

Service Manual



ORDER NO.
CRT1924

VOICE CONTROL DISC SELECTOR

CD-VC50

E

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1. SAFETY INFORMATION

CAUTION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely; you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5). When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

2. EXPLODED VIEWS AND PARTS LIST

2.1. PACKING METHOD

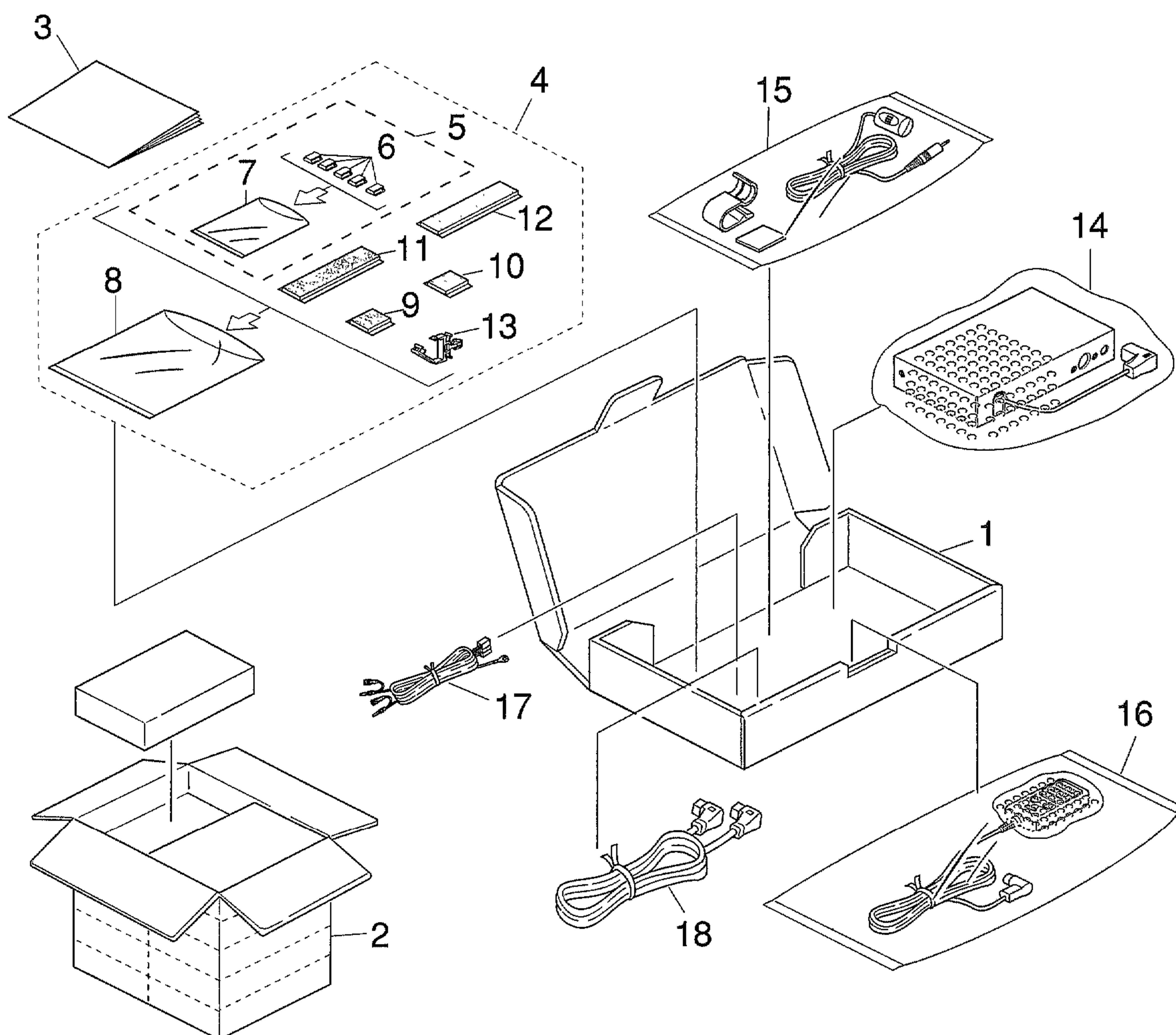


Fig. 1

NOTE:

● Parts marked by “*” are generally unavailable because they are not in our Master Spare Parts List.

● **Parts List**

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Carton	CHG3112	9	Fastener(rough)(S)	CNM3709
2	Contain Box	CHL3112	10	Fastener(soft)(S)	CNM3710
3	Owner's Manual English French Spanish German Italian	CRD2188	11	Fastener(rough)(L)(x2)	CNM3728
*	4 Accessory Assy	CEA2315	12	Fastener(soft)(L)(x2)	CNM3729
	5 Cord Clamper Assy	CEA2072	13	Clamper	CNV3751
	6 Cord Clamper(x5)	CNV2581	14	Air Cushioned Bag	CEG1089
*	7 Polyethylene Bag	E36-615	15	Mike Assy	CPM1017
*	8 Polyethylene Bag	CEG-238	16	Controller Assy	CXA9382
			17	Cord(Power supply)	CDE5122
			18	Cord Assy(IP-BUS)	CDE5056

2.2. EXTERIOR

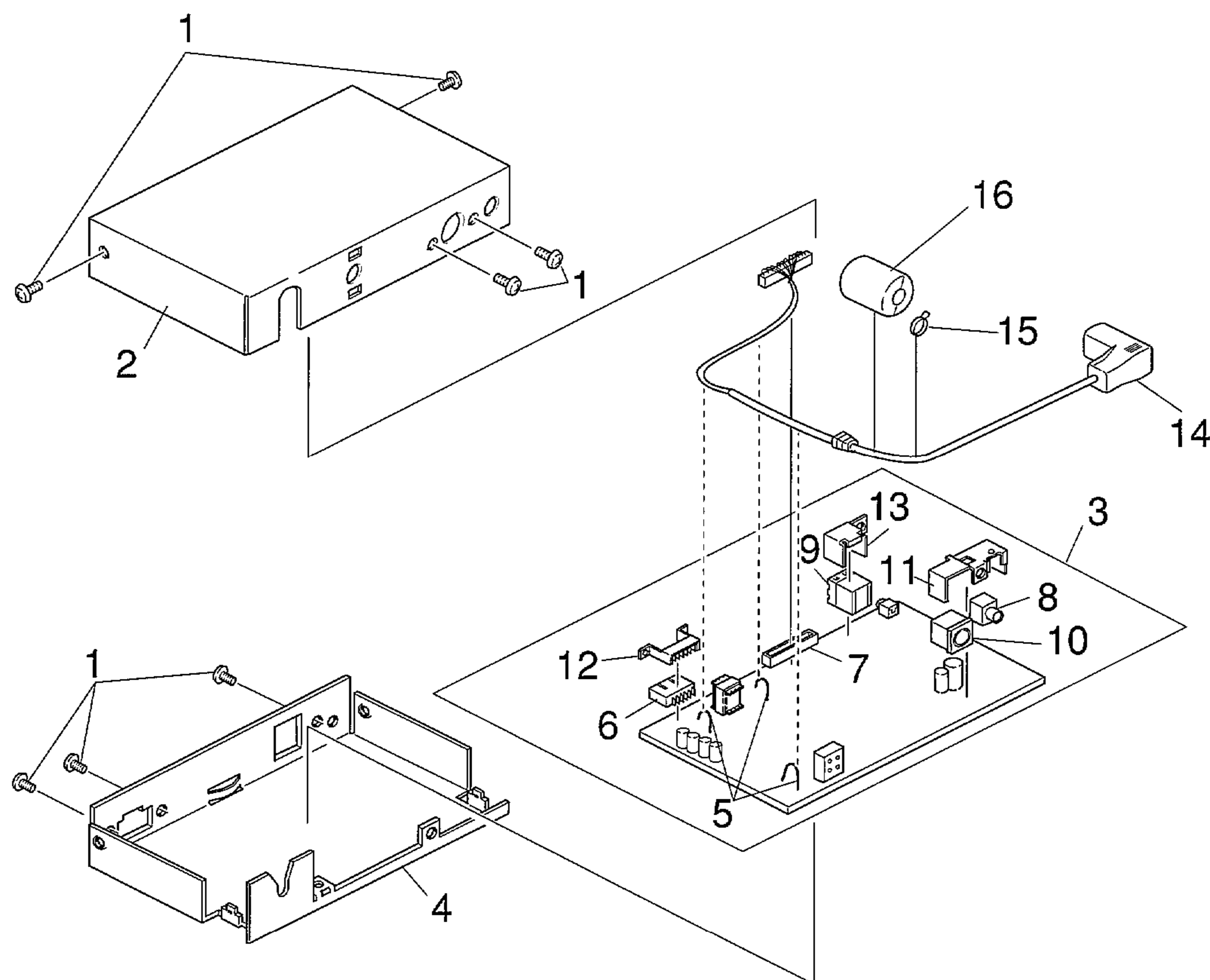
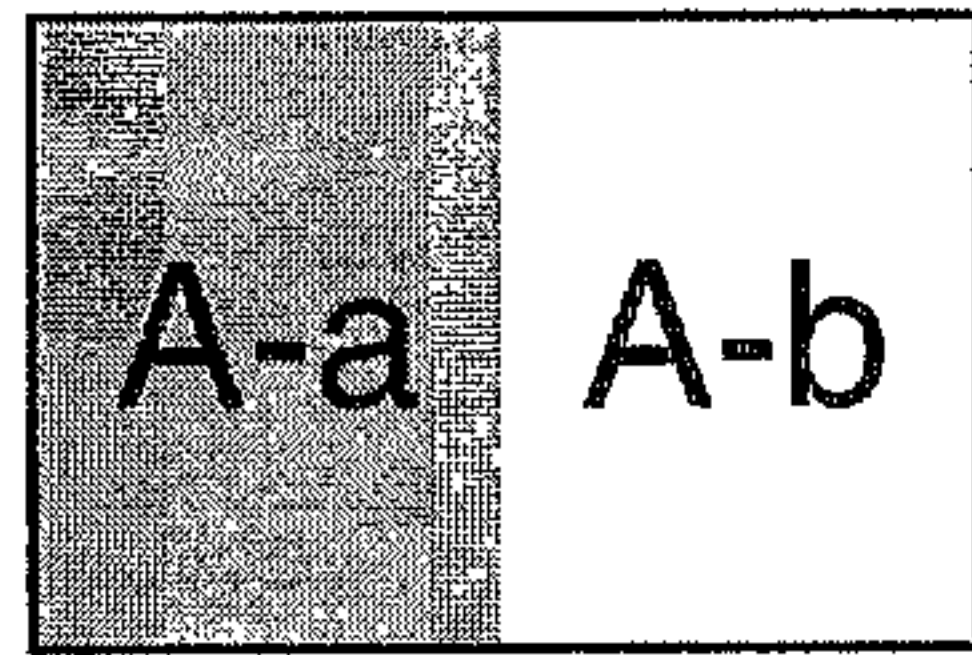


