

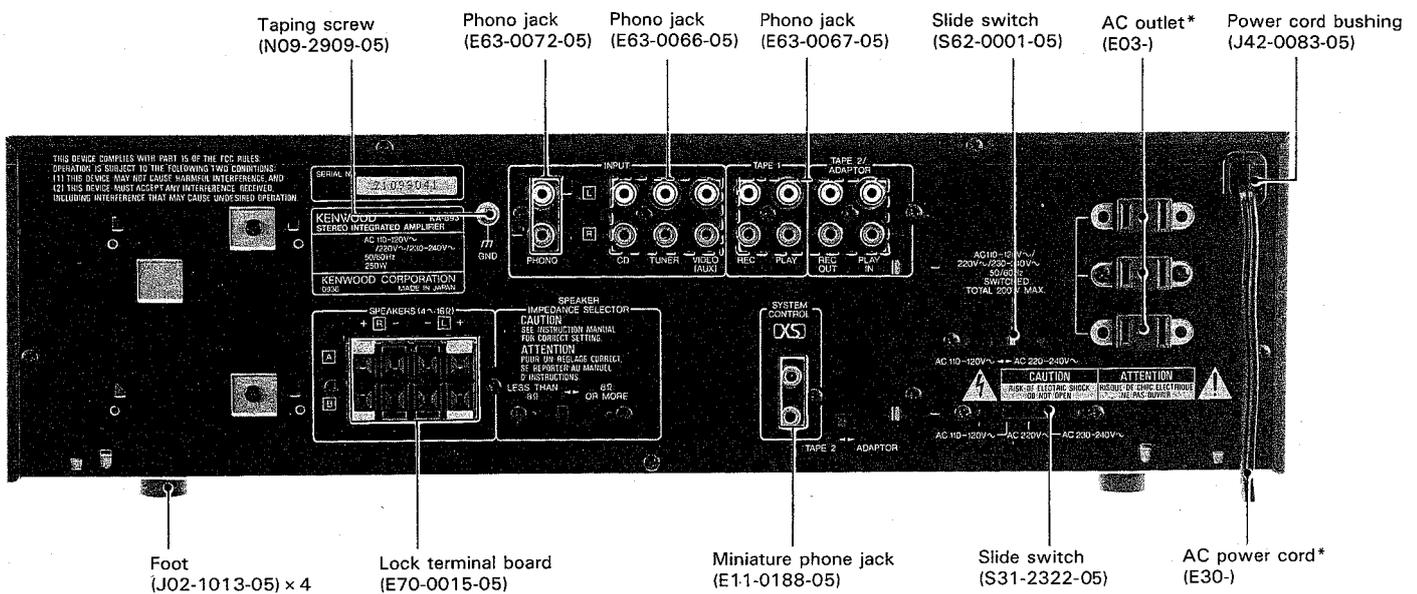
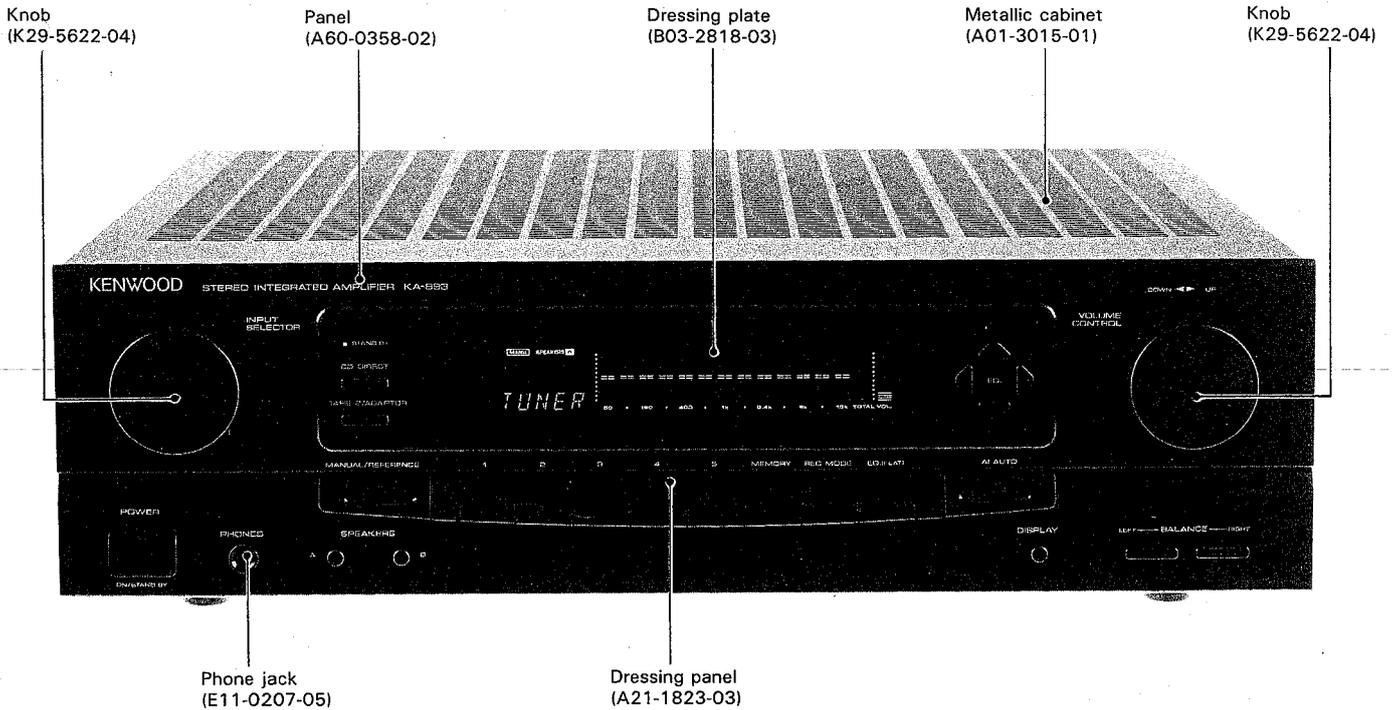
STEREO INTEGRATED AMPLIFIER

KA-893

SERVICE MANUAL

KENWOOD

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B51-4690-00 (S) 2365



* Refer to parts list on page 30.

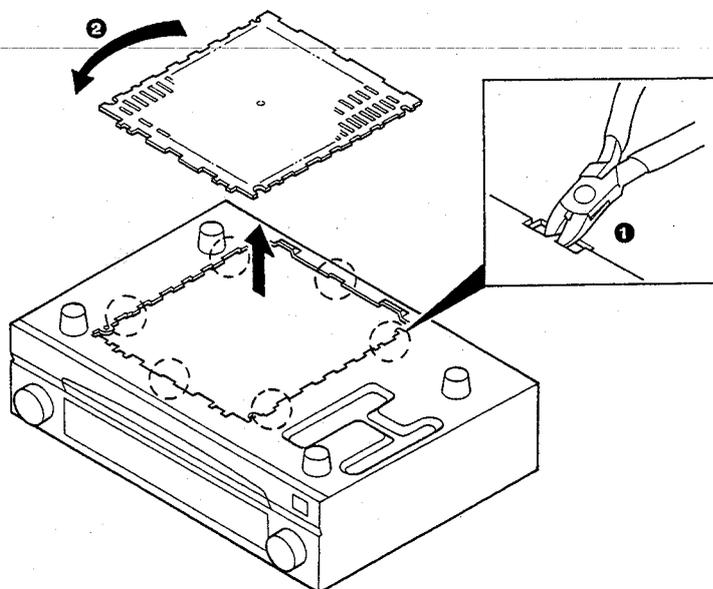
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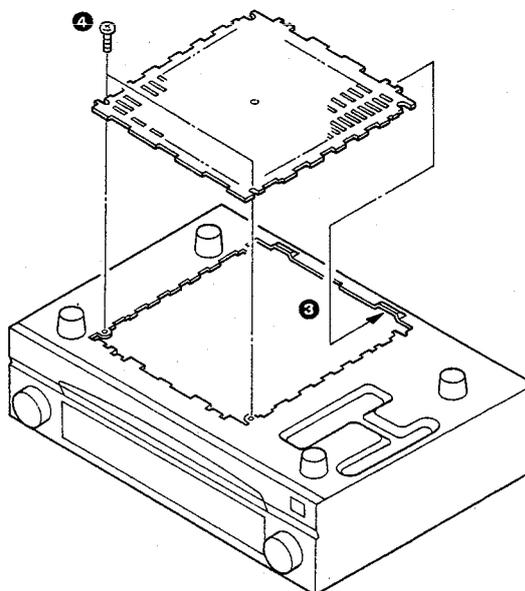
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DISASSEMBLY FOR REPAIR

1. Cut the 6 places with a pair of nippers. ❶.
2. Move the unit holder from the current position to the open mounting position.
3. Rotate the lid, which was cut off, by 180° degrees. ❷.



4. Insert the lids in the 2 places of the chassis (3), and mount them with the 6 screws (3 × 6) (4).



INSTRUCTION MANUAL

B60-1105-00

ENGLISH

B60-1106-00

FRENCH

P

CIRCUIT DESCRIPTION

TEST MODE

① To get in the TEST MODE

Plug the AC power cord in the wall outlet while pushing the FLAT key.

- ◇ All indications light up.

② To cancel the TEST MODE

Unplug the AC power cord from the wall outlet.

③ Operation during the TEST MODE

< 1 > The TEST MODE starts with all indications lit up and with POWER ON.

- ◇ The Light up state returns to the normal operation state when any key of the main unit is pushed.

< 2 > Check of the effectiveness of the keys of the main unit

- Cursor key

The cursor key is effective at any display mode.

- ◇ Level UP/DOWN operation
- ◇ Frequency UP/DOWN operation

< 3 > Check of the circuit operation by means of the keys of the main unit.

- Check of EQ ON/OFF

Carried out by means of the FLAT key.

- ◇ The EQ circuit is turned ON/OFF repeatedly.

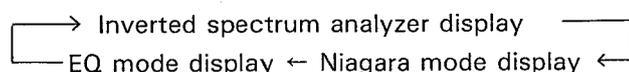
< 4 > EQ curve DATA

- The following results are obtained when the keys M1 to M3 are pushed.
 - ◇ M1 → EQ All bands at center level
 - ◇ M2 → EQ All bands at MAX level
 - ◇ M3 → EQ All bands at MIN level

< 5 > FL display mode switching

The display switches successively as shown below when the DISPLAY key is pushed.

◇



INITIAL SETTING

① Initial setting

- Plug the AC power cord in the wall outlet while pushing the POWER key.

- ◇ All memories are cleared.
- ◇ The backup operation is returned to the normal operation.

SERIAL TEST MODE

① To get in the SERIAL TEST MODE

Enter the TEST ON code (71).

② To cancel the SERIAL TEST MODE

Enter the TEST OFF code (70), unplug the AC power cord from the electrical outlet, or RESET the equipment.

- ◇ The operation returns from the test mode to the normal mode.

③ Operation during the SERIAL TEST MODE

- The following functions become ineffective during the test mode.

- ◇ Keys of the main unit, keys of the remote controller, ordinary serial codes.

- The same codes as the received ones are outputted.

- Output of the MUTE signal.

- ◇ The MUTE function does not work during the SERIAL TEST MODE. The operation of the MUTE function is checked with a specific code.

- Codes received during the SERIAL TEST MODE are effective irrespective of the display mode.

- The key entry inhibit state with 16-second duration is not available when the ADAPTER is turned ON/OFF.

- When the initial setting is carried out by means of the initial setting AMP (3F) and the initial setting GE (DF) code.

- ◇ SPEAKERS A/B turn OFF in response to software operation.

