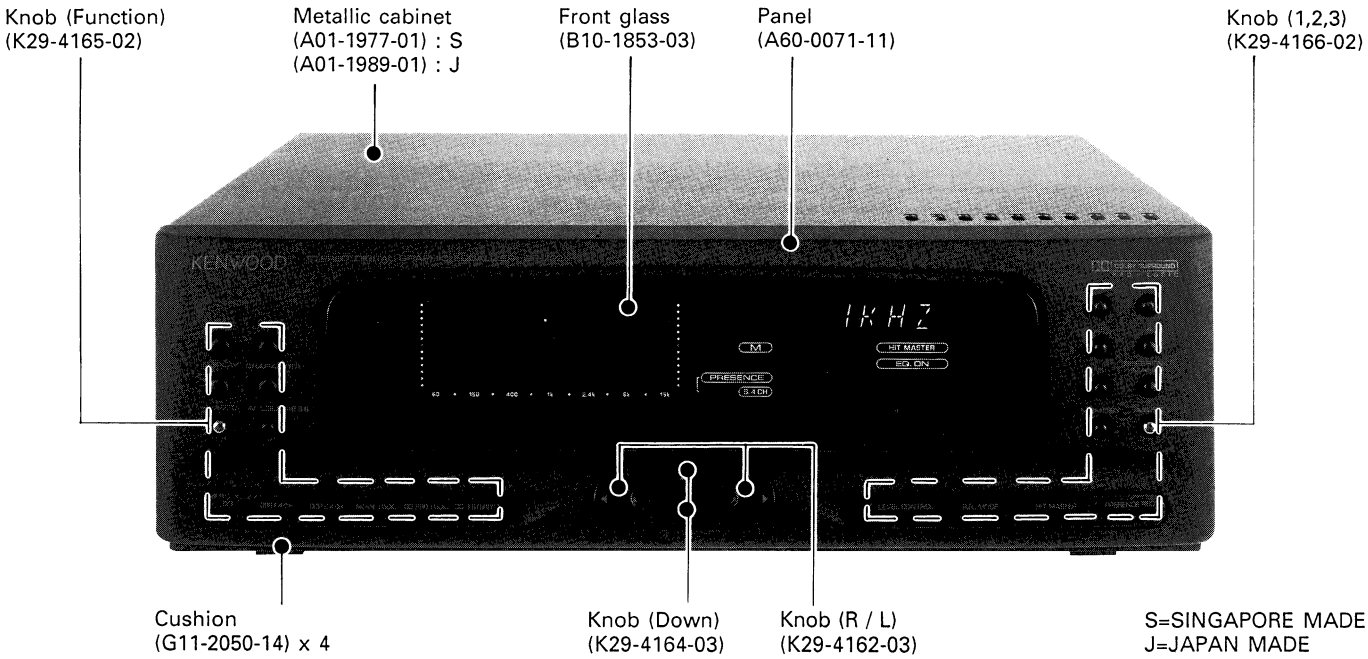
GRAPHIC EQUALIZER

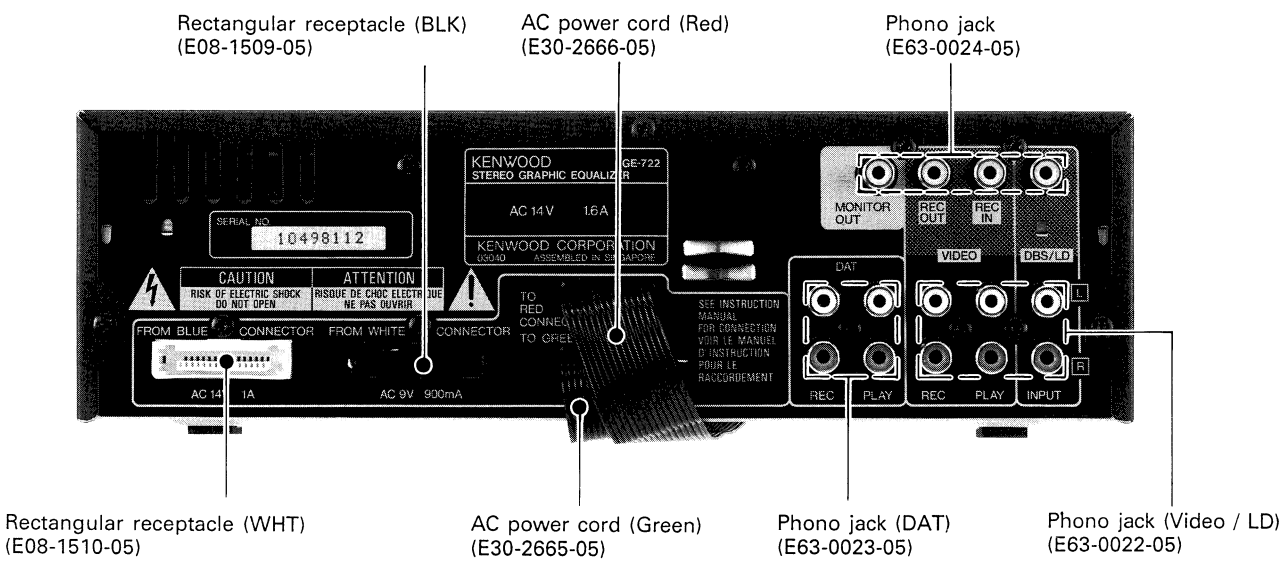
GE-722

SERVICE MANUAL

KENWOOD

B51-4372-00 (O) 3615





CAUTION : When doing repair of GE-722, be sure to have the customer bring the A-722, or use power supply jig RM-90PS, or supply to 16V AC to jumper leads W18 and W19 on X14-3200-00 PC board ass'y. If not get 16V AC, please order the A-848's power transformer (parts No. L07-0038-05 / 120V / 220V / 240V). Don't use the "RHEOSTAT".

CONTENTS/ACCESSORIES

CONTENTS

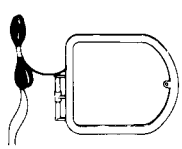
System name	Receiver	Graphic equalizer	Cassette deck	CD player	Speaker
UD-90	A-722	GE-722	X-722	DP-722	LS-722

Outer packing case	Instruction manual	Warranty card
H60-0028-04 (M, P, Y) : J	B60-0513-00 (M) : SPANISH	B46-0092-03 (K)
H60-0029-04 (X) : J	B60-0583-00 (M) : CHINA	B46-0094-03 (Y)
H60-0030-04 (T) : J	B60-0508-00 (E) : ENGLISH	B46-0095-03 (Y)
H60-0031-04 (K) : J	B60-0509-00 (E) : FRENCH	B46-0096-23 (X)
H60-0033-04 (M, P, Y) : S	B60-0510-00 (E) : GERMANY	B46-0122-13 (E)
H60-0034-04 (X) : S	B60-0511-00 (E) : NETHERLANDS	B46-0143-13 (T)
H60-0035-04 (T) : S	B60-0512-00 (E) : ITALY	

J=JAPAN MADE S=SINGAPORE MADE

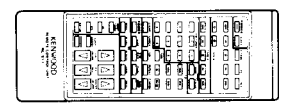
ACCESSORIES

• AM loop antena 1
(T90-0173-05) : J
(T90-0174-05) : S



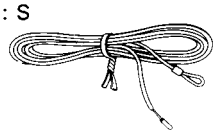
• Loop antenna stand 1
(J19-2815-04)

• Remote control unit 1
(A70-0535-05)

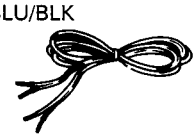


(Supplied with DP-722)

• FM indoor antenna 1
(T90-0176-05) : J
(T90-0175-05) : S

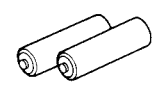


• Speaker cords 2
(E30-1297-05) : RED/BLK
(E30-5091-05) : BLU/BLK

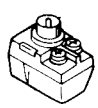


(Supplied with the LS-722)

• Battery (R06 / AAA) 2
(–)



• Antenna adaptor 1
(T90-0136-05) T, E TYPE ONLY



• AC plug adaptor 1
(E03-0115-05) M TYPE ONLY

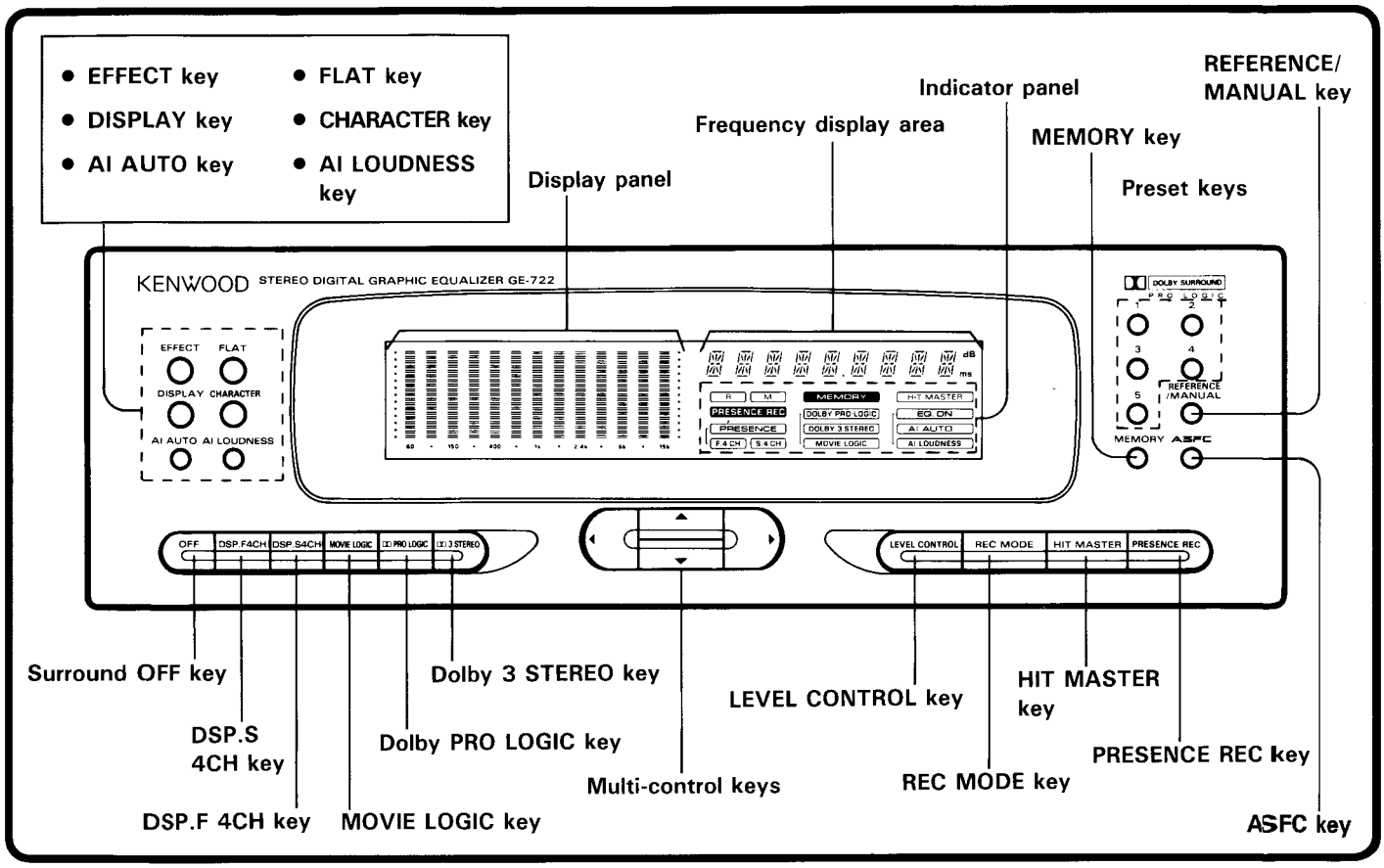
(Except for some areas)
For the unit with a European AC plug in areas other than Europe.