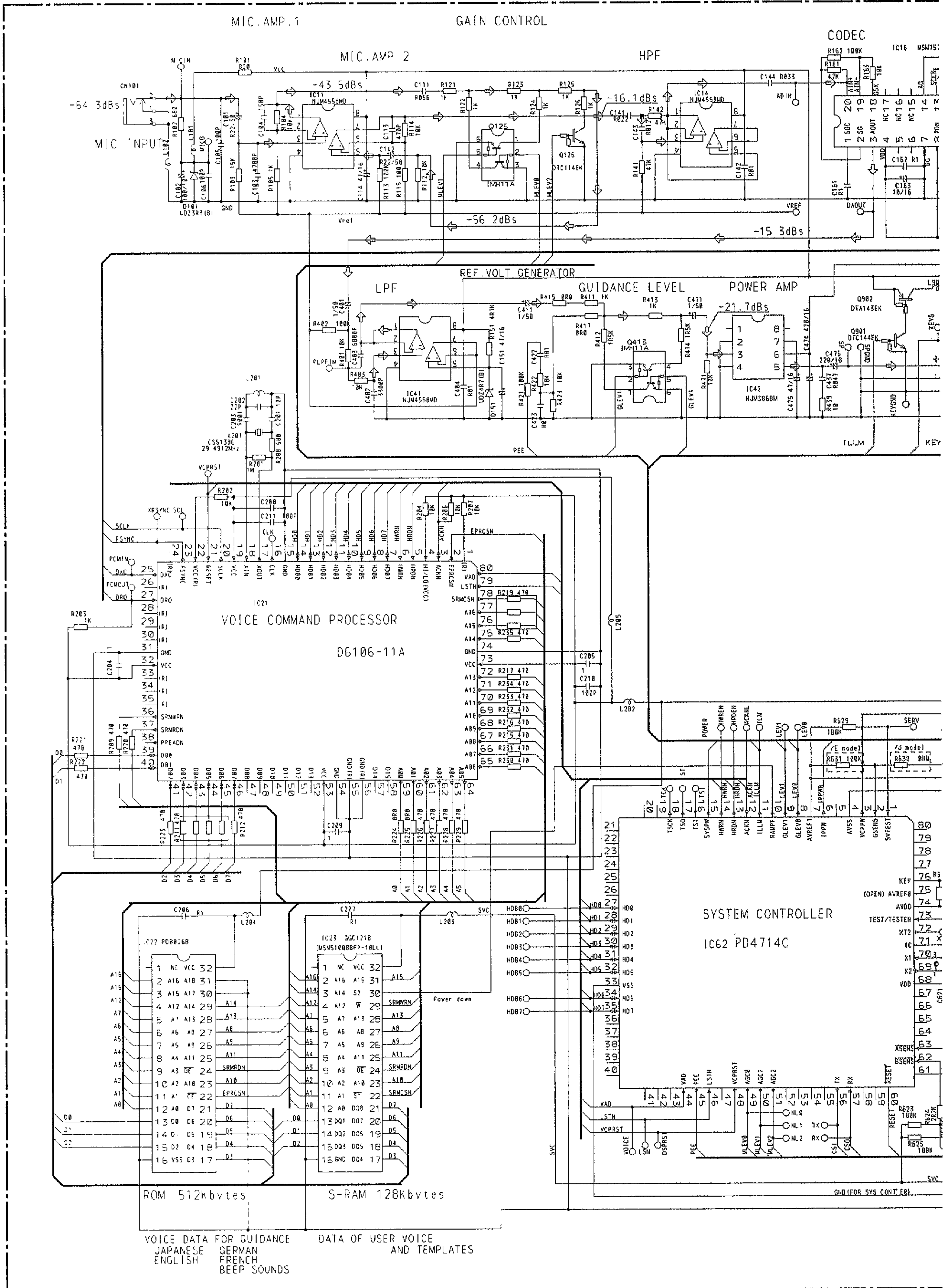
Fig. 2

● **Parts List**

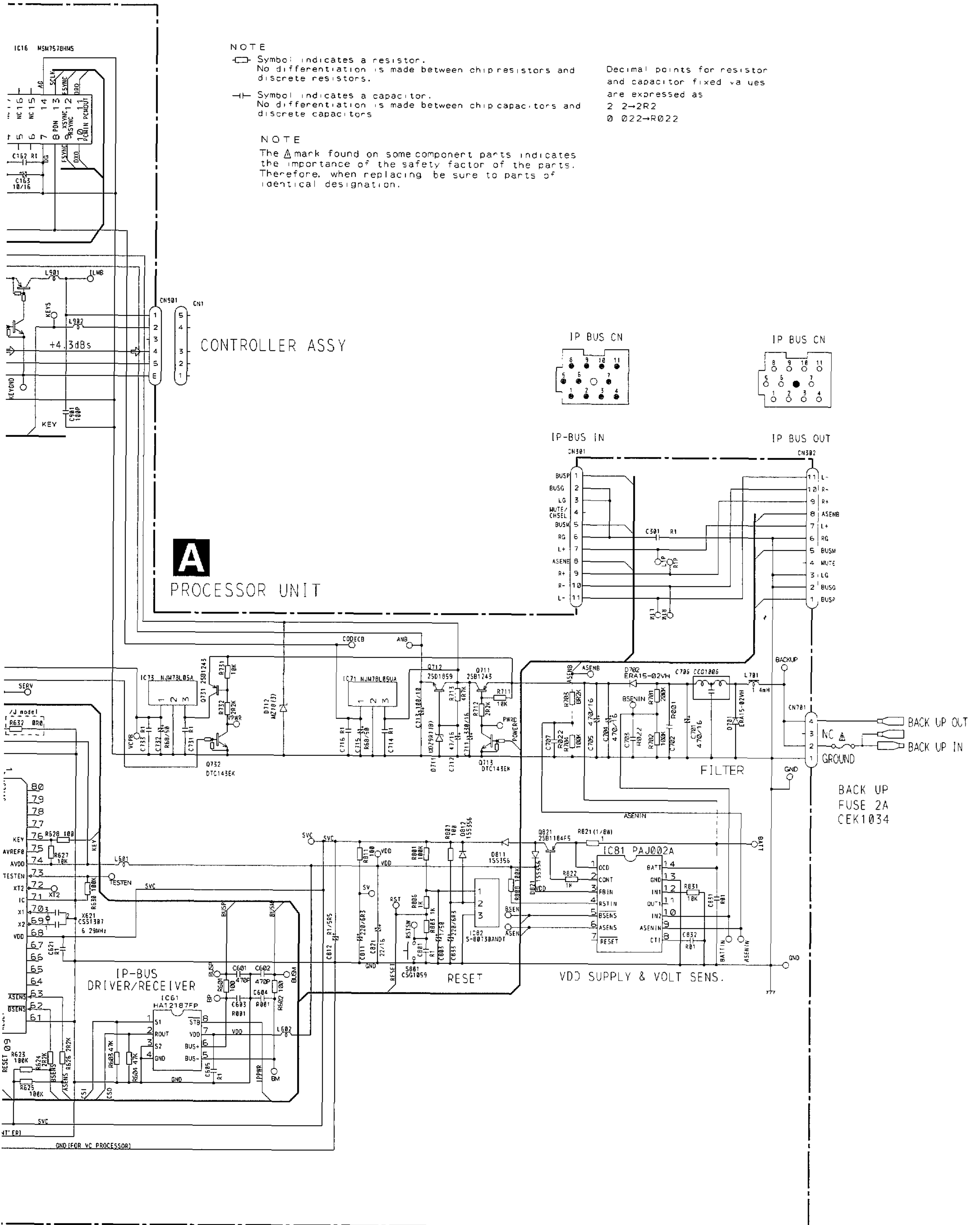
Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Screw	BSZ30P060FZK	9	Connector(CN301)	CKS2486
2	Case	CNB2122	10	Connector(CN901)	CKS3195
3	Processor Unit	CWX2092	11	Holder	CNC6686
4	Chassis	CNA1839	12	Bracket	CZN6159
5	Clamper(x5)	CEF1005	13	Bracket	CZN6234
6	Plug(CN701)	CKM1131	14	Cord Assy	CDE5358
7	Plug(CN302)	CKS1044	*	15 Lock Tie	CNV-754
8	Jack(CN101)	CKS2310	*	16 Filter	CTX1060



