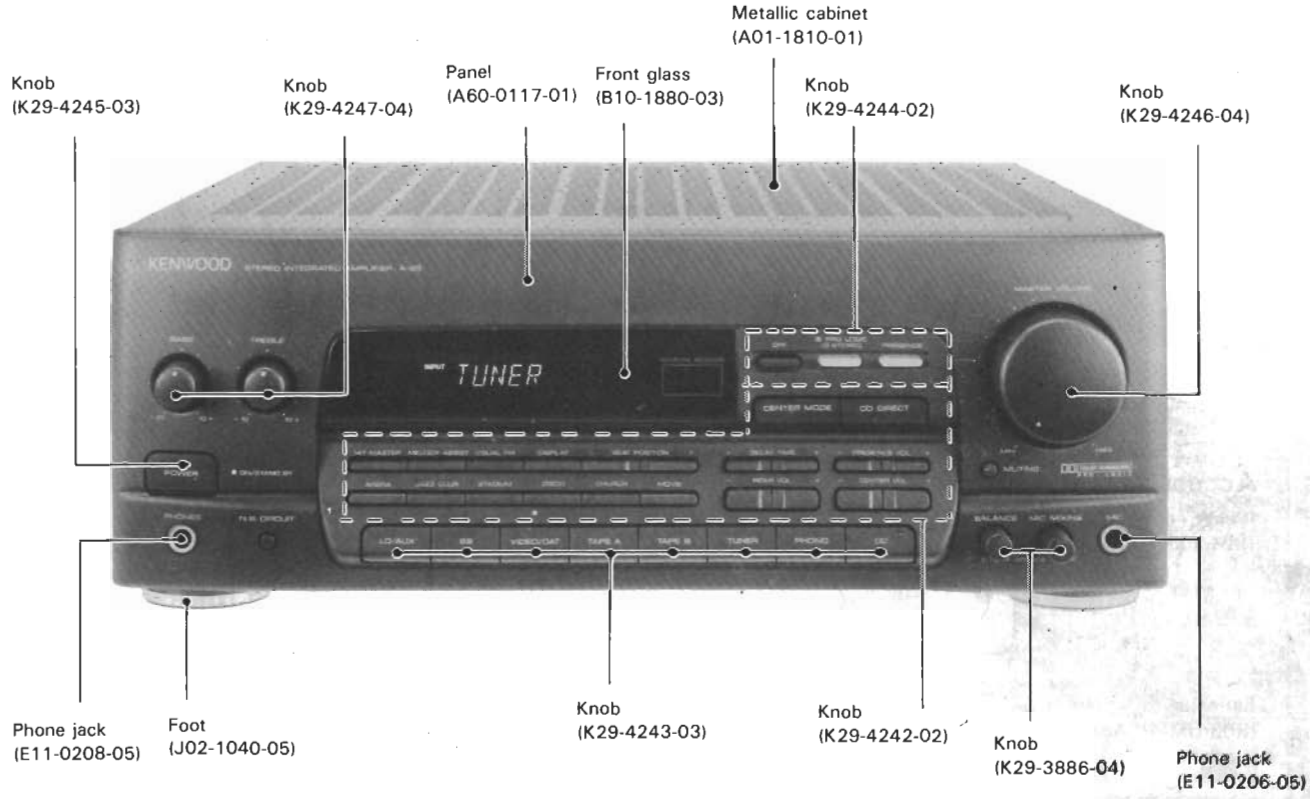
STEREO INTEGRATED AMPLIFIER

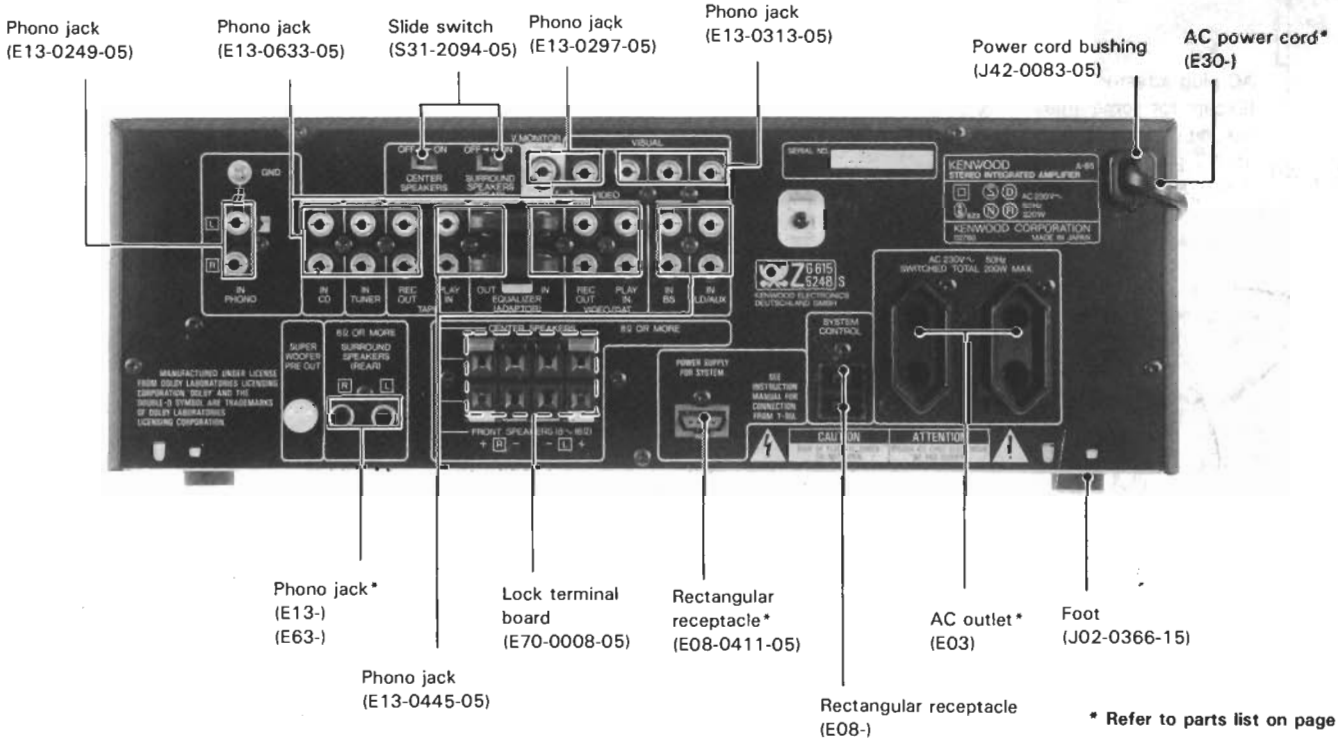
A-85

SERVICE MANUAL

KENWOOD

B51-4343-00(S)1941





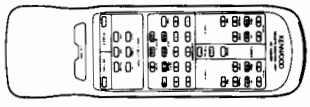
* Refer to parts list on page 29.

A-85

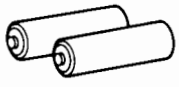
CONTENTS

Accessories

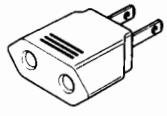
Remote control unit 1
(X94-1000-11)



Batteries
(R03/UM-4/"AAA") 2



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



Instruction manual

B60-0608-00	ENGLISH	
B60-0609-00	FRENCH	E
B60-0610-00	GERMAN	E
B60-0611-00	DUTCH	E
B60-0612-00	ITALIANO	E
B60-0613-00	SPANISH	M
B60-0652-00	CHINESE	M

Item carton case

H50-0145-04

Polystyrene foamed fixture

H10-5184-02	L
H10-5185-02	R

When the protection circuitry is enabled , the output power ceases and the message, "P. OFF" is displayed.

■ Remote control operation keys

Operation keys for KENWOOD components connected by System Control cords

TAPE A operation keys
These keys perform the same operations as the corresponding keys on the cassette deck. However, operations requiring simultaneous pressing of two keys are not possible.
These keys are used for operating Deck A of a double- cassette deck.

TUNER operation keys

TAPE B operation keys
These keys perform the same operations as the corresponding keys on the cassette deck. However, operations requiring simultaneous pressing of two keys are not possible.
These keys are used for operating a single- cassette deck or Deck B of a double- cassette deck.

Numeric keys
When the INPUT SELECTOR is set to TUNER:
These keys are used for specifying preset station numbers.
When the INPUT SELECTOR is set to CD:
These keys are used for direct tune selection.

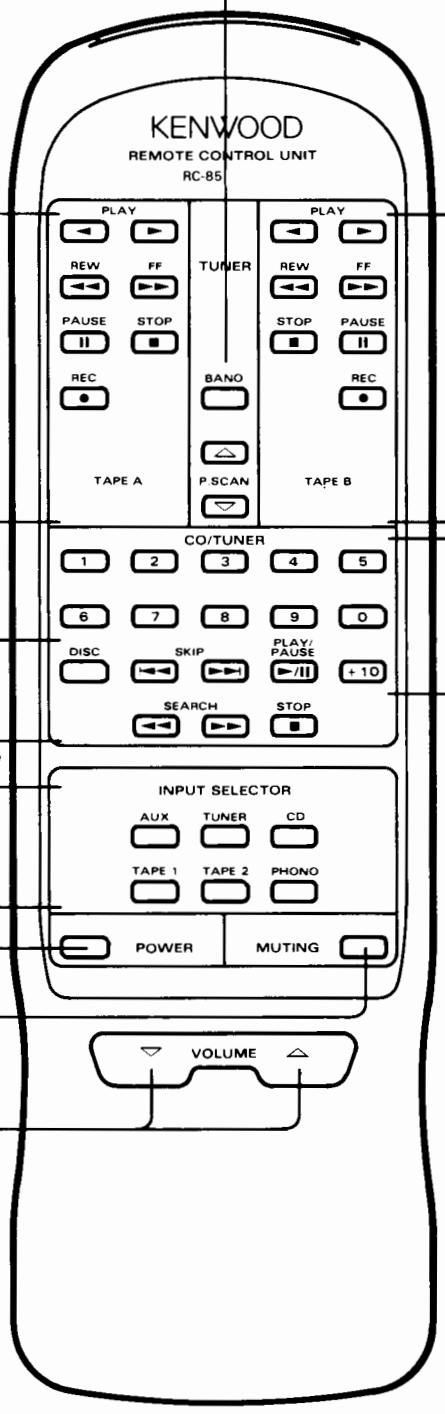
CD player operation keys

INPUT SELECTOR keys

POWER key

MUTING key

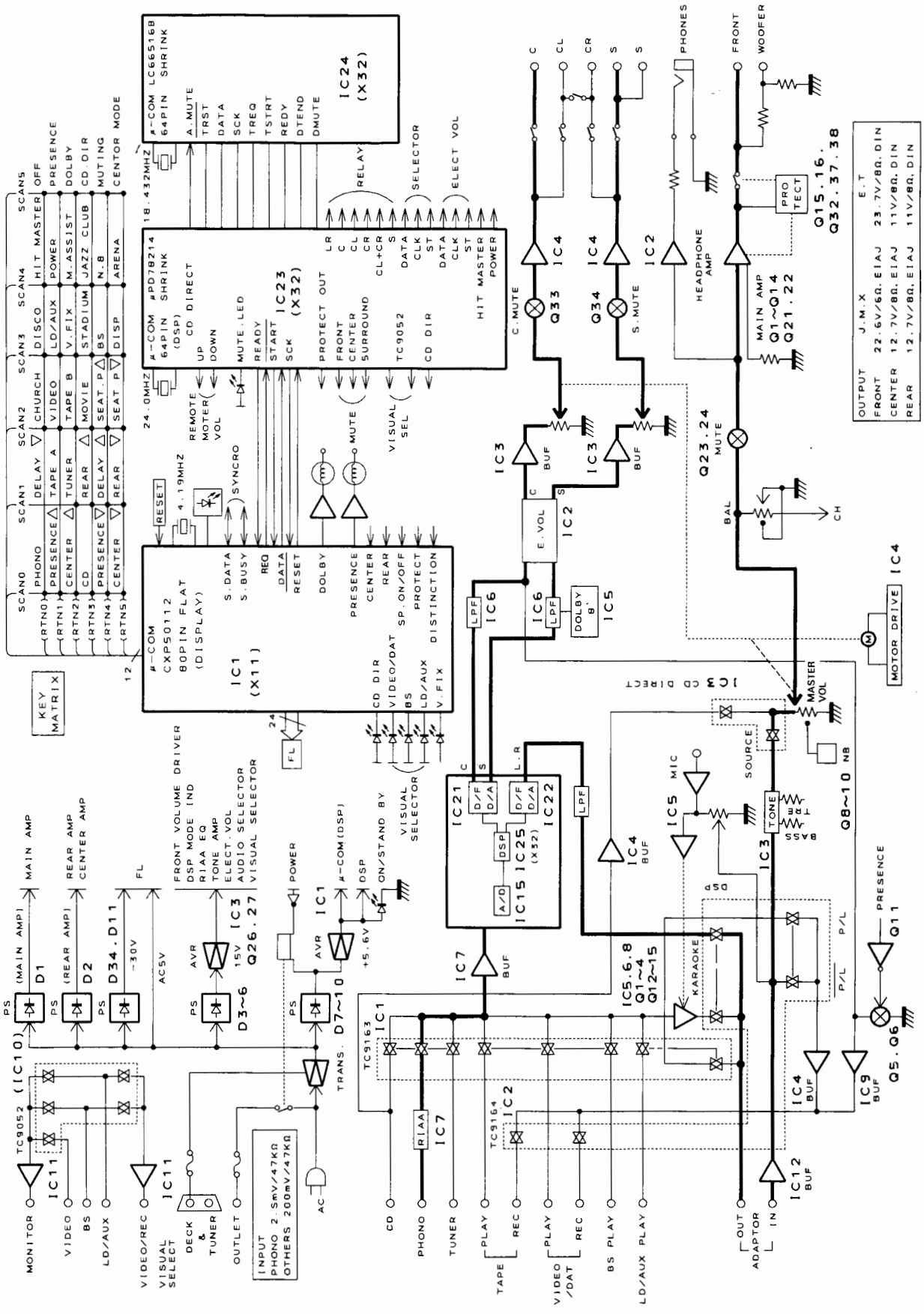
VOLUME UP △, DOWN ▽ keys



A-85 Operation keys
These keys have the same function as the corresponding keys on the main unit.

A-85

BLOCK DIAGRAM



CIRCUIT DESCRIPTION

TEST MODE

The test mode in A-85 consists of the following two modes:
Test 1....Mode in which all FL and LED indicators go on.
Test 2....Mode in which the RAM contents are initialized.

Auxiliary 1
Transits from the Test 1 state to the surround test modes.
a) MASTER VOLUME
b) CENTER VOLUME
c) REAR VOLUME
d) PRESENCE VOLUME
e) DELAY TIME
f) SEAT POSITION
g) DOLBY TEST TONE

Auxiliary 2
Discriminates ROXY and MIDI by the BS selector display in the test mode.
ROXY: [BS]
MIDI: [DBS]

Setting
1) Test 1
Insert the AC plug into a receptacle while pressing the CD key.
2) Test 2
Insert the AC plug into a receptacle while pressing the TUNER key.

How to use
During the operation in step 1), all the FL and LED indicators go on and the DOLBY and PRESENCE indicator lamps go on as indicated below.
DOLBY ↔ PRESENCE

During the operation in step 2), data is initialized and the power is switched off (factory setting).

Press the DOLBY or PRESENCE key after the Test 1 mode operation is completed. The display returns to normal. Press the PRESENCE +/− KEY for a), CENTER + key for b), REAR + key for c), CENTER + key for d), DELAY + key for e), SEAT POSITION FRONT key for f), and VISUAL FIX key for g). The following operation is performed.

a) MASTER VOLUME
VOLUME UP, STOP, and DOWN are assigned to the following keys to perform the following operations:

PRESENCE + key: VOLUME UP = Increases continuously (UP).

PRESENCE +/− key: VOLUME STOP = Stops UP/DOWN during volume control operation

PRESENCE − key: VOLUME DOWN = Decreases continuously (DOWN)

b) CENTER VOLUME
Use the CENTER + key during DOLBY.

(−15 dB) → −∞ dB → −40 dB → −0 dB
↑ ↓

Ineffective during PRESENCE.

c) REAR VOLUME
DOLBY (prologic)

(−15 dB) → −∞ dB → −40 dB → −0 dB
↑ ↓

The same as during PRESENCE (when the rear speaker is on).

d) PRESENCE VOLUME
Ineffective during DOLBY.
Use the CENTER + key during PRESENCE.

(−8 dB) → −20 dB → −10 dB → −0 dB
↑ ↓

e) DELAY TIME
The delay time changes from 15 to 30 ms in 1 ms units during DOLBY.
The delay time changes from 5 to 100 ms in 5 ms units during PRESENCE.

f) SEAT POSITION
Ineffective during DOLBY.
PRESENCE

REAR −12 → CENTER 0 → FRONT +12
↑ ↓

g) DOLBY TEST TONE
Use the VISUAL FIX key.
Press the key to enter the test tone mode during DOLBY. The mode is selected about every 2 seconds. Press the key again. The mode is then selected every second. The test tone mode is terminated when the key is pressed again.
PROLOGIC (NORMAL WIDE)

LEFT → CENTER → RIGHT → REAR
↑ ↓
PROLOGIC (PHANTOM)
LEFT → RIGHT → REAR
↑ ↓
3 STEREO
LEFT → CENTER → RIGHT
↑ ↓

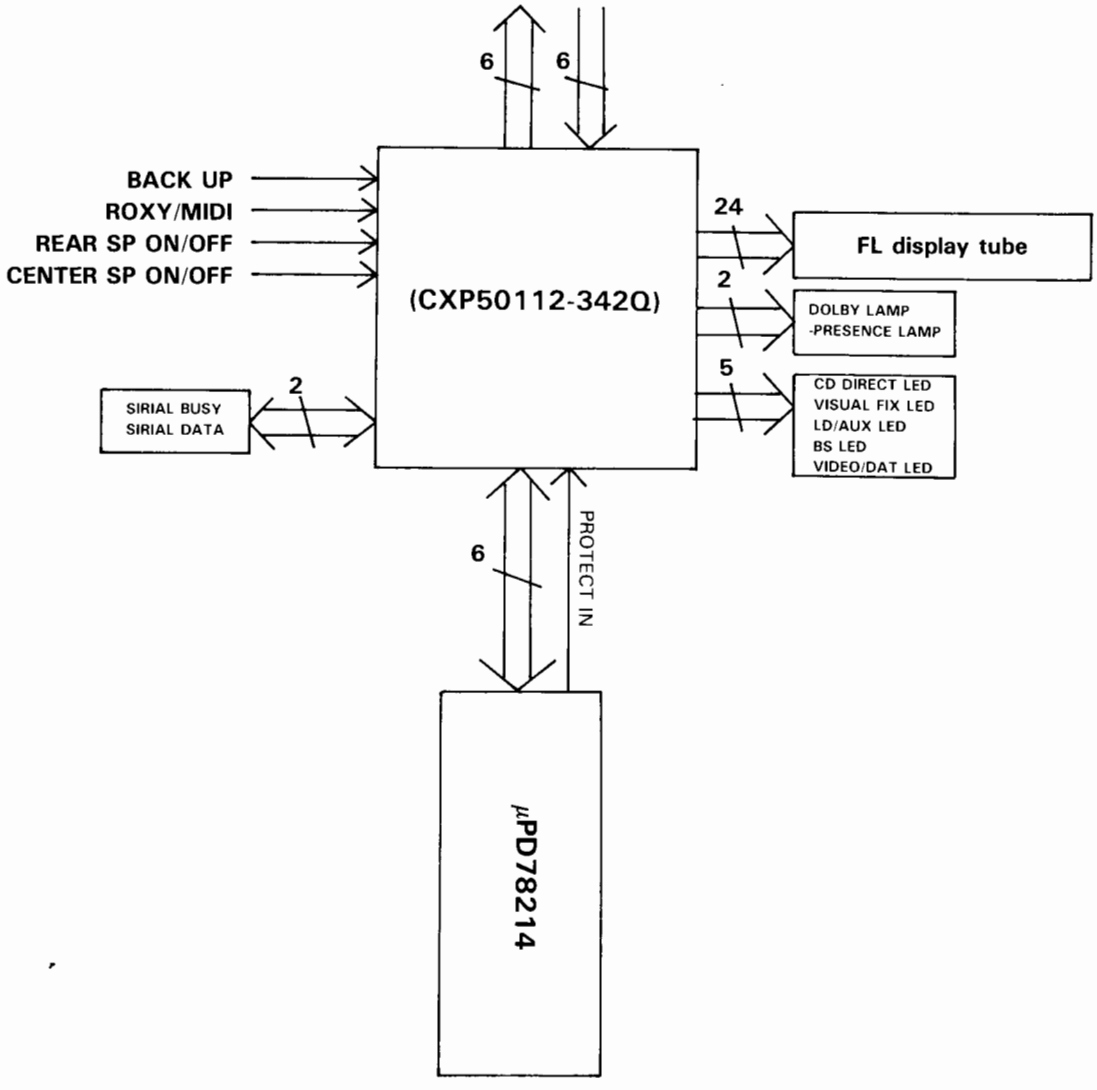
Note: The through mode is entered in the PRESENCE of ARENA only.

CIRCUIT DESCRIPTION

Microprocessor

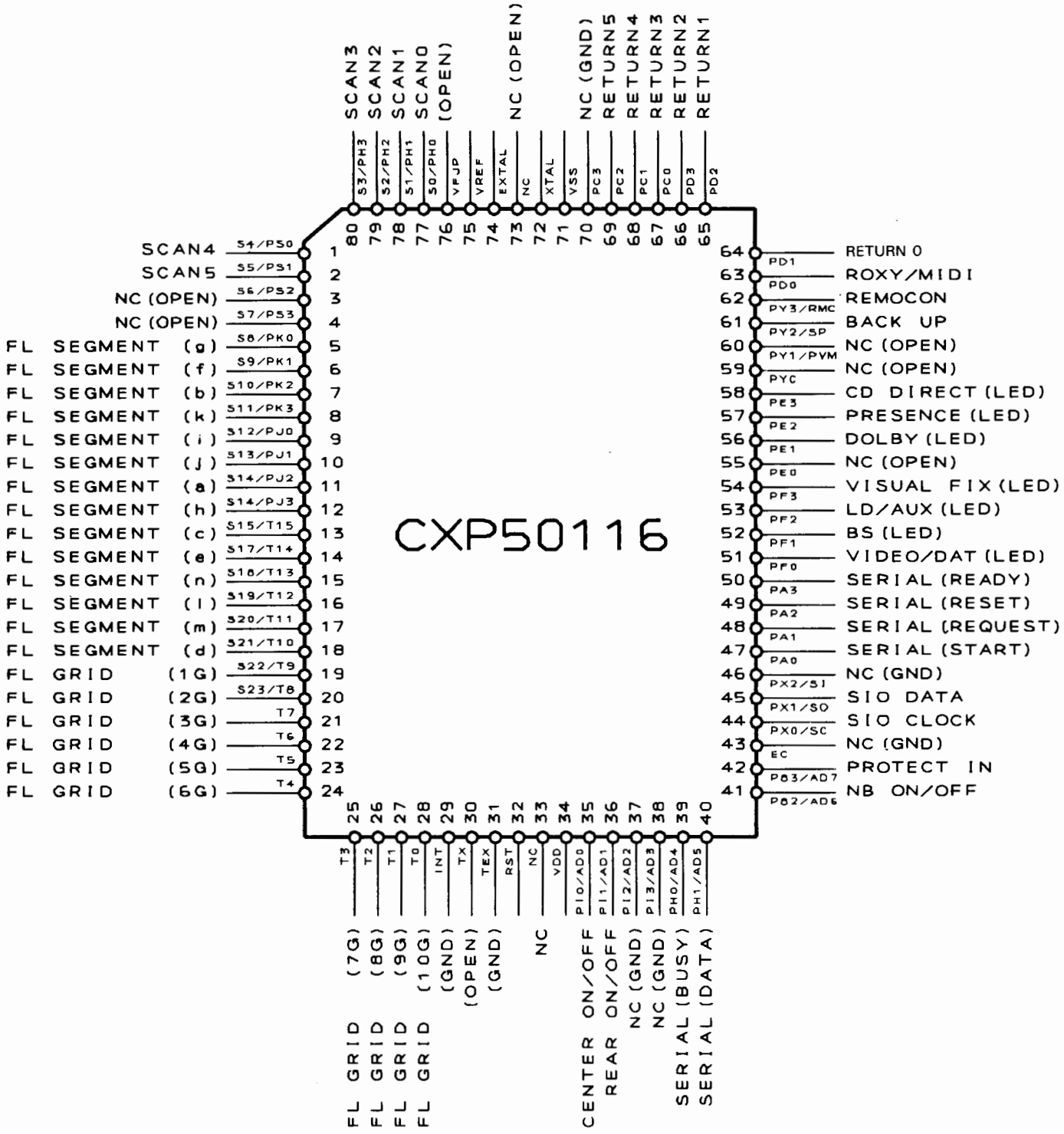
Block diagrm of microcomputer's peripheral equipment

SCAN 5	OFF	PRESENCE	3STEREO	CD DIRECT	MUTE	CENTER MODE
SCAN 4	HIT MASTER	POWER	MELODY ASSIST	JAZZ CLUB	NB CIRCUIT	ARENA
SCAN 3	DISCO	LD/AUX	VISUAL FIX	STADIUM	BS	DISPLAY
SCAN 2	CHURCH	VIDEO DAT	TAPE A	MOVIE	SEAT-P FRONT	SEAT-P REAR
SCAN 1	DELAY DOWN	TAPE B	TUNER	REAR UP	DELAY UP	REAR DOWN
SCAN 0	PHONO	P-VOL. UP	CENTER UP	CD	P-VOL. DOWN	CENTER DOWN
	RETURN 0	RETURN 1	RETURN 2	RETURN 3	RETURN 4	RETURN 5



