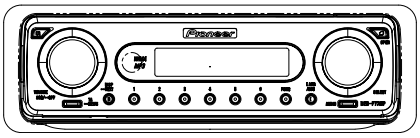
Pioneer sound.vision.soul

Service Manual



DEH-P77MP/EW

ORDER NO.
CRT3072

MULTI-CD/DAB CONTROL HIGH POWER CD/MP3/WMA PLAYER WITH RDS TUNER

DEH-P77MP EW

COMPACT disc DIGITAL AUDIO TEXT

Designed for Windows Media™

● This service manual should be used together with the following manual(s):

Model No.	Order No.	Mech. Module	Remarks
CX-3057	CRT3026	S10MP3	CD Mech. Module:Circuit Description, Mech.Description, Disassembly

For details, refer to "Important symbols for good services".

PIONEER CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS (USA) 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

K-ZZA. FEB. 2003 Printed in Japan

[Important symbols for good services]
In this manual, the symbols shown-below indicate that adjustments, settings or cleaning should be made securely.
When you find the procedures bearing any of the symbols, be sure to fulfill them:

1. Product safety

You should conform to the regulations governing the product (safety, radio and noise, and other regulations), and should keep the safety during servicing by following the safety instructions described in this manual.

2. Adjustments

To keep the original performances of the product, optimum adjustments or specification confirmation is indispensable. In accordance with the procedures or instructions described in this manual, adjustments should be performed.

3. Cleaning

For optical pickups, tape-deck heads, lenses and mirrors used in projection monitors, and other parts requiring cleaning, proper cleaning should be performed to restore their performances.

4. Shipping mode and shipping screws

To protect the product from damages or failures that may be caused during transit, the shipping mode should be set or the shipping screws should be installed before shipping out in accordance with this manual, if necessary.

5. Lubricants, glues, and replacement parts

Appropriately applying grease or glue can maintain the product performances. But improper lubrication or applying glue may lead to failures or troubles in the product. By following the instructions in this manual, be sure to apply the prescribed grease or glue to proper portions by the appropriate amount.For replacement parts or tools, the prescribed ones should be used.

● CD Player Service Precautions

1. Before disassembling the unit, be sure to turn off the power. Unplugging and plugging the connectors during power-on mode may damage the ICs inside the unit.
2. To protect the pickup unit from electrostatic discharge during serviving, take an appropriate treatment(shorting-solder) by referring to "the DISASSEMBLY" on page 54.
3. After replacing the pickup unit, be sure to check the grating.(See p.50.)

SAFETY INFORMATION

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.

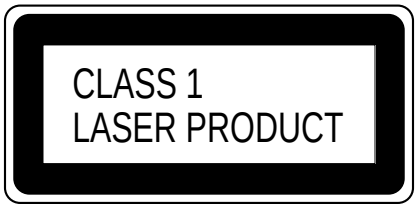
1. Safety Precautions for those who Service this Unit.

- **When checking or adjusting the emitting power of the laser diode exercise caution in order to get safe, reliable results.**

Caution:

1. **During repair or tests, minimum distance of 13cm from the focus lens must be kept.**
2. **During repair or tests, do not view laser beam for 10 seconds or longer.**

2. A "CLASS 1 LASER PRODUCT" label is affixed to the bottom of the player.



3. The triangular label is attached to the mechanism unit frame.

4. Specifications of Laser Diode

Specifications of laser radiation fields to which human access is possible during service.
Wavelength = 800 nanometers

CONTENTS

1. SPECIFICATIONS

General

Power source ..... 14.4 V DC (10.8 – 15.1 V allowable)
Grounding system ..... Negative type
Max. current consumption ..... 10.0 A
Backup current ..... 5 mA or less
Dimensions (W × H × D):
- DIN
  - Chassis ..... 178 × 50 × 157 mm
  - Nose ..... 188 × 58 × 21 mm
- D
  - Chassis ..... 178 × 50 × 162 mm
  - Nose ..... 170 × 46 × 16 mm

