

Service Manual

ORDER NO.
CRT3352

UNIVERSAL DIGITAL PREAMP EQUALIZER

DEQ-P90 /EW

- This service manual should be used together with the manual(s) listed below.

For the parts numbers, adjustments, etc. which are not shown in this manual, refer to the following manual(s).

Model No.	Order No.	Mech. Module	Remarks
DEQ-P9/EW	CRT2686		

EXPLODED VIEWS AND PARTS LIST

PACKING (Page 2)

● PACKING SECTION PARTS LIST

Mark No.	Symbol and Description	Part No.	
		DEQ-P9/EW	DEQ-P90/EW
16	Carton	CHG4344	CHG5375
18	Contain Box	CHL4344	CHL5375
22-1	Owner's Manual (English)	CRB1635	CRB1992
22-2	Owner's Manual (Spanish)	CRB1636	CRB1993
22-3	Owner's Manual (German)	CRB1637	CRB1994
22-4	Owner's Manual (French)	CRB1638	CRB1995
22-5	Owner's Manual (Italian)	CRB1639	CRB1996
22-6	Owner's Manual (Dutch)	CRB1640	CRB1997
22-8	Owner's Manual (Russian)	Not used	CRB1998

EXTERIOR (Page 4)

● EXTERIOR SECTION PARTS LIST

Mark No.	Symbol and Description	Part No.	
		DEQ-P9/EW	DEQ-P90/EW
7	Panel	CNB2636	CNB3087
8	Case	CNB2634	CNB3086
12	Audio Control Unit	CWM7507	CWM9909

ELECTRICAL PARTS LIST(Page 24)

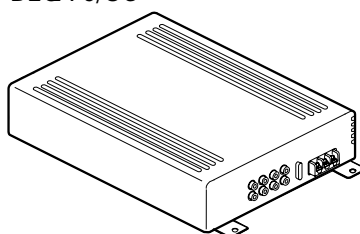
Audio Control Unit

Symbol and Description	Part No.	
	DEQ-P9/EW	DEQ-P90/EW
C913 4700μF/16V	CCH1266	CCH1542

Service Manual

Pioneer

DEQ-P9/UC



ORDER NO.
CRT2686

UNIVERSAL DIGITAL PREAMP EQUALIZER

DEQ-P9

UC,EW

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PIONEER CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS SERVICE INC. P.O.Box 1760, Long Beach, CA 90801-1760 U.S.A.
PIONEER EUROPE NV Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE.LTD. 253 Alexandra Road, #04-01, Singapore 159936

1. SAFETY INFORMATION

CAUTION

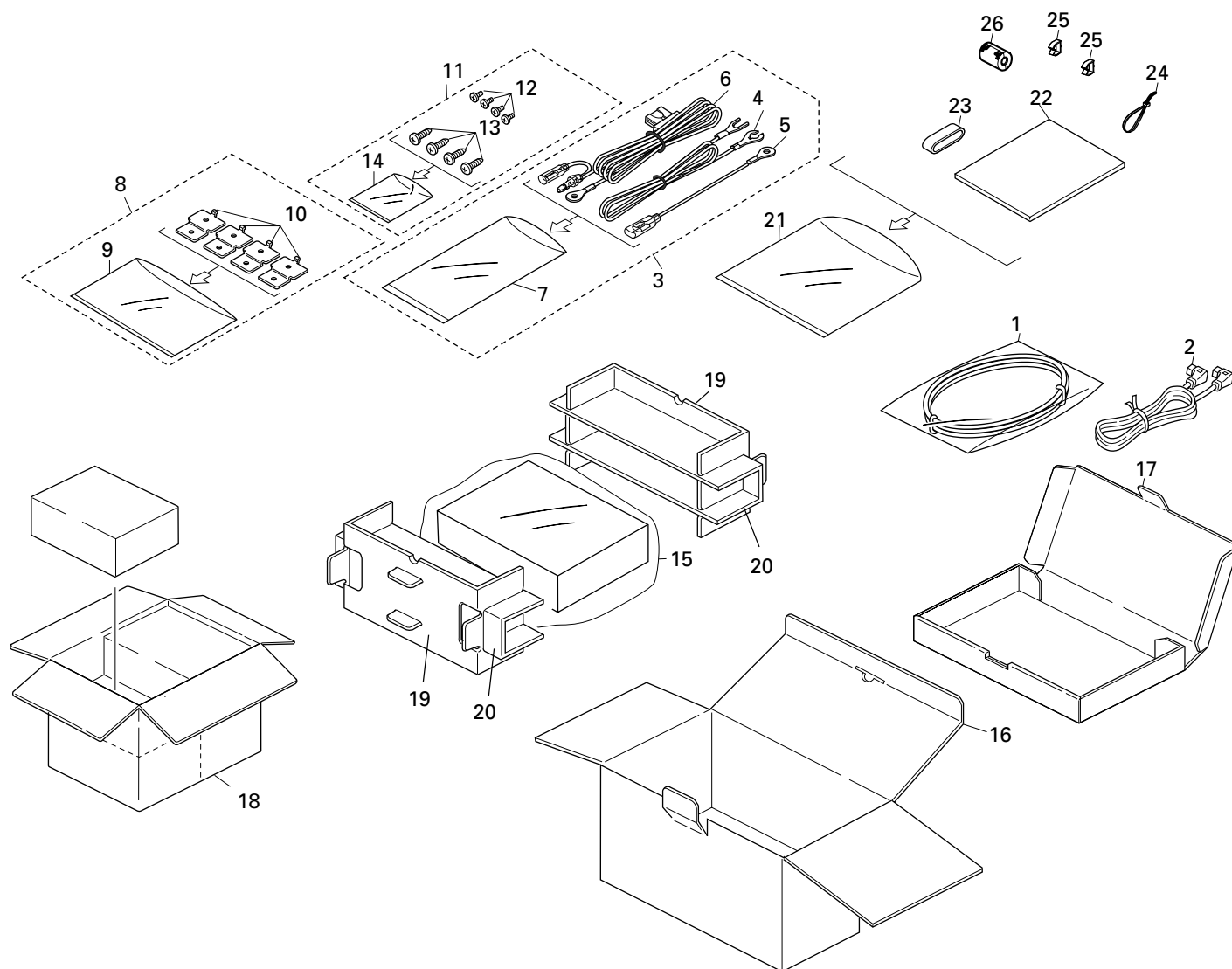
This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly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

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.
Health & Safety Code Section 25249.6 - Proposition 65

2. EXPLODED VIEWS AND PARTS LIST

2.1 PACKING



NOTE:

- Parts marked by "*" are generally unavailable because they are not in our Master Spare Parts List.
- Screws adjacent to ∇ mark on the product are used for disassembly.

(1) PACKING SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Cable	CDE6690	16	Carton	See Contrast table(2)
2	Cord	CDE4167	17	Sub Unit Box	CHG4438
3	Cord Assy	CDE6643	18	Contain Box	See Contrast table(2)
4	Cord	CDE3951	19	Protector	CHP2359
* 5	Cord	CDE6641	20	Protector	CHP2360
* 6	Cord	CDE6644	21	Polyethylene Bag	CEG1116
* 7	Polyethylene Bag	CEG-145	22-1	Owner's Manual	See Contrast table(2)
8	Accessory Assy	CEA1849	22-2	Owner's Manual	See Contrast table(2)
* 9	Polyethylene Bag	CEG-020	22-3	Owner's Manual	See Contrast table(2)
* 10	Bracket	CNC4763	22-4	Owner's Manual	See Contrast table(2)
11	Screw Assy	CEA2761	22-5	Owner's Manual	See Contrast table(2)
12	Screw	BMZ40P050FMC	22-6	Owner's Manual	See Contrast table(2)
13	Screw	BYC40P120FZK	* 22-7	Warranty Card	See Contrast table(2)
* 14	Polyethylene Bag	E36-613	23	Cover	CNS2726
15	Polyethylene Bag	See Contrast table(2)	* 24	Lock Tie	See Contrast table(2)
			* 25	Clamper	CNV1272
			* 26	Filter	See Contrast table(2)

(2) CONTRAST TABLE

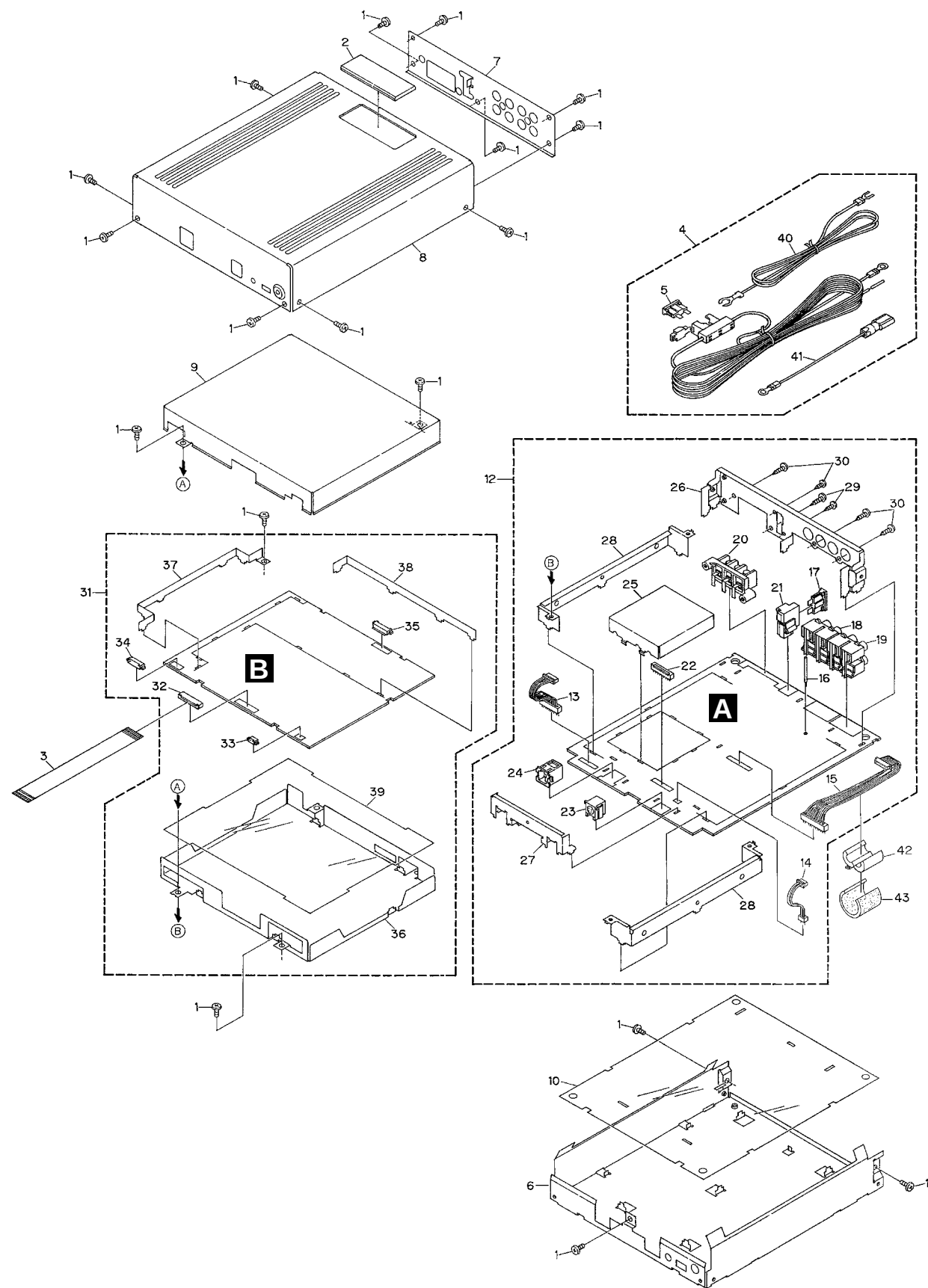
DEQ-P9/UC and EW are constructed the same except for the following:

Mark No.	Symbol and Description	Part No.	
		DEQ-P9/UC	DEQ-P9/EW
15	Polyethylene Bag	CEG1173	CEG-162
16	Carton	CHG4345	CHG4344
18	Contain Box	CHL4345	CHL4344
22-1	Owner's Manual	CRB1641	CRB1635
22-2	Owner's Manual	CRB1642	CRB1636
22-3	Owner's Manual	Not used	CRB1637
22-4	Owner's Manual	Not used	CRB1638
22-5	Owner's Manual	Not used	CRB1639
22-6	Owner's Manual	Not used	CRB1640
* 22-7	Warranty Card	CRY1070	CRY1157
* 24	Lock Tie	Not used	CNV-754
* 26	Filter	Not used	CTX1060

● Owner's Manual, Installation Manual

Model	Part No.	Language
DEQ-P9/UC	CRB1641	English
	CRB1642	French
DEQ-P9/EW	CRB1635	English
	CRB1636	Spanish
	CRB1637	German
	CRB1638	French
	CRB1639	Italian
	CRB1640	Dutch

2.2 EXTERIOR



● EXTERIOR SECTION PARTS LIST

Mark No.	Description	Part No.
	1 Screw	BSZ30P060FZK
*	2 Badge(/UC)	CAH1765
*	Badge(/EW)	CAH1764
	3 Cable	CDE6625
	4 Cord Assy	CDE6643
	5 Fuse(4A)	CEK1001
	6 Chassis	CNA2366
	7 Panel	CNB2636
	8 Case	CNB2634
	9 Case	CNC9165
	10 Insulator	CNM7103
	11	
	12 Audio Control Unit(/UC)	CWM7506
	Audio Control Unit(/EW)	CWM7507
	13 Connector(CN903)	CDE6309
	14 Connector(CN603)	CDE6462
	15 Connector(CN501)	CDE6463
	16 Clamper	CEF1007
	17 Fuse(4A)	CEK1001
	18 Pin Jack(CN101)	CKB1048
	19 Pin Jack(CN301)	CKB1048
	20 Terminal(CN902)	CKE1033
	21 Fuse Holder(CN901)	CKR1021
*	22 Connector(CN602)	CKS2248
	23 Connector(CN601)	CKS2601

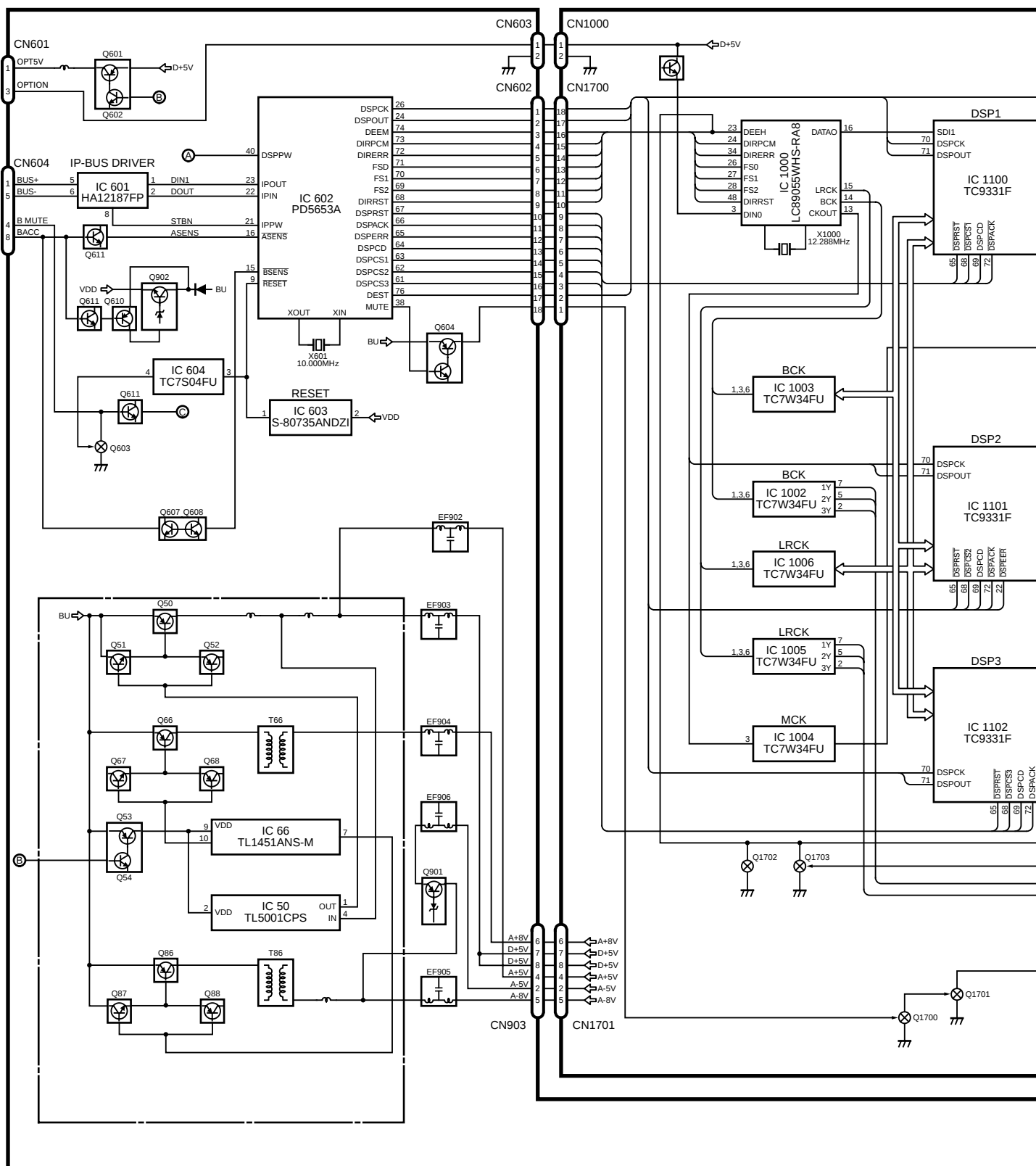
Mark No.	Description	Part No.
	24 Connector(CN604)	CKS3410
	25 Shield	CNC4761
	26 Holder	CNC9161
	27 Holder	CNC9162
	28 Holder	CNC9163
	29 Screw	PPZ20P060FZK
	30 Screw	PPZ30P080FZK
	31 DSP Unit(/UC)	CWX2519
	DSP Unit(/EW)	CWX2520
	32 Connector(CN1700)	CKS1956
	33 Connector(CN1000)	CKS2191
	34 Connector(CN1701)	CKS2198
*	35 Connector(CN1702)	CKS2201
	36 Shield	CNC9164
	37 Holder	CNC9175
	38 Holder	CNC9176
	39 Insulator	CNM7106
	40 Cord	CDE3951
*	41 Cord	CDE6641
	42 Filter(/EW)	CTX1054
	43 Cushion(/EW)	CNM7567