J = JAPAN MADE
S = SINGAPORE MADE

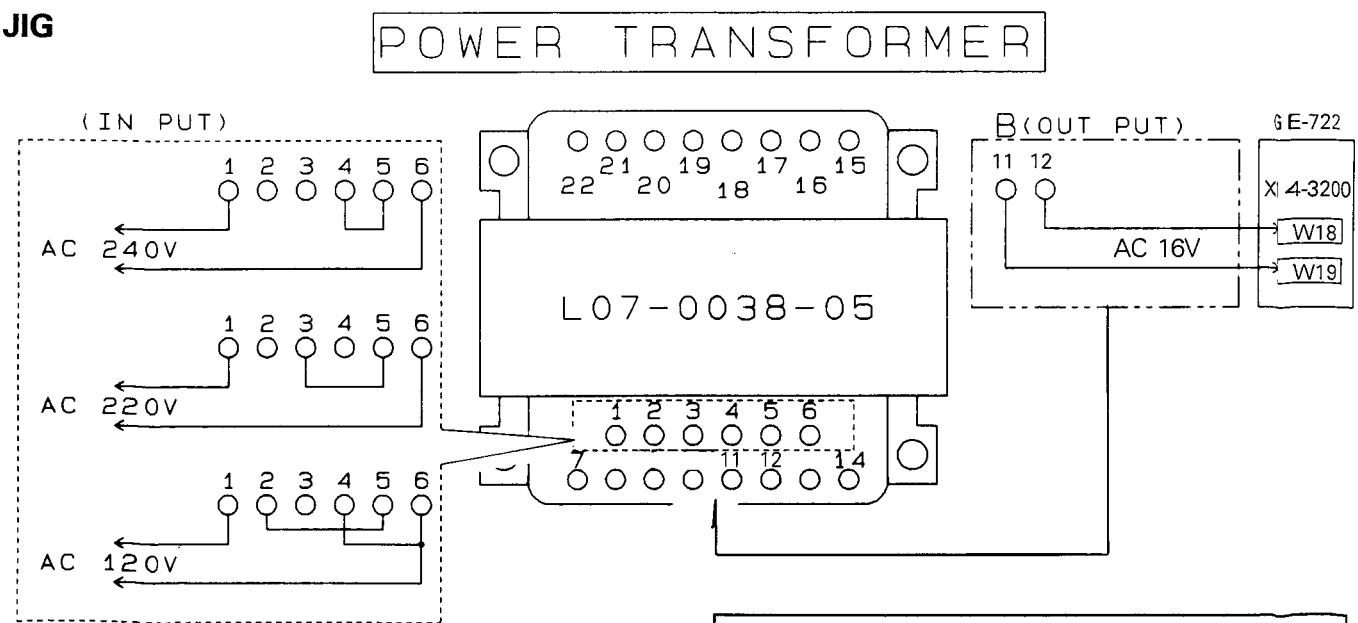
Note : A-722/L has accessories with no attached models.

CONTROLLES/ JIG

CONTROLLES



JIG



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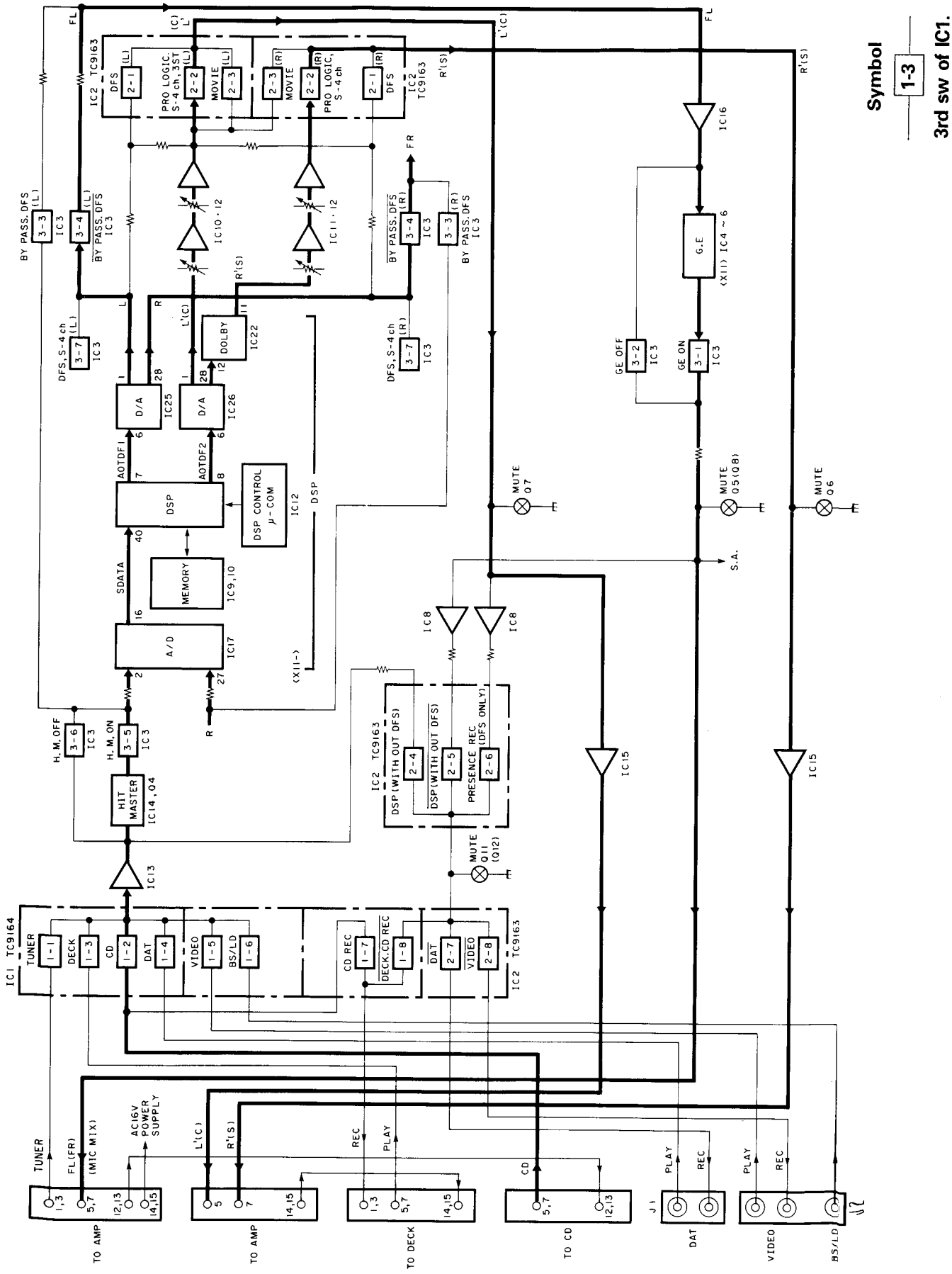
GE-722

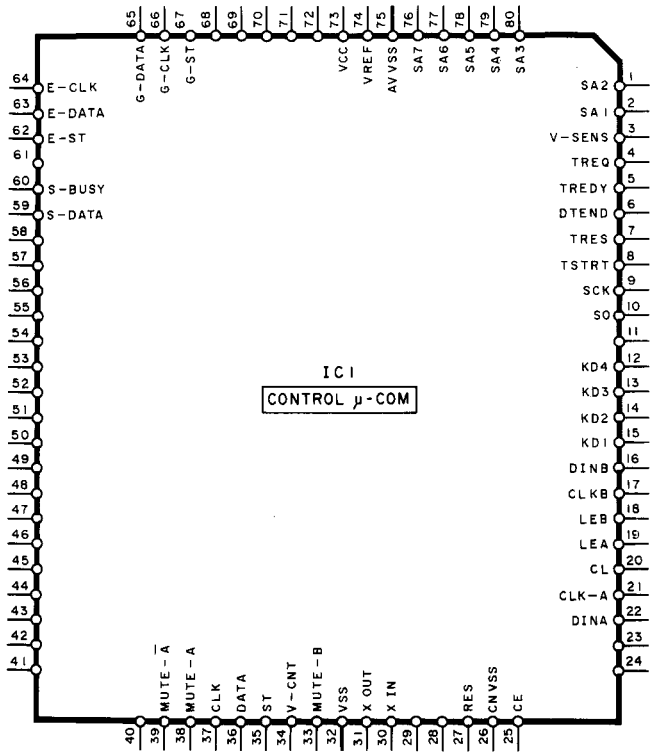
BLOCK DIAGRAM



CIRCUIT DESCRIPTION

1. Main Microprocessor : M38063M6-151FP (IC1)

1-1. Pin connection diagram



1-2. Pin functions

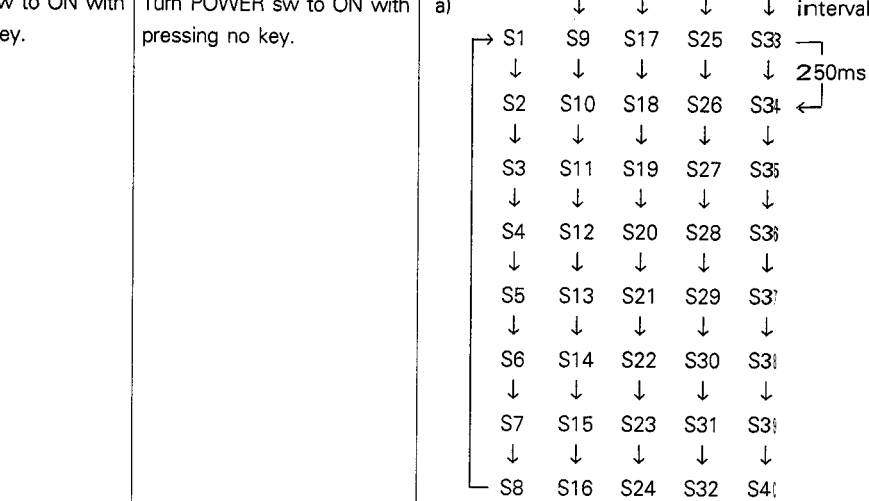
Pin No.	Pin Name	I/O	Functions
1	SA2	I	Spectrum analyzer
2	SA1	I	Spectrum analyzer
3	V-SENS	I	VOLUME SENS for AI LOUDNESS
4	TREQ	O	DSP(Digital Surround Processor) demand
5	TREDY	I	DSP ready
6	DTEND	I	DSP data end
7	TRES	O	DSP reset
8	TSTRT	O	DSP start
9	SCK	O	DSP clock
10	SO	O	DSP data
11	–	I	Not use
12 ~ 15	KD4 ~ 1	I	Key return
16	DINB	O	Grid data
17	CLKB	O	Grid clock
18	LEB	O	Grid latch
19	LEA	O	Segment latch
20	CL	O	Display clear
21	CLKA	O	Segment clock
22	DINA	O	Segment data
23, 24	–	I	Not use
25	$\overline{CE}$	I	Backup enable
26	CNVss	–	GND
27	$\overline{RESET}$	I	Reset

Pin No.	Pin Name	I/O	Functions
28, 29	–	I	Not use
30	XIN	–	Oscillator input
31	XOUT	–	Oscillator output
32	Vss	–	GND
33	MUTEB	O	Mute B
34	V-CNT	O	Video control
35	ST	O	Selector ST
36	DATA	O	Selector data
37	CLK	O	Selector clock
38	$\overline{MUTEA}$	O	Mute A
39	MUTEA	O	Inverted Mute A
40 ~ 58	–	I	Not use
59	SDATA	I/O	Extra serial data
60	SBUSY	I/O	Extra serial busy
61	–	I	Not use
62	EST	O	Electric volume ST
63	EDATA	O	Electric volume data
64	ECLK	O	Electric volume clock
65	GDATA	O	GE electric volume data
66	GCLK	O	GE electric volume clock
68 ~ 72	–	I	Not use
73	Vcc	–	Power supply (5V)
74	VREF	–	Reference voltage
75	AVss	–	GND
76 ~ 80	SA7 ~ 3	I	Spectrum analyzer

Refer to page 29 on the Input sensitivity of spectrum analyzer.