Weight ..... 1.5 kg

Audio

Maximum power output ..... 50 W × 4
50 W × 2/4 Ω + 70 W × 1/2 Ω (for subwoofer)
Continuous power output ... 27 W × 4 (DIN 45324, +B=14.4 V)
Load impedance ..... 4 Ω (4 – 8 Ω [2 Ω for 1 ch] allowable)
Preout max output level/output impedance 6.5 V/100Ω
Equalizer (3-Band Equalizer):
- Low
  - Frequency ..... 100 Hz
  - Gain ..... ±12dB
- Mid
  - Frequency ..... 1k Hz
  - Gain ..... ±12dB
- High
  - Frequency ..... 10k Hz
  - Gain ..... ±12dB

Loudness contour
- Low ..... +3.5 dB (100 Hz), +3 dB (10 kHz)
- Mid ..... +10 dB (100 Hz), +6.5 dB (10 kHz)
- High ..... +11 dB (100 Hz), +11 dB (10 kHz) (volume: –30 dB)

Tone controls:
- Bass
  - Frequency ..... 40 Hz
  - Gain ..... ±12dB
- Treble
  - Frequency ..... 10k Hz
  - Gain ..... ±12dB

HPF:
- Frequency ..... 50/80/125 Hz
- Slope ..... –12 dB/oct

Subwoofer:
- Frequency ..... 50/80/125 Hz
- Slope ..... –18 dB/oct
- Gain ..... ±12dB
- Phase ..... Normal/Reverse

CD player

System ..... Compact disc audio system
Usable discs ..... Compact disc
Signal format:
- Sampling frequency ..... 44.1 kHz
- Number of quantization bits ..... 16; linear

Frequency characteristics ... 5 – 20,000 Hz (±1 dB)
Signal-to-noise ratio ..... 100 dB (1 kHz) (IEC-A network)
Dynamic range ..... 97 dB (1 kHz)
Number of channels ..... 2 (stereo)
MP3 decoding format ..... MPEG-1 & 2 Audio Layer 3
WMA decoding format ..... Ver. 7 & 8

FM tuner

Frequency range ..... 87.5 – 108.0 MHz
Usable sensitivity ..... 8 dBf (0.7 μV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity ..... 10 dBf (0.9 μV/75 Ω, mono)
Signal-to-noise ratio ..... 75 dB (IEC-A network)
Distortion ..... 0.3 % (at 65 dBf, 1 kHz, stereo)
0.1 % (at 65 dBf, 1 kHz, mono)
Frequency response ..... 30 – 15,000 Hz (±3 dB)
Stereo separation ..... 45 dB (at 65 dBf, 1 kHz)
Selectivity ..... 80 dB (±200 kHz)

MW tuner

Frequency range ..... 531 – 1,602 kHz (9 kHz)
Usable sensitivity ..... 18 μV (S/N: 20 dB)
Signal-to-noise ratio ..... 65 dB (IEC-A network)