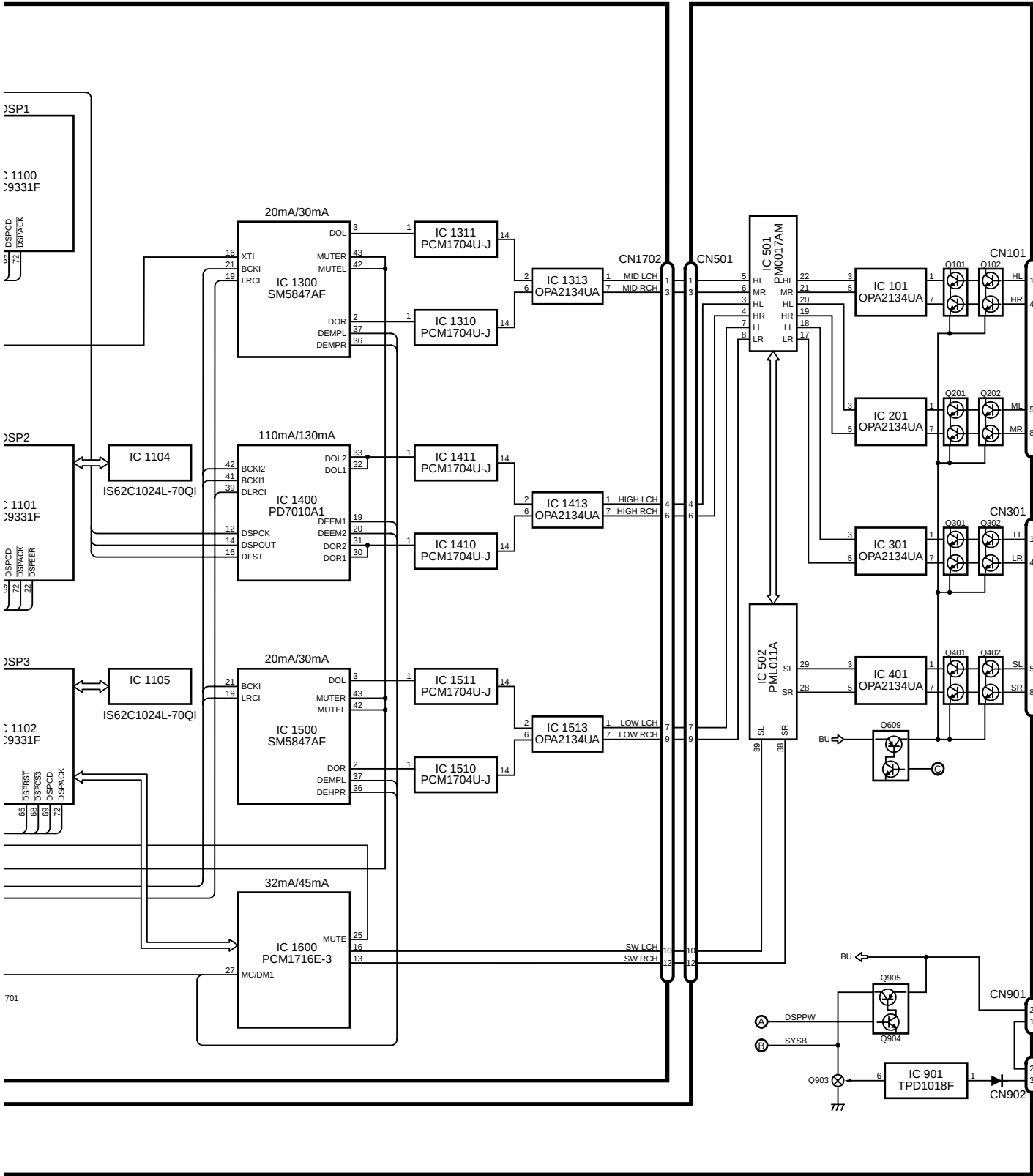
3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

3.1 BLOCK DIAGRAM

A AUDIO CONTROL UNIT

B DSP UNIT





A

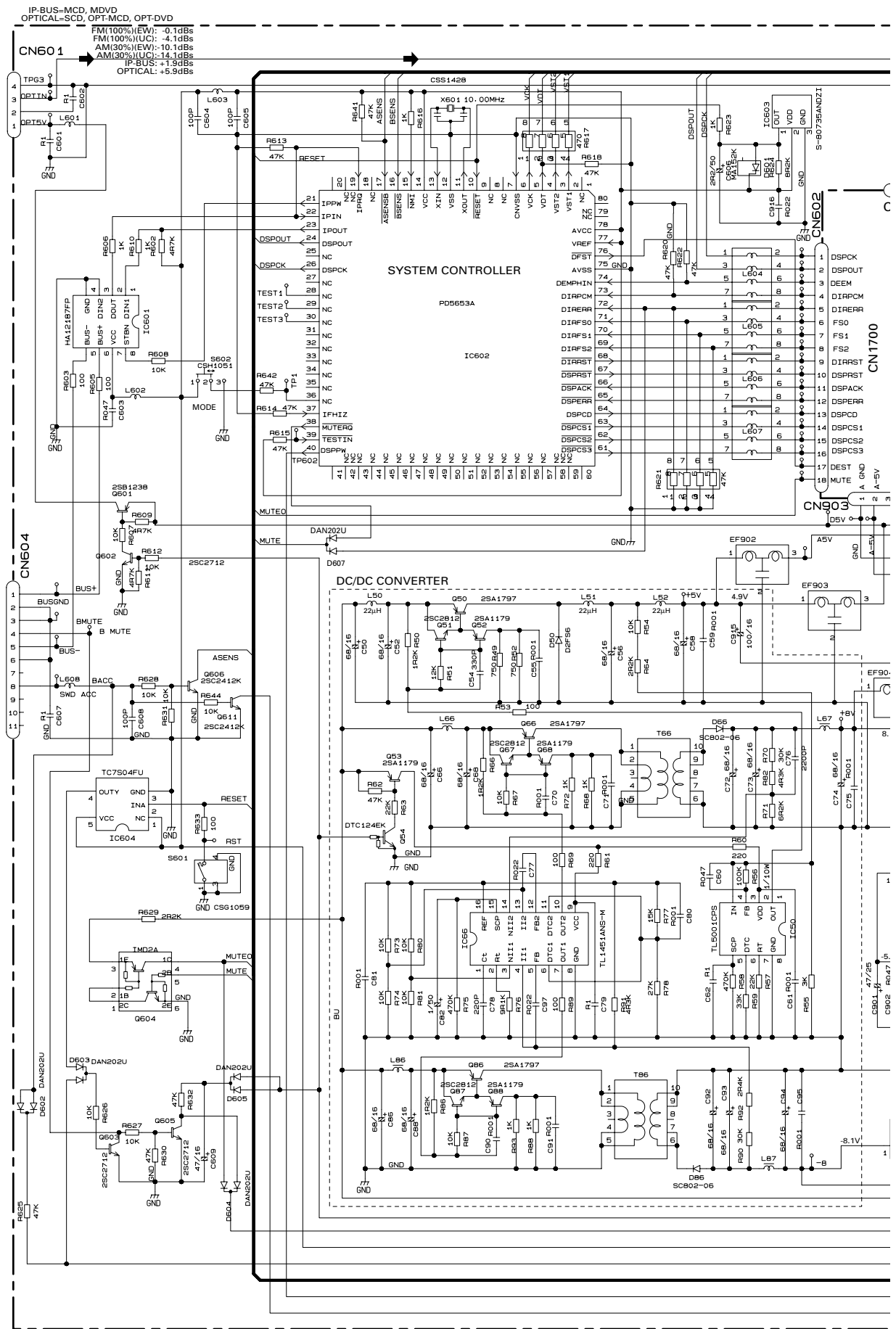
B

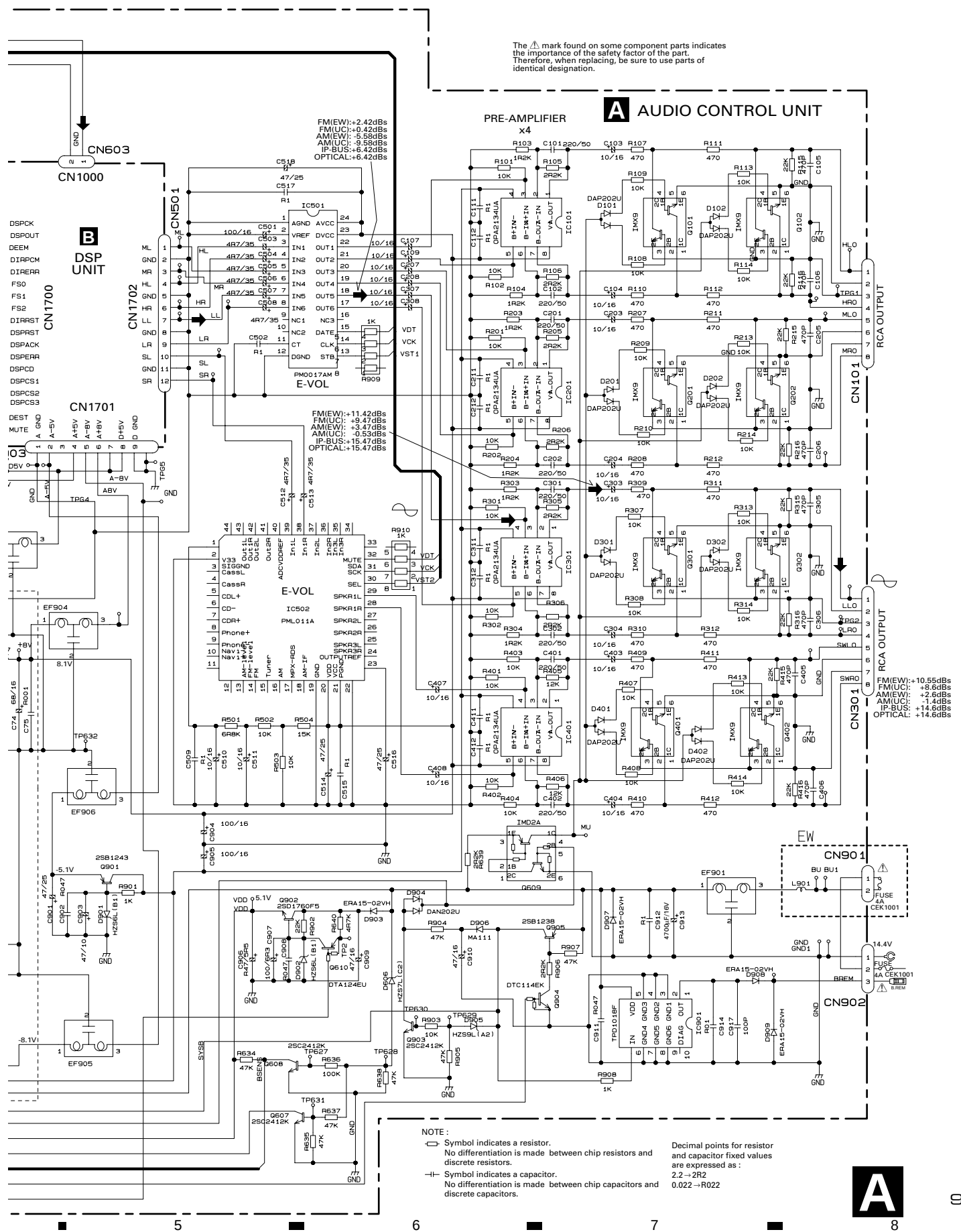
C

D

Note: When ordering service parts, be sure to refer to “EXPLODED VIEWS AND PARTS LIST” or “ELECTRICAL PARTS LIST”.

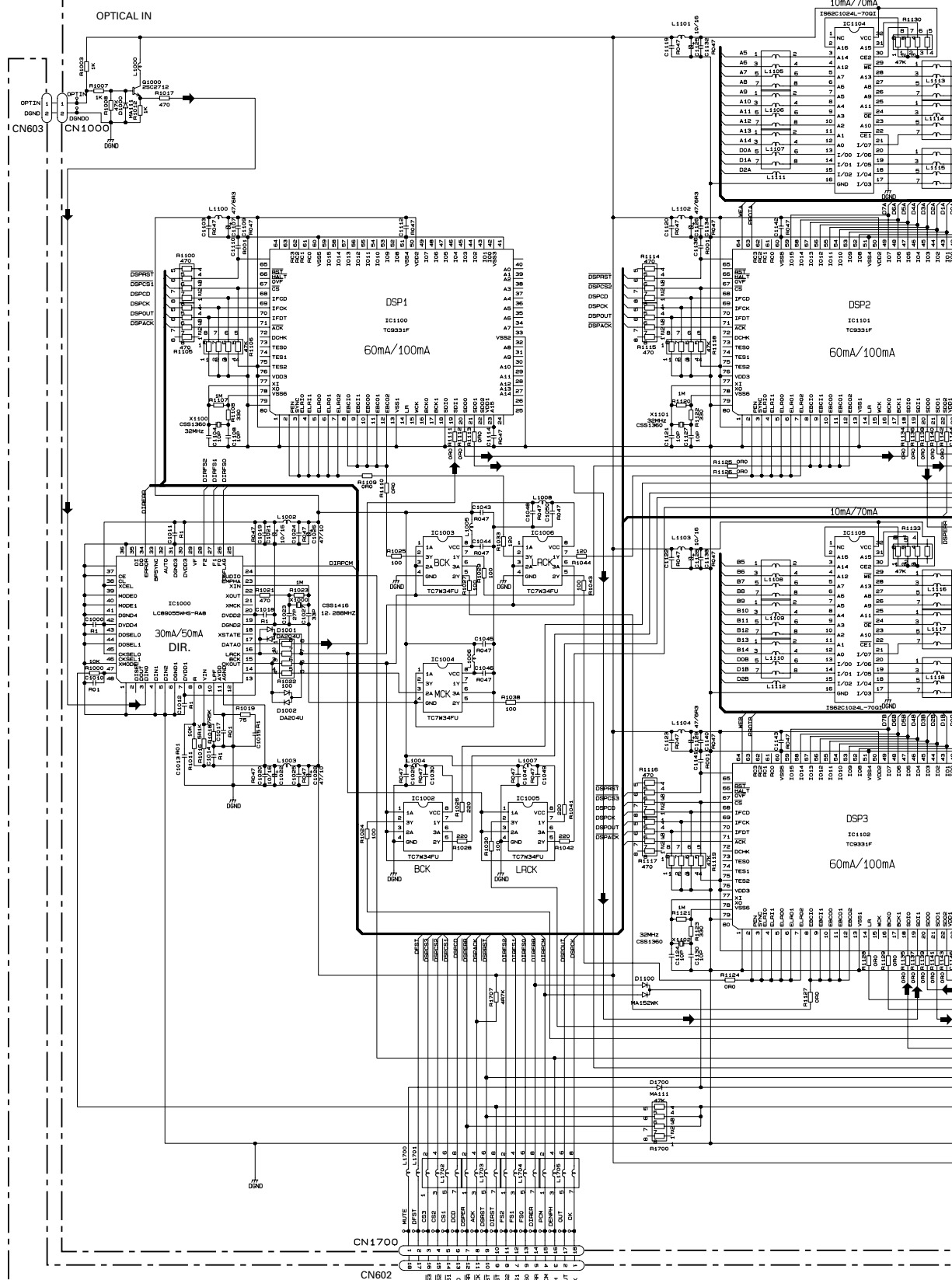
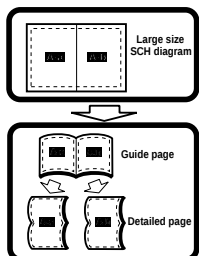
Note: When ordering service parts, be sure to refer to “EXPLODED VIEWS AND PARTS LIST” or “ELECTRICAL PARTS LIST”.





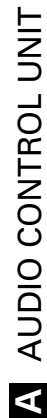
3.3 DSP UNIT(GUIDE PAGE)

B-a









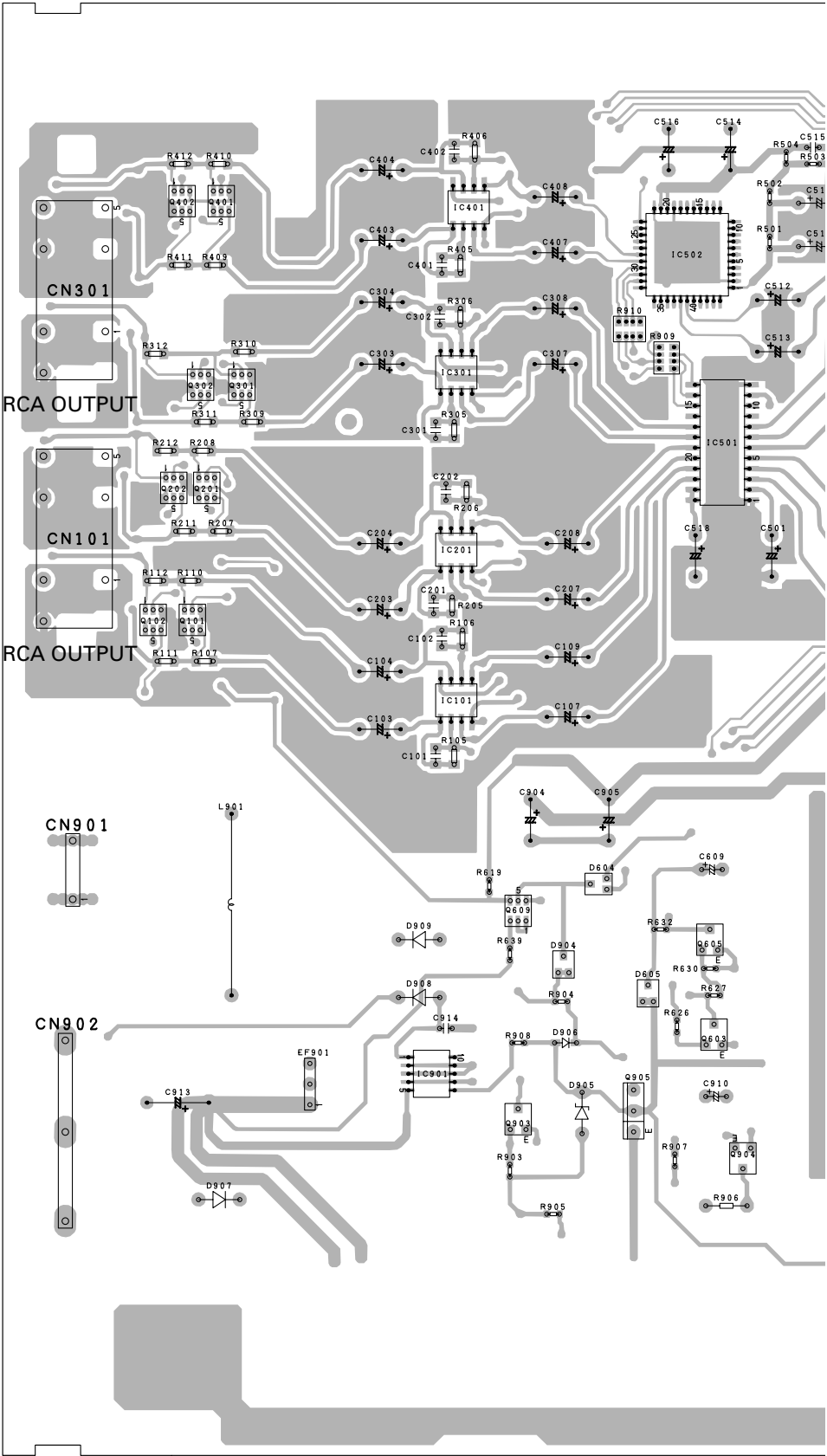
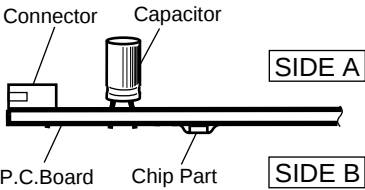
4. PCB CONNECTION DIAGRAM

