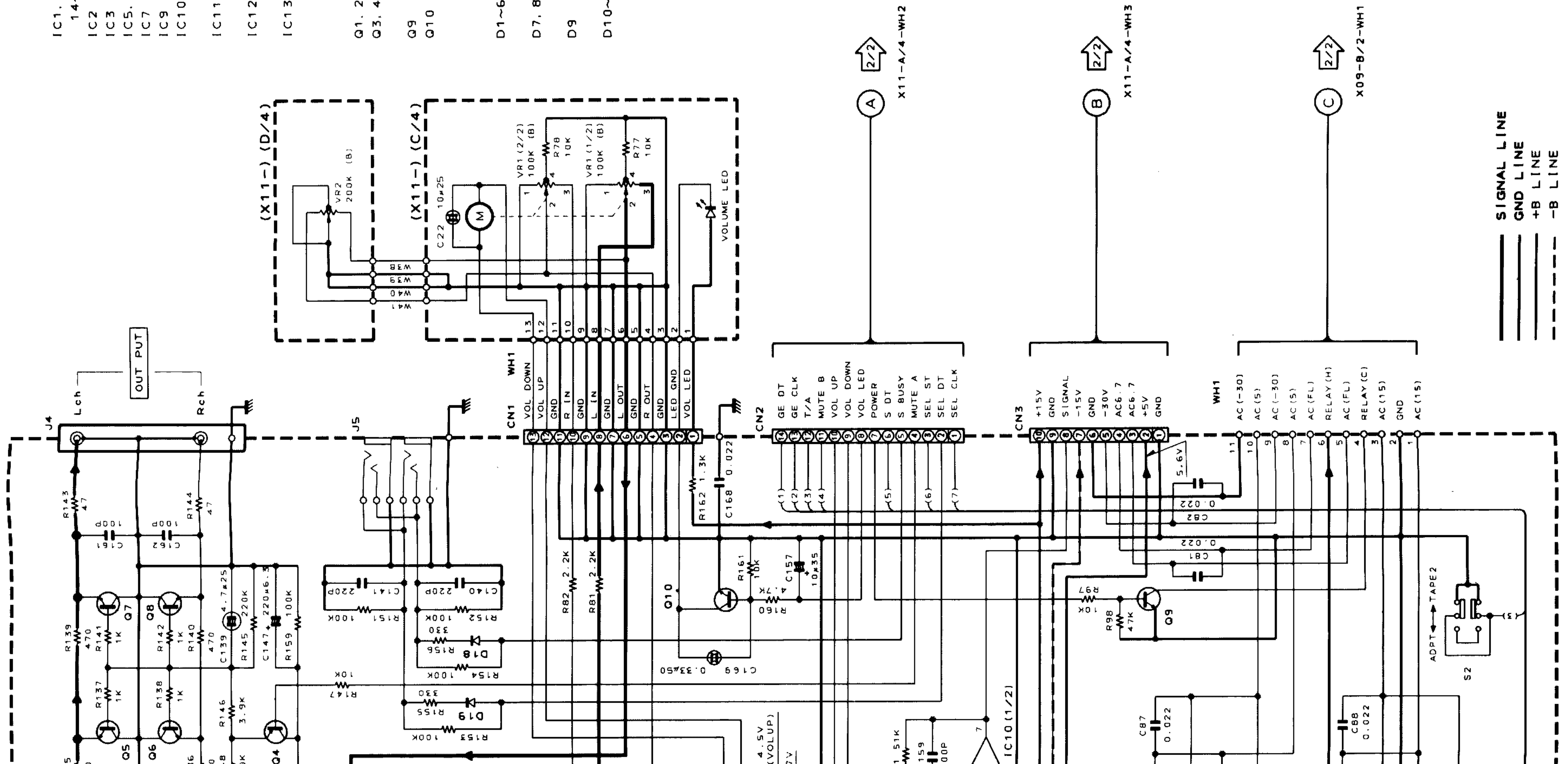
Refer to the schematic diagram for the values of resistors and capacitors

(X09-354X-XX) (A/2)