LW tuner

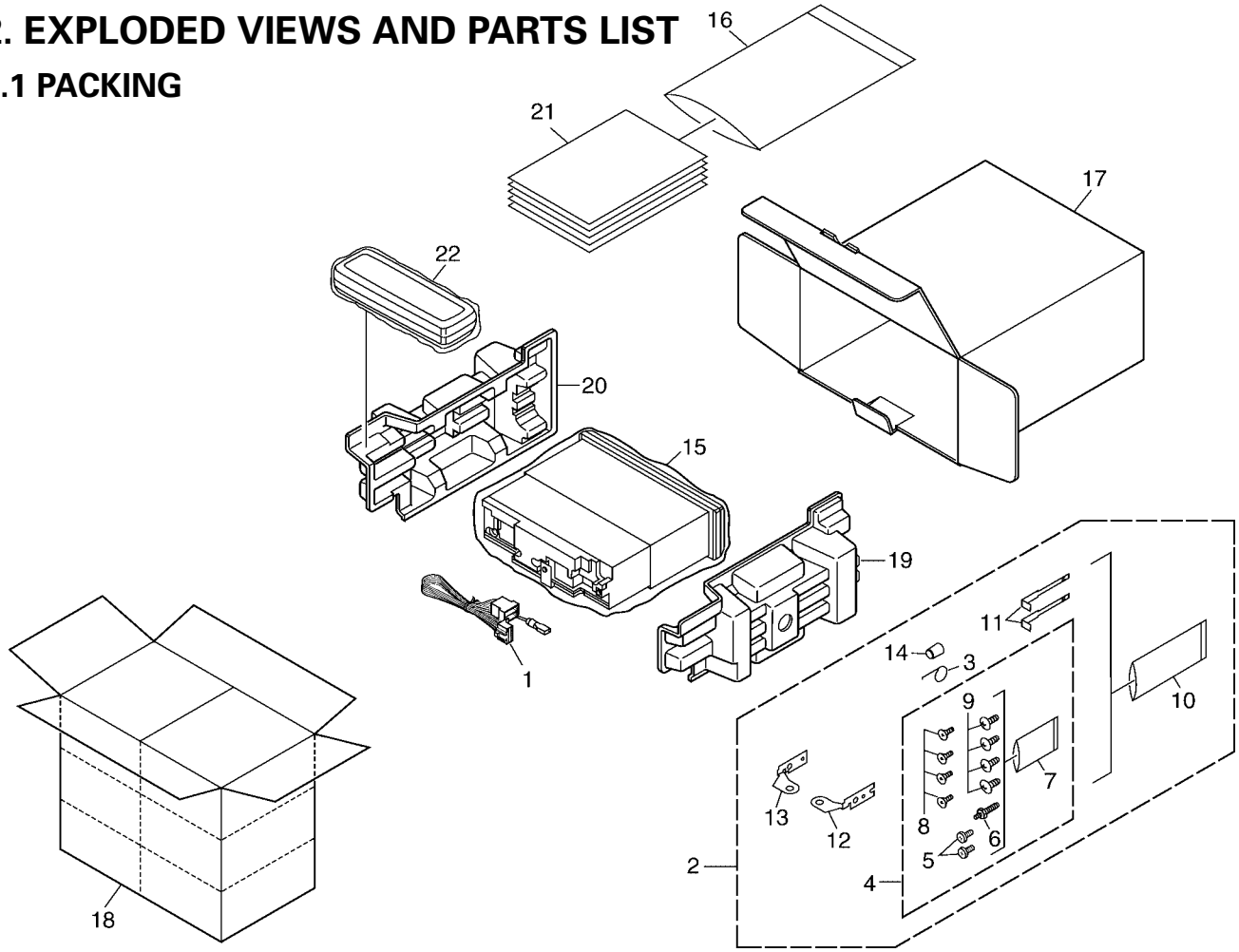
Frequency range ..... 153 – 281 kHz
Usable sensitivity ..... 30 μV (S/N: 20 dB)
Signal-to-noise ratio ..... 65 dB (IEC-A network)

Note

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

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.
- For the applying amount of lubricants or glue, follow the instructions in this manual.
  (In the case of no amount instructions, apply as you think it appropriate.)