4.1 AUDIO CONTROL UNIT

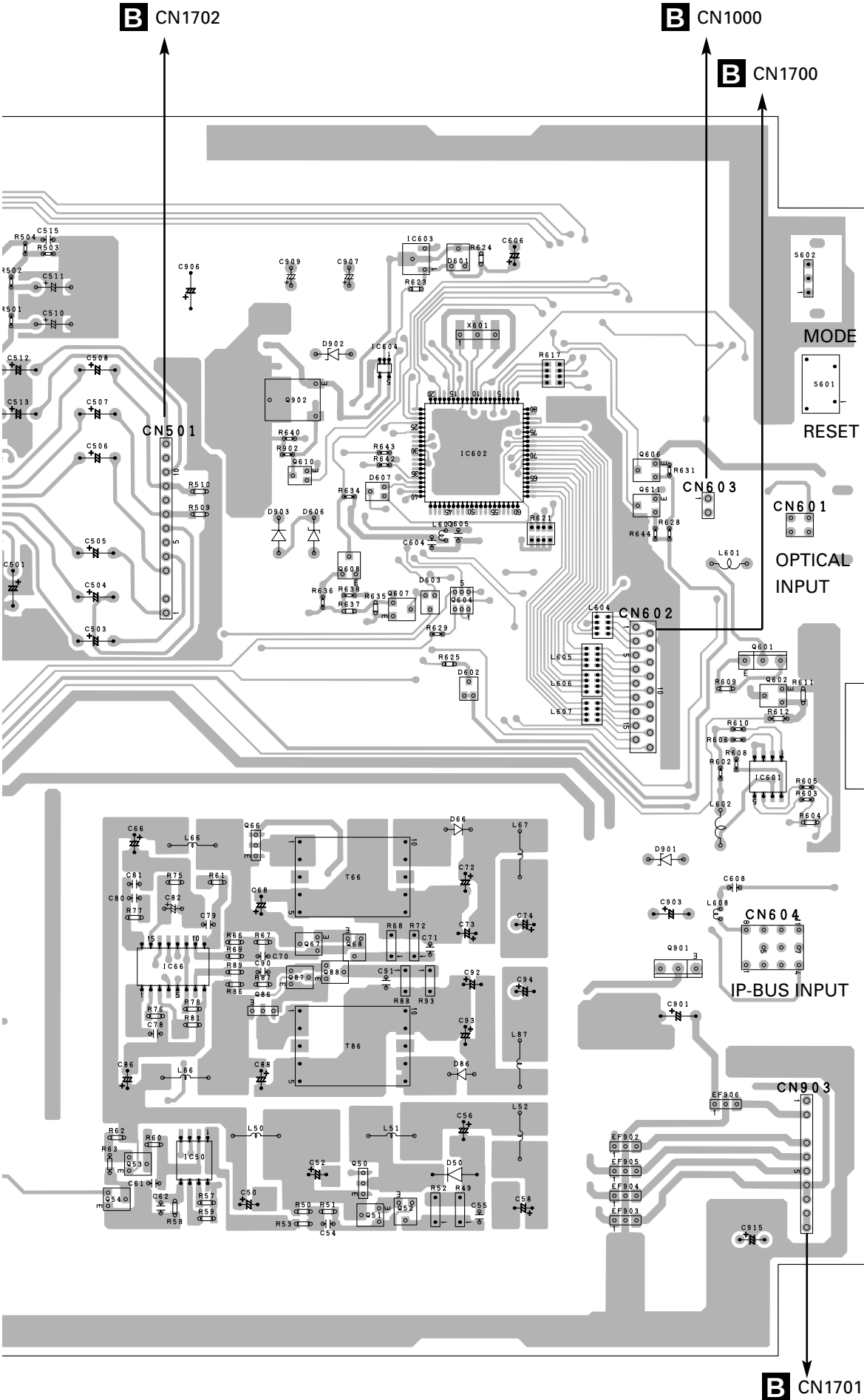
A AUDIO CONTROL UNIT

NOTE FOR PCB DIAGRAMS

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

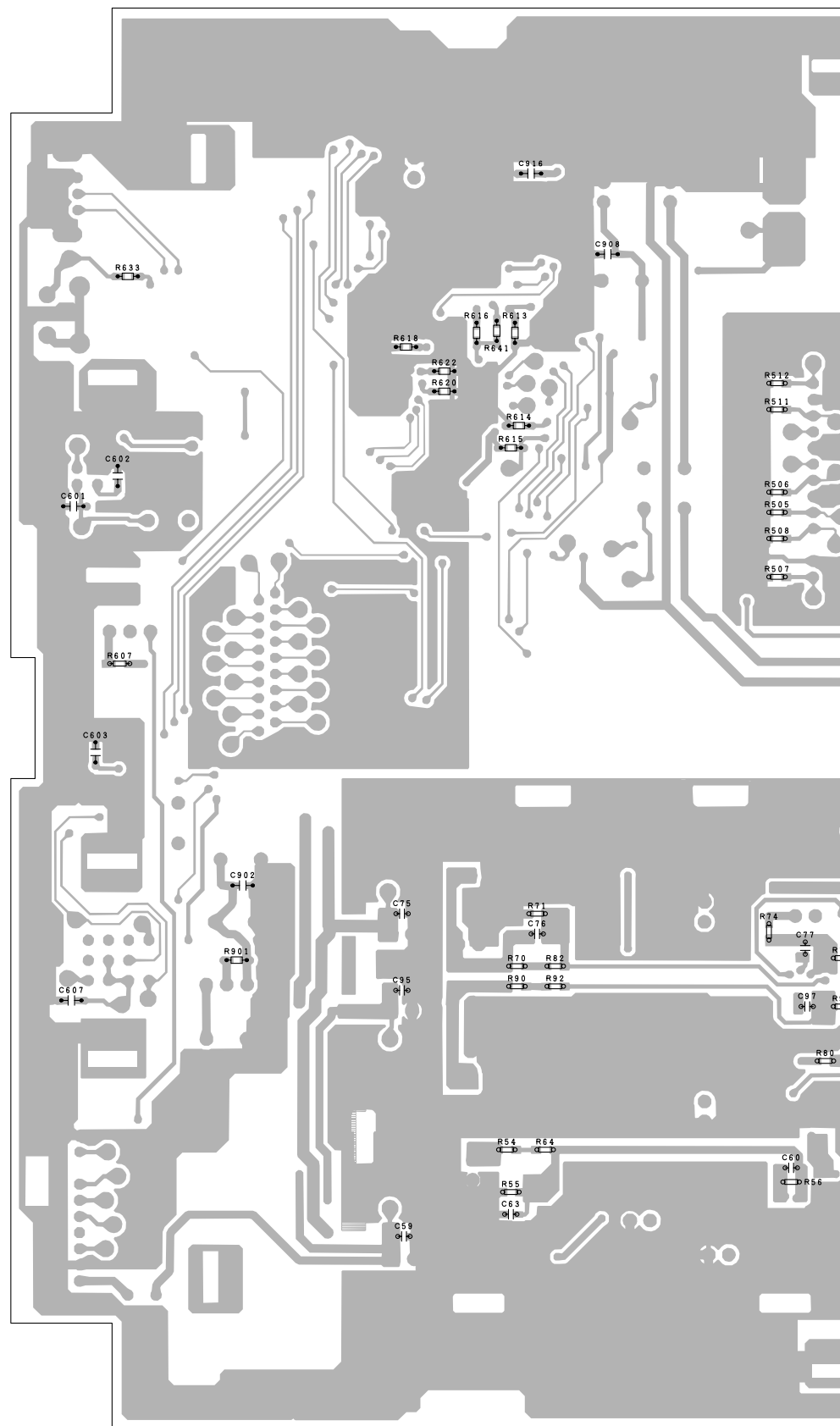


SIDE A

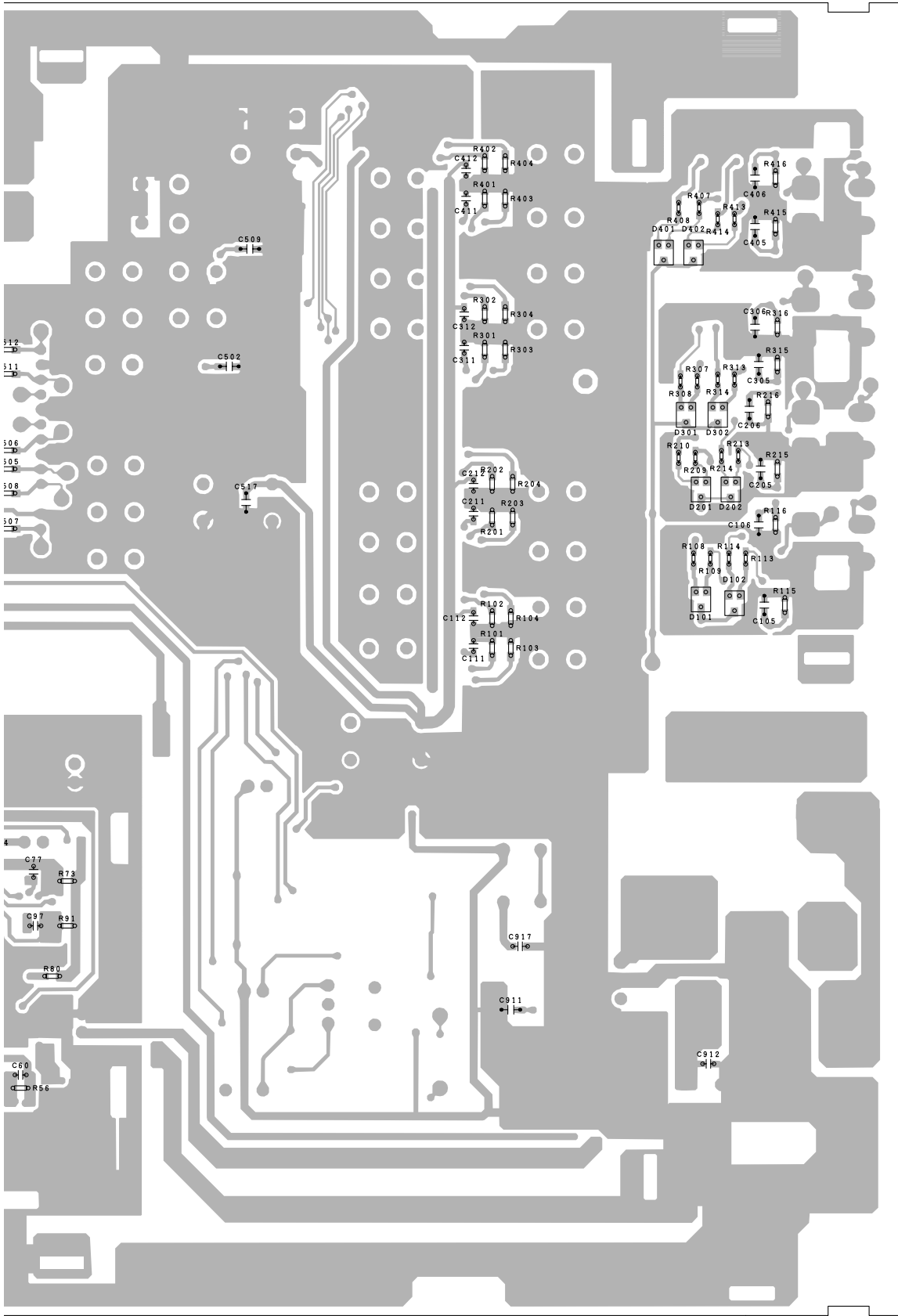


A

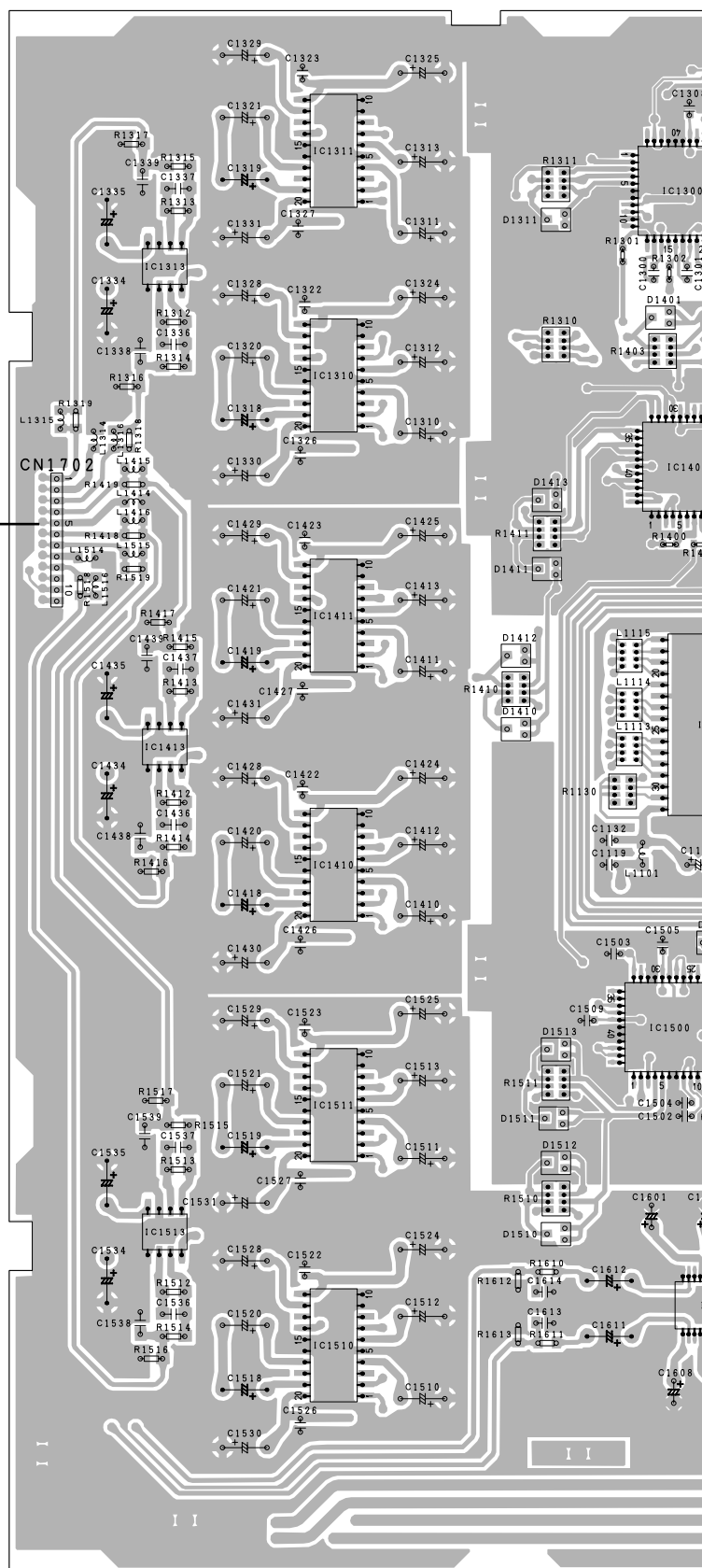
A AUDIO CONTROL UNIT



SIDE B

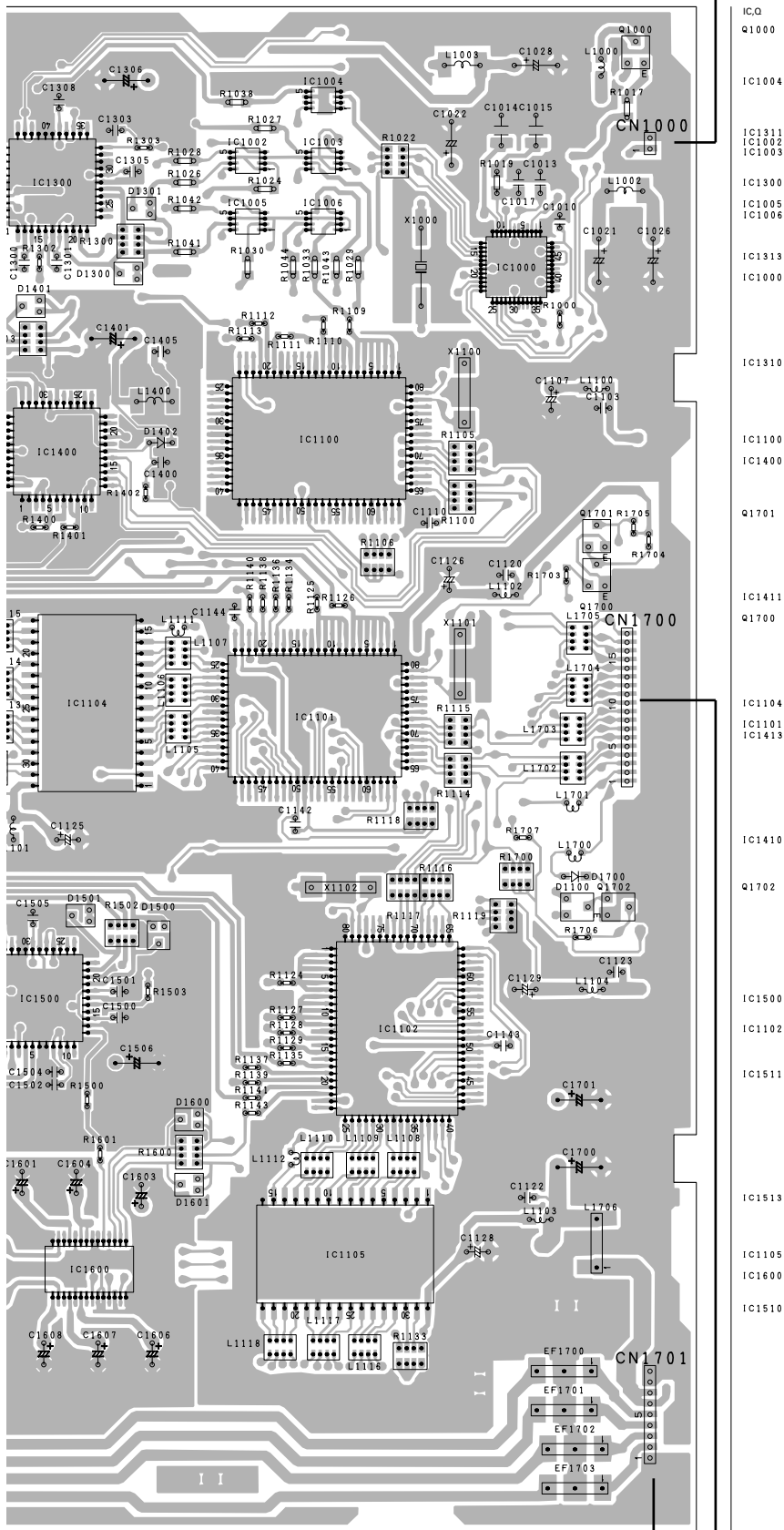


DSP UNIT

CN501 

A CN603

SIDE A



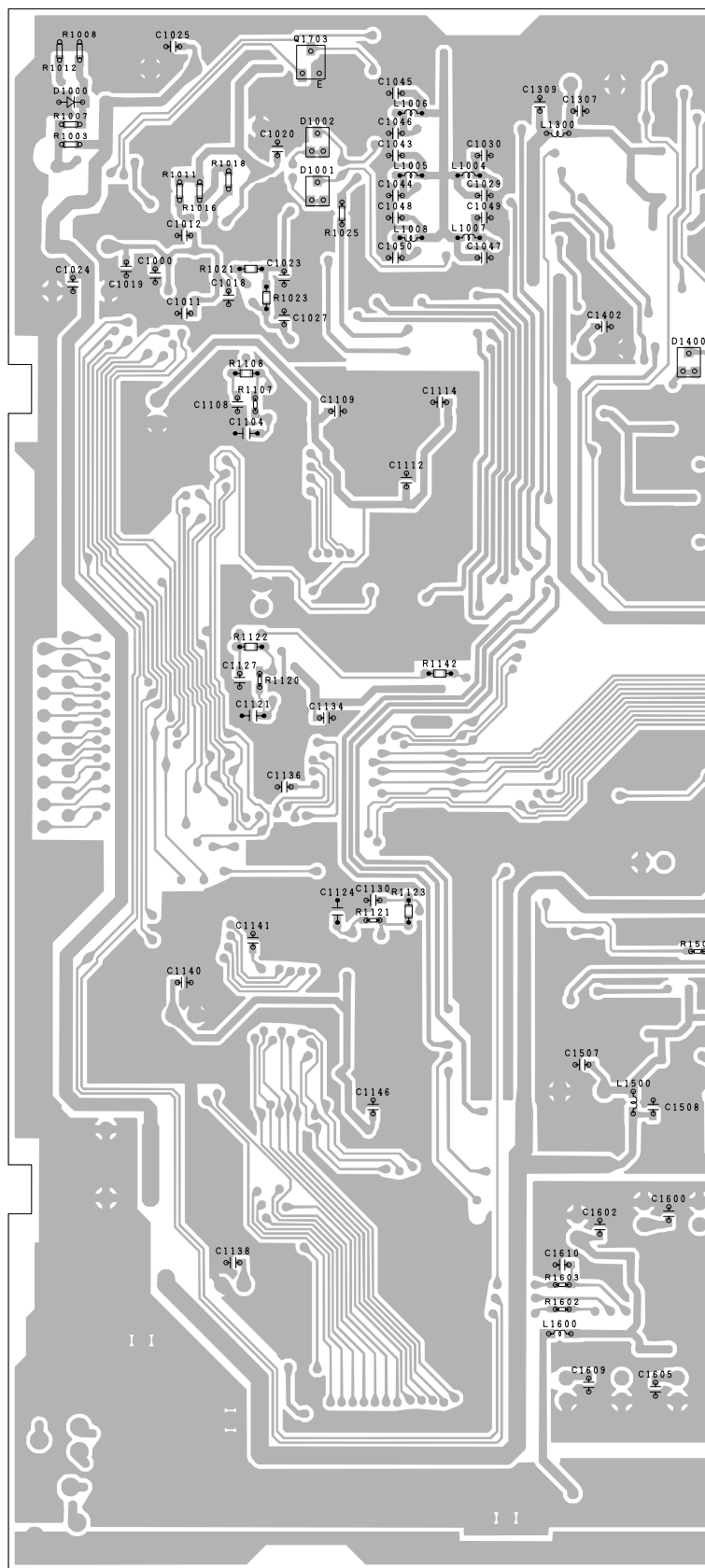
A CN602

A CN903

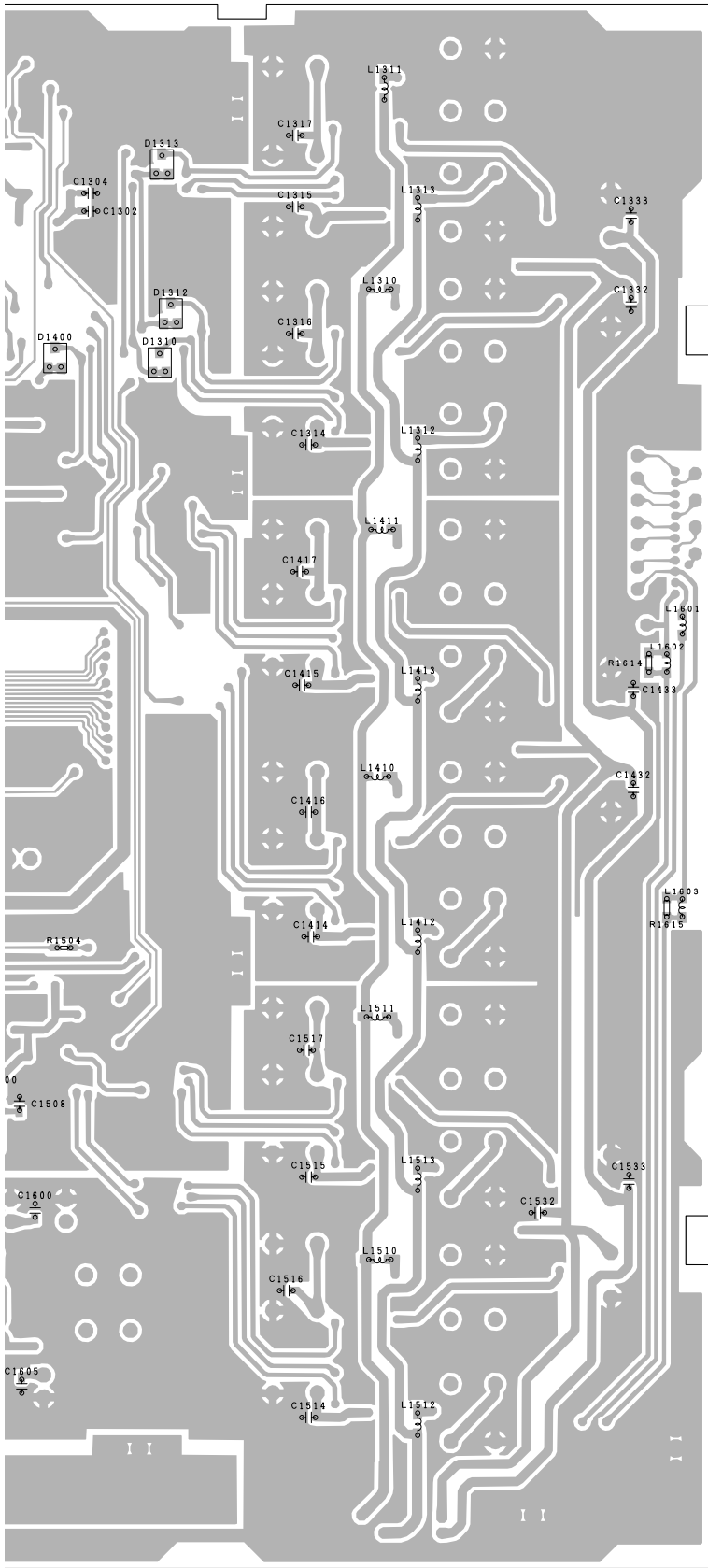
B

B

IC,Q
Q1703



SIDE B



5. ELECTRICAL PARTS LIST

NOTES:

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

Chip Resistor

RS1/○S○○○○J,RS1/○○S○○○J

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

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

====Circuit Symbol and No.==Part Name	Part No.	====Circuit Symbol and No.==Part Name	Part No.
A Unit Number : CWM7506(DEQ-P9/UC)		Q 903 Transistor	2SC2412K
Unit Number : CWM7507(DEQ-P9/EW)		Q 904 Transistor	DTC114EK
Unit Name : Audio Control Unit		Q 905 Transistor	2SB1238
		D 50 Diode	D2FS6
		D 66 Diode	SC802-06
		D 86 Diode	SC802-06
		D 101 Diode	DAP202U
		D 102 Diode	DAP202U
		D 201 Diode	DAP202U
		D 202 Diode	DAP202U
		D 301 Diode	DAP202U
		D 302 Diode	DAP202U
		D 401 Diode	DAP202U
		D 402 Diode	DAP202U
		D 601 Diode	MA152K
		D 602 Diode	DAN202U
		D 603 Diode	DAN202U
		D 604 Diode	DAN202U
		D 605 Diode	DAN202U
		D 606 Diode	HZS7L(C2)
		D 607 Diode	DAN202U
		D 901 Diode	HZS6L(B1)
		D 902 Diode	HZS6L(B1)
		D 903 Diode	ERA15-02VH
		D 904 Diode	DAN202U
		D 905 Diode	HZS9L(A2)
		D 906 Diode	MA111
		D 907 Diode	ERA15-02VH
		D 908 Diode	ERA15-02VH
		D 909 Diode	ERA15-02VH
		L 50 Choke Coil 22μH	CTH1109
		L 51 Choke Coil 22μH	CTH1109
		L 52 Choke Coil 22μH	CTH1109
		L 66 Coil	CTH1110
		L 67 Coil	CTH1110
		L 86 Coil	CTH1110
		L 87 Coil	CTH1110
		L 601 Inductor	LAU1R5K
		L 602 Inductor	LAU3R3K
		L 603 Inductor	CTF1410
		L 604 Inductor-Array	CTF1421
		L 605 Inductor-Array	CTF1421
		L 606 Inductor-Array	CTF1421
		L 607 Inductor-Array	CTF1421
		L 608 Inductor	CTF1410
		L 901 Coil (DEQ-P9/EW)	CTH1170
		T 66 Transformer	CTT1098
		T 86 Transformer	CTT1098
		X 601 Radiator 10.00MHz	CSS1428
		S 601 Switch(RESET)	CSG1059
		S 602 Slide Switch(MODE)	CSH1051
		EF 901 EMI Filter	CCG1003
		EF 902 EMI Filter	CCG1083
		EF 903 EMI Filter	CCG1083
		EF 904 EMI Filter	CCG1083

====Circuit Symbol and No.====Part Name			Part No.	====Circuit Symbol and No.====Part Name			Part No.
EF	905	EMI Filter	CCG1083	R	210		RS1/16S103J
EF	906	EMI Filter	CCG1083	R	211		RN1/10SE4700D
RESISTORS				R	212		RN1/10SE4700D
R	49		RS1/4S751J	R	213		RS1/16S103J
R	50		RS1/10S122J	R	214		RS1/16S103J
R	51		RS1/10S123J	R	215		RN1/10SE2202D
R	52		RS1/4S751J	R	216		RN1/10SE2202D
R	53		RS1/10S101J	R	301		RN1/10SE1002D
				R	302		RN1/10SE1002D
R	54		RN1/10SE1002D	R	303		RN1/10SE1201D
R	55		RN1/10SE3001D	R	304		RN1/10SE1201D
R	56		RS1/10S104J	R	305		RN1/10SE2201D
R	57		RN1/10SE2202D	R	306		RN1/10SE2201D
R	58		RS1/10S474J	R	307		RS1/16S103J
				R	308		RS1/16S103J
R	59		RS1/10S333J	R	309		RN1/10SE4700D
R	60		RS1/10S221J	R	310		RN1/10SE4700D
R	61		RS1/10S221J	R	311		RN1/10SE4700D
R	62		RS1/10S473J	R	312		RN1/10SE4700D
R	63		RS1/10S223J	R	313		RS1/16S103J
				R	314		RS1/16S103J
R	64		RN1/10SE2201D	R	315		RN1/10SE2202D
R	66		RS1/10S122J	R	316		RN1/10SE2202D
R	67		RS1/10S103J	R	401		RN1/10SE1002D
R	68		RS1/4S102J	R	402		RN1/10SE1002D
R	69		RS1/10S101J				
				R	403		RN1/10SE1002D
R	70		RN1/10SE3002D	R	404		RN1/10SE1002D
R	71		RN1/10SE6201D	R	405		RN1/10SE1202D
R	72		RS1/4S102J	R	406		RN1/10SE1202D
R	73		RN1/10SE1002D	R	407		RS1/16S103J
R	74		RN1/10SE1002D				
				R	408		RS1/16S103J
R	75		RS1/10S474J	R	409		RN1/10SE4700D
R	76		RN1/10SE9101D	R	410		RN1/10SE4700D
