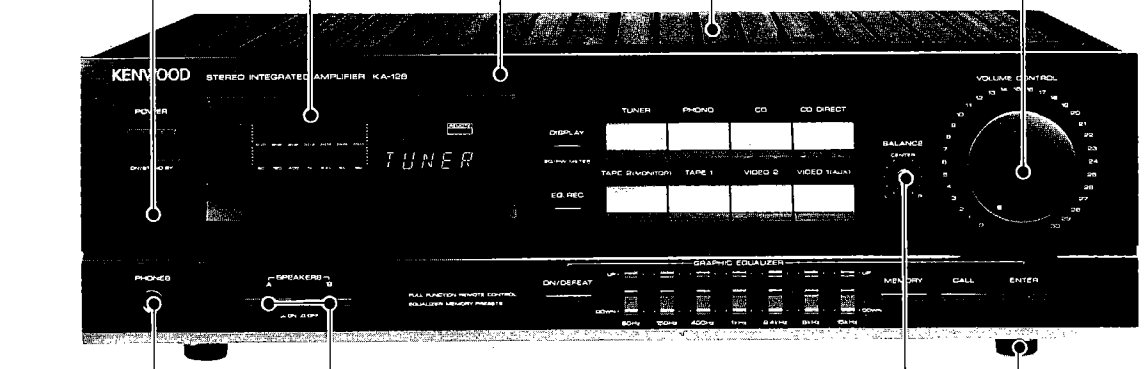
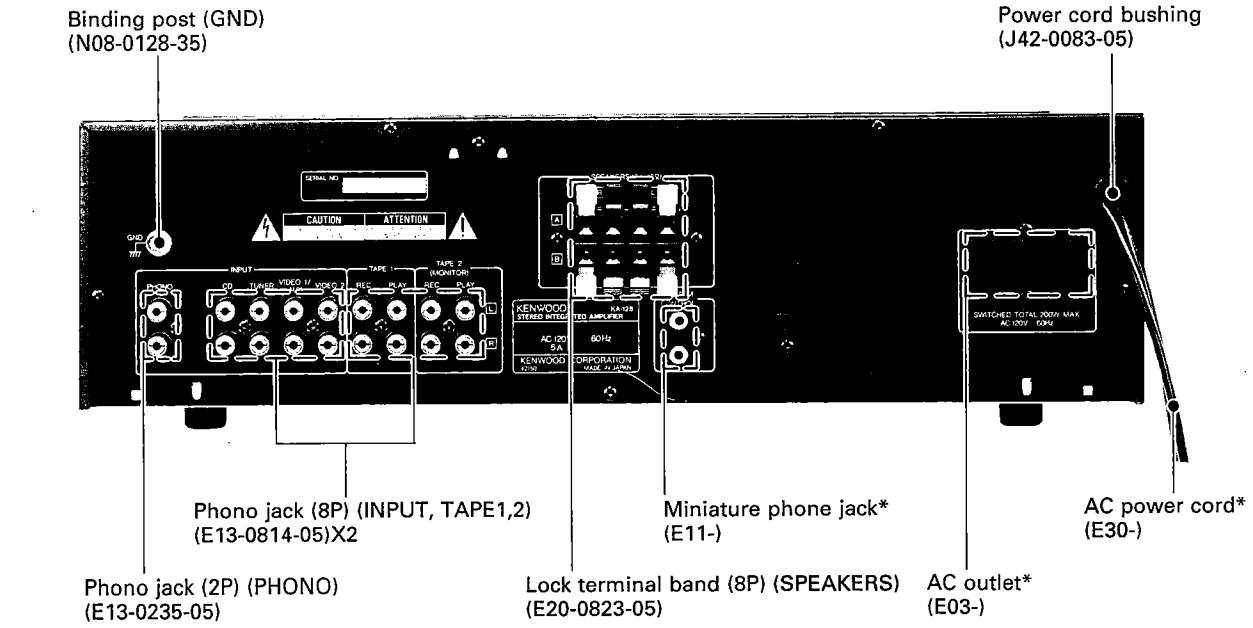
STEREO INTEGRATED AMPLIFIER

KA-128

SERVICE MANUAL

KENWOOD





***Refer to Parts List on page 32.**

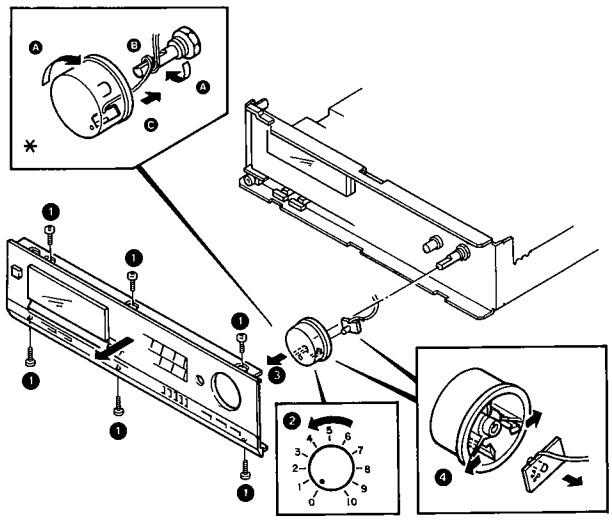
CONTENTS/DISASSEMBLY FOR REPAIR

Contents

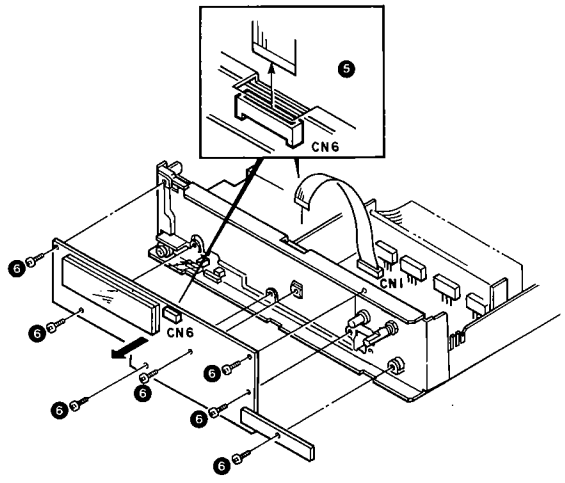
Disassembly for repair

Remove the case before doing the following :

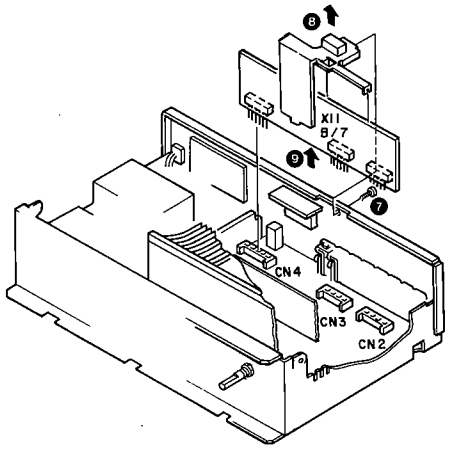
1. Remove the six screws (❶) holding the front panel, then remove the front panel in the direction of the arrow.
2. The volume knob fully anticlockwise (❷) and remove the knob (❸) . (Take care not To pull the LED cord too hard.)
3. Disensge the claws at the rear of the knob and remove the LED board (❹).



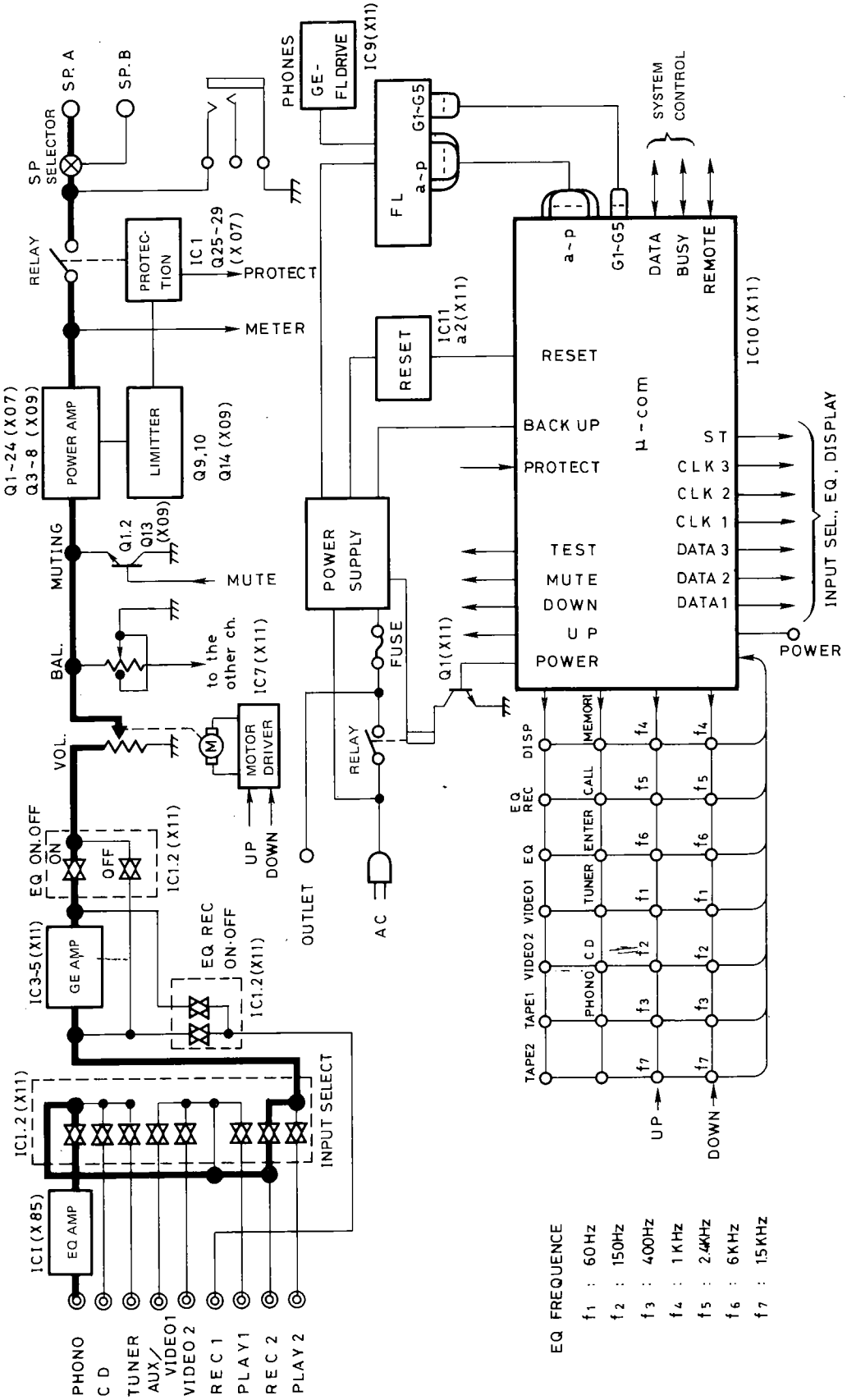
4. Remove the five screws (❻) holding the FL beard and the cord from connections (CN6) (❺) and remove the FL board in the direction of the arrow .



5. Remove the screw (❼) holding the clamp to the rear panel and remove the clamp, taking care not to damage the claws.
6. Extract the control nuit (XII) (B/7) from the connectors (CN2, CN3, CN4) of the Main board in the direction of the arrow.



BLOCK DIAGRAM



CIRCUIT DESCRIPTION

1. Description of Components

1-1. AUDIO UNIT (X09-2870-10)

Component	Use/Function	Operation/Condition/Interchangeability
IC1 (μpc78M12H)	3-pin regulator	Input(pin1) = +24.8V Output(pin3) = +12V
Q1, 2	Mute	ON(muting)for 4 seconds after power ON. ON when the MUTE switch on the remote controller is turned ON. ON for 500 msec when on input selector(other than TAPE2)is Switched. ON for 8 msec when TAPE2 EQ or EQ REC is switched ON and OFF.
Q3, 4	Final amplifier	Pc = 150W V_{CE} = 160V
Q5, 6		Ic = 15A
Q7, 8	Bias	Bias current compensation in the output stage of the main amplifier.
Q9, 10	Power meter muting	Muting for clearing the FL tube power meter display immediately after the POWER switch is turred OFF.
Q11	Stabilized power supply	−12V stabilized power supply.
Q13	Muting drive	Inverts the MUTE signal from the microprocessor and drives Q1 and Q2. Muting occars when Q13 is ON.
Q14	Power meter muting drive	Inverts the MUTE signal from the microprocessor and drives Q9 and Q10. Muting occars when Q14 is ON.

1-2. CONTROL UNIT (X11-2640-10)

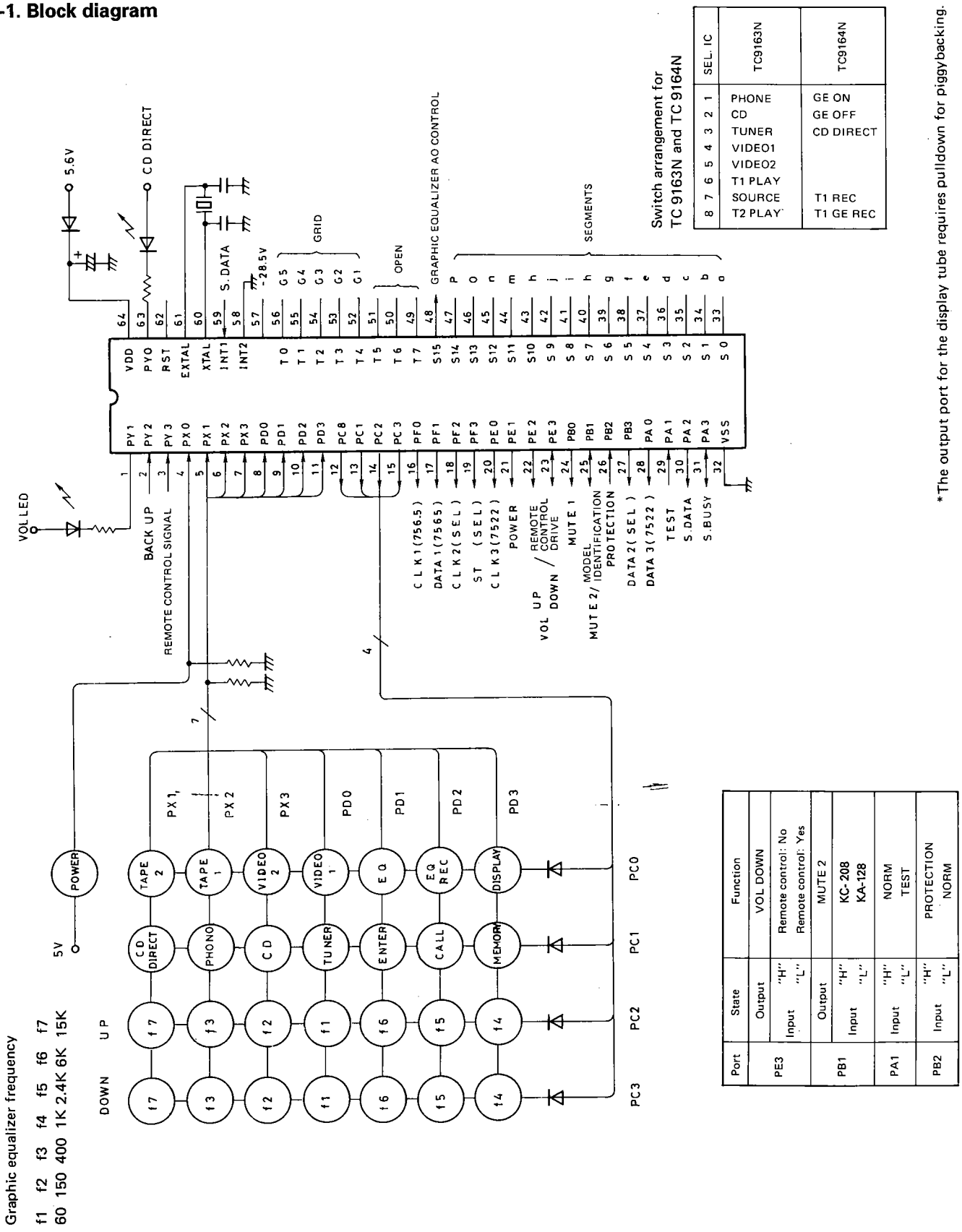
Component	Use/Function	Operation/Condition/Interchangeability
IC1, 2	Selector	
IC2, 3	Graphic equalizer	
IC5	Electronic volume control	
IC6	Buffer for graphic equalizer	
IC7	Volume control motor drive	
IC8	3-pin regulator	For 5V
IC9	FIP driver	
IC10	Microprocessor	
IC11	Reset IC	When the input is "H", the output goes "H".
Q1	Relay ON/OFF	
Q2	Microprocessor reset	When Q2 is ON, the microprocessor reset pin goes "L".

NOTO : The description of the function of the microprocessor is the same as for KC-208

CIRCUIT DESCRIPTION

2. Microprocessor CXP5014-328S (X11-2640-10 : IC10)

2-1. Block diagram



Port	State		Function
PE3	Output		VOL DOWN
	Input	"H"	Remote control: No
		"L"	Remote control: Yes
PB1	Output		MUTE 2
	Input	"H"	KC-208
		"L"	KA-128
PA1	Input	"H"	NORM
		"L"	TEST
PB2	Input	"H"	PROTECTION
		"L"	NORM

CIRCUIT DESCRIPTION

2-2. Explanation of terminals

Pin No.	Symbol	I/O	Description
1	PY_1	O	Volume contiol, LED control pin. Normally ON;flashing when remote control volume UP/DOWN is pressed.
2	PY_2	I	Backup detection pin "H": Normal operation "L": Backup
3	PY_3	I	Remote control signal input pin. Active "L".
4	PX_0	I	Key matrix return signal input pin. Active "H"
5	PX_1	I	
6	PX_2	I	
7	PX_3	I	
8	PD_0	I	
9	PD_1	I	
10	PD_2	I	
11	PD_3	I	
12	PC_0	O	Key matrix digit signal output pin. (Normally all "H")
13	PC_1	O	
14	PC_2	O	
15	PC_3	O	
16	PF_0	O	LC7565 clock pin(CLK1) LC7565: Graphic equalizer display IC(DATA1)
17	PF_1	O	LC7565 data pin Active "H"
18	PF_2	O	TC9163N and TC9164N clock pin(CLK_2) TC9163N and TC9164N: Selector switching ICs Active "H"
19	PF_3	O	TC9163N and TC9164N strobe pin(ST) Active "H"
20	PE_0	O	LC7522 clock pin(CLK3) LC7522: ELectronic volume control for graphic equalizer. Active "H"
21	PE_1	O	Power relay control pin Active "H"
22	PE_2	O	UP Electronic volume control pin Active "H"
23	PE_3	O/1	DOWN Electrouic volume control pin * The DOWN pin also functions as a remote control identifi cation pin
24	PB_0	O	MUTE1 Mute control pin(for LINE muting) Active "L"
25	PB_1	O/1	MUTE2 Mute control pin(for REC muting) Active "L"
26	PB_2	I	PROTECTION Protection state detection pin Active "H"
27	PB_3	O	TC9163N and TC9164N data pin(DATA2) Active "H"
28	PA_0	O	LC7522 data pin(DATA3) Active "H"
29	PA_1	I	TEST Test mode detection pin "H" Normal operation "L" Test mode * Detected when reset
30	PA_2	I/O	S. DATA Used for serial communication(data pin) Active "H"
31	PA_3	I/O	S. BUSY Used for serial communication (busy pin) Active "H"
32	Vss		GND pin
33	S_0	O	a FL tube segment control pin Active "H"
⌇	⌇		⌇ * With a pulldown resistor as a mask option (pins 33 to 66)
47	S_{14}	O	p
48	S_{15}	O	−30V control pin for KC-208 Aϕ pin control pin for graphic equalizer display in the FL tube for (KA-128) Active "H"
49	T7	O	Not used
⌇	⌇		
51	T5	O	
52	T4	O	G1 Grid control pin for FL tube Active "H"
⌇	⌇		⌇
56	T0		G2
57	V_{FDP}		FL tube drive power pin(−30V)
58	INT_2	I	Unused interrupt pin
59	INT_1	I	Receive interrupt pin for serial communication
60	X_{TAL}		System clock generation pin 4.19 MHz
61	E_{XTAL}		
62	RST	I	Reset input pin "L" reset
63	PYϕ	O (n, d)	CD DIRECT LED control pin * Used for KC-208 only
64	V_{DD}		5V power pin for microprocessor * Keep the poential with a super capacitor, etc, for backup.

CIRCUIT DESCRIPTION

2-3. Test mode

When pin 29 of the microprocessor is pulled LOW (grounded) by connecting it to an outlet (reset), test mode is entered.

(a) All-segments-ON mode

All the segments except those of the graphic equalizer and the ▼2 in figure 1 come on.
When this happens, the graphic equalizer key is inhibited and the SELECTOR key can be operated, but the display remains unchanged. Pressing the Power key once cancels the all-segments-ON mode.

(b) Graphic equalizer test mode

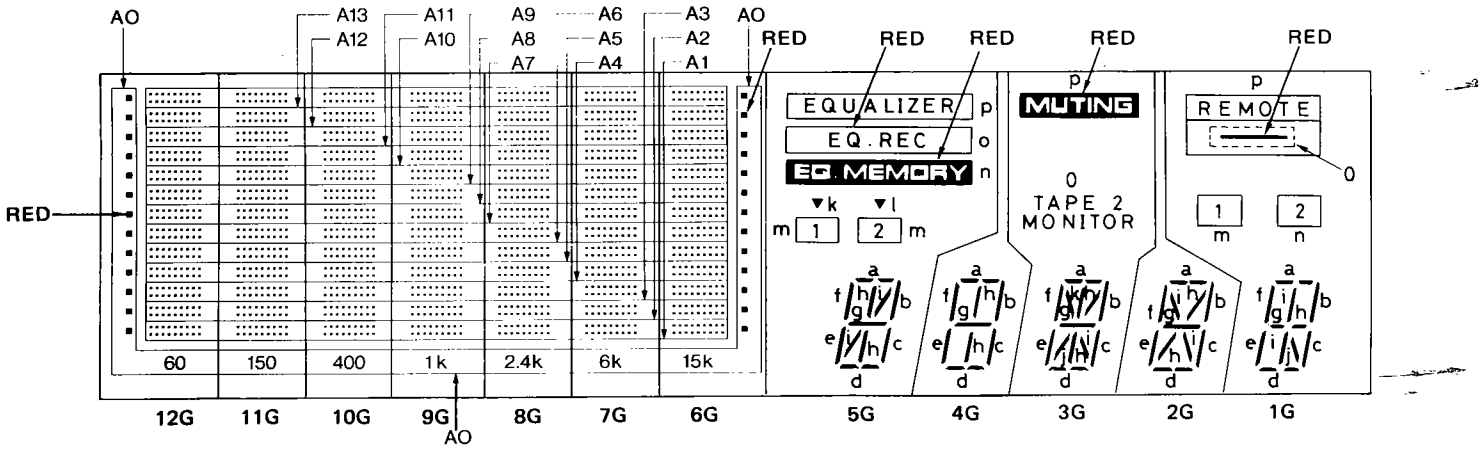
The state of the graphic equalizer can be switched between MAX and MIN by pressing the UP/DOWN key once.