WHA

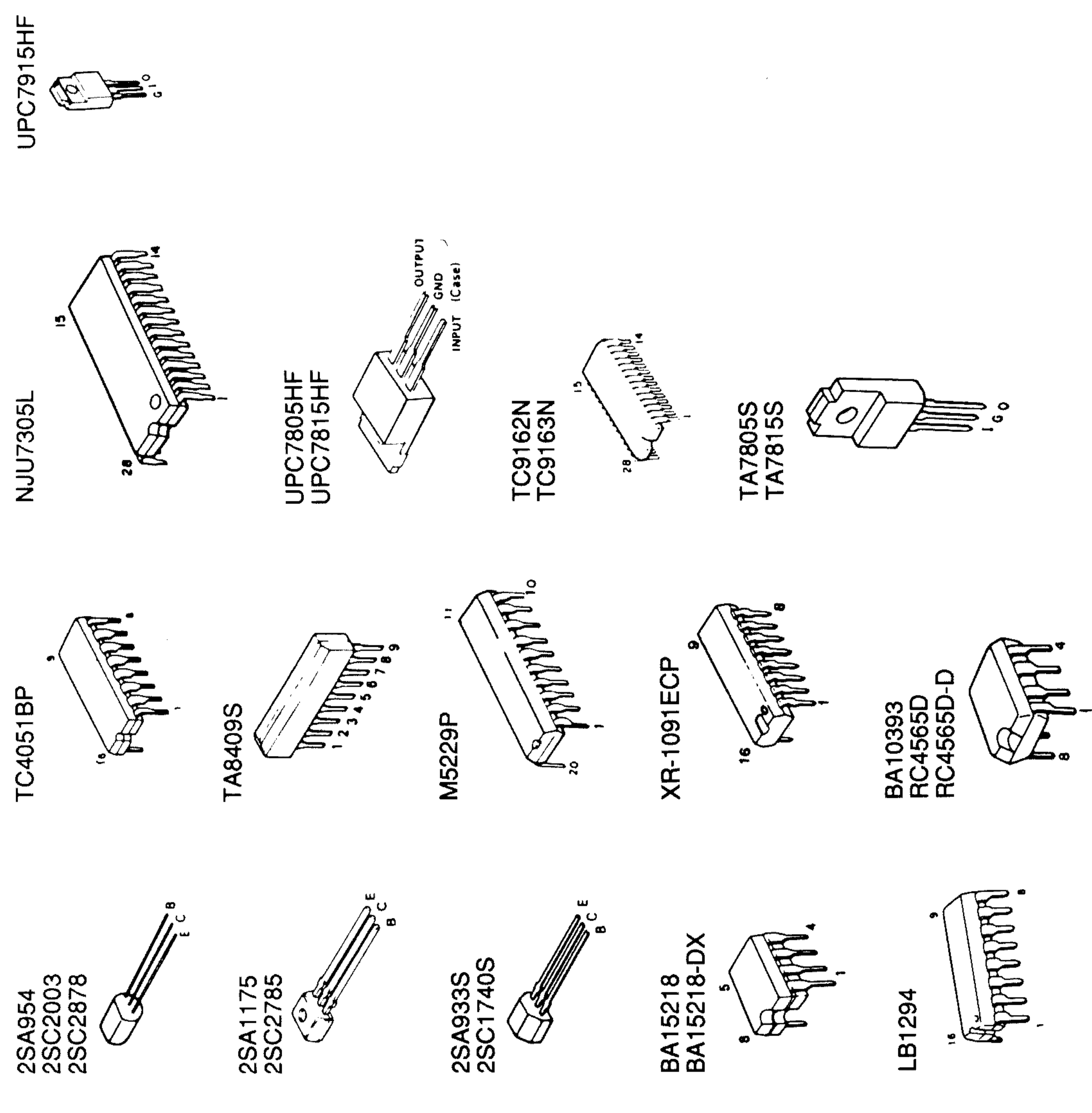
WHA



- IC1, 4, 8, RC4565D-D
- 14-16 or BA15218-DX
- IC2 TC9163N
- IC3 TC9162N
- IC5, 6 M5229P
- IC7 NJU7305L
- IC9 TA8409S
- IC10 RC4565D
- IC11 or BA15218
- or APC7915HF
- IC12 or TA79015S
- or APC7815HF
- or TA7815S
- IC13 or APC7805HF
- or TA7805S

- Q1, 2, 5-8 2SC2878 (B)
- Q3, 4 2SA933S (Q, R)
- Q9 or 2SA1175 (F, E)
- Q10 2SC2003 (L, K)
- or 2SC1740S (Q, R)
- or 2SC2785 (F, E)

- D1-6, 18-24 HSS104
- or 1SS133
- D7, 8 RD6.8ES (B2)
- or HZS6.8N (B2)
- D9 RD4.7ES (B)
- or HZS4.7N (B)
- D10-17 S5566B
- or 1SR139-100

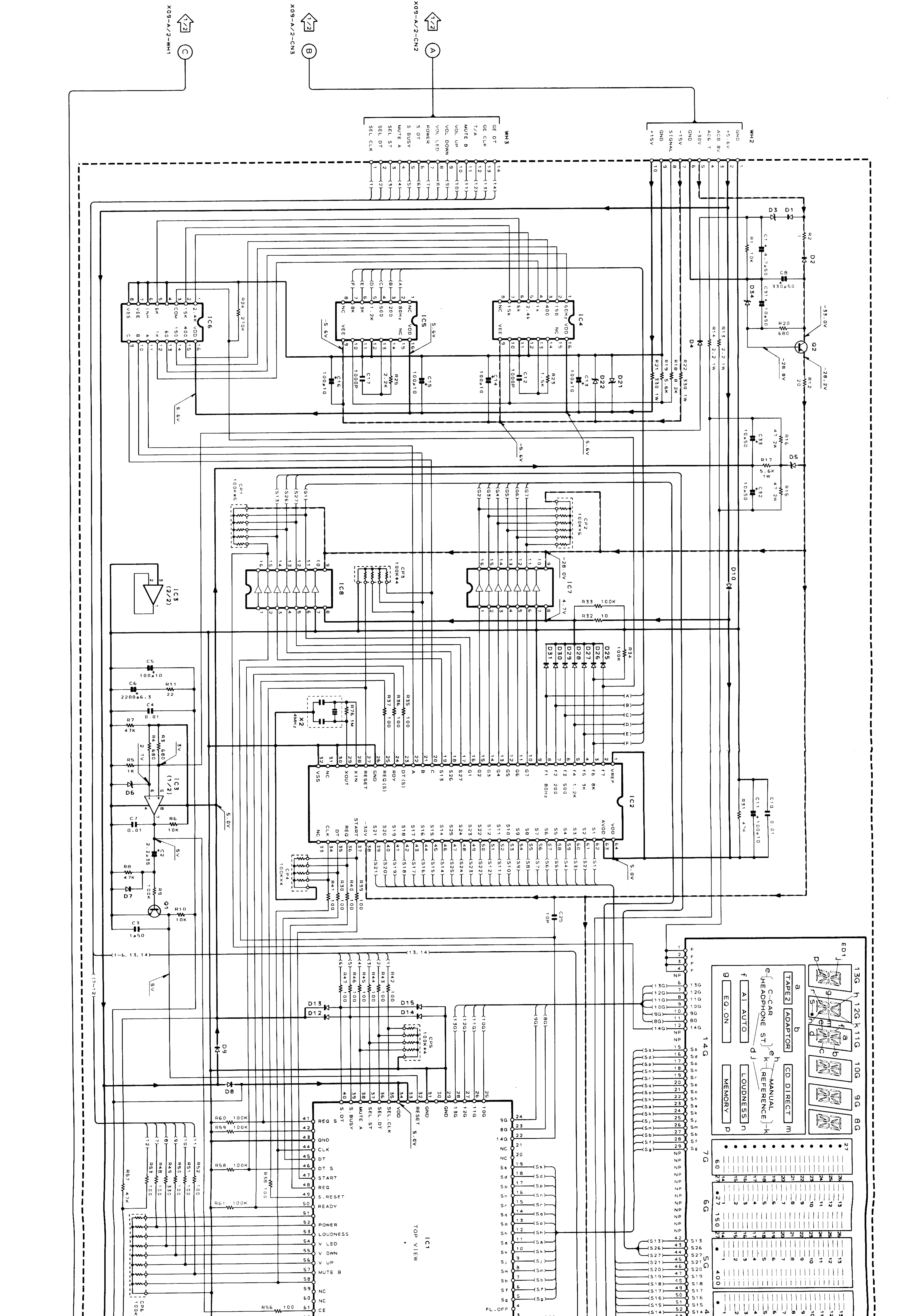


DC voltages are as measured with a high impedance voltmeter with no signal input. Values may vary slightly due to variations between individual instruments or/and units.

Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance sans signal d'entrée. Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.

Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen Spannungsmesser ohne Eingangssignal gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u. U. geringfügig.

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). **⚠** Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.