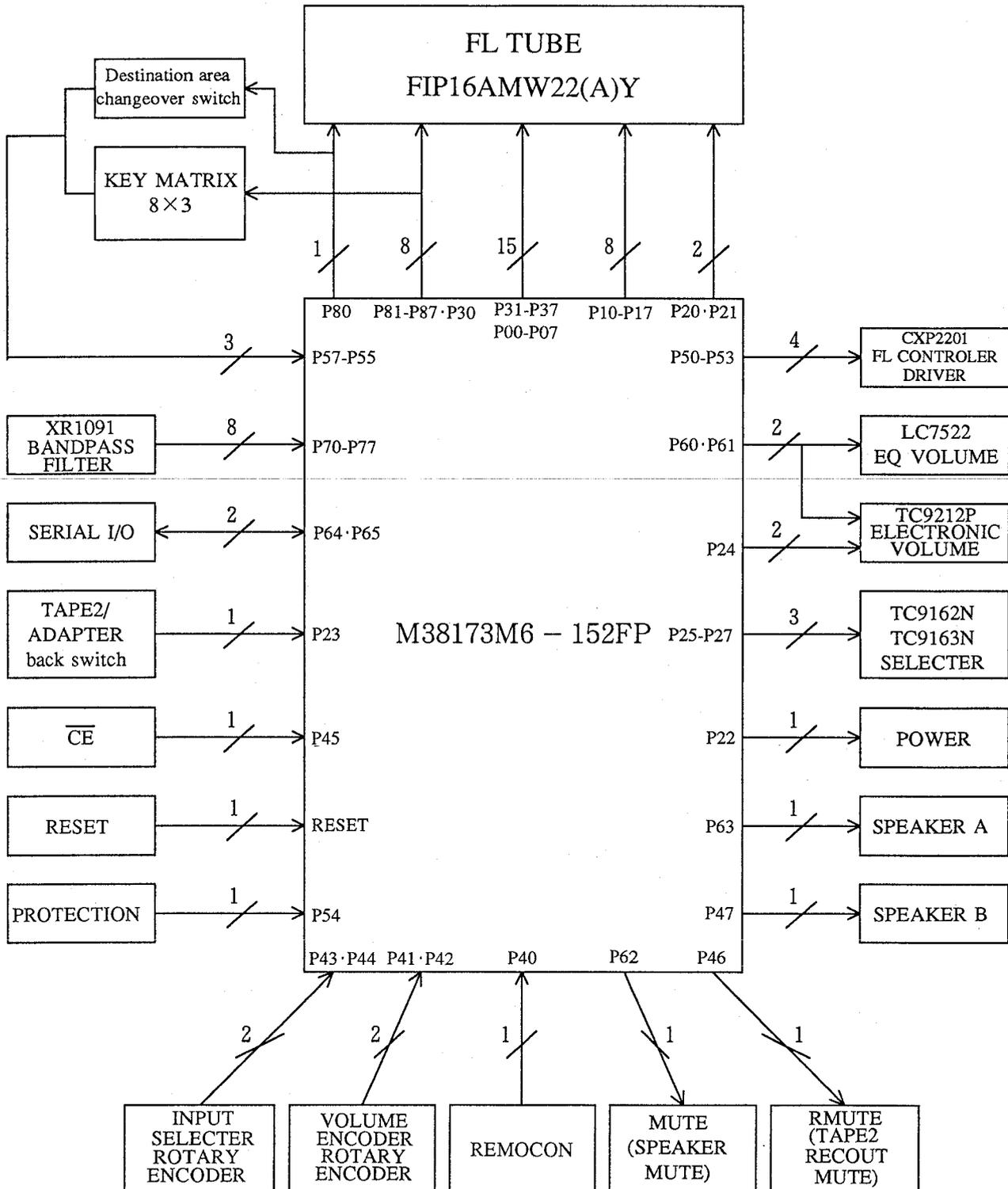
CIRCUIT DESCRIPTION

8 bit SERIAL TEST CODE

FUNCTION CODE	AMP										TUNER					SURROUND					GE				
	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E
0	POWER OFF	CD DIRECT OFF	SP B OFF		POWER OFF	0	MEMORY	TEST OFF	POWER OFF	REAR MUTE ON	ASFC MAX	ACUSTIC BGM	POWER OFF												
1	POWER ON	CD DIRECT ON	SP B ON		POWER ON	1	MAIN	TEST ON	POWER ON	MUTE ALL OFF	SEAT POS MIN	CINEMA SCREEN OFF	POWER ON												
2	PHONO	CD REC OFF	HIT MASTER OFF		MUTE OFF	2	SUB		BYPASS	CENTER LEVEL MIN	SEAT POS MID	CINEMA SCREEN 1	MUTE OFF												
3	CD	CD REC ON	HIT MASTER ON		MUTE ON	3	BOTH		DOLBY SUR-ROUND	CENTER LEVEL MID	SEAT POS MAX	CINEMA SCREEN 2	MUTE ON												
4	TUNER	SOURCE DIRECT OFF	MOTOR VOL UP		AUTO STEREO	4			DOLBY 3 STEREO	CENTER LEVEL MAX	WALL MIN	CINEMA SCREEN 3	EQ OFF												
5	TAPE 1 (TAPE A)	SOURCE DIRECT ON	MOTOR VOL DOWN		MONO	5			DSP	REAR LEVEL MIN	WALL MID	CH.MODE 2	EQ ON												
6	TAPE 2 (TAPE B)	LINE STRAIGHT OFF	MOTOR VOL STOP		TUNED OFF	6			DSP LOGIC	REAR LEVEL MID	WALL MAX	CH.MODE 3	M1 (ALL MID)												
7	AUX	LINE STRAIGHT ON	DBS/TV		TUNED ON	7			S.4CH	REAR LEVEL MAX	ROOM SIZE MIN	CH.MODE 4	M2 (ALL MAX)												
8	DAT	LOUDNESS OFF	VR 0dB		A.R OFF	8			F.4CH	DILAY TIME MIN	ROOM SIZE MID	CH.MODE 5	M3 (ALL MIN)												
9	VIDEO 1 (VIDEO)	LOUDNESS ON	-20dB		A.R ON	9			CENTER MODE NORMAL	DILAY TIME MID	ROOM SIZE MAX														
A	VIDEO 2	SUB SONIC OFF	-30dB		RF DIRECT	+10			CENTER MODE WIDE	DILAY TIME MAX	STEREO (KARAOKE)														
B	VIDEO 3	SUB SONIC ON	-70dB		RF DISTANCE	BAND FM			CENTER MODE PHANTOM	PRESENCE LEVE (EFFECT)MIN	MULTI (KARAOKE)														
C	VDP	S WOOFER OFF	∞		IF WIDE	BAND AM/MW			TEST TONE OFF	PRESENCE LEVE (EFFECT)MID	HIFI MULTI (KARAOKE)														
D	MUTE ON	S WOOFER ON	BALANCE L	ALL LIGHT UP ON	IF NORMAL	BAND TV/LW			TEST TONE ON	PRESENCE LEVE (EFFECT)MAX	NORMAL (KARAOKE)														ALL LIGHT UP ON
E	SELMUTE ON (SP A OFF)	SP OFF (SP A OFF)	BALANCE C	ALL LIGHT UP OFF	IF NARROW	DOWN			FRONT MUTE ON	ASFC MIN	ACUSTIC NON DIRE 1														ALL LIGHT UP OFF
F	MUTE ALL OFF	SP ON (SP A ON)	BALANCE R	INITIAL SETTING (AMP)	DIRECT	UP			CENTER MUTE ON	ASFC MID	ACUSTIC NON DIRE 2	INITIAL SETTING (SURROUND)													INITIAL SETTING (GE)

CIRCUIT DESCRIPTION

MICROPROCESSOR PERIPHERY BLOCK DIAGRAM



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CIRCUIT DESCRIPTION

KEY MATRIX

	KR0	KR1	KR2		
(A1) KSINI	—	KA/ \overline{KC}	—	P80/SEG0	72
(A2) KS0	POWER	CD DIRECT	TAPE2·ADAPTOR ON/OFF	P81/SEG1	71
(A3) KS1	MR3	MR5	MR4	P82/SEG2	70
(A4) KS2	—	SPEAKER B	SPEAKER A	P83/SEG3	69
(A5) KS3	M/R	MR1	MR2	P84/SEG4	68
(A6) KS4	$\nabla L-$	$\nabla f-$	$\Delta L+$	P85/SEG5	67
(A7) KS5	$\Delta f+$	BALANCE L	BALANCE R	P86/SEG6	66
(A8) KS6	AI AUTO	—	DISPLAY	P87/SEG7	65
(A9) KS7	MEMORY	REC MODE	FLAT	P30/SEG8	64
	P55/SOUT2	P56/SCLK2	P57/ $\overline{SRDY2}$		
	7	6	5		

DESTINATION AREA CHANGEOVER

The destination area is changed over by outputting the SCAN signal from the KSINI (pin # 72) terminal, and by reading the setting of the destination area by means of the KR1 (pin # 56) via diode switch.

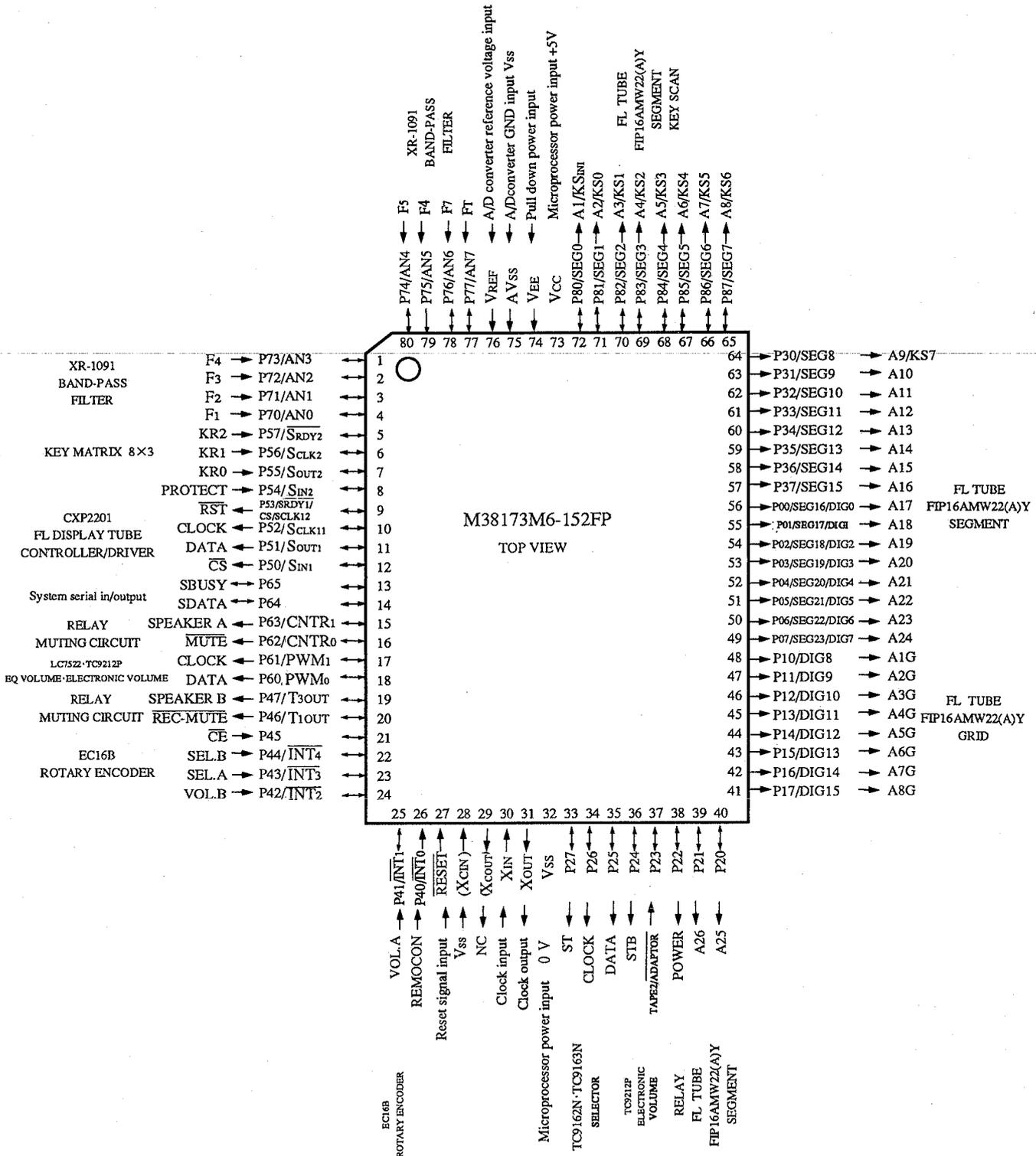
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SPEAKER A/B Changeover, no POWER INDICATOR indication, no INPUT SELECTOR VIDEO2.

INPUT SELECTOR VIDEO indication: VIDEO

CIRCUIT DESCRIPTION

MICRO PROCESSOR μ 38173M6-152FP X11 (IC1)
PIN LAYOUT



CIRCUIT DESCRIPTION

Pin description

Pin No.	Pin Name	I/O	Name	Description
1	P73/AN3	I	F ₄	1.0kHz Analog signal input (Signal entered directly from filter circuit)
2	P72/AN2	I	F ₃	400Hz Analog signal input (Signal entered directly from filter circuit)
3	P71/AN1	I	F ₂	150Hz Analog signal input (Signal entered directly from filter circuit)
4	P70/AN0	I	F ₁	60 Hz Analog signal input (Signal entered directly from filter circuit)
5	P57/ $\overline{\text{SRDY2}}$	I	KR2	KEY RETURN Signal input H: on L: off
6	P56/SCLK2	I	KR1	KEY RETURN Signal input H: on L: off
7	P55/SOUT2	I	KR0	KEY RETURN Signal input H: on L: off
8	P54/SIN2	I	PROTECT	PROTECTION control signal input H: on L: off
9	P53/ $\overline{\text{SRDY1}}$ / CS/SCLK12	O	$\overline{\text{RST}}$	Output of $\overline{\text{RST}}$ signal for control of FL tube CONTROLLER/DRIVER CXP2201
10	P52/SCLK11	O	CLOCK	Output of CLOCK signal for control of FL tube CONTROLLER/DRIVER CXP2201
11	P51/SOUT1	O	DATA	Output of DATA signal for control of FL tube CONTROLLER/DRIVER CXP2201
12	P50/SIN1	O	$\overline{\text{CS}}$	Output of $\overline{\text{CS}}$ signal for control of FL tube CONTROLLER/DRIVER CXP2201
13	P65	I/O	SBUSY	System serial BUSY signal input/output
14	P64	I/O	SDATA	System serial DATA signal input/output
15	P63/CNTR ₁	O	SPEAKER A	SPEAKER A RELAY Control signal output H: on L: off
16	P62/CNTR ₀	O	$\overline{\text{MUTE}}$	MUTING circuit control signal output H: on L: off
17	P61/PWM ₁	O	CLOCK	Output of CLOCK signal for control of graphic equalizer electronic VR LC7522 Output of CLOCK signal for control of AMP MAIN electronic VOLUME PC9212P
18	P60/PWM ₀	O	DATA	Output of DATA signal for control of graphic equalizer electronic VR LC7522 Output of DATA signal for control of AMP MAIN electronic VOLUME PC9212P
19	P47/T ₃ OUT	O	SPEAKER B	SPEAKER B RELAY control signal output H: on L: off
20	P46/T ₁ OUT	O	$\overline{\text{REC-MUTE}}$	TAPE2 REC-MUTING circuit control signal output H: on L: off
21	P45	I	$\overline{\text{CE}}$	BACK UP detection H: others L: backing up
22	P44/ $\overline{\text{INT4}}$	I	SELECTOR B	Input of ROTARY ENCODER EC16B PHASE B signal for INPUT SELECTOR
23	P43/ $\overline{\text{INT3}}$	I	SELECTOR A	Input of ROTARY ENCODER EC16B PHASE A signal for INPUT SELECTOR
24	P42/ $\overline{\text{INT2}}$	I	VOLUME B	Input of ROTARY ENCODER EC16B PHASE B signal for VOLUME
25	P41/ $\overline{\text{INT1}}$	I	VOLUME B	Input of ROTARY ENCODER EC16B PHASE B signal for VOLUME
26	P40/ $\overline{\text{INT0}}$	I	REMOCON	REMOTE CONTROLLER signal input
27	$\overline{\text{RESET}}$	I	$\overline{\text{RESET}}$	RESET signal detection H: others L: reset
28	X _{CIN}	I	V _{SS}	Unused (Clock input terminal)
29	X _{COU}	O	NC	Unused (Clock output terminal)
30	X _{IN}	I	X _{IN}	System clock input (6.3 MHz ceralock)

CIRCUIT DESCRIPTION

Pin description

Pin No.	Pin Name	I/O	Name	Description
31	XOUT	O	XOUT	System clock output (63 MHz crystal)
32	V _{SS}			GND
33	P27	O	ST	Output of STROBE signal for control of SELECTOR TC9126N·TC9163N
34	P26	O	CLOCK	Output of CLOCK signal for control of SELECTOR TC9126N·TC9163N
35	P25	O	DATA	Output of DATA signal for control of SELECTOR TC9126N·TC9163N
36	P24	O	STB	Output of STROBE signal for control of AMP MAIN electronic VOLUME TC9212P
37	P23	I	TAPE2/ ADAPTOR	Detection of rear side TAPE2/ADAPTER SW H: TAPE2 L: ADAPTOR
38	P22	O	POWER	POWER RELAY control signal output H: on L: off
39	P21	O	A26	FL tube segment A26 (pin # 76) driving signal output H: on L: off
40	P20	O	A25	FL tube segment A25 (pin # 75) driving signal output H: on L: off
41	P17/DIG15	O	A8G	FL tube grid A8G (pin # 72) driving signal output H: on L: off
42	P16/DIG14	O	A7G	FL tube grid A7G (pin # 71) driving signal output H: on L: off
43	P15/DIG13	O	A6G	FL tube grid A6G (pin # 70) driving signal output H: on L: off
44	P14/DIG12	O	A5G	FL tube grid A5G (pin # 69) driving signal output H: on L: off
45	P13/DIG11	O	A4G	FL tube grid A4G (pin # 68) driving signal output H: on L: off
46	P12/DIG10	O	A3G	FL tube grid A3G (pin # 67) driving signal output H: on L: off
47	P11/DIG9	O	A2G	FL tube grid A2G (pin # 66) driving signal output H: on L: off
48	P10/DIG8	O	A1G	FL tube grid A1G (pin # 65) driving signal output H: on L: off
49	P07/ SEG23/DIG7	O	A24	FL tube grid A24 (pin # 62) driving signal output H: on L: off
50	P06/ SEG22/DIG6	O	A23	FL tube grid A23 (pin # 61) driving signal output H: on L: off
51	P05/ SEG21/DIG5	O	A22	FL tube grid A22 (pin # 60) driving signal output H: on L: off
52	P04/ SEG20/DIG4	O	A21	FL tube grid A21 (pin # 59) driving signal output H: on L: off
53	P03/ SEG19/DIG3	O	A20	FL tube grid A20 (pin # 58) driving signal output H: on L: off
54	P02/ SEG18/DIG2	O	A19	FL tube grid A19 (pin # 57) driving signal output H: on L: off
55	P01/ SEG17/DIG1	O	A18	FL tube grid A18 (pin # 56) driving signal output H: on L: off
56	P00/ SEG16/DIG0	O	A17	FL tube grid A17 (pin # 55) driving signal output H: on L: off