R	77		RN1/10SE1502D	R	411		RN1/10SE4700D
R	78		RN1/10SE2702D	R	412		RN1/10SE4700D
R	80		RN1/10SE1002D				
				R	413		RS1/16S103J
R	81		RN1/10SE1002D	R	414		RS1/16S103J
R	82		RN1/10SE4301D	R	415		RN1/10SE2202D
R	86		RS1/10S122J	R	416		RN1/10SE2202D
R	87		RS1/10S103J	R	501		RS1/16S682J
R	88		RS1/4S102J				
				R	502		RS1/16S103J
R	89		RS1/10S101J	R	503		RS1/16S103J
R	90		RN1/10SE3002D	R	504		RS1/16S153J
R	91		RN1/10SE4301D	R	602		RS1/16S472J
R	92		RN1/10SE2401D	R	603		RS1/16S101J
R	93		RS1/4S102J				
				R	605		RS1/16S101J
R	101		RN1/10SE1002D	R	606		RS1/16S102J
R	102		RN1/10SE1002D	R	607		RS1/10S103J
R	103		RN1/10SE1201D	R	608		RS1/16S103J
R	104		RN1/10SE1201D	R	609		RS1/10S472J
R	105		RN1/10SE2201D				
				R	610		RS1/16S102J
R	106		RN1/10SE2201D	R	611		RS1/10S472J
R	107		RN1/10SE4700D	R	612		RS1/10S103J
R	108		RS1/16S103J	R	613		RS1/16S473J
R	109		RS1/16S103J	R	614		RS1/16S473J
R	110		RN1/10SE4700D				
				R	615		RS1/16S473J
R	111		RN1/10SE4700D	R	616		RS1/16S102J
R	112		RN1/10SE4700D	R	617		RAB4C471J
R	113		RS1/16S103J	R	618		RS1/16S473J
R	114		RS1/16S103J	R	620		RS1/16S473J
R	115		RN1/10SE2202D				
				R	621		RAB4C473J
R	116		RN1/10SE2202D	R	622		RS1/16S473J
R	201		RN1/10SE1002D	R	623		RS1/16S102J
R	202		RN1/10SE1002D	R	624		RS1/16S822J
R	203		RN1/10SE1201D	R	625		RS1/16S473J
R	204		RN1/10SE1201D				
R	205		RN1/10SE2201D				
R	206		RN1/10SE2201D				
R	207		RN1/10SE4700D				
R	208		RN1/10SE4700D				
R	209		RS1/16S103J				

====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.
R 626	RS1/16S103J	C 102	CFHSQ221J50
R 627	RS1/16S103J	C 103	CCH1396
R 628	RS1/16S103J	C 104	CCH1396
R 629	RS1/16S222J	C 105	CCSRCH471J50
R 630	RS1/16S473J	C 106	CCSRCH471J50
R 631	RS1/16S103J	C 107	CCH1396
R 632	RS1/16S473J	C 109	CCH1396
R 633	RS1/16S101J	C 111	CKSRYB104K25
R 634	RS1/16S473J	C 112	CKSRYB104K25
R 635	RS1/16S473J	C 201	CFHSQ221J50
R 636	RS1/16S104J	C 202	CFHSQ221J50
R 637	RS1/16S473J	C 203	CCH1396
R 638	RS1/16S473J	C 204	CCH1396
R 639	RS1/16S222J	C 205	CCSRCH471J50
R 640	RS1/16S472J	C 206	CCSRCH471J50
R 641	RS1/16S473J	C 207	CCH1396
R 642	RS1/16S473J	C 208	CCH1396
R 644	RS1/16S103J	C 211	CKSRYB104K25
R 901	RS1/16S102J	C 212	CKSRYB104K25
R 902	RS1/16S223J	C 301	CFHSQ221J50
R 903	RS1/16S103J	C 302	CFHSQ221J50
R 904	RS1/16S473J	C 303	CCH1396
R 905	RS1/16S473J	C 304	CCH1396
R 906	RD1/4PU222J	C 305	CCSRCH471J50
R 907	RS1/16S473J	C 306	CCSRCH471J50
R 908	RS1/16S102J	C 307	CCH1396
R 909	RAB4C102J	C 308	CCH1396
R 910	RAB4C102J	C 311	CKSRYB104K25
		C 312	CKSRYB104K25
		C 401	CFHSQ221J50
CAPACITORS			
C 50	CEHAZL680M16	C 402	CFHSQ221J50
C 52	CEHAZL680M16	C 403	CCH1396
C 54	CCSRCH331J50	C 404	CCH1396
C 55	CKSRYB102K50	C 405	CCSRCH471J50
C 56	CEHAZL680M16	C 406	CCSRCH471J50
C 58	CEHAZL680M16	C 407	CCH1396
C 59	CKSRYB102K50	C 408	CCH1396
C 60	CKSRYB473K25	C 411	CKSRYB104K25
C 61	CKSRYB102K50	C 412	CKSRYB104K25
C 62	CKSRYB104K25	C 501	CCH1353
C 66	CEHAZL680M16	C 502	CKSRYB104K25
C 68	CEHAZL680M16	C 503	CCH1358
C 70	CKSRYB102K50	C 504	CCH1358
C 71	CKSRYB102K50	C 505	CCH1358
C 72	CEHAZL680M16	C 506	CCH1358
C 73	CEHAZL680M16	C 507	CCH1358
C 74	CEHAZL680M16	C 508	CCH1358
C 75	CKSRYB102K50	C 509	CKSRYB104K25
C 76	CKSRYB222K50	C 510	CEJQ100M16
C 77	CKSRYB223K25	C 511	CEJQ100M16
C 78	CCSRCH221J50	C 512	CCH1358
C 79	CKSRYB104K25	C 513	CCH1358
C 80	CKSRYB102K50	C 514	CCH1394
C 81	CKSRYB102K50	C 515	CKSRYB104K25
C 82	CEHAS1R0M50	C 516	CCH1394
C 86	CEHAZL680M16	C 517	CKSRYB104K25
C 88	CEHAZL680M16	C 518	CCH1394
C 90	CKSRYB102K50	C 601	CKSRYB104K25
C 91	CKSRYB102K50	C 602	CKSRYB104K25
C 92	CEHAZL680M16	C 603	CKSRYB473K25
C 93	CEHAZL680M16	C 604	CCSRCH101J50
C 94	CEHAZL680M16	C 605	CCSRCH101J50
C 95	CKSRYB102K50	C 606	CEJQ2R2M50
C 97	CKSRYB223K25	C 607	CKSRYB104K25
C 101	CFHSQ221J50	C 608	CCSRCH101J50