CIRCUIT DESCRIPTION

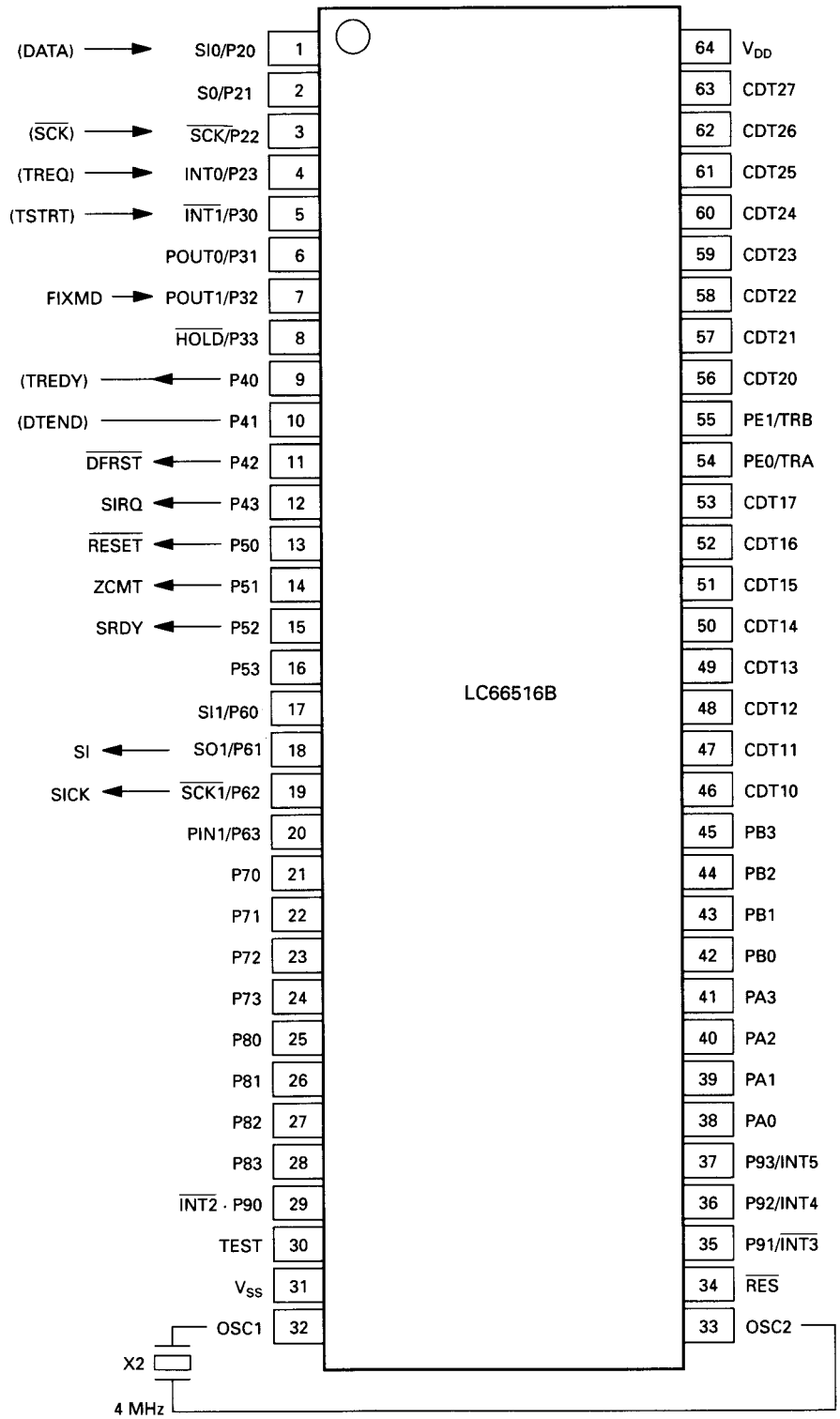
2. TEST MODE

TEST MODE	SETTING	RESETTING	CONTENTS
1. MEMORY CLEAR	Turn POWER sw to ON with pressing MEMORY key.	–	The memory is set initially (to RESET state), then the normal operation is started.
2. SELECTOR	Turn POWER sw to ON with pressing EJECT key.	Turn POWER sw to ON with pressing no key.	Display a) CD→TUNER→DECK→DAT→VIDEO→DBS/LD →CD (Freq. UP key) CD←TUNER←DECK←DAT←VIDEO←DBS/LD ←CD (Freq. DOWN key) b) No key is accepted except Freq. UP and DOWN.
3. GRAPHIC EQUALIZER	Turn POWER sw to ON with pressing FLAT key.	Turn POWER sw to ON with pressing no key.	a) All of segments turn on at first time. If pressed key, turn to normal indicator. b) Set segments as follows, M1 : ±0 (FLAT) M2 : +10 (All max.) M3 : –10 (All min.) c) In all of frequency range, EQ's UP/DOWN keys used to set 3 points of +10dB, 0 and –10dB. d) In DSP-OFF mode, function mode is set to Surround 4 channels and DSP output data is free. e) AI AUTO KEY (Remote controller) is no acceptable. f) Other operation is the same as the normal mode. g) SELECTOR is set to TUNER. h) Operation words with pressing EJECT key. i) By pressing CHARACTER key, turn on and check all of segments.
4. SEGMENT	Turn POWER sw to ON with pressing R/M key.	Turn POWER sw to ON with pressing no key.	a)  Each group turns on for 250ms. If pressed any key, turn to normal display. b) After procedure a), mode changes to 3. GRAPHIC EQUALIZER. c) By pressing CHARACTER key, turn on and check all of segments.

CIRCUIT DESCRIPTION

3. DSP Microprocessor : LC66516B-4677 (IC12)

3-1. Pin connection diagram



GE-722

CIRCUIT DESCRIPTION

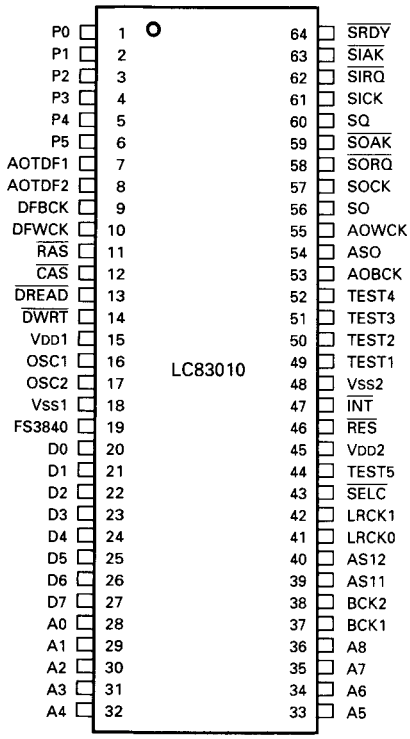
3-2. Pin functions

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 Vss.
31	Vss			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	VDD			Power supply