3. SCHEMATIC DIAGRAM



A-a A-b



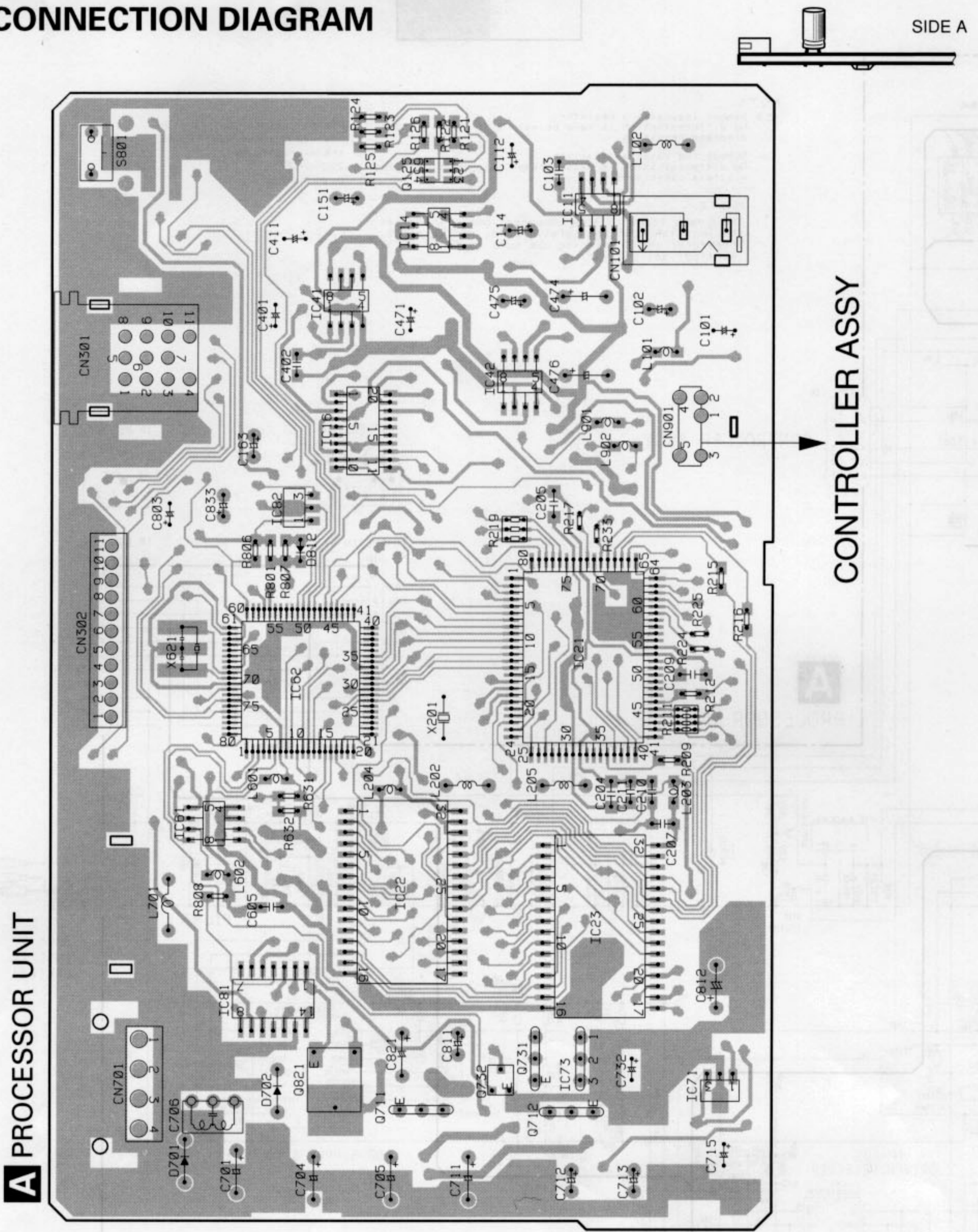
NOTE
 □ Symbol indicates a resistor.
 No differentiation is made between chip resistors and discrete resistors.
 ⊕ Symbol indicates a capacitor.
 No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as
 2 2→2R2
 0 022→R022

NOTE
 The Δ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing be sure to parts of identical designation.

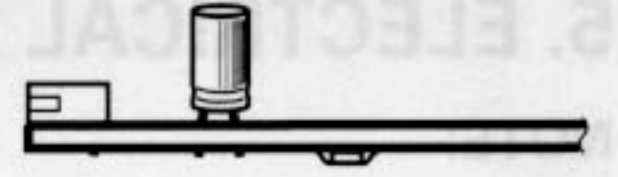
Fig.3

4. PCB CONNECTION DIAGRAM



IC.0	0413	IC61	IC62	IC81	IC41	0126	IC16	IC22	0902	0125	IC42	0731	IC21	0712	IC23	IC11	IC71
			IC82	IC81					0901	IC14	0732	0731					
					0821	0711			0713	0732			IC73				

Fig.4



SIDE B

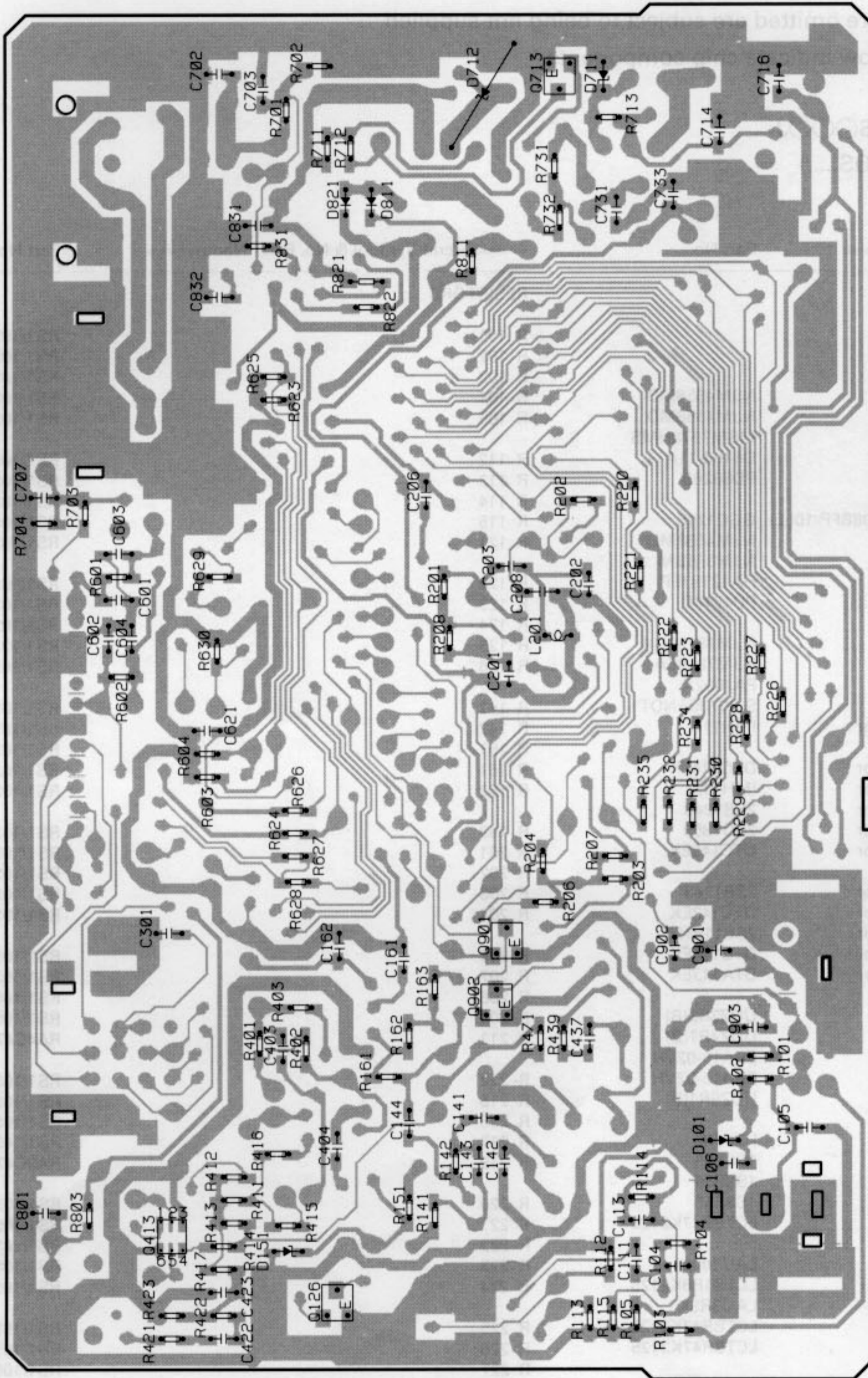


Fig.5

NOTE:

The parts mounted on this PCB include all necessary parts for several destinations.
 For further information for respective destinations, be sure to check with the schematic diagram.