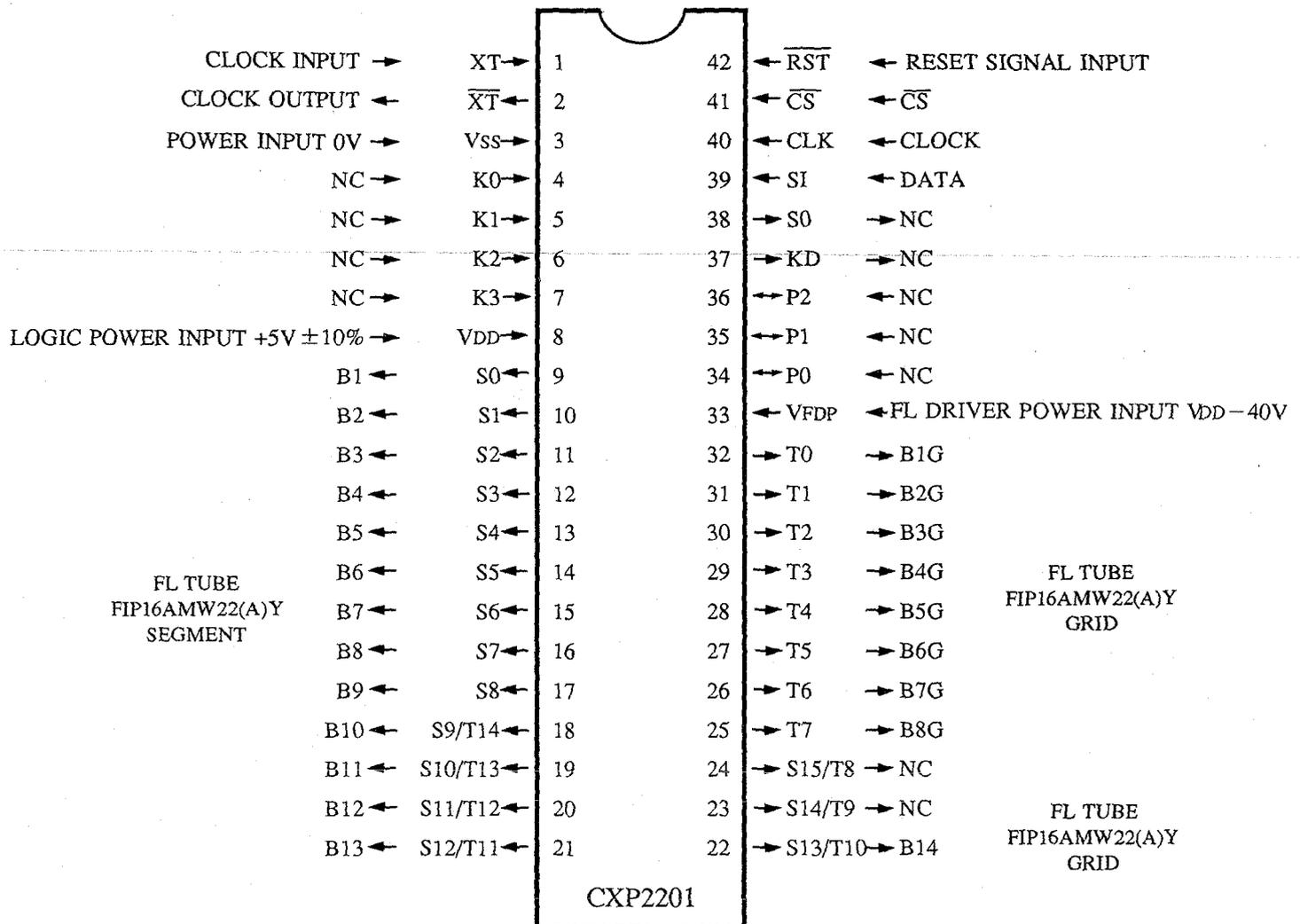
CIRCUIT DESCRIPTION

Pin description

Pin No.	Pin Name	I/O	Name	Description	
57	P37/ SEG15	O	A16	FL tube grid A16 (pin #54) driving signal output	H: on L: off
58	P36/SEG14	O	A15	FL tube grid A15 (pin #53) driving signal output	H: on L: off
59	P35/SEG13	O	A14	FL tube grid A14 (pin #52) driving signal output	H: on L: off
60	P34/SEG12	O	A13	FL tube grid A13 (pin #51) driving signal output	H: on L: off
61	P33/SEG11	O	A12	FL tube grid A12 (pin #50) driving signal output	H: on L: off
62	P32/SEG10	O	A11	FL tube grid A11 (pin #49) driving signal output	H: on L: off
63	P31/SEG9	O	A10	FL tube grid A10 (pin #48) driving signal output	H: on L: off
64	P30/SEG8	O	A9/KS7	FL tube grid A09 (pin #47) driving signal output KEY SCAN 7 signal out put	H: on L: off
65	P87/SEG7	O	A8/KS6	FL tube grid A08 (pin #46) driving signal output KEY SCAN 6 signal out put	H: on L: off
66	P86/SEG6	O	A7/KS5	FL tube grid A07 (pin #45) driving signal output KEY SCAN 5 signal out put	H: on L: off
67	P85/SEG5	O	A6/KS4	FL tube grid A06 (pin #44) driving signal output KEY SCAN 4 signal out put	H: on L: off
68	P84/SEG4	O	A5/KS3	FL tube grid A05 (pin #43) driving signal output KEY SCAN 3 signal out put	H: on L: off
69	P83/SEG3	O	A4/KS2	FL tube grid A04 (pin #42) driving signal output KEY SCAN 2 signal out put	H: on L: off
70	P82/SEG2	O	A3/KS1	FL tube grid A03 (pin #41) driving signal output KEY SCAN 1 signal out put	H: on L: off
71	P81/SEG1	O	A2/KS0	FL tube grid A02 (pin #40) driving signal output KEY SCAN 0 signal out put	H: on L: off
72	P80/SEG0	O	A1/KS _{INI}	FL tube grid A01 (pin #39) driving signal output KEY SCAN INI signal out put	H: on L: off
73	V _{CC}	I	V _{CC}	Microprocessor power input +5 V ± 10%	
74	V _{EE}	I	V _{EE}	PULL DOWN power input -30V	
75	AV _{SS}	I	AV _{SS}	A/D converter GND input V _{SS}	
76	V _{REF}	I	V _{REF}	A/D converter reference voltage input +5V	
77	P77/AN7	I	F _T	TOTAL analog signal input (Signal entered directly from filter circuit)	
78	P76/AN6	I	F ₇	15 kHz analog signal input (Signal entered directly from filter circuit)	
79	P75/AN5	I	F ₆	6.0 kHz analog signal input (Signal entered directly from filter circuit)	
80	P74/AN4	I	F ₅	2.4 kHz analog signal input (Signal entered directly from filter circuit)	

CIRCUIT DESCRIPTION

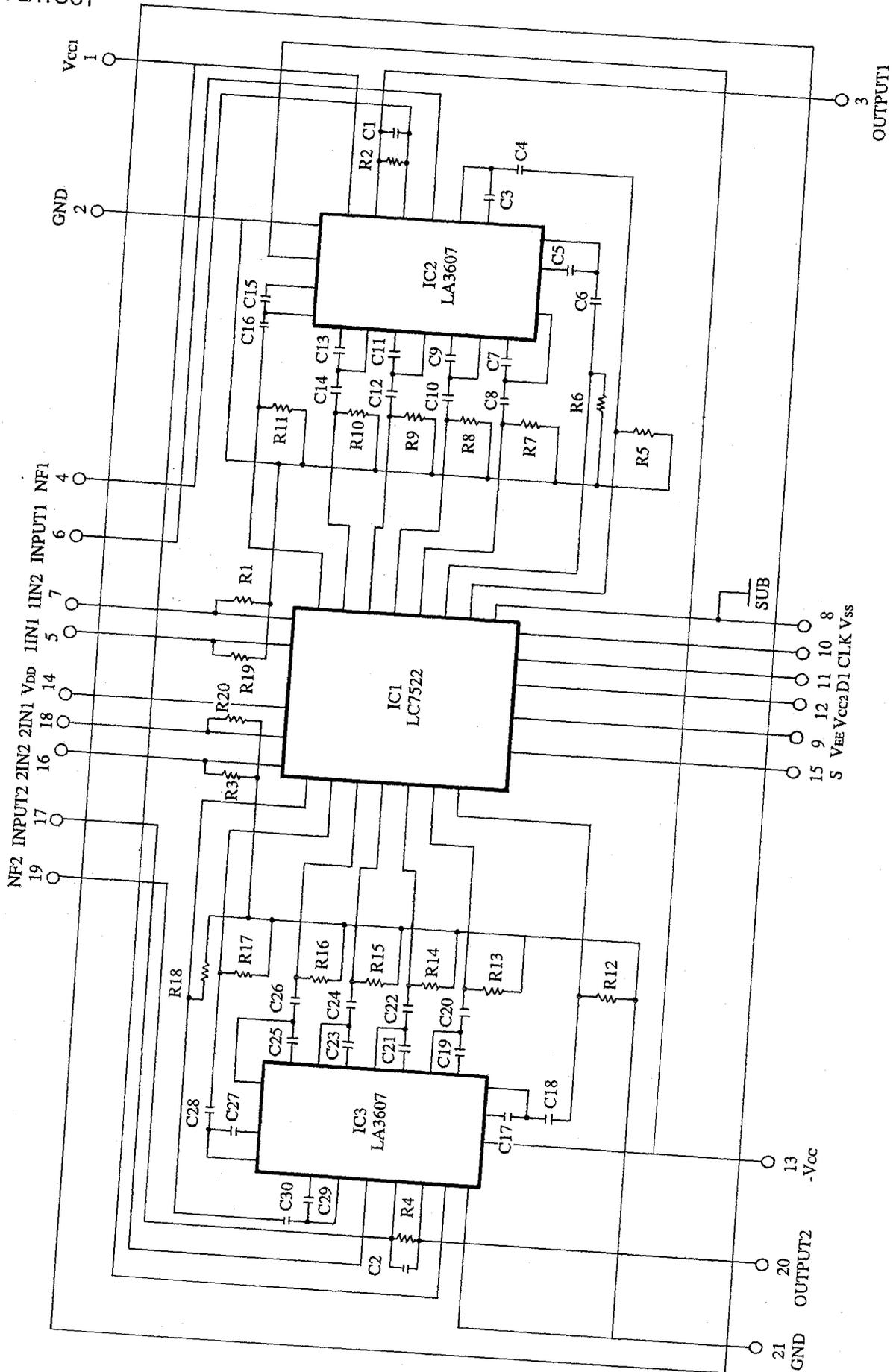
I/O PROCESSOR (FL DRIVE) CXP2201 X11(IC2)
PIN LAYOUT



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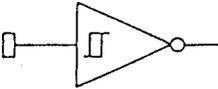
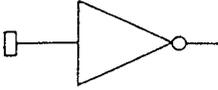
CIRCUIT DIAGRAM

ELECTRICAL GRAPHIC EQUALIZER IC
STK301-090 X11(IC11)
PIN LAYOUT



CIRCUIT DIAGRAM

Pin description

Pin No.	Pin Name	Description	
1	+Vcc1	Power supply terminal: (+) Power supply of graphic equalizer IC2 and IC3.	
2, 21	DC	1/2 Vcc1 of graphic equalizer IC. Terminal for decoupling capacitor. Influence of the power supply is prone to occur, and ripple and other problems occur with ease when it is made too small.	
3	OUTPUT1	Output terminal 1	
4	NF1	Inverted input of the OP Amp. with built-in graphic equalizer IC2.	
5	1IN1	Audio signal input 1 of electronic volume IC1 (For INPUT1)	
6	INPUT1	Input terminal 1. The input impedance is approximately 60K-Ohm (1 KHz, flat)	
7	1IN2	Audio signal input 2 of electronic volume IC1 (For INPUT 2)	
8	Vss	Power supply terminal. Connected with GND	
9	V $\Sigma\Sigma$	Power supply terminal. Power supply for audio signal of electronic volume unit. Connected with Vss when using one-side power supply.	
10	CLK		Terminal to enter data from CPU. Schmitt inverter type.
11	DI		Terminal to enter clock from CPU. Schmitt inverter type.
12	+Vcc2	Power supply terminal. +5V typ. Care must be taken for Vcc2 not to build up before Voo.	
13	GND (-Vcc1)	Power supply terminal. GND of graphic equalizer IC2 and IC3 (-power supply)	
14	VDD	Power supply terminal. Power supply for audio signals of electronic volume unit.	
15	S		Select terminal when using 2IC. Connected to key code 7C3 → VDD when "1" is entered. Connected to key code 7C2 → Vxx when "0" is entered.
16	2IN2	Audio signal input 1 of electronic volume IC1 (For INPUT 2)	
17	INPUT 2	Input terminal 2. The input impedance is approximately 60K-Ohm (1KHz, flat)	
18	2IN1	Audio signal input 2 of electronic volume IC1 (For INPUT 2)	
19	NF1	Inverted input of OP Amp with built-in graphic equalizer IC3.	
20	OUTPUT2	Output terminal 2	

Note 1: As for the terminals of LC7522 or LC7523, that are not directly available as pins of hybrid IC, refer to the specifications of LC7522 or LC7523.

ADJUSTMENT/REGLAGES/ABGLEICH

ADJUSTMENT

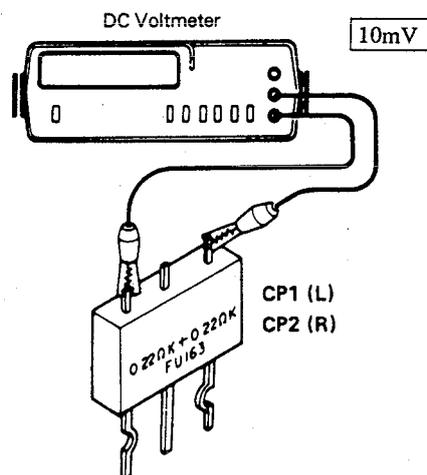
No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	AMPLIFIER SETTING	ALIGNMENT POINTS	ALIGN FOR	FIG.
Unless otherwise specified, set the respective switches as follows: POWER: ON SPEAKER: B REC OUT: OFF SELECTOR: PHONO							
1	IDLE CURRENT	-	Connect a DC voltmeter across CP1 (L) CP2 (R) (X09-)	VOLUME: 0	VR1 (L) VR2 (R) (X09-)	10mV	(a)

REGLAGES

N	ITEM	REGLAGE DE L'ENTREE	REGLAGE DE LA SORTIE	REGLAGE DE L'AMPLIFICATEUR	POINTS DE L'ALIGNEMENT	ALIGNER POUR	FIG.
Sauf indication contraire, régler comme suit les commandes respectives: POWER: ON SPEAKER: B REC OUT: OFF SELECTOR: PHONO							
1	COURANT DE POLARISATION	-	Connecter un voltmètre de CC SUR CP1 (G) CP2 (D) (X09-)	VOLUME: 0	VR1 (G) VR2 (D) (X09-)	10mV	(a)

ABGLEICH

NR.	GENGENSTAND	EINGANGS-EINSTELLUNG	AUSANG-EINSTELLUNG	VORSTÄRKER-EINSTELLUNG	ABGLEICHE-PUNKTE	ABGLEICHEN FÜR	ABB.
Wenn nicht anders angegeben, die einzelnen Schalter wie folgt einstellen: POWER: ON SPEAKER: B REC OUT: OFF SELECTOR: PHONO							
1	LEERLAUFSTROM	-	Einen Gleichspannungsmesser über CP1 (L) CP2 (R) anschließen. (X09-)	VOLUME: 0	VR1 (L) VR2 (R) (X09-)	10mV	(a)



(a)

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NAME AND OPERATION OF CONTROL

REMOTE CONTROL ASSY UNIT : X94-1030-00

BATTERY COVER : A09-0140-03

LEARN/TRANSMIT indicator

LEARN : Blinks or lights steadily during programming procedure.

TRANSMIT: Lights up while the remote control signal is being transmitted.

LEARN/USE switch

Normally set to the USE position. Set to the LEARN position when programming remote control signal.

Cassette tape deck/video deck operation keys

The TAPE A and TAPE B keys allow to operate a double cassette tape deck. When using a single cassette tape deck, use the TAPE B keys. A video deck can also be operated by programming the control signals of a video deck in the VIDEO mode.

CD player keys

Operate the CD player.
DISC: The DISC key can be used the disc selector key of a multi-disc player with a disc changer. For details, read the instruction manual provided with the CD player.