MAX ⇄ FLAT ⇄ MIN

(c) Cancel

Test modes a and b are set to their initial states (SEL, TUNER, and graphic equalizer memory all flat) when pin 29 of the microprocessor is disconnected.

Internal connector (grid and segment layout/color specification) **Fig. 1**



2-4. Protection function

Pin 26 of the microprocessor goes high (5V) to indicate the protection state (abnormal operation).

(a) Protection state setting conditions

The state of the protection IC of the main amplifier is always monitored. When the protection IC enters the protection state, a high signal (5V) is input to the microprocessor. The microprocessor allows about 400ms chaitering time (to prevent malfunction) and then enters the protection state.

(b) Protection indication

"P-OFF" flashes on the character display (selector display) of the fluorescent tube.

(c) Canceling the state

- When in the protection state, all keys except the POWER key are disabled.
- When the protection IC enters the protection state because of a momentary voltage drop or power failure and recovers from it automatically, the protection display automatically returns to the normal selector display.

(d) The microprocessor does not monitor the protection IC state for 5 seconds after the power is switched ON.

2-5. Model Identification (KC-208 [Preamplifier]/ KA-128 [Pre-main amplifier])

- When the signal on pin 25 of the microprocessor is high, the model is identified as a KC-208 (preamplifier). When the signal is low, the model is identified as a KA-128 (Pre-main amplifier).
- Separate program processing is performed when the power is switched ON and OFF.
- Pin 48 (S15) of the KC-208 (preamplifier) controls the FL tube drive power supply (−30V) when the power is switched ON, S15 is pulled high when the display lights.

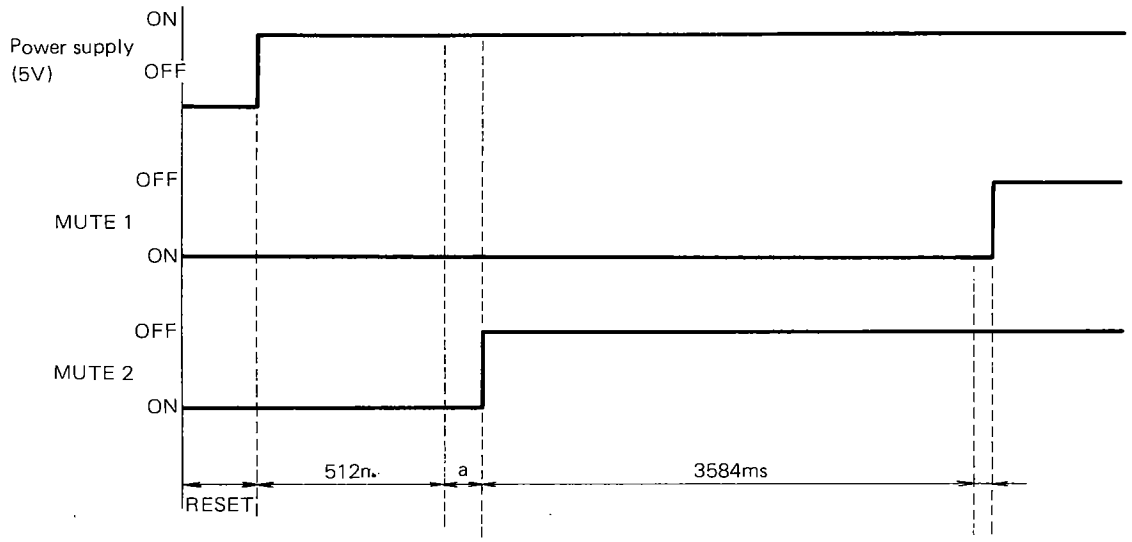
CIRCUIT DESCRIPTION

2-6. Mute timing

PBO (MUTE 1) and PB1 (MUTE 2) are used as MUTE pins. When they are low. MUTE is ON.

Note: PB1 (MUTE2) is used for the preamplifier (KC-208).

•When the power is switched ON (initally, SEL, TUNER).

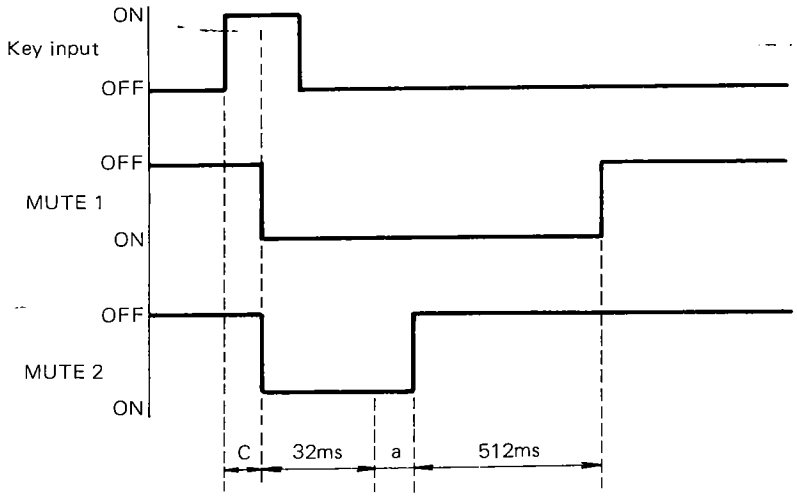


a: Selector IC data transfer (selector switching)
Graphic equalizer IC (7522) data transfer
Graphic equalizer display IC (7565) data transfer.
FL tube selector diaplay data creation.
} about 50 ms

b: Selector IC data transfer (SW ON for the selector state)

Note: When the power is switched ON, the selector IC data is given by "a"; SW ALL OPEN (open all switches) data is transferred.

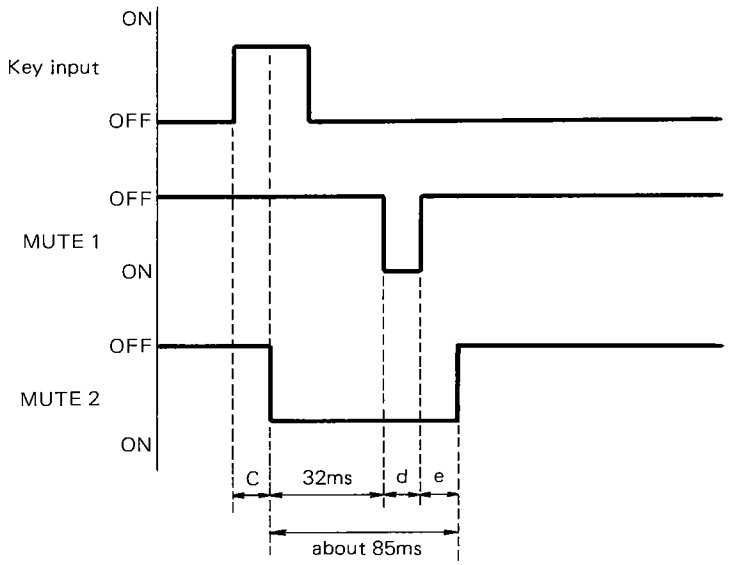
•Selector switching (TAPE 2 OFF)



C: Chattering time (about 20ms).

CIRCUIT DESCRIPTION

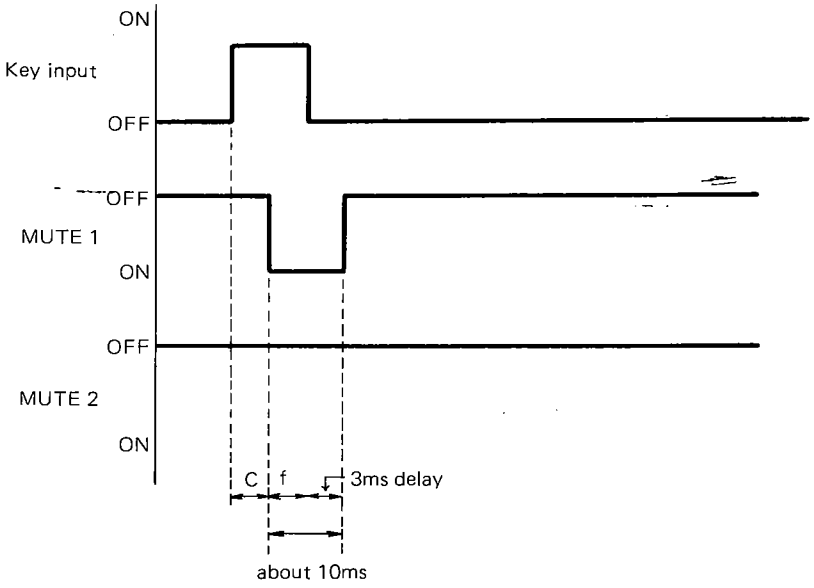
•Selector switching (TAPE 2 ON)



d: Selector switching (about 10ms)

e: Graphic equalizer IC (7522) data transfer Graphic equalizer display IC (7565) data transfer Fluorescent tube selector display

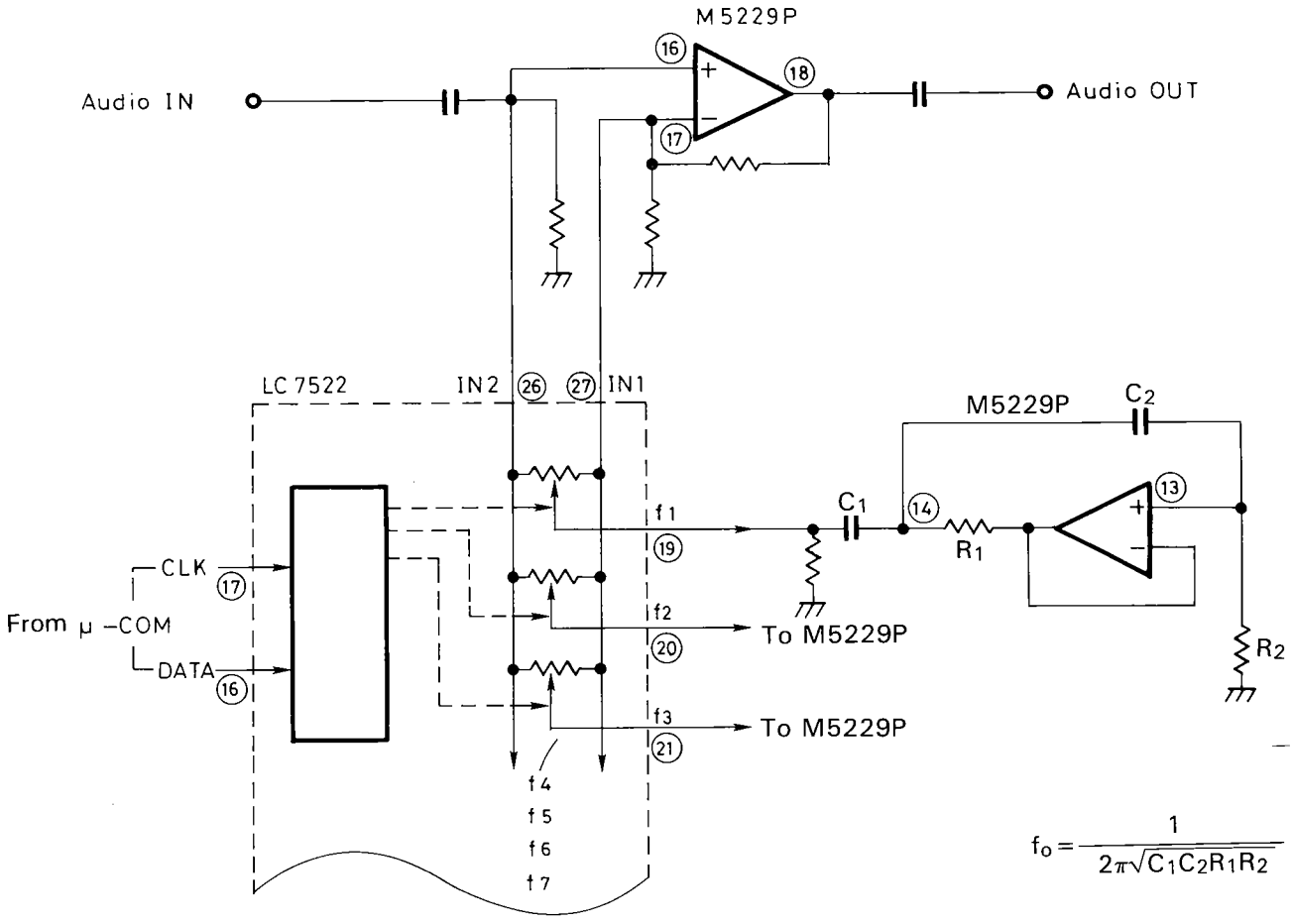
•Selector switching (GE ON/OFF, GE, REC ON/OFF, TAPE 2 ON/OFF)



f: Selector switching
Fluorescent tube selector display + state display

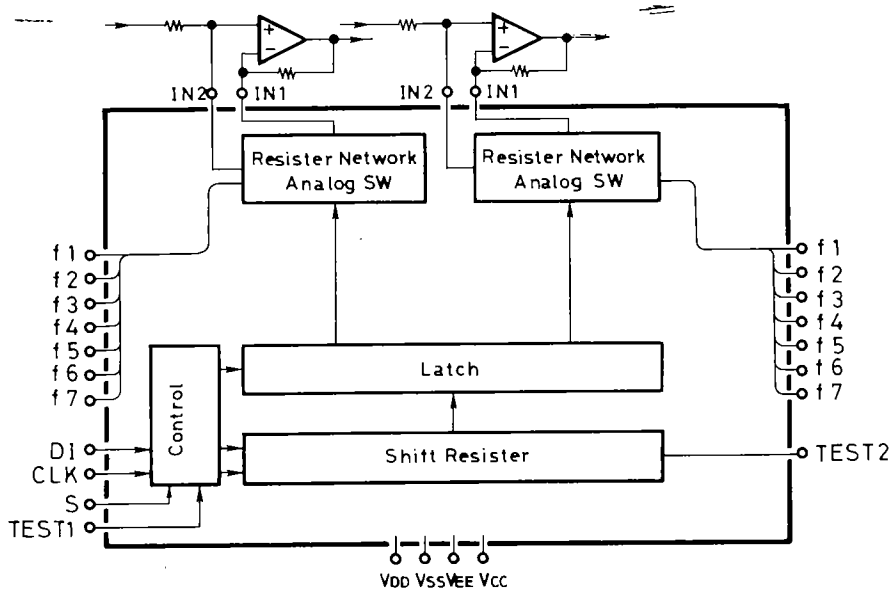
CIRCUIT DESCRIPTION

3. Graphic equalizer diagram



4. Electronic volume control LC7522 (X11-2640-10 : IC5)

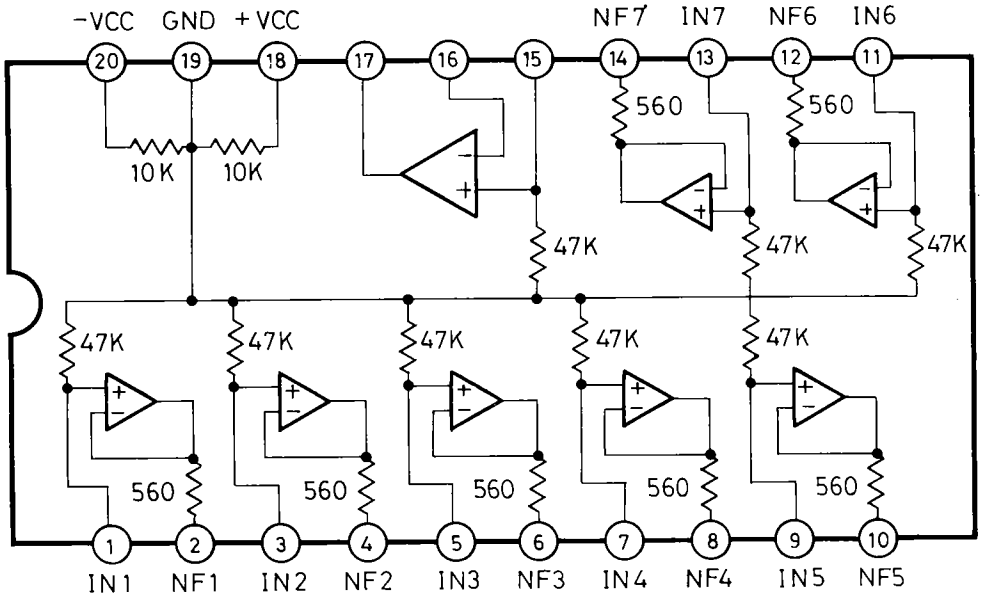
4-1. Block diagram



CIRCUIT DESCRIPTION

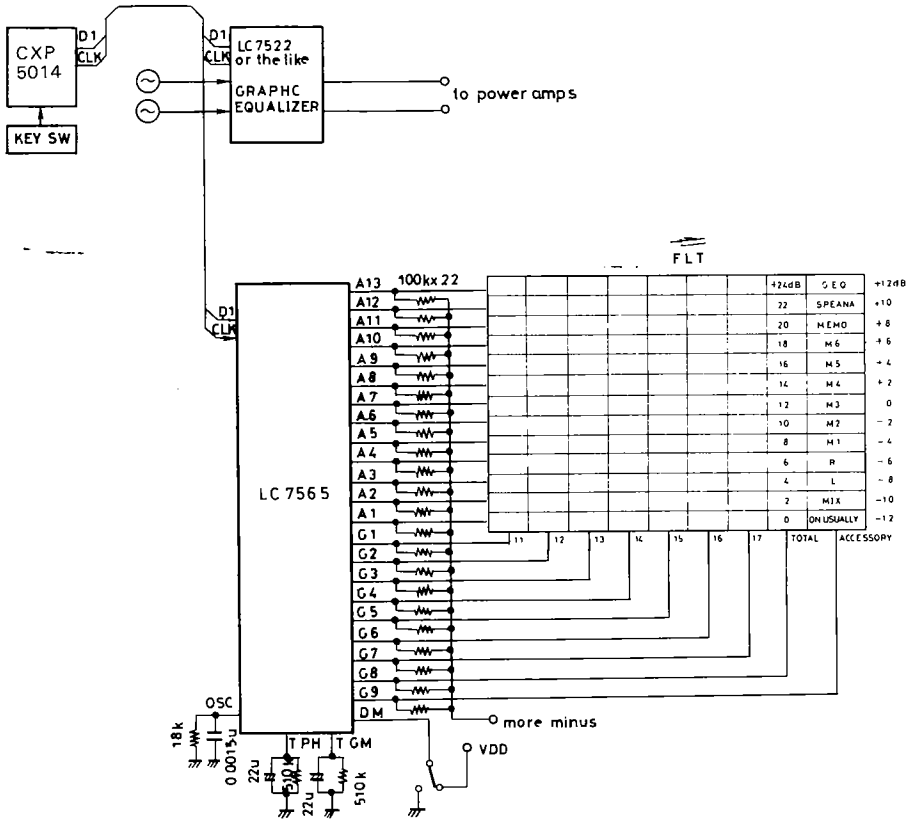
5. Graphic equalizer M5229P (X11-2640-10 : IC3,4)

5-1. Block diagram



6. FIP driver LC7565 (X11-2640-10 : IC9)

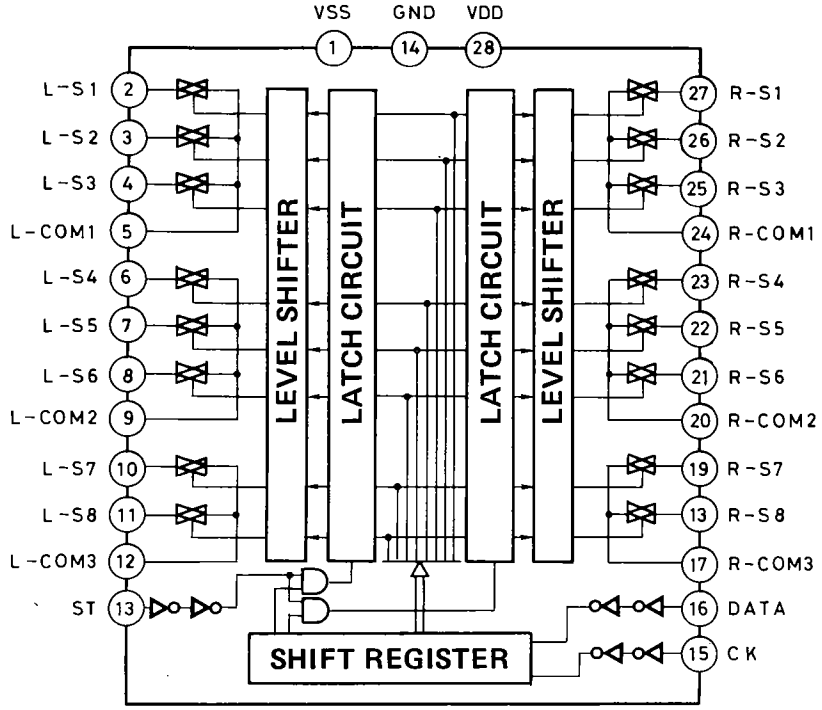
6-1. Terminal connection diagram & keymatrix connection