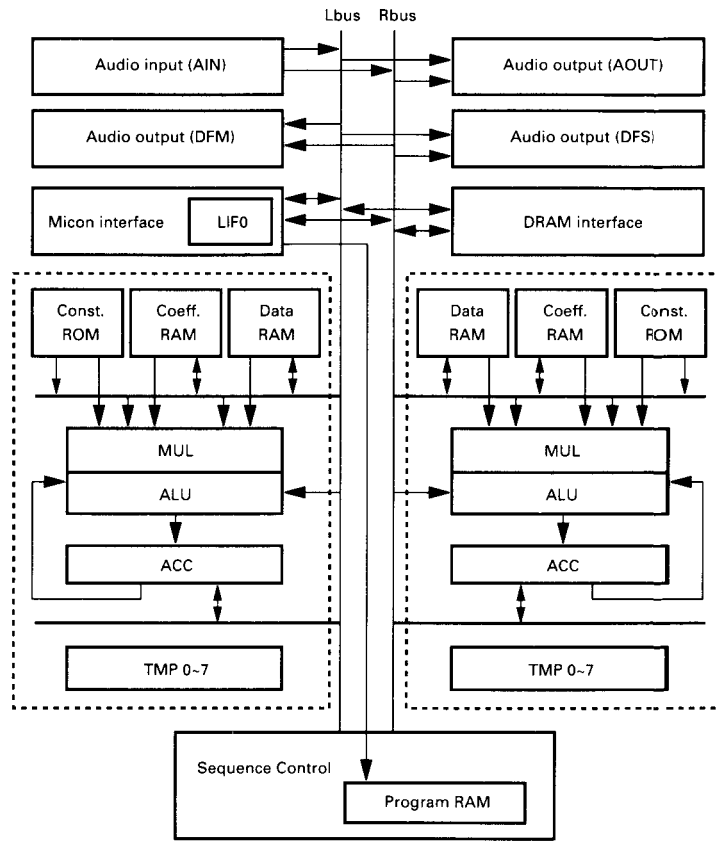
CIRCUIT DESCRIPTION

4. DSP IC : LC83010 (IC11)

4-1. Pin connection diagram



4-2. Block diagram

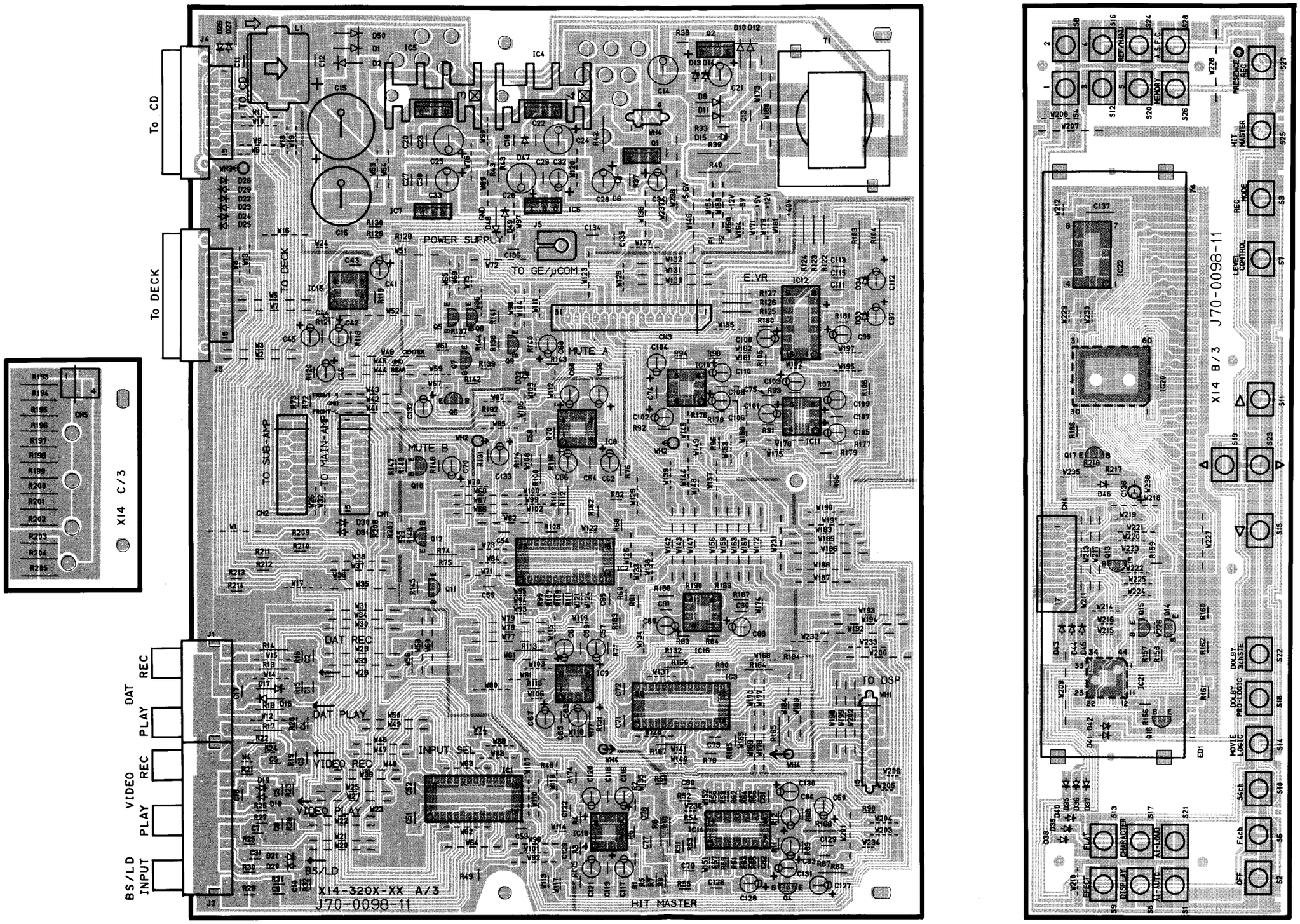


CIRCUIT DESCRIPTION

4-3. Pin functions

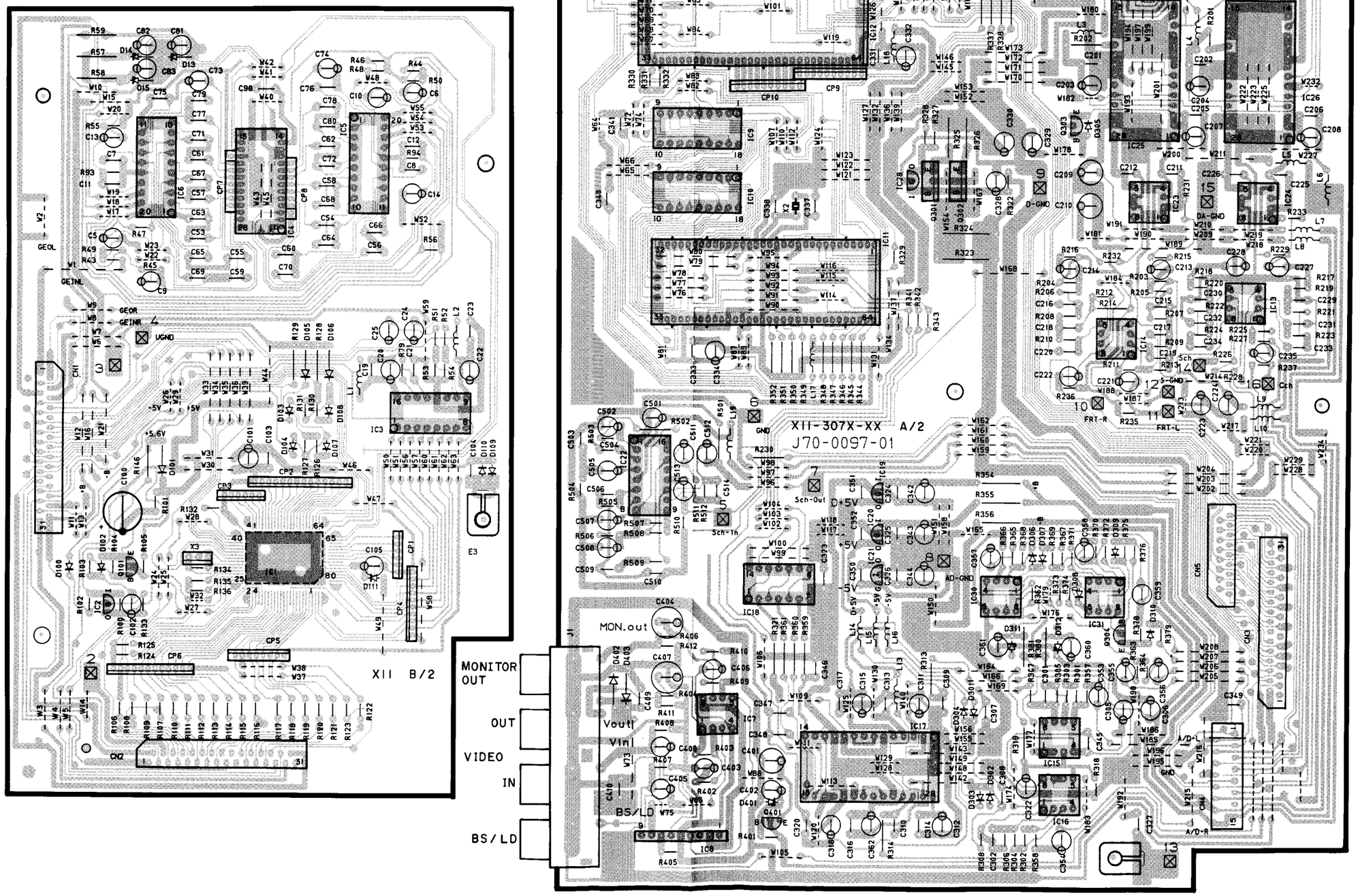
Pin No.	Pin name	I/O	Description	
1	P0	I	Digital mute - High: mute; Low: unmute during DSP program	
2	P1	I	Soft muting - High during DSP program: Soft mute with time constant of 1 ms; Low: Unmute	
3	P2	O	Overflow detection If the input data from the A/D converter becomes the maximum positive or negative 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)	
55 ~ 59	A0WCK etc.		No used	
60	SI	I	Serial data input from µ-com	DSP ↔µ-com interface
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	

PC BOARD (COMPONENT SIDE VIEW)



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

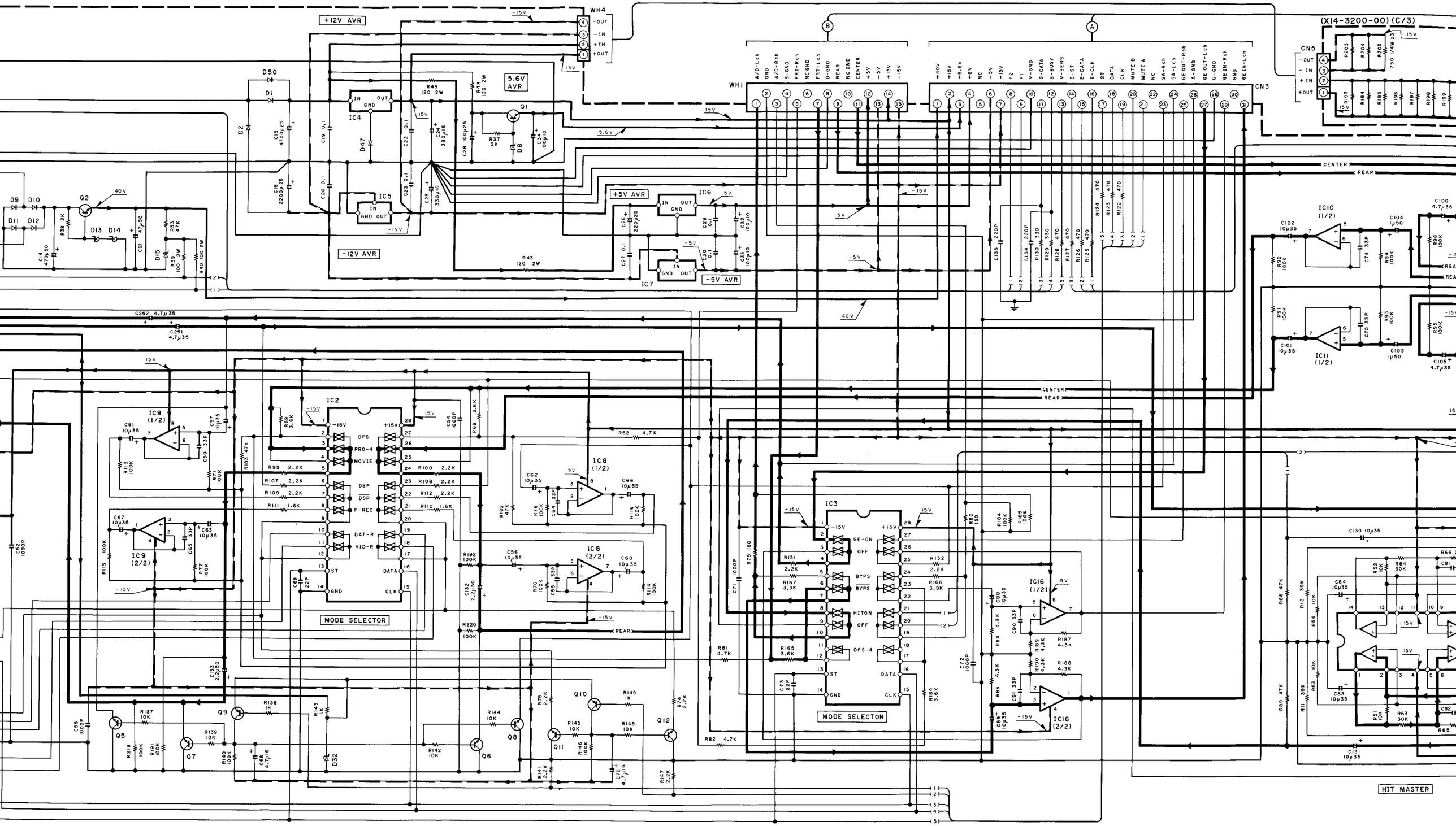
PC BOARD (COMPONENT SIDE VIEW)