TUNER operation keys

BAND: Switches the bands.
P. CALL: Select the preset stations.

Input selector keys

Switch the input selector on the amplifier.

MODE switch

Selects the mode to be used.

Numeric keys

When the CD source is selected, these keys can be used as the numeric keys of the CD player.

When the TUNER source is selected, they can be used as the numeric keys of the tuner.

How to enter numerals:

For 23, press $\left[\text{+10} \right]$, $\left[\text{+10} \right]$, $\left[3 \right]$.
For 40, press $\left[\text{+10} \right]$, $\left[\text{+10} \right]$, $\left[\text{+10} \right]$, $\left[\text{+10} \right]$, $\left[0 \right]$.

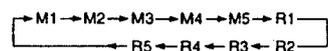
Surround processor operation keys

Operate the surround processor SS-992 or SS-592.

Amplifier's equalizer operation keys

AI AUTO: Turns the AI equalizer ON and OFF.

M. CALL: Recalls equalizer patterns stored in memory.



EQ EFFECT: Turns the graphic equalizer effect ON and OFF.

VOLUME CONTROL keys

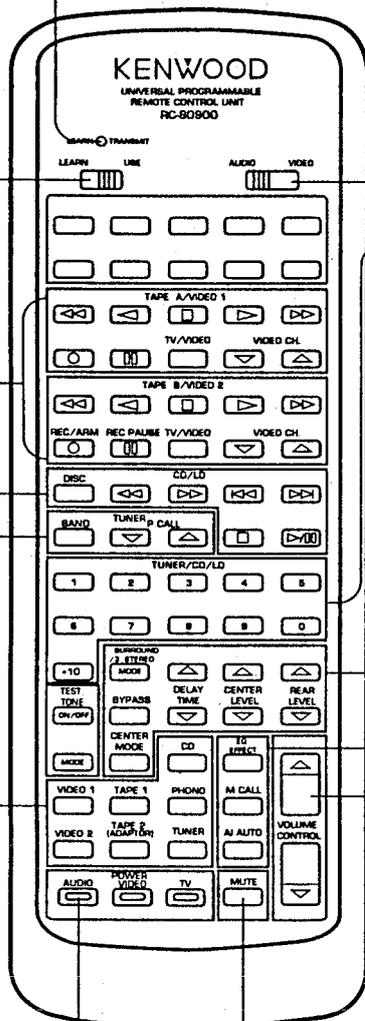
Adjust the volume level of this unit and the surround processor SS-992 or SS-592.

Power key

Turn the power of components ON/OFF.

MUTE key

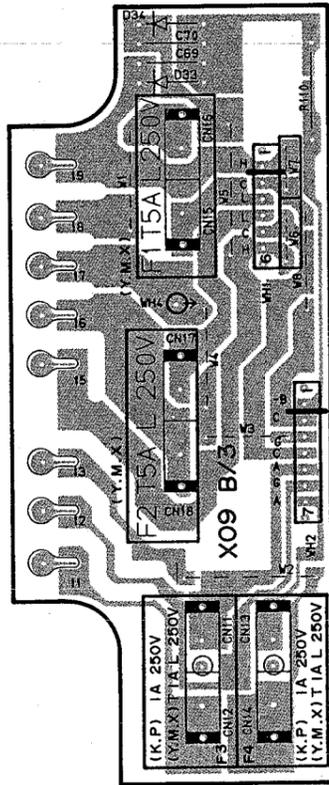
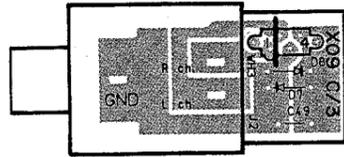
Press to mute the volume temporarily.



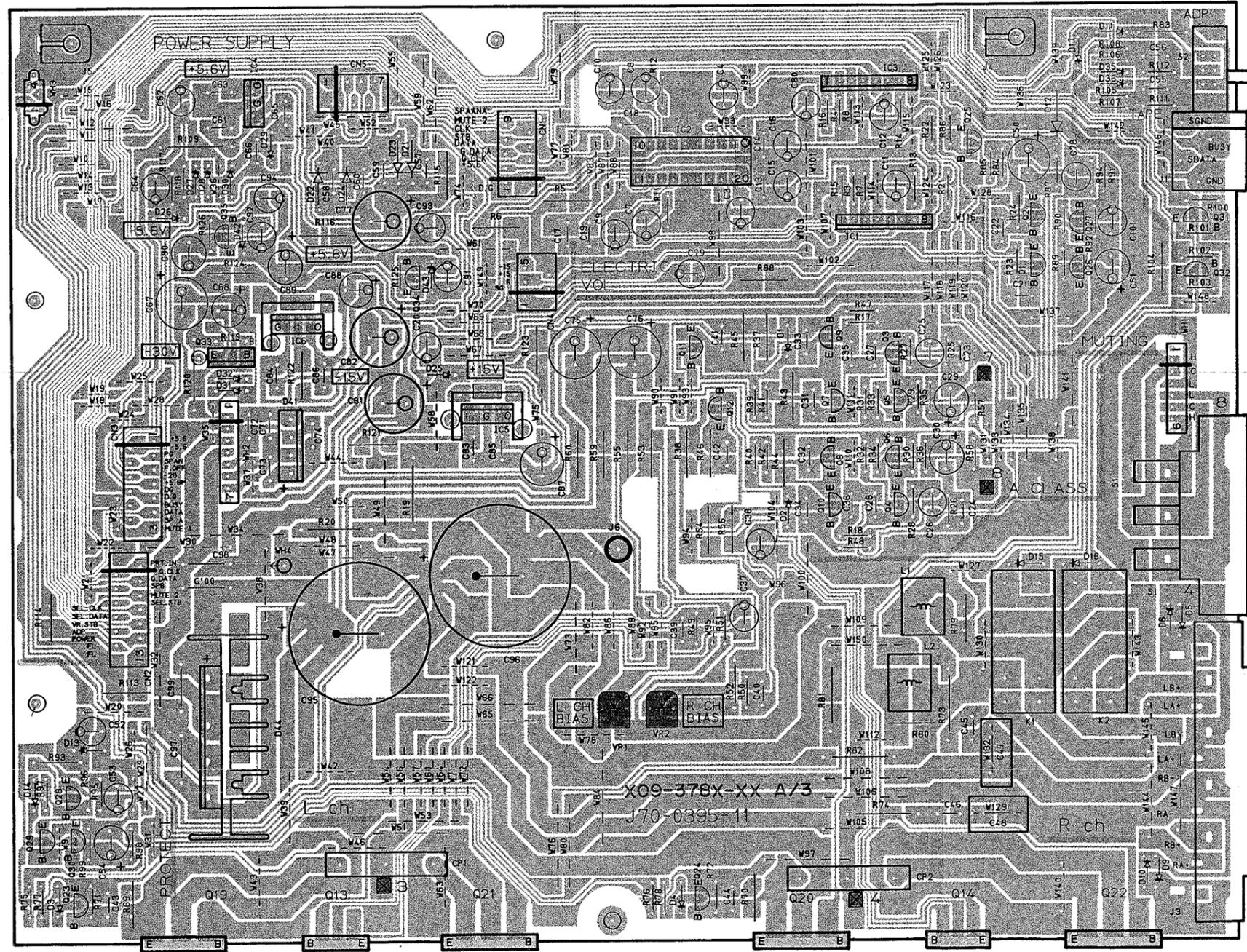
PC BOARD (Component side view)

AUDIO UNIT (X09-3780-10:K,0-21(S):Y,M,X, 0-22(J):M,Y,1-01:P)

PHONES



← FRONT

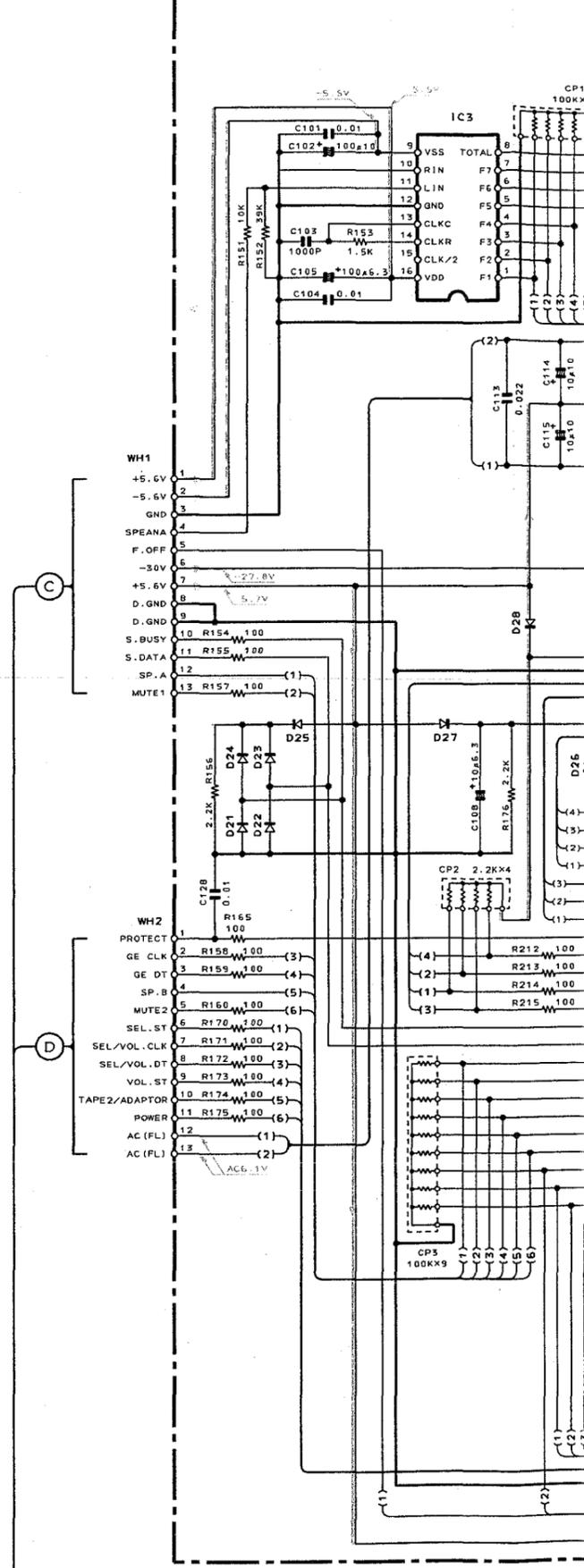
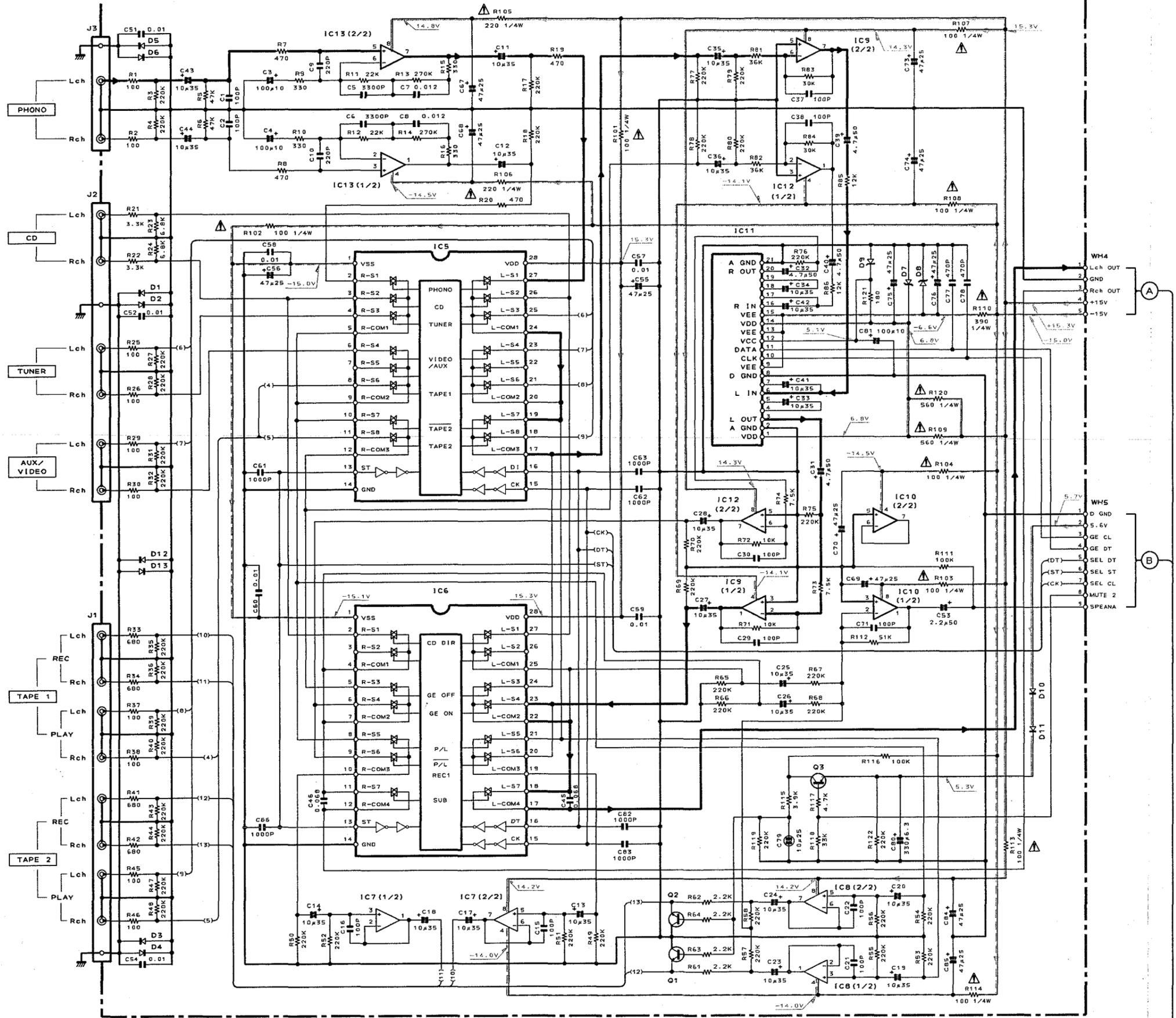