CIRCUIT DESCRIPTION

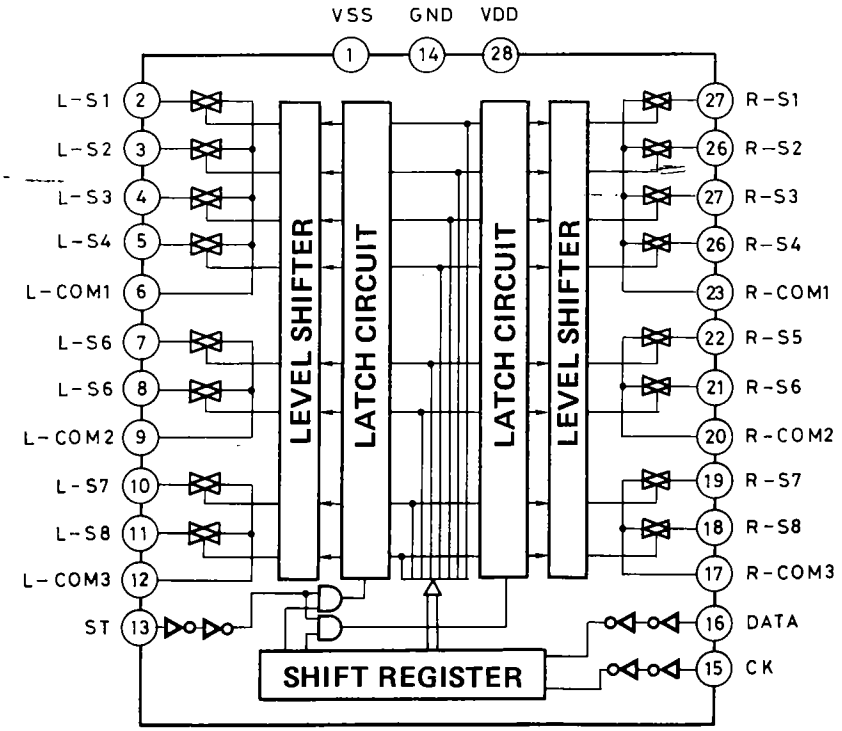
7. Selector TC9163N (X11-2640-10 : IC1)

7-1. Block diagram



8. Selector TC9164N (X11-2640-10 : IC2)

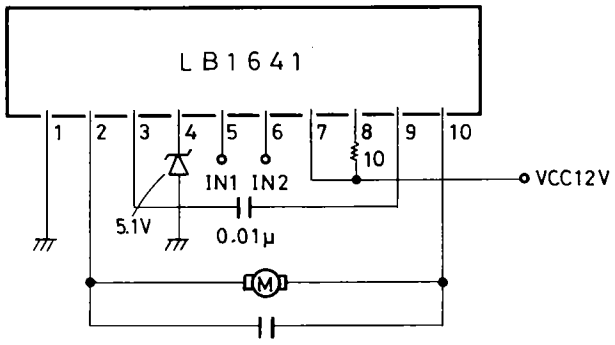
8-1. Block diagram

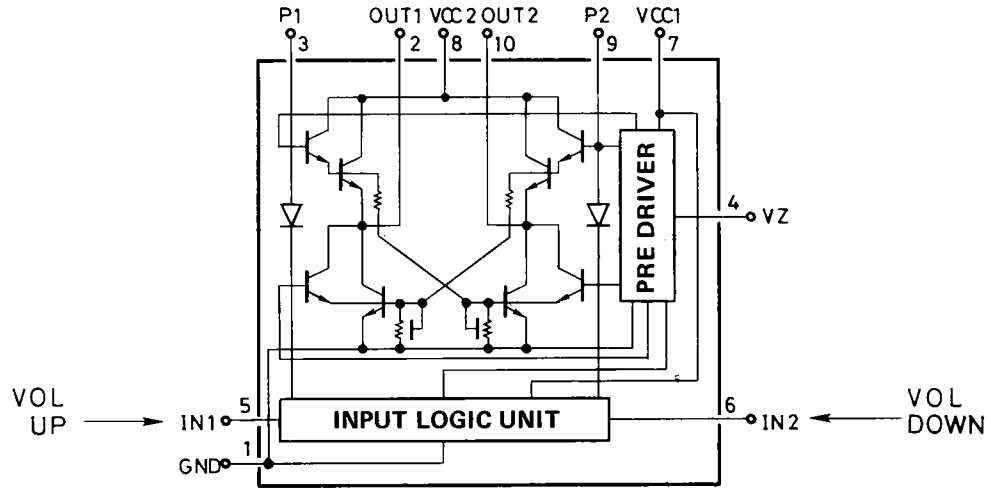


CIRCUIT DESCRIPTION

9. Volume control motor drive LB1641 (X11-2640-10 : IC7)

9-1. Block diagram





ADJUSTMENT/REGLAGES/ABGLEICH

ADJUSTMENT

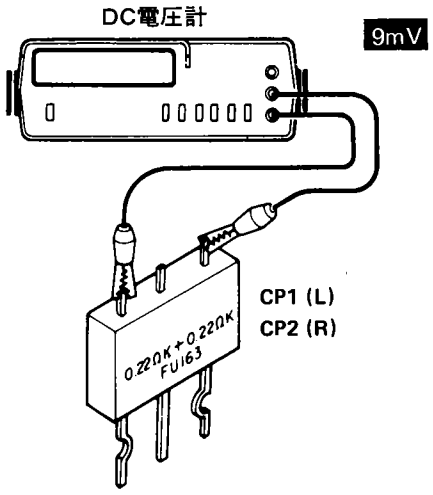
No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	AMPLIFIER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
Set the controls and switches as follows: POWER: ON SPEAKER: B							
1	IDLE CURRENT	–	Connect a DC voltmeter across CP1 (L) CP2 (R)	VOLUME: 0	VR1 (L) VR2 (R)	9mV	(a)

REGLAGES

N°	ITEM	REGLAGE DE L'ENTREE	REGLAGE DE LA SORTIE	REGLAGE DE L'AMPLIFICATEUR	POINS L'ALIGNEMENT	ALIGNER POUR	FIG.
Régler les controles et les boutons comme suit: POWER: ON SPEAKER: B							
1	COURANT DE POLARISATION	–	Connecter un voltmètre de CC sur CP1 (G) CP2 (D)	VOLUME: 0	VR1 (G) VR2 (D)	9mV	(a)

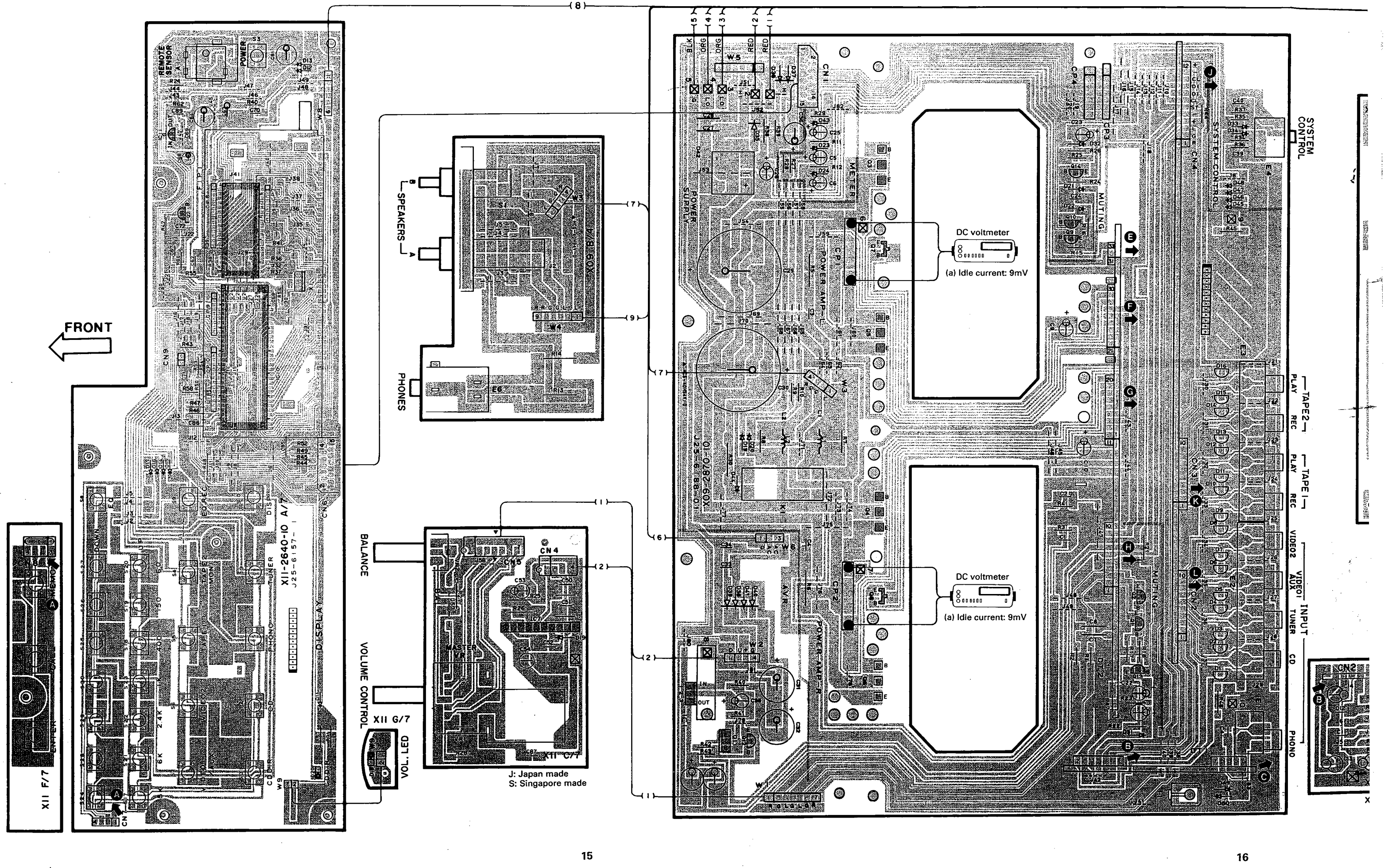
ABGLEICH

NR.	GEGENSTAND	EINGANGS-EINSTELLUNG	AUSGANGS-EINSTELLUNG	VORSTÄRKER EINSTELLUNG	ABGLEICH-PUNKTE	ABGLEICHEN FÜR	ABB.
Die Regler und Knöpfe wird folgt einstellen: POWER: ON SPEAKER: B							
1	LEERLAUFSTROM	–	Einen Gleichspannungs-messer über CP1 (L) CP2 (R) anschließen	VOLUME: 0	VR1 (L) VR2 (R)	9mV	(a)

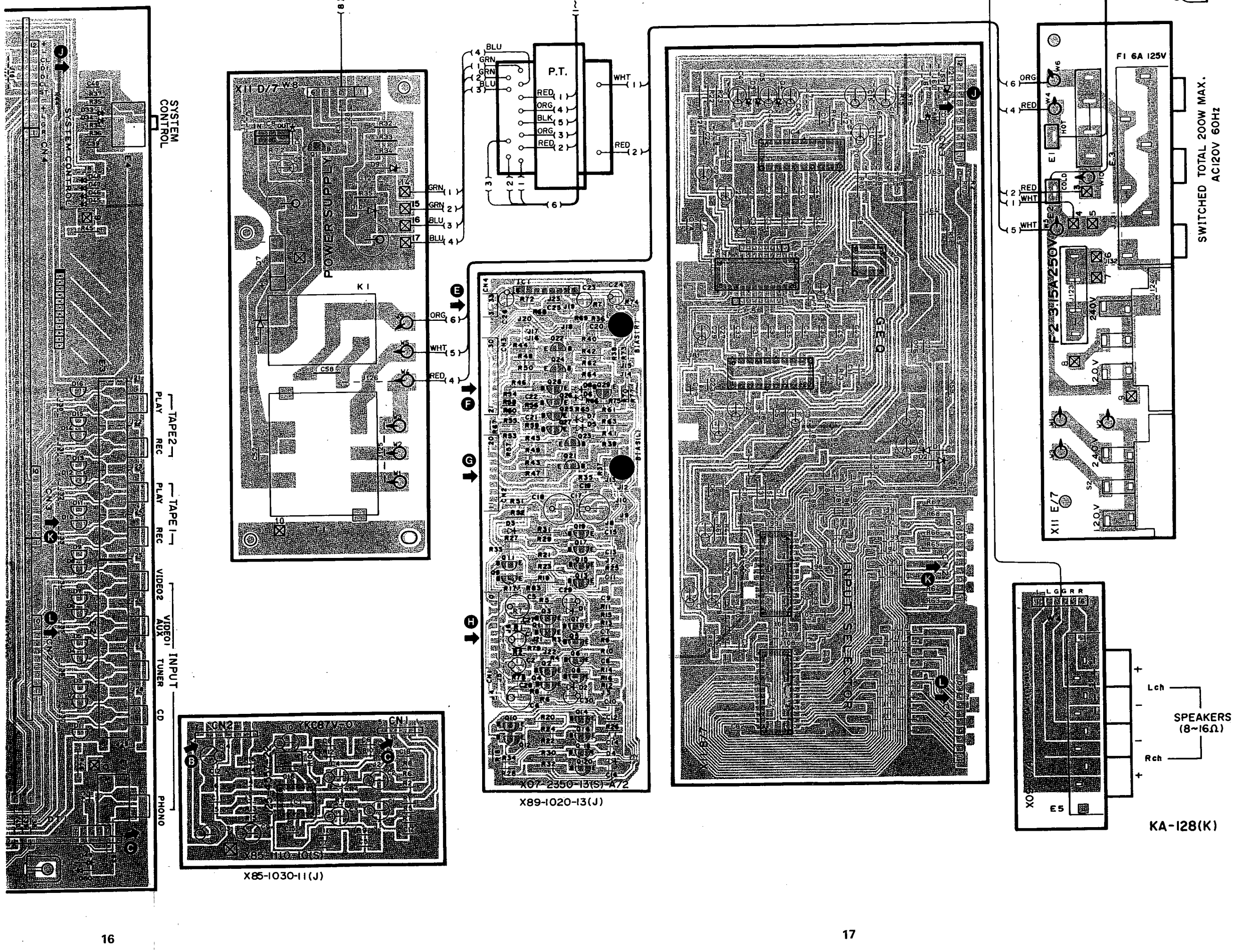


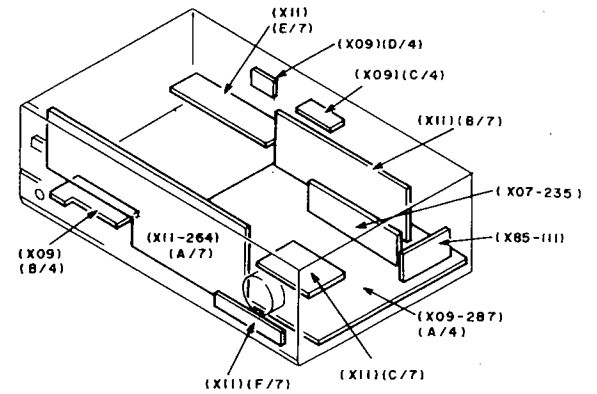
(a)

PC BOARD (COMPONENT SIDE VIEW)



J: Japan made
S: Singapore made





X11-264X-XX

IC1

1	–12V
28	12V

IC2

1	–12V
28	12V

IC3

18	12V
20	–12V

IC4

18	12V
20	–12V

IC5

1	6.8V
11~14	–6.8V
15	5V

IC6

1,2	0V
8	12V

IC7

2	UP:4.5V
4	5V
7,8	12V
10	DOWN:4.5V

IC8

O	5.7V
I	13V

IC9

42	5V

IC10

57	–30V

IC11

I	5V

X89-1020-13 (JAPAN MADE)
X07-2350-13 (SINGAPORE MADE)

C1

1~3	0V
4	2V
6	0.7V
7	2.2V
8	3.3V

	B	C	E
Q1,3	0V	3.3V	–0.7V
Q5,7	4V	11.8V	3.3V
Q9	11.8V	69.4V	11.2V
Q11	11.8V	70V	11.2V
Q13	69.4V	2.1V	70V
Q15	69.4V	1.2V	70V
Q17	–	–69.4V	0.6V
Q19	–69.4	–12V	–70V
Q21	–	–	0.6V
Q23	–	–	–0.6V
Q25	0V	72V	–
Q27	0V	–	0V
Q29	72V	–	–

X09-287X-XX

IC1

O	12V
I	24.8V

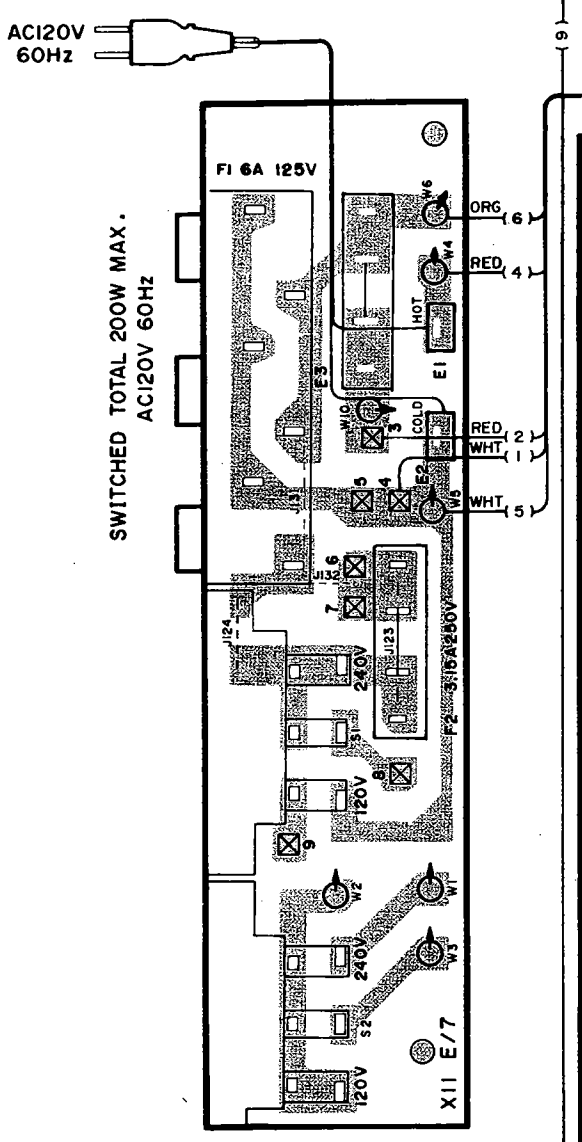
	B	C	
Q3,4	–	72V (LOW:52V)	–
Q4,5	–	–72V (LOW:–52V)	
Q7	0.6V	1.2V	–1.2V
Q11	–	–24.8V	–12V

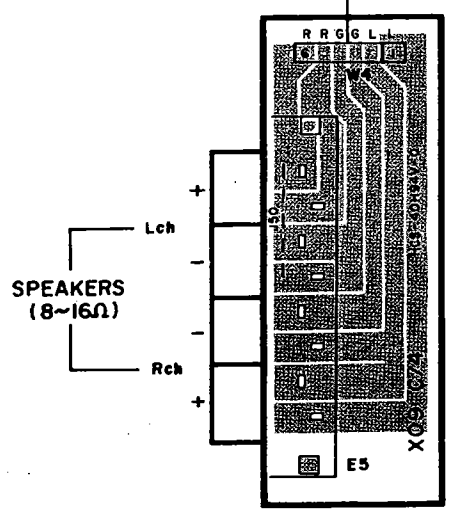
X85-1030-11 (JAPAN MADE)
X85-1110-10 (SINGAPORE MADE)

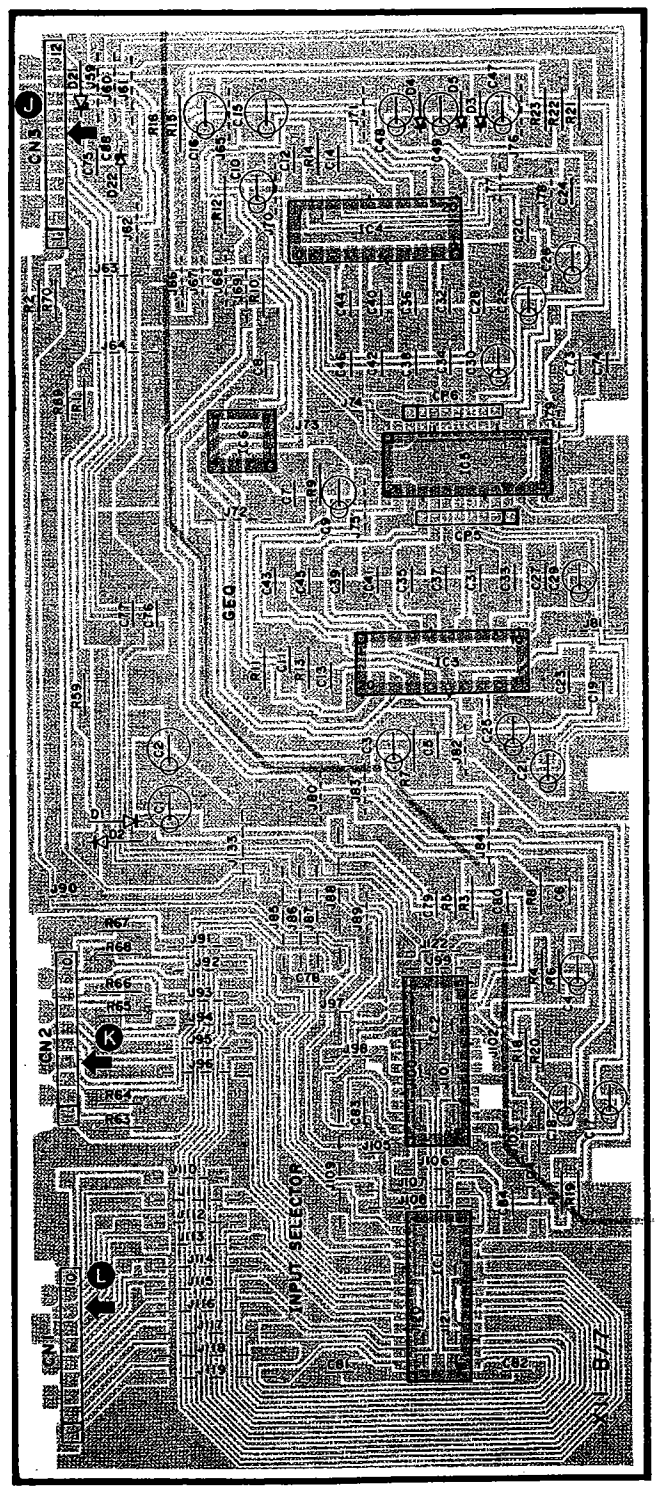
IC1

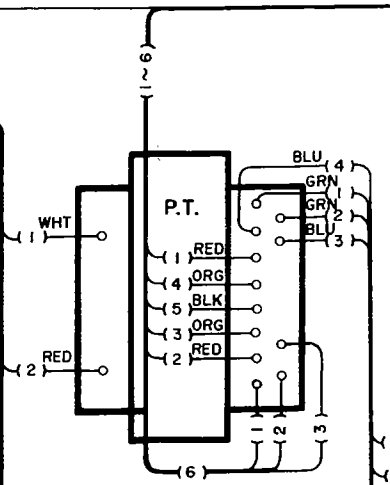
1	0V
4	–12V
7	0V

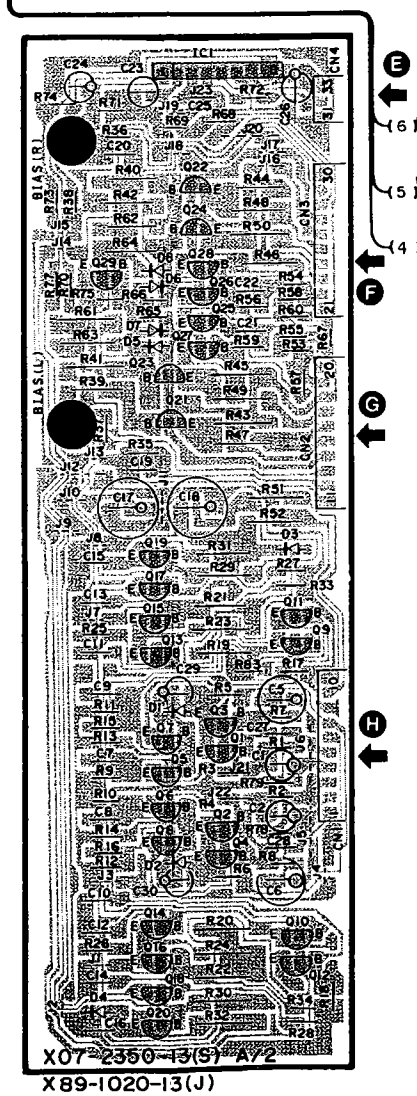
PC BOARD (FOIL SIDE VIEW)