5. ELECTRICAL PARTS LIST

NOTE:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/OSOOOJ,RS1/OOSOOOJ

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

====Circuit Symbol & No. Part Name====	Part No.	====Circuit Symbol & No. Part Name====	Part No.
A Unit Number : CWX2092 Unit Name : Processor Unit		RESISTORS	
MISCELLANEOUS		R 101	RS1/10S821J
IC 11	IC NJM4558MD	R 102	RS1/10S681J
IC 14	IC NJM4558MD	R 103	RS1/10S153J
IC 16	IC MSM7578HMS	R 104	RS1/10S103J
IC 21	IC D6106-11A	R 105	RS1/10S102J
IC 22	IC PD8026B	R 112	RS1/10S103J
IC 23	IC(M5M51008BFP-10LL) GGC1218	R 113	RS1/10S104J
IC 41	IC NJM4558MD	R 114	RS1/10S103J
IC 42	IC NJM386BM	R 115	RS1/10S101J
IC 61	IC HA12187FP	R 121	RS1/10S102J
IC 62	IC PD4714C	R 122	RS1/10S102J
IC 71	IC NJM78L05UA	R 123	RS1/10S102J
IC 73	IC NJM78L05A	R 124	RS1/10S102J
IC 81	IC PAJ002A	R 125	RS1/10S102J
IC 82	IC S-80730ANDT	R 126	RS1/10S102J
Q 125	Transistor IMH11A	R 141	RS1/10S473J
Q 126	Transistor DTC114EK	R 142	RS1/10S473J
Q 413	Transistor IMH11A	R 151	RS1/10S472J
Q 711	Transistor 2SB1243	R 161	RS1/10S473J
Q 712	Transistor 2SD1859	R 162	RS1/10S104J
Q 713	Transistor DTC143EK	R 163	RS1/10S103J
Q 731	Transistor 2SB1243	R 201	RS1/10S105J
Q 732	Transistor DTC143EK	R 202	RS1/10S103J
Q 821	Transistor 2SB1184F5	R 203	RS1/10S102J
Q 901	Transistor DTC144EK	R 204	RS1/10S103J
Q 902	Transistor DTA143EK	R 206	RS1/10S103J
D 101	Diode UDZ3R3(B)	R 207	RS1/10S103J
D 151	Diode UDZ4R7(B)	R 208	RS1/10S681J
D 701	Diode ERA15-02VH	R 209	RS1/10S471J
D 702	Diode ERA15-02VH	R 211	RA4C471J
D 711	Diode UDZ9R1(B)	R 212	RS1/10S471J
D 712	Diode HZ18(3)	R 215	RS1/10S471J
D 811	Diode 1SS356	R 216	RS1/10S471J
D 812	Diode 1SS356	R 217	RS1/16S471J
D 821	Diode 1SS356	R 219	RA3C471J
L 101	Inductor LCTBR47K2125	R 220	RS1/10S471J
L 102	Inductor LAU101K	R 221	RS1/10S471J
L 201	Inductor LCTB1R8K2125	R 222	RS1/10S471J
L 202	Inductor LAU3R3K	R 223	RS1/10S471J
L 203	Inductor LCTBR47K2125	R 224	RS1/16S0R0J
L 204	Inductor LCTBR47K2125	R 225	RS1/16S0R0J
L 205	Inductor LAU101K	R 226	RS1/10S471J
L 601	Inductor LCTBR47K2125	R 227	RS1/10S471J
L 602	Inductor LCTBR47K2125	R 228	RS1/10S471J
L 701	Choke Coil 1.4mH CTH1129	R 229	RS1/10S471J
L 901	Inductor LCTBR47K2125	R 230	RS1/10S471J
L 902	Inductor LCTBR47K2125	R 231	RS1/10S471J
X 201	Resonator 29.4912MHz CSS1386	R 232	RS1/10S471J
X 621	Resonator 6.29MHz CSS1307	R 233	RS1/16S471J
S 801	Switch CSG1059	R 234	RS1/10S471J

====Circuit Symbol & No. Part Name====	Part No.	====Circuit Symbol & No. Part Name====	Part No.
R 235	RS1/10S471J	C 161	CKSQYB104K50
R 401	RS1/10S103J	C 162	CKSQYB104K50
R 402	RS1/10S104J	C 163	CEA100M16LL
R 403	RS1/10S103J	C 201	CCSQCH100J50
R 411	RS1/10S102J	C 202	CCSQCH220J50
R 412	RS1/10S152J	C 203	CKSQYB102K50
R 413	RS1/10S102J	C 204	CKSYB105K16
R 414	RS1/10S152J	C 205	CKSYB105K16
R 415	RS1/10S0R0J	C 206	CKSQYB104K50
R 417	RS1/10S0R0J	C 207	CKSQYB104K50
R 421	RS1/10S104J	C 208	CKSYB105K16
R 422	RS1/10S103J	C 209	CKSYB105K16
R 423	RS1/10S103J	C 210	CCSQCH101J50
R 439	RS1/10S100J	C 211	CCSQCH101J50
R 471	RS1/10S103J	C 301	CKSQYB104K50
R 601	RS1/10S101J	C 401	CEA010M50LL
R 602	RS1/10S101J	C 402	CKSQYB332K50
R 603	RS1/10S473J	C 403	CKSQYB682K50
R 604	RS1/10S473J	C 404	CKSQYB103K50
R 623	RS1/10S104J	C 411	CEA010M50LL
R 624	RS1/10S222J	C 422	CKSQYB103K50
R 625	RS1/10S104J	C 423	CKSQYB103K50
R 626	RS1/10S222J	C 437	CKSQYB473K50
R 627	RS1/10S103J	C 471	CEA010M50LL
R 628	RS1/10S101J	C 474	CCH1183
R 629	RS1/10S104J	C 475	CEA470M16LS
R 630	RS1/10S104J	C 476	CEAS221M10
R 631	RS1/10S104J	C 601	CKSQYB471K50
R 701	RS1/10S204J	C 602	CKSQYB471K50
R 702	RS1/10S104J	C 603	CKSQYB102K50
R 703	RS1/10S822J	C 604	CKSQYB102K50
R 704	RS1/10S104J	C 605	CKSQYB104K50
R 711	RS1/10S103J	C 621	CKSQYB104K50
R 712	RS1/10S222J	C 701	CCH1183
R 713	RS1/10S472J	C 702	CKSQYB102K50
R 731	RS1/10S103J	C 703	CKSQYB223K50
R 732	RS1/10S222J	C 704	CCH1183
R 801	RS1/10S104J	C 705	CCH1183
R 803	RS1/10S102J	C 706	CCG1006
R 806	RS1/10S102J	C 707	CKSQYB223K50
R 807	RS1/10S101J	C 711	CEAS331M16
R 808	RS1/10S104J	C 712	CEA470M16LS
R 811	RS1/10S101J	C 713	CEA101M10LS
R 821	RS1/8S1R0J	C 714	CKSQYB104K50
R 822	RS1/10S102J	C 715	CEAR68M50LL
R 831	RS1/10S103J	C 716	CKSQYB104K50
		C 731	CKSQYB104K50
		C 732	CEAR68M50LL
		C 733	CKSQYB104K50
		C 801	CKSQYB104K50
CAPACITORS			
C 101	CEAR22M50LL		
C 102	CEA101M10LS		
C 103	CKSQYB472K50	C 803	CEA010M50LL
C 104	CCSQCH151J50	C 811	CEA221M6R3LL
C 105	CCSQCH101J50	C 812	CCL1023
		C 821	CSZA220M16
		C 831	CKSQYB103K50
C 106	CCSQCH101J50		
C 111	CKSQYB563K16		
C 112	CEAR22M50LL	C 832	CKSQYB103K50
C 113	CKSQYB471K50	C 833	CEA221M6R3LL
C 114	CEA470M16LS	C 901	CCSQCH101J50
C 141	CKSQYB223K50		
C 142	CKSQYB103K50		
C 143	CKSQYB123K50		
C 144	CKSQYB333K50		
C 151	CEA470M16LS		

6. ADJUSTMENT

There is no information to be shown in this chapter.

7. GENERAL INFORMATION

7.1. IC

● Pin Functions(PD4714C)

Pin No.	Pin Name	I/O	Format	Function and Operation
1	SVTEST	I		Service testmode input
2	GSENS	I		Select input for the distination
3	VCPW	O	C	Power supply for D6106,ROM
4	AVSS	I		GND
5	NC			Not used
6	IPPW	O	C	Power supply control output for IP BUS driver
7	AVREF1			VDD
8,9	GLEVO,1	O	C	Guidance level output 0,1
10	RAMPF	O	C	CS2 control output for SRAM
11	ILLM	O	C	Illumination output
12	ACKN	I		D6106 data YES or NO detection input
13	HRDN	O	C	Data reading request output
14	HWRN	O	C	Data writing request output
15	SYSPW	O	C	System power supply control output
16	TSI	I		Chip test data input
17	TSO	O	C	Chip test data output
18	TCK	O	C	Chip test clock output
19-26	NC			Not used
27-32	HD 0-5	I/O		Data line 0-5
33	VSS			GND
34,35	HD 6,7	I/O		Data line 6,7
36-43	NC			Not used
44	VAD	I		Speaking detection input
45	PEE	O	C	PEE output
46	LSTN	I		Waiting detection input
47	NC			Not used
48	VCPRST	O	C	D6106 reset output
49-51	AGC 0-3	O	C	Gain control output 0-3
52-55	NC			Not used
56	TX	O	C	IP BUS data output
57	RX	I		IP BUS data input
58,59	NC			Not used
60	RESET			Reset
61	NC			Not used
62	BSNS	I		Back up power sense input
63	ASNS	I		ACC power sense input
64-67	NC			Not used
68	VDD			Power supply
69	X2	O		Oscillator output
70	X1	I		Oscillator input
71	IC			Connect to GND
72	XT2	O		Sub clock output
73	TEST/TESTEN	I		Test mode/Test enable
74	AVDD			VDD
75	AVREF0			Open
76	KEY			MODE key/SEARCH+ key/SEACH- key input
77-80	NC			Not used