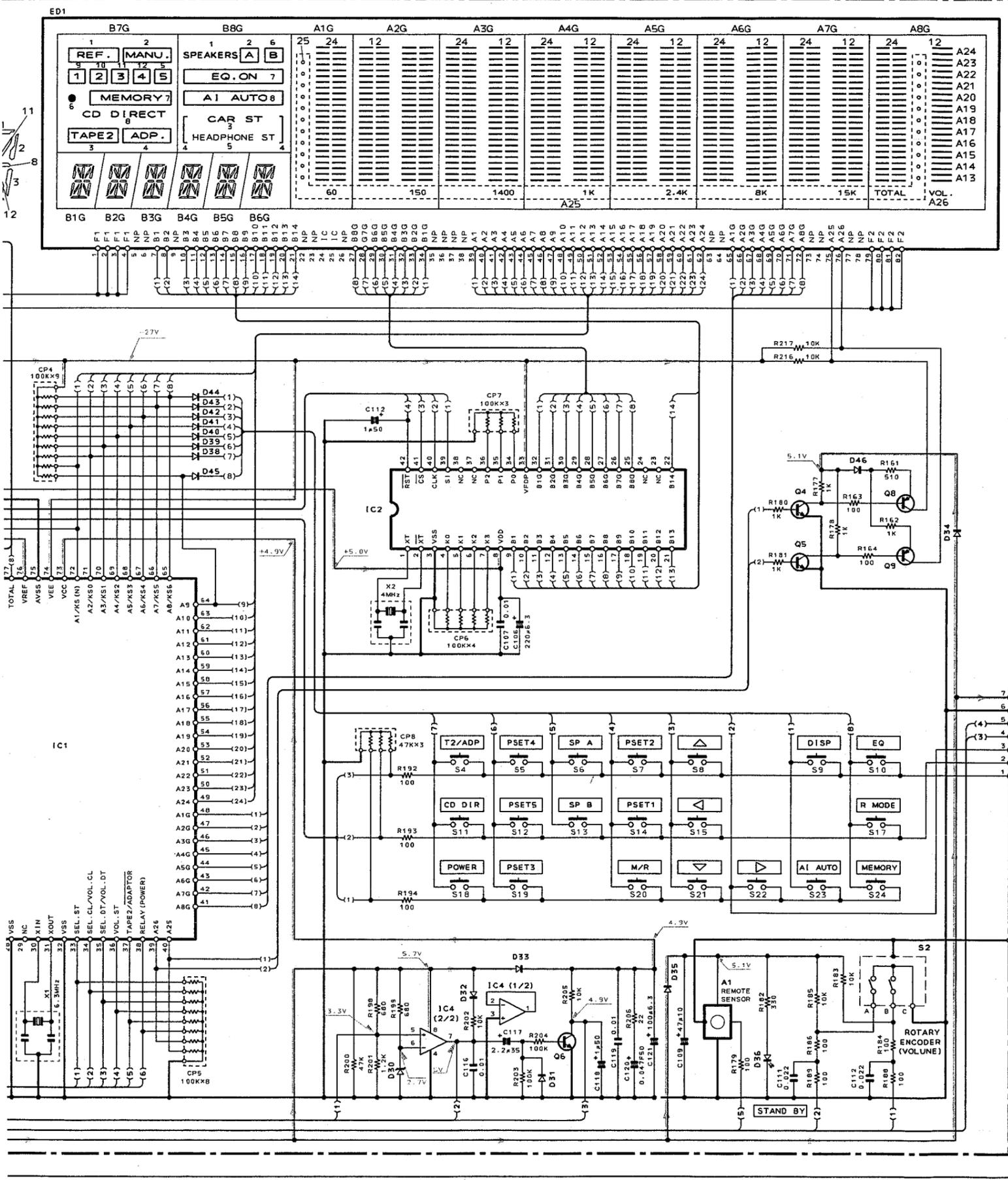
SYSTEM TAPE 2 → ADAPTOR CONTROL

SPEAKER IMPEDANCE SELECTOR
IMPEDANCE SELECTOR
LESS THAN
8Ω > 8Ω OR MORE
(Y, M, X TYPE)

+R-
-L+
SPEAKERS (4~16Ω)

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



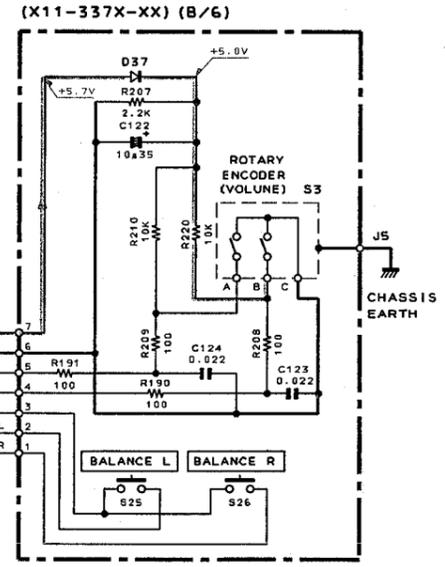


(X11-337X-XX) (A/6)

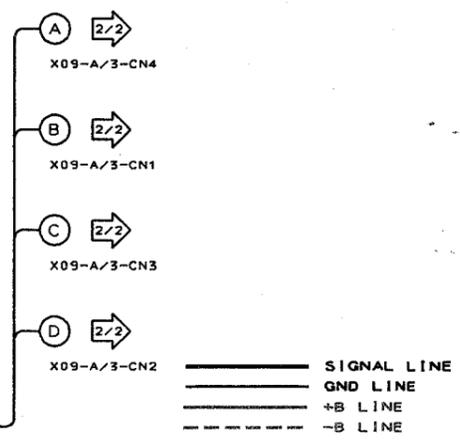
ED1	: FIP16AMW22Y
A1	: W02-1153-05 or W02-1046-05
IC1	: M38173M6-152FP
IC2	: CXP2201AS
IC3	: XR-1091ECP
IC4	: XRA10393
Q4~6	: 2SC1740S (Q. R) or 2SC2785 (F. E)
Q8, 9	: 2SA933S (Q. R) or 2SA1175 (F. E)
D21~28, 31~35	: HSS104 or 1SS133
38~46	: HSS104 or 1SS133
D29	: HZS8.2N (B2) or RD8.2ES (B2)
D30	: HZS2.7N (B2) or RD2.7ES (B2)
D36	: B30-1291-05

(X11-337X-XX) (C/6)

IC5	: NJU7312L
IC6	: NJU7311L
IC7	: XRA15218-DX or NJM4565D-D
IC8, 9, 12, 13	: XRA15218N-DX or NJM4565L-D
IC10	: XRA15218 or NJM4565D
IC11	: STK301-090
Q1, 2	: 2SC2878 (B)
Q3	: 2SA933S (Q. R) or 2SA1175 (F. E)
D1~6, 10~13	: HSS104 or 1SS133
D7, 8	: HZS6.8N (B2) or RD6.8ES (B2)
D9	: HZS5.1N (B2) or RD5.1ES (B2)



D37 : HSS104 or 1SS133



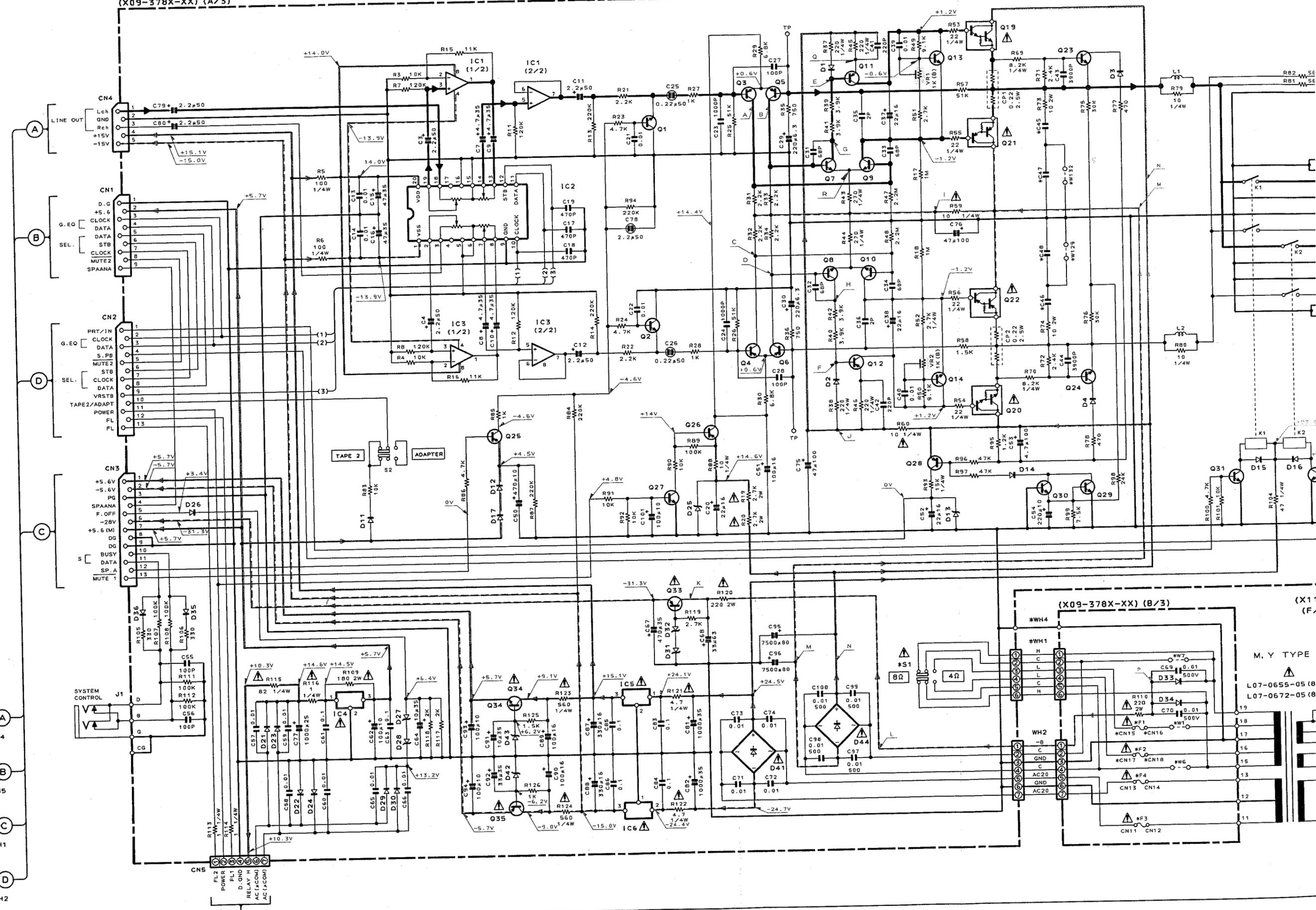
DC voltages are as measured with a high impedance voltmeter with no signal input. Values may vary slightly due to variations between individual instruments or/and units.

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.

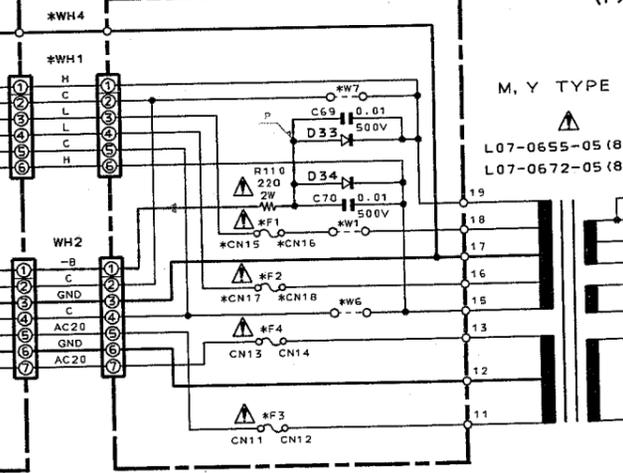
Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen Spannungsmesser ohne Eingangssignal gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u. U. geringfügig.

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.

(X09-378X-XX) (A/3)



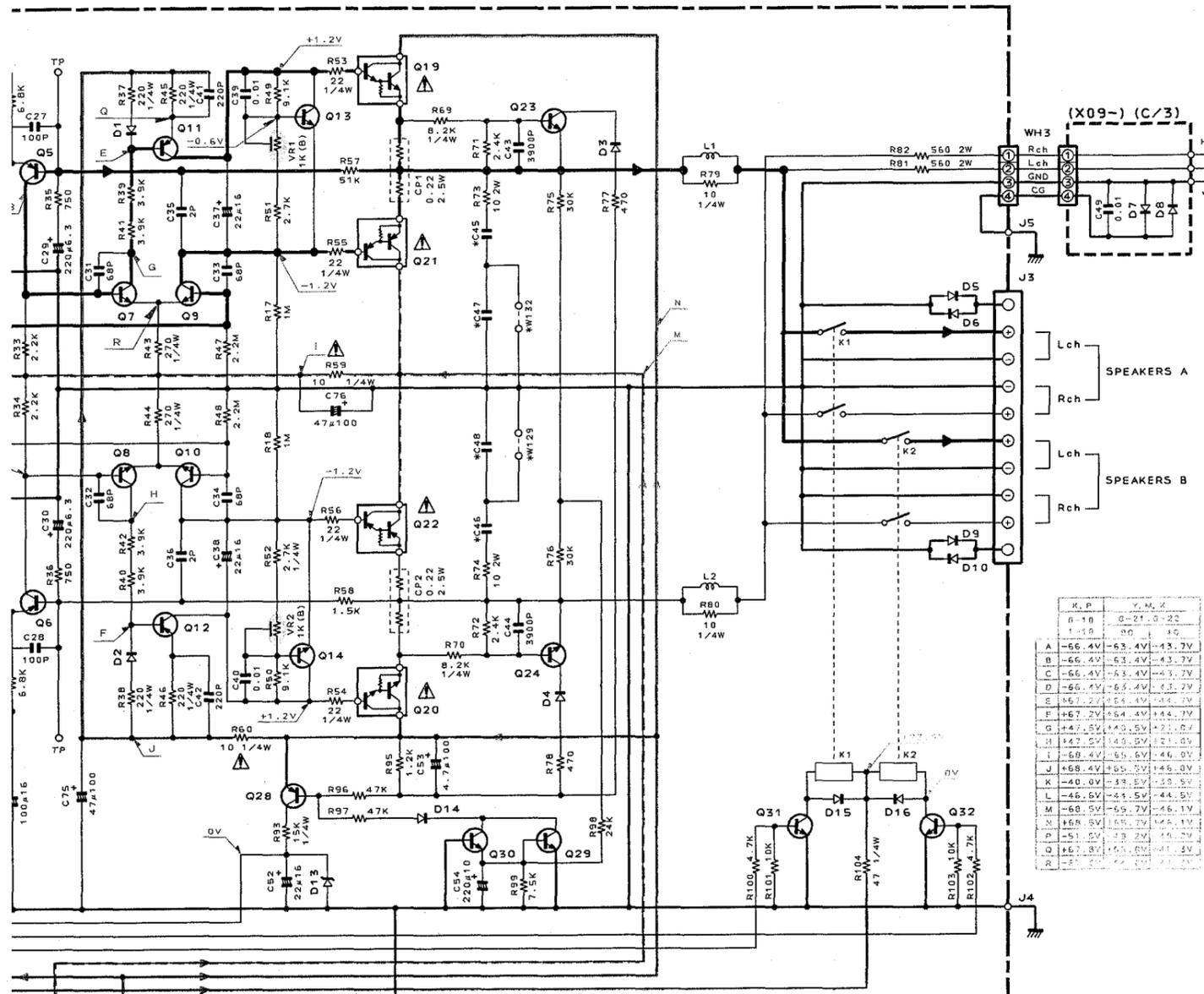
(X09-378X-XX) (B/3)



(X11 (F/

M, Y TYPE
 L07-0655-05 (8'
 L07-0672-05 (8'