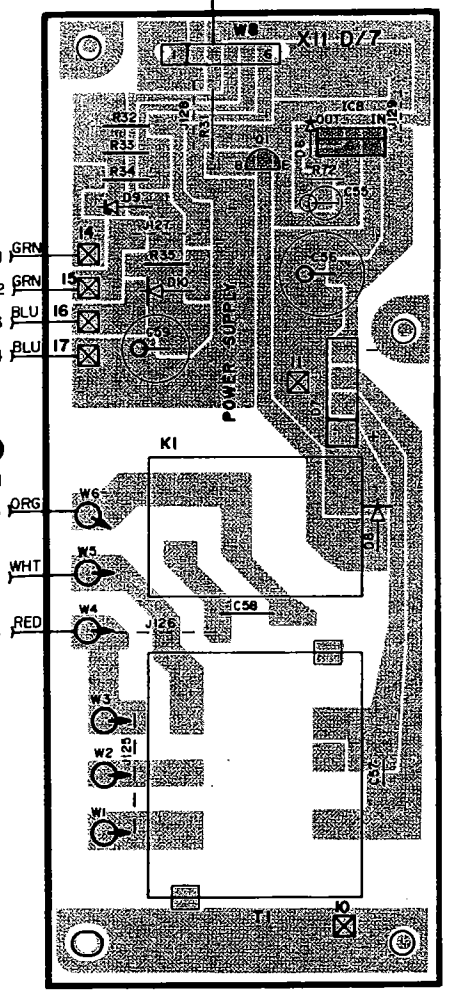


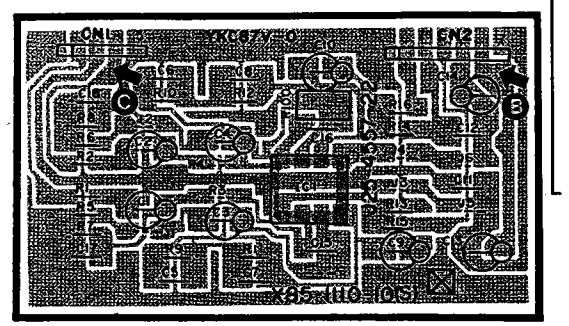


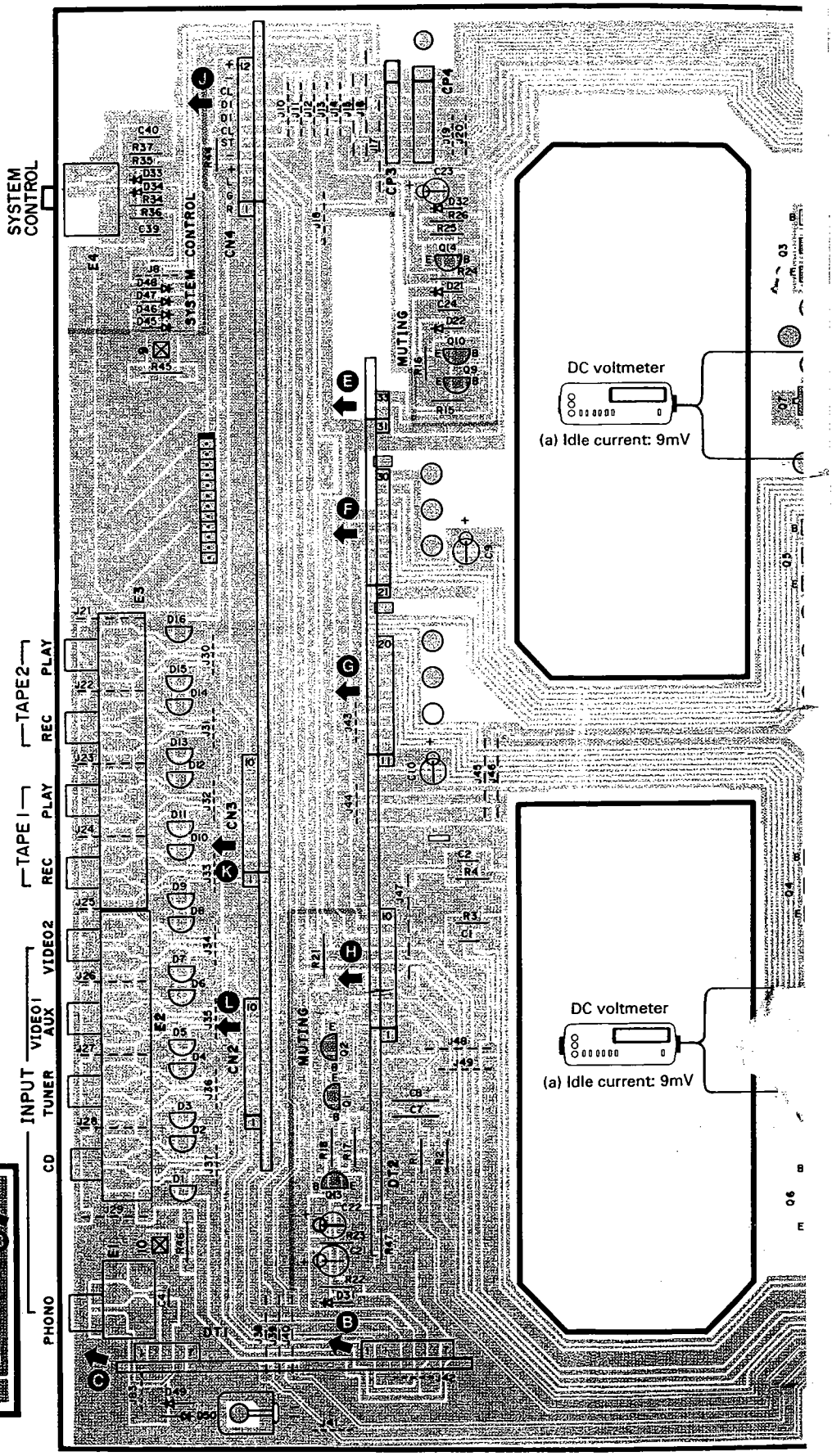


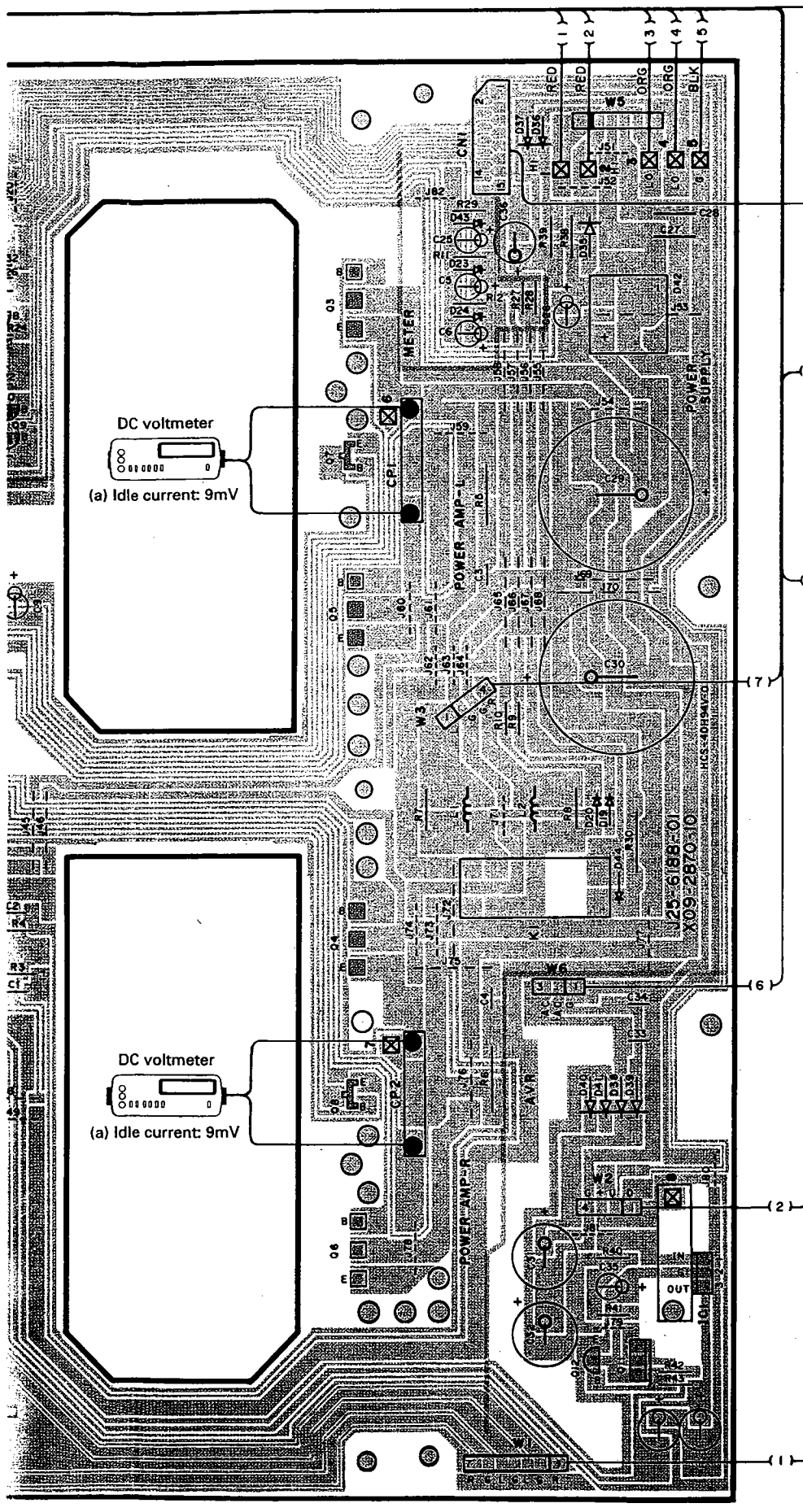


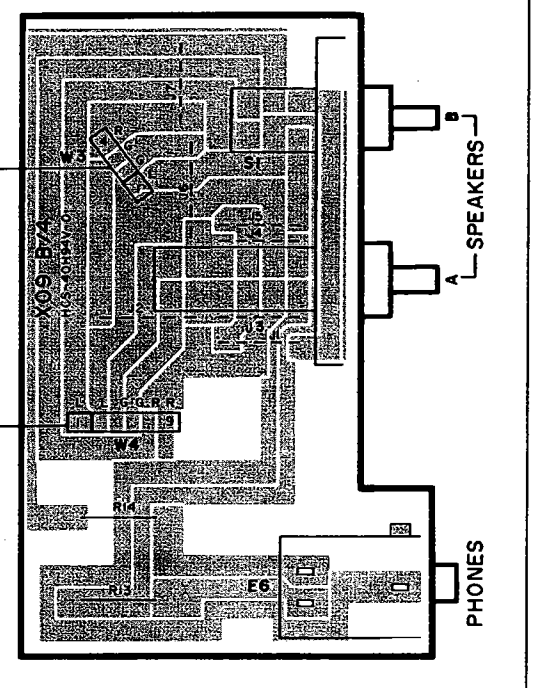


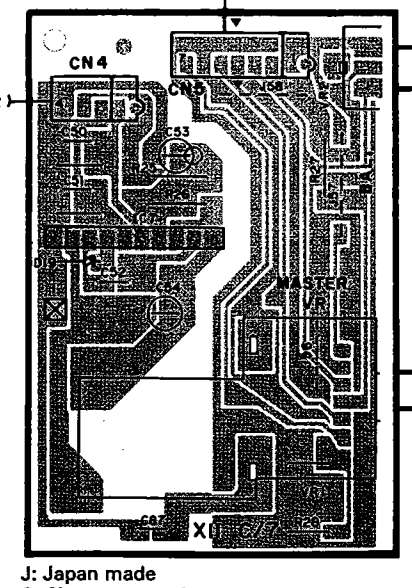












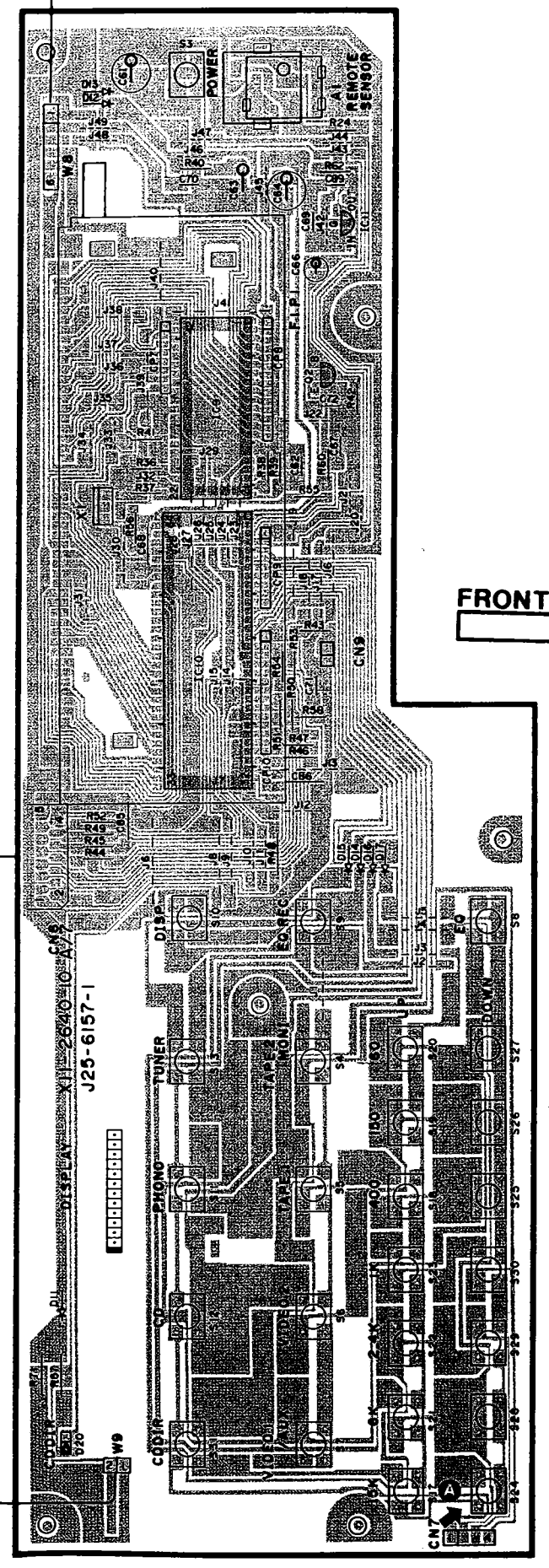
J: Japan made
S: Singapore made

BALANCE

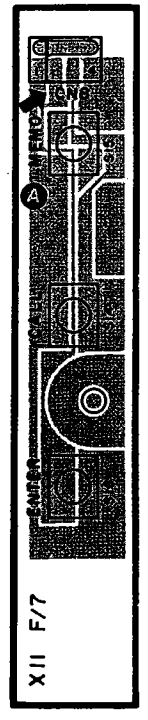
VOLUME CONTROL

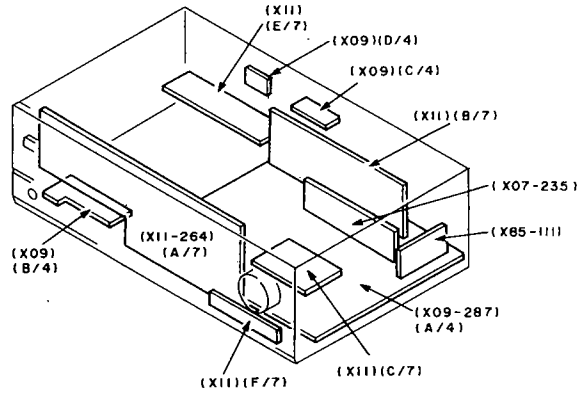
XII G/7

VOL. LED



FRONT





X11-264X-XX

IC1

1	–12V
28	12V

IC2

1	–12V
28	12V

IC3

18	12V
20	–12V

IC4

18	12V
20	–12V

IC5

1	6.8V
11~14	–6.8V
15	5V

IC6

1,2	0V
8	12V

IC7

2	UP:4.5V
4	5V
7,8	12V
10	DOWN:4.5V

IC8

O	5.7V
I	13V–

IC9

42	5V

IC10

57	–30V

IC11

I	5V

X89-1020-13 (JAPAN MADE)
X07-2350-13 (SINGAPORE MADE)

C1

1~3	0V
4	2V
6	0.7V
7	2.2V
8	3.3V

	B	C	E
Q1,3	0V	3.3V	–0.7V
Q5,7	4V	11.8V	3.3V
Q9	11.8V	69.4V	11.2V
Q11	11.8V	70V	11.2V
Q13	69.4V	2.1V	70V
Q15	69.4V	1.2V	70V
Q17	–	–69.4V	0.6V
Q19	–69.4	–12V	–70V
Q21	–	–	0.6V
Q23	–	–	–0.6V
Q25	0V	72V	–
Q27	0V	–	0V
Q29	72V	–	–

X09-287X-XX

IC1

O	12V
I	24.8V

	B	C	E
Q3,4	–	72V (LOW:52V)	–
Q4,5	–	–72V (LOW:–52V)	
Q7	0.6V	1.2V	–1.2V
Q11	–	–24.8V	–12V

X85-1030-11 (JAPAN MADE)
X85-1110-10 (SINGAPORE MADE)

IC1

1	0V
4	–12V
7	0V

KA-128(K)

DT1	Ref No.	R100
DESTINATION		
X85-1030-11 (JAPAN MADE)		22
X85-1110-10 (SINGAPORE MADE)		10

DT1
(X85-1030-11) JAPAN MADE
(X85-1110-10) SINGAPORE MADE

IC1 : NJM4565D-D
or M5218P or μPC4570C-A

(X09-287X-XX)
(A/4)

	JAPAN MADE				SINGAPORE MADE			
	K,P	U,M,UE	X	E	K,P	U,M,UE	X	E
X09-287	0-11	0-22	2-72	2-72	0-10	0-21	2-71	2-71
X11-264	0-11	0-22	0-72	2-72	0-10	0-21	0-71	2-71
DT1	X85-1030-11				X85-1110-10			
DT2	X89-1020-13				X07-2350-13			

(X09-287X-XX)
IC1 : μPC78M12H

Q1,2 : 2SC2878(B)
Q3,4 : 2SC2921*5
Q5,6 : 2SA1215*5
Q7,8 : 2SC3419(Y)
Q9,10 : 2SC945(A)(Q,P) or 2SC1740S(Q,R)
Q11 : 2SB941(Q,P)
Q12~14 : 2SA733(A)(Q,P) or 2SA933S(Q,R)

D1~16 : MC931 or MA177
D19,20,44,49,50 : 1SS131 or HSS104A
D21,22,31~34,45~48 : 1SS133 or HSS104
D23,24,43 : RD4.7ES(B) or HZS4.7N(B)
D35~41 : S5566B
D42 : D5FB20*1

(DT2)
IC1 : μPC1237HA

Q1~4,9~12 : 2SC1845(F,E)
Q5~8
(JAPAN MADE) : 2SC945(A)(Q,P) or 2SC2320(E,F)
(SINGAPORE MADE) : 2SC945(A)(Q,P)
Q13~18 : 2SA1123(R,S)
Q19,20,25,26 : 2SC2631(R,S)
Q21,22 : 2SC3944(Q,R)
Q23,24 : 2SA1535(Q,R)
Q27,28 : 2SA1123(R,S)
Q29 : 2SA992(F,E)

D1,2
(JAPAN MADE) : RD5.1JS(B2) or HZS5.1S(B2)
(SINGAPORE MADE) : RD5.1ES(B2) or HZS5.1N(B2)
D3,4
(JAPAN MADE) : 1SS133 or 1SS176
(SINGAPORE MADE) : 1SS176
D5~8
(JAPAN MADE) : 1SS131 or 1SS178
(SINGAPORE MADE) : 1SS178

(X09-287X-XX)

DESTINATION \ Ref No.	S2	W5	J51, 52
0-11(0-10) K,P	NO	NO	YES
0-22(0-21) U,M,UE	YES	YES	NO
2-72(2-71) E,X	YES	YES	NO

( ): SINGAPORE MADE

DT2
(X89-1020-13) JAPAN MADE
(X07-2350-13) SINGAPORE MADE

Ref. No. / DESTINATION	R85	C27, 28
X89-1020-13 (JAPAN MADE)	YES	NO
X07-2350-13 (SINGAPORE MADE)	NO	YES

(X09-287X-XX) (D/4)
(U,M,UE,X,E) TYPE ONLY

(X09-287X-XX)(B/4)

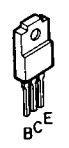
(X09-287X-XX) (C/4)
OUTPUT 31.6V at 8Ω
SPEAKERS A
SPEAKERS B

SIGNAL LINE
GND LINE
+B LINE
-B LINE

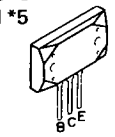
CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠Indicates safety-critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably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

- 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. Voltmeter ohne Eingangssignal gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u.U. geringfügig.