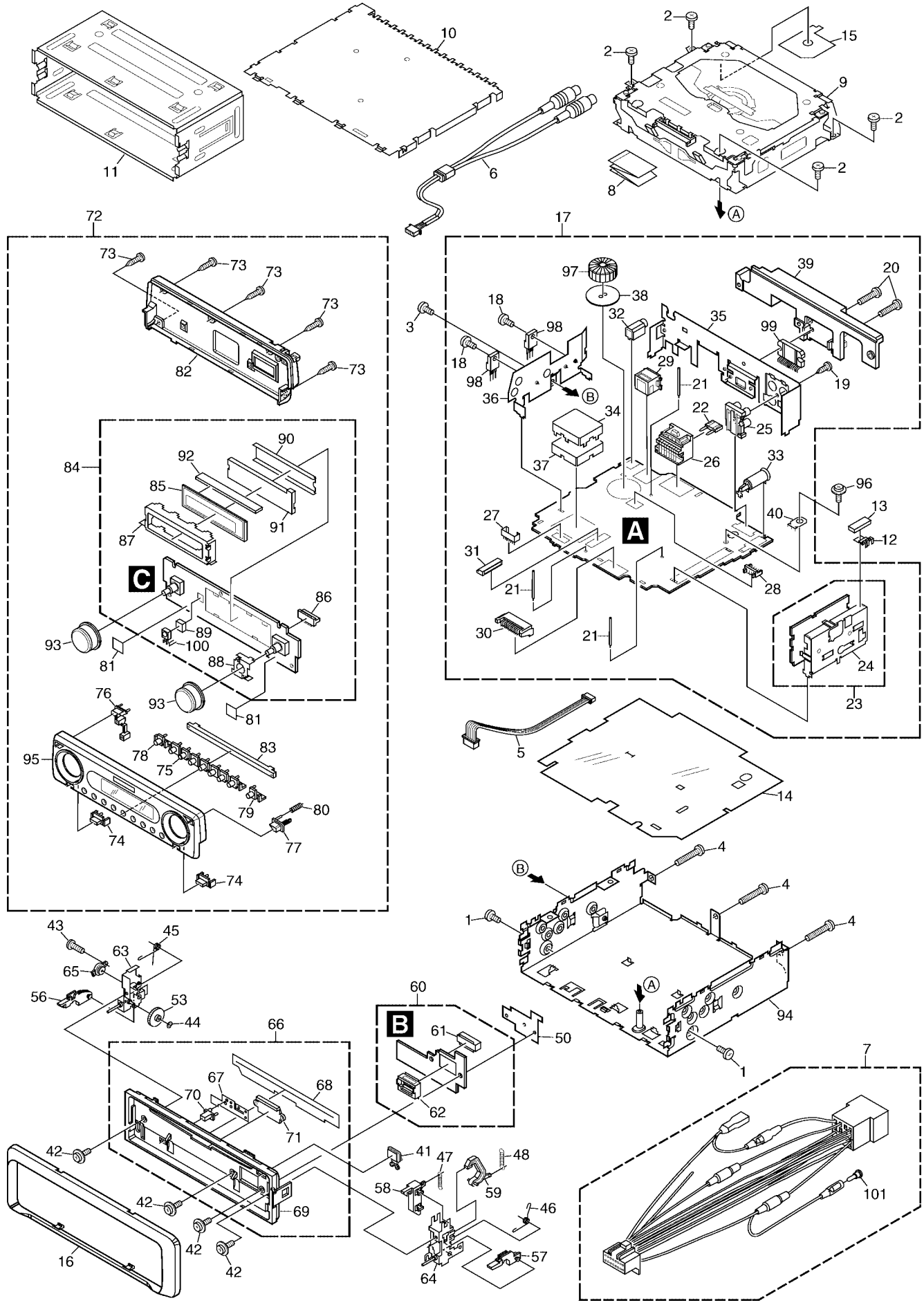
● PACKING SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Cord Assy	CDE7153
	2	Accessory Assy	CEA3376
	3	Spring	CBH1650
	4	Screw Assy	CEA3848
	5	Fixing Screw	BPZ20P060FZK
	6	Screw	CBA1650
*	7	Polyethylene Bag	CEG-127
	8	Screw	CRZ50P090FTC
	9	Screw	TRZ50P080FTC
*	10	Polyethylene Bag	CEG-158
	11	Handle	CNC5395
	12	Holder	CND1249
	13	Holder	CND1250
	14	Bush	CNV3930
	15	Polyethylene Bag	CEG-162
*	16	Polyethylene Bag	CEG1116
	17	Carton	CHG5036
	18	Contain Box	CHL5036
	19	Protector	CHP2663
	20	Protector	CHP2664
	21-1	Owner's Manual	CRD3754
	21-2	Owner's Manual	CRD3755
	21-3	Owner's Manual	CRD3756
	21-4	Installation Manual	CRD3757
*	21-5	Passport	CRY1013
*	21-6	Warranty Card	CRY1157
	22	Case Assy	CXC1507