CIRCUIT DESCRIPTION

Pin Connection



CIRCUIT DESCRIPTION

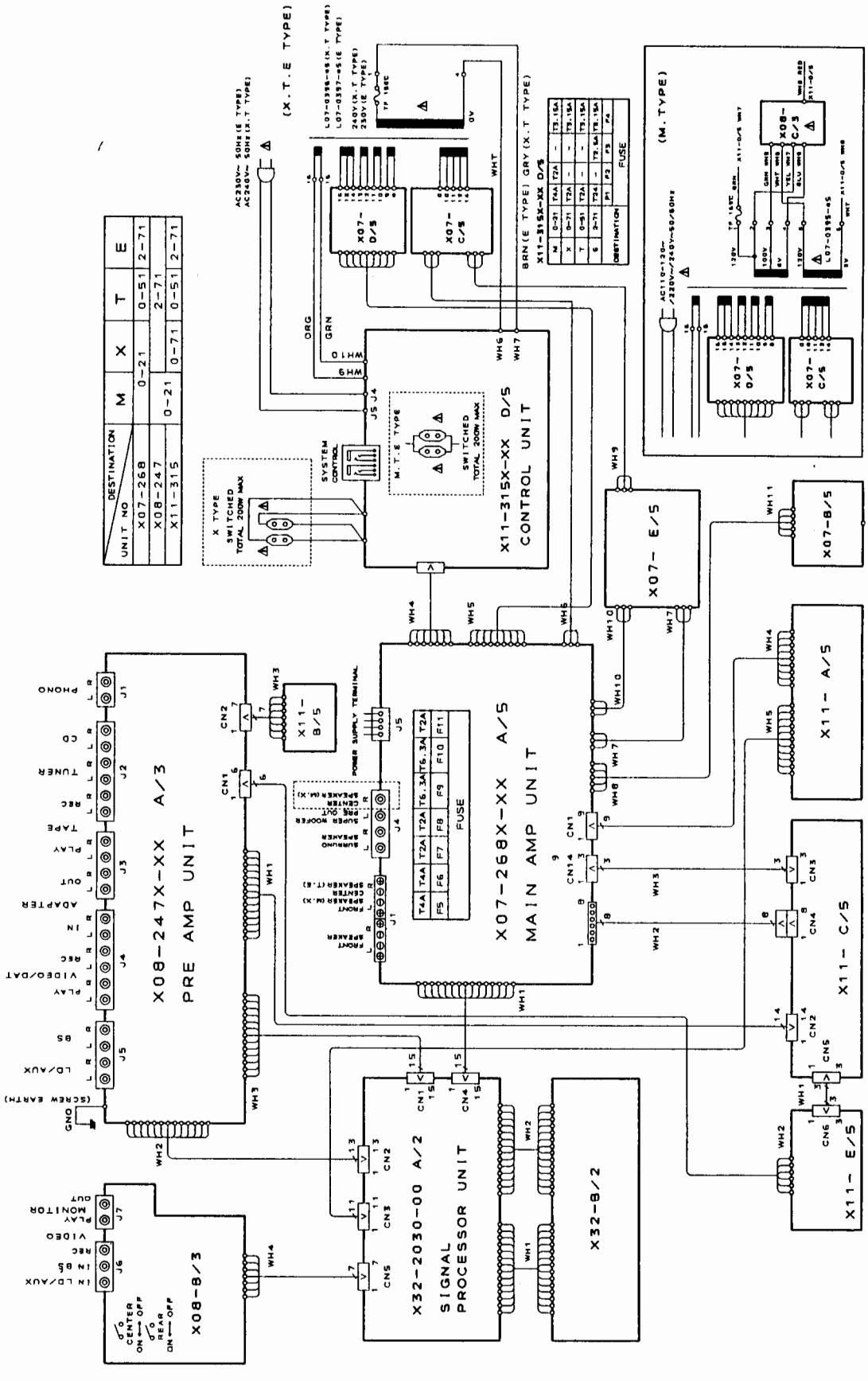
Pin Functions

Pin No.	Pin name	I/O	Name	Description
1	S4/PG0	O	SCAN 4	Key scan 4
2	S5/PG1	O	SCAN 5	Key scan 5
3	S6/PG2	—	NC (OPEN)	
4	S7/PG3	—	NC (OPEN)	
5	S8/PK0	O	FL SEGMENT (g)	FL segment (g)
6	S9/PK1	O	FL SEGMENT (f)	FL segment (f)
7	S10/PK2	O	FL SEGMENT (b)	FL segment (b)
8	S11/PK3	O	FL SEGMENT (k)	FL segment (k)
9	S12/PJ0	O	FL SEGMENT (i)	FL segment (i)
10	S13/PJ1	O	FL SEGMENT (j)	FL segment (j)
11	S14/PJ2	O	FL SEGMENT (a)	FL segment (a)
12	S15/PJ3	O	FL SEGMENT (h)	FL segment (h)
13	S16/T15	O	FL SEGMENT (c)	FL segment (c)
14	S17/T14	O	FL SEGMENT (e)	FL segment (e)
15	S18/T13	O	FL SEGMENT (n)	FL segment (n)
16	S19/T12	O	FL SEGMENT (l)	FL segment (l)
17	S20/T11	O	FL SEGMENT (m)	FL segment (m)
18	S21/T10	O	FL SEGMENT (d)	FL segment (d)
19	S22/T9	O	FL GRID (1G)	FL grid (1G)
20	S23/T8	O	FL GRID (2G)	FL grid (2G)
21	T7	O	FL GRID (3G)	FL grid (3G)
22	T6	O	FL GRID (4G)	FL grid (4G)
23	T5	O	FL GRID (5G)	FL grid (5G)
24	T4	O	FL GRID (6G)	FL grid (6G)
25	T3	O	FL GRID (7G)	FL grid (7G)
26	T2	O	FL GRID (8G)	FL grid (8G)
27	T1	O	FL GRID (9G)	FL grid (9G)
28	T0	O	FL GRID (10G)	FL grid (10G)
29	INT	I	NC (GND)	External interrupt (unused)
30	TX	—	NC (OPEN)	32 kHz T/C clock output (unused)
31	TEX	I	NC (GND)	32 kHz T/C clock input (unused)
32	RST	I/O		Microcomputer reset
33	NC	—		
34	V_{DD}	—		Positive power supply
35	PI0/AD0	I	CENTER SP ON/OFF	Center speaker ON/OFF input
36	PI1/AD1	I	REAR SP ON/OFF	Rear speaker ON/OFF input
37	PI2/AD2	—	NC (GND)	
38	PI3/AD3	—	NC (GND)	
39	PB0/AD4	I/O	SERIAL (BUSY)	Serial BUSY line
40	PB1/AD5	I/O	SERIAL (DATA)	Serial DATA line
41	PB2/AD6	O	NB CIRCUIT ON/OFF	NB circuit ON/OFF output
42	PB3/AD7	I	PROTECT IN	Protection input
43	EC	—	NC (GND)	
44	PX0/SC	O	SIO CLOCK	SIO CLOCK (for communication)
45	PX1/SO	O	SIO DATA	SIO DATA (for communication)
46	PX2/SI	—	NC (GND)	

CIRCUIT DESCRIPTION

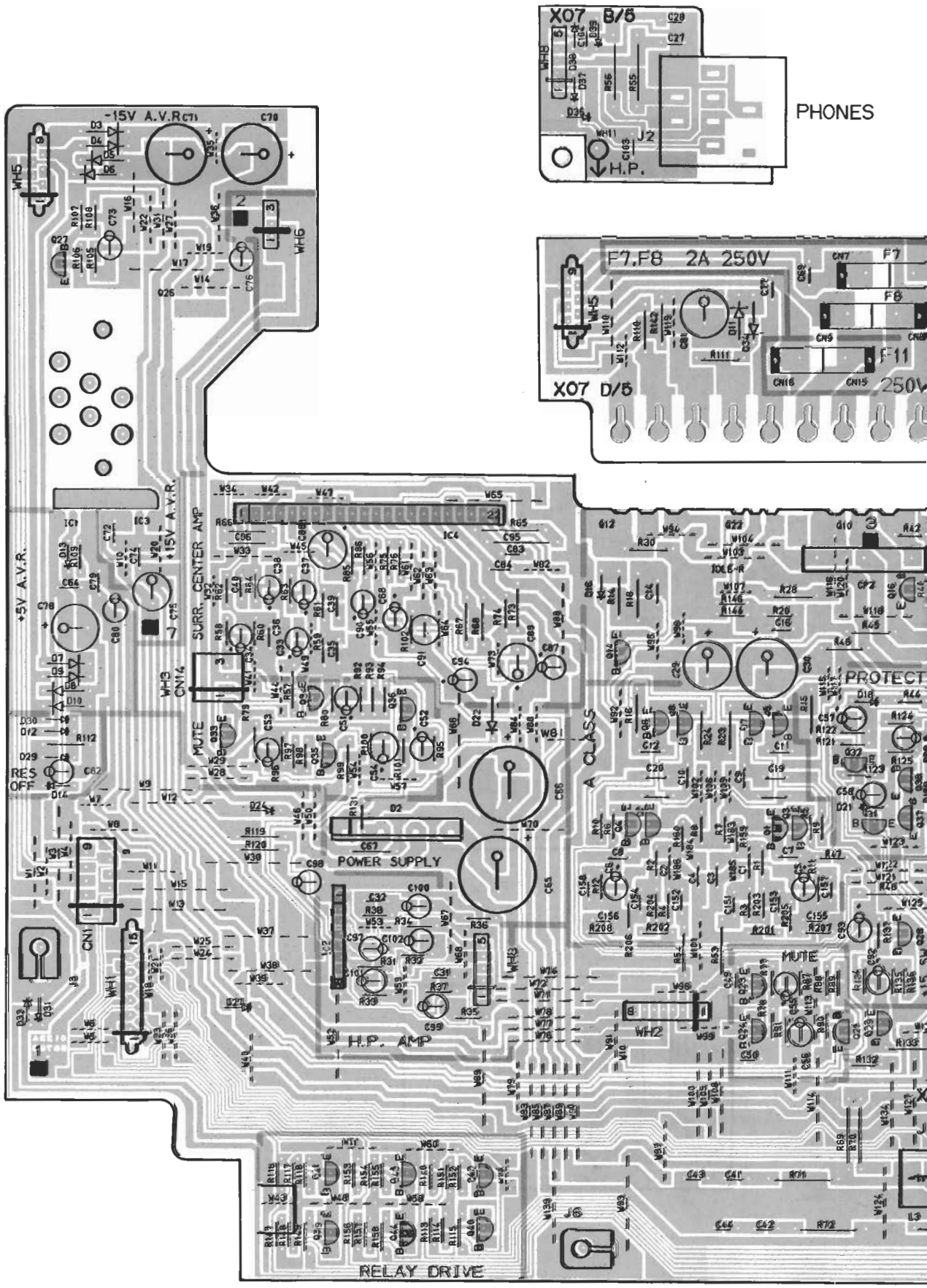
Pin No.	Pin name	I/O	Name	Description
47	PA0	O	SERIAL (START)	Serial START (for communication)
48	PA1	O	SERIAL (REQUEST)	Serial REQUEST (for communication)
49	PA2	O	SERIAL (RESET)	Serial RESET (for communication)
50	PA3	I	SERIAL (READY)	Serial READY (for communication)
51	PF0	I	VIDEO/DAT (LED)	LED
52	PF1	I	BS (LED)	LED
53	PF2	I	LD/AUX (LED)	LED
54	PF3	I	VISUAL FIX (LED)	LED
55	PE0	I	NC (OPEN)	
56	PE1	I	DOLBY (LED)	LAMP
57	PE2	I	RPESENCE (LED)	LAMP
58	PE3	I	CD DIRECT (LED)	LAMP
59	PY0	I	NC (OPEN)	
60	PY1/PWM	I	NC (OPEN)	
61	PY2/WP	I	BACK UP	Backup input
62	PY3/RMC	I	REMOCON	Remote control input
63	PD0	I	ROXY/MIDI	Type discrimination input
64	PD1	I	RETURN0	Key return 0
65	PD2	I	RETURN1	Key return 1
66	PD3	I	RETURN2	Key return 2
67	PC0	I	RETURN3	Key return 3
68	PC1	I	RETURN4	Key return 4
69	PC2	I	RETURN5	Key return 5
70	PC3	I	NC (OPEN)	
71	Vss	—		GND pin
72	XTAL	—		Clock output
73	CN	—	NC (OPEN)	
74	EXTAL	I		Clock input
75	V_{REF}	—		Reference voltage pin for voltage detection (unused)
76	V_{FDP}	—		FL load power supply pin
77	S0/PH0	O	SCAN0	Key scan 0
78	S1/PH1	O	SCAN1	Key scan 1
79	S2/PH2	O	SCAN2	Key scan 2
80	S3/PH3	O	SCAN3	Key scan 3

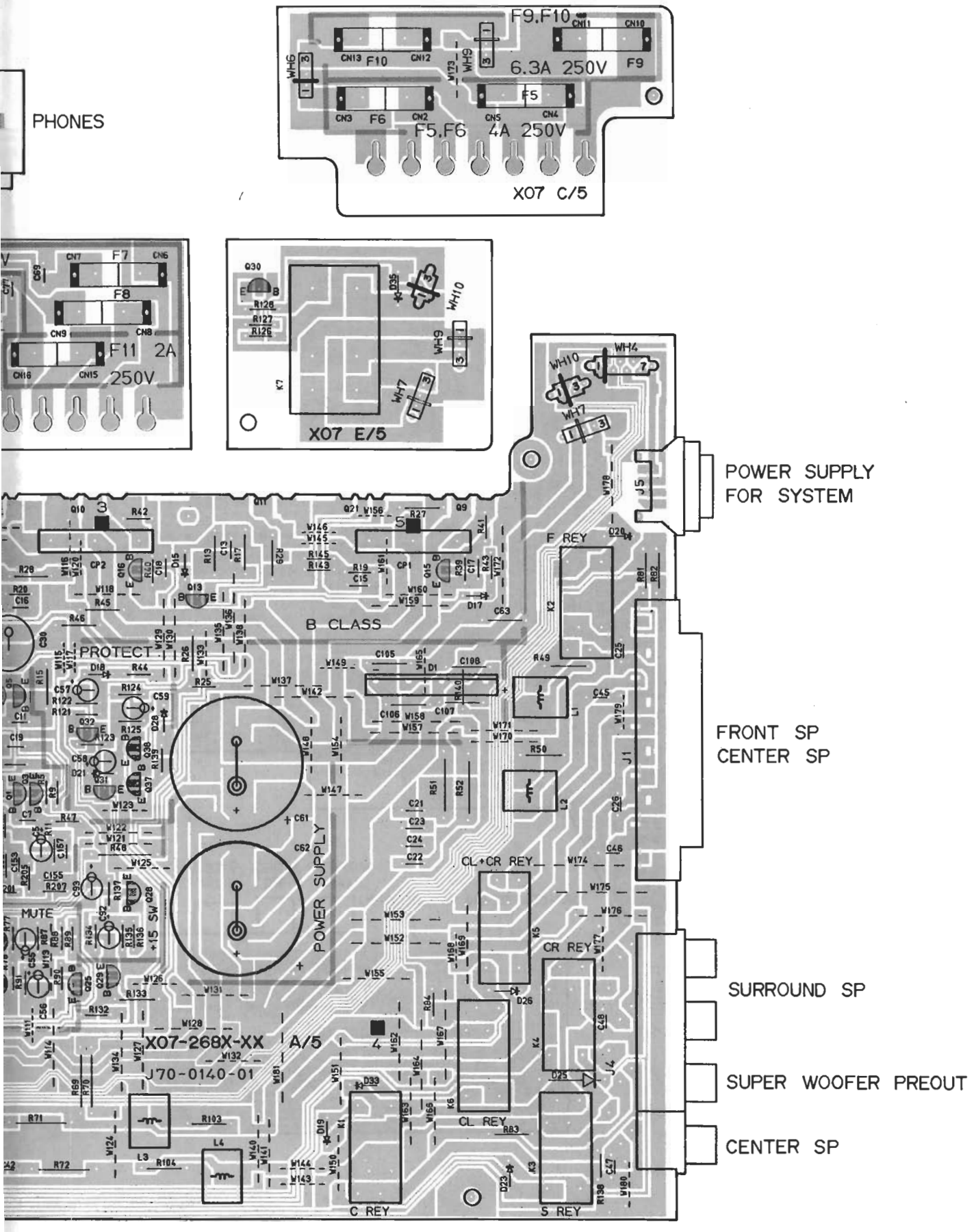
WIRING DIAGRAM



PC BOARD (Component Side View)

MAIN AMP UNIT

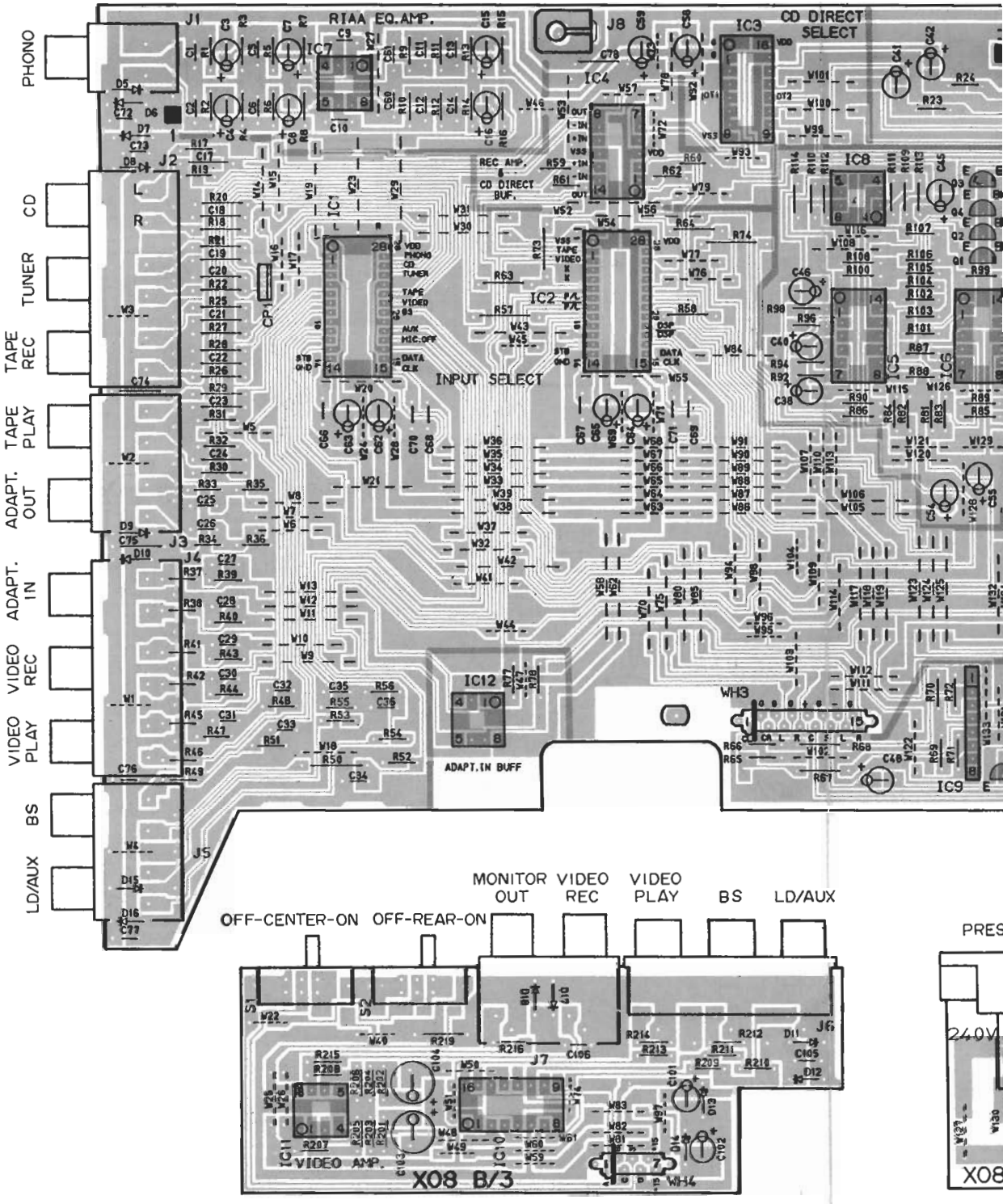


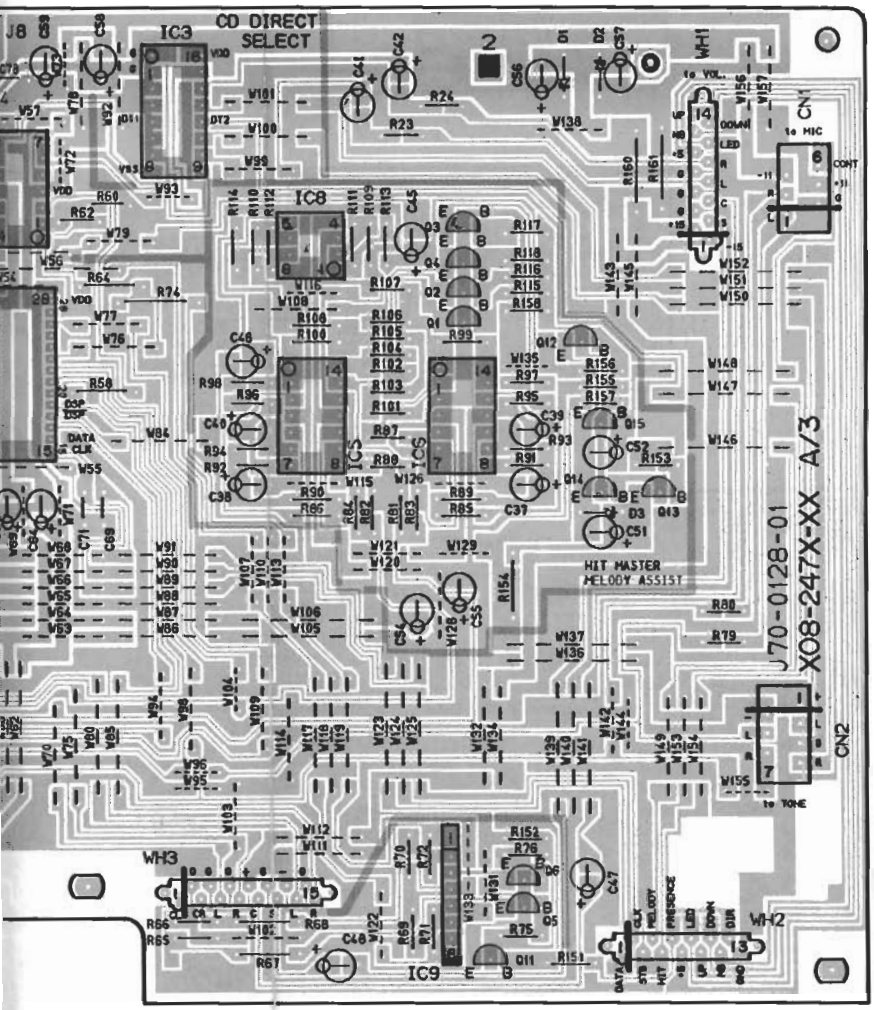


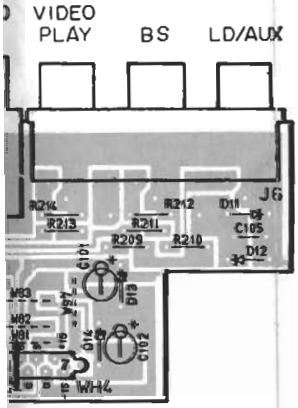
Refer to the schematic diagram for the values of resistors and capacitors.

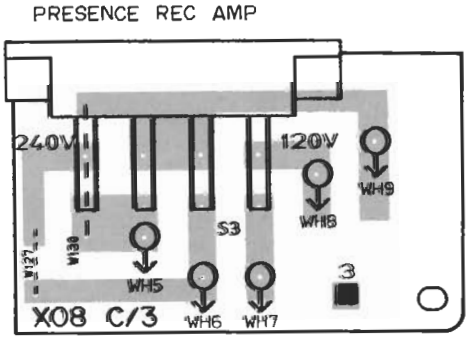
C BOARD (Component Side View)

PRE AMPLIFIER UNIT





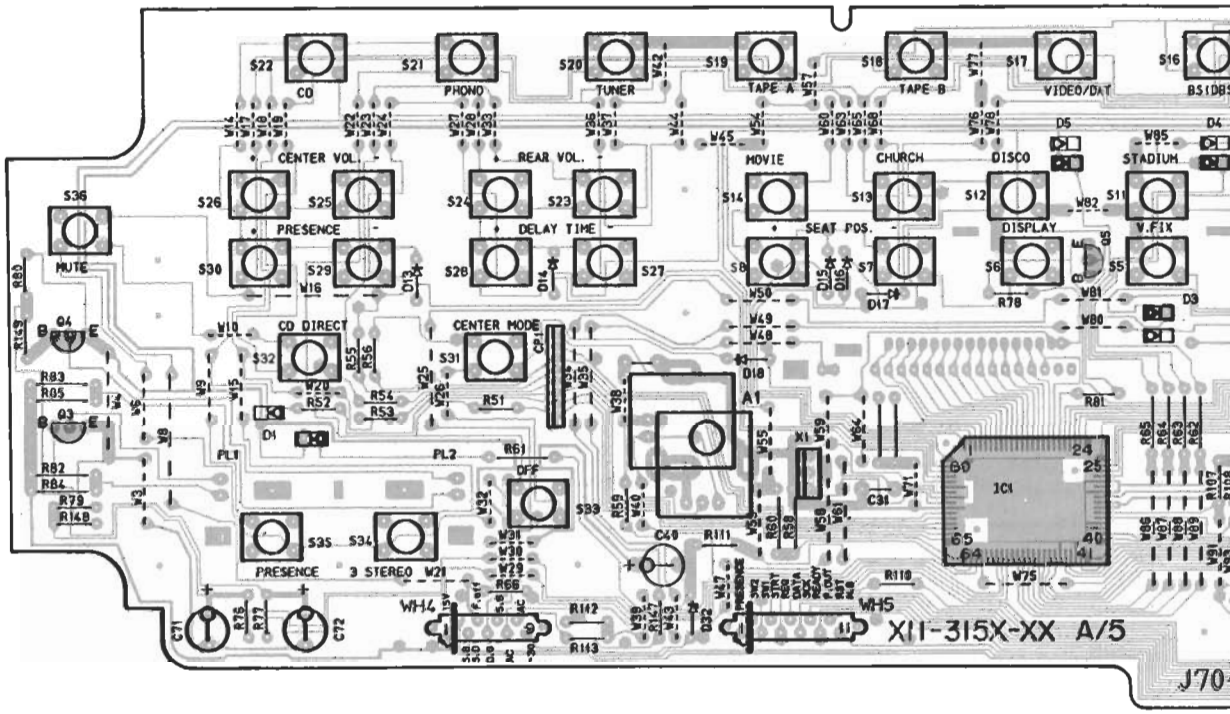


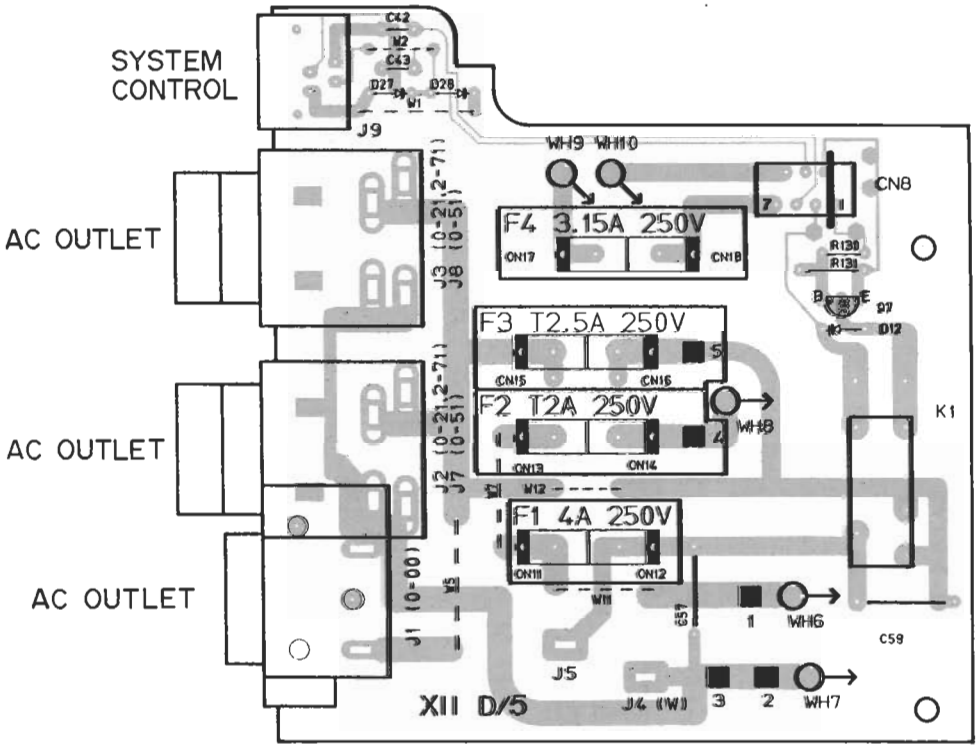


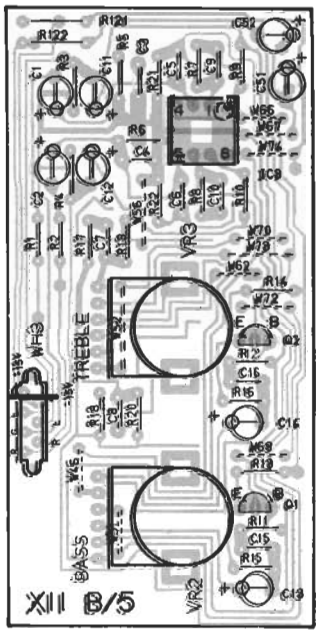
Refer to the schematic diagram for the values of resistors and capacitors.