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

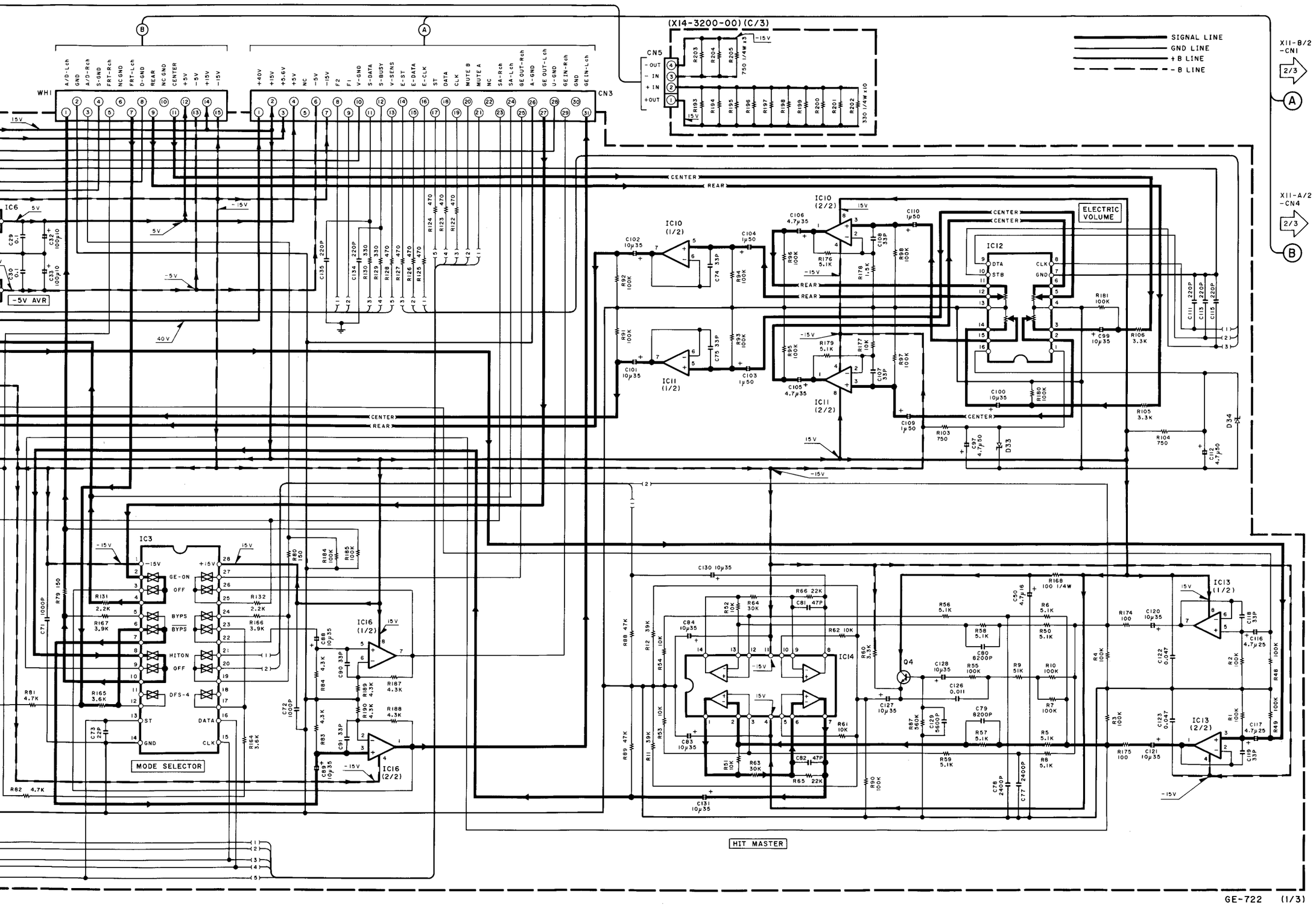
(X14-3200-00)(A/3)

IC1	: TC9164N
IC2	: TC9163N
IC3	: TC9162N
IC4	: μPC7812HF or TA7812S
IC5	: μPC7912HF or TA79001ZS
IC6	: μPC7805HF or TA7805S
IC7	: μPC7905HF or TA7900S
IC8~11,13,15,16	: RC4565D-D or NJM4565D-D
IC12	: TC9213P
IC14	: μPC4574C
Q1,2	: 2SD1266
Q4	: 2SC2458(Y,GR) or 2SC1740S(Q,R)
Q5~8,11,12	: 2SC2878(B)
Q9,10	: 2SA1048(Y,GR) or 2SA933S(Q,R)
D1,2,9~12,50	: S5688B or ISR139-100
D8	: HZS6.2N(B2) or RD6.2ES(B2)
D13	: RD24ES(B) or HZS24N(B)
D14	: RD16ES(B2) or HZS16N(B2)
D15	: HZS8.2N(B2) or RD8.2ES(B2)
D16~31	: HSS104 or ISS133
D32	: HZS3.9N(B2) or RD3.9ES(B2)
D33,34	: HZS11N(B2) or RD11ES(B2)
D47~49	: HSS104 or ISS133



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

- DC voltages are as measured with voltmeter. Values may vary slight between individual instruments or/



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- DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

Y09-3800-00

GE-722

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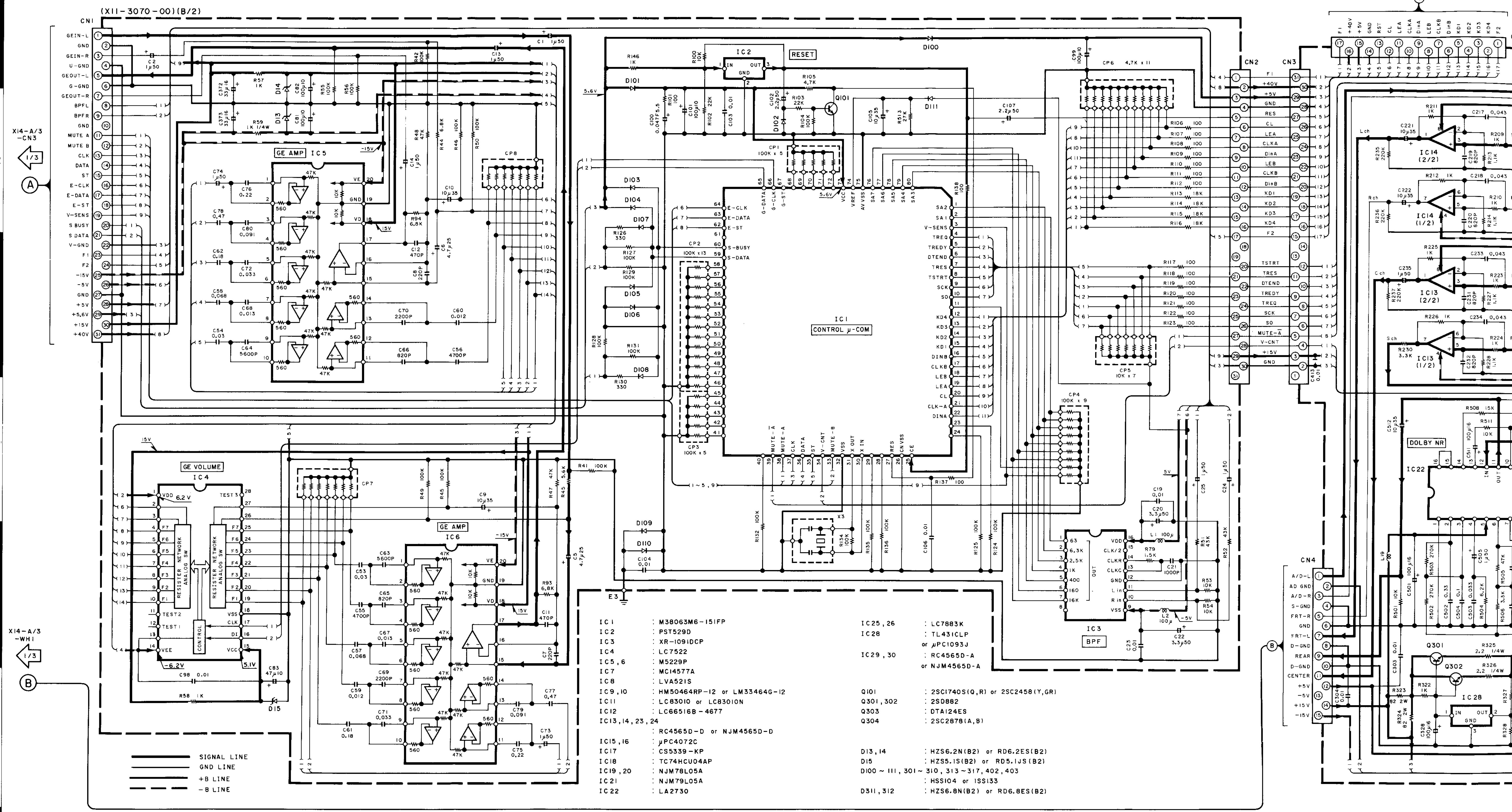
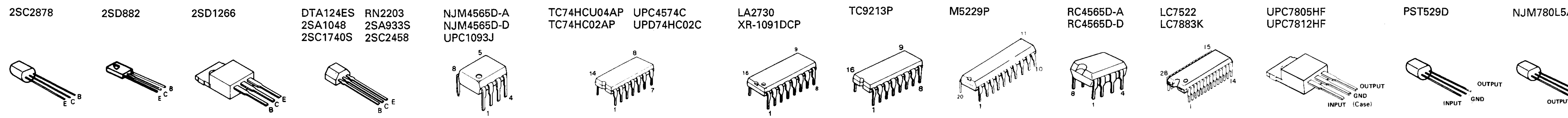


IC1	: M38063M6-151FP
IC2	: PST529D
IC3	: XR-1091DCP
IC4	: LC7522
IC5, 6	: M5229P
IC7	: MC14577A
IC8	: LVA521S
IC9, 10	: HM50464RP-12 or LM33464G-12
IC11	: LC83010 or LC83010N
IC12	: LC66516B-4677
IC13, 14, 23, 24	: RC4565D-D or NJM4565D-D
IC15, 16	: μPC4072C
IC17	: CS5339-KP
IC18	: TC74HCU04AP
IC19, 20	: NJM78L05A
IC21	: NJM79L05A
IC22	: LA2730
IC25, 26	: LC7883K
IC28	: TL431CLP or μPC1093J
IC29, 30	: RC4565D-A or NJM4565D-A
Q101	: 2SC1740S(Q,R) or 2SC2458(Y,GR)
Q301, 302	: 2SD882
Q303	: DTA124ES
Q304	: 2SC2878(A,B)
D13, 14	: HZS6.2N(B2) or RD6.2ES(B2)
D15	: HZS5.1S(B2) or RD5.1JS(B2)
D100 ~ 111, 301 ~ 310, 313 ~ 317, 402, 403	: HSS104 or 1SS133
D311, 312	: HZS6.8N(B2) or RD6.8ES(B2)

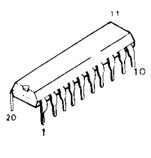


: LC7883K
: TL431CLP
or μPC1093J
: RC4565D-A
or NJM4565D-A

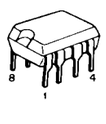
: 2SC1740S(Q,R) or 2SC2458(Y,GR)
: 2SD882
: DTA124ES
: 2SC2878(A,B)

: HZS6.2N(B2) or RD6.2ES(B2)
: HZS5.1S(B2) or RD5.1JS(B2)
~ 111, 301 ~ 310, 313 ~ 317, 402, 403
: HSS104 or ISS133
312 : HZS6.8N(B2) or RD6.8ES(B2)