Format	Meaning
C	C MOS

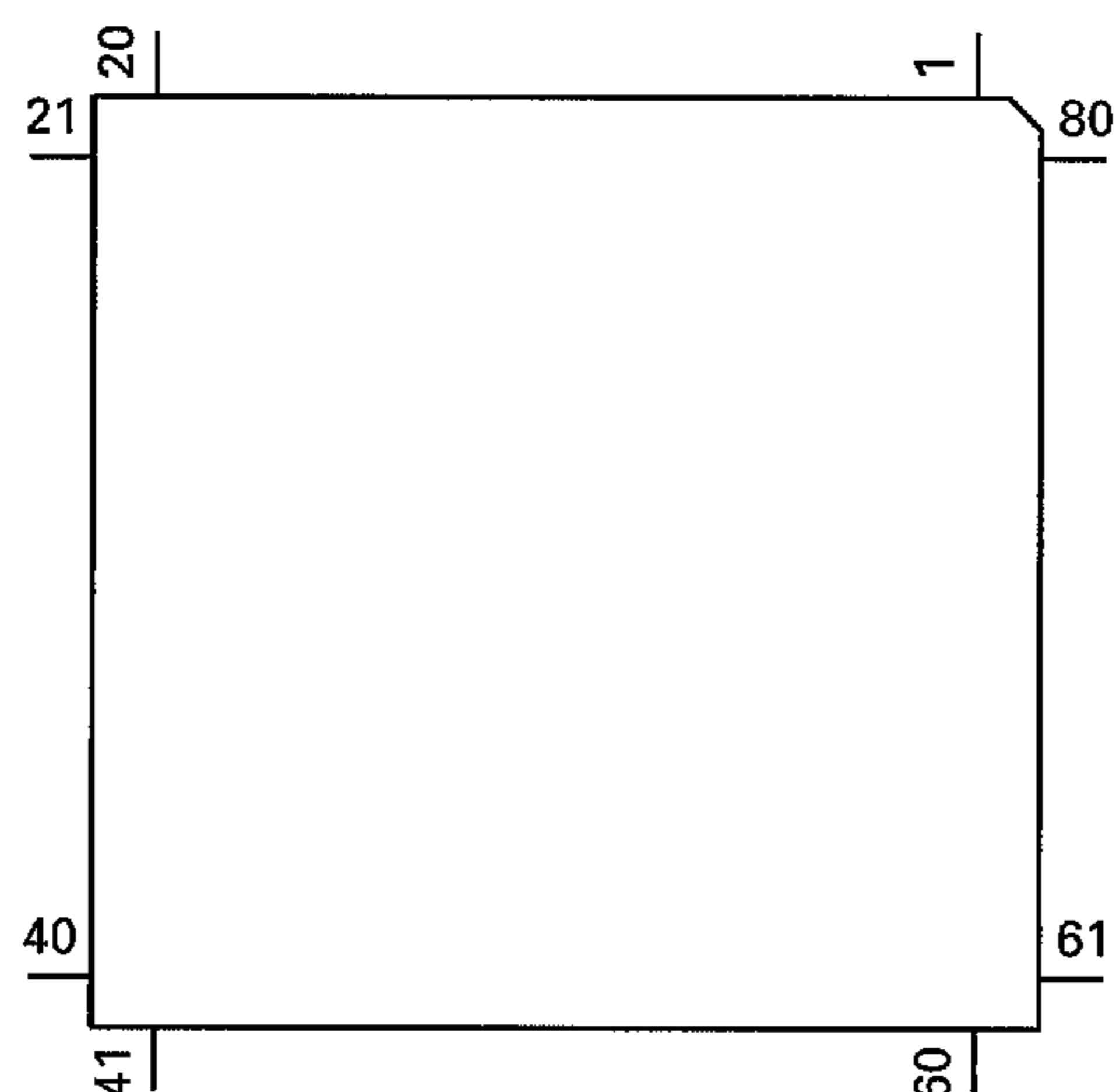
IC's marked by* are MOS type.

Be careful in handling them because they are very liable to be damaged by electrostatic induction.

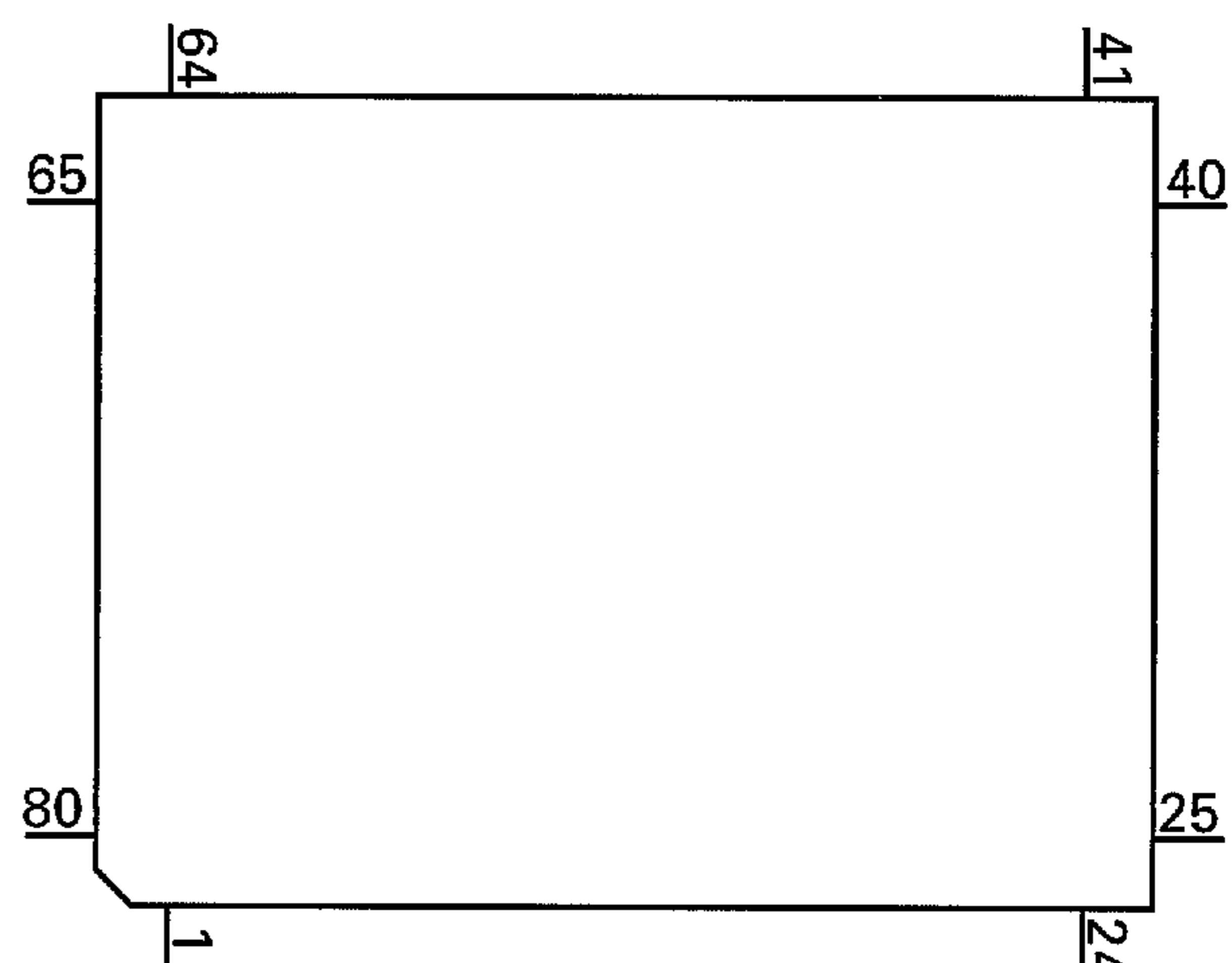
● Pin Functions(D6106-11A)

Pin No.	Pin Name	I/O	Function and Operation
1	RESERVED		These pins should be left unconnected
2	EPRCSN	O	Active-low EPROM select output
3	ACKN	I/O	Active-low host interrupt flag
4	HI/LO	I	Connect to 10K pull-up
5	HRDN	I	Active-low host read control line
6	HWRN	I	Active-low host write control line
7-14	HD7-0	I/O	Bidirectional data bus lines for the host interface 7-0
15	GND		GND
16	CLK	O	Clock output
17	XOUT	O	Crystal oscillator output
18	XIN	I	Crystal oscillator input
19	VCC	I	+5V supply voltage line
20	SCLK	O	2106kHz clock output to the PCM codec
21	RESET	I	Active-high reset input with Schmitt trigger interface
22	PDN	I	Connect to 10K pull-up
23	FSYNC	O	Active-high, 8228Hz frame synchronization pulse output to the PCM codec
24	RESERVED		These pins should be left unconnected
25	DXO	O	Output for μ -Law PCM encoded data from the PCM codec
26	RESERVED		These pins should be left unconnected
27	DRO	I	Input for μ -Law PCM encoded data from the PCM codec
28-30	RESERVED		These pins should be left unconnected
31	GND		GND
32	VCC	I	+5V supply voltage line
33-35	RESERVED		These pins should be left unconnected
36	SRMWRN	O	Active-low write strobe output to the SRAM
37	SRMRDN	O	Active-low EPROM/SRAM read control output
38	PREADN	O	This pin should be left unconnected
39-52	D0-13	I/O	Bidirectional data bus lines for the external memory components 0-13
53	VCC	I	+5V supply voltage line
54	GND		GND
55,56	RESERVED		GND
57,58	D14,15	I/O	Bidirectional data bus lines for the external memory components 14,15
59-72	A0-13	O	Address lines for the external memory components 0-13
73	VCC	I	+5V supply voltage line
74	GND		GND
75-77	A14-16	O	Address lines for the external memory components 14-16
78	SRMCSN	O	Active-low SRAM select output
79	LISTN	O	Active-low listening state indication line
80	VAD	O	Active-low Voice Activity indication line