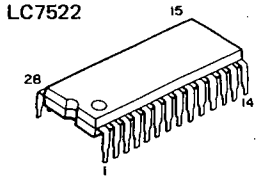
2SA1535
2SB941
2SC3944



2SA1215*5
2SC2921*5

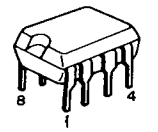


LC7522

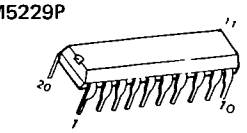


2SC3419

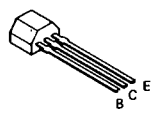
M5218P-A
NJM4565D-D
UPC4570C-A



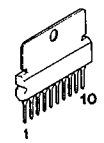
M5229P



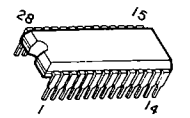
2SA933S
2SC1740S



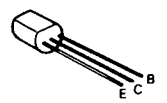
BA6109



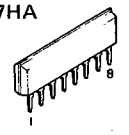
TC9163N
TC9164N



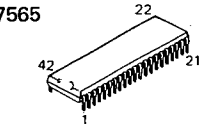
2SA1123 2SC2003
2SA733(A) 2SC2631
2SA992 2SC2878
2SC1845 2SC945(A)



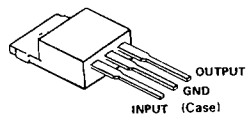
UPC1237HA



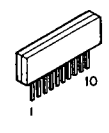
LC7565



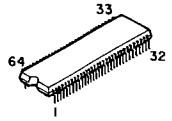
UPC78M12H
UPC7805H



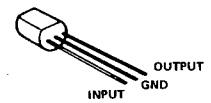
LB1641



CXP5014-328S



M51951ASL



KA-128(K)(1/2)

25

26

Y08-3730-11

KA-128
KENWOOD

(X11-264X-XX)

IC1	: TC9163N	D7	: KBP02ML-6127
IC2	: TC9164N	D8,10	: S5566B
IC3,4	: M5229P	D9	: RD5.6ES(B2) or HZS5.6N(B2)
IC5	: LC7522	D18	: B30-1012-05
IC6	: μPC4570C-A	D20	: B30-1223-05
IC7	: LB1641 or BA6109	FL1	: FIP12AMW19
IC8	: μPC7805H	AI	: W02-7975-05 or W02-0776-05
IC9	: LC7565		
IC10	: CXP5014-328S		
IC11	: M51951ASL		
Q1	: 2SC2003(L,K)		
Q2	: 2SC945(A)(Q,P) or 2SC1740S(Q,R)		

D1,2,6,11~17 : 1SS133 or 1SS104
D3,4 : RD6.8ES(B2) or HZS6.8N(B2)
D5,19 : RD5.1ES(B2) or HZS5.1N(B2)

(U,M,UE)TYPE

(X11-2640-22/0-21)(E/7)

(X11-)(D/7)

(E)TYPE

(X11-)(D/7)

(X11-2642-72/2-71)(E/7)

(X11-2640-72/0-71)(E/7)

(X)TYPE

(X11-264X-XX)(D/7)

(X11-264X-XX)(G/7)

(X11-264X-XX)(F/7)

(X11-2640-11/0-10)(E/7)

(K,P)TYPE

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

SIGNAL LINE
GND LINE
+B LINE
-B LINE

KA-128(K)(2/2)

Y08-3730-11

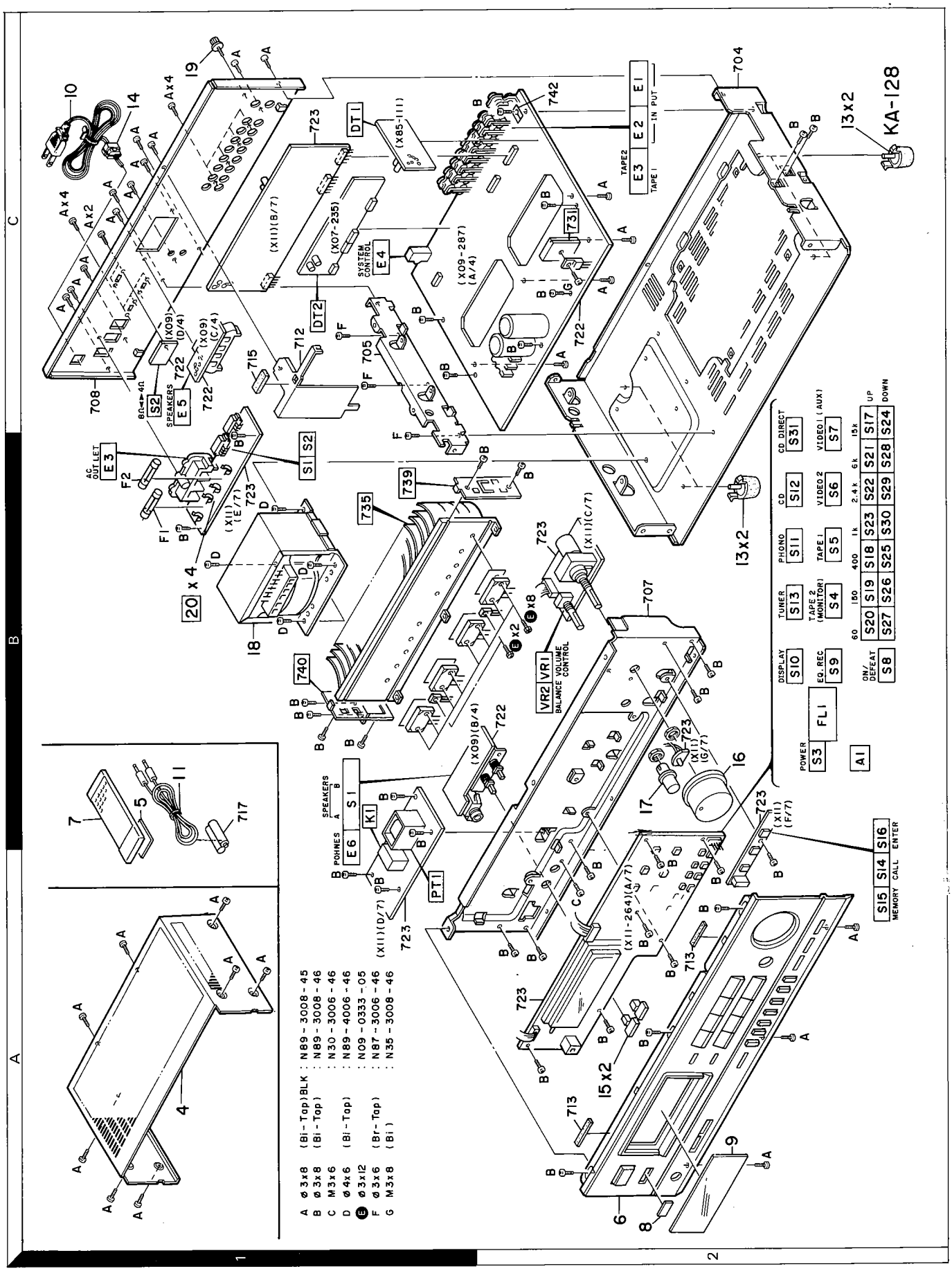
KA-128
KENWOOD

(XII-264X-XX)(A/7)

(XII-264X-XX)(B/7)

(XII-264X-XX)(C/7)

EXPLODED VIEW



Parts with the exploded numbers larger than 700 are not supplied.

PARTS LIST

* New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Telle ohne **Parts No.** werden nicht geliefert.

	Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
				KA-128			
	4	1A	*	A01-1738-01	METALLIC CABINET		
	5	1B		A09-0088-08	BATTERY COVER		
	6	2A	*	A20-5749-02	PANEL ASSY		
	7	1B	*	A70-0260-05	REMOTE CONTROLLER ASSY	KUUE	
	7	1B	*	A70-0261-05	REMOTE CONTROLLER ASSY	PME	
	7	1B	*	A70-0262-05	REMOTE CONTROLLER ASSY	X	
	8	2A		B03-2417-04	DRESSING PLATE		
	9	2A	*	B03-2516-04	DRESSING PLATE		
	-			B46-0092-03	WARRANTY CARD	K	
	-			B46-0094-03	WARRANTY CARD	UUE	
	-			B46-0095-03	WARRANTY CARD	UUE	
	-			B46-0096-13	WARRANTY CARD	X	
	-			B46-0121-03	WARRANTY CARD	P	
	-			B46-0122-13	WARRANTY CARD	E	
	-		*	B50-9609-00	INSTRUCTION MANUAL(ENG)	KPUUEM	
	-		*	B50-9609-00	INSTRUCTION MANUAL(ENG)	X	
	-		*	B50-9610-00	INSTRUCTION MANUAL(FRE)	PME	
	-		*	B50-9611-00	INSTRUCTION MANUAL(SP/AR/CH)	M	
	-			B58-0223-04	CAUTION CARD (PRE-SET 120V)	U	
	-			B58-0513-04	CAUTION CARD (PRESET220-240)	UE	
	-			B58-0803-13	CAUTION CARD	E	
⚠	10	1C		E30-0459-05	AC POWER CORD	E	
⚠	10	1C		E30-0812-05	AC POWER CORD	UUEM	
⚠	10	1C		E30-1341-05	AC POWER CORD	X	
⚠	10	1C		E30-2209-05	AC POWER CORD	KP	
	11	1B		E30-0977-05	CORD WITH PLUG	E	
	11	1B		E30-1392-05	CORD WITH PLUG		
⚠	-	1B		E03-0055-05	AC OUTLET	E	
⚠	F1	1B		F05-3121-05	FUSE (SEMKO) (250V T3.15A)	XE	
	F1	1B		F05-6029-05	FUSE (UL)	KP	
	F1	1B		F05-6324-05	FUSE (250V 6.3A)	UUEM	
⚠	F2	1B		F05-3123-05	FUSE (250V 3.15A)	UUEM	
	-		*	H01-8507-04	ITEM CARTON CASE	KPUUEM	
	-		*	H01-8507-04	ITEM CARTON CASE	X	
	-		*	H01-8508-04	ITEM CARTON CASE	E	
	-		*	H10-3820-02	POLYSTYRENE FOAMED FIXTURE		
	-		*	H10-3821-02	POLYSTYRENE FOAMED FIXTURE		
	-			H25-0232-04	PROTECTION BAG (235X350X0.03)		
	-			H25-0330-04	PROTECTION BAG		
	-			H25-0623-04	PROTECTION BAG (150X180X0.05)	E	
	13	2B,2C	*	J02-1013-05	FOOT		
⚠	14	1C		J42-0083-05	POWER CORD BUSHING		
	-			J61-0307-05	WIRE BAND		
	15	2A		K27-0742-14	KNOB (BUTTON) SPEAKERS		
	16	2B	*	K29-3581-04	KNOB ASSY (VOLUME)		
	17	2B	*	K29-3632-04	KNOB (BALANCE)		
⚠	18	1B	*	L01-5901-05	POWER TRANSFORMER	KP	
⚠	18	1B	*	L01-5902-05	POWER TRANSFORMER	E	
⚠	18	1B	*	L01-5905-05	POWER TRANSFORMER	UUEM	
⚠	18	1B	*	L01-5907-05	POWER TRANSFORMER	X	

E: Scandinavia & Europe **K**: USA **P**: Canada
U: PX(Far East, Hawaii) **T**: England **M**: Other Areas
UE: AAFES(Europe) **X**: Australia

J : Japan made
S : Singapore made

⚠ indicates safety critical components.

PARTS LIST

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19	1C		N08-0128-35	BINDING POST (GND)		
POWER AMPLIFIER UNIT (X07-2350-13) : S (X89-1020-13) : J						
C1 ,2			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C5 ,6		*	CE04LW0J221M	ELECTRO 220UF 6.3WV		
C7 ,8			CF92FV1H113J	MF 0.011UF J		
C9 ,10			CC45FSL1H680J	CERAMIC 68PF J		
C11 -14			CC45FSL1H470J	CERAMIC 47PF J		
C15 ,16			CC45FSL1H221J	CERAMIC 220PF J		
C17 ,18			CE04LW2A470M	ELECTRO 47UF 100WV		
C19 -22			CK45FF1H103Z	CERAMIC 0.010UF Z		
C23			C90-1333-05	NP-ELEC 22UF 10WV		
C24			CE04LW1C220M	ELECTRO 22UF 16WV		
C25			CF92FV1H183J	MF 0.018UF J		
C26			CE04LW1C330M	ELECTRO 33UF 16WV		
C27 ,28			CC45FSL1H101J	CERAMIC 100PF J		
C29 ,30			CE04LW1C220M	ELECTRO 22UF 16WV		
—			J21-5022-04	MOUNTING HARDWARE		
R19 -22			RD14GB2E122J	FL-PROOF RD 1.2K J 1/4W		
R23 ,24			RD14GB2E181J	FL-PROOF RD 180 J 1/4W		
R29 -32			RD14GB2E221J	FL-PROOF RD 220 J 1/4W		
R39 -42			RD14GB2E220J	FL-PROOF RD 22 J 1/4W		
R43 -46			RD14GB2E221J	FL-PROOF RD 220 J 1/4W		
R47 -50			RD14GB2E2R2J	FL-PROOF RD 2.2 J 1/4W		
R51			RD14GB2E100J	FL-PROOF RD 10 J 1/4W		
R61 -64			RD14GB2E101J	FL-PROOF RD 100 J 1/4W		
VR1 ,2			R12-1070-05	TRIMMING POT. (1)		
D1 ,2			HZS5.1N(B2)	ZENER DIODE		
D1 ,2			RD5.1ES(B2)	ZENER DIODE		
D3 ,4			1SS176	DIODE		
D5 -8			1SS178	DIODE		
IC1			UPC1237HA	IC(POWER AMP)		
Q1 -4			2SC1845(F,E)	TRANSISTOR		
Q5 -8			2SC945(A)(Q,P)	TRANSISTOR		
Q9 -12			2SC1845(F,E)	TRANSISTOR		
Q13 -18			2SA1123(R,S)	TRANSISTOR		
Q19 ,20			2SC2631(R,S)	TRANSISTOR		
Q21 ,22			2SC3944(Q,R)	TRANSISTOR		
Q23 ,24			2SA1535(Q,R)	TRANSISTOR		
Q25 ,26			2SC2631(R,S)	TRANSISTOR		
Q27 ,28			2SA1123(R,S)	TRANSISTOR		
Q29			2SA992(F,E)	TRANSISTOR		
AUDIO UNIT (X09-287X-XX) K, P : 0-10 (S), 0-11 (J) U, M, UE : 0-21 (S), 0-22 (J) X, E : 2-71 (S), 2-72 (J)						
C1 ,2			CC45FSL1H270J	CERAMIC 27PF J		
C3 ,4			CF92FV1H473J	MF 0.047UF J		
C5 ,6			CE04LW1H2R2M	ELECTRO 2.2UF 50WV		
C7 ,8			C91-0747-05	CERAMIC 150PF K		
C9 ,10			CE04LW1C330M	ELECTRO 33UF 16WV		
C21			CE04LW1C101M	ELECTRO 100UF 16WV		
C22			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C23			CE04LW1C101M	ELECTRO 100UF 16WV		
C24			CK45FF1H103Z	CERAMIC 0.010UF Z		
C25			CE04LW1H2R2M	ELECTRO 2.2UF 50WV		
C26			CE04LW1H4R7M	ELECTRO 4.7UF 50WV		

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	C27 ,28			CK45FE2H103P	CERAMIC 0.010UF P		
	C29 ,30			C90-1645-05	ELECTRO 8200UF 80WV		
	C31 ,32			CE04LW1E102M	ELECTRO 1000UF 25WV		
	C33 ,34			CK45FF1H103Z	CERAMIC 0.010UF Z		
	C35			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		
	C36			CE04LW1H101M	ELECTRO 100UF 50WV		
	C37 ,38			CE04LW1C331M	ELECTRO 330UF 16WV		
	C39 ,40			CK45FB1H102K	CERAMIC 1000PF K		
	C41			CK45FF1H223Z	CERAMIC 0.022UF Z		
	CN1			E10-1507-05	FLAT CABLE CONNECTOR		
	E1	2C		E13-0235-05	PHONO JACK (2P)		
	E2 ,3	2C		E13-0814-05	PHONO JACK (8P)		
	E4	1C		E11-0165-05	MINIATURE PHONE JACK	KP	
	E4	1C		E11-0168-05	MINIATURE PHONE JACK	UUEMXE	
	E5	1C		E20-0823-05	LOCK TERMINAL BOARD(8P)		
	E6	1B		E11-0162-05	PHONE JACK (3P)		
	L1 ,2			L39-0085-05	PHASE-COMPENSATION COIL		
	E	2B		N09-0333-05	TAPPING SCREW (3X12)		
	CP1 ,2			R90-0187-05	MULTI-COMP 0.22X2 K 5W		
	CP3			R90-0281-05	MULTI-COMP 10KX6 J 1/6W		
	CP4			R90-0499-05	MULTI-COMP 0PFX6 M		
	R5 ,6			RS14KB3D100J	FL-PROOF RS 10 J 2W		
	R7 ,8			RD14GB2E100J	FL-PROOF RD 10 J 1/4W		
	R13 ,14			RS14KB3D561J	FL-PROOF RS 560 J 2W		
	R30			RS14KB3D681J	FL-PROOF RS 680 J 2W		
	R39			RD14GB2E221J	FL-PROOF RD 220 J 1/4W		
	K1			S51-2078-05	MAGNETIC RELAY		
	S1	1B		S42-2163-05	MULTIPLE PUSH SWITCH		
⚠	S2	1C		S31-2127-05	SLIDE SWITCH (POWER TYPE)	UUEMXE	
	D1 -16			MA177	DIODE		
	D1 -16			MC931	DIODE		
	D19 ,20			HSS104A	DIODE		
	D19 ,20			1SS131	DIODE		
	D21 ,22			HSS104	DIODE		
	D21 ,22			1SS133	DIODE		
	D23 ,24			HZS4.7N(B)	ZENER DIODE		
	D23 ,24			RD4.7ES(B)	ZENER DIODE		
	D31 -34			HSS104	DIODE		
	D31 -34			1SS133	DIODE		
	D35			S5566B	DIODE		
	D36 ,37			S5566B	DIODE		
	D38 -41			S5566B	DIODE		
	D42			D5FB20*1	DIODE		
	D43			HZS4.7N(B)	ZENER DIODE		
	D43			RD4.7ES(B)	ZENER DIODE		
	D44			HSS104A	DIODE		
	D44			1SS131	DIODE		
	D45 -48			HSS104	DIODE		
	D45 -48			1SS133	DIODE		
	D49 ,50			HSS104A	DIODE		
	D49 ,50			1SS131	DIODE		
	IC1			UPC78M12H	IC(VOLTAGE REGULATOR/ +12V)		

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Q1 ,2			2SC2878(B)	TRANSISTOR		
Q3 ,4			2SC2921*5	TRANSISTOR		
Q5 ,6			2SA1215*5	TRANSISTOR		
Q7 ,8			2SC3419(Y)	TRANSISTOR		
Q9 ,10			2SC1740S(Q,R)	TRANSISTOR		
Q9 ,10			2SC945(A)(Q,P)	TRANSISTOR		
Q11			2SB941(Q,P)	TRANSISTOR		
Q12 -14			2SA733(A)(Q,P)	TRANSISTOR		
Q12 -14			2SA933S(Q,R)	TRANSISTOR		
CONTROL UNIT (X11-264X-XX) K,P:0-10(S),0-11(J) U,M,UE:0-21(S),0-22(J) X:0-71(S),0-72(J) E;2-71(S),2-72(J)						
D18	2B		B30-1012-05	LED(SLP-981C-50)		
D20			B30-1223-05	LED(LN21CPH(V)-C)		
C1 ,2			CE04KW1C471M	ELECTRO 470UF 16WV		
C3 ,4			CE04LW1V100M	ELECTRO 10UF 35WV		
C5 ,6			CC45FSL1H101J	CERAMIC 100PF J		
C7 ,8			CC45FSL1H100D	CERAMIC 10PF D		
C9 ,10			CE04LW1V100M	ELECTRO 10UF 35WV		
C13 ,14			CC45FSL1H221J	CERAMIC 220PF J		
C15 ,16			CE04LW1C101M	ELECTRO 100UF 16WV		
C17 ,18			CE04LW1V100M	ELECTRO 10UF 35WV		
C19 ,20			CF92FV1H124J	MF 0.12UF J		
C21 ,22			CE04LW1H2R2M	ELECTRO 2.2UF 50WV		
C23 ,24			CF92FV1H473J	MF 0.047UF J		
C25 ,26			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C27 ,28			CF92FV1H183J	MF 0.018UF J		
C29 ,30			CE04LW1HR33M	ELECTRO 0.33UF 50WV		
C31 ,32			CF92FV1H822J	MF 8200PF J		
C33 ,34			CF92FV1H124J	MF 0.12UF J		
C35 ,36			CF92FV1H272J	MF 2700PF J		
C37 ,38			CF92FV1H563J	MF 0.056UF J		
C39 ,40			CF92FV1H152J	MF 1500PF J		
C41 ,42			CF92FV1H183J	MF 0.018UF J		
C43 ,44			CK45FB1H471K	CERAMIC 470PF K		
C45 ,46			CF92FV1H822J	MF 8200PF J		
C47			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		
C48 ,49			CE04LW1C330M	ELECTRO 33UF 16WV		
C50 ,51			CK45FF1H103Z	CERAMIC 0.010UF Z		
C52			CF92FV1H104J	MF 0.10UF J		
C53			CE04LW1C470M	ELECTRO 47UF 16WV		
C54			C90-1333-05	NP-ELEC 22UF 10WV		
C55			CE04LA1J101M	ELECTRO 100UF 10WV		
C56			CE04LW1E102M	ELECTRO 1000UF 25WV		
C57			CK45FF1H103Z	CERAMIC 0.010UF Z		
⚠ C58			C91-0023-05	CERAMIC 0.01UF AC250V	UUEM	
⚠ C58			C91-0971-05	FILM 0.01UF 250WV	KPXE	
C59			CE04LW1V221M	ELECTRO 220UF 35WV		
C61		*	CE04JW0J221M	ELECTRO 220UF 6.3WV		
C62			CK45FB1H152K	CERAMIC 1500PF K		
C63			C91-0928-05	BACKUP C 0.047F 5.5WV		
C64		*	CE04JW0J221M	ELECTRO 220UF 6.3WV		
C66			CE04JW1H0R1M	ELECTRO 0.1UF 50WV		
C67			CK45FF1H103Z	CERAMIC 0.010UF Z		
C68			C91-0085-05	CERAMIC 0.022UF N		
C69 ,70			CK45FF1H223Z	CERAMIC 0.022UF Z		