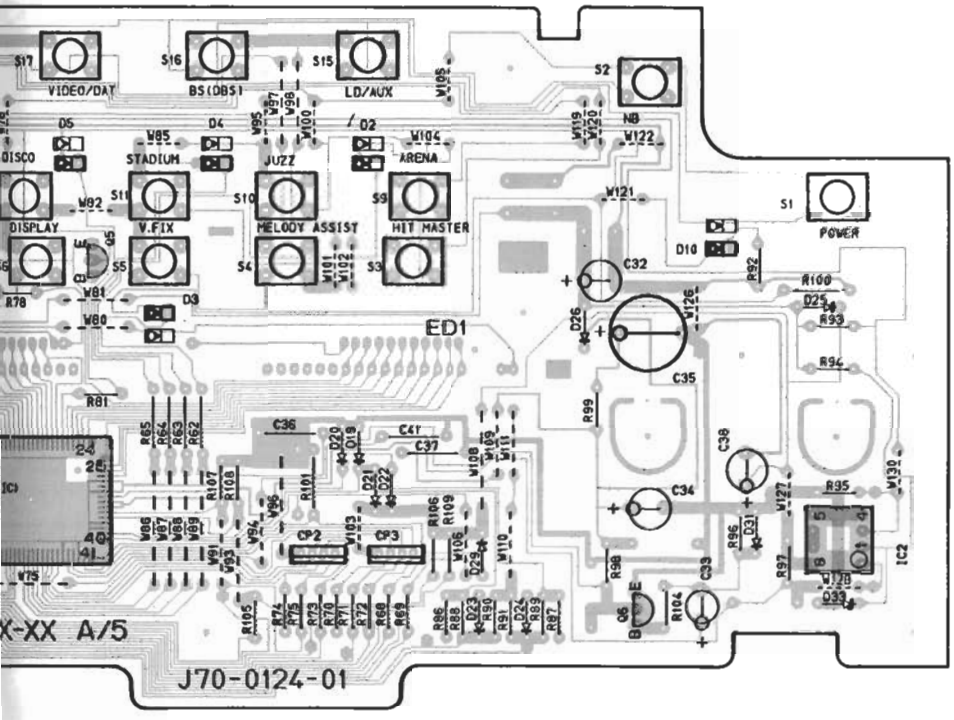
PC BOARD (Component Side View)

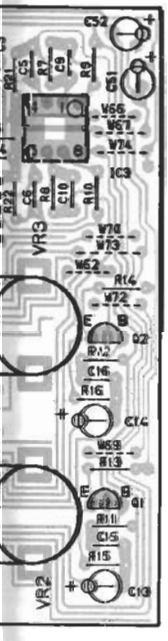
CONTROL UNIT

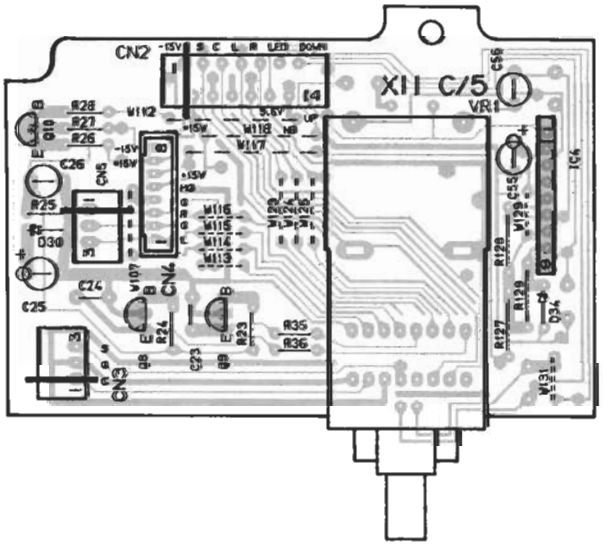


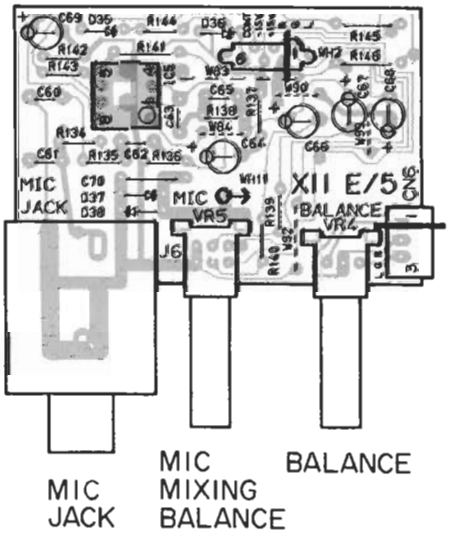






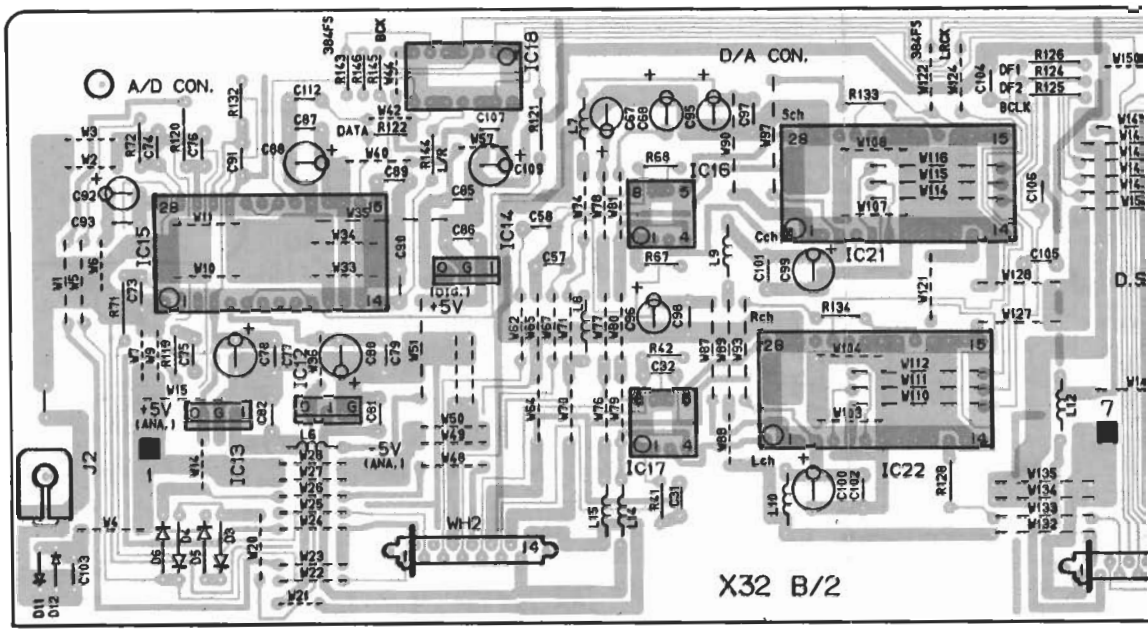


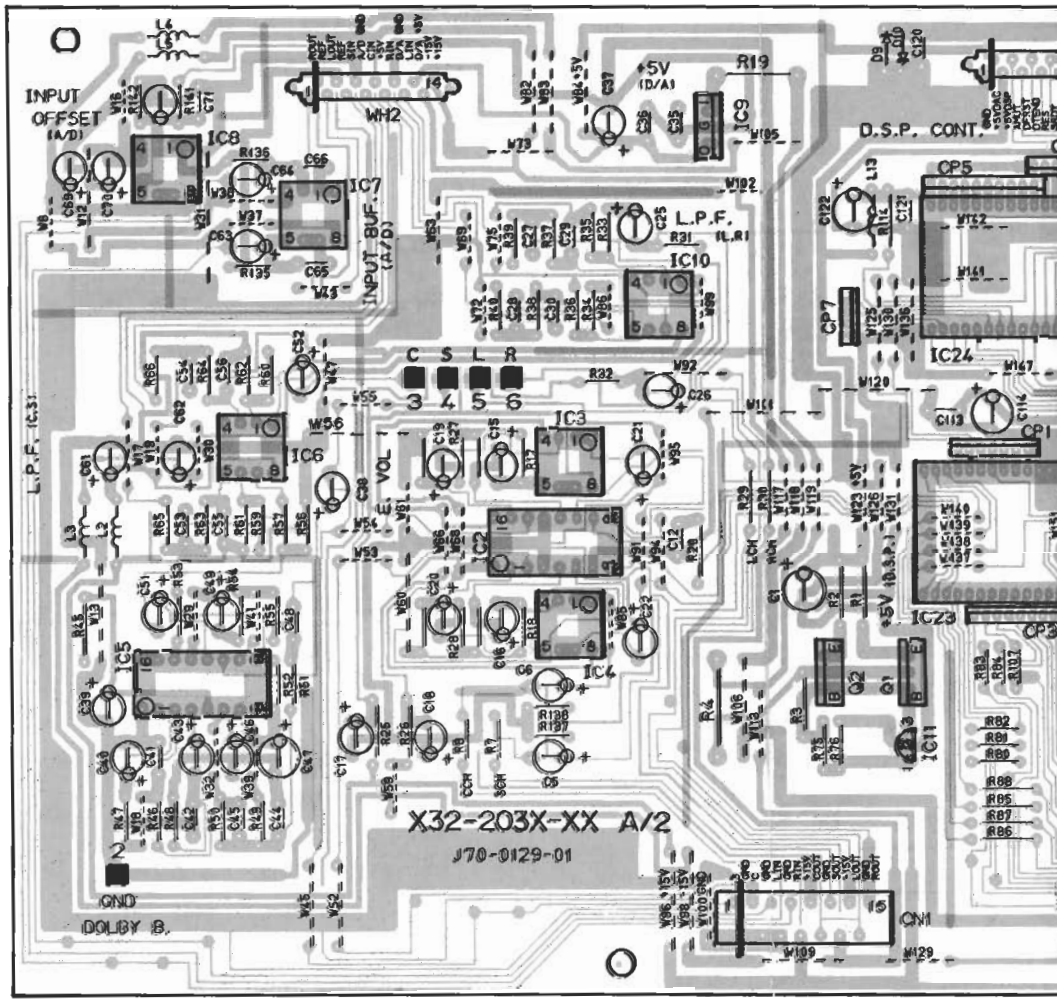


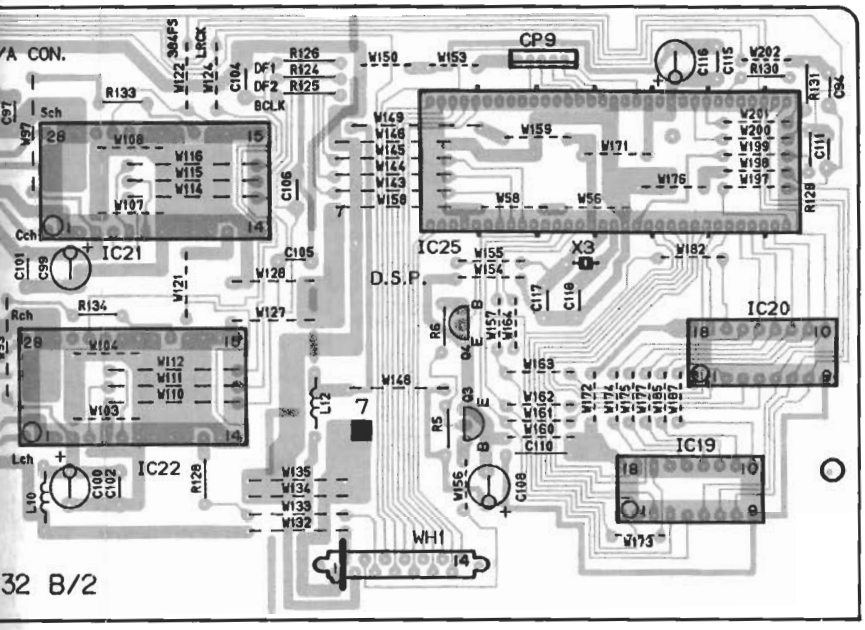


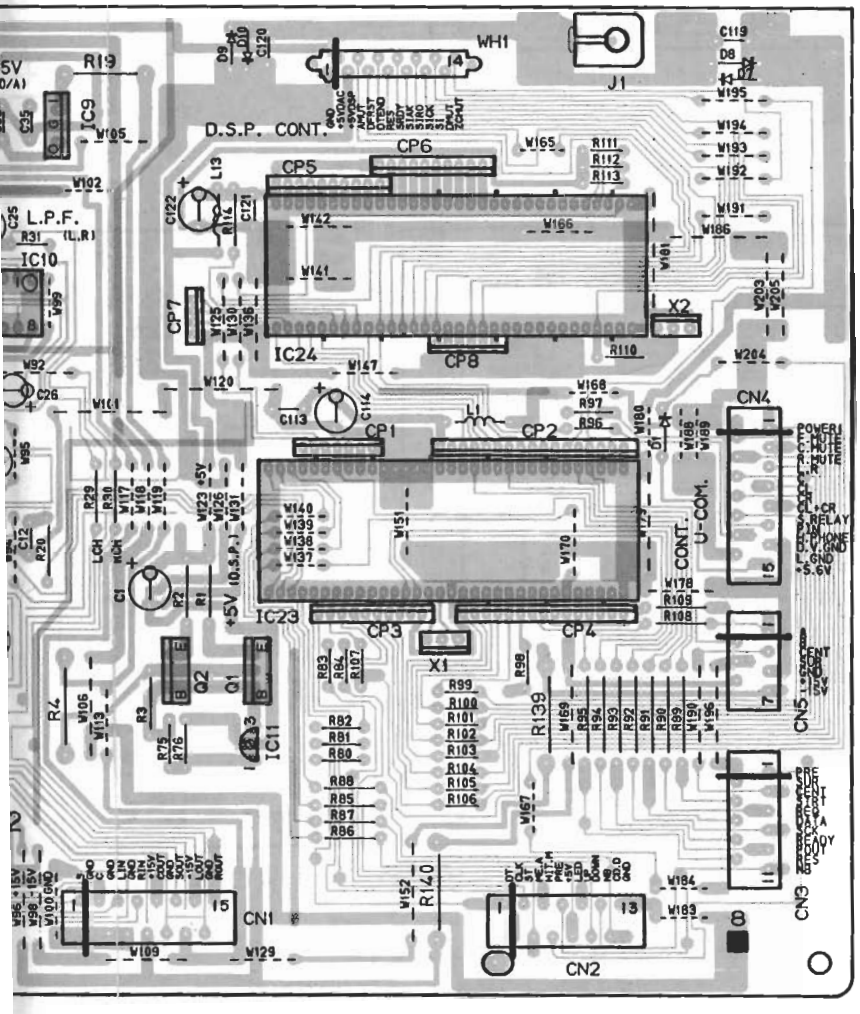
Refer to the schematic diagram for the values of resistors and capacitors.

SIGNAL PROCESSOR UNIT

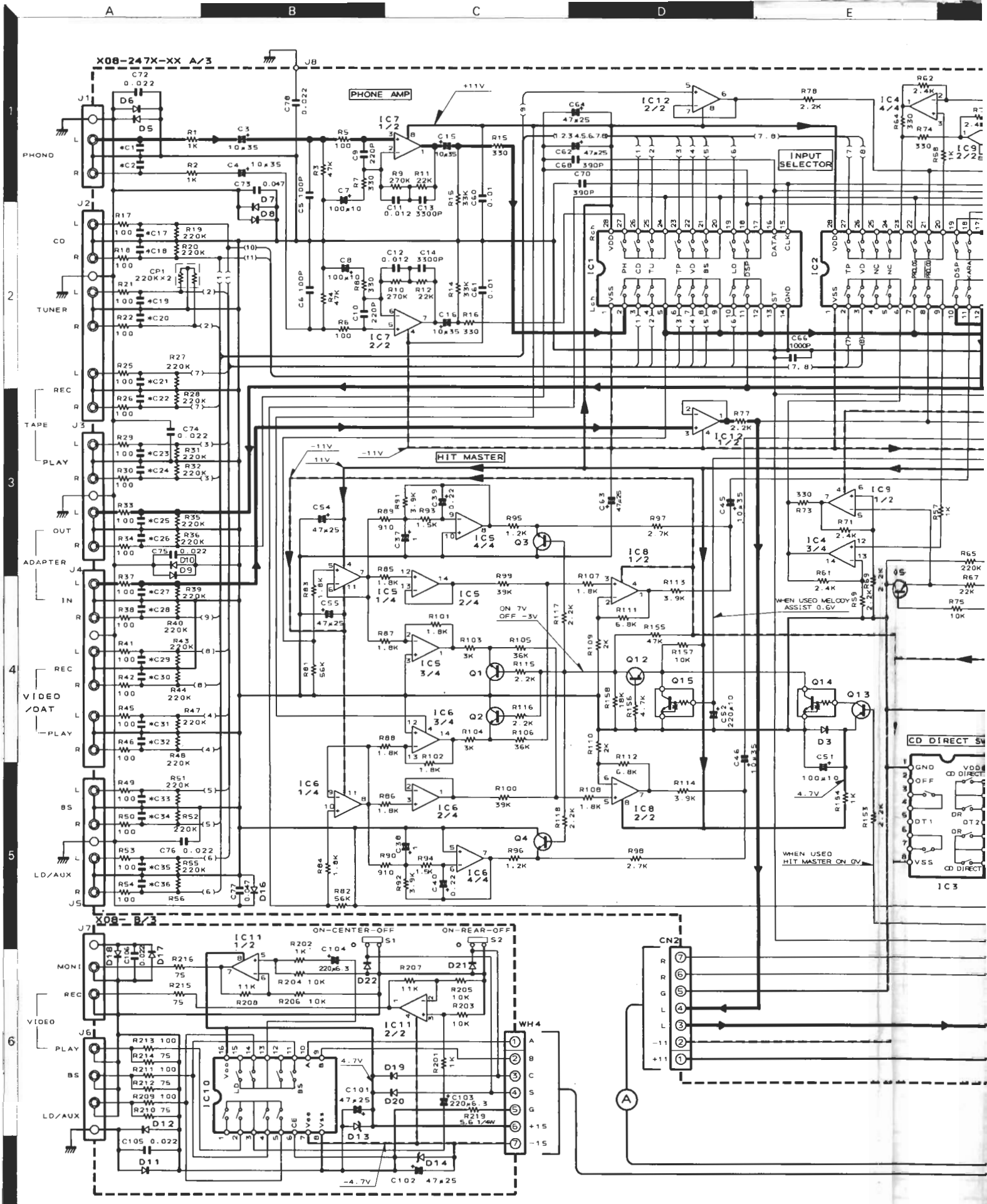






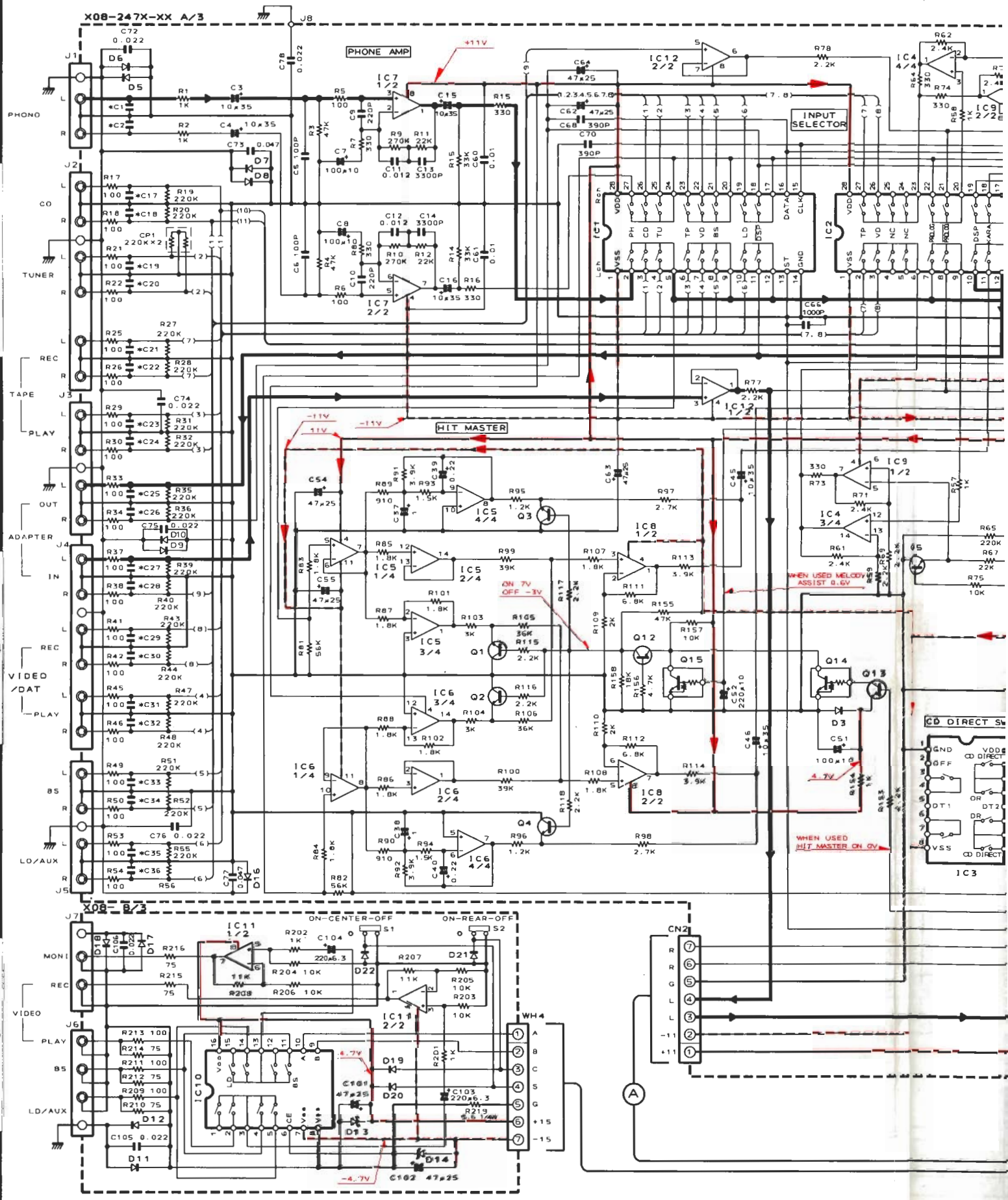


Refer to the schematic diagram for the values of resistors and capacitors.