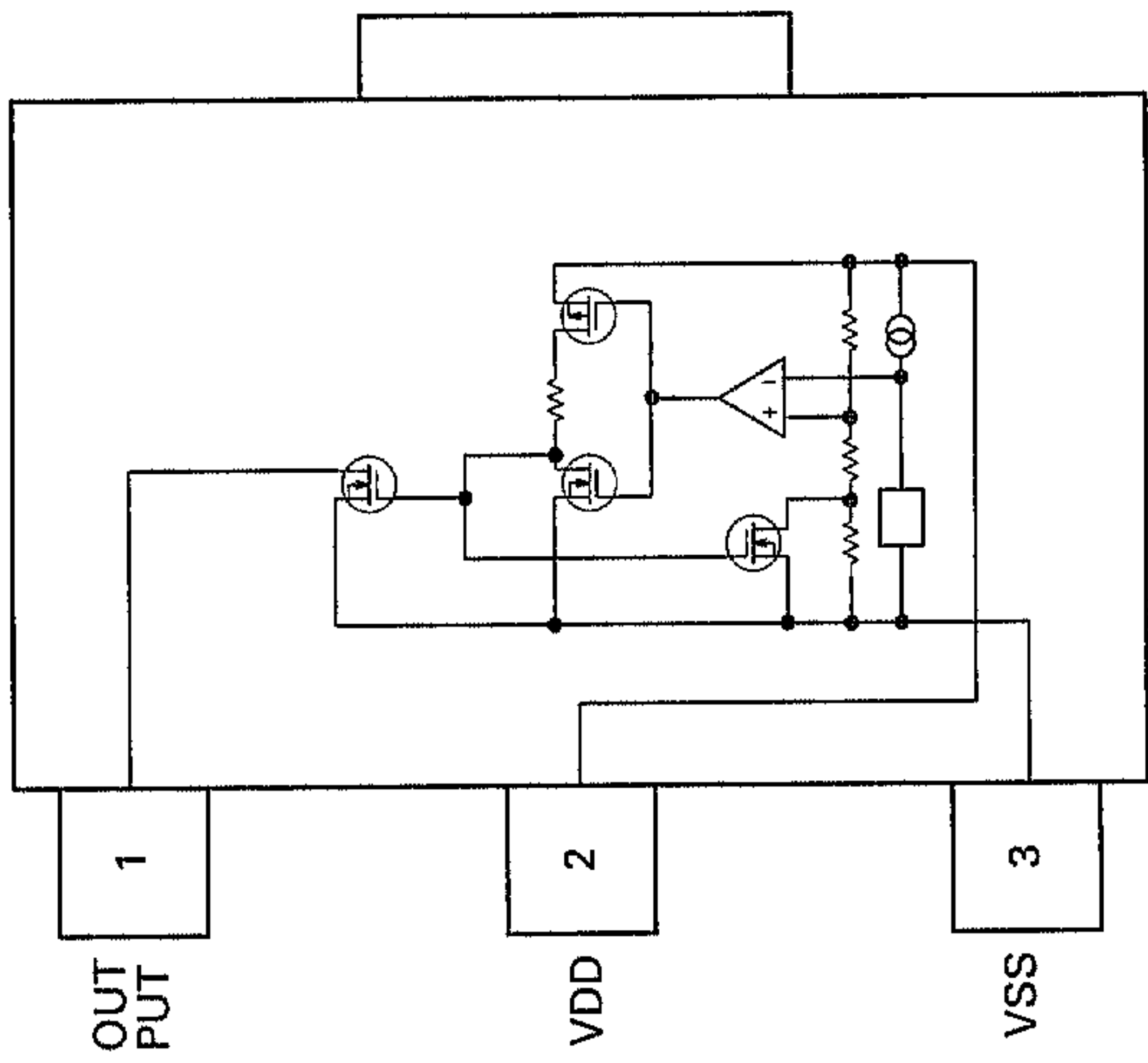
*PD4714C



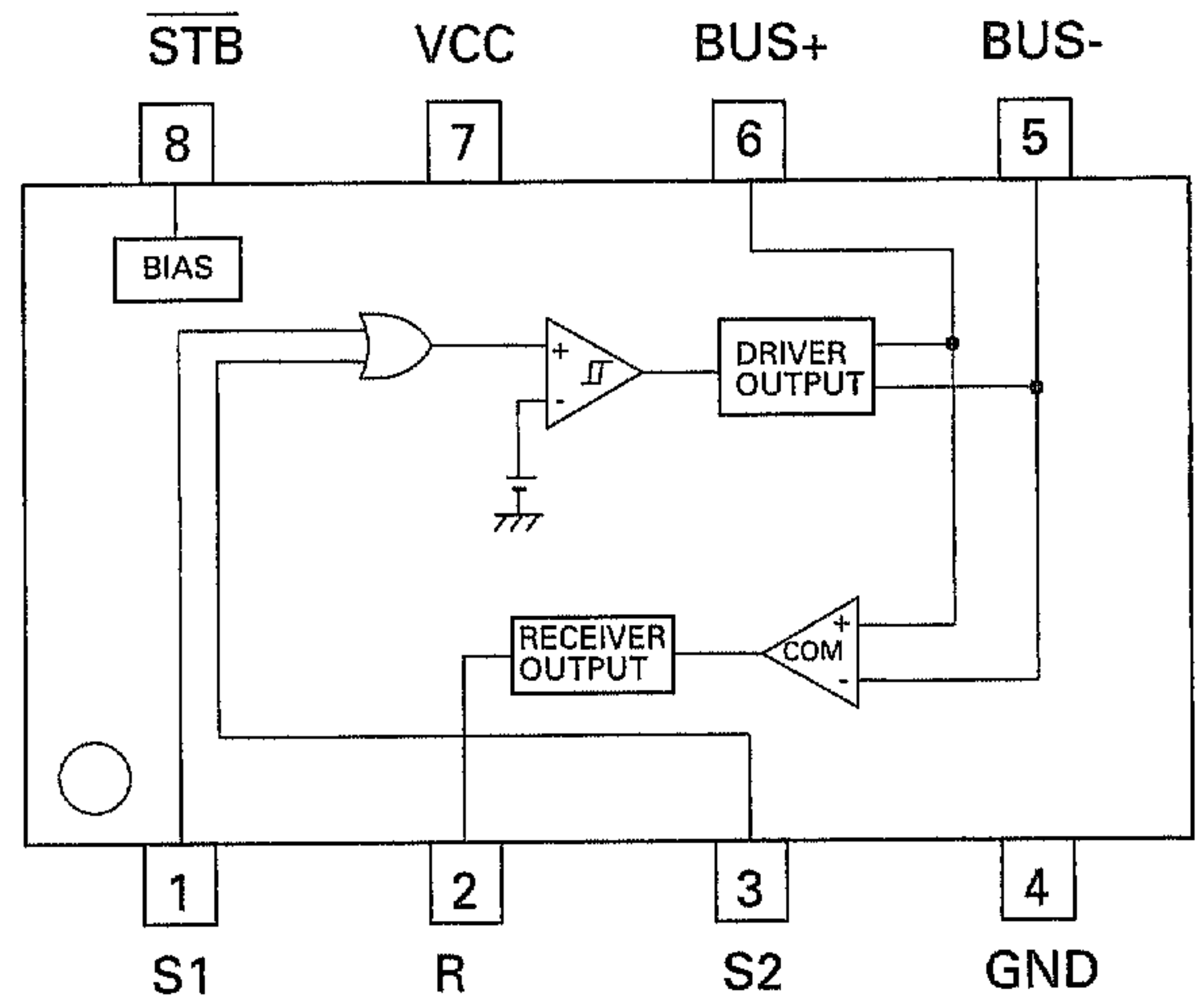
D6106-11A



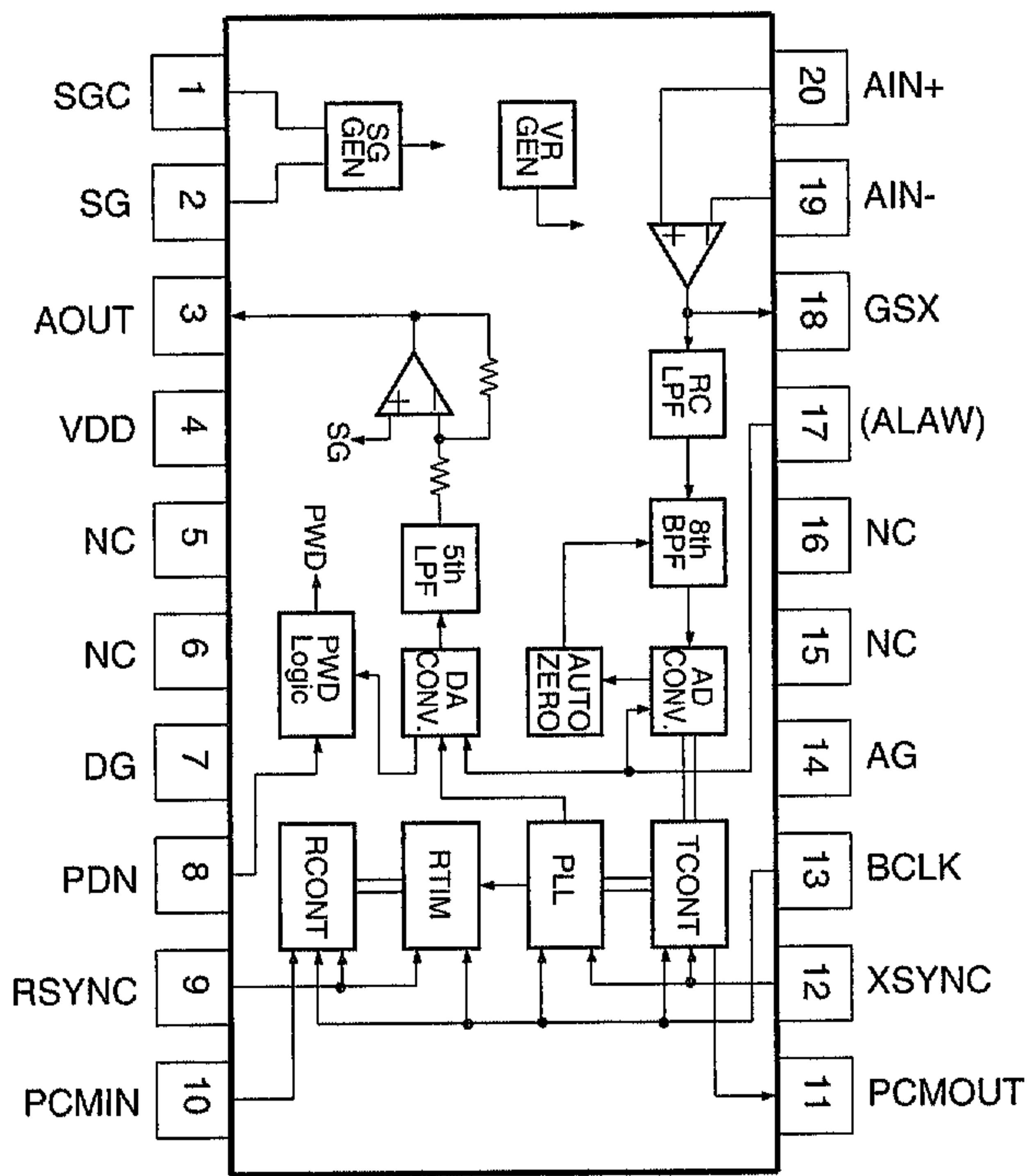