WH3

GE DT	14	(14)
GE CLK	3	(13)
T/A	12	(12)
MUTE B	11	(11)
VOL UP	10	(10)
VOL DOWN	9	(9)
VOL LED	8	(8)
POWER	7	(7)
S BUSY	5	(5)
SEL A	4	(4)
SEL ST	2	(2)
SEL DT	1	(1)

WH2

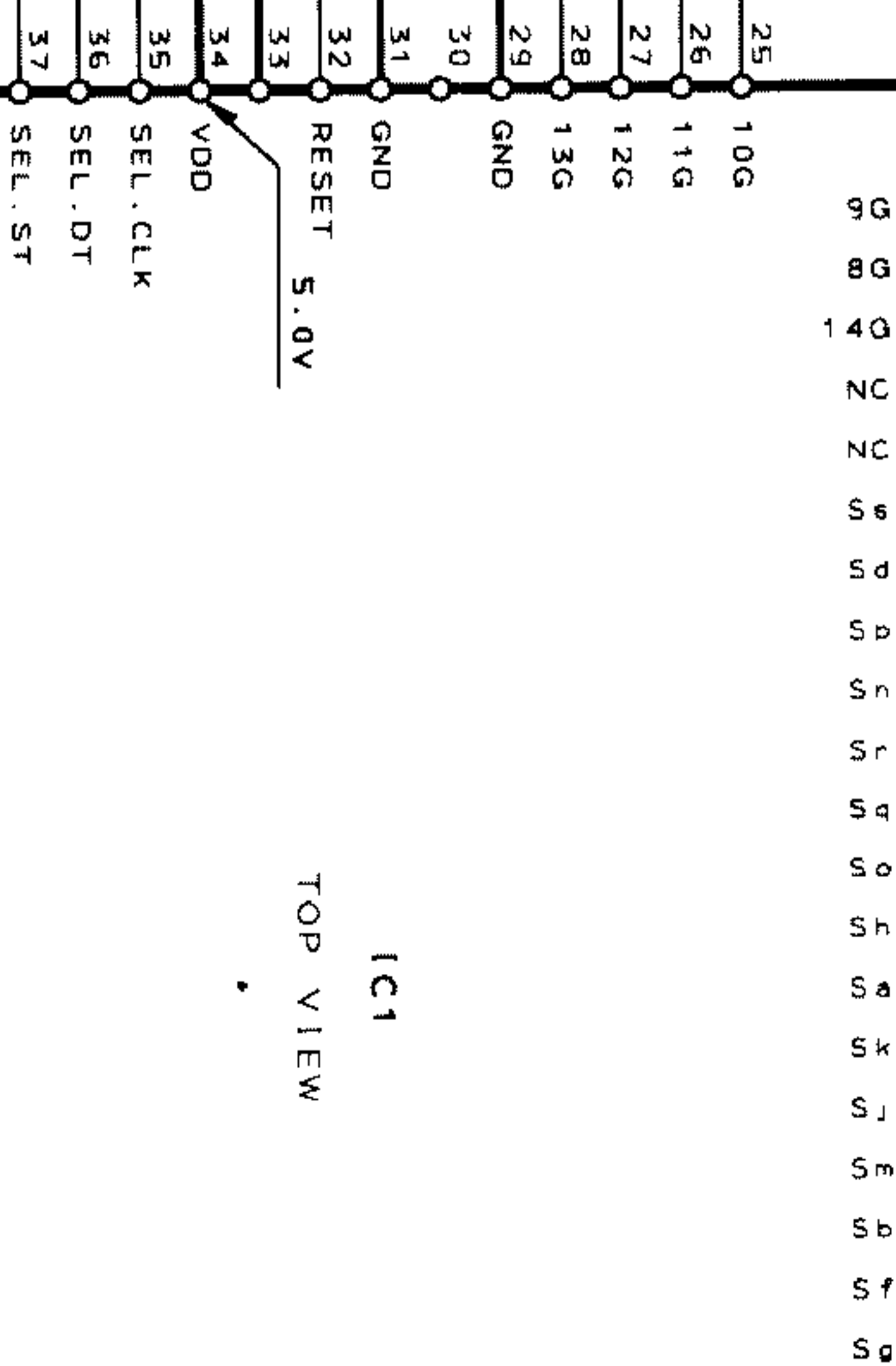
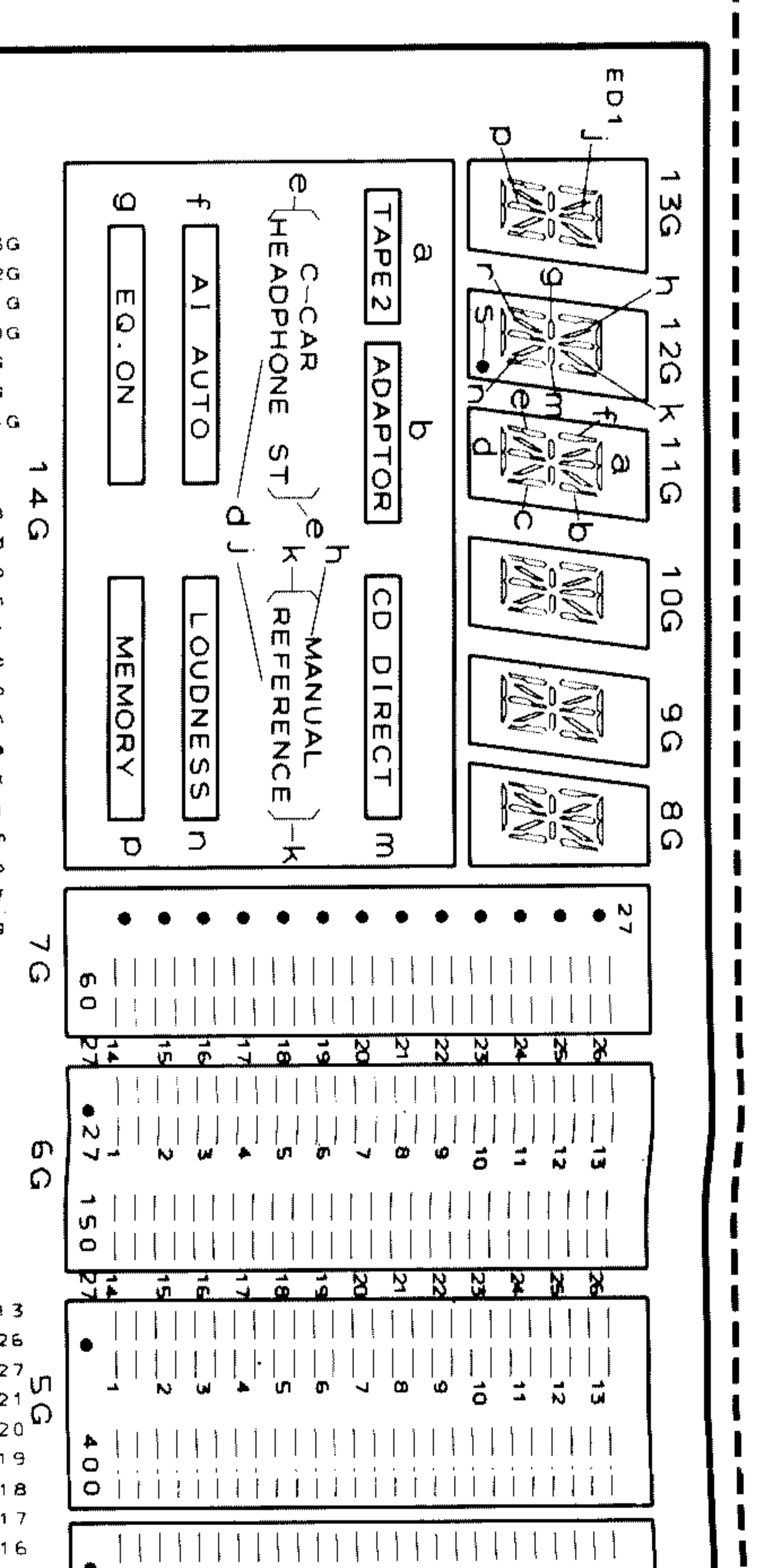
+5.6V	3
ACB 8V	4
ACB 7	5
-30V	6
GND	7
-15V	8
SIGNAL	9
GND	10