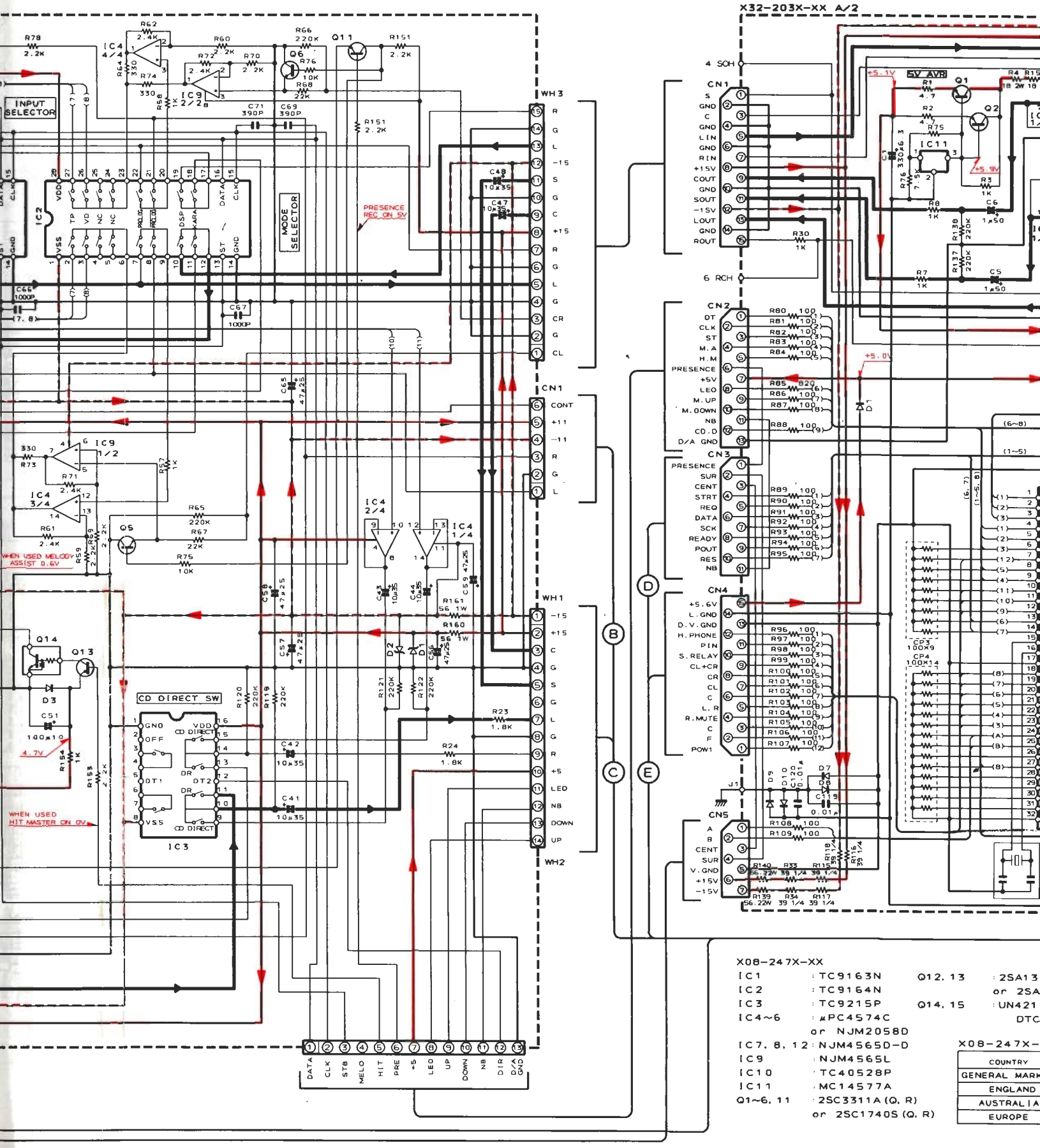
2SA1123	2SC1923
2SA733 (A)	2SC2003
2SA992	2SC2878
2SC1845	2SC945 (A)

2SD1266



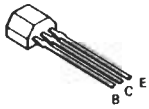
2SA1123 2SC1923
2SA733 (A) 2SC2003
2SA992 2SC2878
2SC1845 2SC945 (A)

2SD1266



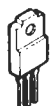
X08-247X-XX

IC1	: TC9163N	Q12, 13	: 2SA13 or 2SA
IC2	: TC9164N	Q14, 15	: UN421 DTC
IC3	: TC9215P		
IC4~6	: μPC4574C or NJM2058D		
IC7, 8, 12	: NJM4565D-D	X08-247X-	
IC9	: NJM4565L	COUNTRY	
IC10	: TC40528P	GENERAL MARK	
IC11	: MC14577A	ENGLAND	
Q1~6, 11	: 2SC3311A (Q, R) or 2SC1740S (Q, R)	AUSTRALIA	
		EUROPE	

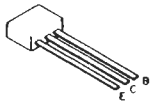


DTC124ES
2SA933S
2SC1740S

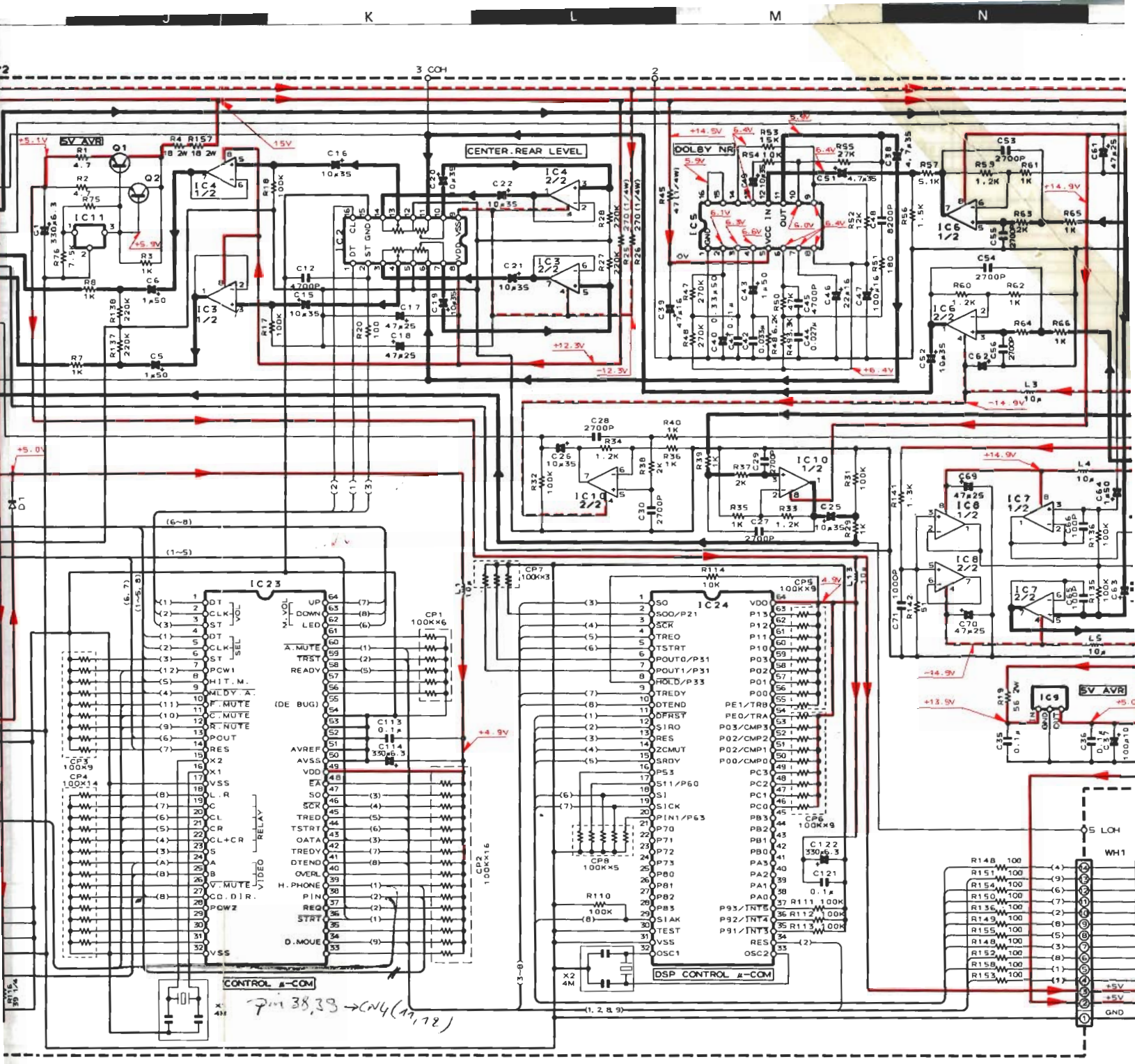
2SC4137



2SB941



UN421
2SA13
2SC33



163N Q12, 13 : 2SA1309A (Q, R)
164N or 2SA933S (Q, R)
215P Q14, 15 : UN4212 or
4574C DTC124ES
JM2058D
4565D-D
4565L
0528P
4577A
311A (Q, R)
C1740S (Q, R)

D1, 2 : RD11ES (B2)
or HZS11N (B2)
D3, 13, 14 : RD4.7ES (B)
or HZS4.7N (B)
D5~12 : 1SS133 or HSS104

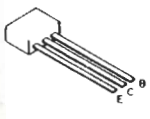
X08-247X-XX

COUNTRY	ABB	UNIT NAME \ AREP.NO	WH5~9	C1, 2, 17~36
GENERAL MARKET	M	0-21	YES	NO
ENGLAND	T	2-71	NO	220P
AUSTRALIA	X			
EUROPE	E			

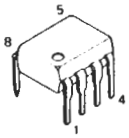
X32-203X-XX

IC3, 4, 6, 10 : NJM4565D-D
IC2 : TC9213P
IC5 : LA2730
IC7, 8 : UPC4072C
IC11 : TL431CLP or NJM431L
IC12 : UPC7905HF
IC9, 13, 14 : UPC7805HF
IC15 : CS5339-KP
IC16, 17 : NJM4558D
IC18 : UPD74HC08C
or HM50464RP-12

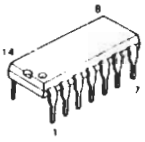
IC19, 20 : LM33464G-12
or HM50464RP-12
IC21, 22 : LC7883K
IC23 : UPD78214CW-770
IC24 : LC66516B-4733
IC25 : LC83010N
Q1, 2 : 2SD1266
Q3 : UN4212orDTC124ES
Q4 : 2SC1923 (R, O)
Q5 : 2SA1309A (Q, R)
or2SA9335 (Q, R)
D1, 3~10 : 1SS133orHSS104



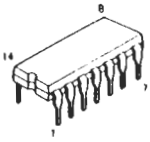
UN4212
2SA1309A
2SC3311A



NJM4558D
NJM4565D-D



NJM2058D



UPC4
UPD7

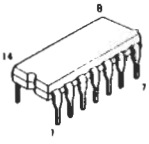
N O P Q R

X32- B/2

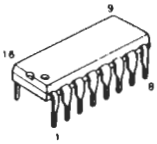
IC19, 20	LM33464G-12 or HM50464RP-12
IC21, 22	LC7883K
IC23	UPD78214CW-770
IC24	LC66516B-4733
IC25	LC83010N
Q1, 2	2SD1266
Q3	UN4212 or DTC124ES
Q4	2SC1923 (R, O)
Q5	2SA1309A (Q, R) or 2SA933S (Q, R)
D1, 3~10	1SS133 or HSS104

SIGNAL LINE
GND LINE
+B LINE
-B LINE

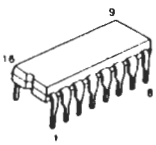
058D



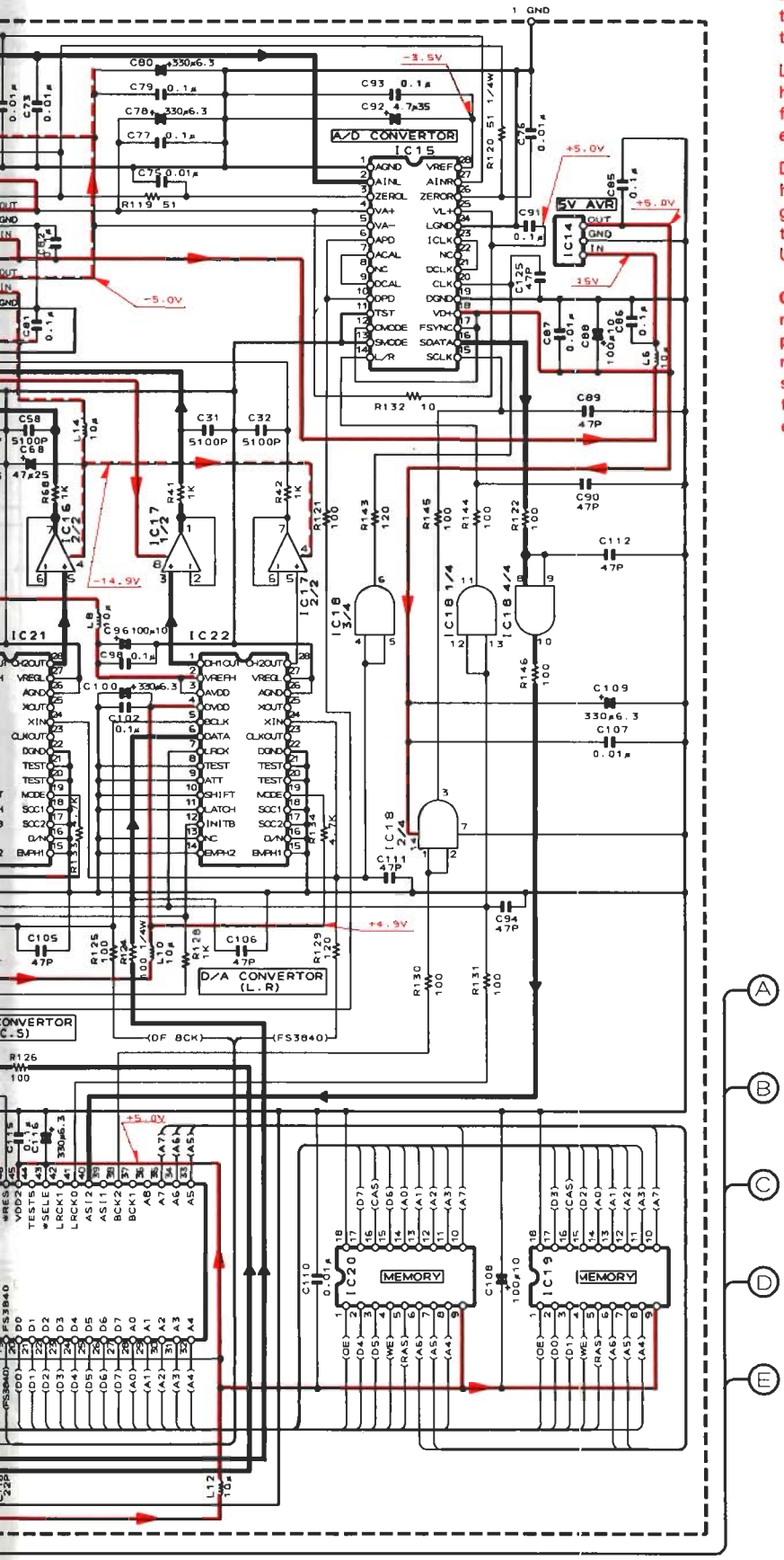
UPC4574C
UPD74HC08C



LA2730



TC4052BP
TC9213P
TC9215P



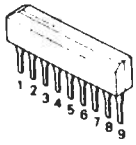
SIGNAL LINE
GND LINE
+B LINE
-B LINE

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

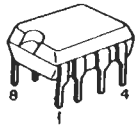
Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance sans signal d'entrée. Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.

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.

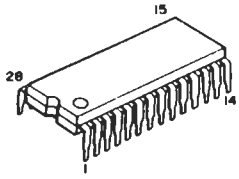
CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably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



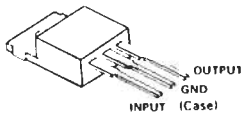
TA8409S



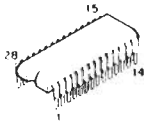
BA10393
UPC4072C



LC7883K

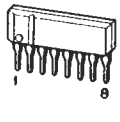


UPC7805HF
UPC7815HF



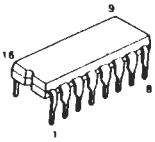
TC9163N
TC9164N

UPC7905HF



NJM4565L

LA2730



TC4052BP
TC9213P
TC9215P

X07-268X-XX

COUNTRY	ABB	UNIT NAME / AREP. NO	R5, 4	R61, 62	R203, 204	R205,
GENERAL MARKET	M	0-21	10K	1K	1.5K	1.2
AUSTRALIA	X					
EUROPE	E	2-71	NO	2.7K	6.2K	NO
ENGLAND	T	0-51	NO	1K	6.2K	NO

X07-268X-XX A/5

X11- E/5

X11- C/5

X11- B/5

PRESENCE AMP

MIC AMP

BALANCE

MIXING

TONE UNIT

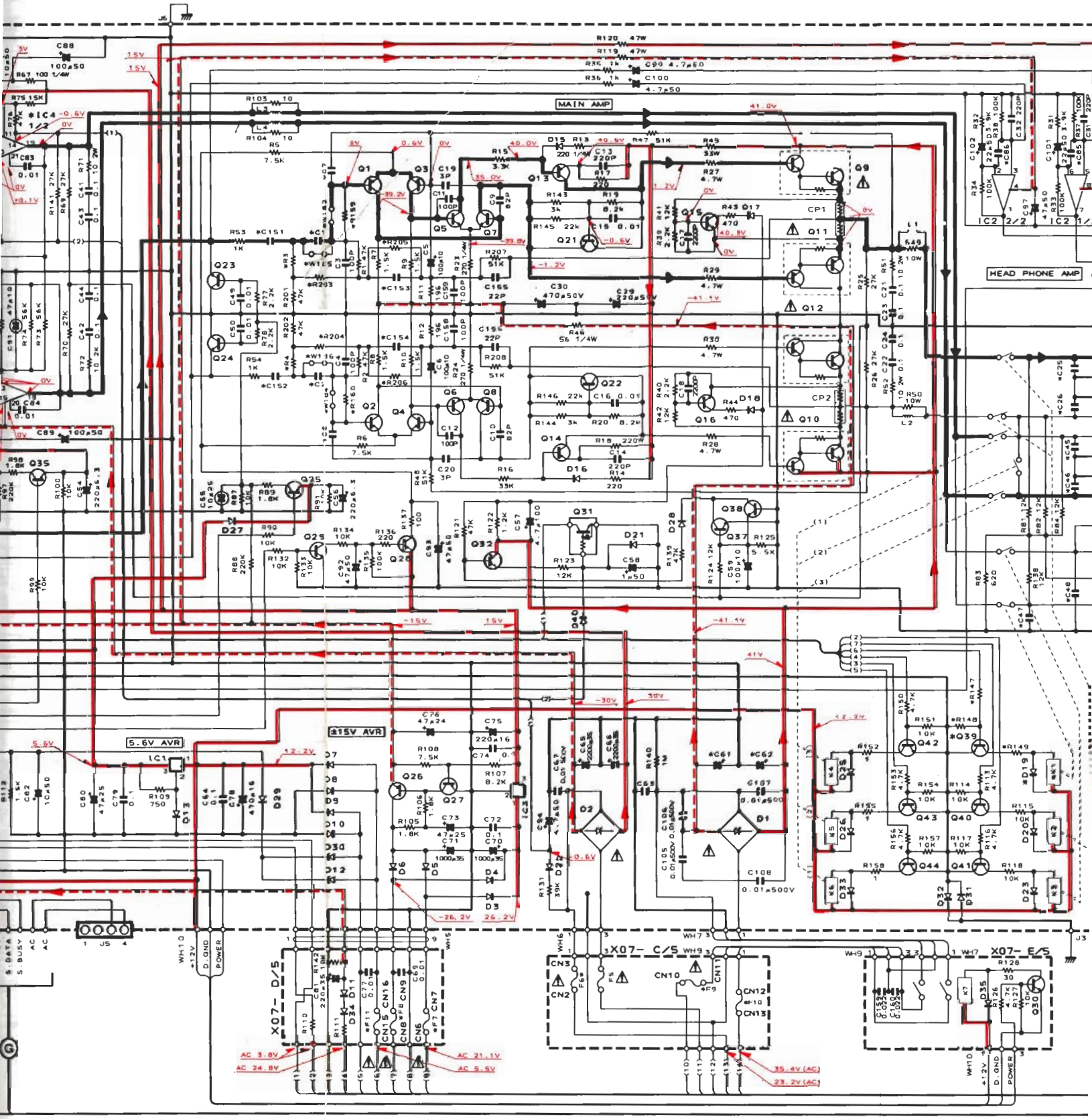
VOLUME UNIT

TREBLE

BASS

AA AB AC AD AE

R61, 62	R203, 204	R205, 206	R159, 160	R147	R148	R149	C1, 2	C7, 8	C25, 26	C45~48	C61, 62	C85, 86	C95, 96	C151, 152	C153, 154	D19	D39	F5, 6	F7, 8	F9, 10	F11	J4	K1	W32	W
1K	1.5K	1.2K	NO	4.7K	10K	1	0.1	100P	NO	NO	6800μ50	NO	10P	0.024	0.1	YES	YES	T4A	T2A	T6.3A	T2A	E13-1403	YES	YES	N
2.7K	6.2K	NO	1K	NO	NO	NO	NO	470P	4700P	2200P	6800μ63	220P	10P	10μ35	NO	NO	NO	T4A	T2A	T6.3A	T2A	E63-0078	NO	NO	Y
1K	6.2K	NO	NO	NO	NO	NO	NO	100P	NO	NO	6800μ63	NO	10P	10μ35	NO	NO	NO	T4A	T2A		T2A	E63-0028	NO	YES	N

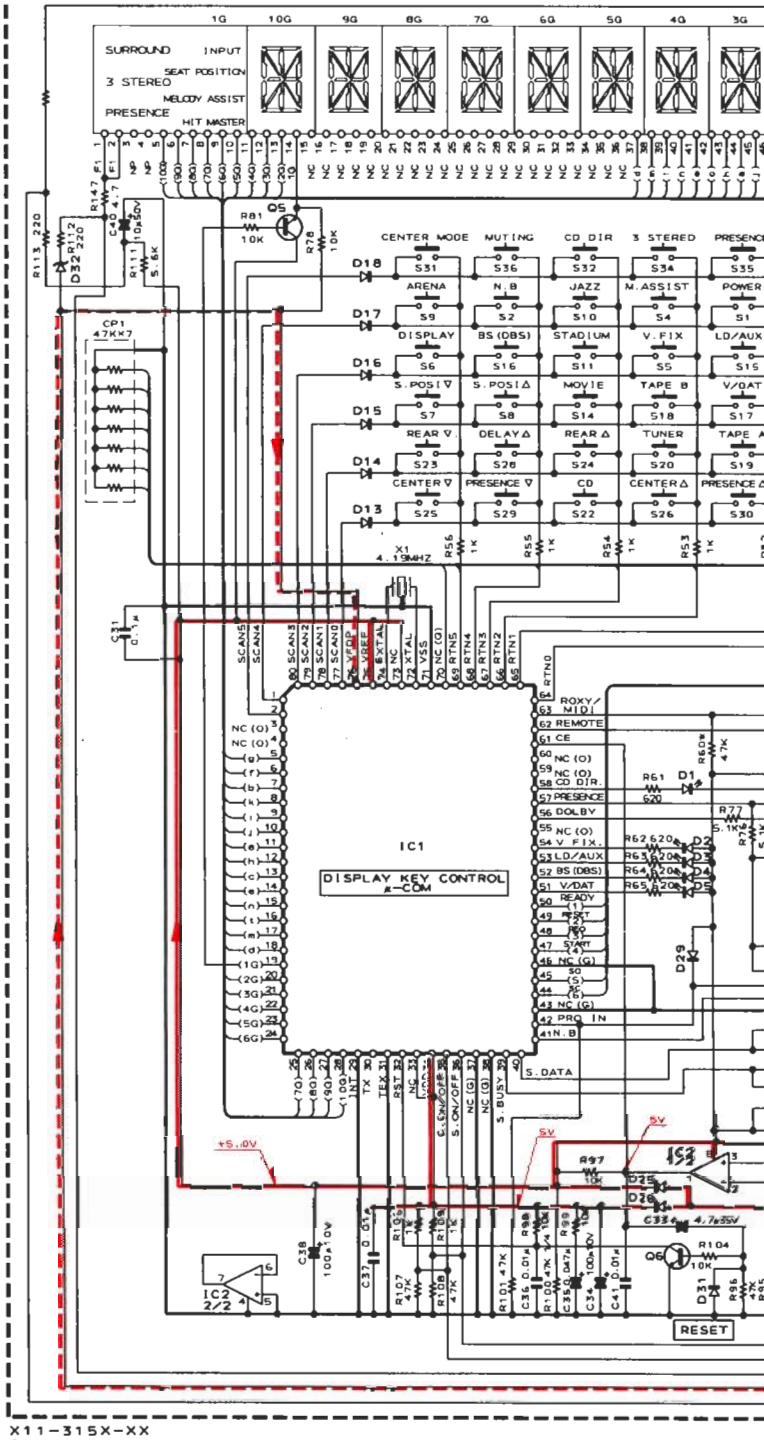


	D39	F5, 6	F7, 8	F9, 10	F11	J4	K1	W32	W42	W183, 184	W185, 186	IC4
ES	YES	T4A	T2A	T6.3A	T2A	E13-1403	YES	YES	NO	YES	NO	STK4145MK2
O	NO	T4A	T2A	T6.3A	T2A	E63-0078	NO	NO	YES	NO	YES	STK4145MK5
O	NO	T4A	T2A		T2A	E63-0028	NO	YES	NO	YES	YES	STK4145MK2

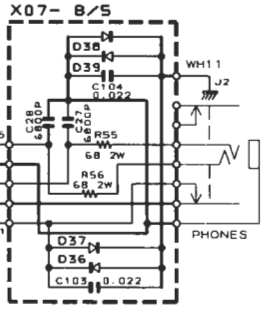
X11-315X-XX

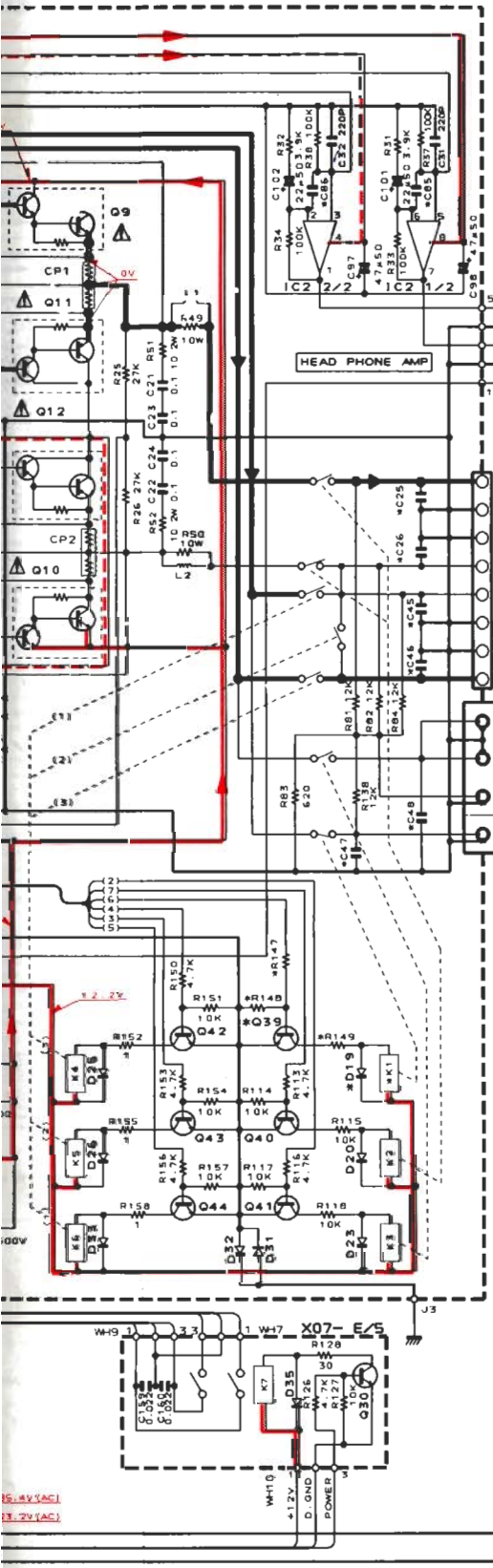
COUNTRY	ABB	UNIT NAME \ AREP.NO	R58	R60	F1	F2	F3	F4	CN13, 14
GENERAL MARKET	M	0-21	47K	NO	T4A	T2A	NO	T3.15A	YES
ENGLAND	T	0-51	NO	47K	T2A	NO	NO	T3.15A	NO
AUSTRALIA	X	0-71	47K	NO	T2A	NO	NO	T3.15A	NO
EUROPE	E	2-71	NO	47K	T2A	NO	T2.5A	T3.15A	NO