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C71			CK45FB1H471K	CERAMIC 470PF K		
C72			CK45FF1H103Z	CERAMIC 0.010UF Z		
C73 ,74			CK45FB1H471K	CERAMIC 470PF K		
C76 -77			CK45FF1H472Z	CERAMIC 4700PF Z		
C78 -84			CK45FF1H103Z	CERAMIC 0.010UF Z		
C85 ,86			C91-0753-05	CHIP C 470PF K		
C87			CK45FF1H103Z	CERAMIC 0.010UF Z		
C89			CK45FF1H103Z	CERAMIC 0.010UF Z		
CN6			E10-1508-05	FLAT CABLE CONNECTOR		
⚠ E3	1B		E03-0093-05	AC OUTLET	KPUUEM	
20	1B		J13-0054-05	FUSE CLIP		
⚠ PT1	1A		L01-7651-05	POWER TRANSFORMER	KP	
⚠ PT1	1A		L01-7652-05	POWER TRANSFORMER	XE	
PT1	1A		L01-7653-05	POWER TRANSFORMER	UUEM	
X1			L78-0209-05	RESONATOR (4.194MHZ)		
CP5 ,6			R90-0491-05	MULTI-COMP 820KX7 J 1/6W		
CP7			R90-0803-05	MULTI-COMP 100KX7 J 1/4W		
CP8			R90-0483-05	MULTI-COMP 100KX13 J 1/6W		
CP9			R90-0492-05	MULTI-COMP 100KX8 J 1/6W		
CP10			R90-0483-05	MULTI-COMP 100KX13 J 1/6W		
R26			RD14GB2E100J	FL-PROOF RD 10 J 1/4W		
R32 ,33			RD14GB2E101J	FL-PROOF RD 100 J 1/4W		
R34 ,35			RD14GB2E1R0J	FL-PROOF RD 1.0 J 1/4W		
VR1	2B	*	R29-5026-05	POTENTIOMETER (MAIN VOL)		
VR2	2B	*	R05-5026-05	POTENTIOMETER (BALANCE)		
⚠ K1	1B		S51-1036-05	MAGNETIC RELAY		
⚠ S1 ,2	1B		S31-2131-05	SLIDE SWITCH (POWER TYPE)	UUEM	
S3 -31	2B		S40-1064-05	PUSH SWITCH		
D1 ,2			HSS104	DIODE		
D1 ,2			1SS133	DIODE		
D3 ,4			HZS6.8N(B2)	ZENER DIODE		
D3 ,4			RD6.8ES(B2)	ZENER DIODE		
D5			HZS5.1N(B2)	ZENER DIODE		
D5			RD5.1ES(B2)	ZENER DIODE		
D6			HSS104	DIODE		
D6			1SS133	DIODE		
D7			KBP02ML-6127	DIODE		
D8			S5566B	DIODE		
D9			HZS5.6N(B2)	ZENER DIODE		
D9			RD5.6ES(B2)	ZENER DIODE		
D10			S5566B	DIODE		
D11 -17			HSS104	DIODE		
D11 -17			1SS133	DIODE		
D19			HZS5.1N(B2)	ZENER DIODE		
D19			RD5.1ES(B2)	ZENER DIODE		
FL1	2B		FIP12AMW19	FLUORESCENT INDICATOR TUBE		
IC1			TC9163N	IC(BILATERAL SWITCH X16)		
IC2			TC9164N	IC(16CH BILATERAL SELECTOR SW)		
IC3 ,4			M5229P	IC(7CH GRAPHIC EQUALIZER)		
IC5			LC7522	IC(7CH GRAPHIC EQUALIZER)		
IC6			UPC4570C-A	IC(OP AMP X2)		
IC7			BA6109	IC(MOTOR DRIVER)		
IC7			LB1641	IC(MOTOR DRIVER)		

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IC8			UPC7805H	IC(VOLTAGE REGULATOR/ +5V)		
IC9			LC7565	IC(GRAPHIC EQ FL DISPLAY DR)		
IC10			CXP5014-328S	IC(MICROPROCESSOR)		
IC11			M51951ASL	IC(SYSTEM RESET)		
Q1			2SC2003(L,K)	TRANSISTOR		
Q2			2SC1740S(Q,R)	TRANSISTOR		
Q2			2SC945(A)(Q,P)	TRANSISTOR		
A1	2B		W02-0776-05	ELECTRIC CIRCUIT MODULE		
A1	2B		W02-0975-05	ELECTRIC CIRCUIT MODULE		
PREAMPLIFIER UNIT (X85-1110-10) : S (X85-1030-11) : J						
C1 ,2			CE04LW1C100M	ELECTRO 10UF 16WV		
C3 ,4			CE04LW1A470M	ELECTRO 47UF 10WV		
C5			CF92FV1H123J	MF 0.012UF J		
C6			CF92FV1H123J	MF 0.012UF J		
C7			CF92FV1H332J	MF 3300PF J		
C8			CF92FV1H332J	MF 3300PF J		
C9 ,10			CE04LW1V100M	ELECTRO 10UF 35WV		
C11 ,12			CK45FF1H103Z	CERAMIC 0.010UF Z		
C15 ,16			CK45FB1H561K	CERAMIC 560PF K		
C17 ,18			CC45FSL1H101J	CERAMIC 100PF J		
IC1			M5218P-A	IC(OP AMP X2)		
IC1			NJM4565D-D	IC(OP AMP X2)		
IC1			UPC4570C-A	IC(OP AMP X2)		

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SPECIFICATIONS

Audio Section

Rated Power Output

125 watts per channel minimum RMS, both channels driven, at 8 ohms from 20 Hz to 20,000 Hz with no more than 0.05% total harmonic distortion. (FTC)

Maximum continuous output power
(IEC) from 63 Hz to 12,500 Hz 0.7% T.H.D.
at 8 ohms ..... 135 W + 135 W
(DIN) 1,000 Hz at 8 ohms ..... 135 W + 135 W
Total Harmonic Distortion LINE input to SPEAKER output
(20 Hz to 20,000 Hz) ..... 0.04% at 1/2 rated power into 8 ohms
(1 kHz) ..... 0.01% at 1/2 rated power into 8 ohms
Inter Modulation Distortion (60 Hz:7 kHz = 4:1) ..... 0.03% at rated power into 8 ohms
Power Bandwidth ..... 10 Hz to 100 kHz at 0.2% T.H.D. 8 ohms
Frequency Response ..... 10 Hz to 50 kHz, +0 dB, −3 dB
Input Sensitivity/Impedance
Phono ..... 2.5 mV/47 k ohms
Tuner, Tape play, CD, AUX, VIDEO ..... 100 mV/33 k ohms
Signal-to-Noise Ratio (IHF-A)
Phono ..... 75 dB for 2.5 mV input
Tuner, Tape play, CD, AUX, VIDEO ..... 100 dB
Phono Maximum Input Level ..... 150 mV, T.H.D. 0.3% at 1 kHz
Output Level/Impedance
Tape REC (Pin) ..... 150 mV/3.3 k ohms
Phono Frequency Response ..... RIAA standard curve ±0.5 dB (20 Hz to 20,000 Hz)
Graphic equalizer control
(60 Hz, 150 Hz, 400 Hz, 1 kHz, 2.4 kHz, 6 kHz, 15 kHz) ..... ±12 dB
Loudness Control ..... +8 dB at 100 Hz (at −30 dB VOLUME Level)

General

Power Consumption ..... 5 A (U.S.A. & Canada models)
270 W (Other countries)
Dimensions ..... W : 440 mm (17-5/16″)
H : 133 mm (5-1/4″)
D : 275 mm (10-13/16″)
Weight (Net) ..... 8.7 kg (19.2 lb)

Note:
KENWOOD follows a policy of continuous advancements in development: For this reason specifications may be changed without notice.

Note :
Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on, the U.S.A. (K) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

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KENWOOD ELECTRONICS DEUTSCHLAND GMBH
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TRIO-KENWOOD FRANCE S.A.
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TRIO-KENWOOD U.K. LTD.
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KENWOOD ELECTRONICS AUSTRALIA PTY. LTD.
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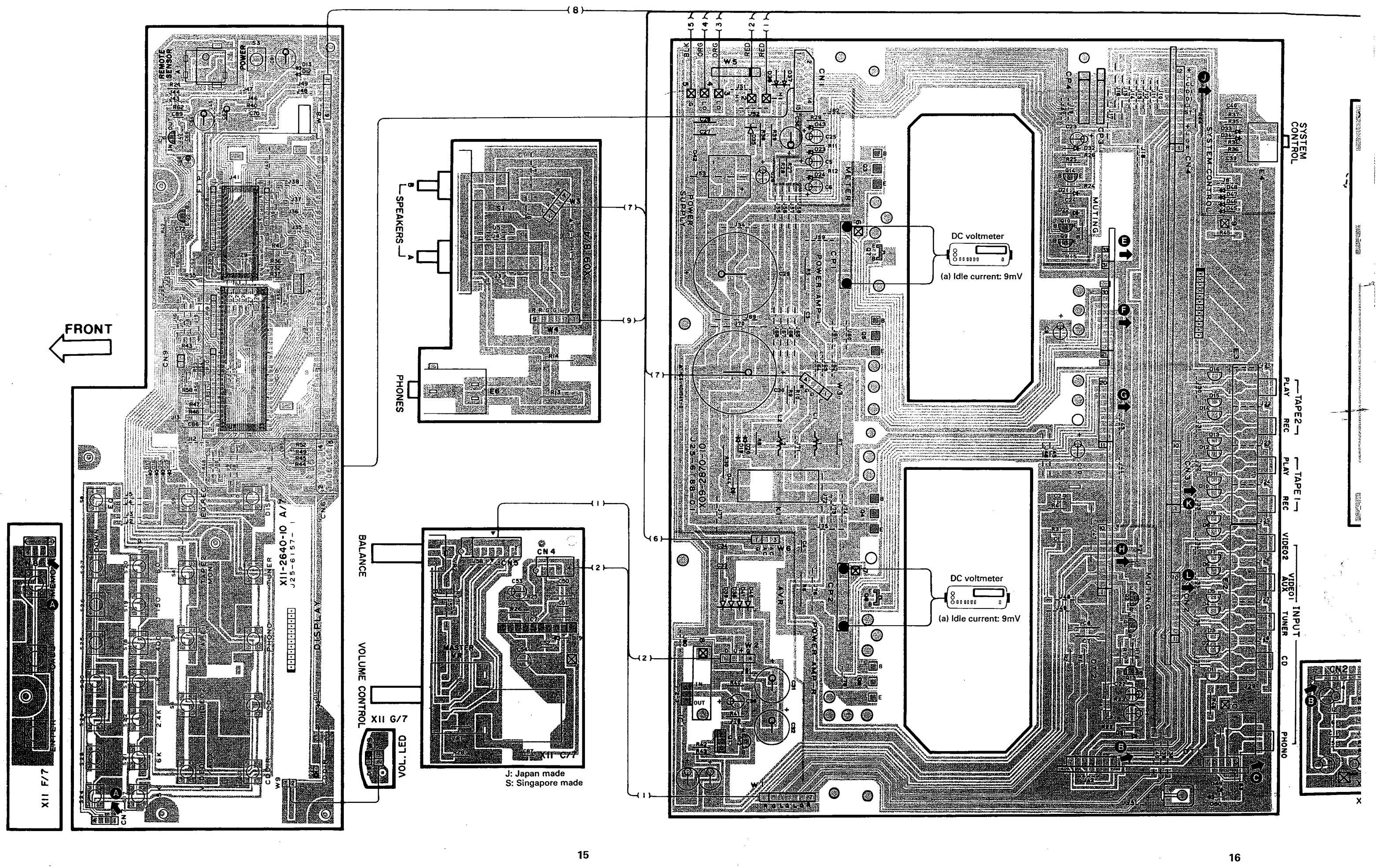
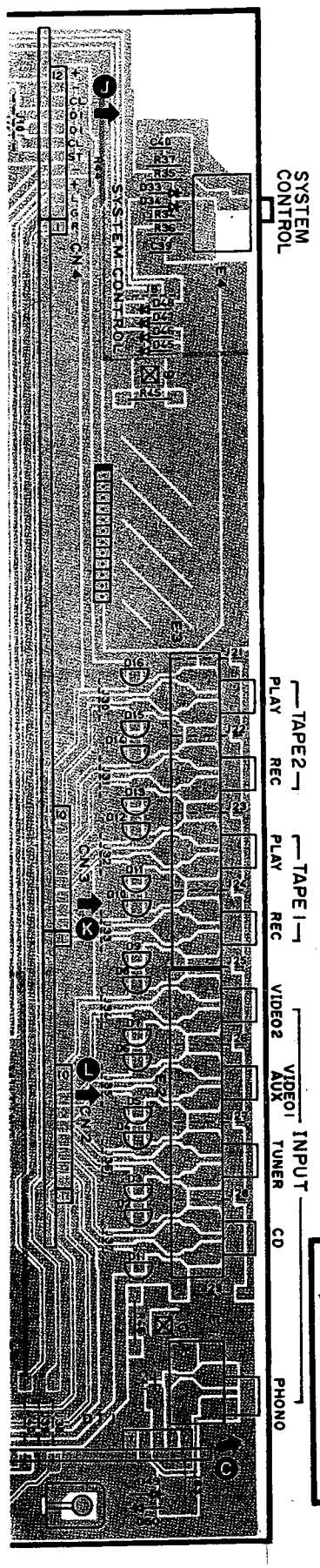
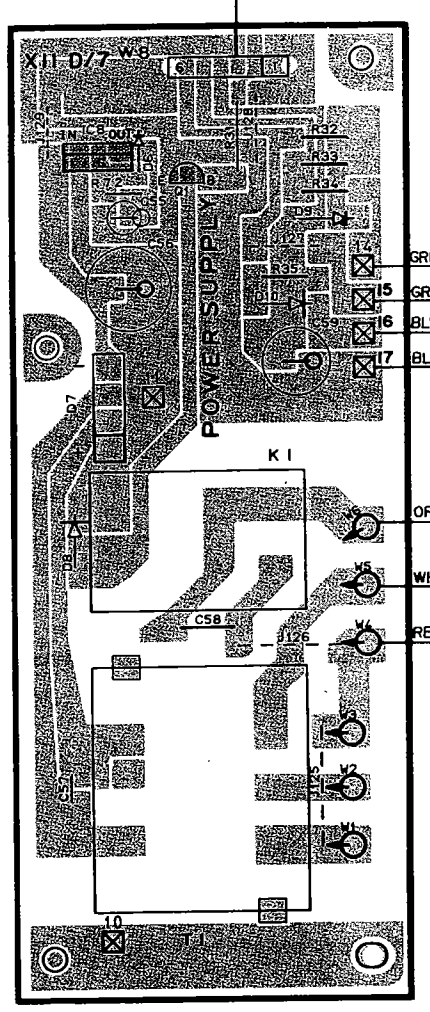
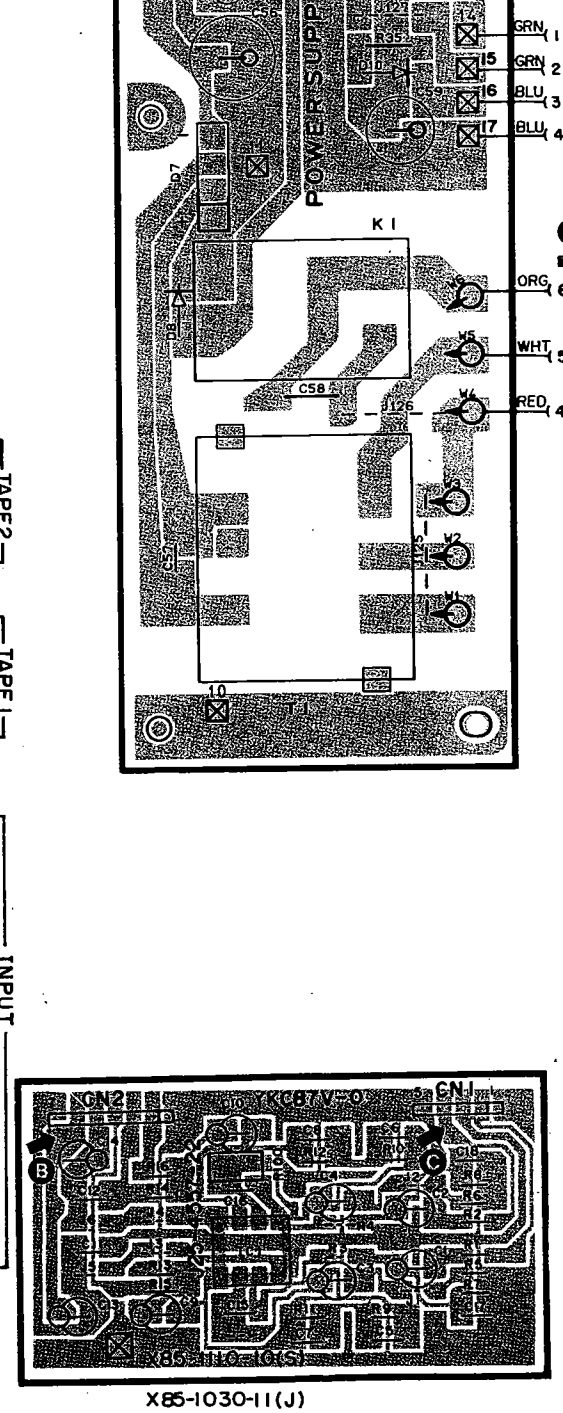
KENWOOD & LEE ELECTRONICS, LTD.
Wang Kee Building, 4th Floor, 34-37, Connaught Road, Central, Hong Kong

PC BOARD (COMPONENT SIDE VIEW)