- 1/2 A X11-C/6-WH4
- 1/2 B X11-C/6-WH5
- 1/2 C X11-A/6-WH1
- 1/2 D X11-A/6-WH2



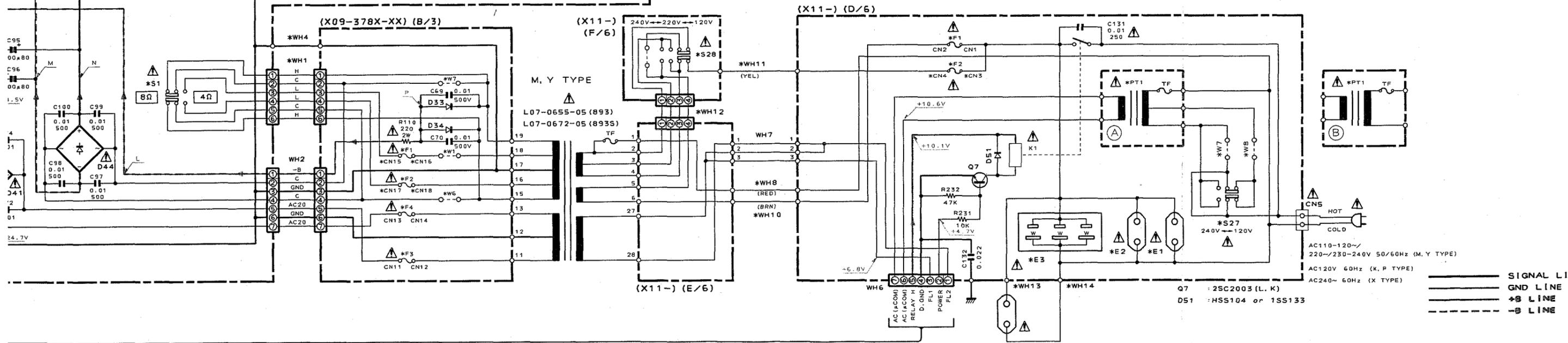
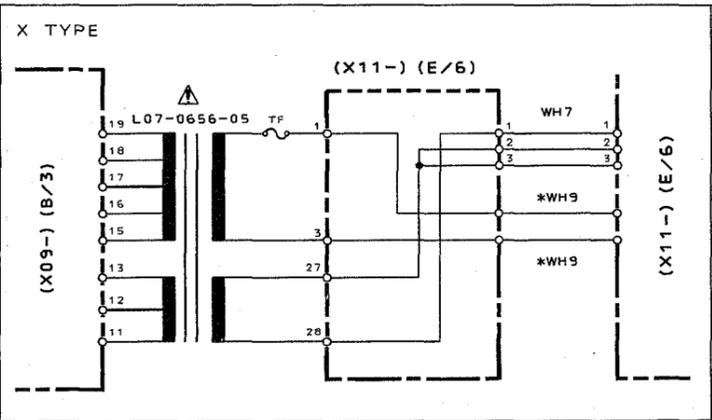
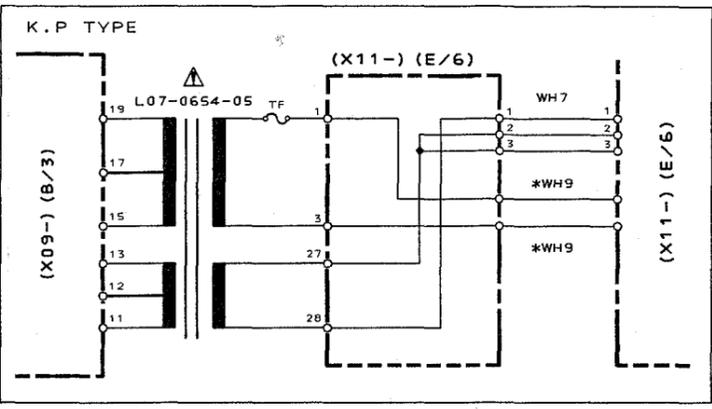
- | | | | | | |
|---------|-------------------------|-------------|--|---------------------|--------------------------------|
| IC1, 3 | : NJM4580L | Q21, 22 | : 2SB1570 | D1~4, 14~16, 29, 30 | : HSS104A or 1SS131 |
| IC2 | : TC9212P | Q23, 24 | : 2SC2631 (R, S) | D5~12, 17, 35, 36 | : HSS104 or 1SS133 |
| IC4 | : TA78057S or AN78057F | Q25, 26, 35 | : 2SA1048 (Y, GR)
or 2SA1175 (F, E)
or 2SA1309A (Q, R) | D13 | : HZS4.7N (B2) or RD4.7ES (B2) |
| IC5 | : XRA17815T or TA7815S | Q27, 34 | : 2SC1740S (Q, R) or 2SC2458 (Y, GR)
or 2SC2785 (F, E) or 2SC3311A (Q, R) | D21~24, 33, 34 | : S5688B or 1SR139-100 |
| IC6 | : TA79015S or PC7915AHF | Q28 | : 2SA1123 (R, S) | D25 | : HZS15N (B2) or RD15ES (B2) |
| Q1, 2 | : 2SC2878 (B) | Q29, 30 | : 2SC1845 (F, E) | D26 | : RB721Q |
| Q3~6 | : 2SA992 (F, E) | Q31, 32 | : 2SC2003 (L, K) | D27, 28 | : HZS3.9N (B2) or RD3.9ES (B) |
| Q7~10 | : 2SC2632 (R, S) | Q33 | : 2SB1375 or 2SB1548 | D31, 32 | : HZS16N (B2) or RD16ES (B2) |
| Q11, 12 | : 2SA1124 (R, S) | | | D41 | : KBP02ML-6127 |
| Q13, 14 | : 2SC4137 | | | D42, 43 | : HZS6.2N (B2) or RD6.2ES (B) |
| Q19, 20 | : 2SD2401 | | | D44 | : DSSBA20F03 or RBV-602LFA |

(X09-378X-XX)

DESTINATION	SI, MA MADE		J MADE	
	K	P	Y, M, X	Y, M
REF. NO.	0-10	1-01	0-21	0-22
C45, 46	0.1	0.1	0.22	0.22
C47, 48	NO	NO	0.22	0.22
W129, 132	YES	YES	NO	NO
S1	NO	NO	YES	YES
WH1	NO	NO	YES	YES
WH4	NO	YES	NO	NO
W1	NO	NO	YES	YES
W6, 7	YES	YES	NO	NO
F1, 2	NO	NO	T5A	T5A
F3, 4	1A	1A	T1A	T1A
CN15~18	NO	NO	YES	YES

(X11-337X-XX)

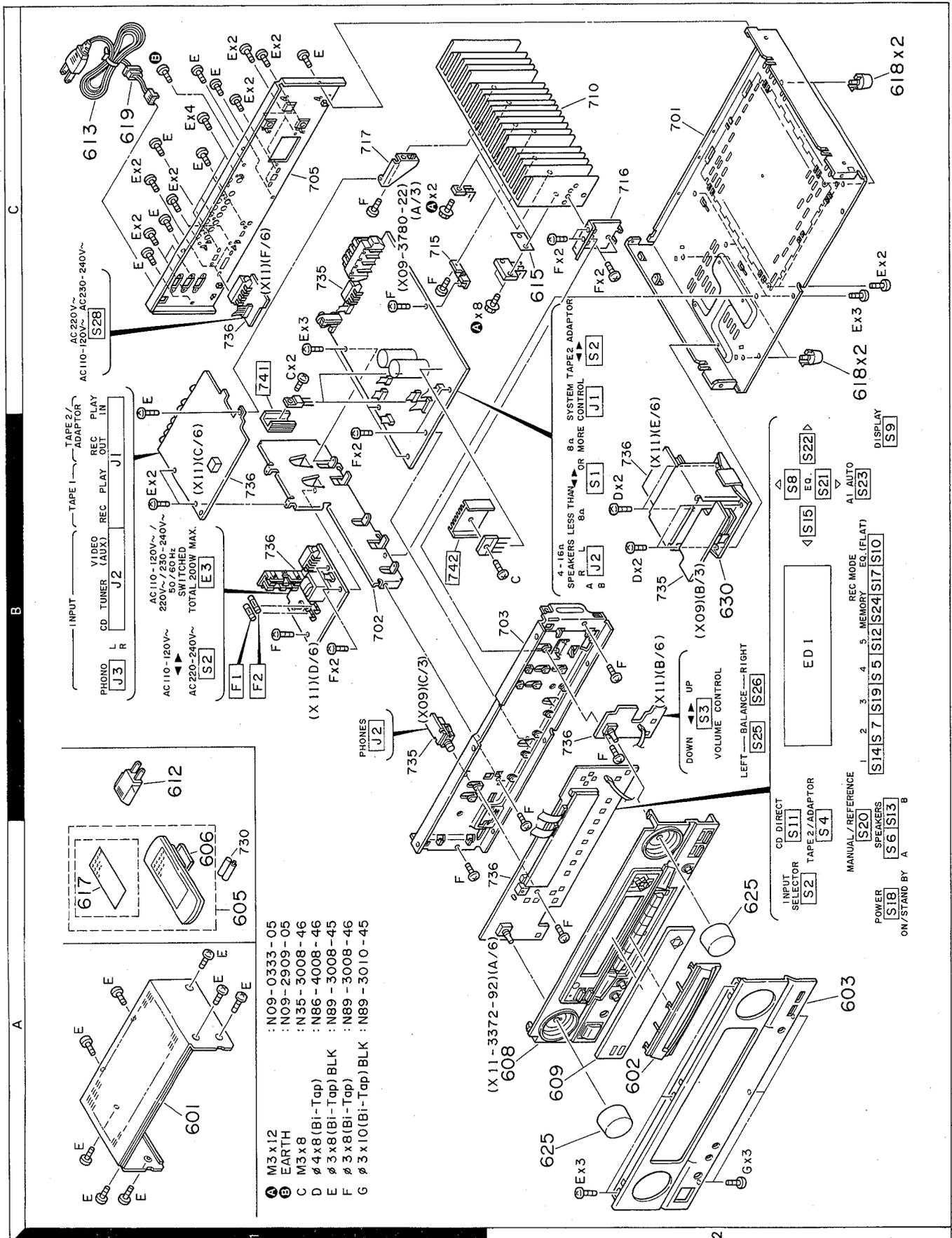
DESTINATION	SINGAPORE, MALAYSIA MADE				JAPAN MADE	
	K, P	M	Y	X	M	Y
REF. NO.	0-10	0-21	2-31	0-71	0-22	2-92
PT1	L07-0664-05	L07-0665-05	L07-0665-05	L07-0656-05	L07-0672-05	L07-0672-05
F1	125V 6A	250V T1.6A	250V T1.6A	250V T1.6A	250V T1.6A	250V T1.6A
F2	NO	250V T1.6A	250V T1.6A	NO	250V T1.6A	250V T1.6A
CN3, 4	NO	YES	YES	NO	YES	YES
S27, 28	NO	YES	YES	NO	YES	YES
E1, 2	NO	YES	NO	NO	YES	NO
E3	YES	NO	YES	NO	NO	YES
WH3, 14	NO	YES	NO	YES	YES	NO
WH8, 10, 11	NO	YES	YES	NO	YES	YES
WH9	YES	NO	NO	YES	NO	NO
WH2	NO	YES	YES	NO	YES	YES
W7	YES	NO	NO	YES	NO	NO
WB	NO	YES	YES	NO	YES	YES



AC110-120V/220-230-240V 50/60Hz (M, Y TYPE)
AC120V 60Hz (K, P TYPE)
AC240V 60Hz (X TYPE)

— SIGNAL LII
— GND LINE
— +B LINE
— -B LINE

EXPLODED VIEW (UNIT)



KA-893

PARTS LIST

	DESTINATION	SINGAPORE	MALAYSIA	JAPAN
AUDIO UNIT	K	X09-3780-10	X09-3780-10	
	P	X09-3781-01	X09-3781-01	
	Y	X09-3780-21		X09-3780-22
	M	X09-3780-21		X09-3780-22
	X	X09-3780-21		
CONTROL UNIT	K	X11-3370-10	X11-3370-10	
	P	X11-3370-10	X11-3370-10	
	Y	X11-3372-91		X11-3372-92
	M	X11-3370-21		X11-3370-22
	X	X11-3370-71		

PARTS LIST

× New Parts

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Teile 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	Desti- nation 仕 向	Re- marks 備考
KA-893 (SINGAPORE MADE)						
601	1A	*	A01-3015-01	METALLIC CABINET		
602	2A	*	A21-1823-03	DRESSING PANEL		
603	2A	*	A60-0358-02	PANEL		
605	1A	*	X94-1030-00	REMOTE CONTROL ASSY UNIT		
606	1A	*	A09-0140-03	BATTERY COVER		
608	2A	*	B01-0499-11	PANEL ESCUTCHEON		
609	2A	*	B03-2818-03	DRESSING PLATE		
-		*	B46-0092-23	WARRANTY CARD	K	
-		*	B46-0094-03	WARRANTY CARD	Y	
-		*	B46-0095-03	WARRANTY CARD	Y	
-		*	B46-0096-33	WARRANTY CARD	X	
-		*	B46-0121-23	WARRANTY CARD	P	
-		*	B58-0513-04	CAUTION CARD (PRESET220-240)	Y	
-		*	B60-1105-00	INSTRUCTION MANUAL (ENGLISH)		
-		*	B60-1106-00	INSTRUCTION MANUAL (FRENCH)	P	
-		*	B60-1107-00	INSTRUCTION MANUAL (SPA,CHI)	M	
△ 612	1B		E03-0115-05	AC PLUG ADAPTER	M	
△ 613	1C		E30-2592-15	AC POWER CORD	M	
△ 613	1C		E30-2605-05	AC POWER CORD	Y	
△ 613	1C		E30-2650-05	AC POWER CORD	KP	
△ 613	1C		E30-2717-05	AC POWER CORD	X	
△ E4	1C		E03-0055-05	AC OUTLET	M	
△ E4 ,5	1C		E03-0141-05	AC OUTLET	X	
615	2C		F20-1285-05	INSULATING BOARD		
617	1A	*	G16-0804-04	WRITING SHEET		
-		*	H50-0542-04	ITEM CARTON CASE	KPYX	
-		*	H50-0543-04	ITEM CARTON CASE	M	
-		*	H10-5444-12	POLYSTYRENE FOAMED FIXTURE		
-		*	H10-5445-12	POLYSTYRENE FOAMED FIXTURE		
-		*	H25-0224-04	PROTECTION BAG (800X400X0.03)		
-		*	H25-0232-04	PROTECTION BAG (235X350X0.03)		
-		*	H25-0699-04	PROTECTION BAG	X	
△ 618	2C		J02-1013-05	FOOT		
△ 619	1C		J42-0083-05	POWER CORD BUSHING		
625	2A	*	K29-5622-04	KNOB VOLUME/INPUT SELECTOR		
△ 630	2B	*	L07-0654-05	POWER TRANSFORMER	KP	
△ 630	2B	*	L07-0655-05	POWER TRANSFORMER	YM	
△ 630	2B	*	L07-0656-05	POWER TRANSFORMER	X	
A	1C		N09-0333-05	TAPPING SCREW (3X12)		
B	1C		N09-2909-05	TAPTITE SCREW (BARTH)		
D	2B		N86-4008-46	BINDING HEAD TAPTITE SCREW		
E	1A, 1C		N89-3008-45	BINDING HEAD TAPTITE SCREW		
F	1A, 1B		N89-3008-46	BINDING HEAD TAPTITE SCREW		
G	2A		N89-3010-45	BINDING HEAD TAPTITE SCREW		
KA-893 (MALAYSIA MADE)						
601	1A	*	A01-3015-01	METALLIC CABINET		
602	2A	*	A21-1823-03	DRESSING PANEL		
603	2A	*	A60-0358-02	PANEL		

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.

KA-893

PARTS LIST

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕 向	Re- marks 備考
605	1A	*	X94-1030-00	REMOTE CONTROL ASSY UNIT		
606	1A	*	A09-0140-03	BATTERY COVER		
608	2A	*	B01-0499-11	PANEL ESCUTCHEON		
609	2A	*	B03-2818-03	DRESSING PLATE		
-	-	*	B46-0092-23	WARRANTY CARD	K	
-	-	*	B46-0121-23	WARRANTY CARD	P	
-	-	*	B60-1105-00	INSTRUCTION MANUAL (ENGLISH)		
-	-	*	B60-1106-00	INSTRUCTION MANUAL (FRANCH)	P	
△ 613	1C		E30-2650-05	AC POWER CORD		
615	2C		F20-1285-05	INSULATING BOARD		
617	1A	*	G16-0804-04	WRITING SHEET		
-	-	*	H50-0586-04	ITEM CARTON CASE		
-	-	*	H10-5446-12	POLYSTYRENE FOAMED FIXTURE		
-	-	*	H10-5447-12	POLYSTYRENE FOAMED FIXTURE		
-	-		H25-0224-04	PROTECTION BAG (800X400X0.03)		
-	-		H25-0232-04	PROTECTION BAG (235X350X0.03)		
618	2C		J02-1013-05	FOOT		
△ 619	1C		J42-0083-05	POWER CORD BUSHING		
625	2A	*	K29-5622-04	KNØB VOLUME/INPUT SELECTØR		
△ 630	2B	*	L07-0654-05	POWER TRANSFORMER		
A	1C		N09-0333-05	TAPPING SCREW (3X12)		
B	1C		N09-2909-05	TAPTITE SCREW (EARTH)		
D	2B		N86-4008-46	BINDING HEAD TAPTITE SCREW		
E	1A, 1C		N89-3008-45	BINDING HEAD TAPTITE SCREW		
F	1A, 1B		N89-3008-46	BINDING HEAD TAPTITE SCREW		
G	2A		N89-3010-45	BINDING HEAD TAPTITE SCREW		
KA-893 (JAPAN MADE)						
601	1A	*	A01-3015-01	METALLIC CABINET		
602	2A	*	A21-1823-03	DRESSING PANEL		
603	2A	*	A60-0358-02	PANEL		
605	1A	*	X94-1030-00	REMOTE CONTROL ASSY UNIT		
606	1A	*	A09-0140-03	BATTERY COVER		
608	2A	*	B01-0499-11	PANEL ESCUTCHEON		
609	2A	*	B03-2818-03	DRESSING PLATE		
-	-		B46-0094-03	WARRANTY CARD	Y	
-	-		B46-0095-03	WARRANTY CARD	Y	
-	-		B58-0513-04	CAUTION CARD (PRESET220-240)	Y	
-	-	*	B60-1105-00	INSTRUCTION MANUAL (ENGLISH)		
-	-	*	B60-1107-00	INSTRUCTION MANUAL (SPA,CHI)	M	
△ 612	1B		E03-0115-05	AC PLUG ADAPTER	M	
△ 613	1C		E30-2592-15	AC POWER CORD	M	
△ 613	1C		E30-2605-05	AC POWER CORD	Y	
△ E4	1C		E03-0055-05	AC ØUTLET	M	
615	2C		F20-1285-05	INSULATING BOARD		
617	1A	*	G16-0804-04	WRITING SHEET		
-	-	*	H50-0545-04	ITEM CARTON CASE		
-	-	*	H10-5448-12	POLYSTYRENE FOAMED FIXTURE		

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.