X11-315X-XX A/S



X07-8/S





X07-268X-XX

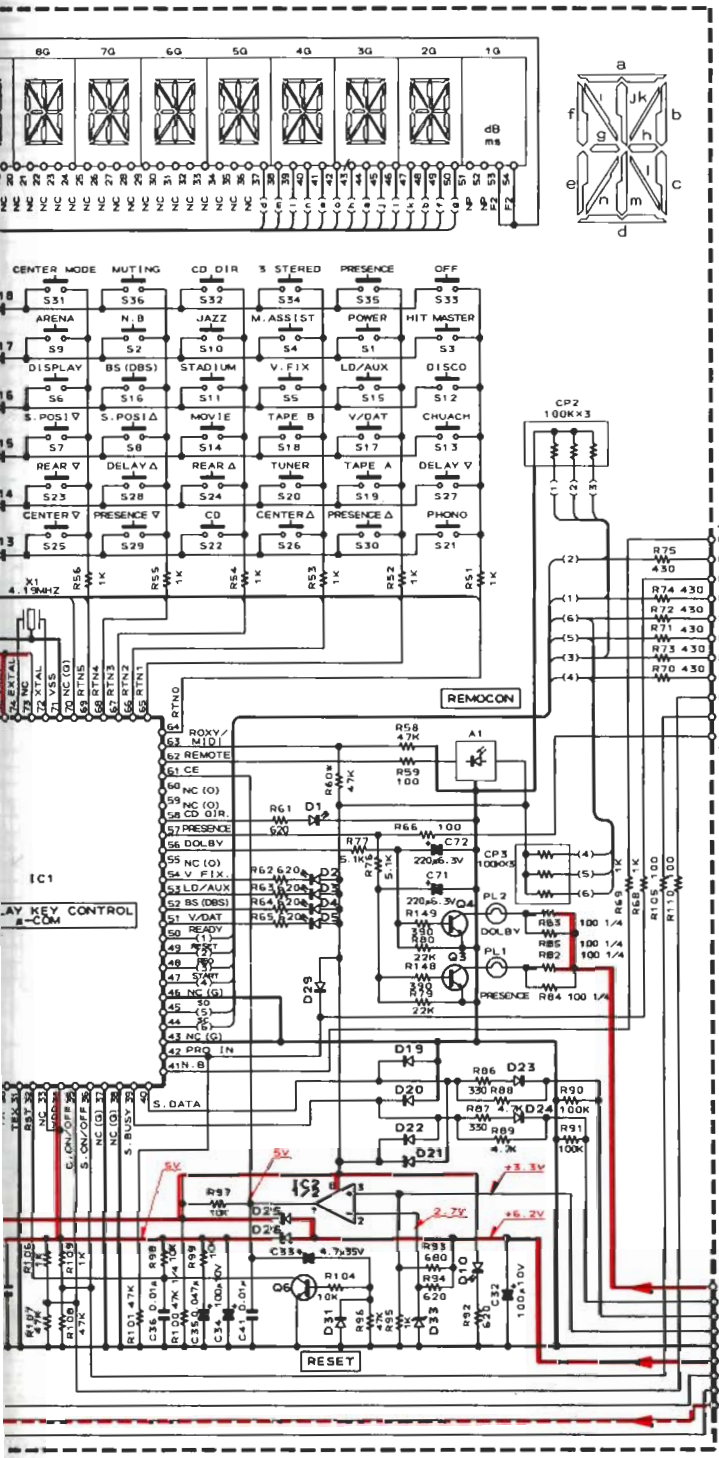
IC1	: UPC7805HF
IC2	: NJM4580L-O
IC3	: UPC7815HF
IC4	: *
Q1~4, 13, 14	: 2SA992 (F, E)
Q5~8, 15, 16	: 2SC1845 (F, E)
Q9, 10	: 2SD2276
Q11, 12	: 2SB1503
Q21, 22	: 2SC4137 (V, W)
Q23, 24, 33, 34	: 2SC2878 (B)
Q25, 27, 28, 35, 36	: 2SA733 (A) (Q, P) or 2SA933S (Q, R)
Q26	: 2SB941
Q29, 37, 38	: 2SC945 (A) (Q, P) or 2SC1704S (Q, R)
Q31	: DTC124ES
Q32	: 2SA1123 (R, S)
Q30, 39~44	: 2SC2003 (L, K)
D1	: DSSBA20F03
D2	: D3SBA20F03
D3~11, 34	: SS5668
D12~20, 22~28, 30, 35	: 1SS131 or HSS104A
D21	: RD4.7ES (B) or HZS4.7N (B)
D29	: RD6.8ES (B2) or HZS6.8N (B2)

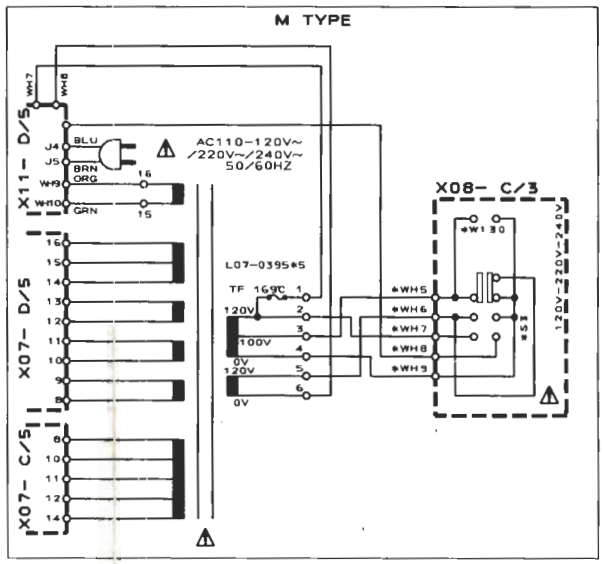
X07-E/S

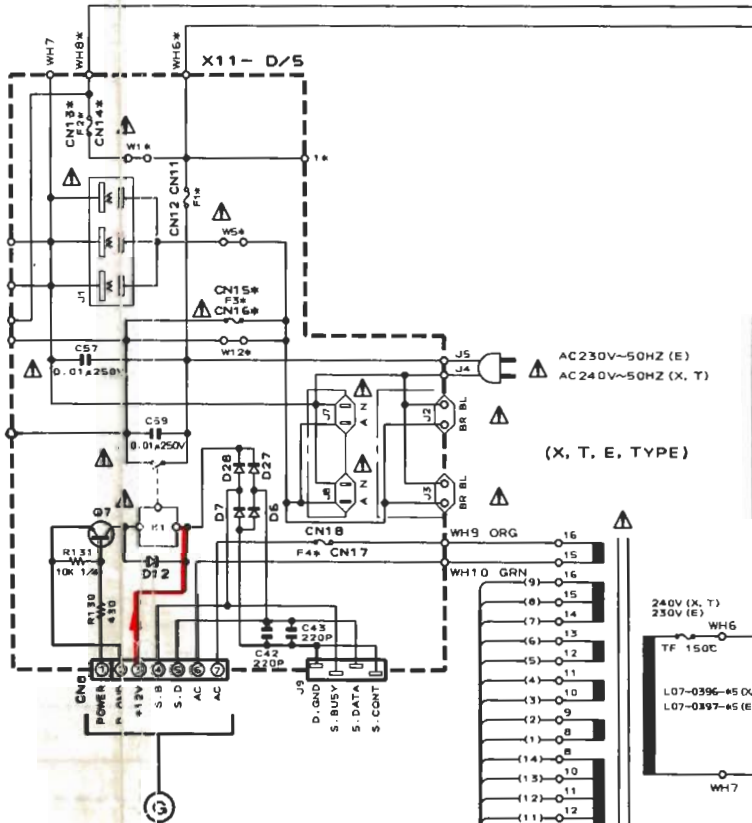
X11-315X-XX

IC1	: CXP50112-3420	Q7	: 2SC2003 (L, K)
IC2	: 8A10393	D1~5, 10	: 1SS131 or HSS104A
IC3, 5	: NJM4580D-D	D12	: 1SS133 or HSS104
IC4	: TAB409S	D13~29, 31, 35, 37, 38	: RD3.3ES (B2) or HZS3.3N (B2)
Q10	: 2SA933S (Q, R) or 2SA1309A (Q, R)	D30	
Q1, 2, 3, 4, 5, 6, 8, 9	: 2SC1740S (Q, R) or 2SC3311A (Q, R)		

RGO	F1	F2	F3	F4	CN13, 14	CN15, 16	J1	J2, 3	J7, 8	WH6	WH8	W5	W7	W12	2, 6	1
NO	T4A	T2A	NO	T3.15A	YES	NO	NO	YES	NO	NO	YES	NO	YES	YES	NO	YES
47K	T2A	NO	NO	T3.15A	NO	NO	NO	NO	YES	YES	NO	NO	NO	YES	NO	NO
NO	T2A	NO	NO	T3.15A	NO	NO	NO	NO	NO	YES	NO	NO	NO	YES	YES	NO
47K	T2A	NO	T2.5A	T3.15A	NO	YES	NO	YES	NO	YES	NO	NO	NO	NO	NO	NO

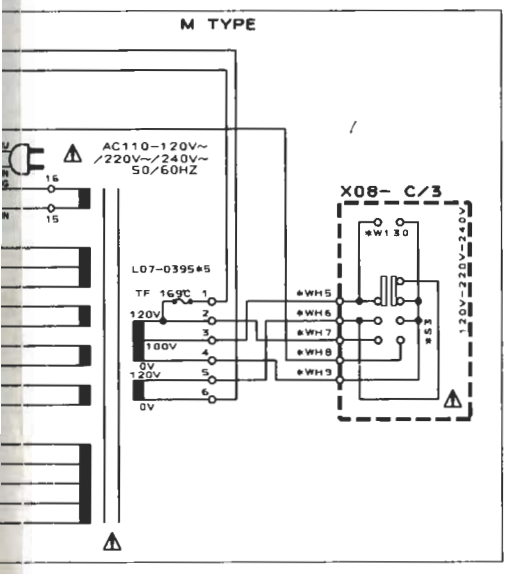


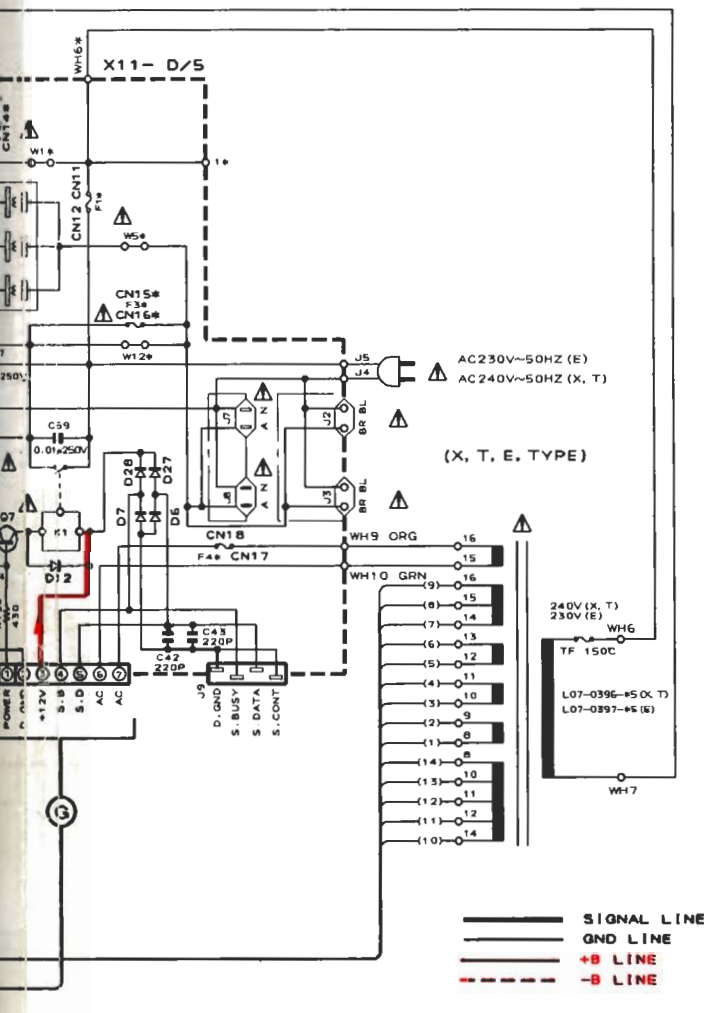




Q7	: 2SC2003(L, K)	D32	: RD6.8ES(B2) or HZS6.8N(B2)
D1~5, 10	: B30-1012-05	D33, 36	: RD2.7ES(B2) or HZS2.7N(B2)
D12	: 1SS131 or HSS104A	D34	: RD4.7ES(B2) or HZS4.7N(B2)
D13~29, 31 35, 37, 38	: 1SS133 or HSS104	A1	: W02-1046-05 or W02-0776-05
D30	: RD3.3ES(B2) or HZS3.3N(B2)		

SIGNAL
GND LI
+B LINE
-B LINE





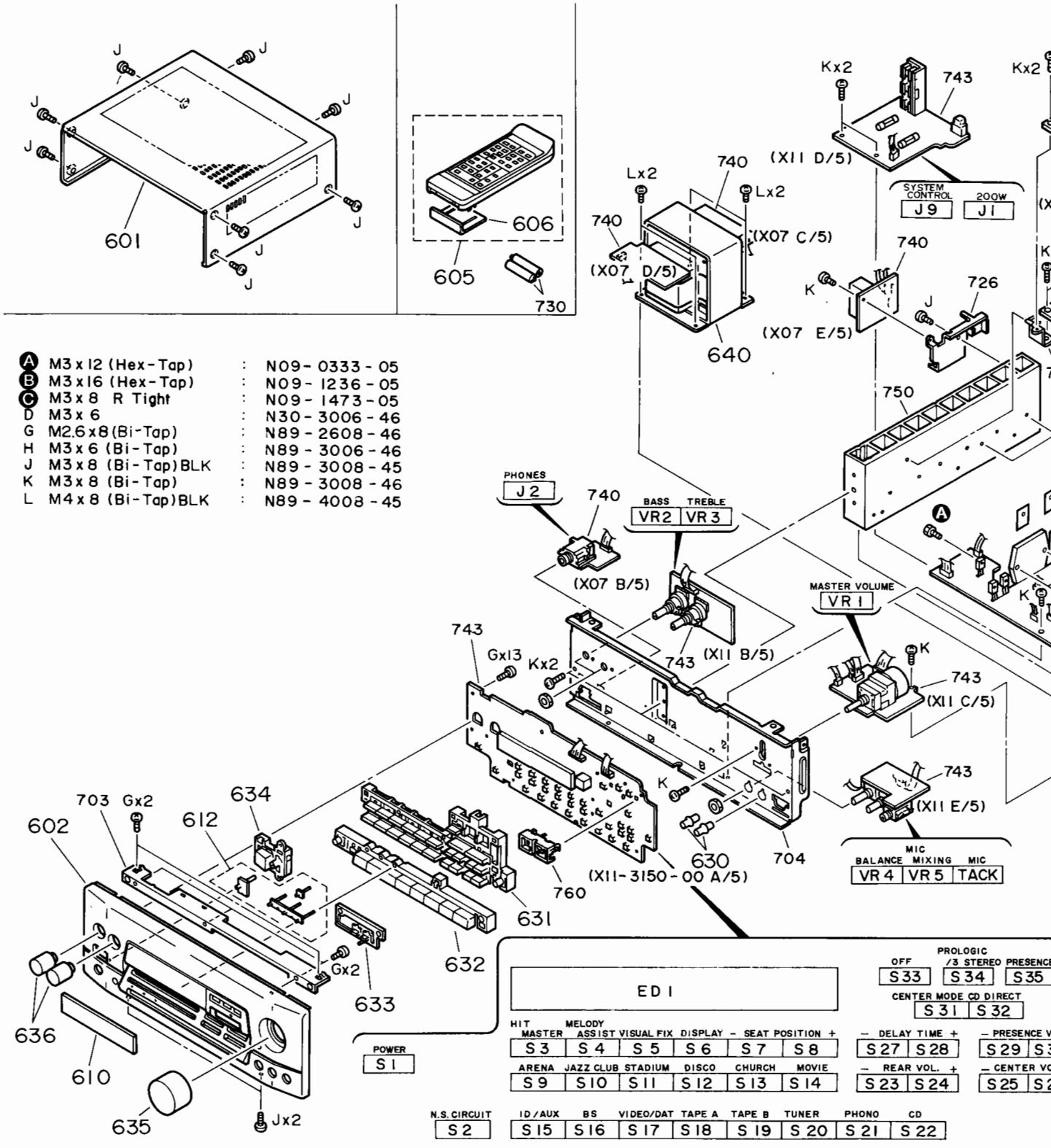
DC voltages are as measured with a high impedance voltmeter with no signal input. Values may vary slightly due to variations between individual instruments or/and units.

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

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.

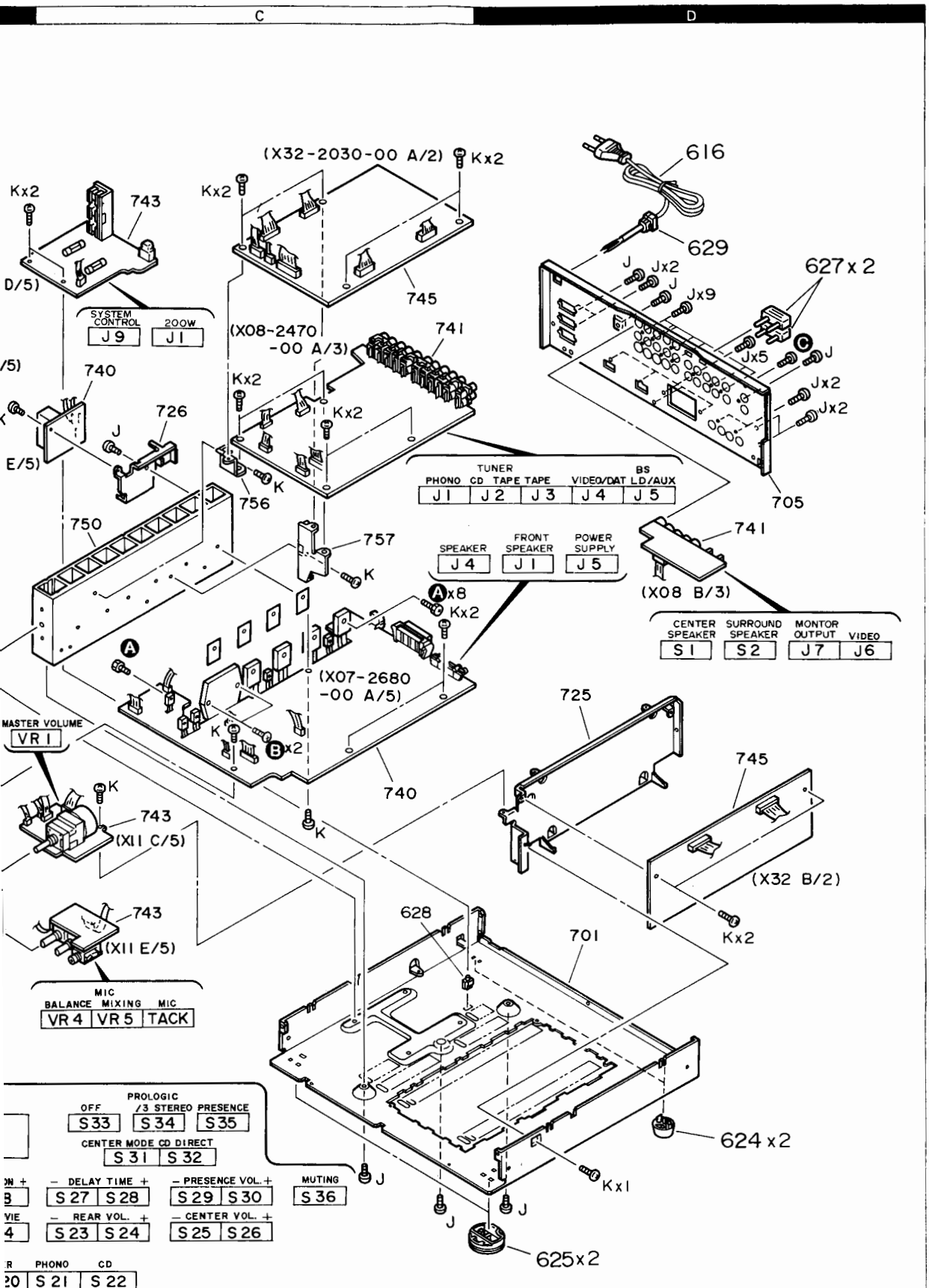
CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably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

EXPLODED VIEW



A	M3 x 12 (Hex-Tap)	:	N09-0333-05
B	M3 x 16 (Hex-Tap)	:	N09-1236-05
C	M3 x 8 R Tight	:	N09-1473-05
D	M3 x 6	:	N30-3006-46
G	M2.6 x 8 (Bi-Tap)	:	N89-2608-46
H	M3 x 6 (Bi-Tap)	:	N89-3006-46
J	M3 x 8 (Bi-Tap) BLK	:	N89-3008-45
K	M3 x 8 (Bi-Tap)	:	N89-3008-46
L	M4 x 8 (Bi-Tap) BLK	:	N89-4008-45

DDED VIEW



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

* 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.

NO. 1

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
			A-85			
601	1A		A01-1810-01	METALLIC CABINET		
602	3A	*	A60-0117-01	PANEL		
605	1B	*	X94-1000-11	REMOTE CONTROL ASSY		
606			A09-0115-13	BATTERY COVER		
610	3A	*	B10-1880-03	FRONT GLASS		
612	3A	*	B12-0170-03	INDICATOR		
-			B09-0068-05	CAP	E	
-			B46-0096-23	WARRANTY CARD	X	
-			B46-0122-13	WARRANTY CARD	E	
-			B46-0143-13	WARRANTY CARD	T	
-		*	B52-0399-00	CONNECTING DIAGRAM	MX	
-		*	B52-0400-00	CONNECTING DIAGRAM	TE	
-		*	B60-0608-00	INSTRUCTION MANUAL (ENGLISH)		
-		*	B60-0609-00	INSTRUCTION MANUAL (FRENCH)	E	
-		*	B60-0610-00	INSTRUCTION MANUAL (GERMAN)	E	
-		*	B60-0611-00	INSTRUCTION MANUAL (DUTCH)	E	
-		*	B60-0612-00	INSTRUCTION MANUAL (ITARIANO)	E	
-		*	B60-0613-00	INSTRUCTION MANUAL (SPANISH)	M	
-		*	B60-0652-00	INSTRUCTION MANUAL (CHINESE)	M	
⚠ 616	1D		E30-0459-05	AC POWER CORD	ME	
⚠ 616	1D		E30-1341-05	AC POWER CORD	X	
⚠ 616	1D		E30-1416-05	AC POWER CORD	T	
⚠ -			E03-0114-05	AC OUTLET	X	
		*	H50-0145-04	ITEM CARTON CASE		
-		*	H10-5184-02	POLYSTYRENE FOAMED FIXTURE (L)		
-		*	H10-5185-02	POLYSTYRENE FOAMED FIXTURE (R)		
-			H25-0232-04	PROTECTION BAG (235X350X0.03)	MXE	
-			H25-0391-04	PROTECTION BAG		
-			H25-0651-04	PROTECTION BAG (0232 PRINTED)	T	
624	3D		J02-0366-15	FOOT		
625	3D		J02-1040-05	FOOT		
627	1D		J12-0091-05	PIN		
628	3C		J19-3180-05	UNIT HOLDER		
⚠ 629	1D		J42-0083-05	POWER CORD BUSHING		
-			J61-0307-05	WIRE BAND		
630	3B		K29-3886-04	KNOB BALANCE,MIC MIXING		
631	3B	*	K29-4242-02	KNOB SURROUND SELECTOR		
632	3B	*	K29-4243-03	KNOB INPUT SELECTOR		
633	3A	*	K29-4244-04	KNOB PROLOGIC/3STEREO,PRESENCE		
634	3A	*	K29-4245-03	KNOB POWER		
635	3A	*	K29-4246-04	KNOB MASTER VOLUME		
636	3A	*	K29-4247-04	KNOB BASS,TREBLE		
⚠ 640	1B	*	L07-0395-05	POWER TRANSFORMER	M	
⚠ 640	1B	*	L07-0396-05	POWER TRANSFORMER	XT	
⚠ 640	1B	*	L07-0397-05	POWER TRANSFORMER	E	
C	1D		N09-1473-05	TAPPING SCREW (M3X8)		
G	3A,2B		N89-2608-46	BINDING HEAD TAPTITE SCREW		
H	2B		N89-3006-46	BINDING HEAD TAPTITE SCREW		
J	1A,1D		N89-3008-45	BINDING HEAD TAPTITE SCREW		
K	1B,2B		N89-3008-46	BINDING HEAD TAPTITE SCREW		

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

⚠ indicates safety critical components.

* New Parts
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.

NO. 2

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
L	1B		N89-4008-46	BINDING HEAD TAPTITE SCREW				
			MAIN AMP UNIT (X07-2680-21: M, X, 00-51: T, 2-71: E)					
C1 ,2			CF92FV1H104J	MF	0.10UF	J	MX	
C3 ,4			CC45FSL1H101J	CERAMIC	100PF	J		
C5 ,6			CE04KW1A101M	ELECTRO	100UF	10WV		
C7 ,8			CC45FSL1H101J	CERAMIC	100PF	J		
C9 ,10			CC45FSL1H820J	CERAMIC	82PF	J		
C11 ,12			CC45FSL1H101J	CERAMIC	100PF	J		
C13 ,14			CC45FSL1H221J	CERAMIC	220PF	J		
C15 ,16			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C17 ,18			CF92FV1H222J	MF	2200PF	J		
C19 ,20			CC45FSL1H030C	CERAMIC	3.0PF	C		
C21 -24			CF92FV1H104J	MF	0.10UF	J		
C25 ,26			CF92FV1H472J	MF	4700PF	J	E	
C27 ,28			CF92FV1H682J	MF	6800PF	J		
C29			CE04KW1H221M	ELECTRO	220UF	50WV		
C30			CE04KW1H471M	ELECTRO	470UF	50WV		
C31 ,32			CC45FSL1H221J	CERAMIC	220PF	J		
C33 ,34			CE04KW1H2R2M	ELECTRO	2.2UF	50WV		
C35 ,36			CF92FV1H471J	MF	470PF	J		
C37 ,38			CE04KW1E330M	ELECTRO	33UF	25WV		
C39 ,40			CC45FSL1H221J	CERAMIC	220PF	J		
C41 -44			CF92FV1H104J	MF	0.10UF	J		
C45 -48			CF92FV1H222J	MF	2200PF	J	E	
C49 ,50			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C51			C90-1351-05	NP-ELEC	3.3UF	50WV		
C52			CE04KW0J221M	ELECTRO	220UF	6.3WV		
C53			C90-1351-05	NP-ELEC	3.3UF	50WV		
C54			CE04KW0J221M	ELECTRO	220UF	6.3WV		
C55			C90-1332-05	NP-ELEC	10UF	25WV		
C56			CE04KW0J221M	ELECTRO	220UF	6.3WV		
C57			CE04KW2A4R7M	ELECTRO	4.7UF	100WV		
C58			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C59			CE04KW1A101M	ELECTRO	100UF	10WV		
C60			CK45FF1H223Z	CERAMIC	0.022UF	Z		
C61 ,62			C90-1828-05	ELECTRO	6800UF	50WV	MX	
C61 ,62			C90-1829-05	ELECTRO	6800UF	63WV	TE	
C63			CK45FE2H103P	CERAMIC	0.010UF	P		
C64			CF92FV1H104J	MF	0.10UF	J		
C65 ,66			CE04KW1V222M	ELECTRO	2200UF	35WV		
C67			CK45FE2H103P	CERAMIC	0.010UF	P		
C68			CE04KW1H220M	ELECTRO	22UF	50WV		
C69			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C70 ,71			CE04KW1V102M	ELECTRO	1000UF	35WV		
C72			CF92FV1H104J	MF	0.10UF	J		
C73			CE04KW1E470M	ELECTRO	47UF	25WV		
C74			CF92FV1H104J	MF	0.10UF	J		
C75			CE04KW1C221M	ELECTRO	220UF	16WV		
C76			CE04KW1E470M	ELECTRO	47UF	25WV		
C77			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C78			CE04KW1C102M	ELECTRO	1000UF	16WV		
C79			CF92FV1H104J	MF	0.10UF	J		
C80			CE04KW1E470M	ELECTRO	47UF	25WV		
C81			CE04KW1V221M	ELECTRO	220UF	35WV		

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 A-85

※ 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.