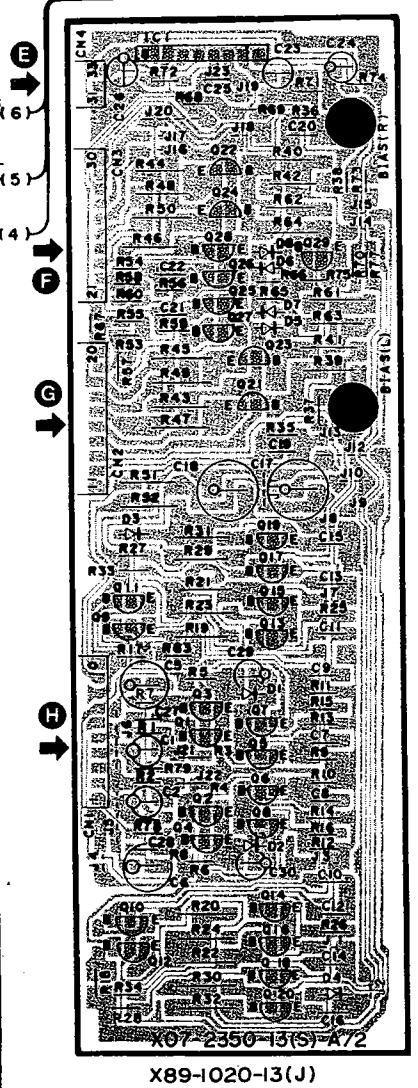




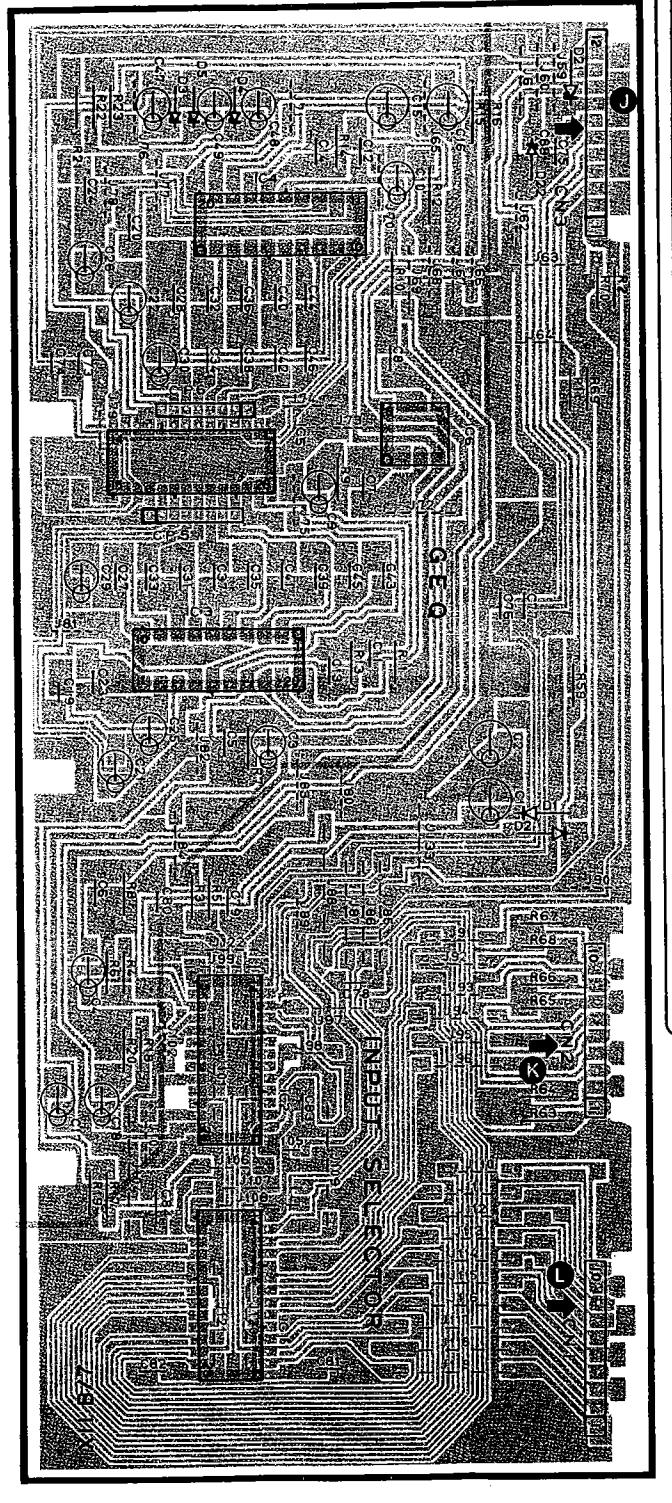


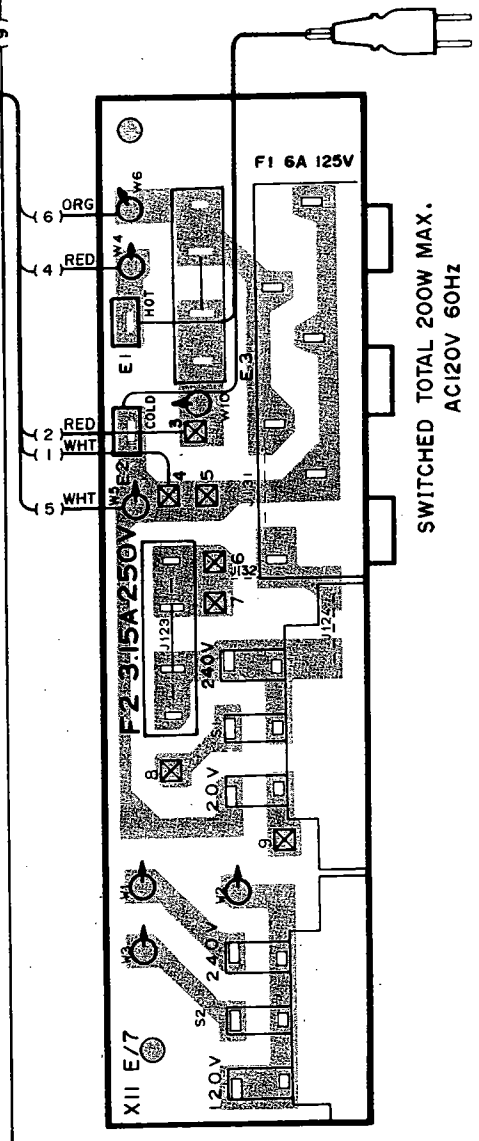


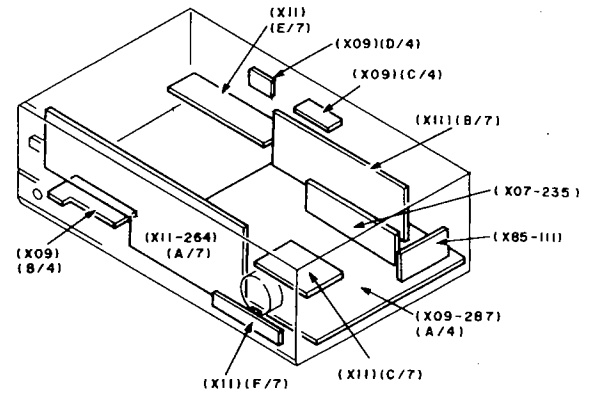
X85-1030-11(J)



X89-1020-13(J)







X11-264X-XX

IC1

1	–12V
28	12V

IC2

1	–12V
28	12V

IC3

18	12V
20	–12V

IC4

18	12V
20	–12V

IC5

1	6.8V
11~14	–6.8V
15	5V

IC6

1,2	0V
8	12V

IC7

2	UP:4.5V
4	5V
7,8	12V
10	DOWN:4.5V

IC8

O	5.7V
I	13V

IC9

42	5V

IC10

57	–30V

IC11

I	5V

X89-1020-13 (JAPAN MADE)
X07-2350-13 (SINGAPORE MADE)

C1

1~3	0V
4	2V
6	0.7V
7	2.2V
8	3.3V

	B	C	E
Q1,3	0V	3.3V	–0.7V
Q5,7	4V	11.8V	3.3V
Q9	11.8V	69.4V	11.2V
Q11	11.8V	70V	11.2V
Q13	69.4V	2.1V	70V
Q15	69.4V	1.2V	70V
Q17	–	–69.4V	0.6V
Q19	–69.4	–12V	–70V
Q21	–	–	0.6V
Q23	–	–	–0.6V
Q25	0V	72V	–
Q27	0V	–	0V
Q29	72V	–	–

X09-287X-XX

IC1

O	12V
I	24.8V

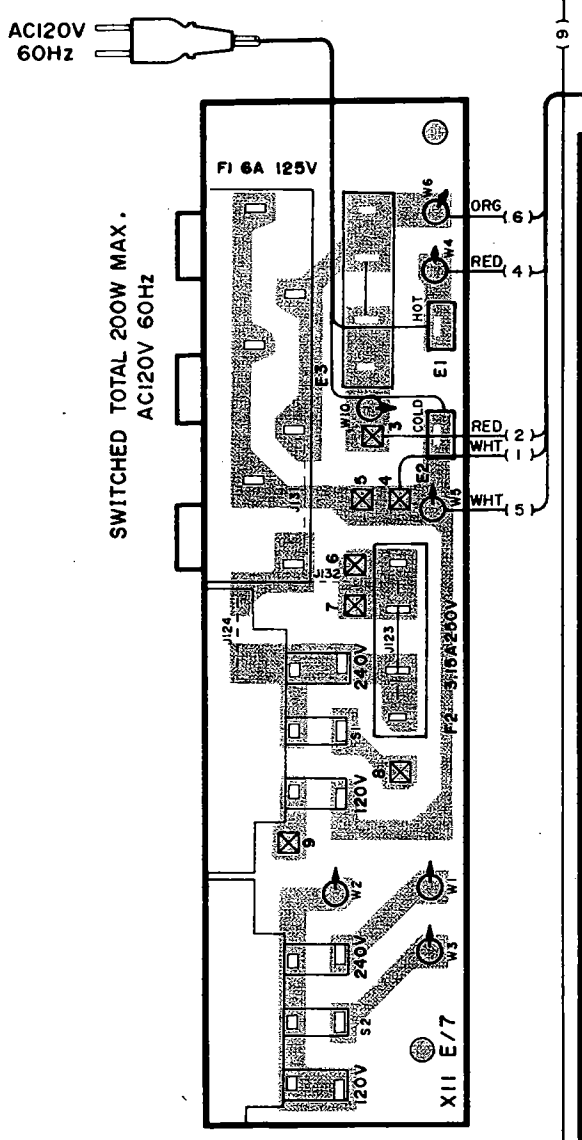
	B	C	
Q3,4	–	72V (LOW:52V)	–
Q4,5	–	–72V (LOW:–52V)	
Q7	0.6V	1.2V	–1.2V
Q11	–	–24.8V	–12V

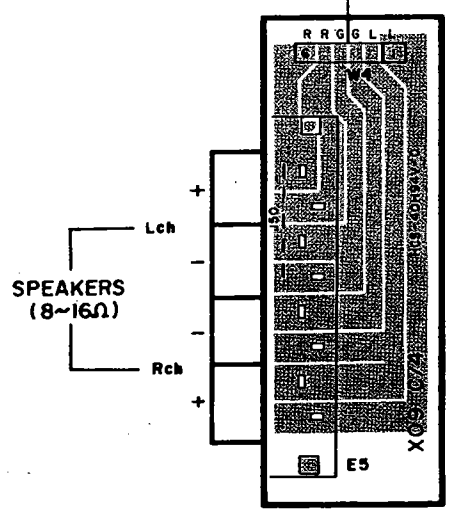
X85-1030-11 (JAPAN MADE)
X85-1110-10 (SINGAPORE MADE)

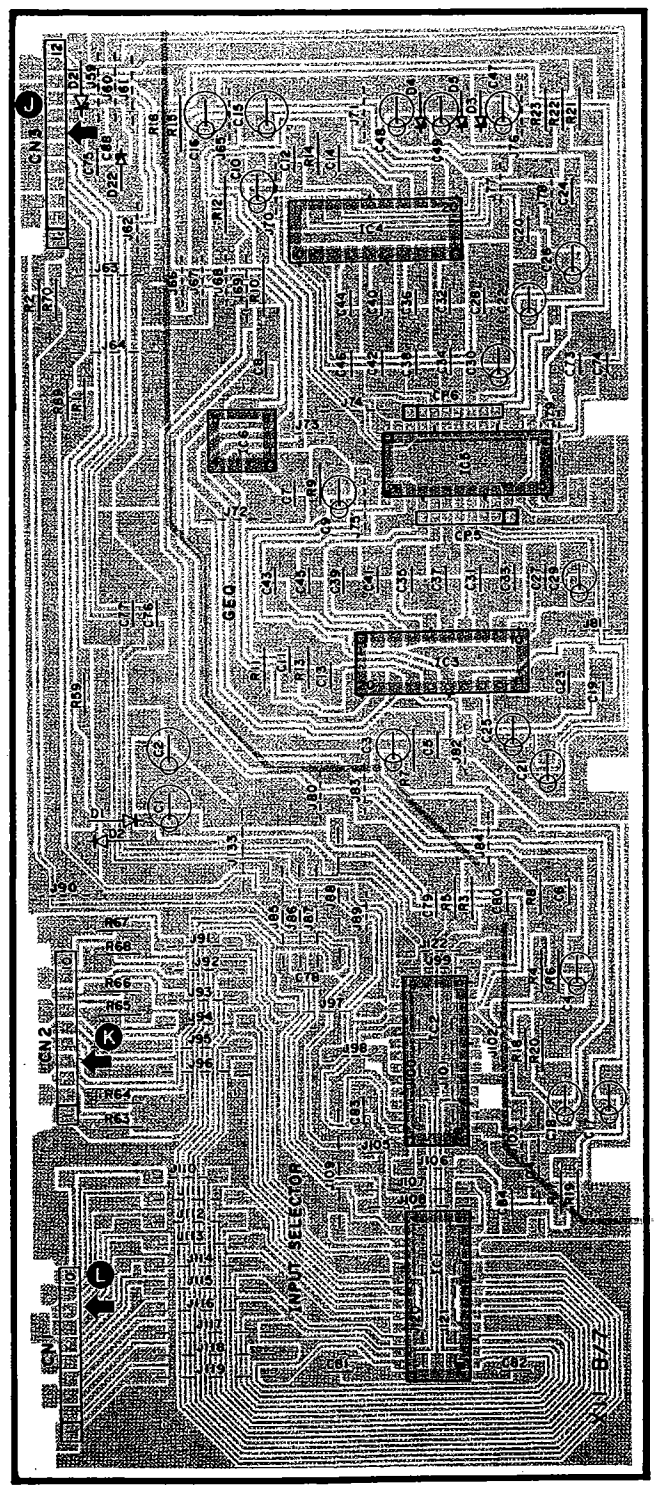
IC1

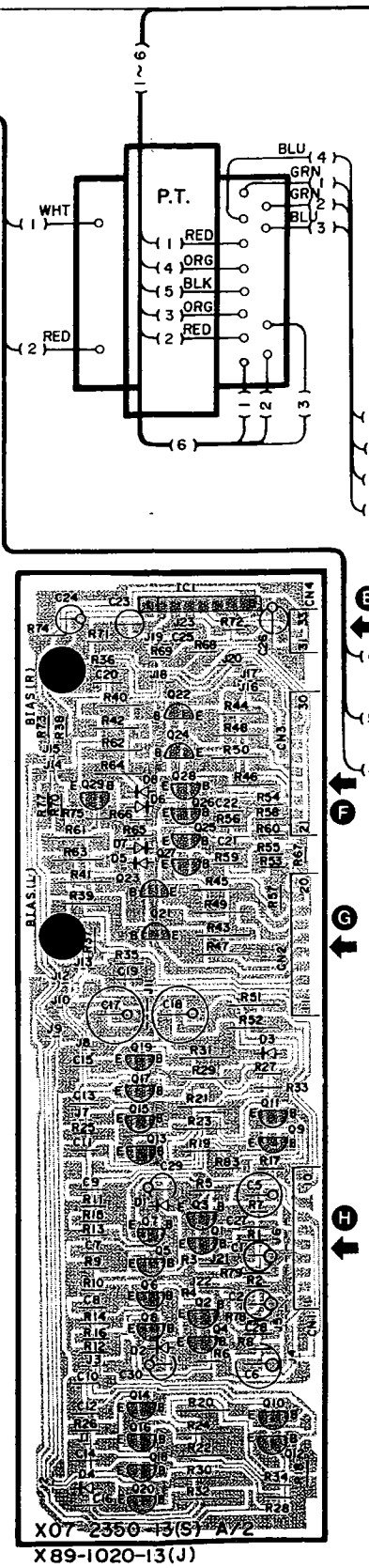
1	0V
4	–12V
7	0V

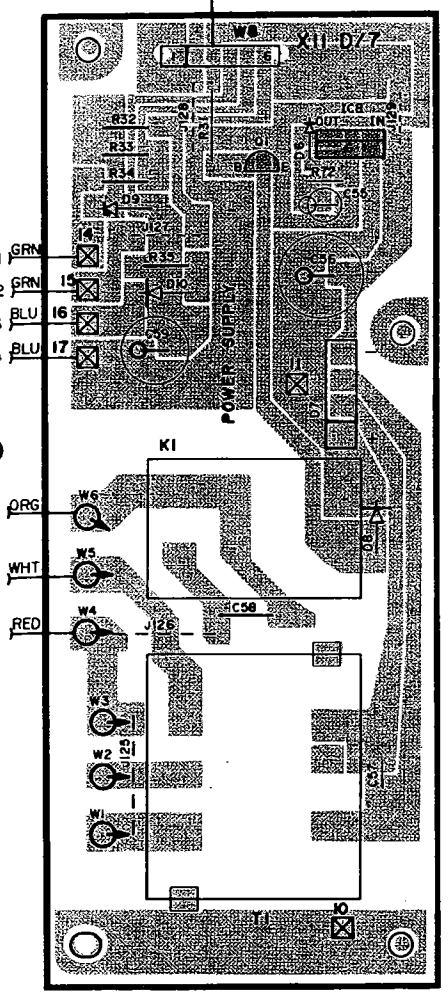
PC BOARD (FOIL SIDE VIEW)