====Circuit Symbol and No.===Part Name			Part No.	====Circuit Symbol and No.===Part Name			Part No.
C	609		CEJQ470M16	D	1401	Diode Network	DA204U
C	901	47μF/25V	CCH1394	D	1402	Diode	MA111
C	902		CKSRYB473K25	D	1410	Diode Network	DA204U
C	903		CEJQ470M10	D	1411	Diode Network	DA204U
C	904	100μF/16V	CCH1353	D	1412	Diode Network	DA204U
C	905	100μF/16V	CCH1353	D	1413	Diode Network	DA204U
C	906	0.47F/5.5V	CCL1016	D	1500	Diode Network	DA204U
C	907		CEJQ101M6R3	D	1501	Diode Network	DA204U
C	908		CKSRYB473K25	D	1510	Diode Network	DA204U
C	909		CEJQ470M16	D	1511	Diode Network	DA204U
C	910		CEJQ470M16	D	1512	Diode Network	DA204U
C	911		CKSRYB473K25	D	1513	Diode Network	DA204U
C	912		CKSRYB104K25	D	1600	Diode Network	DA204U
C	913	4700μF/16V	CCH1266	D	1601	Diode Network	DA204U
C	914		CKSRYB103K50	D	1700	Diode	MA111
C	915	100μF/16V	CCH1395	L	1000	Inductor	CTF1295
C	916		CKSRYB223K50	L	1002	Inductor	LCTA1R0J4532
C	917		CCSQCH101J50	L	1003	Inductor	LCTA1R0J4532
B	Unit Number : CWX2519(DEQ-P9/UC)			L	1004	Inductor	CTF1306
	Unit Number : CWX2520(DEQ-P9/EW)			L	1005	Inductor	CTF1306
	Unit Name : DSP Unit			L	1006	Inductor	CTF1306
MISCELLANEOUS				L	1007	Inductor	CTF1306
IC	1000	IC	LC89055WHS-RA8	L	1008	Inductor	CTF1306
IC	1002	IC	TC7W34FU	L	1100	Inductor	CTF1295
IC	1003	IC	TC7W34FU	L	1101	Inductor	CTF1295
IC	1004	IC	TC7W34FU	L	1102	Inductor	CTF1295
IC	1005	IC	TC7W34FU	L	1103	Inductor	CTF1295
IC	1006	IC	TC7W34FU	L	1104	Inductor	CTF1295
IC	1100	IC	TC9331F	L	1105	Inductor-Array	CTF1421
IC	1101	IC	TC9331F	L	1106	Inductor-Array	CTF1421
IC	1102	IC	TC9331F	L	1107	Inductor-Array	CTF1421
IC	1104	IC	IS62C1024L-70QI	L	1108	Inductor-Array	CTF1421
IC	1105	IC	IS62C1024L-70QI	L	1109	Inductor-Array	CTF1421
IC	1300	IC	SM5847AF	L	1110	Inductor-Array	CTF1421
IC	1310	IC	PCM1704U-J	L	1111	Inductor	CTF1306
IC	1311	IC	PCM1704U-J	L	1112	Inductor	CTF1306
IC	1313	IC	OPA2134UA	L	1113	Inductor-Array	CTF1421
IC	1400	IC	PD7010A1	L	1114	Inductor-Array	CTF1421
IC	1410	IC	PCM1704U-J	L	1115	Inductor-Array	CTF1421
IC	1411	IC	PCM1704U-J	L	1116	Inductor-Array	CTF1421
IC	1413	IC	OPA2134UA	L	1117	Inductor-Array	CTF1421
IC	1500	IC	SM5847AF	L	1118	Inductor-Array	CTF1421
IC	1510	IC	PCM1704U-J	L	1300	Inductor	CTF1295
IC	1511	IC	PCM1704U-J	L	1310	Inductor	CTF1295
IC	1513	IC	OPA2134UA	L	1311	Inductor	CTF1295
IC	1600	IC	PCM1716E-3	L	1312	Inductor	CTF1295
Q	1000	Transistor	2SC2712	L	1313	Inductor	CTF1295
Q	1700	Chip Transistor	2SC2712	L	1314	Inductor	CTF1295
Q	1701	Chip Transistor	2SC2712	L	1315	Inductor (DEQ-P9/EW)	CTF1295
Q	1702	Transistor	DTC144TK	L	1316	Inductor (DEQ-P9/EW)	CTF1295
Q	1703	Transistor	DTC144TK	L	1400	Inductor	LCTA1R0J4532
D	1000	Diode	MA111	L	1410	Inductor	CTF1295
D	1001	Diode Network	DA204U	L	1411	Inductor	CTF1295
D	1002	Diode Network	DA204U	L	1412	Inductor	CTF1295
D	1100	Diode	MA152WK	L	1413	Inductor	CTF1295
D	1300	Diode Network	DA204U	L	1414	Inductor	CTF1295
D	1301	Diode Network	DA204U	L	1415	Inductor (DEQ-P9/EW)	CTF1295
D	1310	Diode Network	DA204U	L	1416	Inductor (DEQ-P9/EW)	CTF1295
D	1311	Diode Network	DA204U	L	1500	Inductor	CTF1295
D	1312	Diode Network	DA204U	L	1510	Inductor	CTF1295
D	1313	Diode Network	DA204U	L	1511	Inductor	CTF1295
D	1400	Diode Network	DA204U	L	1512	Inductor	CTF1295
				L	1513	Inductor	CTF1295
				L	1514	Inductor	CTF1295
				L	1515	Inductor (DEQ-P9/EW)	CTF1295

DEQ-P9

====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.
L 1516 Inductor (DEQ-P9/EW)	CTF1295	R 1123	RS1/16S331J
L 1600 Inductor	CTF1295	R 1124	RS1/16S0R0J
L 1601 Inductor	CTF1295	R 1125	RS1/16S0R0J
L 1602 Inductor (DEQ-P9/EW)	CTF1295	R 1126	RS1/16S0R0J
L 1603 Inductor (DEQ-P9/EW)	CTF1295	R 1127	RS1/16S0R0J
L 1700 Inductor	CTF1306	R 1128	RS1/16S0R0J
L 1701 Inductor	CTF1306	R 1129	RS1/16S0R0J
L 1702 Inductor-Array	CTF1421	R 1130	RAB4C473J
L 1703 Inductor-Array	CTF1421	R 1133	RAB4C473J
L 1704 Inductor-Array	CTF1421	R 1134	RS1/16S0R0J
L 1705 Inductor-Array	CTF1421	R 1135	RS1/16S0R0J
L 1706 Inductor	CTF1250	R 1136	RS1/16S0R0J
X 1000 Crystal Resonator 12.288MHz	CSS1416	R 1137	RS1/16S0R0J
X 1100 Crystal Resonator 32.0MHz	CSS1360	R 1138	RS1/16S0R0J
X 1101 Crystal Resonator 32.0MHz	CSS1360	R 1139	RS1/16S0R0J
X 1102 Crystal Resonator 32.0MHz	CSS1360	R 1140	RS1/16S0R0J
EF 1700 EMI Filter	CCG1030	R 1141	RS1/16S0R0J
EF 1701 EMI Filter	CCG1030	R 1142	RS1/16S0R0J
EF 1702 EMI Filter	CCG1030	R 1143	RS1/16S0R0J
EF 1703 EMI Filter	CCG1030	R 1300	RAB4C101J
RESISTORS		R 1301	RS1/16S820J
R 1000	RS1/16S103J	R 1302	RS1/16S0R0J
R 1003	RN1/10SE1001D	R 1303	RS1/16S102J
R 1007	RN1/10SE1001D	R 1310	RAB4C470J
R 1008	RN1/10SE4702D	R 1311	RAB4C470J
R 1011	RN1/10SE1002D	R 1312	RN1/10SE1801D
R 1012	RN1/10SE1001D	R 1313	RN1/10SE1801D
R 1016	RN1/10SE5101D	R 1314	RN1/10SE2200D
R 1017	RN1/10SE4700D	R 1315	RN1/10SE2200D
R 1018	RN1/10SE7501D	R 1316	RN1/10SE4701D
R 1019	RN1/10SC75R0D	R 1317	RN1/10SE4701D
R 1021	RS1/16S471J	R 1318 (DEQ-P9/UC)	RS1/10S0R0J
R 1022	RAB4C101J	R 1319 (DEQ-P9/UC)	RS1/10S0R0J
R 1023	RS1/16S105J	R 1400	RS1/16S0R0J
R 1024	RN1/10SE1000D	R 1401	RS1/16S0R0J
R 1025	RN1/10SE1000D	R 1402	RS1/16S102J
R 1026	RN1/10SE2200D	R 1403	RAB4C101J
R 1027	RN1/10SE1000D	R 1410	RAB4C470J
R 1028	RN1/10SE2200D	R 1411	RAB4C470J
R 1029	RN1/10SE1000D	R 1412	RN1/10SE1801D
R 1030	RN1/10SE1000D	R 1413	RN1/10SE1801D
R 1033	RN1/10SE1200D	R 1414	RN1/10SE2200D
R 1038	RN1/10SE1000D	R 1415	RN1/10SE2200D
R 1041	RN1/10SE2200D	R 1416	RN1/10SE4701D
R 1042	RN1/10SE2200D	R 1417	RN1/10SE4701D
R 1043	RN1/10SE1000D	R 1418 (DEQ-P9/UC)	RS1/10S0R0J
R 1044	RN1/10SE1200D	R 1419 (DEQ-P9/UC)	RS1/10S0R0J
R 1100	RAB4C471J	R 1500	RS1/16S101J
R 1105	RAB4C471J	R 1502	RAB4C101J
R 1106	RAB4C473J	R 1503	RS1/16S0R0J
R 1107	RS1/16S105J	R 1504	RS1/16S102J
R 1108	RS1/16S331J	R 1510	RAB4C470J
R 1109	RS1/16S0R0J	R 1511	RAB4C470J
R 1110	RS1/16S0R0J	R 1512	RN1/10SE1801D
R 1111	RS1/16S0R0J	R 1513	RN1/10SE1801D
R 1112	RS1/16S0R0J	R 1514	RN1/10SE2200D
R 1113	RS1/16S0R0J	R 1515	RN1/10SE2200D
R 1114	RAB4C471J	R 1516	RN1/10SE4701D
R 1115	RAB4C471J	R 1517	RN1/10SE4701D
R 1116	RAB4C471J	R 1518 (DEQ-P9/UC)	RS1/10S0R0J
R 1117	RAB4C471J	R 1519 (DEQ-P9/UC)	RS1/10S0R0J
R 1118	RAB4C473J	R 1600	RAB4C101J
R 1119	RAB4C473J	R 1601	RS1/16S0R0J
R 1120	RS1/16S105J	R 1602	RS1/16S102J
R 1121	RS1/16S105J	R 1603	RS1/16S102J
R 1122	RS1/16S331J		

====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.
R 1610	RN1/10SE2200D	C 1134	CKSRYB473K25
R 1611	RN1/10SE2200D	C 1136	CKSRYB102K50
R 1612	RN1/10SE4701D	C 1138	CKSRYB473K25
R 1613	RN1/10SE4701D	C 1140	CKSRYB473K25
R 1614 (DEQ-P9/UC)	RS1/10S0R0J	C 1141	CKSRYB102K50
R 1615 (DEQ-P9/UC)	RS1/10S0R0J	C 1142	CKSRYB473K25
R 1700	RAB4C473J	C 1143	CKSRYB473K25
R 1703	RS1/16S103J	C 1144	CKSRYB473K25
R 1704	RS1/16S103J	C 1146	CKSRYB473K25
R 1705	RS1/16S102J	C 1300	CKSRYB104K25
R 1706	RS1/16S473J	C 1301	CKSRYB104K25
R 1707	RS1/16S472J	C 1302	CKSRYB104K25
		C 1303	CCSRCH331J50
		C 1304	CKSRYB104K25
		C 1305	CKSRYB104K25
CAPACITORS			
C 1000	CKSRYB104K25	C 1306	CEZA330M16
C 1010	CKSRYB103K50	C 1307	CKSRYB473K25
C 1011	CKSRYB104K25	C 1308	CKSRYB104K25
C 1012	CKSRYB104K25	C 1309	CKSRYB473K25
C 1013	CFHSQ103J16	C 1310	CASA220M10
C 1014	CFHSP104J16		
C 1015	CFHSP104J16	C 1311	CASA220M10
C 1017	CFHSQ103J16	C 1312	CASA220M10
C 1018	CKSRYB104K25	C 1313	CASA220M10
C 1019	CKSRYB473K25	C 1314	CKSRYB104K25
		C 1315	CKSRYB104K25
C 1020	CKSRYB473K25		
C 1021	CEZA100M16	C 1316	CKSRYB104K25
C 1022	CEZA100M16	C 1317	CKSRYB104K25
C 1023	CCSRCH270J50	C 1318	CEZA220M25
C 1024	CKSRYB473K25	C 1319	CEZA220M25
		C 1320	CEZA101M10
C 1025	CKSRYB473K25		
C 1026	CEZA470M10	C 1321	CEZA101M10
C 1027	CCSRCH330J50	C 1322	CKSRYB104K25
C 1028	CEZA470M10	C 1323	CKSRYB104K25
C 1029	CKSRYB473K25	C 1324	CEZA470M10
		C 1325	CEZA470M10
C 1030	CKSRYB473K25		
C 1043	CKSRYB473K25	C 1326	CKSRYB104K25
C 1044	CKSRYB473K25	C 1327	CKSRYB104K25
C 1045	CKSRYB473K25	C 1328	CEZA470M10
C 1046	CKSRYB473K25	C 1329	CEZA470M10
		C 1330	CEZA470M10
C 1047	CKSRYB473K25		
C 1048	CKSRYB473K25	C 1331	CEZA470M10
C 1049	CKSRYB473K25	C 1332	CKSRYB104K25
C 1050	CKSRYB473K25	C 1333	CKSRYB104K25
C 1103	CKSRYB473K25	C 1334	CCH1352
		C 1335	CCH1352
C 1104	CCSRCH100D50		
C 1107	CEJQ470M6R3	C 1336	CFHSQ331J50
C 1108	CCSRCH100D50	C 1337	CFHSQ331J50
C 1109	CKSRYB473K25	C 1338	CFHSQ332J16
C 1110	CKSRYB102K50	C 1339	CFHSQ332J16
		C 1400	CCSRCH331J50
C 1112	CKSRYB473K25		
C 1114	CKSRYB473K25	C 1401	CEZA330M16
C 1119	CKSRYB473K25	C 1402	CKSRYB473K25
C 1120	CKSRYB473K25	C 1405	CKSRYB473K25
C 1121	CCSRCH100D50	C 1410	CASA220M10
		C 1411	CASA220M10
C 1122	CKSRYB473K25		
C 1123	CKSRYB473K25	C 1412	CASA220M10
C 1124	CCSRCH100D50	C 1413	CASA220M10
C 1125	CEJQ100M16	C 1414	CKSRYB104K25
C 1126	CEJQ470M6R3	C 1415	CKSRYB104K25
		C 1416	CKSRYB104K25
C 1127	CCSRCH100D50		
C 1128	CEJQ100M16	C 1417	CKSRYB104K25
C 1129	CEJQ470M6R3	C 1418	CEZA220M25
C 1130	CCSRCH100D50	C 1419	CEZA220M25
C 1132	CKSRYB473K25	C 1420	CEZA101M10
		C 1421	CEZA101M10

====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.
C 1422	CKSRYP104K25	C 1522	CKSRYP104K25
C 1423	CKSRYP104K25	C 1523	CKSRYP104K25
C 1424	CEZA470M10	C 1524	CEZA470M10
C 1425	CEZA470M10	C 1525	CEZA470M10
C 1426	CKSRYP104K25	C 1526	CKSRYP104K25
C 1427	CKSRYP104K25	C 1527	CKSRYP104K25
C 1428	CEZA470M10	C 1528	CEZA470M10
C 1429	CEZA470M10	C 1529	CEZA470M10
C 1430	CEZA470M10	C 1530	CEZA470M10
C 1431	CEZA470M10	C 1531	CEZA470M10
C 1432	CKSRYP104K25	C 1532	CKSRYP104K25
C 1433	CKSRYP104K25	C 1533	CKSRYP104K25
C 1434 10μF/16V	CCH1352	C 1534 10μF/16V	CCH1352
C 1435 10μF/16V	CCH1352	C 1535 10μF/16V	CCH1352
C 1436	CFHSQ331J50	C 1536	CFHSQ331J50
C 1437	CFHSQ331J50	C 1537	CFHSQ331J50
C 1438	CFHSQ332J16	C 1538	CFHSQ332J16
C 1439	CFHSQ332J16	C 1539	CFHSQ332J16
C 1500	CKSRYP104K25	C 1600	CKSRYP104K25
C 1501	CKSRYP104K25	C 1601	CEZA100M16
C 1502	CKSRYP104K25	C 1602	CKSRYP104K25
C 1503	CCSRCH331J50	C 1603	CEZA100M16
C 1504	CKSRYP104K25	C 1604	CEZA100M16
C 1505	CKSRYP104K25	C 1605	CKSRYP104K25
C 1506	CEZA330M16	C 1606	CEZA100M16
C 1507	CKSRYP473K25	C 1607	CEZA100M16
C 1508	CKSRYP473K25	C 1608	CEZA100M16
C 1509	CKSRYP104K25	C 1609	CKSRYP104K25
C 1510	CASA220M10	C 1610	CCSRCH331J50
C 1511	CASA220M10	C 1611 10μF/16V	CCH1396
C 1512	CASA220M10	C 1612 10μF/16V	CCH1396
C 1513	CASA220M10	C 1613	CFHSQ103J16
C 1514	CKSRYP104K25	C 1614	CFHSQ103J16
C 1515	CKSRYP104K25	C 1700	CCH1394
C 1516	CKSRYP104K25	C 1701 47μF/25V	CCH1394
C 1517	CKSRYP104K25		
C 1518	CEZA220M25		
C 1519	CEZA220M25		
C 1520	CEZA101M10		
C 1521	CEZA101M10		

6. ADJUSTMENT

There is no information to be shown in this chapter.