NO. 3

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
C82			CE04KW1H100M	ELECTRO 10UF 50WV		
C83 ,84			CF92FV1H473J	MF 0.047UF J		
C87			CE04KW1H100M	ELECTRO 10UF 50WV		
C88 ,89			CE04KW1H101M	ELECTRO 100UF 50WV		
C90			CE04KW1HR47M	ELECTRO 0.47UF 50WV		
C91			C90-1334-05	NP-ELEC 47UF 10WV		
C92 ,93			CE04KW1H470M	ELECTRO 47UF 50WV		
C94			CE04KW1H4R7M	ELECTRO 4.7UF 50WV		
C95 ,96			C91-0721-05	CERAMIC 10PF J		
C97 ,98			CE04KW1H470M	ELECTRO 47UF 50WV		
C99 ,100			CE04KW1H4R7M	ELECTRO 4.7UF 50WV		
C101,102			CE04KW1H220M	ELECTRO 22UF 50WV		
C103			CK45FF1H223Z	CERAMIC 0.022UF Z		
C104			CK45FF1H223Z	CERAMIC 0.022UF Z		
C105-108			CK45FE2H103P	CERAMIC 0.010UF P		
C151,152			CE04KW1V100M	ELECTRO 10UF 35WV	TE	
C151,152			CF92FV1H243J	MF 0.024UF J	MX	
C153,154			CF92FV1H104J	MF 0.10UF J	MX	
C155,156			CC45FSL1H220J	CERAMIC 22PF J		
J1			E70-0008-05	LOCK TERMINAL BOARD SPEAKERS		
J2		*	E11-0208-05	PHONE JACK PHONES		
J4			E13-1403-05	PHONO JACK SURROUND SPEAKERS	MX	
J4		*	E63-0028-05	PHONO JACK SURROUND SPEAKERS	TE	
J5			E08-0411-05	RECTANGULAR RECEPTACLE POWER		
⚠ F5 ,6			F05-4025-05	FUSE (SEMKO) (250V T4A)		
⚠ F7 ,8			F06-2021-05	FUSE (SEMKO) (250V T2A)		
⚠ F9 ,10			F05-6321-05	FUSE (SEMKO) (250V T6.3A)		
⚠ F11			F06-2021-05	FUSE (SEMKO) (250V T2A)		
CN2 -13			J13-0075-05	FUSE CLIP		
CN15,16			J13-0075-05	FUSE CLIP		
L1 -4			L39-0085-05	PHASE-COMPENSATION COIL		
A	2C		N09-0333-05	TAPPING SCREW (3X12)		
B	2C		N09-1236-05	TAPPING SCREW (3X16)		
J	1C,2C		N89-3008-45	BINDING HEAD TAPTITE SCREW		
K	1C,2C		N89-3008-46	BINDING HEAD TAPTITE SCREW		
CP1 ,2			R90-0187-05	MULTI-COMP 0.22X2 K 5W		
R11 ,12			RN14BK2C1960F	RN 196.0 F 1/6W		
R13 ,14			RD14AB2E221J	FL-PROOF RD 220 J 1/4W		
R15 ,16			RD14AB2E332J	FL-PROOF RD 3.3K J 1/4W		
R17 ,18			RD14AB2E221J	FL-PROOF RD 220 J 1/4W		
R23 ,24			RD14AB2E271J	FL-PROOF RD 270 J 1/4W		
R27 -30			RD14AB2E4R7J	FL-PROOF RD 4.7 J 1/4W		
R45			RD14AB2E330J	FL-PROOF RD 33 J 1/4W		
R46			RD14AB2E560J	FL-PROOF RD 56 J 1/4W		
R49 ,50			RD14AB2E100J	FL-PROOF RD 10 J 1/4W		
R51 ,52			RS14DB3D100J	FL-PROOF RS 10 J 2W		
R55 ,56			RS14DB3D680J	FL-PROOF RS 68 J 2W		
R67 ,68			RD14AB2E101J	FL-PROOF RD 100 J 1/4W		
R71 ,72			RS14DB3D100J	FL-PROOF RS 10 J 2W		
R103,104			RD14AB2E100J	FL-PROOF RD 10 J 1/4W		
R110,111			RD14AB2E1R0J	FL-PROOF RD 1.0 J 1/4W		
R112			RD14AB2E152J	FL-PROOF RD 1.5K J 1/4W		
R142			RD14AB2E103J	FL-PROOF RD 10K J 1/4W		

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

⚠ indicates safety critical components.

※ New Parts
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.

NO. 4

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
K1 -6		*	S76-0008-05	MAGNETIC RELAY	MX	
K2 -6		*	S76-0008-05	MAGNETIC RELAY	TE	
K7		*	S76-0015-05	MAGNETIC RELAY		
D1			D5SBA20F03	DIODE		
D2			D3SBA20F03	DIODE		
D3 -11			S55668	DIODE		
D12 -18			HSS104A	DIODE	TE	
D12 -18			1SS131	DIODE	TE	
D12 -20			HSS104A	DIODE	MX	
D12 -20			1SS131	DIODE	MX	
D20			HSS104A	DIODE	TE	
D20			1SS131	DIODE	TE	
D21			HZS4.7N(B)	ZENER DIODE		
D21			RD4.7ES(B)	ZENER DIODE		
D22 -28			HSS104A	DIODE		
D22 -28			1SS131	DIODE		
D29			HZS6.2N(B2)	ZENER DIODE		
D29			RD6.2ES(B2)	ZENER DIODE		
D30 -33			HSS104A	DIODE		
D30 -33			1SS131	DIODE		
D34			S5566B	DIODE		
D35			HSS104A	DIODE		
D35			1SS131	DIODE		
D36 ,37			HSS104A	DIODE		
D36 ,37			1SS131	DIODE		
D38 -42			HSS104A	DIODE		
D38 -42			1SS131	DIODE		
IC1			UPC7805HF	IC(VOLTAGE REGULATOR/ +5V)		
IC2			NJM4580L-D	IC(OP AMP)		
IC3			UPC7815HF	IC(VOLTAGE REGULATOR/ +15V)		
IC4		*	STK4145MK2	IC(AF POWER AMP)	MXT	
IC4		*	STK4145MK5	IC(AF POWER AMP)	E	
Q1 -4			2SA992(F,E)	TRANSISTOR		
Q5 -8			2SC1845(F,E)	TRANSISTOR		
Q9 ,10			2SB1503	TRANSISTOR		
Q11 ,12			2SD2276	TRANSISTOR		
Q13 ,14			2SA992(F,E)	TRANSISTOR		
Q15 ,16			2SC1845(F,E)	TRANSISTOR		
Q21 ,22			2SC4137(V,W)	TRANSISTOR		
Q23 ,24			2SC2878(B)	TRANSISTOR		
Q25			2SA733(A)(Q,P)	TRANSISTOR		
Q25			2SA933S(Q,R)	TRANSISTOR		
Q26			2SB941	TRANSISTOR		
Q27 ,28			2SA733(A)(Q,P)	TRANSISTOR		
Q27 ,28			2SA933S(Q,R)	TRANSISTOR		
Q29			2SC1740S(Q,R)	TRANSISTOR		
Q29			2SC945(A)(Q,P)	TRANSISTOR		
Q30			2SC2003(L,K)	TRANSISTOR		
Q31			DTC124ES	DIGITAL TRANSISTOR		
Q32			2SA1123(R,S)	TRANSISTOR		
Q33 ,34			2SC2878(B)	TRANSISTOR		
Q35 ,36			2SA733(A)(Q,P)	TRANSISTOR		
Q35 ,36			2SA933S(Q,R)	TRANSISTOR		
Q37 ,38			2SC1740S(Q,R)	TRANSISTOR		

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

⚠ indicates safety critical components.

※ New Parts
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 gellefert.

NO. 5

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
Q37 ,38			2SC945(A)(Q,P)	TRANSISTOR				
Q39 -44			2SC2003(L,K)	TRANSISTOR			MX	
Q40 -44			2SC2003(L,K)	TRANSISTOR			TE	
PRE AMPLIFIER UNIT (X08-2470-21: M, 2-71: X, T, E)								
C1 ,2			CC45FSL1H221J	CERAMIC	220PF	J	XTE	
C3 ,4			CE04KW1V100M	ELECTRO	10UF	35WV		
C5 ,6			CC45FSL1H101J	CERAMIC	100PF	J		
C7 ,8			CE04KW1A101M	ELECTRO	100UF	10WV		
C9 ,10			CC45FSL1H221J	CERAMIC	220PF	J		
C11 ,12			CF92FV1H123J	MF	0.012UF	J		
C13 ,14			CF92FV1H332J	MF	3300PF	J		
C15 ,16			CE04KW1V100M	ELECTRO	10UF	35WV		
C17 -24			C91-0749-05	CERAMIC	220PF	K	XTE	
C25 -36			CC45FSL1H221J	CERAMIC	220PF	J	XTE	
C37 ,38			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C39 ,40			CE04KW1HR22M	ELECTRO	0.22UF	50WV		
C41 -48			CE04KW1V100M	ELECTRO	10UF	35WV		
C51 ,52			CE04KW1A101M	ELECTRO	100UF	10WV		
C54 -59			CE04KW1E470M	ELECTRO	47UF	25WV		
C60 ,61			CF92FV1H103J	MF	0.010UF	J		
C62 -65			CE04KW1E470M	ELECTRO	47UF	25WV		
C66 ,67			CK45FB1H102K	CERAMIC	1000PF	K		
C68 -71			CK45FB1H391K	CERAMIC	390PF	K		
C72 ,73			CK45FF1H223Z	CERAMIC	0.022UF	Z		
C74 ,75			C91-0085-05	CERAMIC	0.022UF	N		
C76 ,77			CK45FF1H223Z	CERAMIC	0.022UF	Z		
C78			C91-0085-05	CERAMIC	0.022UF	N		
C101,102			CE04KW1E470M	ELECTRO	47UF	25WV		
C103,104			CE04KW0J221M	ELECTRO	220UF	6.3WV		
C105,106			CK45FF1H223Z	CERAMIC	0.022UF	Z		
J1			E13-0249-05	PHONO JACK PHONO				
J2			E13-0633-05	PHONO JACK CD,TUNER,TAPE REC				
J3			E13-0445-05	PHONO JACK TAPE PLAY,ADAPTER				
J4			E13-0633-05	PHONO JACK ADAPTER,VIDEO/DAT				
J5			E13-0445-05	PHONO JACK BS,LD/AUX				
J6			E13-0313-05	PHONO JACK PLAY,BS,LD/AUX				
J7			E13-0297-05	PHONO JACK MONITOR,REC				
CP1			R90-0490-05	MULTI-COMP	220KX2	J 1/6W		
R160,161			RS14KB3A560J	FL-PROOF RS	56	J 1W		
R219			RD14GB2E5R6J	FL-PROOF RD	5.6	J 1/4W		
S1 ,2			S31-2094-05	SLIDE SWITCH CENTER SP/REAR SP				
⚠ S3			S31-2322-05	SLIDE SWITCH VOLTAGE SELECTOR			M	
D1 ,2			HZS11N(B2)	ZENER DIODE				
D1 ,2			RD11ES(B2)	ZENER DIODE				
D3			HZS4.7N(B)	ZENER DIODE				
D3			RD4.7ES(B)	ZENER DIODE				
D5 -12			HSS104	DIODE				
D5 -12			1SS133	DIODE				
D13 ,14			HZS4.7N(B)	ZENER DIODE				
D13 ,14			RD4.7ES(B)	ZENER DIODE				
D15 -18			HSS104	DIODE				
D15 -18			1SS133	DIODE				

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

⚠ indicates safety critical components.

※ New Parts
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 gellefert.

NO. 6

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
IC1			TC9163N	IC(BILATERAL SWITCH X16)				
IC2			TC9164N	IC(16CH BILATERAL SELECTOR SW)				
IC3			TC9215P	IC(ANALOG SWITCH X 6)				
IC4 -6			NJM2058D	IC(OP AMP X4)				
IC4 -6			UPC4574C	IC(OP AMP X4)				
IC7 ,8			NJM4565D-D	IC(OP AMP X2)				
IC9			NJM4565L	IC				
IC10			TC4052BP	IC(4CH MPX/DE-MPX)				
IC11			MC14577A	IC				
IC12			NJM4565D-D	IC(OP AMP X2)				
Q1 -6			2SC1740S(Q,R)	TRANSISTOR				
Q1 -6			2SC3311A(Q,R)	TRANSISTOR				
Q11			2SC1740S(Q,R)	TRANSISTOR				
Q11			2SC3311A(Q,R)	TRANSISTOR				
Q12 ,13			2SA1309A(Q,R)	TRANSISTOR				
Q12 ,13			2SA933S(Q,R)	TRANSISTOR				
Q14 ,15			DTC124ES	DIGITAL TRANSISTOR				
Q14 ,15			UN4212	TRANSISTOR				
CONTROL UNIT (X11-3150-21: M, 0-71: X, 0-51: T, 2-71: E)								
D1 -5			B30-1012-05	LED(SLP-981C-50)				
D10			B30-1012-05	LED(SLP-981C-50)				
PL1 ,2			B30-2407-05	LAMP				
C1 ,2			CE04KW1H3R3M	ELECTRO	3.3UF	50WV		
C3 ,4			CC45FSL1H221J	CERAMIC	220PF	J		
C5 ,6			CC45FSL1H101J	CERAMIC	100PF	J		
C7 ,8			CF92FV1H563J	MF	0.056UF	J		
C9 ,10			CK45FB1H561K	CERAMIC	560PF	K		
C11 ,12			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C13 ,14			CE04KW1V100M	ELECTRO	10UF	35WV		
C15 ,16			CF92FV1H393J	MF	0.039UF	J		
C23 ,24			CF92FV1H683J	MF	0.068UF	J		
C25			CE04KW1V100M	ELECTRO	10UF	35WV		
C26			C90-1332-05	NP-ELEC	10UF	25WV		
C31			CF92FV1H104J	MF	0.10UF	J		
C32		*	C90-3222-05	ALMINIUM ELECTROLYTIC	C.			
C33		*	C90-3242-05	ALMINIUM ELECTROLYTIC	C.			
C34		*	C90-3222-05	ALMINIUM ELECTROLYTIC	C.			
C35			C90-1827-05	BACKUP	0.047F	5.5WV		
C36 ,37			C91-0769-05	CERAMIC	0.01UF	K		
C38		*	C90-3222-05	ALMINIUM ELECTROLYTIC	C.			
C40		*	C90-3258-05	ALMINIUM ELECTROLYTIC	C.			
C41			C91-0769-05	CERAMIC	0.01UF	K		
C42 ,43			CC45FSL1H221J	CERAMIC	220PF	J		
C51 ,52			CE04KW1E470M	ELECTRO	47UF	25WV		
C55			CE04KW1E101M	ELECTRO	100UF	25WV		
C56			C90-1333-05	NP-ELEC	22UF	10WV		
⚠ C57			C91-0971-05	FILM	0.01UF	250WV		
⚠ C59			C91-1421-05	FILM	0.01UF	250AC		
C60			CQ92FM1H472J	MYLAR	4700PF	J		
C61			CC45FSL1H221J	CERAMIC	220PF	J		
C62			CF92FV1H473J	MF	0.047UF	J		
C63			CC45FSL1H221J	CERAMIC	220PF	J		
C64			CE04KW1V100M	ELECTRO	10UF	35WV		
C65			CK45FB1H561K	CERAMIC	560PF	K		

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

⚠ indicates safety critical components.

× New Parts
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.

NO. 7

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
C66 ,67			CE04KW1V100M	ELECTRO 10UF 35WV		
C68 ,69			CE04KW1E470M	ELECTRO 47UF 25WV		
C70			C91-0769-05	CERAMIC 0.01UF K		
C71 ,72			CE04JW0J221M	ELECTRO 220UF 6.3WV	MXT	
⚠ J2 ,3			E03-0108-05	AC OUTLET	ME	
J6		*	E11-0206-05	PHONE JACK MIC JACK		
⚠ J7 ,8			E03-0109-05	AC OUTLET	T	
J9			E08-0311-05	RECTANGULAR RECEPTACLE SYSTEM	MX	
J9			E08-0312-05	RECTANGULAR RECEPTACLE SYSTEM	TE	
⚠ F1			F05-4025-05	FUSE (SEMKO) (250V T4A)	M	
⚠ F1			F06-2021-05	FUSE (SEMKO) (250V T2A)	XTE	
⚠ F2			F06-2021-05	FUSE (SEMKO) (250V T2A)	M	
⚠ F3			F05-2525-05	FUSE (SEMKO) (250V T2.5A)	E	
⚠ F4			F05-3121-05	FUSE (SEMKO) (250V T3.15A)		
-		*	J19-3433-03	HOLDER		
CN11-14			J13-0075-05	FUSE CLIP	M	
CN11,12			J13-0075-05	FUSE CLIP	XTE	
CN15-18			J13-0075-05	FUSE CLIP	E	
CN17,18			J13-0075-05	FUSE CLIP	MXT	
X1			L78-0267-05	RESONATOR		
CP1			R90-0816-05	MULTIPLE RESISTOR		
CP2 ,3			R90-0850-05	MULTIPLE RESISTOR		
R121,122			RD14GB2E121J	FL-PROOF RD 120 J 1/4W		
R127,128			RD14GB2E100J	FL-PROOF RD 10 J 1/4W		
R145,146			RD14GB2E121J	FL-PROOF RD 120 J 1/4W		
VR1		*	R29-5057-05	POTENTIOMETER MASTER VOLUME		
VR2 ,3			R06-5183-05	POTENTIOMETER BASS,TREBLE		
VR4			R05-5037-05	POTENTIOMETER BALANCE		
VR5			R10-5042-05	POTENTIOMETER MIC MIXING		
K1			S76-0009-05	MAGNETIC RELAY		
S1 -36			S40-1064-05	PUSH SWITCH SELECTOR		
D12			HSS104A	DIODE		
D12			1SS131	DIODE		
D13 -26			HSS104	DIODE		
D13 -26			1SS133	DIODE		
D29			HSS104	DIODE		
D29			1SS133	DIODE		
D30			HZS3.3N(B2)	ZENER DIODE		
D30			RD3.3ES(B2)	ZENER DIODE		
D31			HSS104	DIODE		
D31			1SS133	DIODE		
D32			HZS6.8N(B2)	ZENER DIODE		
D32			RD6.8ES(B2)	ZENER DIODE		
D33			HZS2.7N(B2)	ZENER DIODE		
D33			RD2.7ES(B2)	ZENER DIODE		
D34			HZS4.7N(B2)	ZENER DIODE		
D34			RD4.7ES(B2)	ZENER DIODE		
D35			HSS104	DIODE		
D35			1SS133	DIODE		
D36			HZS2.7N(B2)	ZENER DIODE		
D36			RD2.7ES(B2)	ZENER DIODE		
D37 ,38			HSS104	DIODE		
D37 ,38			1SS133	DIODE		

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

⚠ indicates safety critical components.

× New Parts
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.

NO. 8

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
ED1		*	10-8T-86GK	FLUORESCENT INDICATOR TUBE		
IC1		*	CXP50112-342Q	IC		
IC2			BA10393	IC(DUAL COMPALATOR)		
IC3			NJM4580D-D	IC		
IC4			TA8409S	IC(MOTOR CONTROL)		
IC5			NJM4580D-D	IC		
Q1 -6			2SC1740S(Q,R)	TRANSISTOR		
Q1 -6			2SC3311A(Q,R)	TRANSISTOR		
Q7			2SC2003(L,K)	TRANSISTOR		
Q8 ,9			2SC1740S(Q,R)	TRANSISTOR		
Q8 ,9			2SC3311A(Q,R)	TRANSISTOR		
Q10			2SA1309A(Q,R)	TRANSISTOR		
Q10			2SA933S(Q,R)	TRANSISTOR		
A1			W02-0776-05	ELECTRIC CIRCUIT MODULE		
A1			W02-1046-05	ELECTRIC CIRCUIT MODULE		
SIGNAL PROCESSOR UNIT (X32-2030-00)						
C1			CE04KW0J331M	ELECTRO 330UF 6.3WV		
C5 ,6			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C12			CK45FF1H472Z	CERAMIC 4700PF Z		
C15 ,16			CE04KW1V100M	ELECTRO 10UF 35WV		
C17 ,18			CE04KW1E470M	ELECTRO 47UF 25WV		
C19 -22			CE04KW1V100M	ELECTRO 10UF 35WV		
C25 ,26			CE04KW1V100M	ELECTRO 10UF 35WV		
C27 -30			CQ92FM1H272J	MYLAR 2700PF J		
C31 ,32			CQ92FM1H512J	MYLAR 5100PF J		
C35 ,36			CF92FV1H104J	MF 0.10UF J		
C37			CE04KW1A101M	ELECTRO 100UF 10WV		
C38			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		
C39			CE04KW1C470M	ELECTRO 47UF 16WV		
C40			CE04KW1HR33M	ELECTRO 0.33UF 50WV		
C41			CF92FV1H104J	MF 0.10UF J		
C42			CF92FV1H333J	MF 0.033UF J		
C43			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C44			CF92FV1H273J	MF 0.027UF J		
C45			CQ92FM1H472J	MYLAR 4700PF J		
C46			CE04KW1C220M	ELECTRO 22UF 16WV		
C47			CE04KW1C101M	ELECTRO 100UF 16WV		
C48			CQ92FM1H822J	MYLAR 8200PF J		
C49			CE04KW1V100M	ELECTRO 10UF 35WV		
C51			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		
C52			CE04KW1V100M	ELECTRO 10UF 35WV		
C53 -56			CQ92FM1H272J	MYLAR 2700PF J		
C57 ,58			CQ92FM1H512J	MYLAR 5100PF J		
C61 ,62			CE04KW1E470M	ELECTRO 47UF 25WV		
C63 ,64			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C65 ,66			CC45FSL1H101J	CERAMIC 100PF J		
C67 -70			CE04KW1E470M	ELECTRO 47UF 25WV		
C71			CK45FB1H102K	CERAMIC 1000PF K		
C73 -76			CQ92FM1H103J	MYLAR 0.010UF J		
C77			CF92FV1H104J	MF 0.10UF J		
C78			CE04KW1V100M	ELECTRO 10UF 35WV		
C79			CF92FV1H104J	MF 0.10UF J		
C80			CE04KW1V100M	ELECTRO 10UF 35WV		
C81 -86			CF92FV1H104J	MF 0.10UF J		

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

⚠ indicates safety critical components.

× New Parts
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.

NO. 9

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
C87			CK45FF1H103Z	CERAMIC 0.010UF Z		
C88			CE04KW1A101M	ELECTRO 100UF 10WV		
C91			CF92FV1H104J	MF 0.10UF J		
C92			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		
C93			CK45FB1H102K	CERAMIC 1000PF K		
C95 ,96			CE04KW1A101M	ELECTRO 100UF 10WV		
C97 ,98			CF92FV1H104J	MF 0.10UF J		
C99 ,100			CE04KW1A101M	ELECTRO 100UF 10WV		
C101,102			CF92FV1H104J	MF 0.10UF J		
C103			CK45FF1H103Z	CERAMIC 0.010UF Z		
C107			CK45FF1H103Z	CERAMIC 0.010UF Z		
C108			CE04KW1V100M	ELECTRO 10UF 35WV		
C109			CE04KW1A101M	ELECTRO 100UF 10WV		
C110			C91-0769-05	CERAMIC 0.01UF K		
C113			CF92FV1H104J	MF 0.10UF J		
C114			CE04KW1A101M	ELECTRO 100UF 10WV		
C115			CF92FV1H104J	MF 0.10UF J		
C116			CE04KW1A101M	ELECTRO 100UF 10WV		
C117,118			CC45FCH1H220J	CERAMIC 22PF J		
C119,120			CK45FF1H103Z	CERAMIC 0.010UF Z		
C121			CF92FV1H104J	MF 0.10UF J		
C122			CE04KW1A101M	ELECTRO 100UF 10WV		
L1 -15			L40-1001-17	SMALL FIXED INDUCTOR(10UH,K)		
X1			L78-0277-05	RESONATOR		
X2			L78-0244-05	RESONATOR		
X3			L77-1199-05	CRYSTAL RESONATOR		
CP1			R90-0500-05	MULTI-COMP 100KX6 J 1/4W		
CP2			R90-0859-05	MULTIPLE RESISTOR		
CP3			R90-0493-05	MULTI-COMP 100KX9 J 1/6W		
CP4			R90-0864-05	MULTIPLE RESISTOR		
CP5 ,6			R90-0493-05	MULTI-COMP 100KX9 J 1/6W		
CP7			R90-0850-05	MULTIPLE RESISTOR		
CP8			R90-0855-05	MULTI-COMP 100KX5 J		
CP9			R90-0482-05	MULTI-COMP 100KX4 J 1/6W		
R4			RS14KB3D330J	FL-PROOF RS 33 J 2W		
R19			RS14KB3A220J	FL-PROOF RS 2.2 J 1W		
R139,140			RS14KB3D181J	FL-PROOF RS 180 J 2W		
D1			HSS104	DIODE		
D1			1SS133	DIODE		
D3 -10			HSS104	DIODE		
D3 -10			1SS133	DIODE		
IC2			TC9213P	IC(2CH ELECTRONIC VOLUME)		
IC3 ,4			NJM4565D-D	IC(OP AMP X2)		
IC5			LA2730	IC(DOLBY SYSTEM)		
IC6			NJM4565D-D	IC(OP AMP X2)		
IC7 ,8			UPC4072C	IC(OP AMP X2)		
IC9			UPC7805HF	IC(VOLTAGE REGULATOR/ +5V)		
IC10			NJM4565D-D	IC(OP AMP X2)		
IC11		*	NJM431L	IC(REGULATOR)		
IC11			TL431CLP	IC		
IC12			UPC7905HF	IC(VOLTAGE REGULATOR/ -5V)		
IC13,14			UPC7805HF	IC(VOLTAGE REGULATOR/ +5V)		
IC15			CS5339-KP	IC(A/D CONVERTER)		

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

⚠ indicates safety critical components

× New Parts
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.