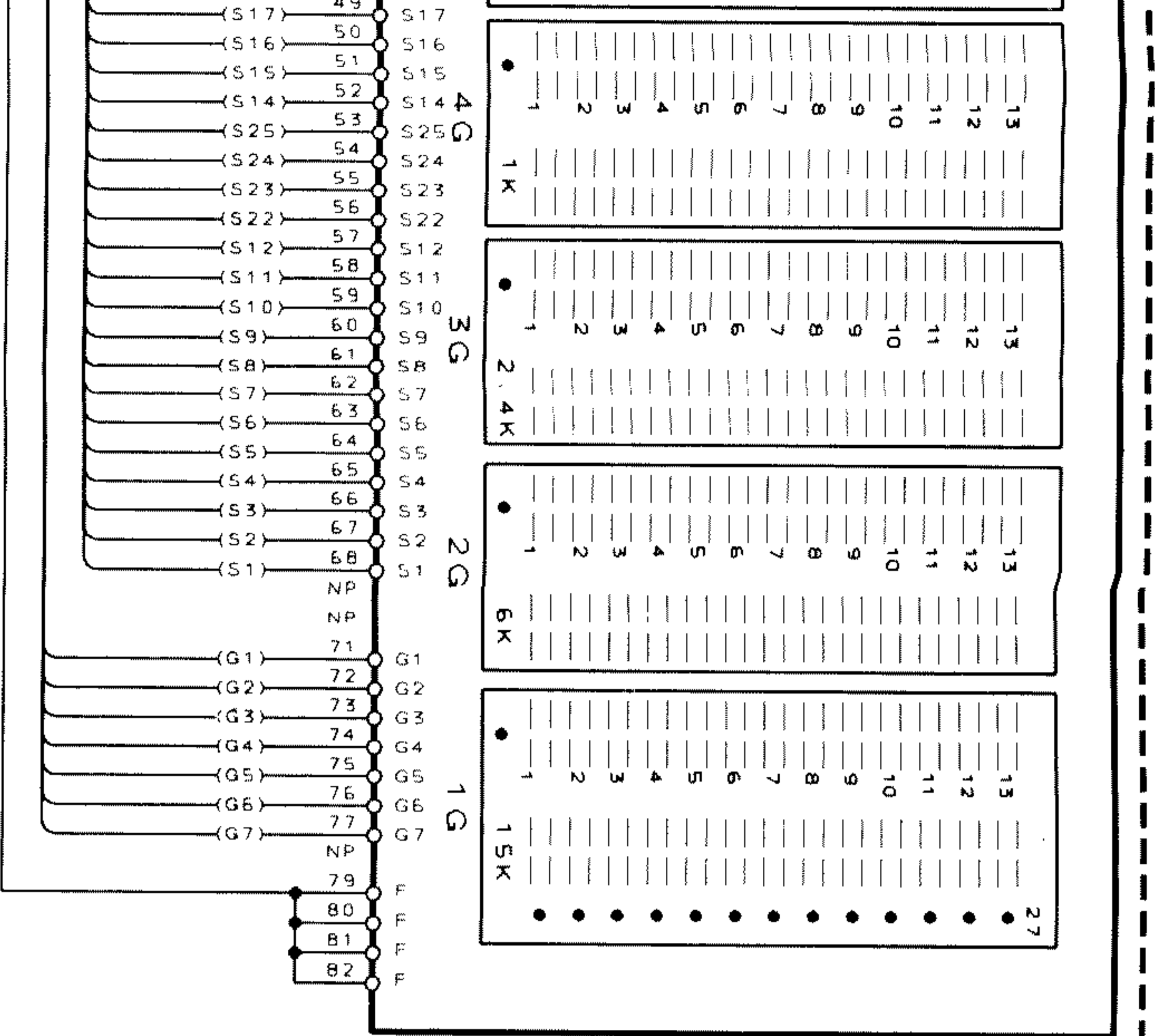
X09-A/2-CN3

A	1
B	2
C	3

X09-A/2-WH1

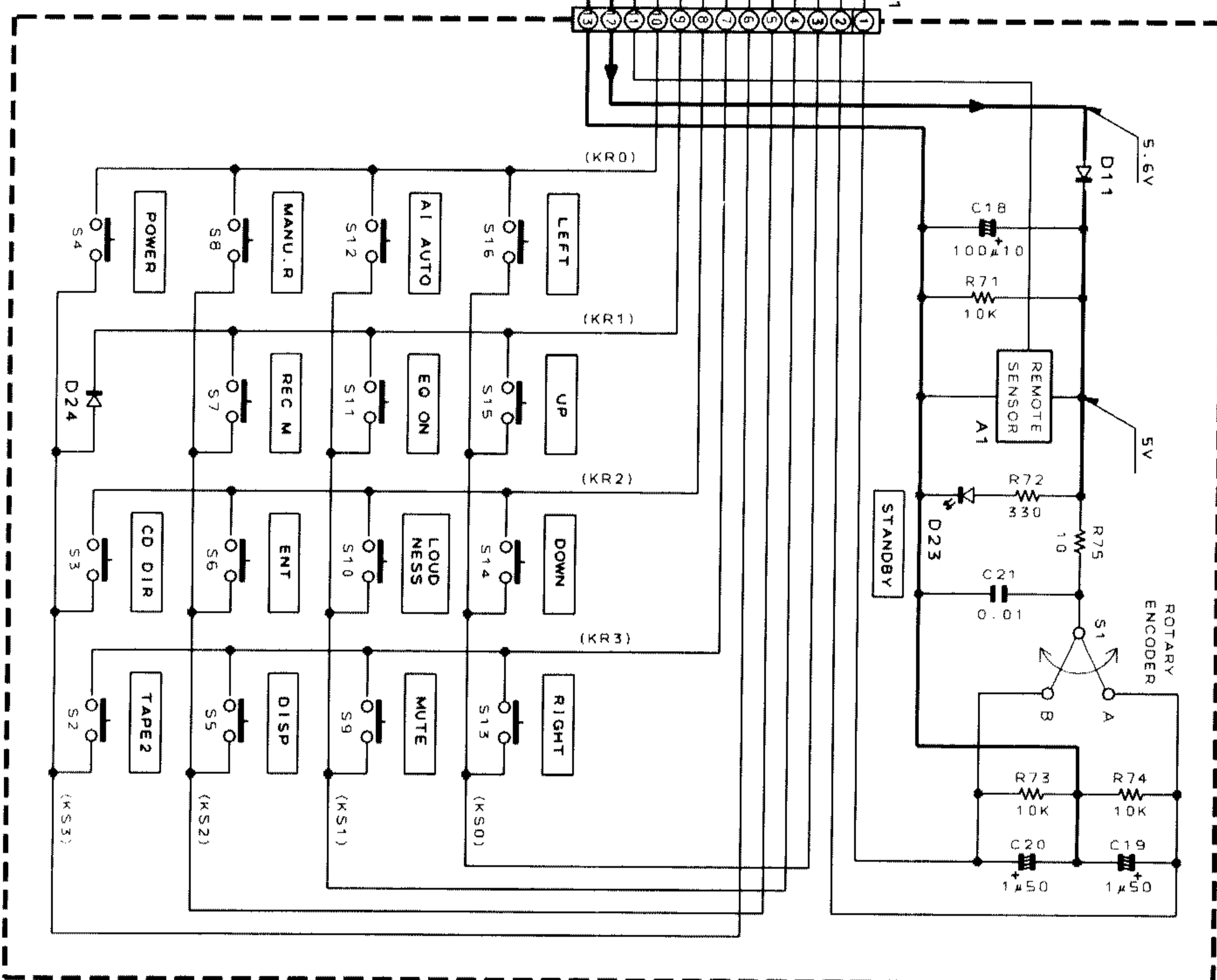
1/2	1
1/2	2
1/2	3



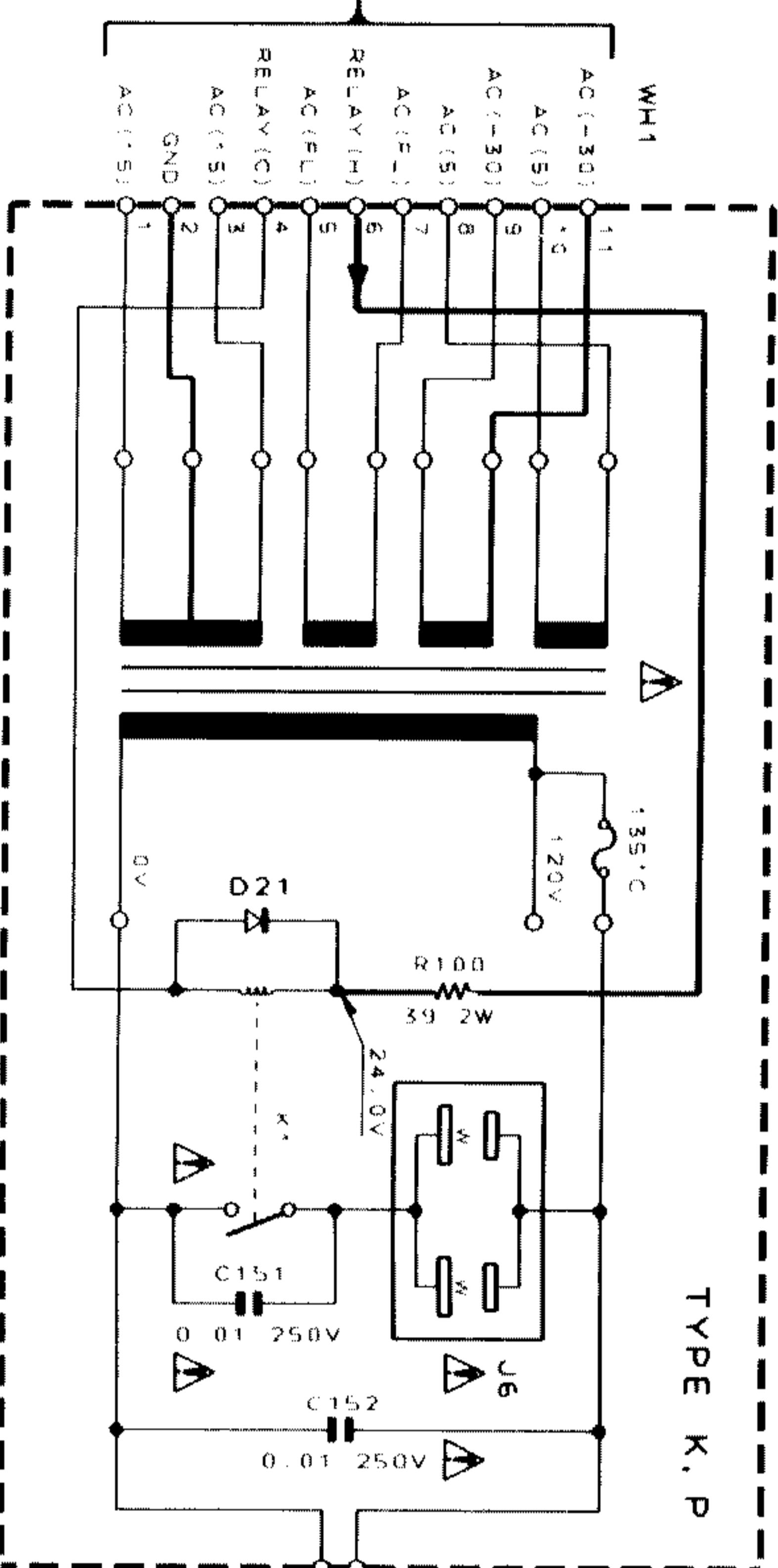


- IC1 : CXP50112-3730
- IC2 : M50946-133SP
- IC3 : BA10393
- IC4, 5 : XR-1091ECP
- IC6 : TC4051BP
- IC7~8 : LB1294
- 01 : 2SC1740S(Q, R) or 2SC2785(F, E)
- 02 : 2SA954(L, K)
- 01, 4 : H5S104A or 1SS131
- 02 : S5688B or 1SR139-100
- 03 : RD10ES (B2) or HZS10N (B2)
- 05 : RD0-2ES (B2) or HZS8-2N (B2)
- 06 : RD2-7ES (B2) or HZS2-7N (B2)
- 07~15, 24~33 : H5S104 or 1SS133
- 021, 22 : RD5-6ES (B2) or HZS5-6N (B2)
- 023 : B30-1291-05
- 034 : RD30ES (B) or HZS30N (B)

(X11-325X-XX) (B/4)