7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 DISASSEMBLY

● Removing the Case (Fig.1)

- ➡ Remove the eleven screws and then remove the Case.



Fig.1

● Removing the DSP Section (Fig.2)

- ➡ Remove the four screws.

Disconnect the connector and then remove the DSP Section.

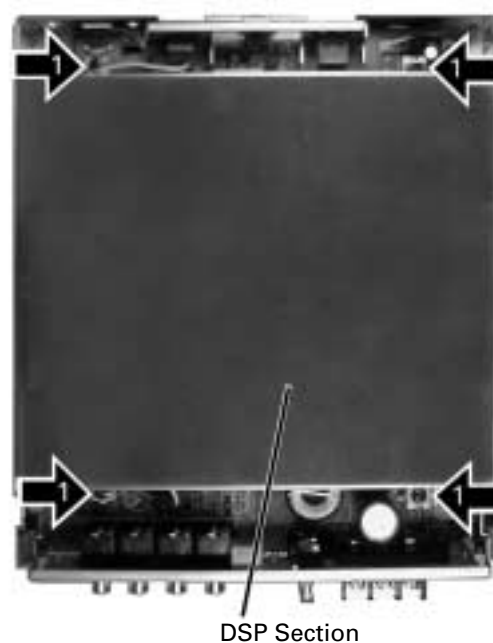
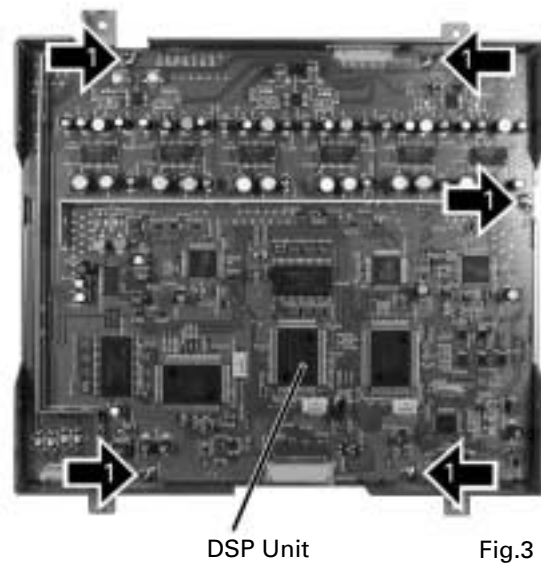


Fig.2

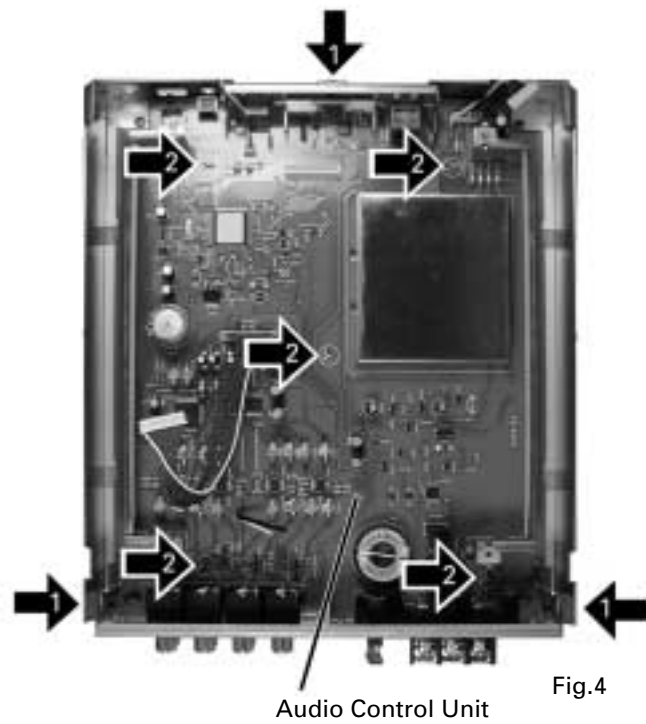
● Removing the DSP Unit (Fig.3)

- ➡ 1 After solder is removed, straight the tabs at five locations indicated and then remove the DSP Unit.

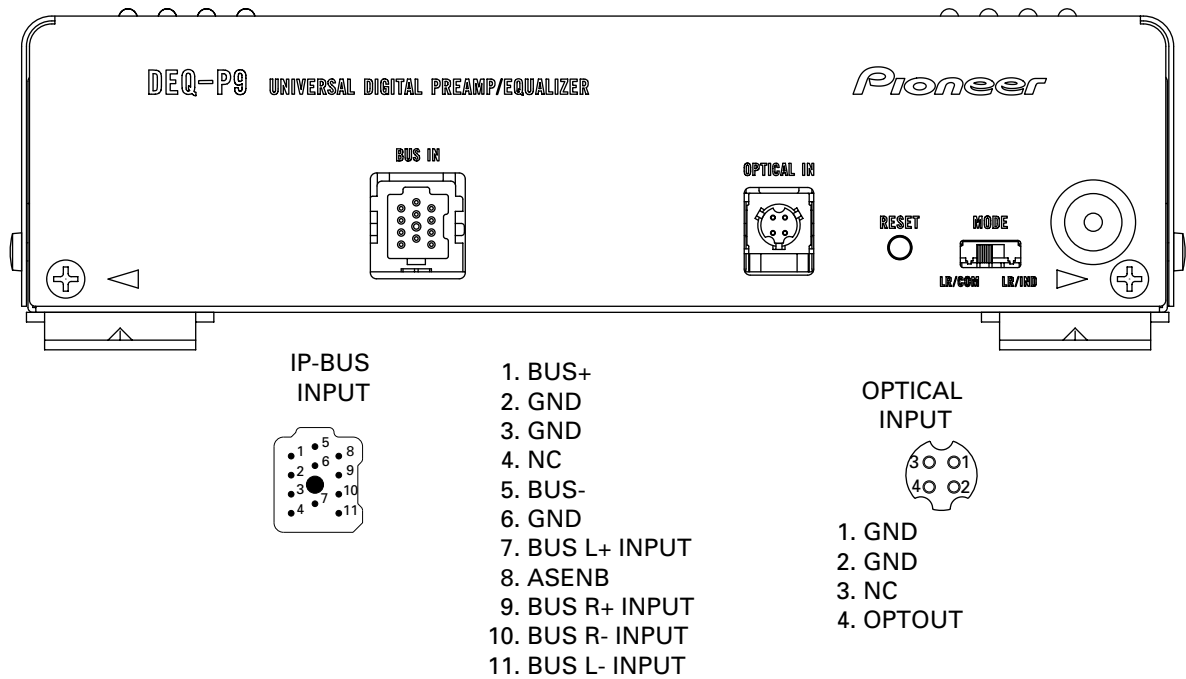


● Removing the Audio Control Unit (Fig.4)

- ➡ 1 Remove the three screws.
- ➡ 2 Straight the tabs at five locations indicated and then remove the Audio Control Unit.

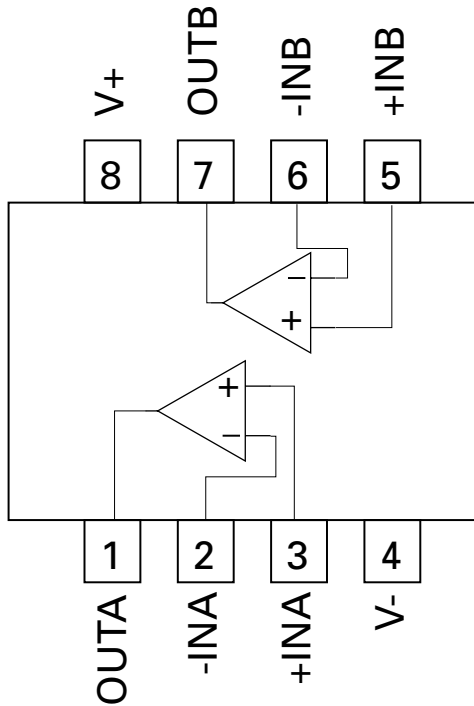


7.1.2 CONNECTOR FUNCTION DESCRIPTION



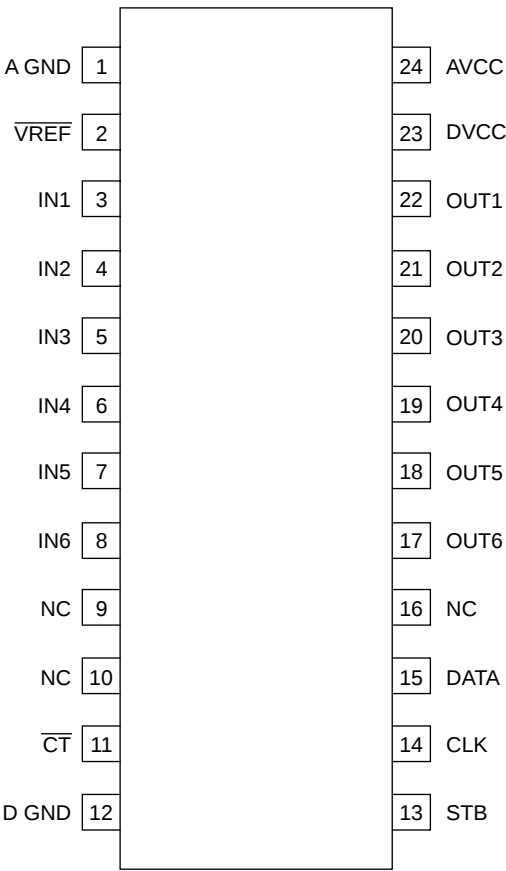
7.2 IC

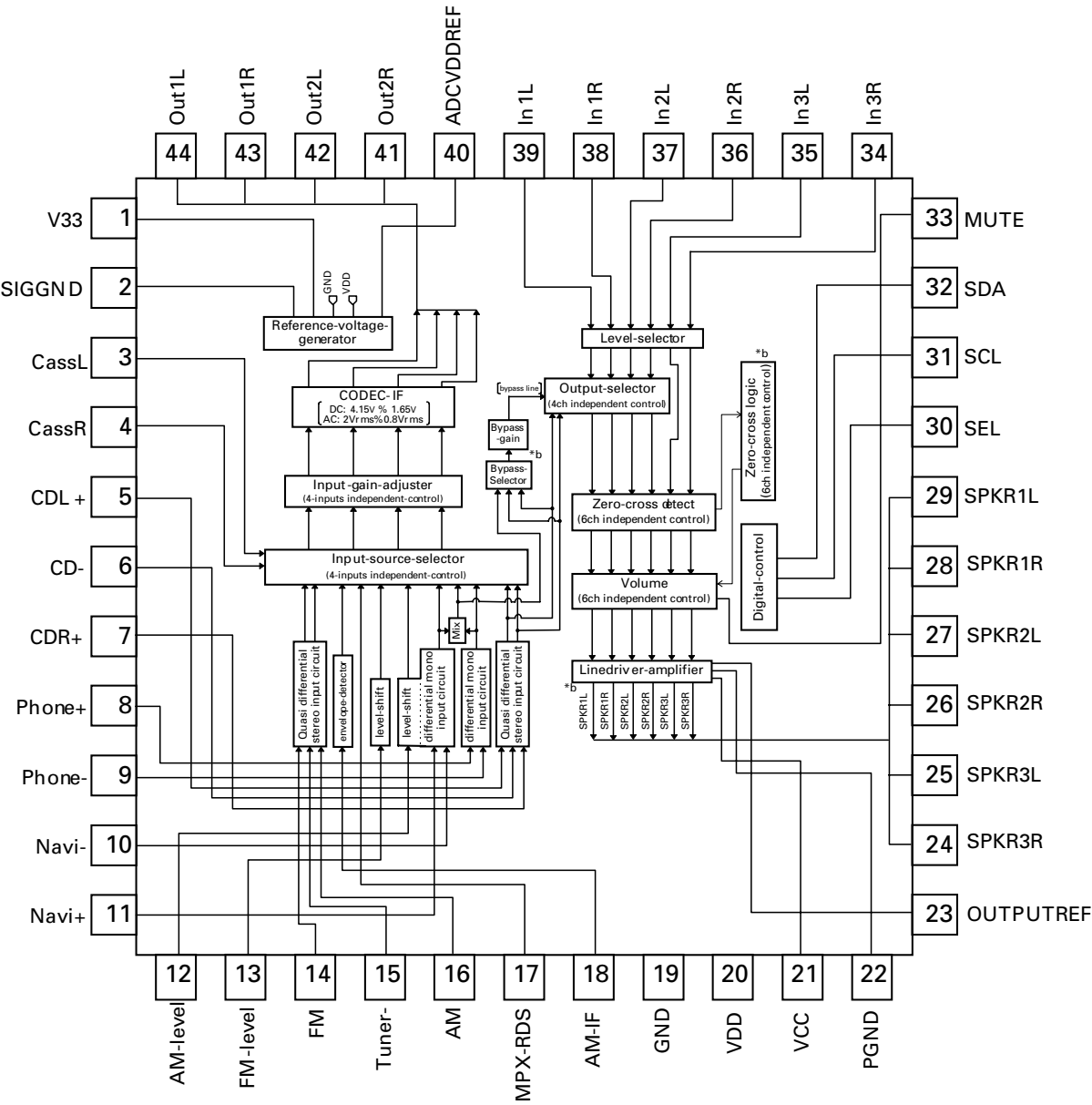
OPA2134UA



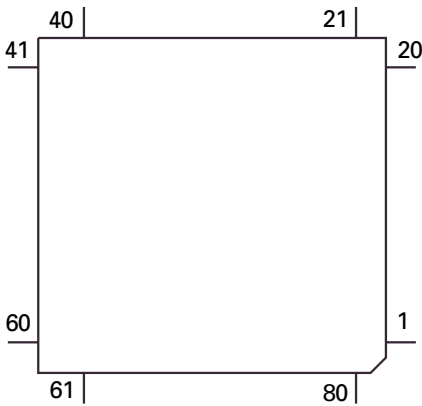
IC's marked by * are MOS type.
Be careful in handling them because they are very liable to be damaged by electrostatic induction.

* PM0017AM





* PD5653A



● Pin Functions(PD5653A)

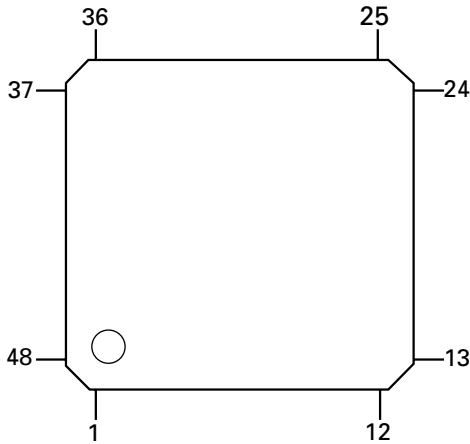
Pin No.	Pin Name	I/O	Format	Function and Operation
1	DFCK	O	C	DF serial clock output
2	VST1	O	C	EVOL strobe output 1(H/M/L)
3	VST2	O	C	EVOL strobe output 2(SW)
4	VDT	O	C	EVOL data output(47k = P.DN)
5	VCK	O	C	EVOL serial clock output
6	CNVSS	I		Vss connection
7, 8	NC			Not used
9	RESET	I		Microcomputer hard reset input
10	XOUT	O		System clock output
11	VSS	I		GND
12	XIN	I		System clock input
13	VCC	I		Microcomputer power supply 5V
14	NMI	I	C	Vcc connection(1k microcomputer power supply = P.UP)
15	BSENS	I	C	B.up sense(47k microcomputer power supply = P.UP)
16	ASENSB	I	C	Acc sense(47k microcomputer power supply = P.UP)
17	NC			Not used
18	IPRQ	I	C	IP-BUS request input(47k = P.DN)
19, 20	NC			Not used
21	IPPW	O	C	IP-BUS driver power supply switching output
22	IPIN	I	N	IP-BUS data input(47k = P.DN)
23	IPOUT	O	N	IP-BUS data output
24	DSPOUT	O	C	DSP data output
25	NC			Not used
26	DSPCK	O	C	DSP serial clock output
27-35	NC			Not used
36	LRSW	I		L/R, separation/common data input
37	IFHIZ	I	C	DSP microcomputer port Hi-z setting(47k = P.DN)
38	MUTERQ	O	C	Hard mute request output
39	TESTIN	I	C	Test program enable(47k microcomputer power supply = P.UP)
40	DSPPW	O	C	DSP IC power supply switching output
41-60	NC			Not used
61-63	DSPCS3-1	O	C	DSP chip select 3-1 output
64	DSPCD	O	C	DSP command/data information output
65	DSPERR	I	C	DSP error information input(47k DSP power supply = P.UP)
66	DSPACK	I	C	DSP acknowledge input
67	DSPRST	O	C	DSP reset output
68	DIRRST	O	C	DIR reset output
69-71	DIRFS2-0	I	C	DIR sampling frequency information 2-0 input(47k = P.DN)
72	DIRERR	I	C	DIR lock/unlock information input(47k = P.DN)
73	DIRPCM	I	C	DIR audio/data information input(47k = P.DN)
74	DEMPHIN	I	C	DIR emphasis information input(47k = P.DN)
75	AVSS	I		Vss connection
76	DFST	O	C	DF strobe output
77	VREF	I		AD converter reference voltage input(Vcc connection)
78	AVCC	I		Vcc connection
79	NC			Not used
80	DFOUT	O	C	DF data output(47k = P.DN)

I/O Format	Meaning
C	CMOS
N	N channel open drain

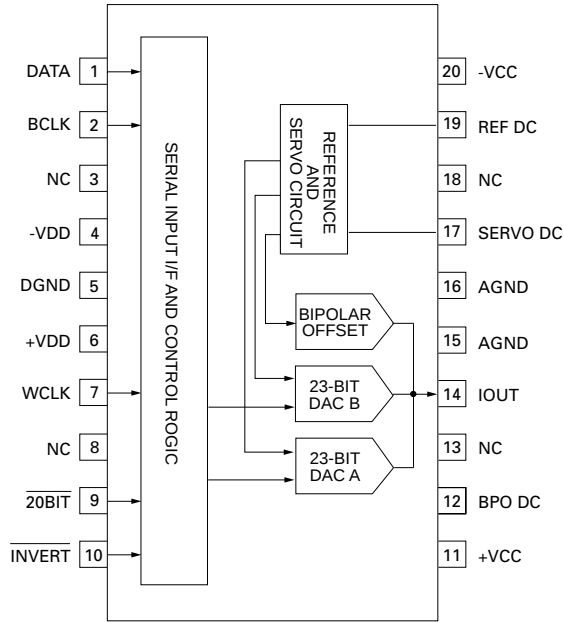
● Pin Functions(LC89055WHS-RA8)