● **Owner's Manual, Installation Manual**

Model	Part No.	Language
DEH-P77MP/EW	CRD3754	English, Spanish
	CRD3755	German, French
	CRD3756	Italian, Dutch
	CRD3757	English, Spanish, German, French, Italian, Dutch

2.2 EXTERIOR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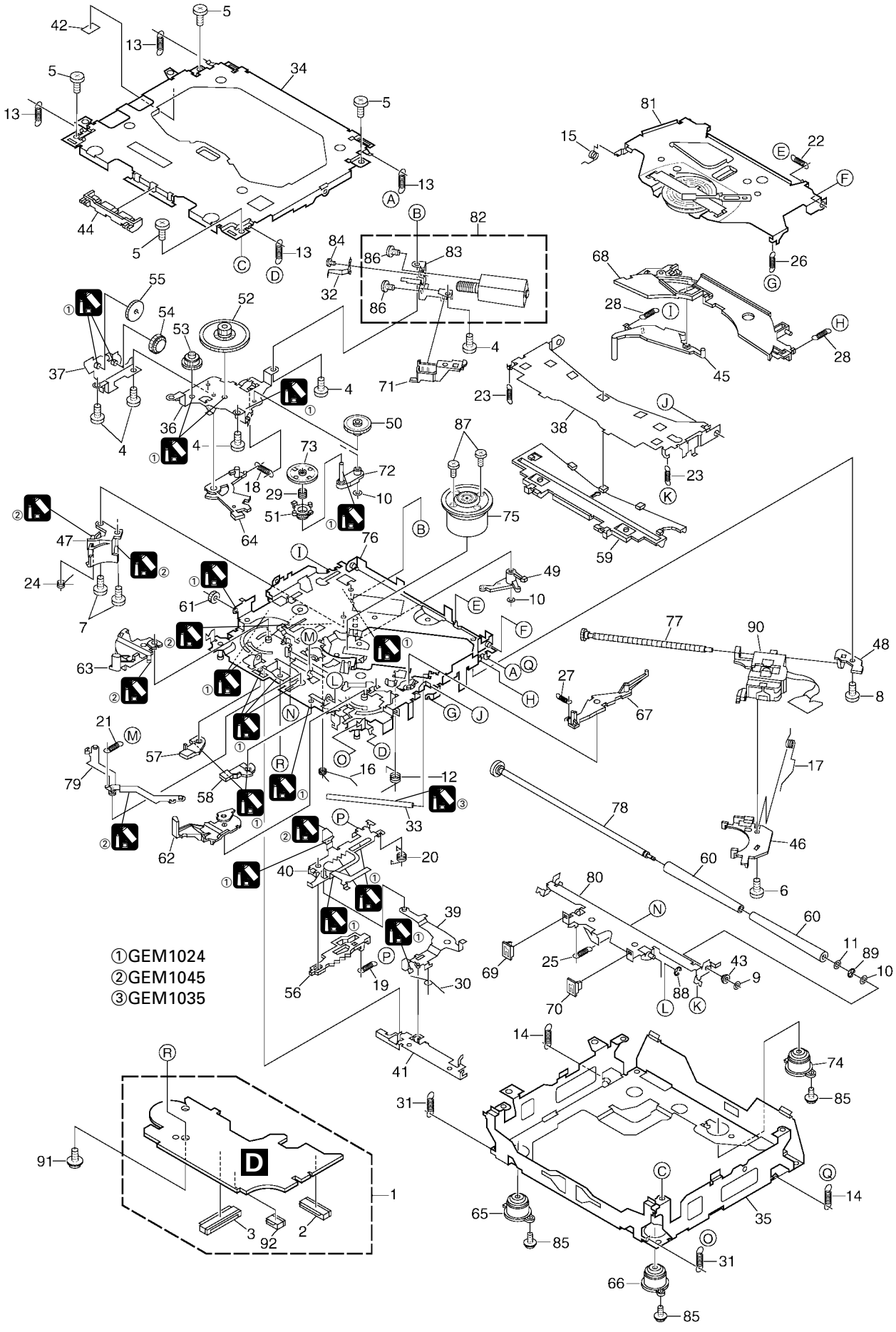
101

● EXTERIOR SECTION PARTS LIST

Mark No.	Description	Part No.
1	Screw	BMZ30P040FZK
2	Screw	BSZ26P060FTC
3	Screw	BSZ30P060FTC
4	Screw	BSZ30P200FTC
5	Cord Assy	CDE7019
6	Cord Assy	CDE7129
7	Cord Assy	CDE7153
8	Flat Cable	CDE7208
9	CD Mechanism Module(S10MP3)	CXK5671
10	Case	CNB2870
11	Holder	CNC8659
12	Earth Plate	CNC8915
13	Cushion	CNM4870
14	Insulator	CNM7935
15	Insulator	CNM8174
16	Panel	CNS7418
17	Tuner Amp Unit	CWM8750
18	Screw	ASZ26P060FTC
19	Screw	BPZ26P080FTC
20	Screw	BSZ26P160FTC
21	Clamper	CEF1008
22	Fuse(10A)	CEK1208
23	FM/AM Tuner Unit	CWE1645
24	Holder	CND1054
25	Pin Jack(CN351)	CKB1051
26	Plug(CN981)	CKM1376
27	Plug(CN702)	CKS-787
28	Plug(CN352)	CKS1238
29	Connector(CN101)	CKS3408
30	Plug(CN841)	CKS3537
31	Connector(CN701)	CKS3841
32	Connector(CN821)	CKS4124
33	Antenna Jack(CN401)	CKX1056
34	Case	CNC8138
35	Holder	CND1270
36	Holder	CND1352
37	Insulator	CNM6249
38	Insulator	CNM8245
39	Heat Sink	CNR1668
40	Terminal(CN402)	VNF1084