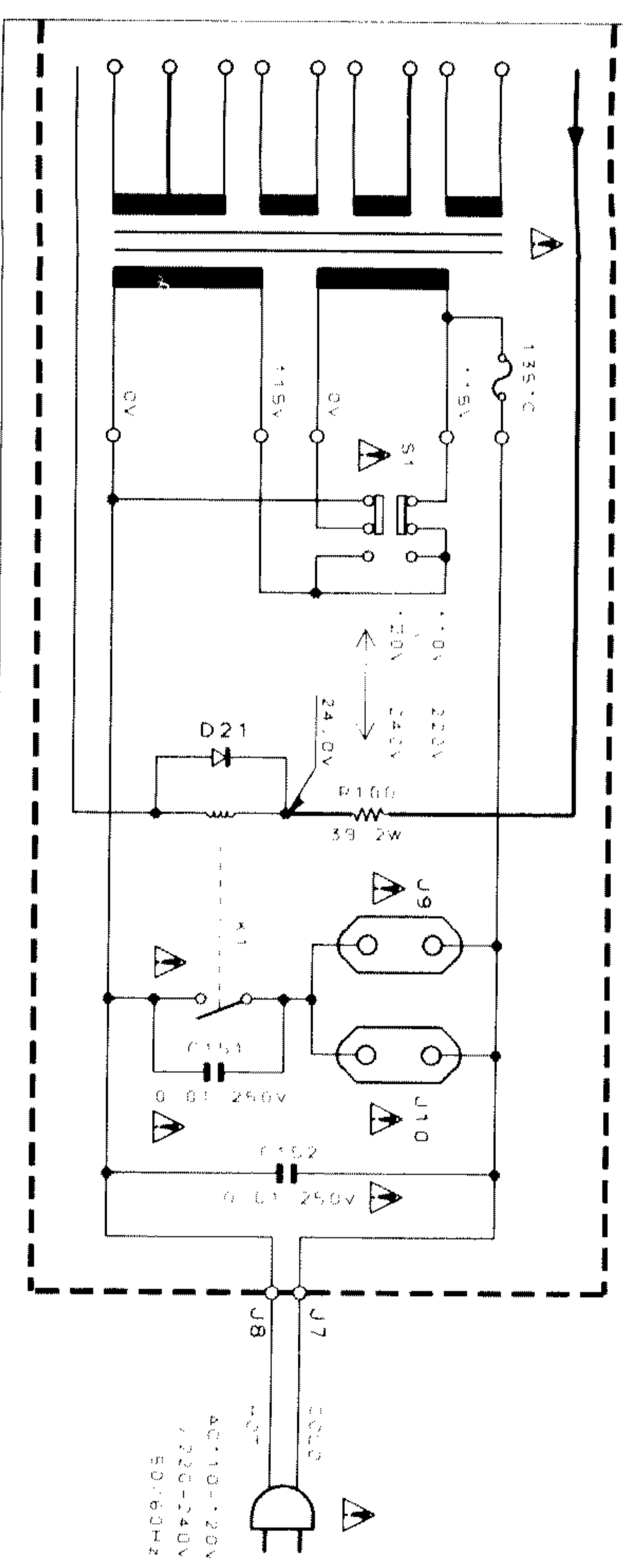


(X09-3540-10) (B/2)



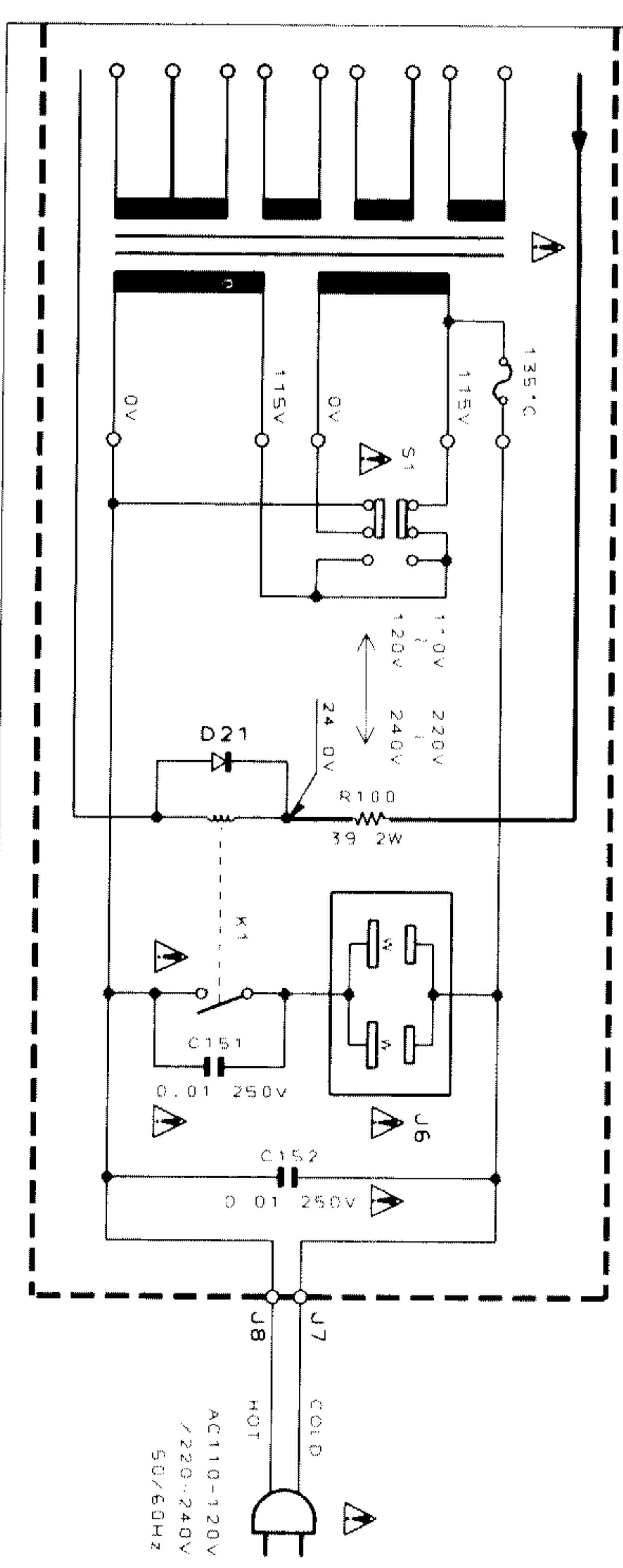
TYPE K, P

(X09-3540-21) (B/2)