Pin No.	Pin Name	I/O	Function and Operation
1	DISEL	I	Data input pin (DIN0,DIN1) select input
2	DOUT	O	Serial audio data output
3	DIN0	I	Digital data input
4	DIN1	I	Digital data input
5	DIN2	I	Digital data input
6	DGND		Digital circuit GND
7	DVDD		Digital VDD(5V)
8	R	I	VCO gain control input
9	VIN	I	VCO free run frequency setting input
10	LPF	O	PLL loop filter setting
11	AVDD		Analog power supply
12	AGND		Analog GND
13	CKOUT	O	Clock output
14	BCK	O	64fs clock output
15	LRCK	O	fs clock output
16	DATAO	O	Data output
17	XSTATE	O	Source clock switching monitor output
18	DGND		Digital GND
19	DVDD		Digital power supply
20	XMCK	O	Crystal oscillator clock output
21	XOUT	O	Crystal oscillator connection output
22	XIN	I	Crystal oscillator connection input
23	EMPHA	O	Channel status emphasis information output
24	AUDIO	O	Channel status bit 1 (Non-PCM data detection bit) output
25	CSFLAG	O	First 40 bits update flag output terminal for channel status
26	F0/P0/C0	O	Input fs calculated signal output/Pc data type output/Input word information output
27	F1/P1/C1	O	Input fs calculated signal output/Pc data type output/Input word information output
28	F2/P2/C2	O	Input fs calculated signal output/Pc data type output/Input word information output
29	VF/P3/C3	O	Validity flag output/Pc data type output/Input word information output
30	DVDD		Digital power supply
31	DGND		Digital GND
32	AUTO	O	Non-PCM burst data transmission detection (Pa, Pb detection) signal output terminal
33	BPSYNC	O	Non-PCM burst preamble Pa, Pb, Pc, Pd sync signal detection terminal
34	ERROR	O	PLL lock error, data error flag output
35	DO	O	Microcomputer IF reading data output
36	DI	I	Microcomputer IF writing data input
37	CE	I	Microcomputer IF chip enable
38	CL	I	Microcomputer IF clock input
39	XSEL	I	XIN Crystal oscillator frequency selection input
40	MODE0	I	Mode setting input
41	MODE1	I	Mode setting input
42	DGND		Digital GND
43	DVDD		Digital power supply
44	DOSEL0	I	Output data format selection input
45	DOSEL1	I	Output data format selection input
46	CKSEL0	I	Output clock selection input
47	CKSEL1	I	Output clock selection input
48	XMODE	I	System reset input

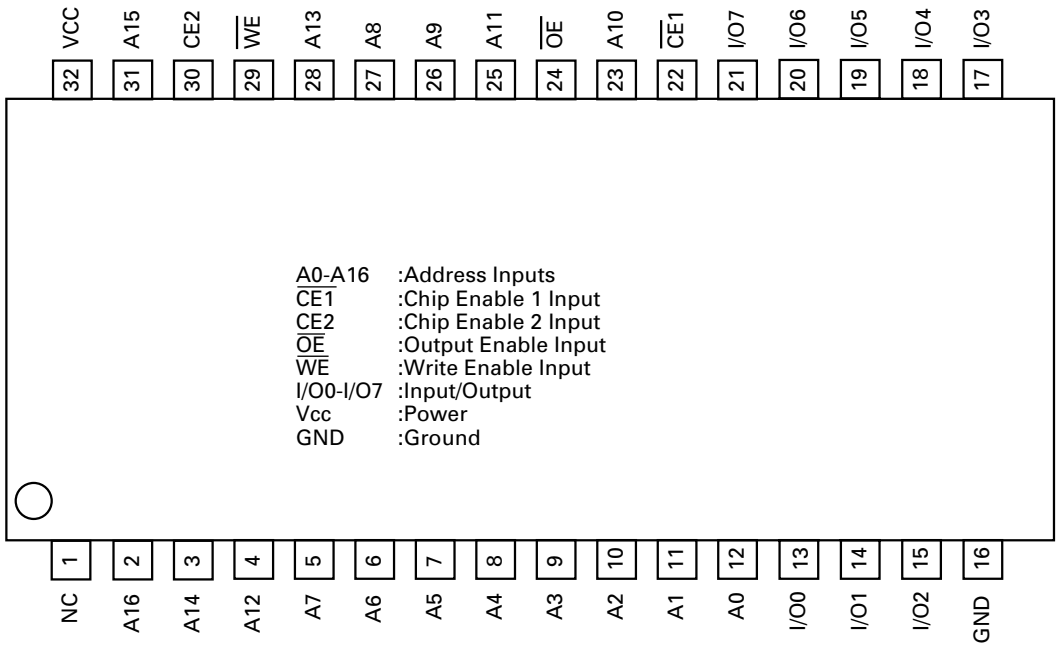
* LC89055WHS-RA8



* PCM1704U-J



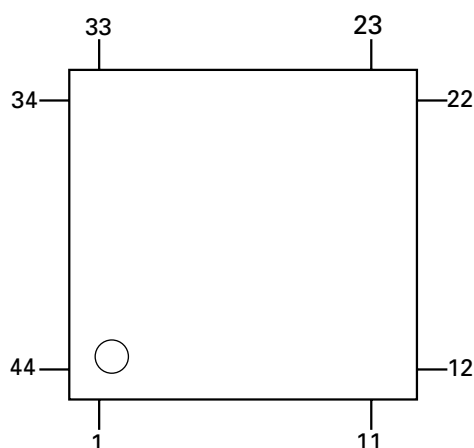
* IS62C1024L-70QI



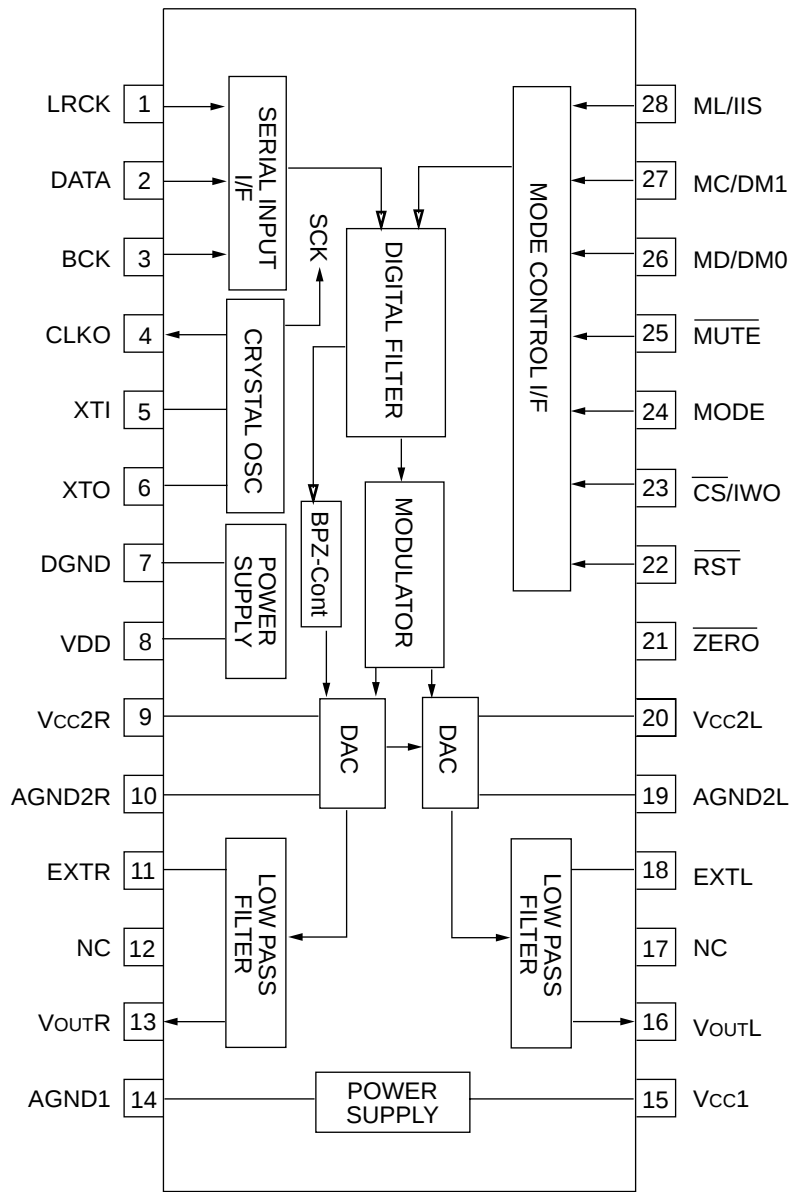
● Pin Functions(PD7010A1)

Pin No.	Pin Name	I/O	Function and Operation
1	DITH	I	Dither ON/OFF
2	DITH	I	Dither ON/OFF
3	CKEN	I	Crystal oscillation circuit operation control
4	CKEN	I	Crystal oscillation circuit operation control
5	XTI	I	Oscillation section input
6	XTO	O	Oscillation section output
7	VSS1		Power supply(0V)
8	CKO	O	Oscillation section output clock
9	CKO	O	Oscillation section output clock
10	CKS	I	Master clock input frequency selection
11	CKS	I	Master clock input frequency selection
12	ASEL2/MDCK	I	Operation mode selection/Microcomputer I/F clock input
13	ASEL2/MDCK	I	Operation mode selection/Microcomputer I/F clock input
14	HS/MDT	I	Operation mode selection/Microcomputer I/F data input
15	HS/MDT	I	Operation mode selection/Microcomputer I/F data input
16	SYNC/MDLE	I	Synchronous mode selection/Microcomputer I/F latch enable input
17	RST	I	Reset input
18	LRS	I	LR clock plarity selection
19	DEEM	I	Deemphasis ON/OFF selection
20	DEEM	I	Deemphasis ON/OFF selection
21	AMS1	I	ATT quantity setting
22	AMS1	I	ATT quantity setting
23	AMS2	I	ATT quantity setting
24	AMS2	I	ATT quantity setting
25	OBS	I	Output data bit length selection
26	OBS	I	Output data bit length selection
27	ASEL1	I	Operation mode selection
28	VSS2		Power supply(0V)
29	VDD2		Power supply(+5V)
30	DOR	O	Rch data output
31	DOR	O	Rch data output
32	DOL	O	Lch data output
33	DOL	O	Lch data output
34	WCKO	O	Word clock output
35	WCKO	O	Word clock output
36	BCKO	O	Bit clock output for output data
37	BCKO	O	Bit clock output for output data
38	MDS	I	Mode setting method selection
39	LRCI	I	LR clock input
40	DIN	I	Data input
41	BCKI	I	Bit clock input
42	BCKI	I	Bit clock input
43	VDD1		Power supply(+5V)
44	VDD1		Power supply(+5V)

* PD7010A1



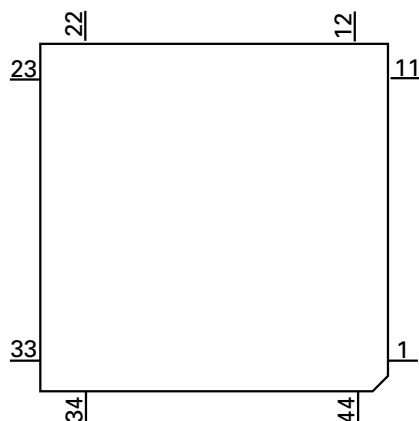
PCM1716E-3



● Pin Functions(SM5847AF)

Pin No.	Pin Name	I/O	Function and Operation
1	OMD	I	Output data rate(4fs/8fs)select pin
2	DOR	O	Rch data output
3	DOL	O	Lch data output
4	WCKO	O	Word clock output
5	BCOK	O	Bit clock output
6	VSS		GND
7	VSSAC		GND
8	VDDAC		Power supply
9	VDD		Power supply
10	DG	O	Deglintch signal output
11	NC		Not used
12	CKO	O	Master clock output
13	VSS		GND
14	VDD		Power supply
15	XTO	O	Radiator output
16	XTI	I	Radiator input/Master clock input
17	VSS		GND
18	VDD		Power supply
19	LRCI	I	Input data sampling rate clock(fs)input
20	DI/INF2N	I	Data input/Input format select pin
21	BCKI	I	Bit clock input
22,23	NC		Not used
24	CKSLN	I	Master clock frequency(192fs/256fs)select pin
25	INF1N	I	Input format select pin
26	IW1N/DIL	I	Input data word length select pin/Lch data input
27	IW2N/DIR	I	Input data word length select pin/Rch data input
28	VSS		GND
29	VDD		Power supply
30	OW1N	I	Output data word length select pin
31	OW2N	I	Output data word length select pin
32	SYNCN	I	The same mode select pin
33	RSTN	I	Reset input
34	CKDV1	I	The inside system establishment ratio of dividing frequency select pin
35	CKDV2	I	The inside system establishment ratio of dividing frequency select pin
36	DEMPR	I	Rch deemphasis ON/OFF
37	DEMPL	I	Lch deemphasis ON/OFF
38	VDD		Power supply
39	VSS		GND
40	FSEL1	I	Deemphasis filter fs select pin
41	FSEL2	I	Deemphasis filter fs select pin
42	MUTEL	I	Lch mute ON/OFF
43	MUTER	I	Rch mute ON/OFF
44	DITHN	I	Output data dither ON/OFF

* SM5847AF



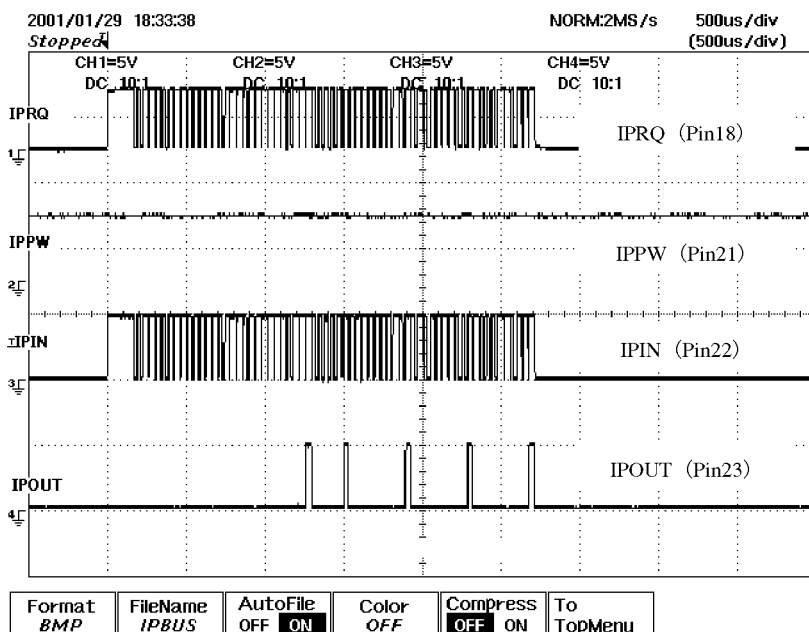
7.3 OPERATIONAL DESCRIPTION

The DSP/DIR/DF/EVOL will be initialized, and the microcomputer will enter a normal operation. All other commands entered by key operations are also received by IP-BUS communications, and DSP/EVOL settings are conducted. For normal operations, the monitoring of the DSP error is conducted by communicating with the DSP at certain intervals.

When DSPPW does not become H

The XOUT(Pin10)/XIN(Pin12) of the microcomputer is not operating.
The microcomputer is in the STOP mode. Please verify the ASENSB (Pin16)/BSENS(Pin15).

IP-BUS Communication



With the IP-BUS communications, communication is conducted in set intervals (a refresh operation is conducted every five seconds), when the Acc and Bup are ON (see figure on the left). When the IP-BUS communications are not performing properly, the product does not operate properly.

When sound is not emitted

Lock and Unlock of the DIR (DIRERR(Pin72) of the microcomputer)

Fixed to HIGH → Either the digital audio is abnormal, or the DIR IC is abnormal.

Becomes HIGH at certain intervals → The microcomputer is performing re-initialization.

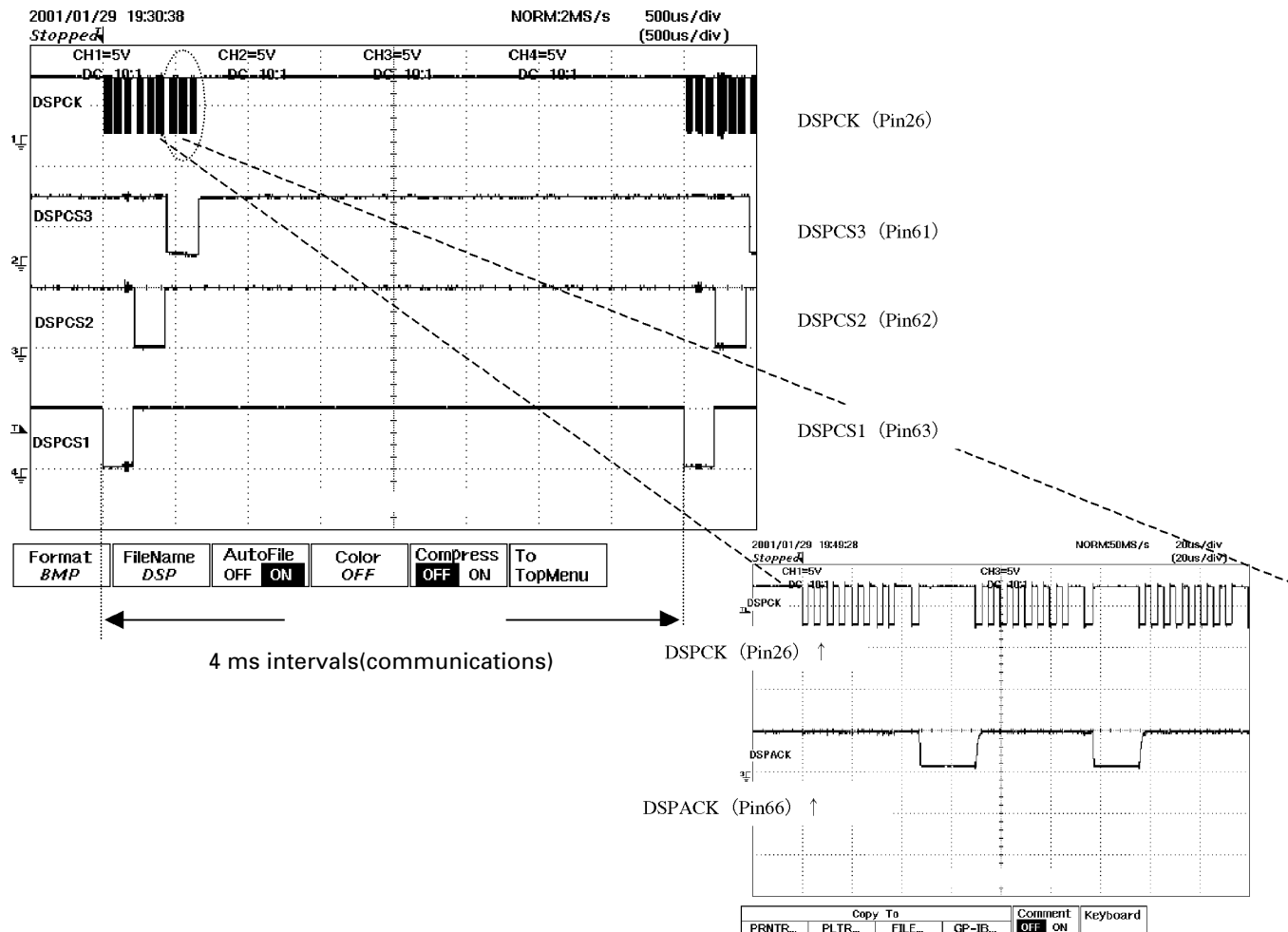
Initialization of the microcomputer

When a DIR error or DSP error is detected, the microcomputer performs re-initialization.