S-80730ANDT



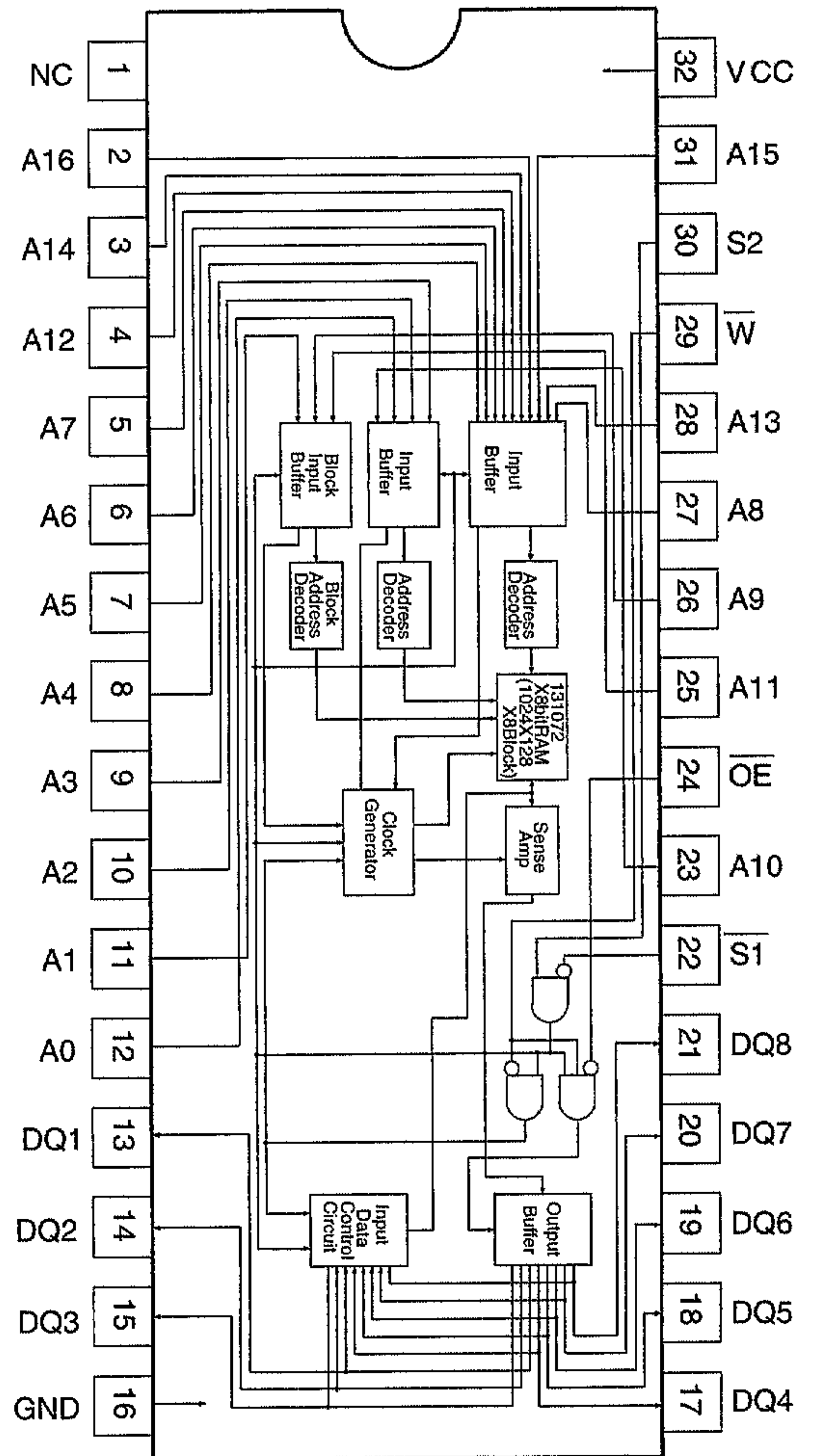
HA12187FP



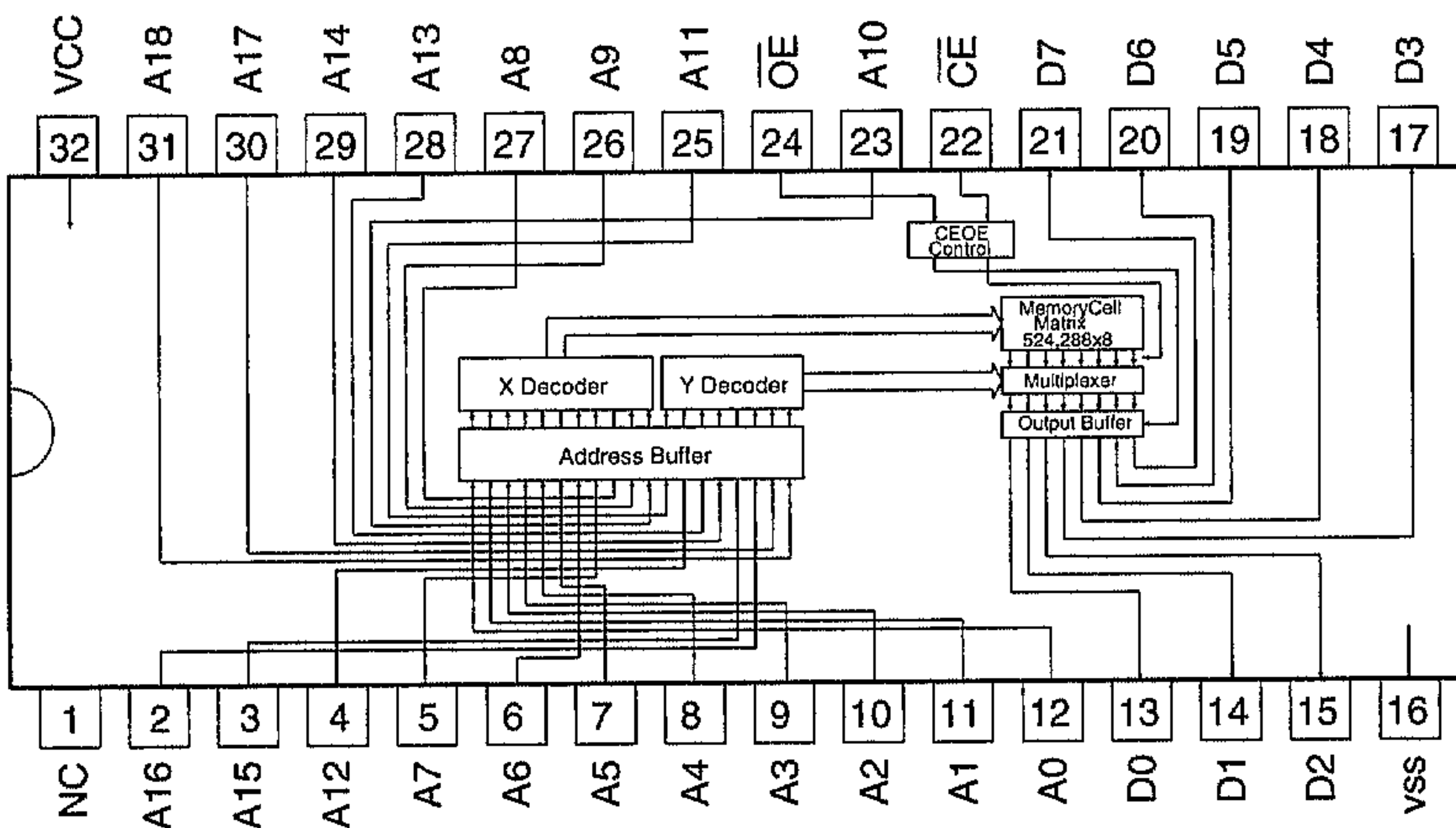
MSM7578HMS



GGC1218(M5M51008BFP-10LL)