41	Button(EJECT)	CAC7752
42	Screw(M2x4.5)	CBA1647
43	Screw(M2x4)	CBA1649
44	Washer	CBF1038
45	Spring	CBH2650
46	Spring	CBH2651
47	Spring	CBH2652
48	Spring	CBH2653
49	•••••	
50	Holder	CND1254
51	•••••	
52	•••••	
53	Gear	CNV5997
54	•••••	
55	•••••	
56	Arm	CNV7400
57	Arm	CNV7401
58	Arm	CNV7402
59	Arm	CNV7403
60	Panel Unit	CWM8758
61	Socket(CN1950)	CKS3550
62	Connector(CN1951)	CKS4462
63	Holder Unit	CXB9501
64	Holder Unit	CXB9502
65	Damper Unit	CXB9503
66	Service Panel Unit	CXX1694
67	Spring	CBL1512
68	Cover	CNM6854
69	Panel	CNS7310
70	Pin	CNV6486
71	Lighting Conductor	CNV6487
72	Detach Grille Assy	CXC1026
73	Screw	BPZ20P100FZK
74	Button(-)	CAC7901
75	Button(1-6)	CAC7903
76	Button(EQ)	CAC8200
77	Button(OPEN)	CAC8201
78	Button(D)	CAC8202
79	Button(B)	CAC8203
80	Spring	CBH2704
81	Double-sided Tape	CNM8498
82	Cover	CNS7417
83	Lighting Conductor	CNV7546
84	Keyboard Unit	CWM8756
85	LCD(LCD1801)	CAW1807
86	Connector(CN1801)	CKS4524
87	Holder	CND1442
88	Holder	CND1444
89	Spacer	CNM6696
90	Sheet	CNM8114
91	Lighting Conductor	CNV7545
92	Connector	CNV7558
93	Knob Unit	CXC1480
94	Chassis Unit	CXC1190
95	Service Grille Unit	CXX1706
96	Screw	ISS26P055FTC
97	Choke Coil(L981)	CTH1280
98	Transistor(Q782, 913)	2SD2375
99	IC(IC301)	PAL007A
100	IC(IC1804)	TSOP4840SB1
101	Cap	CKX-003