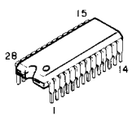
M5229P



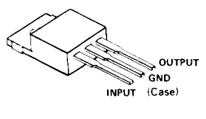
RC4565D-A
RC4565D-D



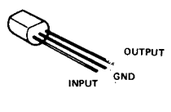
LC7522
LC7883K



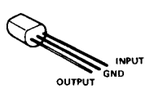
UPC7805HF
UPC7812HF



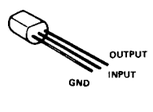
PST529D



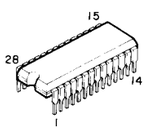
NJM780L5A



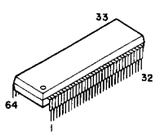
NJM79L05A



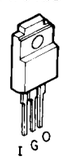
TC9162N
TC9163N
TC9164N



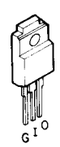
LC83010



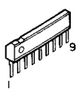
TA7805S
TA7812S



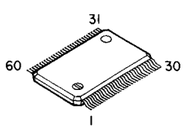
UPC7905HF
UPC7812HF



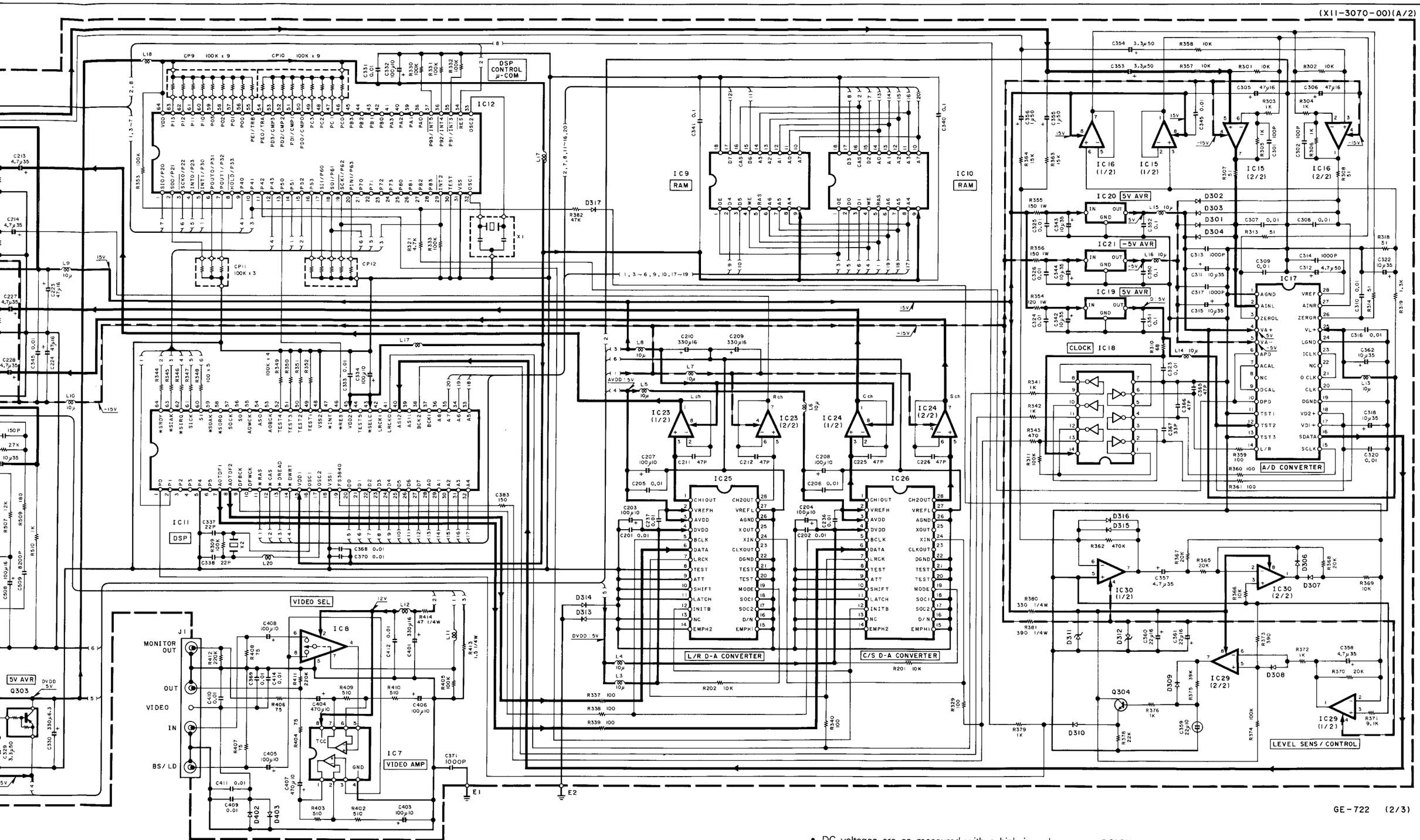
LVA521S



SN755703FT

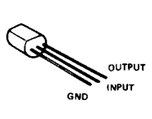


(X11-3070-00)(A/2)

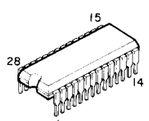


GE-722 (2/3)

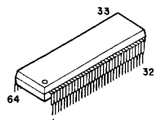
NJM79L05A



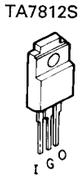
TC9162N
TC9163N
TC9164N



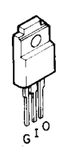
LC83010



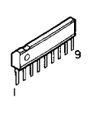
TA7805S
TA7812S



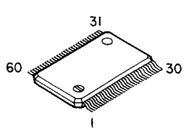
UPC7905HF
UPC7812HF



LVA521S



SN755703FT



- DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

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.

Y09-3800-00

GE-722
KENWOOD

(X14-3200-00)(B/3)

IC20 : SN755703FT
IC21 : SN755700FR
IC22 : μPD74HC02C or TC74HC02AP
ED1 : FIP22AMW23

Q13 : DTA124ES or RN2203
Q14 ~ 17 : 2SC1740S(Q,R) or 2SC2458(Y,GR)
D35 ~ 45 : HSS104A or ISS131
D46 : HSS104 or ISS133

GND LINE
+B LINE

GE-722 (3/3)

DOLBY and the double-D symbol are tradmarks of Dolby Laboratories Licensing Corporation. Noise reduction circuit made under license from Dolby Laboratories Licensing Corporation.

- DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

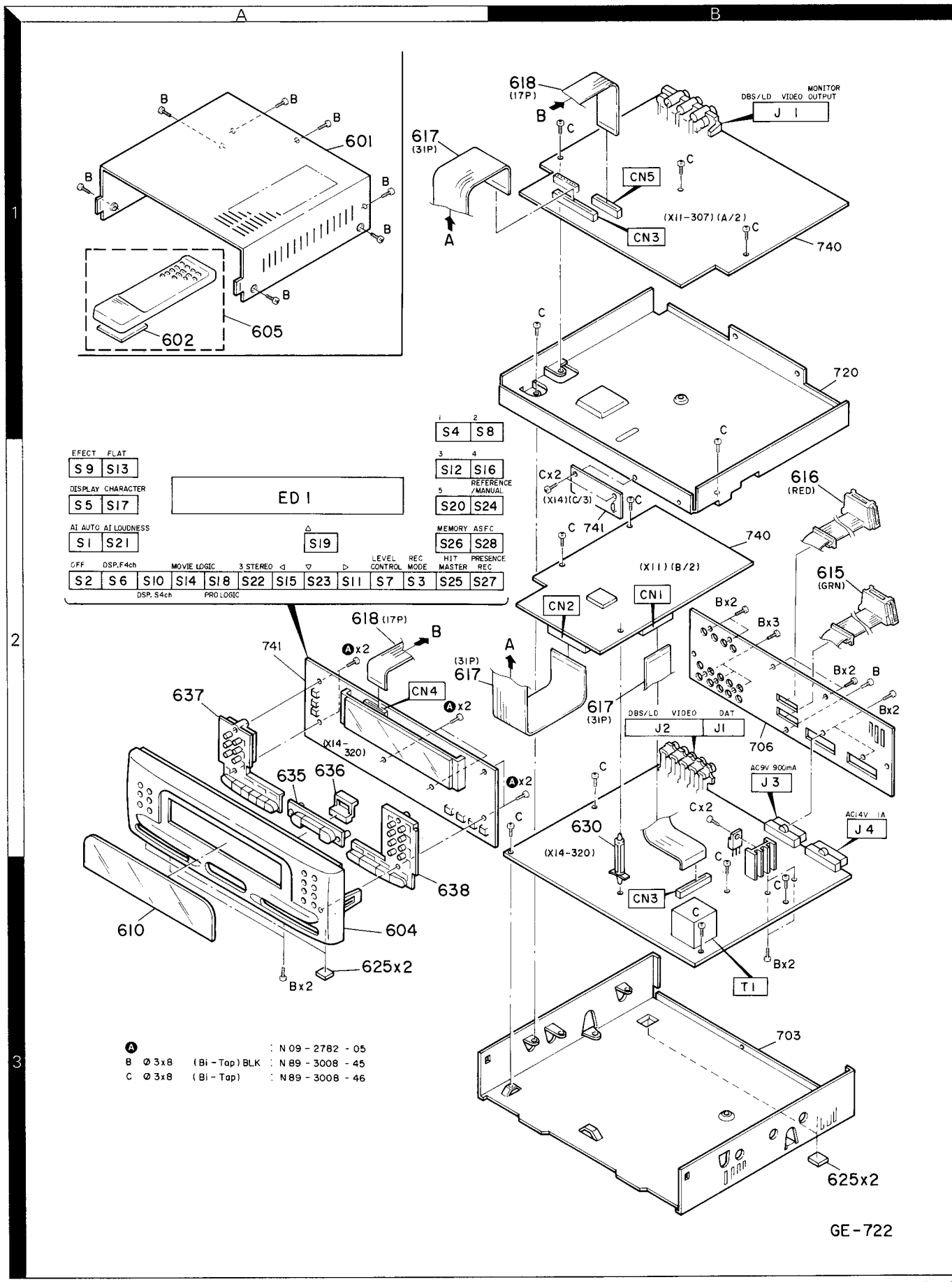
CAUTION : For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably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

Y09-3800-00

GE-722

KENWOOD

EXPLODED VIEW (UNIT)



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.
Telle ohne Parts No. werden nicht geliefert.

❶

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
			GE-722			
601	1A	*	A01-1977-01	METALLIC CABINET		S
601	1A	*	A01-1989-01	METALLIC CABINET		J
602	1A		A09-0106-08	BATTERY COVER		
604	3A	*	A60-0071-11	PANEL		
605	1A	*	A70-0535-05	REMOTE CONTROLLER ASSY		
610	3A	*	B10-1853-03	FRONT GLASS		
615	2B	*	E30-2665-05	AC POWER CORD (GREEN)		
616	2B	*	E30-2666-05	AC POWER CORD (RED)		
617	1A,2A		E31-4301-05	WIRING HARNESS (31P)		
618	1B,2A	*	E35-0214-05	WIRING HARNESS		
625	3A,3B		G11-2050-14	CUSHION		
-		*	H10-5147-02	POLYSTYRENE FOAMED FIXTURE		J
-		*	H10-5148-02	POLYSTYRENE FOAMED FIXTURE		J
-		*	H10-5192-02	POLYSTYRENE FOAMED FIXTURE		S
-		*	H10-5193-02	POLYSTYRENE FOAMED FIXTURE		S
-			H25-0397-04	PROTECTION BAG		
-		*	H50-0085-04	ITEM CARTON CASE	KYM	J
-		*	H50-0086-04	ITEM CARTON CASE	EXT	J
-		*	H50-0147-04	ITEM CARTON CASE	KYM	S
-		*	H50-0148-04	ITEM CARTON CASE	EXT	S
630	2B		J19-3163-05	UNIT HOLDER		
635	2A	*	K29-4162-03	KNOB (R/L)		
636	2A	*	K29-4164-03	KNOB (DOWN)		
637	2A	*	K29-4165-02	KNOB (FUNCTION)		
638	2A	*	K29-4166-02	KNOB (1,2,3)		
A			N09-2782-05	TAPTITE SCREW (2.6X8)		
B			N89-3008-45	BINDING HEAD TAPTITE SCREW		
C			N89-3008-46	BINDING HEAD TAPTITE SCREW		
			CONTROL (X11-3070-00) : JAPAN MADE, (X11-3070-11) : SINGAPORE MADE			
C1 ,2			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C5 ,6			C90-1919-05	ELECTRO 4.7UF 25WV		
C7 ,8			CC45FSL1H221J	CERAMIC 220PF J		
C9 ,10			CE04LW1V100M	ELECTRO 10UF 35WV		
C11 ,12			CF92FV1H471J	MF 470PF J		
C13 ,14			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C19			CK45FF1H103Z	CERAMIC 0.010UF Z		
C20			CE04LW1H3R3M	ELECTRO 3.3UF 50WV		
C21			CF92FV1H102J	MF 1000PF J		
C22			CE04LW1H3R3M	ELECTRO 3.3UF 50WV		
C23			CK45FF1H103Z	CERAMIC 0.010UF Z		
C24 ,25			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C53 ,54			CF92FV1H303J	MF 0.030UF J		
C55 ,56			CF92FV1H472J	MF 4700PF J		
C57 ,58			CF92FV1H683J	MF 0.068UF J		
C59 ,60			CF92FV1H123J	MF 0.012UF J		
C61 ,62			CF92FV1H184J	MF 0.18UF J		
C63 ,64			CF92FV1H562J	MF 5600PF J		
C65 ,66			CF92FV1H821J	MF 820PF J		
C67 ,68			CF92FV1H133J	MF 0.013UF J		
C69 ,70			CF92FV1H222J	MF 2200PF J		