PD8026B



7.2. BLOCK DIAGRAM

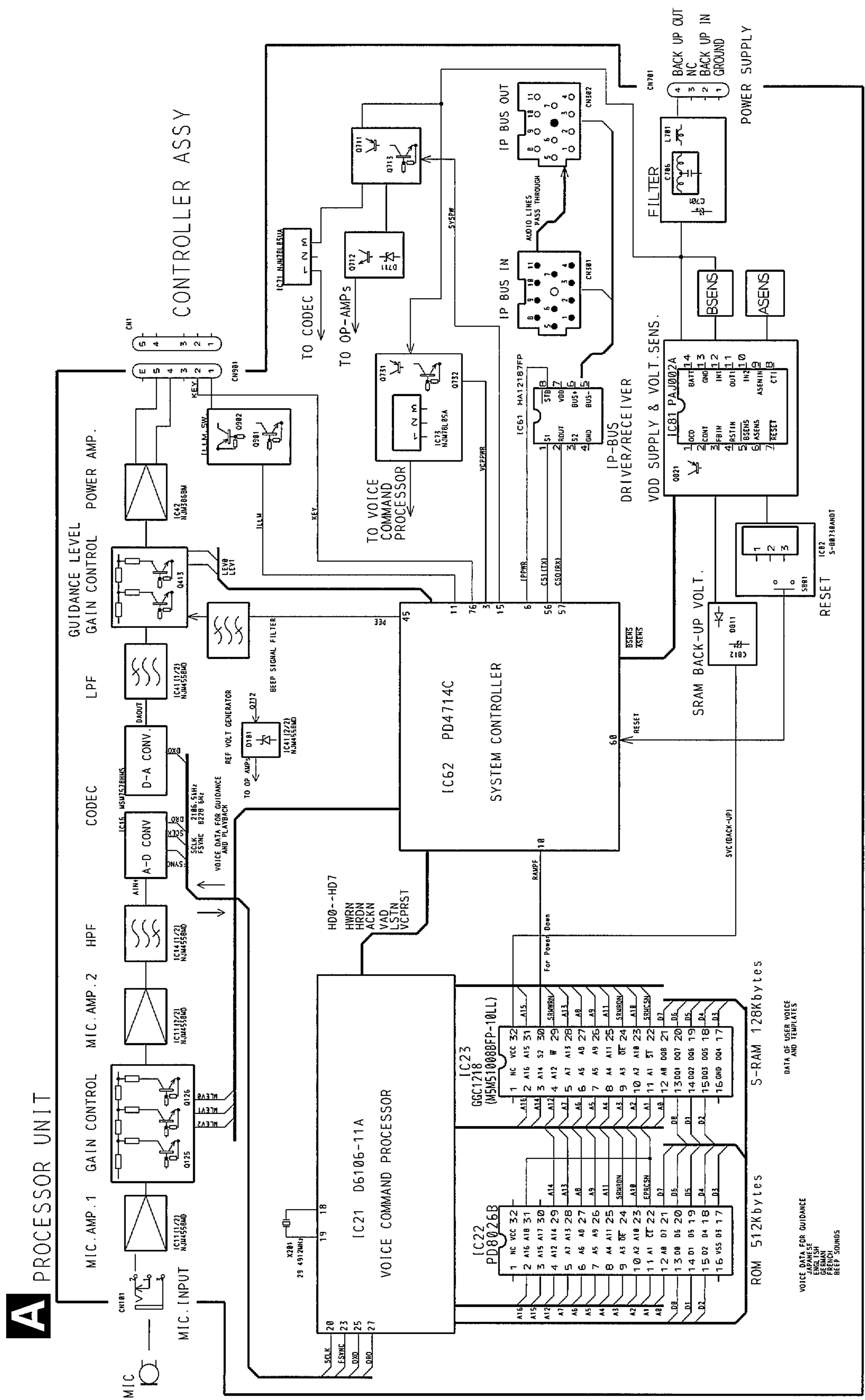
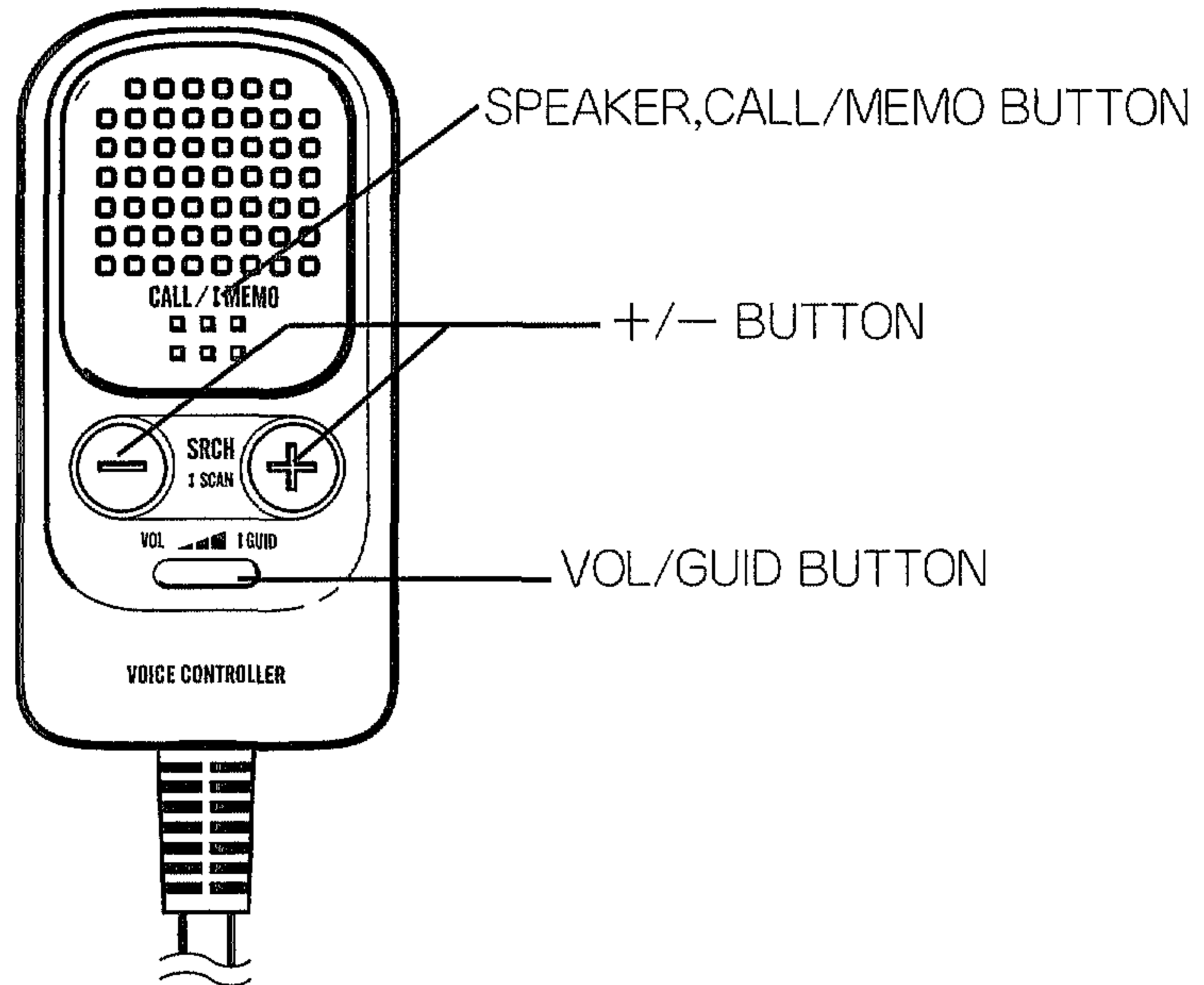


Fig. 6

8. OPERATION AND SPECIFICATIONS

*: The illustration shown below is a controller (not a microphone). When speaking, you should face the microphone.



Specifications

Processor unit

Voice recognition system Voice recognition of a specified voice

Connection terminals

- Power terminal
- IP-BUS input/output jacks
- Controller connection terminals
- Mic input jack (3.5 mm dia.) (Also supplies power to the mic)

Dimensions 140 (W) × 30 (H) × 90 (D) mm

Weight 0.36 kg

Controller

Speaker 28 mm dia.

Microphone

Type Electrolet condenser mic for voice recognition

Directionality Unidirectional

Installation site Sun visor, steering column

General

Power source 14.4 V DC (10.8 – 15.1 V allowable)

Grounding system Negative type

Max. current consumption 300 mA

Supplied accessories

Installation kit 1

Cord 1

Owner's manual 1