PARTS LIST

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕 向	Re- marks 備考
-		*	H10-5449-12	POLYSTYRENE FOAMED FIXTURE		
-			H25-0224-04	PROTECTION BAG (800X400X0.03)		
-			H25-0232-04	PROTECTION BAG (235X350X0.03)		
618	2C		J02-1013-05	FOOT		
619	1C		J42-0083-05	POWER CORD BUSHING		
625	2A	*	K29-5622-04	KNOB VOLUME/INPUT SELECTOR		
630	2B	*	L07-0673-05	POWER TRANSFORMER		
A	1C		N09-0333-05	TAPPING SCREW (3X12)		
B	1C		N09-2909-05	TAPTITE SCREW (BARTH)		
D	2B		N86-4008-46	BINDING HEAD TAPTITE SCREW		
E	1A, 1C		N89-3008-45	BINDING HEAD TAPTITE SCREW		
F	1A, 1B		N89-3008-46	BINDING HEAD TAPTITE SCREW		
G	2A		N89-3010-45	BINDING HEAD TAPTITE SCREW		
AUDIO UNIT (X09-3780-10:K, KW, 0-21(S):Y, M, X, 0-22(J):M, Y (1-01:P, PW)						
C3 ,4			CE04KW1H2R2M	ELECTRO 2.2UF 50WV		J
C3 ,4			CE04LW1H2R2M	ELECTRO 2.2UF 50WV		S
C7 -10			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		J
C7 -10			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		S
C11 ,12			CE04KW1H2R2M	ELECTRO 2.2UF 50WV		J
C11 ,12			CE04LW1H2R2M	ELECTRO 2.2UF 50WV		S
C13 ,14			CK45FF1H103Z	CERAMIC 0.010UF Z		
C15 ,16			CE04KW1V470M	ELECTRO 47UF 35WV		J
C15 ,16			CE04LW1V470M	ELECTRO 47UF 35WV		S
C17 -19			CK45FB1H471K	CERAMIC 470PF K		
C20			CE04KW1C220M	ELECTRO 22UF 16WV		J
C20			CE04LW1C220M	ELECTRO 22UF 16WV		S
C21 ,22			CQ92FM1H103J	MYLAR 0.010UF J		
C23 ,24			CK45FB1H102K	CERAMIC 1000PF K		
C25 ,26			CE04HW1HR22M	NP-ELEC 0.22UF 50WV		
C27 ,28			CC45FSL1H101J	CERAMIC 100PF J		
C29 ,30			CE04KWOJ221M	ELECTRO 220UF 6.3WV		J
C29 ,30			CE04LWOJ221M	ELECTRO 220UF 6.3WV		S
C31 -34			CC45FSL1H680J	CERAMIC 68PF J		
C35 ,36			CC45FSL1H020C	CERAMIC 2.0PF C		
C37 ,38			CE04KW1C220M	ELECTRO 22UF 16WV		J
C37 ,38			CE04LW1C220M	ELECTRO 22UF 16WV		S
C39 ,40			CK45FF1H103Z	CERAMIC 0.010UF Z		
C41 ,42			CC45FSL1H221J	CERAMIC 220PF J		
C43 ,44			CQ92FM1H392J	MYLAR 3900PF J		
C45 -48			CF92FV1H224J	MF 0.22UF J	YM	J
C45 -48			CF92FV1H224J	MF 0.22UF J	YMX	S
C45 ,46			CF92FV1H104J	MF 0.10UF J	KP	
C49			CK45FF1H103Z	CERAMIC 0.010UF Z		
C50			CE04KW1A471M	ELECTRO 470UF 10WV		J
C50			CE04LW1A471M	ELECTRO 470UF 10WV		S
C51			CE04KW1C101M	ELECTRO 100UF 16WV		J
C51			CE04LW1C101M	ELECTRO 100UF 16WV		S
C52			CE04KW1C220M	ELECTRO 22UF 16WV		J
C52			CE04LW1C220M	ELECTRO 22UF 16WV		S
C53			CE04KW2A4R7M	ELECTRO 4.7UF 100WV		J
C53			CE04LW2A4R7M	ELECTRO 4.7UF 100WV		S
C54			CE04KW1A221M	ELECTRO 220UF 10WV		J

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C54			CE04LW1A221M	ELECTRO 220UF 10WV		S
C55 ,56			CC45FSL1H101J	CERAMIC 100PF J		
C57 -60			CK45FF1H103Z	CERAMIC 0.010UF Z		
C61			CF92FV1H104J	MF 0.10UF J		
C62			CE04KW1A101M	ELECTRO 100UF 10WV		J
C62			CE04LW1A101M	ELECTRO 100UF 10WV		S
C63			CF92FV1H104J	MF 0.10UF J		
C64			CE04KW1V100M	ELECTRO 10UF 35WV		J
C64			CE04LW1V100M	ELECTRO 10UF 35WV		S
C65 ,66			CK45FF1H103Z	CERAMIC 0.010UF Z		
C67			CE04EW1V471M	ELECTRO 470UF 35WV		J
C67			CE04LW1V471M	ELECTRO 470UF 35WV		S
C68			CE04KW1J330M	ELECTRO 33UF 63WV		J
C68		*	CE04LW1J330M	ELECTRO 33UF 63WV		S
C69 ,70			CK45FE2H103P	CERAMIC 0.010UF P		
C71 -74			CK45FF1H103Z	CERAMIC 0.010UF Z		
C75 ,76			CE04EW2A470M	ELECTRO 47UF 100WV		J
C75 ,76			CE04LW2A470M	ELECTRO 47UF 100WV		S
C77			CE04EW1E102M	ELECTRO 1000UF 25WV		J
C77			CE04LW1E102M	ELECTRO 1000UF 25WV		S
C78			CE04HW1H2R2M	NP-ELEC 2.2UF 50WV		
C79 ,80			CE04KW1H2R2M	ELECTRO 2.2UF 50WV		J
C79 ,80			CE04LW1H2R2M	ELECTRO 2.2UF 50WV		S
C81 ,82			CE04EW1V102M	ELECTRO 1000UF 35WV		J
C81 ,82			CE04LW1V102M	ELECTRO 1000UF 35WV		S
C83 -86			CF92FV1H104J	MF 0.10UF J		
C87 ,88			CE04KW1C331M	ELECTRO 330UF 16WV		J
C87 ,88			CE04LW1C331M	ELECTRO 330UF 16WV		S
C89 ,90			CE04KW1C101M	ELECTRO 100UF 16WV		J
C89 ,90			CE04LW1C101M	ELECTRO 100UF 16WV		S
C91			CE04KW1V100M	ELECTRO 10UF 35WV		J
C91			CE04LW1V100M	ELECTRO 10UF 35WV		S
C92			CE04KW1V330M	ELECTRO 33UF 35WV		J
C92			CE04LW1V330M	ELECTRO 33UF 35WV		S
C93 ,94			CE04KW1A101M	ELECTRO 100UF 10WV		J
C93 ,94			CE04LW1A101M	ELECTRO 100UF 10WV		S
C95 ,96		*	C90-3487-05	ELECTRO 7500UF 80WV		
C97 -100			CK45FE2H103P	CERAMIC 0.010UF P		
C101			CE04KW1A101M	ELECTRO 100UF 10WV		J
C101			CE04LW1A101M	ELECTRO 100UF 10WV		S
J1			E11-0188-05	MINIATURE PHONE JACK SYNCHRO		
J2			E11-0207-05	PHONE JACK HEAD PHONES		
J3			E70-0015-05	LOCK TERMINAL BOARD SPEAKERS		
△ F1 ,2			F05-5025-05	FUSE (SEMΚ) (250V T5A)	YM	J
△ F1 ,2			F05-5025-05	FUSE (SEMΚ) (250V T5A)	YMX	S
△ F3 ,4			F04-1026-05	FUSE (UL) (250V 1A)	KP	
△ F3 ,4			F06-1022-05	FUSE (SEMΚ) (250V T1A)	YM	J
△ F3 ,4			F06-1022-05	FUSE (SEMΚ) (250V T1A)	YMX	S
CN11-14			J13-0075-05	FUSE CLIP	KP	
CN11-18			J13-0075-05	FUSE CLIP	YM	J
CN11-18			J13-0075-05	FUSE CLIP	YMX	S
J6			J11-0098-05	WIRE CLAMPER	YM	J
J6			J11-0098-05	WIRE CLAMPER	YMX	S
L1 ,2			L39-0085-05	PHASE COMPENSATION COIL		

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C	1C		N35-3008-46	BINDING HEAD MACHINE SCREW		
CP1 ,2			R90-0840-05	COMPOSITE ELEMENTS		
R5 ,6			RD14NB2E101J	RD 100 J 1/4W		
R19 ,20			RS14KB3D272J	FL-PROOF RS 2.7K J 2W		
R37 ,38			RD14NB2E221J	RD 220 J 1/4W		
R43 ,44			RD14NB2E271J	RD 270 J 1/4W		
R45 ,46			RD14NB2E221J	RD 220 J 1/4W		
R53 -56			RD14NB2E220J	RD 22 J 1/4W		
R59 ,60			RD14NB2E100J	RD 10 J 1/4W		
R69 ,70			RD14NB2E822J	RD 8.2K J 1/4W		
R73 ,74			RS14KB3D100J	FL-PROOF RS 10 J 2W		
R79 ,80			RD14NB2E100J	RD 10 J 1/4W		
R81 ,82			RS14KB3D561J	FL-PROOF RS 560 J 2W		
R88			RD14NB2E100J	RD 10 J 1/4W		
R104			RD14NB2E470J	RD 47 J 1/4W		
R109			RS14KB3D181J	FL-PROOF RS 180 J 2W		
R110			RS14KB3D221J	FL-PROOF RS 220 J 2W		
R113,114			RD14NB2E1R0J	RD 1.0 J 1/4W		
R115		*	RD14NB2E820J	RD 82 J 1/4W		
R116			RD14NB2E1R0J	RD 1.0 J 1/4W		
R120			RS14KB3D221J	FL-PROOF RS 220 J 2W		
R121,122			RD14NB2E4R7J	RD 4.7 J 1/4W		
R123,124			RD14NB2E561J	RD 560 J 1/4W		
VR1 ,2			R12-1616-05	TRIMMING POT.(1K) IDL ADJ		
K1 ,2			S51-2078-05	MAGNETIC RELAY	YM	J
S1			S31-2136-05	SLIDE SWITCH IMPEDANCE SELECT	YMX	S
S1			S31-2136-05	SLIDE SWITCH IMPEDANCE SELECT		
S2			S31-2094-05	SLIDE SWITCH TAPE 2/ADAPTER		
D1 -4			HSS104A	DIODE		
D1 -4			1SS131	DIODE		
D5 -12			HSS104	DIODE		
D5 -12			1SS133	DIODE		
D13			HZS4.7N(B2)	ZENER DIODE		
D13			RD4.7ES(B2)	ZENER DIODE		
D14 -16			HSS104A	DIODE		
D14 -16			1SS131	DIODE		
D17			HSS104	DIODE		
D17			1SS133	DIODE		
D21 -24			S5688B	DIODE		
D21 -24			1SR139-100	DIODE		
D25			HZS15N(B2)	ZENER DIODE		
D25			RD15ES(B2)	ZENER DIODE		
D26			RB721Q	DIODE		
D27 ,28			HZS3.9N(B2)	ZENER DIODE		
D27 ,28			RD3.9ES(B2)	ZENER DIODE		
D29 ,30			HSS104A	DIODE		
D29 ,30			1SS131	DIODE		
D31 ,32			HZS16N(B2)	ZENER DIODE		
D31 ,32			RD16ES(B2)	ZENER DIODE		
D33 ,34			S5688B	DIODE		
D33 ,34			1SR139-100	DIODE		
D35 ,36			HSS104	DIODE		
D35 ,36			1SS133	DIODE		

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D41			KBP02ML-6127	DIODE		
D42 ,43			HZS6.2N(B2)	ZENER DIODE		
D42 ,43			RD6.2ES(B2)	ZENER DIODE		
D44			D5SBA20F03	DIODE		
D44			RBV-602LFA	DIODE		
IC1			NJM4580L	IC(OP AMP)		
IC2		*	TC9212P	IC(ELECTRICAL VOLUME)		
IC3			NJM4580L	IC(OP AMP)		
IC4		*	AN780575F	IC(VOLTAGE REGULATOR/+5.75V)		
IC4		*	TA78057S	IC(VOLTAGE REGULATOR/+5.75V)		
IC5			TA7815S	IC(VOLTAGE REGULATOR/ +15V)		
IC5			XRA17815T	IC(VOLTAGE REGULATOR/ +15V)		
IC6			TA79015S	IC(VOLTAGE REGULATOR/ -15V)		
IC6		*	UPC7915AHF	IC(VOLTAGE REGULATOR/ -15V)		
Q1 ,2			2SC2878(B)	TRANSISTOR		
Q3 -6			2SA992(F,E)	TRANSISTOR		
Q7 -10			2SC2632(R,S)	TRANSISTOR		
Q11 ,12			2SA1124(R,S)	TRANSISTOR		
Q13 ,14			2SC4137(V,W)	TRANSISTOR		
Q19 ,20		*	2SD2401	TRANSISTOR		
Q21 ,22		*	2SB1570	TRANSISTOR		
Q23 ,24			2SC2631(R,S)	TRANSISTOR		J
Q25 ,26			2SA1048(Y,GR)	TRANSISTOR		S
Q25 ,26			2SA1175(F,E)	TRANSISTOR		J
Q25 ,26			2SA1309A(Q,R)	TRANSISTOR		J
Q25 ,26			2SA933S(Q,R)	TRANSISTOR		S
Q27			2SC1740S(Q,R)	TRANSISTOR		S
Q27			2SC2458(Y,GR)	TRANSISTOR		S
Q27			2SC2785(F,E)	TRANSISTOR		S
Q27			2SC3311A(Q,R)	TRANSISTOR		J
Q28			2SA1123(R,S)	TRANSISTOR		
Q29 ,30			2SC1845(F,E)	TRANSISTOR		
Q31 ,32			2SC2003(L,K)	TRANSISTOR		
Q33			2SB1375	TRANSISTOR		
Q33			2SB1548	TRANSISTOR		
Q34			2SC1740S(Q,R)	TRANSISTOR		S
Q34			2SC2458(Y,GR)	TRANSISTOR		J
Q34			2SC2785(F,E)	TRANSISTOR		S
Q34			2SC3311A(Q,R)	TRANSISTOR		J
Q35			2SA1048(Y,GR)	TRANSISTOR		J
Q35			2SA1175(F,E)	TRANSISTOR		S
Q35			2SA1309A(Q,R)	TRANSISTOR		J
Q35			2SA933S(Q,R)	TRANSISTOR		S
CONTROL UNIT (X11-337X-XX)						
D36			B30-1291-05	LED(LN21CPSLX(V)-(TA4))		
C1 ,2			CC45FSL1H101J	CERAMIC 100PF J		
C3 ,4			CE04KW1A101M	ELECTRO 100UF 10WV		J
C3 ,4			CE04LW1A101M	ELECTRO 100UF 10WV		S
C5 ,6			CF92FV1H332J	MF 3300PF J		
C7 ,8			CF92FV1H123J	MF 0.012UF J		
C9 ,10			CC45FSL1H221J	CERAMIC 220PF J		
C11 -14			CE04KW1V100M	ELECTRO 10UF 35WV		J
C11 -14			CE04LW1V100M	ELECTRO 10UF 35WV		S
C15 ,16			CC45FSL1H101J	CERAMIC 100PF J		