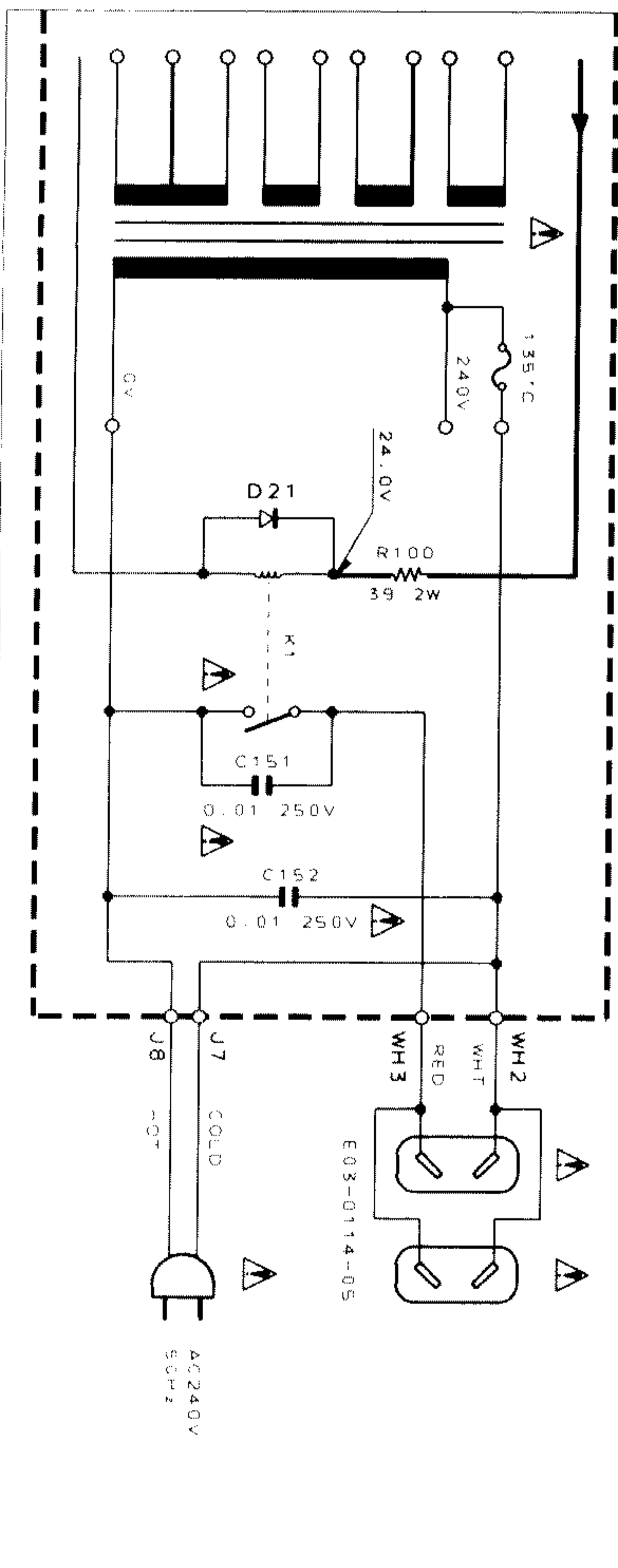
TYPE M, Y

(X09-3542-91) (B/2)



TYPE Y

(X09-3540-71) (B/2)



TYPE X

SIGNAL LINE
GND LINE
+B LINE
-B LINE

DC voltages are as measured with a high impedance voltmeter with no signal input. Values may vary slightly due to variations between individual instruments or/and units.

Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance sans signal d'entrée. Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.

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CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). **⚠** Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

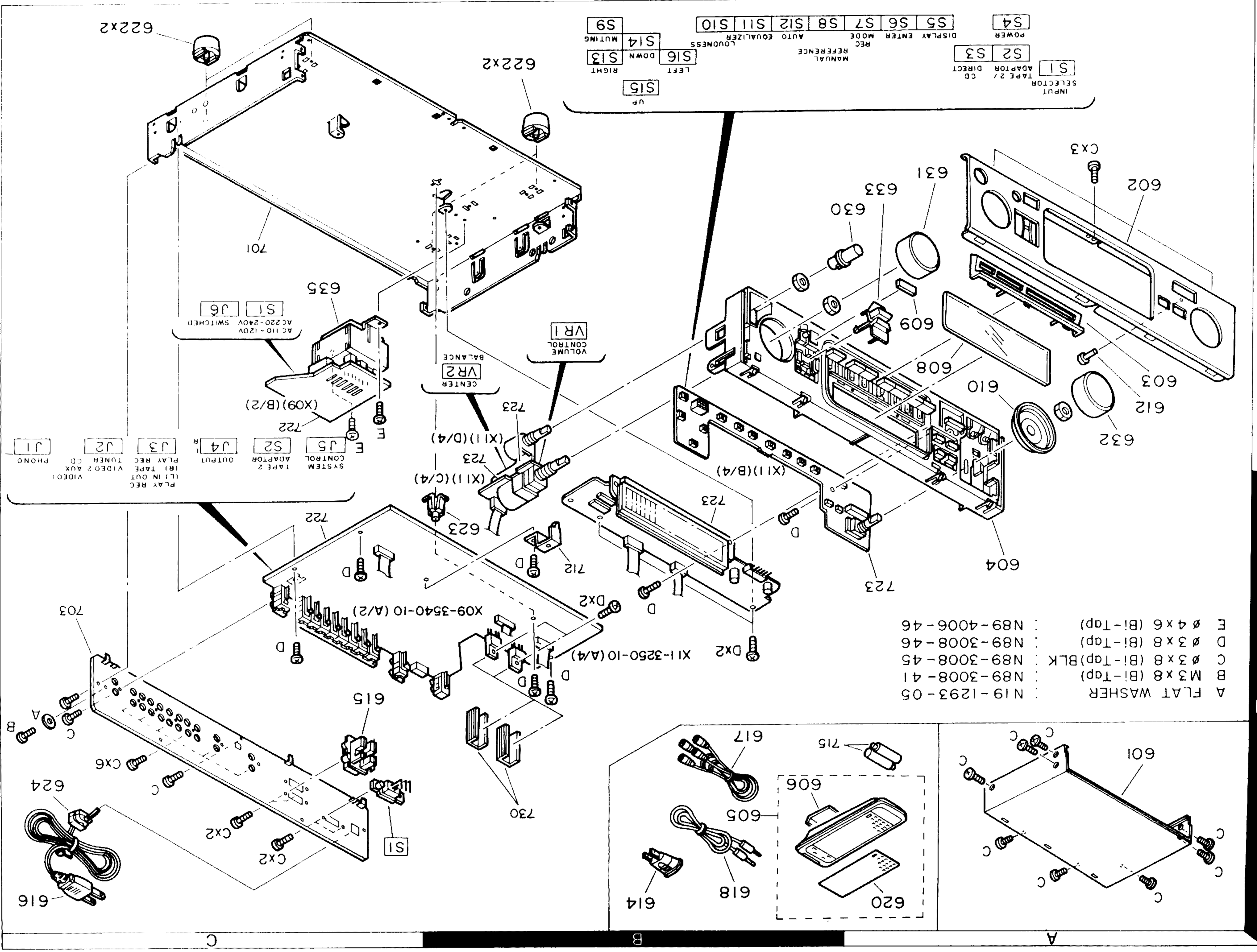
PARTS LIST

Ref. No.	Parts No.	Description	Address	Location
R2	R014082E1R0J	FL-PROOF RD 1.0 J 1/4W		
R3	R014K83A2R2J	FL-PROOF RS 2.2 J 1W		
R4	R014K83A0470J	FL-PROOF RS 4.7 J 2W		
R5	R014K83A562J	FL-PROOF RS 5.6K J 1W		
R6	R014K83A331J	FL-PROOF RS 330 J 1W		
VR1	R29-5050-05	MOTOR VR 100KB X2 VOLUME		
VR2	R01-5066-05	POTENTIOMETER 200KB BALANCE		
S2	S40-1064-05	PUSH SWITCH		
S1	T99-0509-05	ROTARY ENCODER INPUT SELECTOR		
D1	HSS104A	DIODE		
D2	SS5608B	DIODE		
D3	HSS104A	DIODE		
D4	HSS104A	DIODE		
D5	HSS131	DIODE		
D6	HSS104	DIODE		
D7	HSS104	DIODE		
D8	HSS104	DIODE		
D9	HSS104	DIODE		
D10	HSS104	DIODE		
D11	HSS104	DIODE		
D12	HSS104	DIODE		
D13	HSS104	DIODE		
D14	HSS104	DIODE		
D15	HSS104	DIODE		
D16	HSS104	DIODE		
D17	HSS104	DIODE		
D18	HSS104	DIODE		
D19	HSS104	DIODE		
D20	HSS104	DIODE		
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D96	HSS104	DIODE		
D97	HSS104	DIODE		
D98	HSS104	DIODE		
D99	HSS104	DIODE		
D100	HSS104	DIODE		

* New Parts
 Les articles non mentionnés dans le Parts No. ne sont pas fournis.
 Teile ohne Parts No. werden nicht geliefert.
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 Teile ohne Parts No. werden nicht geliefert.