NO. 10

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
IC16,17			NJM4558D	IC(OP AMP X2)		
IC18			TC74HC08AP	IC		
IC18		*	UPD74HC08C	IC(AND GATE)		
IC19,20			HM50464RP-12	IC(RAM)		
IC19,20			LM33464G-12	IC(D RAM)		
IC21,22	ﾌﾚｰﾑ0B		LC7883K	IC(DIGITAL FILTER & D/A CONVER		
IC23		*	UPD78214CW-770	IC		
IC24		*	LC66516B-4733	IC		
IC25			LC83010N	IC(DIGITAL SIGNAL PROCESSOR)		
Q1 ,2			2SD1266	TRANSISTOR		
Q3			DTC124ES	DIGITAL TRANSISTOR		
Q3			UN4212	TRANSISTOR		
Q4			2SC1923(R,O)	TRANSISTOR		

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

A-85

A-85

SPECIFICATIONS

Rated power output
Front
(IEC/NF) from 63Hz to 12,500Hz, 0.7% T.H.D.
at 8 Ω ..... 70W + 70W
(DIN) 1,000Hz at 8 Ω ..... 70W + 70W
Center
(DIN) 1,000Hz ,0.9% T.H.D. at 8 Ω ..... 15W + 15W
Rear
(DIN) 1,000Hz ,0.9% T.H.D. at 8 Ω ..... 15W + 15W

Total harmonic distortion(1kHz, 8 Ω)..... 0.02% at 35W
Frequency response
CD..... 20Hz~ 70kHz +0dB, -3dB
Signal to noise ratio (IHF-A)
PHONO (MM)..... 75dB for 2.5mV input
CD,TAPE,VIDEO..... 95dB for 200mV input
Signal to noise ratio (DIN weighted at 50mW output)
PHONO (MM)..... 58dB
CD,TAPE,VIDEO..... 59dB
Input sensitivity/Impedance
PHONO(MM)..... 2.5 mV/47k Ω
CD,TAPE, VIDEO..... 200mV/47k Ω
MIC ..... 1.5mV/47k Ω
Tone controls
BASS..... ± 10dB (at 100Hz)
TREBLE..... ± 10dB (at 10kHz)
N.B.circuit (-30dB Volume level)..... + 12 dB (at 55Hz)
Output
SUPER WOOFER OUT..... 1.8 V/600 Ω

General
Power consumption..... 220 W
Dimensions..... **W:** 360 mm
H: 129 mm
D: 380 mm
Weight (net)..... 9.3 kg

AC outlets(switched) ..... 2 (Total 200W max)

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.

KENWOOD CORPORATION
Shionogi Shibuya Building, 17-5, 2-chome Shibuya, Shibuya-ku, Tokyo 150, Japan
KENWOOD U.S.A. CORPORATION
2201 East Dominguez Street, Long Beach, CA 90810;
550 Clark Drive, Mount Olive, NJ 07828, U.S.A.
KENWOOD ELECTRONICS CANADA INC
P.O. BOX 1075, 959 Gana Court, Mississauga, Ontario, Canada L4T 4C2
TRIO-KENWOOD U.K. LIMITED
KENWOOD House, Dwight Road, Watford, Herts., WD1 8EB United Kingdom
KENWOOD ELECTRONICS BENELUX N.V.
Mechelsesteenweg 418 B-1930 Zaventem, Belgium
KENWOOD ELECTRONICS DEUTSCHLAND GMBH
Rembrücker-Str. 15, 6056 Heusenstamm, Germany
TRIO-KENWOOD FRANCE S.A.
13 Boulevard Ney, 75018 Paris, France
KENWOOD LINEAR S.p.A.
20125, MILANO-VIA ARBE, 50, ITALY
KENWOOD ELECTRONICS AUSTRALIA PTY. LTD. (INCORPORATED IN N.S.W.)
P.O. Box 504, 8 Figtree Drive, Australia Centre, Homebush, N.S.W. 2140, Australia
KENWOOD & LEE ELECTRONICS, LTD.
Wang Kee Building, 4th Floor, 34-37, Connaught Road, Central, Hong Kong

STEREO INTEGRATED AMPLIFIER

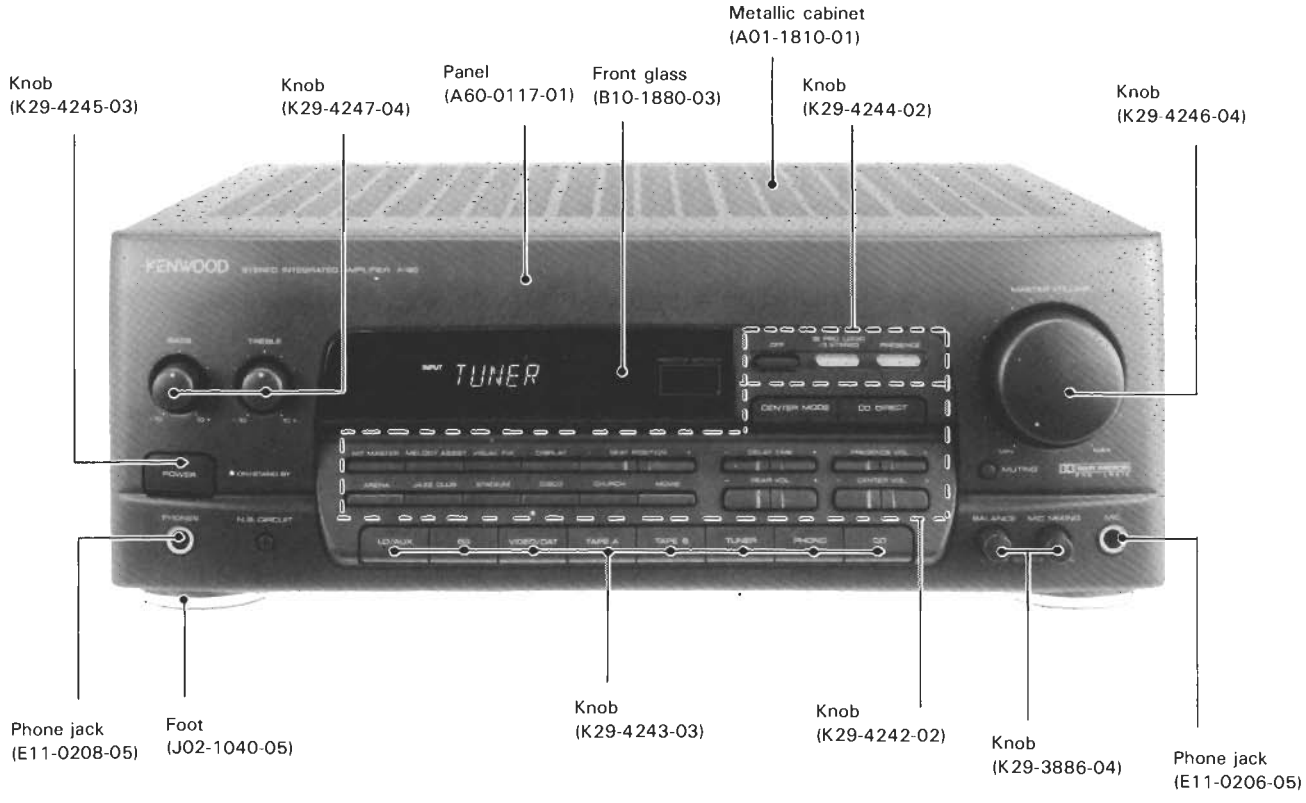
A-85

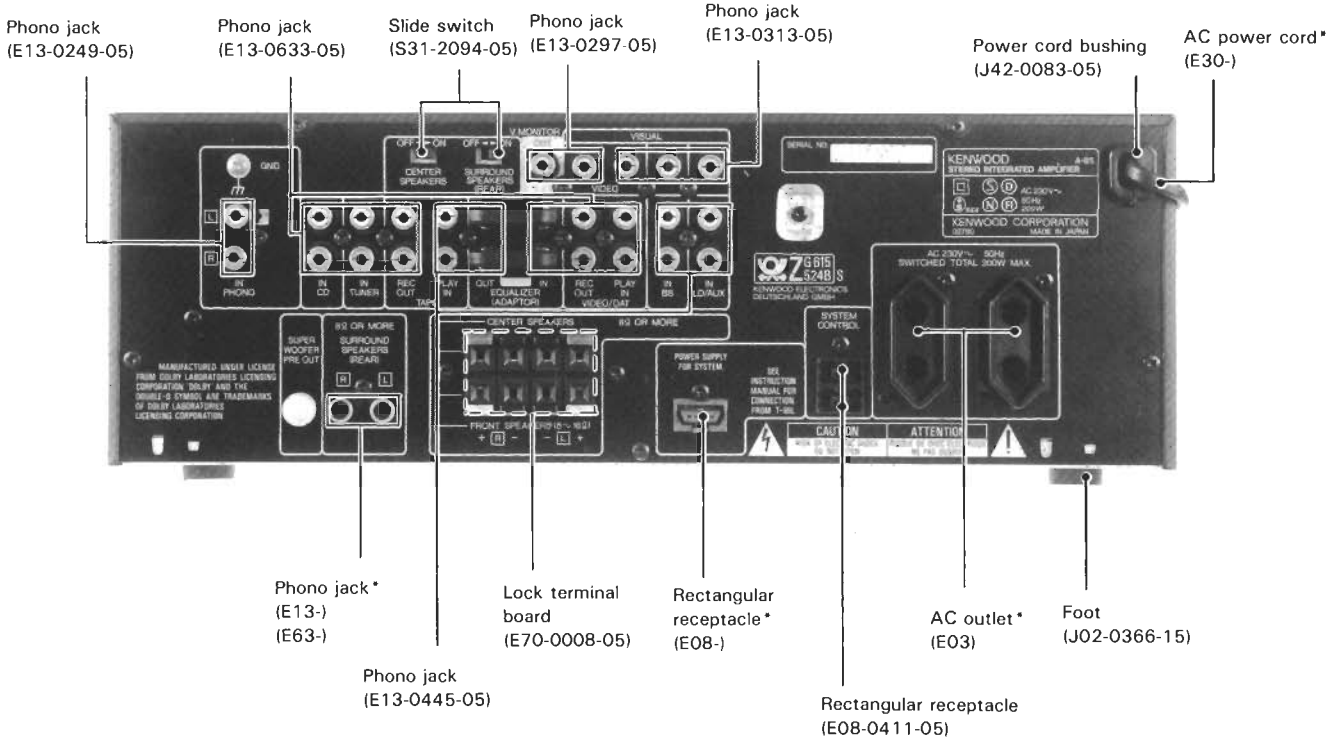
SERVICE MANUAL

MICROPROCESSOR EDITION

KENWOOD

B51-4343-10 (S) 1941

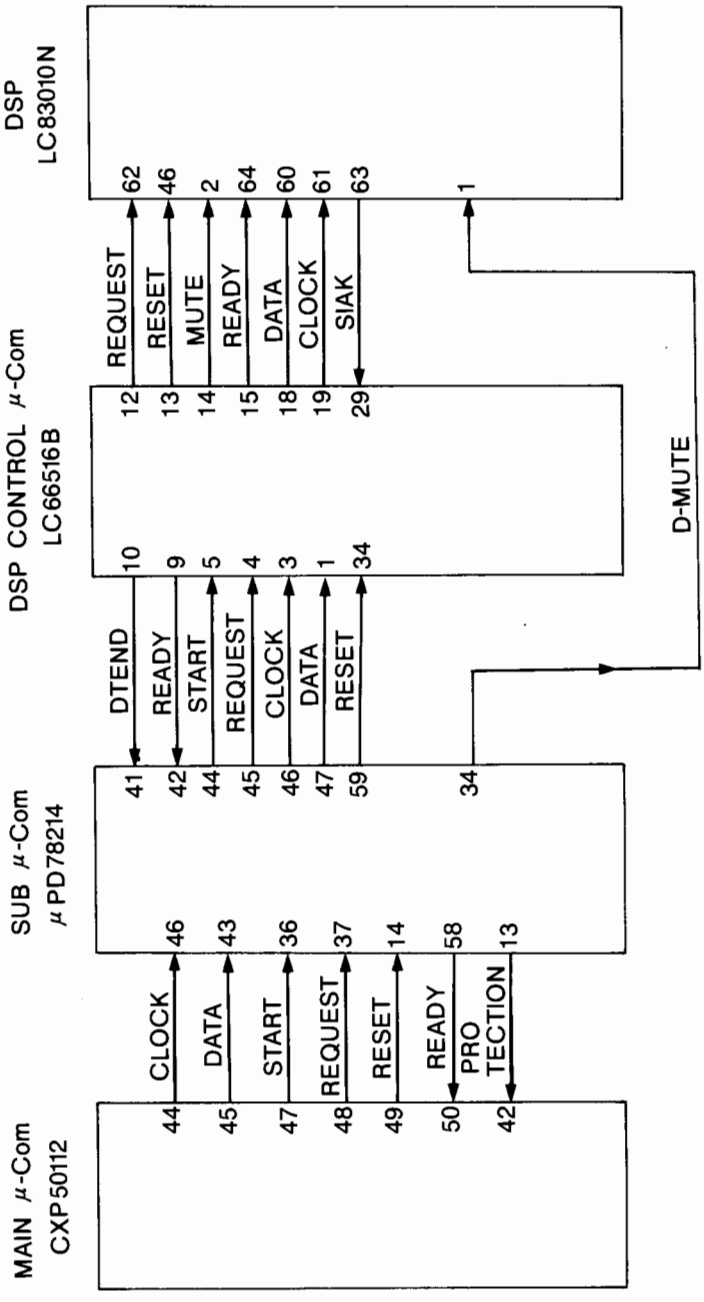




A-85

CIRCUIT DESCRIPTION

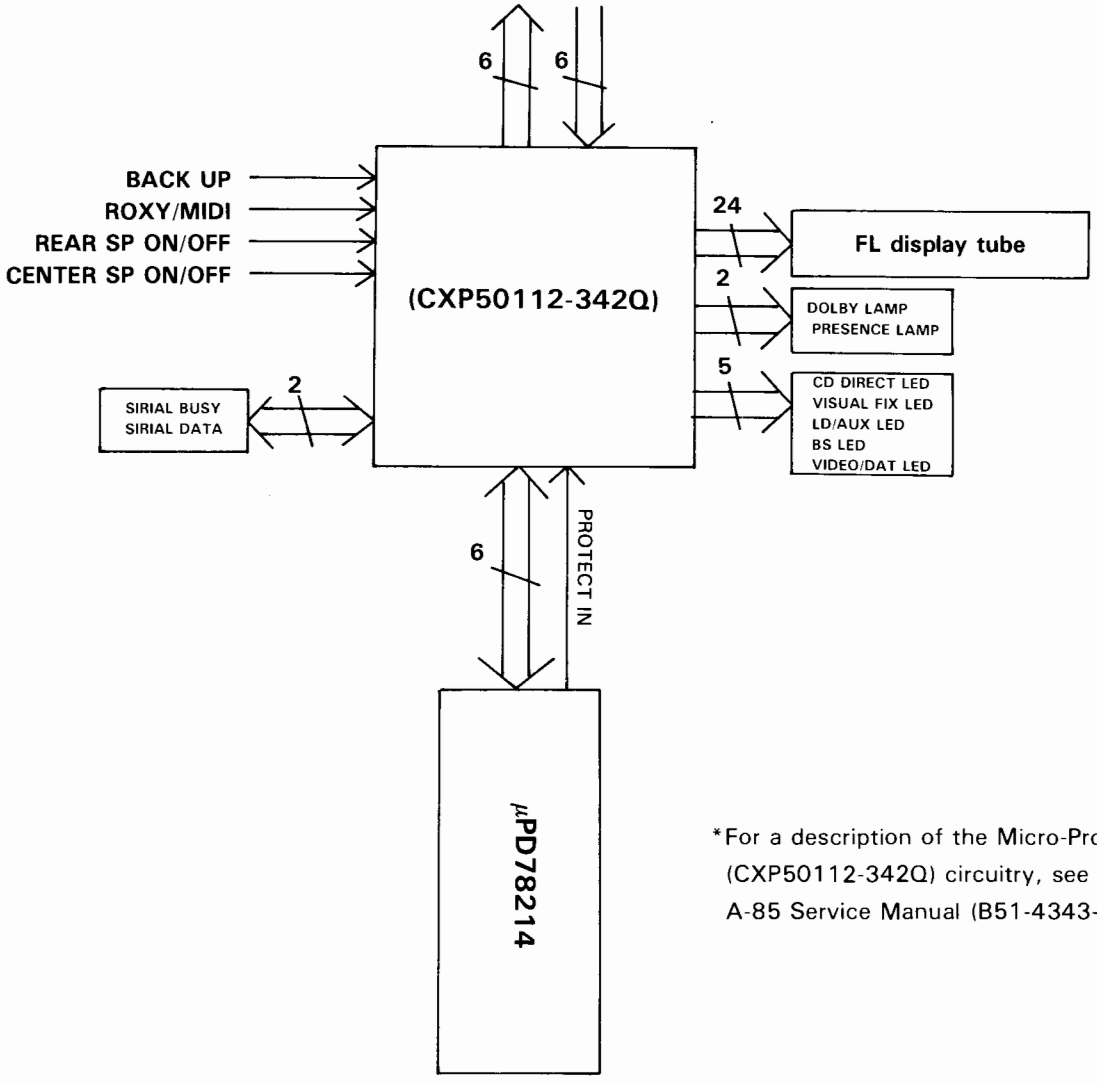
Micro processor



Microprocessor

Block diagrm of microcomputer's peripheral equipment

SCAN 5	OFF	PRESENCE	3STEREO	CD DIRECT	MUTE	CENTER MODE
SCAN 4	HIT MASTER	POWER	MELODY ASSIST	JAZZ CLUB	NB CIRCUIT	ARENA
SCAN 3	DISCO	LD/AUX	VISUAL FIX	STADIUM	BS	DISPLAY
SCAN 2	CHURCH	VIDEO DAT	TAPE A	MOVIE	SEAT-P FRONT	SEAT-P REAR
SCAN 1	DELAY DOWN	TAPE B	TUNER	REAR UP	DELAY UP	REAR DOWN
SCAN 0	PHONO	P-VOL. UP	CENTER UP	CD	P-VOL. DOWN	CENTER DOWN
	RETURN 0	RETURN 1	RETURN 2	RETURN 3	RETURN 4	RETURN 5

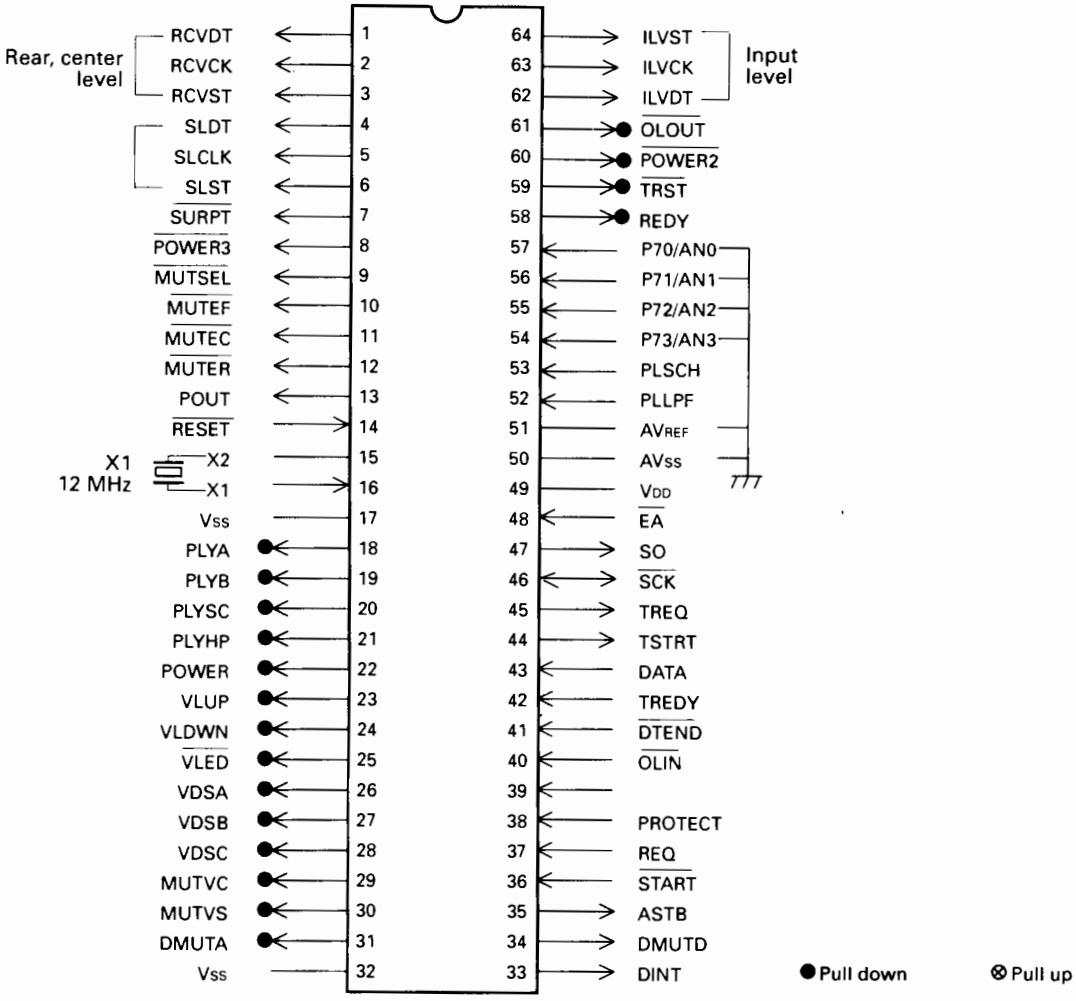


*For a description of the Micro-Processor (CXP50112-342Q) circuitry, see page 6 of the A-85 Service Manual (B51-4343-00).

CIRCUIT DESCRIPTION

System control microprocessor : μPD78214CW

Terminal connection diagram



Pin function

Pin No.	Pin name	I/O	Name	Description
1	P03	O	RCVDT	Rear,center electric volume
2	P04	O	RCVCK	TC9213P control pin CK signal
3	P05	O	RCVST	STB signal
4	P06	O	SLDT	Switch array | IC DATA signal
5	P07	O	SLCLK	TC9162N, 9163N | CK signal
6	P67	O	SLST	TC9164N control pin | ST signal
7	P66	O	$\overline{\text{SURPT}}$	Surround (DSP IC) oscillate control H: Stop L: Oscillate
8	P65	O	$\overline{\text{POWER3}}$	Port used to synchronize with the timing of the power up of the D/A converter
9	P64	O	$\overline{\text{MUTSEL}}$	Selector mute pin H: MUTE OFF L: MUTE ON
10	P63	O	$\overline{\text{MUTEF}}$	Front signal mute pin H: MUTE OFF L: MUTE ON
11	P62	O	$\overline{\text{MUTEC}}$	Center signal mute pin H: MUTE OFF L: MUTE ON
12	P61	O	$\overline{\text{MUTER}}$	Rear signal mute pin H: MUTE OFF L: MUTE ON
13	P60	O	POUT	Pin that notifies the main μ-com of protection detection
14	$\overline{\text{RESET}}$	I		Reset pin

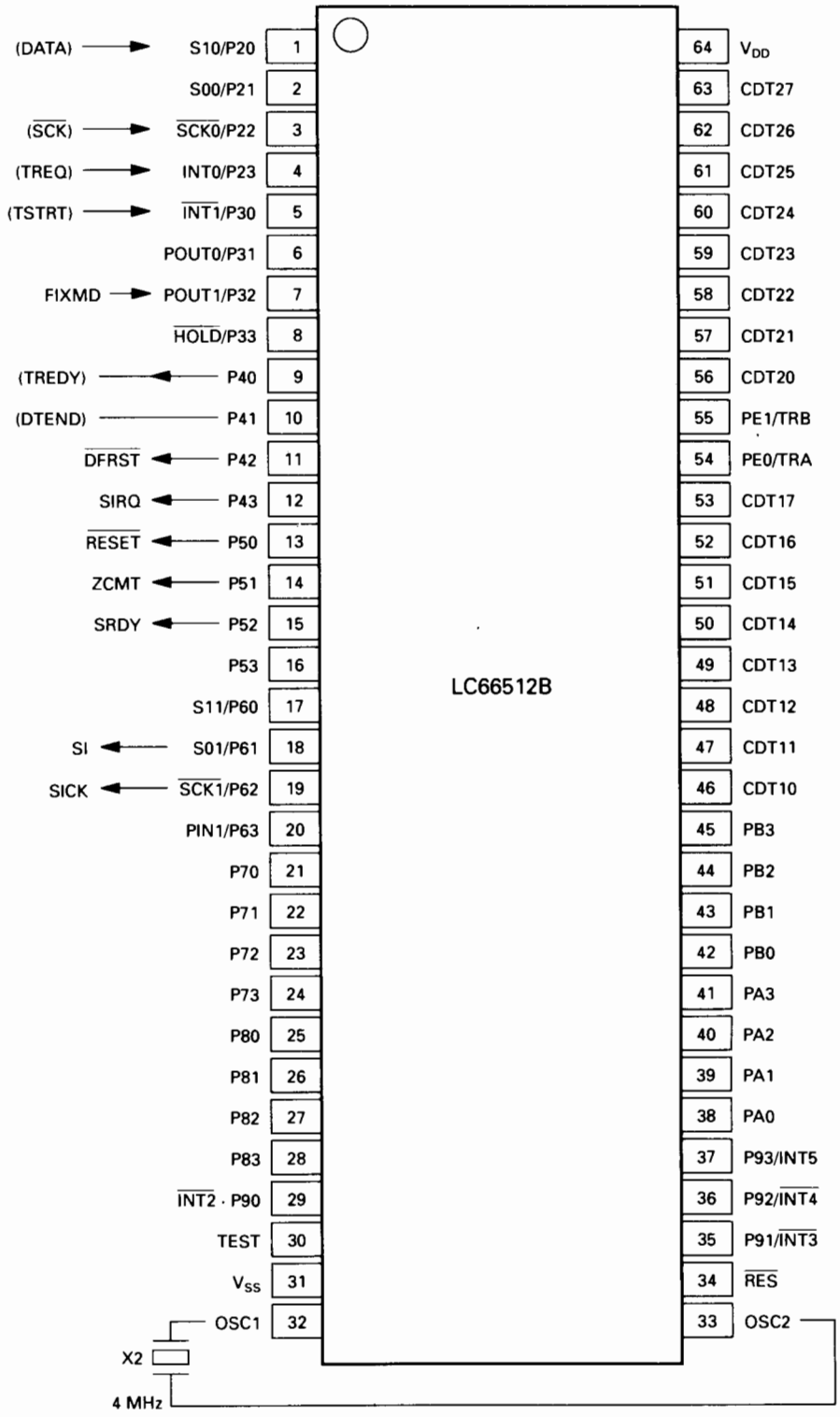
CIRCUIT DESCRIPTION

Pin function

Pin No.	Pin name	I/O	Name	Description
15	X2			System clock oscillator connect pin
16	X1	I		
17	V_{SS}	O		Gnd
18	P57	O	RLYA	Speaker A relay control pin L: Power OFF H: Power ON
19	P56	O	RLYB	Speaker B relay control pin L: Power OFF H: Power ON
20	P55	O	RLYSC	Speaker (SURROUND CENTER) relay control pin L: Power OFF H: Power ON
21	P54	O	RLYHP	Headphone relay control pin L: Power OFF H: Power ON
22	P53	O	POWER	Powersupply control pin L: POWER OFF H: POWER ON
23	P52	O	VLUP	Master volume UP control pin
24	P51	O	VLDWN	Master volume DOWN control pin
25	P50	O	$\overline{VLED}$	Master volume LED control pin L: LED ON H: LED OFF
26	P47	O	VDSA	Video selection control pin V1 V2 V3 VDSA 0 1 1 VDSB 1 0 1 VDSC 1 1 0 V1 ~ V3: input of VIDEO 1 ~ VIDEO 3
27	P46	O	VDSB	
28	P45	O	VDSC	
29	P44	O	MUTVC	Composie video mute control pin Monitor -OUT / COMPOSITE S-OUT: V1 V2 V3; - V2 V3
30	P43	O	MUTVS	S ch video mute control pin MUTE is OFF only entered the VIDEO 3 mode
31	P42	O	DMUTA	DSP analog mute control pin SURROUND ON: MUTE OFF SURROUND OFF: MUTE ON When switched : MUTE ON
32	V_{SS}			Gnd
33	P41	O	DINT	No used
34	P40	O	DMUTD	DSP digital mute control pin
35	ASTB			No used
36	P20/NMI	I	$\overline{START}$	START signal input pin for communicating to main μ-com
37	P21	I	REQ	REQ signal input pin for communicating to main μ-com
38	P22	I	PROTECT	Protection signal detection pin
39	P23			No used
40	P24	I	$\overline{OLIN}$	Over level signal detection pin
41	P25	I	$\overline{DTEND}$	DTEND signal input pin for communicating to DSP IC control μ-com
42	P26	I	TREDY	TREDY signal input pin for communicating to DSP IC control μ-com
43	P27/SI	I	DATA	DATA signal input SI port of communicating to mainl μ-com
44	P30	O	TSTRT	START signal output pin for communicating to DSP IC control μ-com
45	P31	O	TREQ	REQ signal output pin for communicating to DSP IC control μ-com
46	P32/SCK	I/O	$\overline{SCK}$	SCK I/O pin for communicating to main μ-com and DSP IC control μ-com
47	P33/SO	O	SO	SO signal output pin for communicating to DSP IC control μ-com
48	EA			No used
49	V_{DD}			Power supply pin
50,51	AV_{SS}, AV_{REF}			No used
52 ~57	P75 ~ P70	I		No used
58	P34	O	REDY	REDY signal output pin for communicating to main μ-com
59	P35	O	$\overline{TRST}$	DSP IC control μ-com reset pin
60	P36	O	$\overline{POWER2}$	Port used to synchronize with the timing of the power up of the D/A converter
61	P37	O	OLOUT	Over level output pin L: FL light H: FL not light
62	P00	O	ILVDT	Input level electric volume DATA signal
63	P01	O	ILVCK	CK signal
64	P02	O	ILVST	ST signal