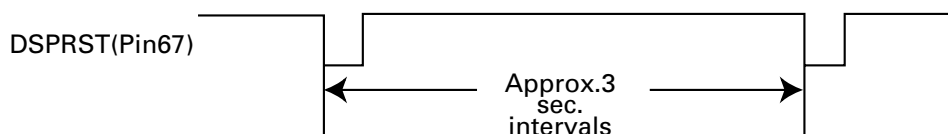
In such circumstances, the DIRRST(Pin68)/DSPRST(Pin67) become LOW (for 4ms) at certain intervals (approximately 3 sec.).

Periodical communications with DSP

DSP error verification(under normal conditions)



DSP error verification(under continued abnormal conditions)



The communications are performed with the DSP IC at 4 ms intervals (see upper left figure). The determination on whether the DSP IC is operating normally or not, is made by monitoring the DSPACK(Pin66) and DSPERR(Pin65). Under normal conditions, the DSPACK(Pin66) will fall to LOW after counting 9 clock cycles of the DSPCK(Pin26) (see upper right figure). By determining which of the DSPCS1-3(Pin61/62/63) is LOW during that time, we can find out which IC is engaged in communications. When the DSPACK(Pin66) does not become LOW, then the IC of that DSPACK (Pin66) may be faulty or abnormal.

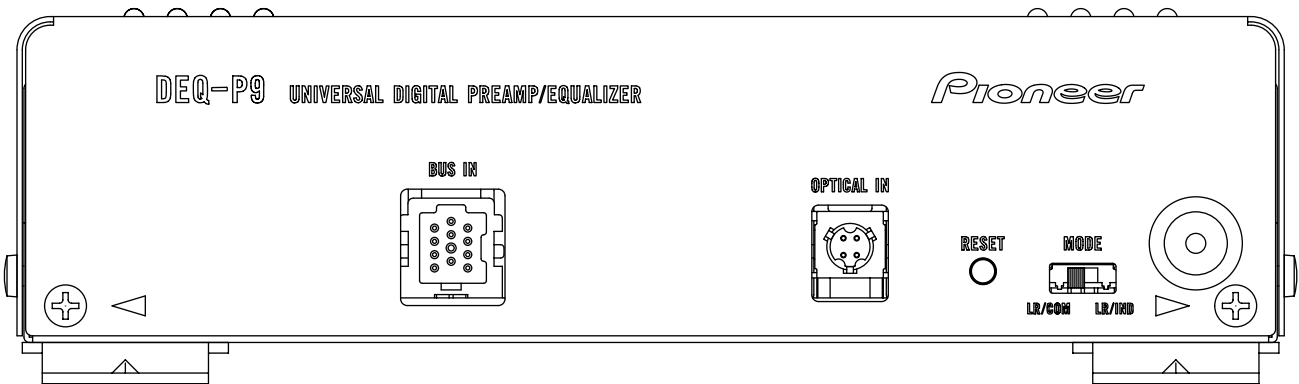
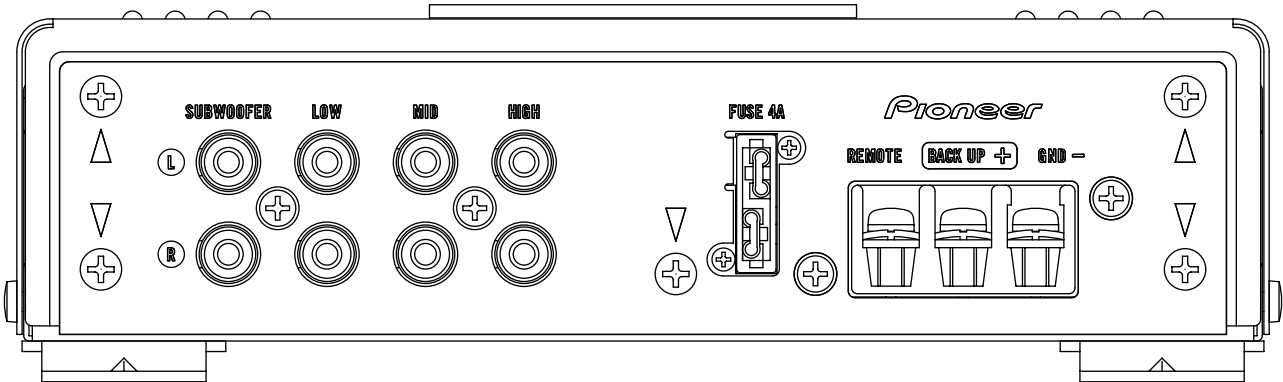
An error will occur with the DSPERR(Pin65), when it is LOW. The DSPERR(Pin65) may become LOW during initialization, but an error occurs at the DSP when it is LOW during a periodical communication. An error is relayed in the order of CHIP1→CHIP3→CHIP2 of the DSP, so please determine at which IC the error is occurring.

Others

When LRCK\$BCK and DATA are being output from DSP IC in a normal manner, please verify the output of the DF IC. When a digital waveform is being output from the DF IC, then please check the DAC IC. When an analog waveform is being output from the DAC IC, then please check the EVOL IC.

8. OPERATIONS AND SPECIFICATIONS

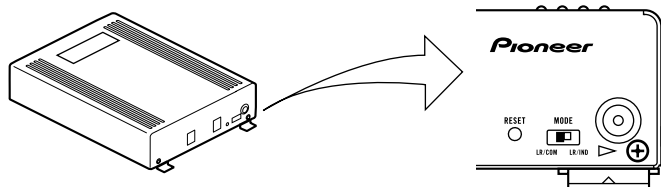
8.1 OPERATIONS



MODE Switch Setting

This product equipped two setting modes. The one is LR/IND mode and the other is LR/COM mode. LR/IND mode can be adjusted the equalizer and network adjustment independently between Left and Right channel. LR/COM mode can be adjusted these adjustment simultaneously between Left and Right channel. Since usable functions are different between LR/IND and LR/COM, be sure to set the mode correctly.

- **Set MODE switch of this product to appropriate position with a pen tip or other pointed instrument.**



Resetting the Microprocessor

The microprocessor must be reset under the following conditions:

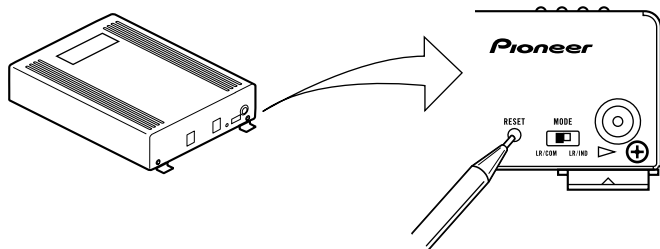
When using this product for the first time after installation.

When the machine fails to operate properly.

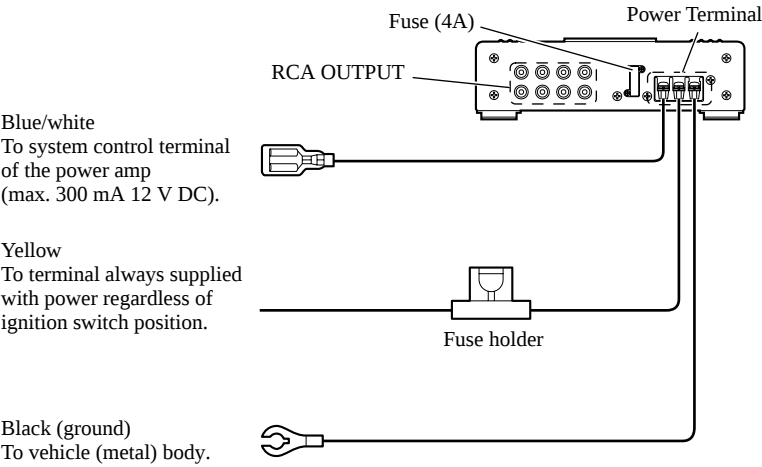
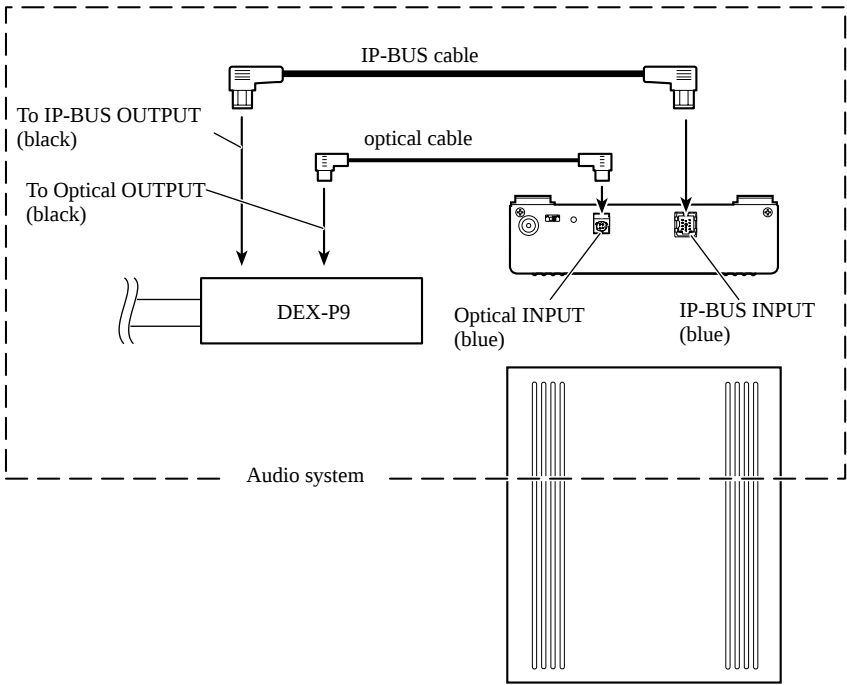
When strange (incorrect) messages appear on the display.

When setting the position of the MODE switch of this product.

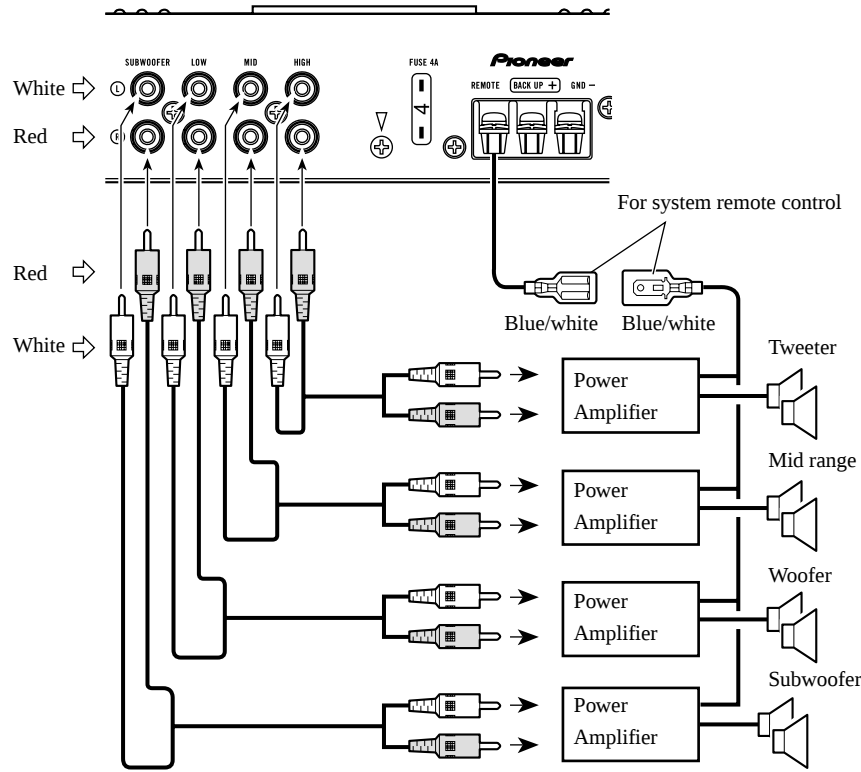
- **To reset the microprocessor, press the RESET button on this unit with a pen tip or other pointed instrument.**



Connection Diagram



Connecting the RCA Input Amplifier



8.2 SPECIFICATIONS

● DEQ-P9/UC

GENERAL

Power Source	DC 14.4 V (10.8 — 15.1 V allowable)
Grounding system	Negative type
Fuse	4 A
Backup current	2 mA or less
Dimensions	191 (W) × 49 (H) × 220 (D) mm
Weight	1.8 kg

DSP/PREAMP

Tone controls (parametric)	
Bass frequency	63 Hz, 100 Hz, 160 Hz, 250 Hz
Treble frequency	4 kHz, 6.3 kHz, 10 kHz, 16 kHz
Gain	±12 dB (1 dB)
31-band graphic equalizer (L/R independent)	
Frequency	20 Hz — 20 kHz, 1/3 oct.
Gain	±12 dB (0.5 dB)
Crossover network (L/R independent)	
SUBWOOFER	
.....	HPF frequency: 20 Hz — 100 Hz, 1/3 oct.
.....	LPF frequency: 25 Hz — 250 Hz, 1/3 oct.
.....	Gain: +10 dB — -24 dB (0.5 dB)
LOW	
.....	HPF frequency: 25 Hz — 250 Hz, 1/3 oct.
.....	LPF frequency: 250 Hz — 10 kHz, 1/3 oct.
.....	Gain: 0 dB — -24 dB (0.5 dB)
MID	
.....	HPF frequency: 200 Hz — 10 kHz, 1/3 oct.
.....	LPF frequency: 2 kHz — 20 kHz, 1/3 oct.
.....	Gain: 0 dB — -24 dB (0.5 dB)
HIGH	
.....	HPF frequency: 1.6 kHz — 20 kHz, 1/3 oct.
.....	LPF frequency: 8 kHz — 20 kHz, 1/3 oct.
.....	Gain: 0 dB — -24 dB (0.5 dB)
Slope	PASS, -6, -12, -18, -24, -30, -36 dB/oct.
.....	(PASS: no pass HPF-High channel)
Phase	NORMAL/REVERSE
Time alignment	0 — 134 in. (0.67 in.)
Position adjustment	
.....	DISTANCE: 0 — 134 in. (0.67 in.)
.....	Level: 0 — -30 dB
Sampling frequency	44.1 kHz
Digital input	Optical input
Analog Output	RCA (4 way)

RCA OUTPUT

Frequency response	10 Hz — 20 kHz (+0, -1 dB)
Max. output level/impedance	4 V/1 kΩ
Distortion	0.005% (1 kHz, 20 kHz LPF)
Signal-to-noise ratio	109 dB (IHF-A network)
Separation	90 dB (1 kHz, 20 kHz LPF)

Note:

- Specifications and the design are subject to possible modification without notice due to improvements.

● DEQ-P9/EW

GENERAL

Power Source DC 14.4 V (10.8 — 15.1 V allowable)
Grounding system Negative type
Fuse 4 A
Backup current 2 mA or less
Dimensions 191 (W) × 49 (H) × 220 (D) mm
Weight 1.8 kg

DSP/PREAMP

Tone controls (parametric)
 Bass frequency 63 Hz, 100 Hz, 160 Hz, 250 Hz
 Treble frequency 4 kHz, 6.3 kHz, 10 kHz, 16 kHz
 Gain ±12 dB (1 dB)
31-band graphic equalizer (L/R independent)
 Frequency 20 Hz — 20 kHz, 1/3 oct.
 Gain ±12 dB (0.5 dB)
Crossover network (L/R independent)
 SUBWOOFER
 HPF frequency: 20 Hz — 100 Hz, 1/3 oct.
 LPF frequency: 25 Hz — 250 Hz, 1/3 oct.
 Gain: +10 dB — -24 dB (0.5 dB)
 LOW HPF frequency: 25 Hz — 250 Hz, 1/3 oct.
 LPF frequency: 250 Hz — 10 kHz, 1/3 oct.
 Gain: 0 dB — -24 dB (0.5 dB)
 MID HPF frequency: 200 Hz — 10 kHz, 1/3 oct.
 LPF frequency: 2 kHz — 20 kHz, 1/3 oct.
 Gain: 0 dB — -24 dB (0.5 dB)
 HIGH
 HPF frequency: 1.6 kHz — 20 kHz, 1/3 oct.
 LPF frequency: 8 kHz — 20 kHz, 1/3 oct.
 Gain: 0 dB — -24 dB (0.5 dB)
 Slope PASS, -6, -12, -18, -24, -30, -36 dB/oct.
 (PASS: no pass HPF-High channel)
 Phase NORMAL/REVERSE
 Time alignment 0 — 340 cm (1.7 cm)
Position adjustment
 DISTANCE: 0 — 340 cm (1.7 cm)
 Level: 0 — -30 dB
Sampling frequency 44.1 kHz
Digital input Optical input
Analog Output RCA (4 way)

RCA OUTPUT

Frequency response 10 Hz — 20 kHz (+0, -1 dB)
Max. output level/impedance 4 V/1 kΩ
Distortion 0.005% (1 kHz, 20 kHz LPF)
Signal-to-noise ratio 109 dB (IHF-A network)
Separation 90 dB (1 kHz, 20 kHz LPF)

Note:

- Specifications and the design are subject to possible modification without notice due to improvements.