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C17	-20		CE04KW1V100M	ELECTRØ 10UF 35WV		J
C17	-20		CE04LW1V100M	ELECTRØ 10UF 35WV		S
C21	,22		CC45FSL1H101J	CERAMIC 100PF J		
C23	-28		CE04KW1V100M	ELECTRØ 10UF 35WV		J
C23	-28		CE04LW1V100M	ELECTRØ 10UF 35WV		S
C29	,30		CC45FSL1H101J	CERAMIC 100PF J		
C31	,32		CE04KW1H4R7M	ELECTRØ 4.7UF 50WV		J
C31	,32		CE04LW1H4R7M	ELECTRØ 4.7UF 50WV		S
C33	-36		CE04KW1V100M	ELECTRØ 10UF 35WV		J
C33	-36		CE04LW1V100M	ELECTRØ 10UF 35WV		S
C37	,38		CC45FSL1H101J	CERAMIC 100PF J		
C39	,40		CE04KW1H4R7M	ELECTRØ 4.7UF 50WV		J
C39	,40		CE04LW1H4R7M	ELECTRØ 4.7UF 50WV		S
C41	-44		CE04KW1V100M	ELECTRØ 10UF 35WV		J
C41	-44		CE04LW1V100M	ELECTRØ 10UF 35WV		S
C45	,46		CF92FV1H683J	MF 0.068UF J		
C51	,52		CK45FF1H103Z	CERAMIC 0.010UF Z		
C53			CE04KW1H2R2M	ELECTRØ 2.2UF 50WV		J
C53			CE04LW1H2R2M	ELECTRØ 2.2UF 50WV		S
C54			C91-0769-05	CERAMIC 0.01UF K		
C55	,56		CE04KW1E470M	ELECTRØ 47UF 25WV		J
C55	,56		CE04LW1E470M	ELECTRØ 47UF 25WV		S
C57	-60		CK45FF1H103Z	CERAMIC 0.010UF Z		
C61	-63		CK45FB1H102K	CERAMIC 1000PF K		
C66			CK45FB1H102K	CERAMIC 1000PF K		
C67	-70		CE04KW1E470M	ELECTRØ 47UF 25WV		J
C67	-70		CE04LW1E470M	ELECTRØ 47UF 25WV		S
C71			CC45FSL1H101J	CERAMIC 100PF J		
C73	-76		CE04KW1E470M	ELECTRØ 47UF 25WV		J
C73	-76		CE04LW1E470M	ELECTRØ 47UF 25WV		S
C77	,78		CK45FB1H471K	CERAMIC 470PF K		
C79			CE04HW1E100M	NP-ELEC 10UF 25WV		
C80			CE04KW0J331M	ELECTRØ 330UF 6.3WV		J
C80			CE04LW0J331M	ELECTRØ 330UF 6.3WV		S
C81			CE04KW1A101M	ELECTRØ 100UF 10WV		J
C81			CE04LW1A101M	ELECTRØ 100UF 10WV		S
C82	,83		CK45FB1H102K	CERAMIC 1000PF K		
C84	,85		CE04KW1E470M	ELECTRØ 47UF 25WV		J
C84	,85		CE04LW1E470M	ELECTRØ 47UF 25WV		S
C101			CF92FV1H103J	MF 0.010UF J		
C102			CE04KW1A101M	ELECTRØ 100UF 10WV		J
C102			CE04LW1A101M	ELECTRØ 100UF 10WV		S
C103			CF92FV1H102J	MF 1000PF J		
C104			CF92FV1H103J	MF 0.010UF J		
C105			C90-3214-05	ELECTRØ 100UF 6.3WV		J
C106			C90-3215-05	ELECTRØ 220UF 6.3WV		
C107			C91-0769-05	CERAMIC 0.01UF K		
C108			C90-3209-05	ELECTRØ 10UF 6.3WV		
C109			C90-3220-05	ELECTRØ 47UF 10WV		
C110-112			CK45FF1H223Z	CERAMIC 0.022UF Z		
C113			CK45FF1H223Z	CERAMIC 0.022UF Z		
C114	,115		C90-3217-05	ELECTRØ 10UF 10WV		
C116			CK45FF1H103Z	CERAMIC 0.010UF Z		
C117			C90-3240-05	ELECTRØ 2.2UF 35WV		
C118			C90-3253-05	ELECTRØ 1UF 50WV		

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C119			C91-0769-05	CERAMIC 0.01UF K		
C120			C90-1827-05	BACKUP 0.047F 5.5WV		
C121			C90-3214-05	ELECTRO 100UF 6.3WV		
C122			CE04KW1V100M	ELECTRO 10UF 35WV		J
C123, 124			CK45FF1H223Z	CERAMIC 0.022UF Z		
C126			C91-0769-05	CERAMIC 0.01UF K		
C128			CK45FF1H103Z	CERAMIC 0.010UF Z		
C131			C91-1439-05	FILM 0.01UF 250VAC		
C132			C91-0085-05	CERAMIC 0.022UF N		
E1 ,2			E03-0108-05	AC OUTLET	M	J
E3			E03-0111-05	AC OUTLET	Y	J
E3			E03-0111-05	AC OUTLET	KPY	S
E3			E03-0111-05	AC OUTLET	KP	W
J1		*	E63-0067-05	PHONO JACK TAPE 1, TAPE 2		
J2		*	E63-0066-05	PHONO JACK CD, TUNER, AUX/VIDEO		
J3		*	E63-0072-05	PHONO JACK PHONO		
F1			F05-1623-05	FUSE (SEMKO) (250V T1.6A)	X	S
F1			F05-6029-05	FUSE (UL) (125V 6A)	KP	
F1 ,2			F05-1623-05	FUSE (SEMKO) (250V T1.6A)	YM	
CN1 -4			J13-0075-05	FUSE CLIP	YM	
CN1 ,2			J13-0075-05	FUSE CLIP	KPX	S
CN1 ,2			J13-0075-05	FUSE CLIP	KP	W
PT1		*	L07-0664-05	POWER TRANSFORMER	KP	
PT1		*	L07-0665-05	POWER TRANSFORMER	YM	S
PT1		*	L07-0666-05	POWER TRANSFORMER	X	S
PT1		*	L07-0672-05	POWER TRANSFORMER	YM	J
X1			L78-0602-05	RESONATOR 6.300MHz		
X2			L78-0244-05	RESONATOR 4.000MHz		
CP1			R90-0492-05	MULTI-COMP 100KX8 J 1/6W		
CP2			R90-0852-05	MULTI-COMP 2.2K X4		
CP3 ,4			R90-0493-05	MULTI-COMP 100KX9 J 1/6W		
CP5			R90-0492-05	MULTI-COMP 100KX8 J 1/6W		
CP6			R90-0482-05	MULTI-COMP 100KX4 J 1/6W		
CP7			R90-0850-05	MULTI-COMP 100KX3 J 1/6W		
CP8			R90-0854-05	MULTI-COMP 4.7KX3 J 1/6W		
R101-104			RD14NB2E101J	RD 100 J 1/4W		
R105, 106			RD14NB2E221J	RD 220 J 1/4W		
R107, 108			RD14NB2E101J	RD 100 J 1/4W		
R109			RD14NB2E561J	RD 560 J 1/4W		
R110			RD14NB2E391J	RD 390 J 1/4W		
R113, 114			RD14NB2E101J	RD 100 J 1/4W		
R120			RD14NB2E561J	RD 560 J 1/4W		
R195, 196			RD14NB2E470J	RD 47 J 1/4W		
R197		*	RD14NB2E682J	RD 6.8K J 1/4W		
R218, 219			RD14NB2E331J	RD 330 J 1/4W		
K1			S76-0002-05	MAGNETIC RELAY		
S4 -15			S40-1064-05	PUSH SWITCH KEY BOARD		
S17 -26			S40-1064-05	PUSH SWITCH KEY BOARD		
S27			S62-0001-05	SLIDE SWITCH VOLTAGE SELECTOR	YM	
S28			S31-2322-05	SLIDE SWITCH VOLTAGE SELECTOR	YM	
S2			T99-0530-05	ROTARY ENCODER INPUT SELECTOR		
S3			T99-0537-05	ROTARY ENCODER VOLUME CONTROL		

L:Scandinavia

K:USA

P:Canada

J:JAPAN MADE

Y:PX(Far East, Hawaii)

T:England

E:Europe

S:SINGAPORE MADE

Y:AAFES(Europe)

X:Australia

M:Other Areas

W:MALAYSIA MADE Δ indicates safety critical components.

PARTS LIST

x New Parts

Parts without Parts No. are not supplied.

Les articles non mentionnes dans le Parts No. ne sont pas fournis.

Teile 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	Desti- nation 仕向	Re- marks 備考
D1 -6			HSS104	DIODE		
D1 -6			1SS133	DIODE		
D7 ,8			HZS6.8N(B2)	ZENER DIODE		
D7 ,8			RD6.8ES(B2)	ZENER DIODE		
D9			HZS5.1N(B2)	ZENER DIODE		
D9			RD5.1ES(B2)	ZENER DIODE		
D10 -13			HSS104	DIODE		
D10 -13			1SS133	DIODE		
D21 -28			HSS104	DIODE		
D21 -28			1SS133	DIODE		
D29			HZS8.2N(B2)	ZENER DIODE		
D29			RD8.2ES(B2)	ZENER DIODE		
D30			HZS2.7N(B2)	ZENER DIODE		
D30			RD2.7ES(B2)	ZENER DIODE		
D31 -35			HSS104	DIODE		
D31 -35			1SS133	DIODE		
D37 -46			HSS104	DIODE		
D37 -46			1SS133	DIODE		
D51			HSS104	DIODE		
D51			1SS133	DIODE		
ED1		*	FIP16AMW22Y	INDICATOR TUBE		
IC1		*	M38173M6-152FP	IC(MICROPROCESSOR)		
IC2		*	CXP2201AS	IC(FL DRIVER)		
IC3		*	XR-1091ECP	IC(EQUALIZER FILTER)		
IC4		*	XRA10393	IC(DUAL COMPALATOR)		
IC5			NJU7312L	IC(ANALOG SWITCH)		
IC6			NJU7311L	IC(ANALOG SWITCH)		
IC7			NJM4565D-D	IC(OP AMP X2)		
IC7			XRA15218-DX	IC(OP AMP X2)		
IC8 ,9			NJM4565L-D	IC(OP AMP X2)		
IC8 ,9			XRA15218N-DX	IC(OP AMP X2)		
IC10			NJM4565D	IC(OP AMP X2)		
IC10			XRA15218	IC(OP AMP X2)		
IC11			STK301-090	IC(ELECTRICAL GRAPHIC EQUALIZE)		
IC12,13			NJM4565L-D	IC(OP AMP X2)		
IC12,13			XRA15218N-DX	IC(OP AMP X2)		
Q1 ,2			2SC2878(B)	TRANSISTOR		
Q3			2SA1175(F,E)	TRANSISTOR		
Q3			2SA933S(Q,R)	TRANSISTOR		
Q4 -6			2SC1740S(Q,R)	TRANSISTOR		
Q4 -6			2SC2785(F,E)	TRANSISTOR		
Q7			2SC2003(L,K)	TRANSISTOR		
Q8 ,9			2SA1175(F,E)	TRANSISTOR		
Q8 ,9			2SA933S(Q,R)	TRANSISTOR		
A1			W02-1046-05	ELECTRIC CIRCUIT MODULE		
A1		*	W02-1153-05	ELECTRIC CIRCUIT MODULE		

L:Scandinavia

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X:Australia

M:Other Areas

⚠ indicates safety critical components.

KA-893

SPECIFICATIONS

For USA and CANADA

Rated power output

120 watts per channel minimum RMS, both channels driven, at 8 Ω from 40 Hz to 20,000 Hz with no more than 0.06% total harmonic distortion. (FTC)

Total harmonic distortion LINE input to SPEAKER output
40Hz to 20,000 Hz 0.06% at rated power into 8Ω
Frequency response 20 Hz to 50 kHz, 0 dB, -3 dB
Input sensitivity/impedance
PHONO 2.5 mV/47 kΩ
TUNER/TAPE/VIDEO 250 mV/47kΩ
CD 400mV/47 kΩ
TAPE 2/ADAPTOR 250mV/47kΩ
Signal-to noise ratio (IHF-A)
PHONO 73 dB for 2.5mV input
TUNER/TAPE/CD/VIDEO 102 dB
Phono maximum input level 100 mV, T.H.D. 0.5% at 1kHz
Output level/impedance
Tape REC (Pin) 250 mV/3.3 kΩ
Phono frequency response
..... RIAA standard curve ±0.5dB (20 Hz to 20,000 Hz)

Graphic equalizer control
(60 Hz, 150 Hz, 400 Hz, 1 kHz, 2.4kHz,
6 kHz, 15 kHz) ±10 dB

General

Power consumption 2.5A
AC outlets
SWITCHED 3; (Total 100 W, 0.8 A Max.)
Dimensions W:440 mm (17-5/16")
H:132 mm (5-3/16")
D:331mm (13-1/16")
Weight (Net) 9.4 kg (20.7 lb)

For other countries

Maximum continuous power output
(IHF '66) From 20 Hz to 20 kHz, 0.06% T.H.D. at 8Ω
..... 120 W + 120 W
EIAJ power at 8Ω 150 W + 150 W
Total harmonic distortion LINE input to SPEAKER output
1kHz 0.06% at rated power into 8Ω
Frequency response 20 Hz to 50 kHz, 0 dB, -3 dB
Input sensitivity/impedance
PHONO 2.5 mV/47 kΩ
TUNER/TAPE/VIDEO 250 mV/47 kΩ
CD 400 mV/47 kΩ
TAPE2/ADAPTOR 250 mV/47 kΩ
Signal-to noise ratio (IHF-A)
PHONO 73 dB for 2.5 mV input
TUNER/TAPE/CD/VIDEO 102 dB
Phono maximum input level 100 mV, T.H.D. 0.5% at 1kHz
Output level/impedance
Tape REC (Pin) 250 mV/3.3 kΩ
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) ±10dB

General

Power consumption 250 W
AC outlets
SWITCHED For Australia:2
..... For other countries:3
Dimensions W:440 mm
H:132 mm
D:331 mm
Weight (Net) 9.4kg

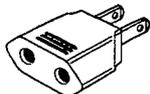
Note:

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

Accessories

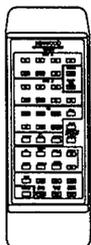
AC plug adaptor 1
(Except for some areas)
For the unit with a European
AC plug in areas other than
Europe.

System control cord 1
(Except for some areas)

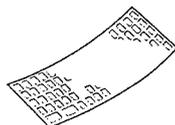


Batteries (R03/AAA) 2

Remote control unit 1



Overlay sheet 1



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