CIRCUIT DESCRIPTION

DSP μ-Com: LC66516B



CIRCUIT DESCRIPTION

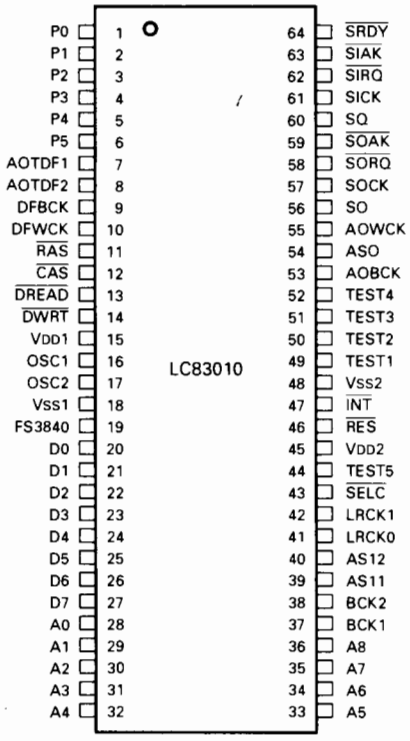
Pin function

Pin No.	Pin name	I/O	Name	Description
1	SI0/P20	I	DATA	DATA signal input pin from system control μ-com
2	SO0			No used
3	$\overline{SCK}$/P22	I	$\overline{SCK}$	Clock signal input pin from system control μ-com
4	INT0/P23	I	TREQ	TREQ signal input pin from system control μ-com
5	INT1/P30	I	TSTRT	TSTRT signal input pin from system control μ-com
6	Pout0/P31	I		No used
7	Pout1/P32	I	FIXMD	Fixation terminal mode setting pin. Low: Normal mode High: Fixation terminal mode
8	$\overline{HOLD}$/P33	I	TSTRT	HOLD mode control input
9	P40	O	TREDY	TREDY signal output pin to system control μ-com
10	P41	O	DTEND	At mode change (command 0 ~ 2) and during clear the DRAM, transfer the data to DSP IC.
11	P42	O	$\overline{DFRST}$	Digital filter reset signal output pin (Normally High)
12	P43	O	SIRQ	DSP IC LC83010 SIRQ signal output pin
13	P50	O	$\overline{RES}$	DSP IC LC83010 Reset signal output pin (Normally High)
14	P51	O	ZCMT	Zero cross mute control signal output pin
15	P52	O	SRDY	DSP IC LC83010 SRDY signal output pin
16,17	P53, SU/P06			No used
18	SO1/P61	O	SI	DSP IC LC83010 SI signal output pin
19	$\overline{SCK}$1/P62	O	SICK	DSP IC LC83010 SICK signal output pin
20 ~ 28	PIN1/P63 P70 ~ P73 P80 ~ P83	O		No used
29	$\overline{INT2}$/P90			DSP IC LC83010 SIAK signal input pin
30	TEST			CPU test pin. Connected to V_{SS}.
31	V_{SS}			GND pin
32	OSC1	I		System clock oscillator pin
33	OSC2	O		System clock oscillator pin
34	$\overline{RES}$	I		System reset signal input pin
35 ~ 37	P91 ~93 $\overline{INT3}$ ~ $\overline{INT5}$			No used
38 ~ 45	PA0 ~ PA3 PB0 ~ PB3	I I		No used
46 ~ 53	PC0	I	CDT10 ~ 17	Correspond to bit 0 ~ 7 of data address 1 of command data in the fixed pin mode.
54	PE0/TRA	I		Correspond to 2 low-order bits of command data in the fixed pin mode. The fixed pin mode can be set to 00, 01,02 or 03.
55	PE1/TRB	I		
56 ~ 63	P35	I	CDT20 ~ 27	Corresponds to bit 0 ~ 7 of data address 2 of command data in the fixed pin mode.
64	V_{DD}			Power supply

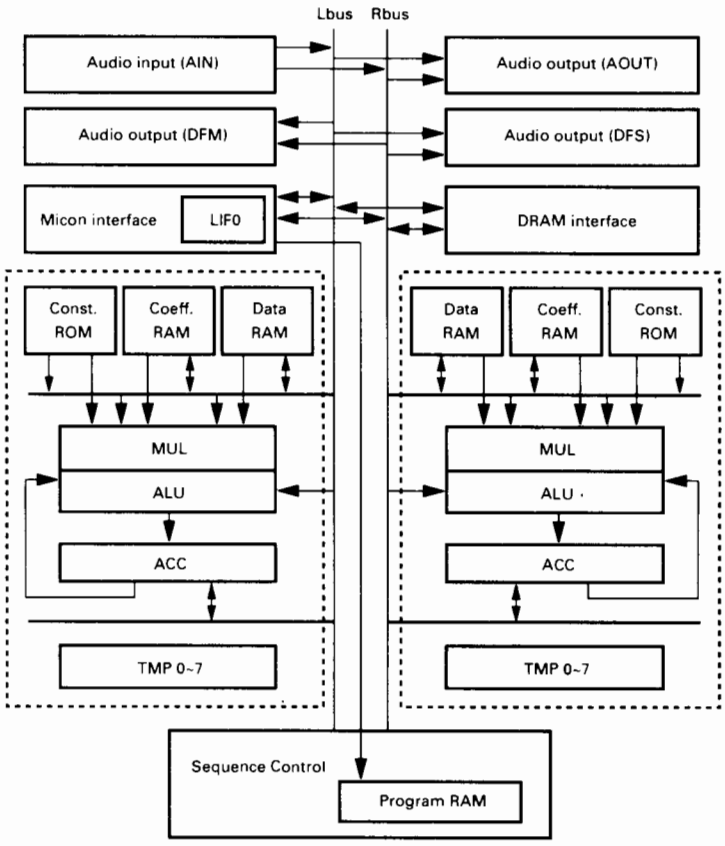
CIRCUIT DESCRIPTION

DSP IC : LC83010

Pin connection



Block diagram



CIRCUIT DESCRIPTION

Pin function

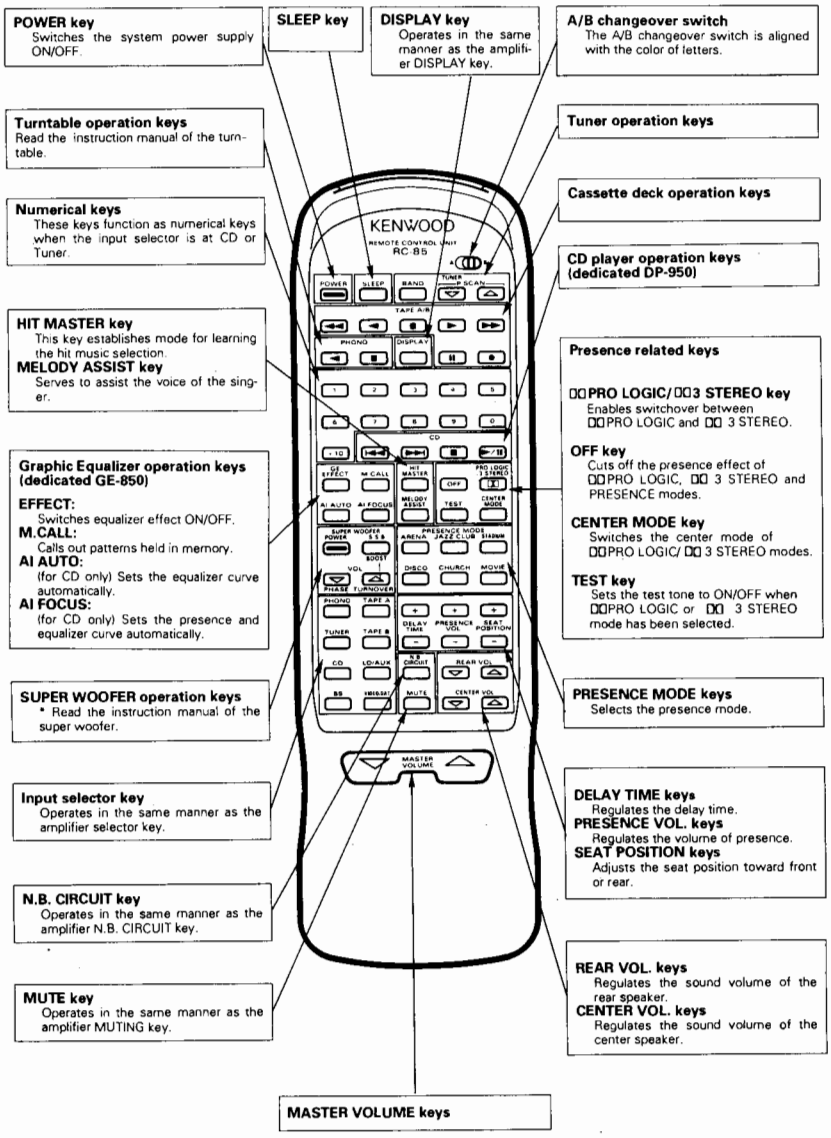
Pin No.	Pin name	I/O	Description
1	P0	I	Digital mute - High: mute; Low: unmute during DSP program
2	P1	I	Soft muting - High during DSP program: Soft mute with time constant of 1 ms; Low: Unmute
3	P2	O	Overflow detection If the input data from the A/D converter becomes the maximum positive or negative value a low signal is output, held for 100 ms, and goes high.
4	P3	I	Phase shifter control The phase shifter is turned on and off during 3-channel sound field program. Low: on; High; off. Always used with "LOW".
5	P4	I	Direct sound add control Control whether direct sound is added in the DSP during sound field program. High: Add; Low: Do not add. Always used with "LOW".
6	P5	I/O	General input/output port No used (open)
7	AOTDF2	O	Audio data output 1 C ch and S ch data is output during Dolby pro logic and 4-ch sound field. If 3 stereo and 3-CH are set, only C ch data is output.
8	AOTDF2	O	Audio data output 2 Decoded L/R data is output for Dolby. The L/R sound field signal is output for sound field.
9	DFBCK	O	Bit clock for AOTDF 1 and 2 48 fs bit clock is output.
10	DFWCK	O	Word clock for AOTDF 1 and 2 No used
11	$\overline{RAS}$	O	For row address strobe DRAM access control
12	$\overline{CAS}$	O	For column address strobe DRAM access control
13	$\overline{DREAD}$	O	DRAM read control signal
14	$\overline{DWRT}$	O	DRAM write control signal
15, 45	VDD1, 2	I	Power supply pin
18, 48	VSS1, 2		GND pin
16	OSC1	I	Crystal oscillator pin
17	OSC2	O	Crystal oscillator pin
19	FS3840	O	384fs output pin
20 ~ 27	D0 ~ D7	I/O	DRAM data I/O pin
28 ~ 36	A0 ~ A8	O	DRAM address output pin (A8 is no used)
37	BCK1	I	No used
38	BCK2	O	Bit clock output pin 32fs bit clock output for A/D
39	ASI1	I	No used
40	ASI2	I	Audio data input pin 2 Data input from A/D
41	LRCKO	O	L/R clock output pin
42	LRCKI	I	No used
43	$\overline{SELC}$	I	Self oscillation and external clock input switching
44	TEST 5	O	Test pin Used by open
46	$\overline{RES}$	I	Reset pin
47	$\overline{INT}$	I	No used
49 ~ 52	TEST 1 ~ 4	I	Test pin Connected to GND
53	AOBCK	O	No used
54	ASO	O	Audio data output (overflow detection) Used by the the KR-V9030 to detect overflow for Dolby.
55 ~ 59	A0WCK etc.		No used
60	SI	I	Serial data input from µ-com
61	SICK	I	Serial clock input of SI input
62	$\overline{SIRQ}$	I	SI request signal input
63	$\overline{SIAK}$	O	Output signal to indicate that the SI serial communication is executing
64	$\overline{SRDY}$	I	Input signal to indicate that the mail box communication is finished

DSP ↔ µ-com interface

A-85

REMOTE CONTROLLER

The illustration for the Remote Controller depicted in the A-85 Service Manual (B51-4343-00) is NOT correct. Use the illustration shown below in it's place. The part numbers however, are the same.



KENWOOD CORPORATION

Shionogi Shibuya Building, 17-5, 2-chome Shibuya, Shibuya-ku, Tokyo 150, Japan

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

KENWOOD ELECTRONICS CANADA INC.
6070 KESTREL ROAD MISSISSAUGA, ONTARIO L 5 T 1S8

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

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

KENWOOD ELECTRONICS DEUTSCHLAND GMBH
Rembrucker-Str. 15, 6056 Heusenstamm, Germany

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

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

KENWOOD ELECTRONICS AUSTRALIA PTY. LTD. (INCORPORATED IN N.S.W.)
P.O. Box 504, 8 Figtree Drive, Australia Centre, Homebush, N.S.W. 2140, Australia

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

SERVICE TECHNICAL REPORT

KENWOOD
KENWOOD CORPORATION

☑ Home ☐ Car ☐ A.R ☐ LMR/Marine

NO. E 1 1 - 9 1 - 0 0 9 1/

MODEL	A-85	DATE	September 2nd, 1991

SUBJECT: No output with the Dolby surround switch or DSP presence switch ON/OFF

CONTENTS | REFERENCE: B 1 1 - 9 1 - 0 1 1

〔Symptom〕If the dolby surround switch or the DSP presence switch is turned ON, OFF, then ON again, no sound is sometimes output.

〔Cause〕SIAK (communication flag) of the DSP control μ-com (LC66516B) and DSP IC (LC83010N) interface is unstable when the DSP presence is turn ON and OFF. Consequently, DSP IC CLK ON↔ OFF switching becomes unstable.

〔Countermeasure〕To stabilize SIAK, retain the ON state of DSP IC CLK that currently changes from ON to OFF.

In other words, cut X32-2030-XX B/2 W155.

The above counter measure is already done in the latter sets of the August production lot. Countermeasure-applied sets are indicated by "1" stamped on the carton box. As a permanent countermeasure, the DSP control microcomputer will be modified. .

※ Parts stock: YES, (NO), Delivery:

Remarks

Prod. change S/N 109 xxxxx

Application ☐ All repair units ☑ Defectives only ☐

Parts included ☑ No ☐ Yes ☐ Mail

Service code A: 02 B: X32-2030 C: W155 D: 91

Distribution

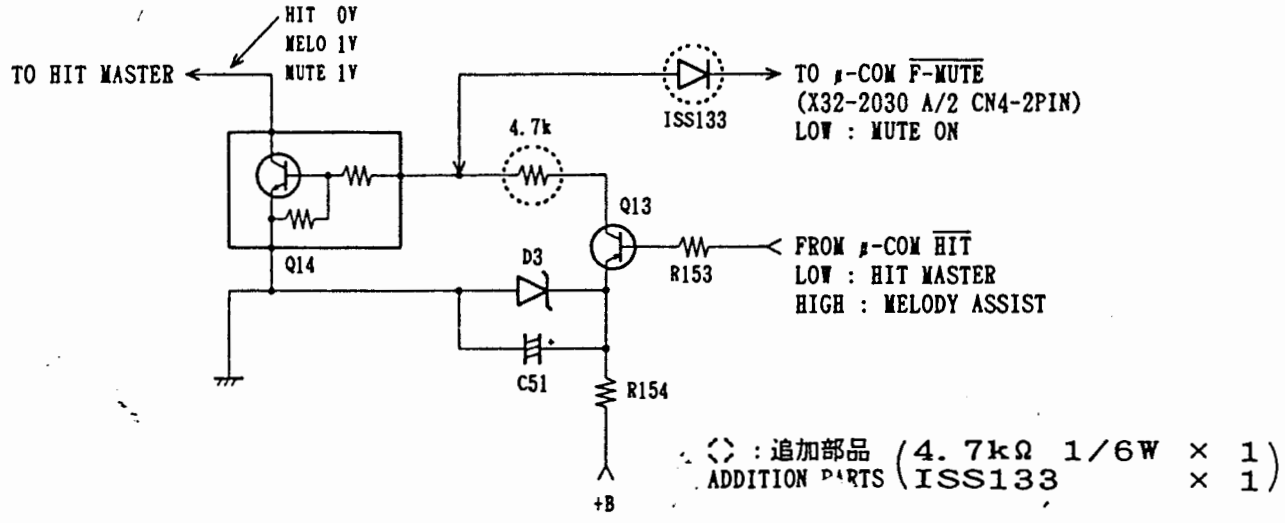
サービス管理S: ☑ U.S.A.(3ヶ所) ☑ U.K. ☑ ショールーム / ☑ CANADA ☑ ITALY ☑ 相談室 / ☑ GERMANY ☑ AUSTRALIA ☐ 部品S / ☑ BELGIUM ☑ SINGAPORE ☐ 教育担当

市場品質S: ☑ 第3課 / ☑ 営業管理S / ☐ 通、営業課 / ☐

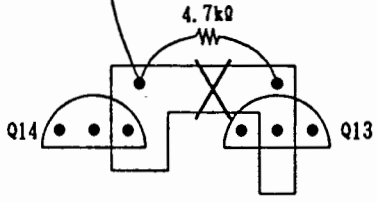
MANAGER UMESHITA

WRITER

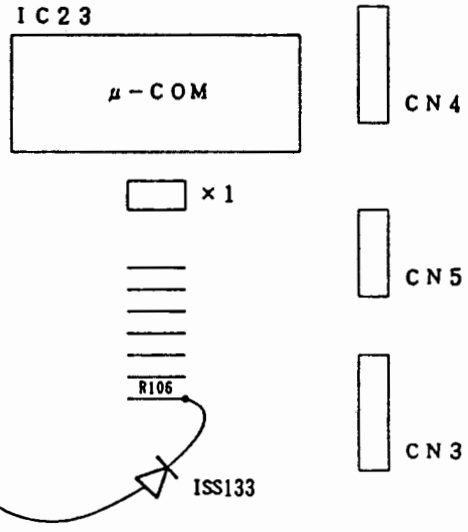
〔Circuit change〕　　X08-2470　A/3



<X08　A/3>



<X32　A/2>



① Cut the pattern connecting between Q13's collector and Q14's base, and connect them via 4.7 kΩ.

② Draw a thin lead from Q14's base and connect it via a diode to R106 of side near CN3 in upper part board (X32- A/2).

SERVICE TECHNICAL REPORT

KENWOOD
KENWOOD CORPORATION

STR No. E11-92-006
REFERENCE. B11-92-006

☑ HOME ☐ GENERAL

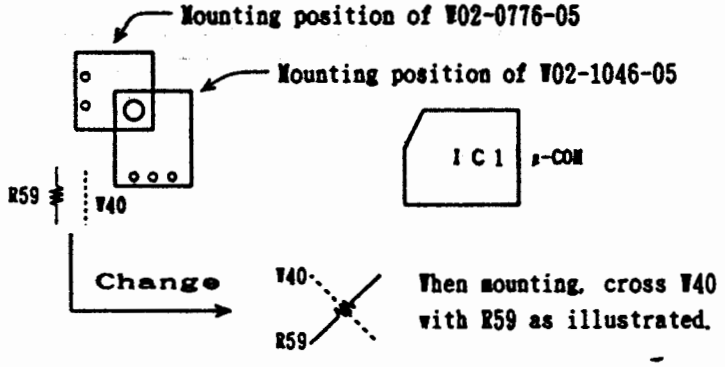
MODEL : A-85	DATE. May 19, 1992

SUBJECT:
Choice of the remote control sensor

〔Symptom〕 Either W02-0766-05 or W02-1046-05 is designated to be used for the remote control sensor (A1) of the A-85. But it was found that the remote controller does not work with W02-0766-05.

〔Cause〕 The remote sensor W02-0766-05 has two terminals and the W02-1046-05 has three terminals. The patterns and silkscreens printed on the two sensors are such that the sensors are soldered 90° rotated about the light receiving hole relative to each other. No problem is caused by using W02-1046-05 since it is an original part. But the pattern for W02-0776-05 is incorrect; +B and out put are opposite.

〔Countermeasure〕 Use W02-1046-05.
If it is unavailable by any means, change the pattern.



Parts included	☐ No ☐ Yes ☐ Mail	Service code	
Parts stock	☑ Yes ☐ No Delivery M D ☐ Charge ☐ Free of charge	A(S) : 55	B : X11-315x
Prod. change	Lot S/No.	C(P) : J70	D(C) : 91
Application	☐ All repair units ☒ Defectives only ☐	MANAGER	K, Nagaokuma
Distribution	☑ サービス部(相談室, 部品S, 教育S, テクニカルS) ☐ ショールーム ☑ IMD(第3課, 営業管理S, 通信, 社員) ☑ K-U.S.A. ☑ TK-F ☑ K-LEE ☑ General Market ☑ K-CANADA ☑ TK-U.K ☑ K-PANAMA ☑ K-GmbH ☑ K-LINEAR ☑ K-S'pore ☑ K-N.V ☑ K-AUST ☑ K-SPAIN	WRITER	K. Kato

SERVICE TECHNICAL REPORT

KENWOOD
KENWOOD CORPORATION

STR No. E11-92-007
REFERENCE. B11-92-008

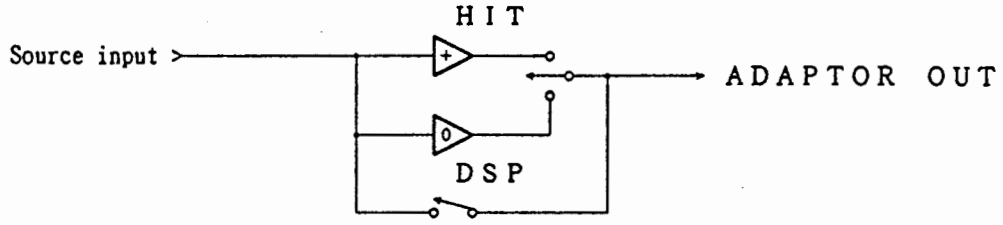
☑ HOME ☐ GENERAL

MODEL: A-85	DATE. July 1st, 1992

SUBJECT: Noise generated with activation of AI AUTO when HIT MASTER is ON

〔Symptom〕 When AI AUTO is activated in the GE-850 while the HIT MASTER is ON in the A-85, slight noise is heard only during CD sampling although MUTE is active.

〔Cause〕 Usually, one of the HIT MASTER, DSP presence, and BYPASS modes is selected via the corresponding key switch. During AI AUTO sampling, however, we have found that the BYPASS switch is forced ON in HIT MASTER and DSP modes also.
As a result, there are two signal paths: (1) BYPASS and HIT MASTER, and (2) BYPASS and DSP.
DSP does not have a gain in it self, so it does not matter. However, the HIT MASTER circuit does have a gain, so that the two signal paths form a loop, generating oscillation. The level of this oscillation is so high that it cannot completely be suppressed by MUTE and the unsuppressed sound is heard as noise.



〔Countermeasure〕 The HIT MASTER circuit is shared by MERODY ASSIST. HIT MASTER has a gain, but MERODY ASSIST does not. For this reason, only during AI AUTO sampling using the MUTE signal, MERODY ASSIST is selected by force whether the A-85 is in either mode.

Parts included ☒ No ☐ Yes ☐ Mail	Service code
Parts stock ☒ Yes ☐ No Delivery M D ☐ Charge ☐ Free of charge	A(S): 09 B: X08-2470
Prod. change Lot S/No.	C(P): ADDR D(C): 91
Application ☐ All repair units ☒ Defectives only ☐	MANAGER T. Kumagai
Distribution: ☑ サービス部(相談室, 部品S, 教育S, テクニカルS) ☑ ショールーム ☑ IMD(第3課, 営業管理S, 通信, 計測) ☑ K-U.S.A. ☑ TK-F ☑ K-LEE ☑ General Market ☑ K-CANADA ☑ TK-U.K ☑ K-PANAMA ☑ K-GmbH ☑ K-LINEAR ☑ K-S'pore ☑ K-N.V ☑ K-AUST ☑ K-SPAIN	WRITER X. Kato