Ref. No.	Parts No.	Description	Address	Location
IC4	RC45650-D	IC(VOL. GRAPHIC EQUALIZER)		
IC5	M5229P	IC(VOL. GRAPHIC EQUALIZER)		
IC6	NJ17305L	IC(ELECTRIC VOLUME)		
IC7	BA15218-DX	IC(OP AMP X2)		
IC8	RC45650-D	IC(OP AMP X2)		
IC9	BA15218	IC(OP AMP X2)		
IC10	RC45650	IC(OP AMP X2)		
IC11	TA790155	IC(VOL. REGULATOR/ -15V)		
IC12	TA79155	IC(VOL. REGULATOR/ -15V)		
IC13	TA78055	IC(VOL. REGULATOR/ +5V)		
IC14	UFC78155H	IC(VOL. REGULATOR/ +15V)		
IC15	UFC79155H	IC(VOL. REGULATOR/ +15V)		
IC16	RC45650-D	IC(OP AMP X2)		
IC17	BA15218-DX	IC(OP AMP X2)		
IC18	RC45650-D	IC(OP AMP X2)		
IC19	TA8409S	IC(MOTOR CONTROL)		
IC20	BA15218	IC(OP AMP X2)		
IC21	RC45650	IC(OP AMP X2)		
IC22	TA79155	IC(VOL. REGULATOR/ -15V)		
IC23	TA78055	IC(VOL. REGULATOR/ +5V)		
IC24	UFC78155H	IC(VOL. REGULATOR/ +15V)		
IC25	UFC79155H	IC(VOL. REGULATOR/ +15V)		
IC26	BA15218-DX	IC(OP AMP X2)		
IC27	RC45650-D	IC(OP AMP X2)		
IC28	RC45650-D	IC(OP AMP X2)		
IC29	RC45650-D	IC(OP AMP X2)		
IC30	RC45650-D	IC(OP AMP X2)		
IC31	RC45650-D	IC(OP AMP X2)		
IC32	RC45650-D	IC(OP AMP X2)		
IC33	RC45650-D	IC(OP AMP X2)		
IC34	RC45650-D	IC(OP AMP X2)		
IC35	RC45650-D	IC(OP AMP X2)		
IC36	RC45650-D	IC(OP AMP X2)		
IC37	RC45650-D	IC(OP AMP X2)		
IC38	RC45650-D	IC(OP AMP X2)		
IC39	RC45650-D	IC(OP AMP X2)		
IC40	RC45650-D	IC(OP AMP X2)		
IC41	RC45650-D	IC(OP AMP X2)		
IC42	RC45650-D	IC(OP AMP X2)		
IC43	RC45650-D	IC(OP AMP X2)		
IC44	RC45650-D	IC(OP AMP X2)		
IC45	RC45650-D	IC(OP AMP X2)		
IC46	RC45650-D	IC(OP AMP X2)		
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IC72	RC45650-D	IC(OP AMP X2)		
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IC74	RC45650-D	IC(OP AMP X2)		
IC75	RC45650-D	IC(OP AMP X2)		
IC76	RC45650-D	IC(OP AMP X2)		
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IC79	RC45650-D	IC(OP AMP X2)		
IC80	RC45650-D	IC(OP AMP X2)		
IC81	RC45650-D	IC(OP AMP X2)		
IC82	RC45650-D	IC(OP AMP X2)		
IC83	RC45650-D	IC(OP AMP X2)		
IC84	RC45650-D	IC(OP AMP X2)		
IC85	RC45650-D	IC(OP AMP X2)		
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IC89	RC45650-D	IC(OP AMP X2)		
IC90	RC45650-D	IC(OP AMP X2)		
IC91	RC45650-D	IC(OP AMP X2)		
IC92	RC45650-D	IC(OP AMP X2)		
IC93	RC45650-D	IC(OP AMP X2)		
IC94	RC45650-D	IC(OP AMP X2)		
IC95	RC45650-D	IC(OP AMP X2)		
IC96	RC45650-D	IC(OP AMP X2)		
IC97	RC45650-D	IC(OP AMP X2)		
IC98	RC45650-D	IC(OP AMP X2)		
IC99	RC45650-D	IC(OP AMP X2)		
IC100	RC45650-D	IC(OP AMP X2)		

* New Parts
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- A FLAT WASHER : N19-1293-05
- B M3 X8 (BI-TAP) : N89-3008-41
- C Ø3 X8 (BI-TAP) BLK : N89-3008-45
- D Ø3 X8 (BI-TAP) : N89-3008-46
- E Ø4 X6 (BI-TAP) : N89-4006-46

EXPLODED VIEW

* New Parts
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No. 1

Table with columns: Ref. No., Address, New Parts, Parts No., Description, Destination, Remarks. Includes sub-header KC-992 and various part numbers and descriptions.

L:Scandinavia K:USA P:Canada
Y:PX(Far East, Hawaii) T:England E:Europe
Y:AAFES(Europe) X:Australia M:Other Areas
indicates safety critical components.

AUDIO UNIT

Table with columns: UNIT No., Destination. Lists units X09-3540-10, X09-3540-21, X09-3540-71 and their destinations K, P, T, M, X.

TONE UNIT

Table with columns: UNIT No., Destination. Lists unit X11-3250-10.

* New Parts
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Teile ohne Parts No. werden nicht geliefert.

No. 2

Table with columns: Ref. No., Address, New Parts, Parts No., Description, Destination, Remarks. Includes sub-header AUDIO UNIT (X09-3540-10: K, P, 0-21: M, 0-71: X, 2-91: Y) and various electronic components.

L:Scandinavia K:USA P:Canada
Y:PX(Far East, Hawaii) T:England E:Europe
Y:AAFES(Europe) X:Australia M:Other Areas
indicates safety critical components.

* New Parts
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Teile ohne Parts No. werden nicht geliefert.

No. 3

Table with columns: Ref. No., Address, New Parts, Parts No., Description, Destination, Remarks. Lists various electronic components and their specifications.

L:Scandinavia K:USA P:Canada
Y:PX(Far East, Hawaii) T:England E:Europe
Y:AAFES(Europe) X:Australia M:Other Areas
indicates safety critical components.