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

S=SINGAPORE MADE
J=JAPAN MADE

⚠ indicates safety critical components

❷

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
C71 ,72			CF92FV1H333J	MF 0.033UF J		
C73 ,74			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C75 ,76			CF92FV1H224J	MF 0.22UF J		
C77 ,78			CF92FV1H474J	MF 0.47UF J		
C79 ,80			CF92FV1H913J	MF 0.091UF J		
C81 ,82			CE04LW1A101M	ELECTRO 100UF 10WV		
C83			CE04LW1A470M	ELECTRO 47UF 10WV		
C98			CK45FF1H103Z	CERAMIC 0.010UF Z		
C99			CE04LW1A101M	ELECTRO 100UF 10WV		
C100			C90-1826-05	BACKUP 0.047F 5.5WV		
C101			CE04LW1A101M	ELECTRO 100UF 10WV		
C102			CE04LW1H2R2M	ELECTRO 2.2UF 50WV		
C103,104			CK45FF1H103Z	CERAMIC 0.010UF Z		
C105			CE04LW1V100M	ELECTRO 10UF 35WV		
C106			CK45FF1H103Z	CERAMIC 0.010UF Z		
C107			CE04LW1H2R2M	ELECTRO 2.2UF 50WV		
C201,202			CK45FF1H103Z	CERAMIC 0.010UF Z		
C203,204			CE04LW1A101M	ELECTRO 100UF 10WV		
C205,206			CK45FF1H103Z	CERAMIC 0.010UF Z		
C207,208			CE04LW1A101M	ELECTRO 100UF 10WV		
C209,210			CE04LW1C331M	ELECTRO 330UF 16WV		
C211,212			CC45FSL1H470J	CERAMIC 47PF J		
C213,214			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		
C215,216			CF92FV1H912J	MF 9100PF J		
C217,218			CF92FV1H433J	MF 0.043UF J		
C219,220			CF92FV1H821J	MF 820PF J		
C221,222			CE04LW1V100M	ELECTRO 10UF 35WV		
C223,224			CE04LW1C470M	ELECTRO 47UF 16WV		
C225,226			CC45FSL1H470J	CERAMIC 47PF J		
C227,228			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		
C229,230			CF92FV1H912J	MF 9100PF J		
C231,232			CF92FV1H821J	MF 820PF J		
C233,234			CF92FV1H433J	MF 0.043UF J		
C235			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C236,237			CK45FF1H103Z	CERAMIC 0.010UF Z		
C301,302			CC45FSL1H101J	CERAMIC 100PF J		
C303,304			CK45FF1H103Z	CERAMIC 0.010UF Z		
C305,306			CE04LW1C470M	ELECTRO 47UF 16WV		
C307-310			CF92FV1H103J	MF 0.010UF J		
C311			CE04LW1V100M	ELECTRO 10UF 35WV		
C312			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		
C313,314			CK45FB1H102K	CERAMIC 1000PF K		
C315			CE04LW1V100M	ELECTRO 10UF 35WV		
C316			CK45FF1H103Z	CERAMIC 0.010UF Z		
C317			CK45FB1H102K	CERAMIC 1000PF K		
C318			CE04LW1V100M	ELECTRO 10UF 35WV		
C320			CK45FF1H103Z	CERAMIC 0.010UF Z		
C322			CE04LW1V100M	ELECTRO 10UF 35WV		
C323-326			CK45FF1H103Z	CERAMIC 0.010UF Z		
C328			CE04LW1C101M	ELECTRO 100UF 16WV		
C329			CE04LW1H3R3M	ELECTRO 3.3UF 50WV		
C330			CE04LW0J331M	ELECTRO 330UF 6.3WV		
C331			CK45FF1H103Z	CERAMIC 0.010UF Z		
C332			CE04LW1A101M	ELECTRO 100UF 10WV		
C333			CK45FF1H103Z	CERAMIC 0.010UF Z		

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C334			CE04LW1A101M	ELECTRO 100UF 10WV		
C337,338			CC45FSL1H220J	CERAMIC 22PF J		
C340,341			CF92FV1H104J	MF 0.10UF J		
C342-344			CE04LW1V100M	ELECTRO 10UF 35WV		
C345			CK45FF1H103Z	CERAMIC 0.010UF Z		
C350-352			CF92FV1H104J	MF 0.10UF J		
C353,354			CE04LW1H3R3M	ELECTRO 3.3UF 50WV		
C355,356			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C357,358			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		
C359			C90-1333-05	NP-ELEC 22UF 10WV		
C360,361			CE04LW1C220M	ELECTRO 22UF 16WV		
C362			CE04LW1V100M	ELECTRO 10UF 35WV		
C365,366			CC45FSL1H470J	CERAMIC 47PF J		
C367			CC45FSL1H330J	CERAMIC 33PF J		
C368			CK45FF1H103Z	CERAMIC 0.010UF Z		
C371			CK45FB1H102K	CERAMIC 1000PF K		
C372,373			CE04LW1C330M	ELECTRO 33UF 16WV		
C401			CE04LW1C331M	ELECTRO 330UF 16WV		
C403			CE04LW1A101M	ELECTRO 100UF 10WV		
C404			CE04LW1A471M	ELECTRO 470UF 10WV		
C405,406			CE04LW1A101M	ELECTRO 100UF 10WV		
C407			CE04LW1A471M	ELECTRO 470UF 10WV		
C408			CE04LW1A101M	ELECTRO 100UF 10WV		
C409-414			CK45FF1H103Z	CERAMIC 0.010UF Z		
C501			CE04LW1C101M	ELECTRO 100UF 16WV		
C502			CF92FV1H334J	MF 0.33UF J		
C503			CF92FV1H333J	MF 0.033UF J		
C504			CF92FV1H104J	MF 0.10UF J		
C505			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C506			CF92FV1H472J	MF 4700PF J		
C507			CE04LW1C220M	ELECTRO 22UF 16WV		
C508			CE04LW1C101M	ELECTRO 100UF 16WV		
C509			CF92FV1H822J	MF 8200PF J		
C510			CF92FV1H273J	MF 0.027UF J		
C511			CE04LW1C101M	ELECTRO 100UF 16WV		
C512,513			CE04LW1V100M	ELECTRO 10UF 35WV		
C514			CC45FSL1H151J	CERAMIC 150PF J		
CN1 -3	1B,2B		E40-4171-05	FLAT CABLE CONNCTOR		
CN5	1B	＊	E40-4157-05	FLAT CABLE CONNCTOR		
J1	1B	＊	E63-0024-05	PHONO JACK		
L1 ,2			L40-1011-17	SMALL FIXED INDUCTOR(100UH,K)		
L3 -10			L40-1001-17	SMALL FIXED INDUCTOR(10UH,K)		
L11 ,12			L40-2291-17	SMALL FIXED INDUCTOR		
L13 -19			L40-1001-17	SMALL FIXED INDUCTOR(10UH,K)		
L20			L40-2291-17	SMALL FIXED INDUCTOR		
X1			L78-0244-05	RESONATOR		
X2			L77-1199-05	CRYSTAL RESONATOR		
X3		＊	L78-0284-05	RESONATOR		
CP1			R90-0855-05	MULTI-COMP 100KX5 J		
CP2			R90-0483-05	MULTI-COMP 100KX13 J 1/6W		
CP3			R90-0855-05	MULTI-COMP 100KX5 J		
CP4			R90-0493-05	MULTI-COMP 100KX9 J 1/6W		
CP5			R90-0815-05	MULTIPLE RESISTOR		

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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	Destination 仕向	Remarks 備考
CP6			R90-0860-05	MULTIPLE RESISTOR		
CP7 ,8			R90-0491-05	MULTI-COMP 820KX7 J 1/6W		
CP9 ,10			R90-0493-05	MULTI-COMP 100KX9 J 1/6W		
CP11			R90-0850-05	MULTIPLE RESISTOR		
CP12			R90-0855-05	MULTI-COMP 100KX5 J		
R323,324			RS14KB3D820J	FL-PROOF RS 82 J 2W		
R325,326			RD14NB2E2R2J	RD 2.2 J 1/4W		
R354			RS14KB3A121J	FL-PROOF RS 120 J 1W		
R355,356			RS14KB3A151J	FL-PROOF RS 150 J 1W		
R380			RD14NB2E331J	RD 330 J 1/4W		
R381			RD14NB2E391J	RD 390 J 1/4W		
R414			RD14NB2E470J	RD 47 J 1/4W		
D13 ,14			HZS6.2N(B2)	ZENER DIODE		
D13 ,14			RD6.2ES(B2)	ZENER DIODE		
D15			HZS5.1S(B2)	ZENER DIODE		
D15			RD5.1JS(B2)	ZENER DIODE		
D100-111			HSS104	DIODE		
D100-111			1SS133	DIODE		
D301-310			HSS104	DIODE		
D301-310			1SS133	DIODE		
D311,312			HZS6.8N(B2)	ZENER DIODE		
D311,312			RD6.8ES(B2)	ZENER DIODE		
D313-317			HSS104	DIODE		
D313-317			1SS133	DIODE		
D402,403			HSS104	DIODE		
D402,403			1SS133	DIODE		
IC1		＊	M38063M6-151FP	IC		
IC2			PST529D	IC(SYSTEM RESET)		
IC3			XR-1091DCP	IC(GE DISPLAY FILTER)		
IC4			LC7522	IC(7CH GRAPHIC EQUALIZER)		
IC5 ,6			M5229P	IC(7CH GRAPHIC EQUALIZER)		
IC7			MC14577A	IC		
IC8			LVA521S	IC(VIDEO SWITCH)		
IC9 ,10			HM50464RP-12	IC(RAM)		
IC9 ,10			LM33464G-12	IC		
IC11			LC83010	IC(SIGNAL PROCESSOR)		
IC11		＊	LC83010N	IC		
IC12			LC66516B-4677	IC(MICROPROCESSOR)		
IC13,14			NJM4565D-D	IC(OP AMP X2)		
IC13,14			RC4565D-D	IC(OP AMP X2)		
IC15,16			UPC4072C	IC(OP AMP X2)		
IC17		＊	CS5339-KP	IC(A/D CONVERTER)		
IC18			TC74HCU04AP	IC(CMOS INVERTER)		
IC19,20			NJM78L05A	IC(VOLTAGE REGULATOR/ +5V)		
IC21			NJM79L05A	IC(VOLTAGE REGULATOR/ +5V)		
IC22			LA2730	IC(DOLBY SYSTEM)		
IC23,24			NJM4565D-D	IC(OP AMP X2)		
IC23,24			RC4565D-D	IC(OP AMP X2)		
IC25,26	チューナ部		LC7883K	IC(DIGITAL FILTER & D/A CONVER		
IC28			TL431CLP	IC		
IC28			UPC1093J	IC(REGULATOR)		
IC29,30			NJM4565D-A	IC(OP AMP X2)		
IC29,30		＊	RC4565D-A	IC(OP AMP X2)		
Q101			2SC1740S(Q,R)	TRANSISTOR		