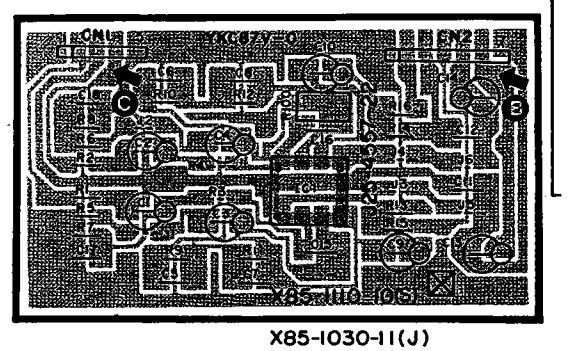


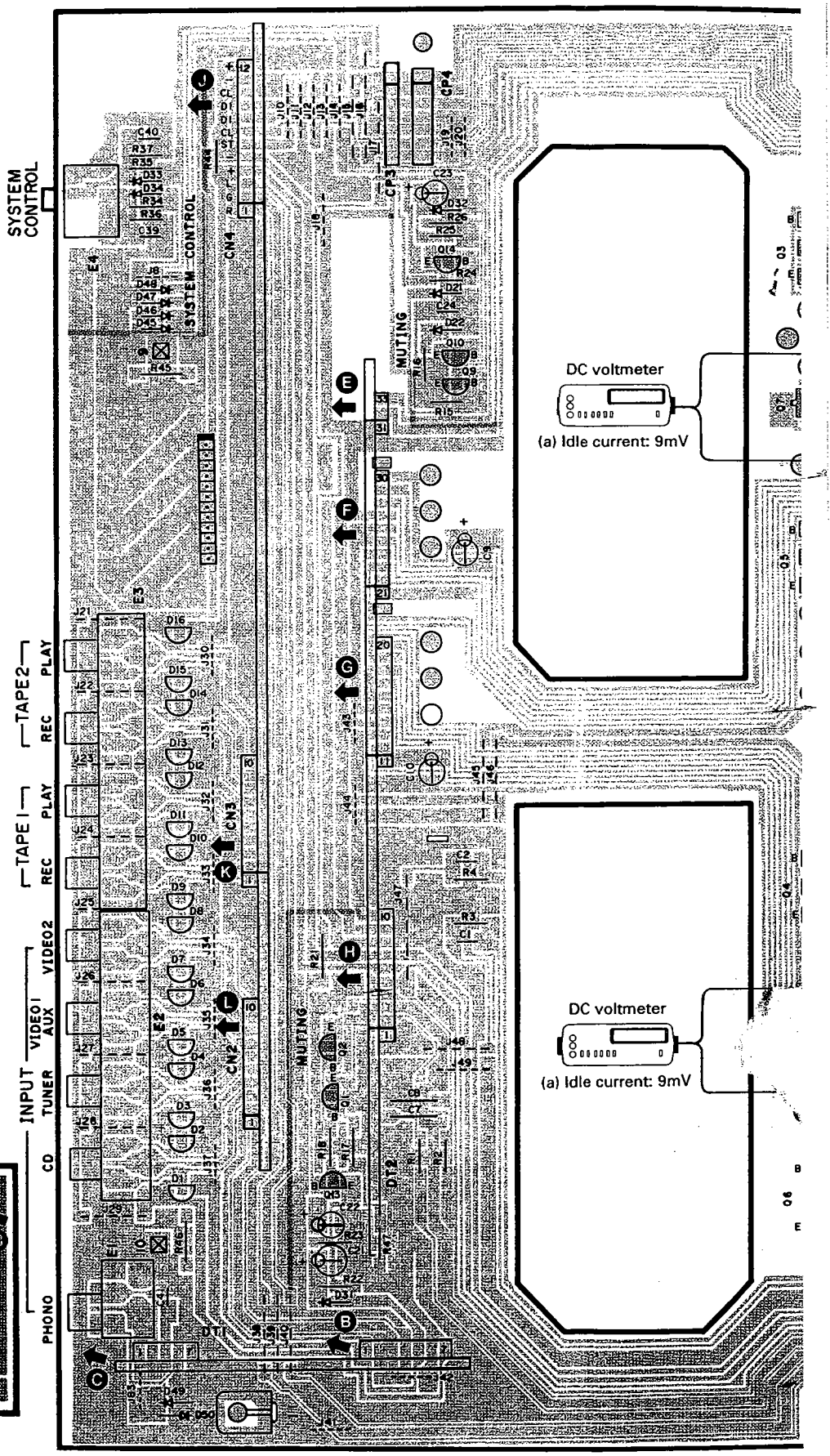


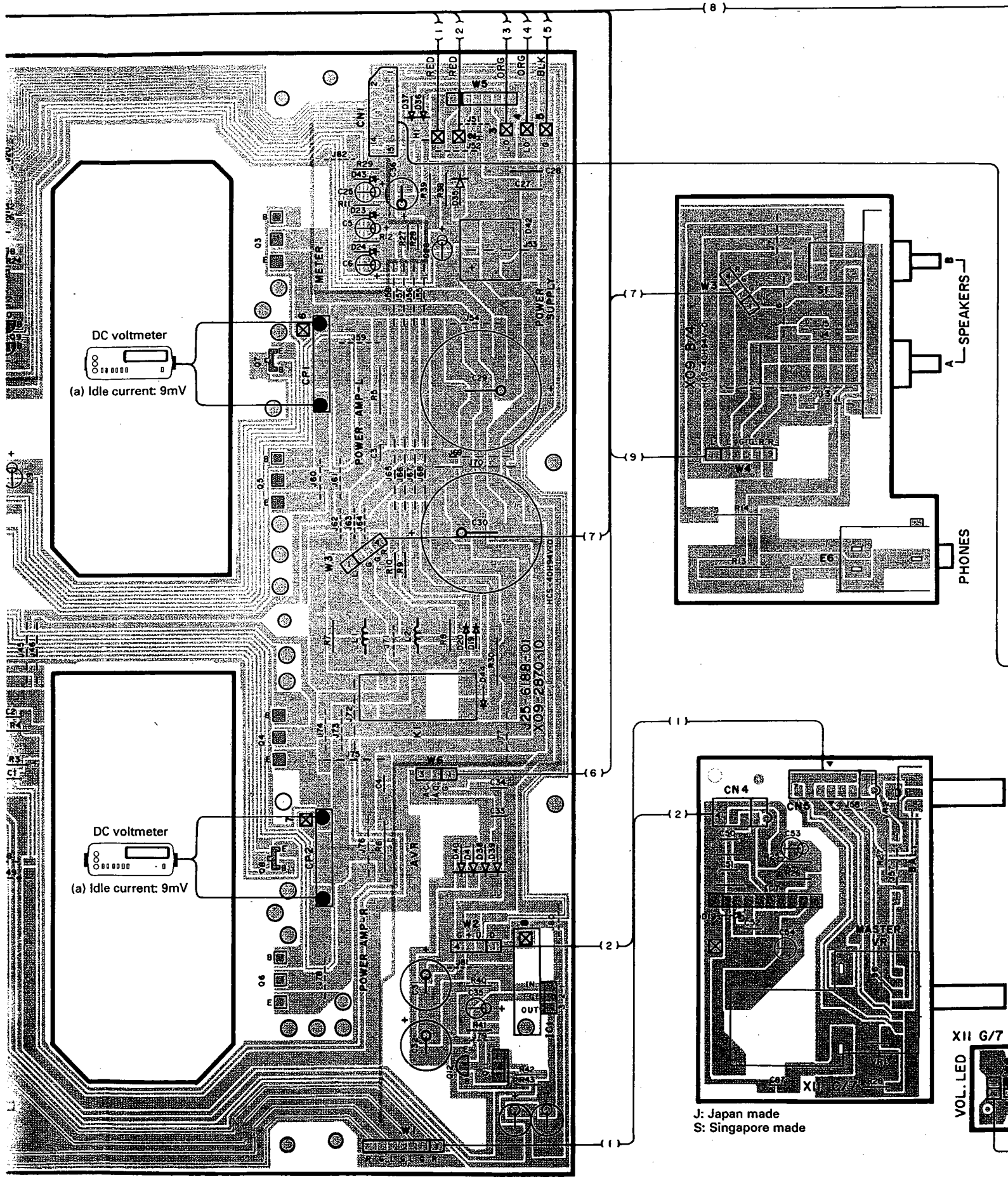


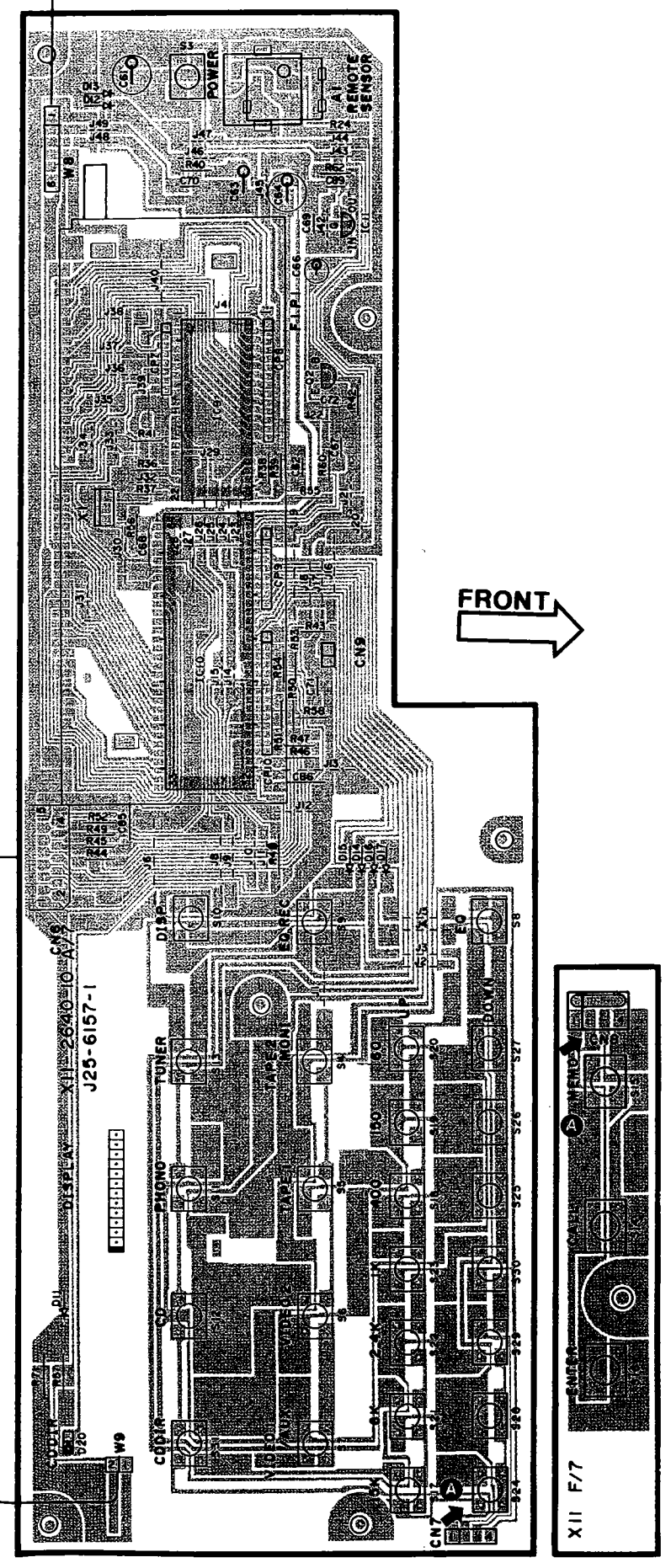


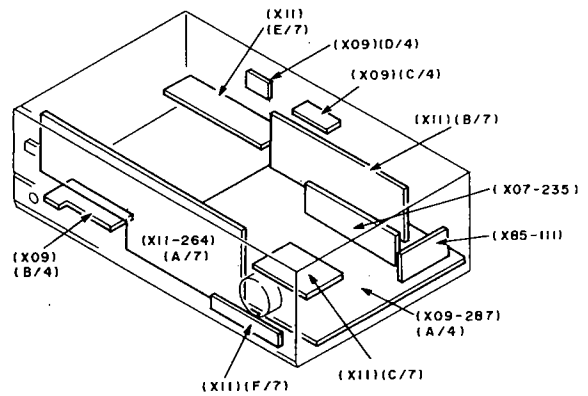












X11-264X-XX

IC1

1	–12V
28	12V

IC2

1	–12V
28	12V

IC3

18	12V
20	–12V

IC4

18	12V
20	–12V

IC5

1	6.8V
11~14	–6.8V
15	5V

IC6

1,2	0V
8	12V

IC7

2	UP:4.5V
4	5V
7,8	12V
10	DOWN:4.5V

IC8

O	5.7V
I	13V

IC9

42	5V

IC10

57	–30V

IC11

I	5V

X89-1020-13 (JAPAN MADE)
X07-2350-13 (SINGAPORE MADE)

C1

1~3	0V
4	2V
6	0.7V
7	2.2V
8	3.3V

	B	C	E
Q1,3	0V	3.3V	–0.7V
Q5,7	4V	11.8V	3.3V
Q9	11.8V	69.4V	11.2V
Q11	11.8V	70V	11.2V
Q13	69.4V	2.1V	70V
Q15	69.4V	1.2V	70V
Q17	–	–69.4V	0.6V
Q19	–69.4	–12V	–70V
Q21	–	–	0.6V
Q23	–	–	–0.6V
Q25	0V	72V	–
Q27	0V	–	0V
Q29	72V	–	–

X09-287X-XX

IC1

O	12V
I	24.8V

	B	C	E
Q3,4	–	72V (LOW:52V)	–
Q4,5	–	–72V (LOW:–52V)	
Q7	0.6V	1.2V	–1.2V
Q11	–	–24.8V	–12V

X85-1030-11 (JAPAN MADE)
X85-1110-10 (SINGAPORE MADE)

IC1

1	0V
4	–12V
7	0V

KA-128(K)

DT1 Ref No. / DESTINATION	R100
X85-1030-11 (JAPAN MADE)	22
X85-1110-10 (SINGAPORE MADE)	10

DT1
(X85-1030-11) JAPAN MADE
(X85-1110-10) SINGAPORE MADE

IC1 : NJM4565D-D or M5218P or μPC4570C-A

(X09-287X-XX)
(A/4)

	JAPAN MADE				SINGAPORE MADE			
	K,P	U,M,UE	X	E	K,P	U,M,UE	X	E
X09-287	0-11	0-22	2-72	2-72	0-10	0-21	2-71	2-71
X11-264	0-11	0-22	0-72	2-72	0-10	0-21	0-71	2-71
DT1	X85-1030-11				X85-1110-10			
DT2	X89-1020-13				X07-2350-13			

(X09-287X-XX)
IC1 : μPC78M12H

Q1,2 : 2SC2878(B)
Q3,4 : 2SC2921*5
Q5,6 : 2SA1215*5
Q7,8 : 2SC3419(Y)
Q9,10 : 2SC945(A)(Q,P) or 2SC1740S(Q,R)
Q11 : 2SB941(Q,P)
Q12~14 : 2SA733(A)(Q,P) or 2SA933S(Q,R)

D1~16 : MC931 or MA177
D19,20,44,49,50 : 1SS131 or HSS104A
D21,22,31~34,45~48 : 1SS133 or HSS104
D23,24,43 : RD4.7ES(B) or HZS4.7N(B)
D35~41 : S5566B
D42 : D5FB20*1

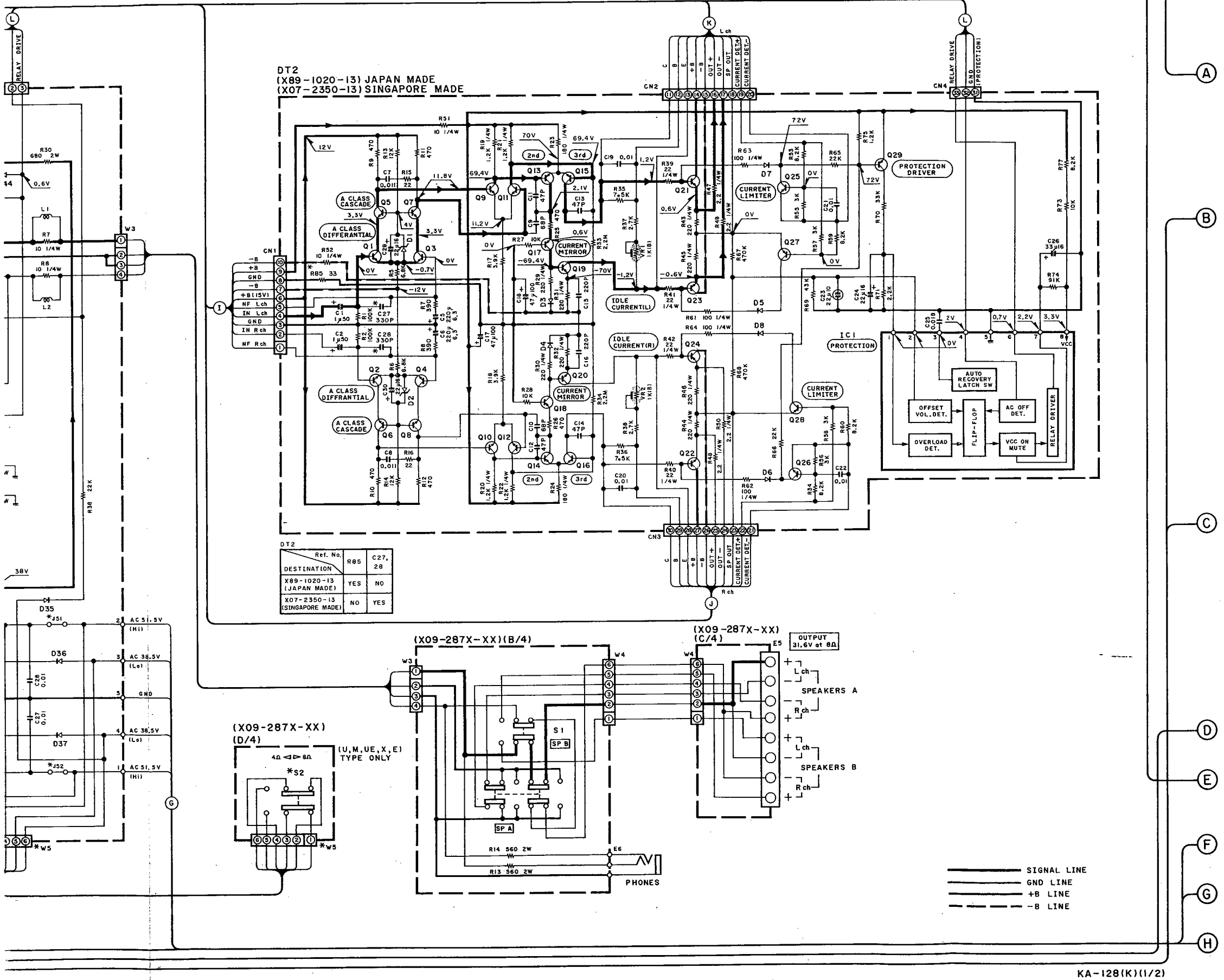
(DT2)
IC1 : μPC1237HA

Q1~4,9~12 : 2SC1845(F,E)
Q5~8
(JAPAN MADE) : 2SC945(A)(Q,P) or 2SC2320(E,F)
(SINGAPORE MADE) : 2SC945(A)(Q,P)
Q13~18 : 2SA1123(R,S)
Q19,20,25,26 : 2SC2631(R,S)
Q21,22 : 2SC3944(Q,R)
Q23,24 : 2SA1535(Q,R)
Q27,28 : 2SA1123(R,S)
Q29 : 2SA992(F,E)

D1,2
(JAPAN MADE) : RD5.1JS(B2) or HZS5.1S(B2)
(SINGAPORE MADE) : RD5.1ES(B2) or HZS5.1N(B2)
D3,4
(JAPAN MADE) : 1SS133 or 1SS176
(SINGAPORE MADE) : 1SS176
D5~8
(JAPAN MADE) : 1SS131 or 1SS178
(SINGAPORE MADE) : 1SS178

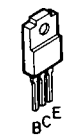
(X09-287X-XX) Ref No. / DESTINATION	S2	W5	J51, 52
0-11(0-10) K,P	NO	NO	YES
0-22(0-21) U,M,UE	YES	YES	NO
2-72(2-71) E,X	YES	YES	NO

( ): SINGAPORE MADE

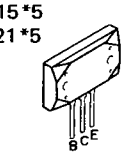


DT2 Ref. No. / DESTINATION	R85	C27, 28
X89-1020-13 (JAPAN MADE)	YES	NO
X07-2350-13 (SINGAPORE MADE)	NO	YES

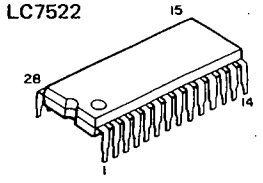
2SA1535
2SB941
2SC3944



2SA1215*5
2SC2921*5

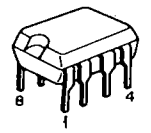


LC7522

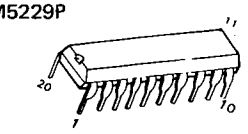


2SC3419

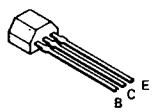
M5218P-A
NJM4565D-D
UPC4570C-A



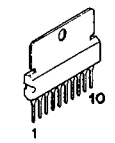
M5229P



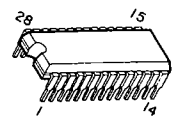
2SA933S
2SC1740S



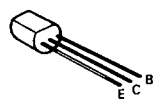
BA6109



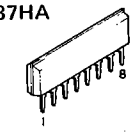
TC9163N
TC9164N



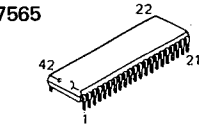
2SA1123 2SC2003
2SA733(A) 2SC2631
2SA992 2SC2878
2SC1845 2SC945(A)



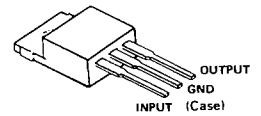
UPC1237HA



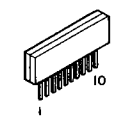
LC7565



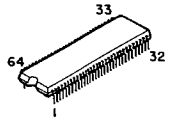
UPC78M12H
UPC7805H



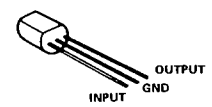
LB1641



CXP5014-328S



M51951ASL



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.

- 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. Voltmeter ohne Eingangssignal gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u.U. geringfügig.

Y08-3730-11

KA-128
KENWOOD

(X11-264X-XX)

IC1	: TC9163N	D7	: KBP02ML-6127
IC2	: TC9164N	D8,10	: S5566B
IC3,4	: M5229P	D9	: RD5.6ES(B2) or HZS5.6N(B2)
IC5	: LC7522	D18	: B30-1012-05
IC6	: μPC4570C-A	D20	: B30-1223-05
IC7	: LB1641 or BA6109	FL1	: FIP12AMW19
IC8	: μPC7805H	AI	: W02-7975-05 or W02-0776-05
IC9	: LC7565		
IC10	: CXP5014-328S		
IC11	: M5195IASL		
Q1	: 2SC2003(L,K)		
Q2	: 2SC945(A)(Q,P) or 2SC1740S(Q,R)		

D1,2,6,11~17 : 1SS133 or 1SS104
D3,4 : RD6.8ES(B2) or HZS6.8N(B2)
D5,19 : RD5.1ES(B2) or HZS5.1N(B2)

(U,M,UE) TYPE

(X11-2640-22/0-21)(E/7)

(X11-)(D/7)

W1 (RED)
W3 (YEL)
W2 (BLU)
S1
240V ◄► 120V
S2 120V
240V
C68 0.01
11 RED
12 ORG
13 WHT
W6
W4
F1 T6.3A
E3
F2 T3.15A
240V
120V
0V
E1 E2
W5
BRN
YEL
BLU
WHT
RED
T.F 150°C
120V
0V
(U) AC110~120V 50/60Hz
(M,UE) AC220~240V 50/60Hz

(E) TYPE

(X11-)(D/7)

(X11-2642-72/2-71)(E/7)

11 RED
12 ORG
13 WHT
W6
W4
F1 T3.15A
W10 BRN 6
T.F 150°C
220V
4
3 WHT
0V
E1 E2
BRN
W5
5
7
AC220V 50Hz

(X11-)(D/7)

(X11-2640-72/0-71)(E/7)

RED W6
ORG W4
WHT
F1 T3.1A
3
6 GRY
T.F 150°C
240V
4
3 WHT
0V
E1 E2
BRN
W5
AC240V 50Hz
(X)TYPE

(X11-264X-XX)(D/7)

(X11-2640-11/0-10)(E/7)

(K,P)TYPE

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.

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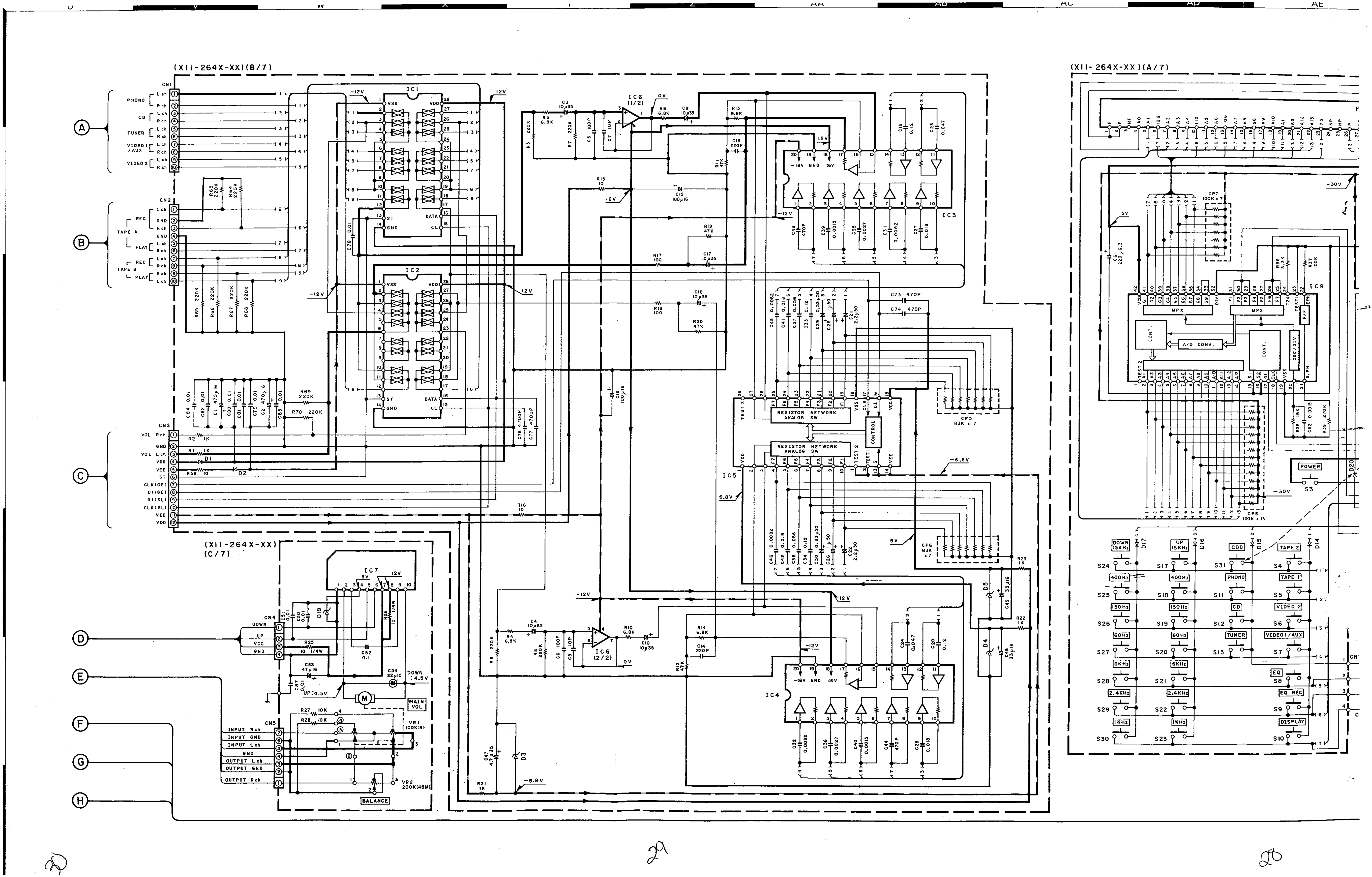
- Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance sans signal d'entrée. Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.
- Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen Voltmeter ohne Eingangssignal gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u.U. geringfügig.

SIGNAL LINE
GND LINE
+B LINE
-B LINE

KA-128(K)(2/2)

Y08-3730-11

KA-128
KENWOOD


(XII-264X-XX)(B/7)
(XII-264X-XX)(A/7)
(XII-264X-XX)
(C/7)
CN1
PHONO
CD
TUNER
VIDEO 1 /AUX
VIDEO 2
CN2
TAPE A
TAPE B
REC
PLAY
CN3
VOL Rch
VOL Lch
CN4
DOWN
UP
VCC
GND
CN5
INPUT Rch
INPUT GND
INPUT Lch
OUTPUT Lch
OUTPUT GND
OUTPUT Rch
IC1
IC2
IC3
IC4
IC5
IC6 (1/2)
IC6 (2/2)
IC7
IC9
RESISTOR NETWORK ANALOG SW
CONTROL
MPX
CONT.
A/D CONV.
OSC/DIV
F/F
MAIN VOL
BALANCE
VR1 100K(B)
VR2 200K(48M)
POWER
DOWN 15KHz
UP 15KHz
400Hz
150Hz
60Hz
6KHz
2.4KHz
1KHz
CDD
PHONO
CD
TUNER
TAPE 2
TAPE 1
VIDEO 2
VIDEO 1/AUX
EQ
EQ REC
DISPLAY