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Q101			2SC2458(Y,GR)	TRANSISTOR				
Q301,302			2SD882	TRANSISTOR				
Q303			DTA124ES	DIGITAL TRANSISTOR				
Q303			RN1203	TRANSISTOR				
Q304			2SC2878(A,B)	TRANSISTOR				
STEREO (X14-3200-00) : JAPAN MADE, (X14-3200-11) : SINGAPORE MADE								
C1 -10			CC45FSL1H221J	CERAMIC	220PF	J		
C11 -13			CF92FV1H103J	MF	0.010UF	J		
C14			CE04LW1H471M	ELECTRO	470UF	50WV		
C15			CE04KW1E472M	ELECTRO	4700UF	25WV		
C16			CE04KW1E222M	ELECTRO	2200UF	25WV		
C17 ,18			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C19 ,20			CF92FV1H104J	MF	0.10UF	J		
C21			CE04LW1H470M	ELECTRO	47UF	50WV		
C22 ,23			CF92FV1H104J	MF	0.10UF	J		
C24 ,25			CE04LW1C331M	ELECTRO	330UF	16WV		
C26			CE04LW1E221M	ELECTRO	220UF	25WV		
C27			CF92FV1H104J	MF	0.10UF	J		
C28			CE04LW1E101M	ELECTRO	100UF	25WV		
C29 ,30			CF92FV1H104J	MF	0.10UF	J		
C31			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C32 -34			CE04LW1A101M	ELECTRO	100UF	10WV		
C41 ,42			CE04LW1V100M	ELECTRO	10UF	35WV		
C43 ,44			CC45FSL1H330J	CERAMIC	33PF	J		
C45 ,46			CE04LW1V100M	ELECTRO	10UF	35WV		
C50			CE04LW1C4R7M	ELECTRO	4.7UF	16WV		
C51 ,52			CF92FV1H102J	MF	1000PF	J		
C53			CC45FSL1H220J	CERAMIC	22PF	J		
C54 ,55			CF92FV1H102J	MF	1000PF	J		
C56 ,57			CE04LW1V100M	ELECTRO	10UF	35WV		
C58 ,59			CC45FSL1H330J	CERAMIC	33PF	J		
C60 -63			CE04LW1V100M	ELECTRO	10UF	35WV		
C64 ,65			CC45FSL1H330J	CERAMIC	33PF	J		
C66 ,67			CE04LW1V100M	ELECTRO	10UF	35WV		
C68			CE04LW1C4R7M	ELECTRO	4.7UF	16WV		
C69			CC45FSL1H220J	CERAMIC	22PF	J		
C70			CE04LW1C4R7M	ELECTRO	4.7UF	16WV		
C71 ,72			CF92FV1H102J	MF	1000PF	J		
C73			CC45FSL1H220J	CERAMIC	22PF	J		
C74 ,75			CC45FSL1H330J	CERAMIC	33PF	J		
C77 ,78			CF92FV1H242J	MF	2400PF	J		
C79 ,80			CF92FV1H822J	MF	8200PF	J		
C81 ,82			CC45FSL1H470J	CERAMIC	47PF	J		
C83 ,84			CE04LW1V100M	ELECTRO	10UF	35WV		
C88 ,89			CE04LW1V100M	ELECTRO	10UF	35WV		
C90 ,91			CC45FSL1H330J	CERAMIC	33PF	J		
C97			CE04LW1H4R7M	ELECTRO	4.7UF	50WV		
C99 -102			CE04LW1V100M	ELECTRO	10UF	35WV		
C103,104			CE04LW1H010M	ELECTRO	1.0UF	50WV		
C105,106			CE04LW1V4R7M	ELECTRO	4.7UF	35WV		
C107,108			CC45FSL1H330J	CERAMIC	33PF	J		
C109,110			CE04LW1H010M	ELECTRO	1.0UF	50WV		
C111			CC45FSL1H221J	CERAMIC	220PF	J		
C112			CE04LW1H4R7M	ELECTRO	4.7UF	50WV		
C113			CC45FSL1H221J	CERAMIC	220PF	J		

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C115			CC45FSL1H221J	CERAMIC	220PF	J		
C116,117		*	C90-1853-05	ELECTRO	4.7UF	25WV		
C118,119			CC45FSL1H330J	CERAMIC	33PF	J		
C120,121			CE04LW1V100M	ELECTRO	10UF	35WV		
C122,123			CF92FV1H473J	MF	0.047UF	J		
C126			CF92FV1H113J	MF	0.011UF	J		
C127,128			CE04LW1V100M	ELECTRO	10UF	35WV		
C129			CF92FV1H562J	MF	5600PF	J		
C130,131			CE04LW1V100M	ELECTRO	10UF	35WV		
C132,133			CE04LW1H2R2M	ELECTRO	2.2UF	50WV		
C134,135			CK45FF1H221J	CERAMIC	220PF	J		
C136			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C137			C91-0757-05	CERAMIC	1000PF	K		
CN1 ,2	3B		E40-4244-05	SOCKET FOR PIN ASSY				
CN3	2A		E40-4171-05	FLAT CABLE CONNCTOR				
CN4	2A	*	E40-4197-05	FLAT CABLE CONNCTOR				
J1	2B	*	E63-0023-05	PHONO JACK (DAT)				
J2	2B	*	E63-0022-05	PHONO JACK (VIDEO/LD)				
J3	2B		E08-1509-05	RECTANGULAR RECEPTACLE (BLK)				
J4	2B		E08-1510-05	RECTANGULAR RECEPTACLE (WHT)				
⚠ L1			L79-0785-05	LINE FILTER				
⚠ T1	3B	*	L07-0411-05	POWER TRANSFORMER				
-			N30-3006-46	PAN HEAD MACHIN SCREW				
-			N89-3006-46	BINDING HEAD TAPTITE SCREW				
R39 ,40			RS14KB3D101J	FL-PROOF RS	100	J 2W		
R42			RS14KB3D121J	FL-PROOF RS	120	J 2W		
R43			RS14DB3D121J	FL-PROOF RS	120	J 2W		
R168		*	RD14NB2E101J	RD	100	J 1/4W		
R193-202		*	RD14NB2E331J	RD	330	J 1/4W		
R203-205		*	RD14NB2E751J	RD	750	J 1/4W		
S1 -28			S40-1064-05	PUSH SWITCH				
D1 ,2			S5688B	DIODE				
D1 ,2			1SR139-100	DIODE				
D8			HZS6.2N(B2)	ZENER DIODE				
D8			RD6.2ES(B2)	ZENER DIODE				
D9 -12			S5688B	DIODE				
D9 -12			1SR139-100	DIODE				
D13			HZS24N(B)	ZENER DIODE				
D13			RD24ES(B)	ZENER DIODE				
D14			HZS16N(B2)	ZENER DIODE				
D14			RD16ES(B2)	ZENER DIODE				
D15			HZS8.2N(B2)	ZENER DIODE				
D15			RD8.2ES(B2)	ZENER DIODE				
D16 -31			HSS104	DIODE				
D16 -31			1SS133	DIODE				
D32			HZS3.9N(B2)	ZENER DIODE				
D32			RD3.9ES(B2)	ZENER DIODE				
D33 ,34			HZS11N(B2)	ZENER DIODE				
D33 ,34			RD11ES(B2)	ZENER DIODE				
D35 -45			HSS104A	DIODE				
D35 -45			1SS131	DIODE				

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GE-722

PARTS LIST

PARTS LIST

GE-722

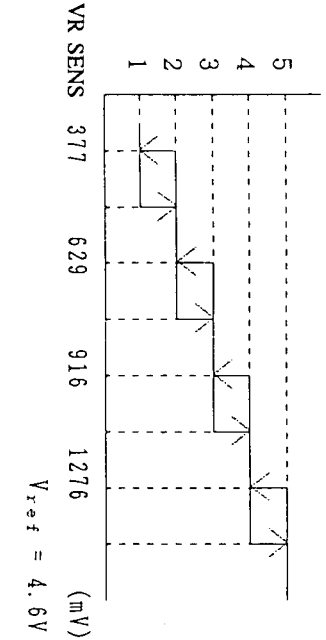
Input sensitivity

Segment	Input (dB)	Input voltage (mV)	A-D register
+9	21.5	4150.78	231
+8	20.4	3665.63	204
+7	19.2	3198.44	178
+6	18.0	2785.16	155
+5	16.8	2425.78	135
+4	15.6	2102.34	117
+3	14.4	1832.81	102
+2	13.2	1599.22	89
+1	12.1	1401.56	78
0	10.9	1221.88	68
-1	9.6	1060.16	59
-2	8.4	916.41	51
-3	7.3	808.59	45
-4	6.3	718.75	40
-5	5.3	646.88	36
-6	4.3	575.00	32
-7	3.2	503.13	28
-8	1.8	431.25	24
-9	0.2	359.38	20

V_{REF}=4.6V, 0dB=350mV,
Absolute accuracy ±3LSB=53.9mV
Segments turn on if A-D register has equal or over value compared with above table's value.

AI LOUDNESS CURVE VS LEVEL

LOUDNESS CURVE



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D46 -49			HSS104	DIODE		
D46 -49			1SS133	DIODE		
D50			S5688B	DIODE		
D50			1SR139-100	DIODE		
ED1	2A	*	FIP22AMW23	FLUORESCENT INDICATOR TUBE		
IC1			TC9164N	IC(16CH BILATERAL SELECTOR SW)		
IC2			TC9163N	IC(BILATERAL SWITCH X16)		
IC3			TC9162N	IC(ANALOG SWITCH ARRAY)		
IC4			TA7812S	IC(VOLTAGE REGULATOR/ +12V)		
IC4			UPC7812HF	IC(VOLTAGE REGULATOR/ +12V)		
IC5		*	TA790012S	IC		
IC5			UPC7912HF	IC(VOLTAGE REGULATOR/ -12V)		
IC6			TA7805S	IC(VOLTAGE REGULATOR/ +5V)		
IC6			UPC7805HF	IC(VOLTAGE REGULATOR/ +5V)		
IC7		*	TA79005S	IC		
IC7			UPC7905HF	IC(VOLTAGE REGULATOR/ -5V)		
IC8 -11			NJM4565D-D	IC(OP AMP X2)		
IC8 -11			RC4565D-D	IC(OP AMP X2)		
IC12			TC9213P	IC(2CH ELECTRONIC VOLUME)		
IC13			NJM4565D-D	IC(OP AMP X2)		
IC13			RC4565D-D	IC(OP AMP X2)		
IC14			UPC4574C	IC(OP AMP X4)		
IC15,16			NJM4565D-D	IC(OP AMP X2)		
IC15,16			RC4565D-D	IC(OP AMP X2)		
IC20			SN755703FT	IC(DISPLAY DRIVER)		
IC21		*	SN755700FR	IC		
IC22			TC74HC02AP	IC(QUAD 2-INPUT NOR GATE)		
IC22			UPD74HC02C	IC(QUAD 2-INPUT NOR GATE)		
Q1 ,2			2SD1266	TRANSISTOR		
Q4			2SC1740S(Q,R)	TRANSISTOR		
Q4			2SC2458(Y,GR)	TRANSISTOR		
Q5 -8			2SC2878(B)	TRANSISTOR		
Q9 ,10			2SA1048(Y,GR)	TRANSISTOR		
Q9 ,10			2SA933S(Q,R)	TRANSISTOR		
Q11 ,12			2SC2878(B)	TRANSISTOR		
Q13			DTA124ES	DIGITAL TRANSISTOR		
Q13			RN2203	TRANSISTOR		
Q14 -17			2SC1740S(Q,R)	TRANSISTOR		
Q14 -17			2SC2458(Y,GR)	TRANSISTOR		

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SPECIFICATIONS

Equalizer characteristics variable range ..... ±10dB
Individual channel adjust : 60kHz, 150Hz, 400Hz
1KHz, 2.4kHz, 6kHz, 15kHz
Dimensions ..... W : 270mm
H : 85mm
D : 255mm
Weight (Net) 2.7kg

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For this reason specifications may be changed without notice.
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Noise reduction circuit made under license from Dolby Laboratories Licensing Corporation.

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

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