2.3 CD MECHANISM MODULE



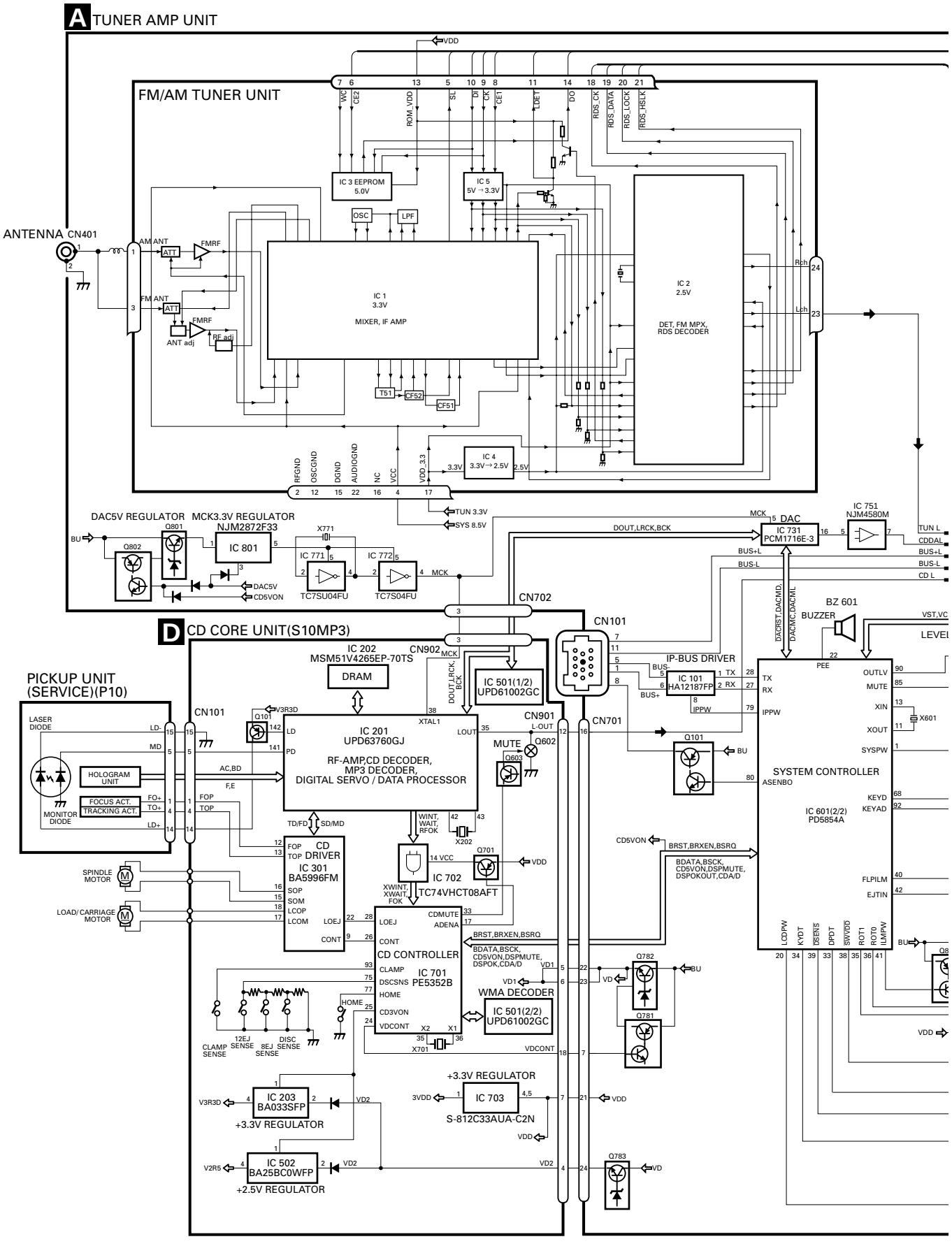
● CD MECHANISM MODULE SECTION PARTS LIST

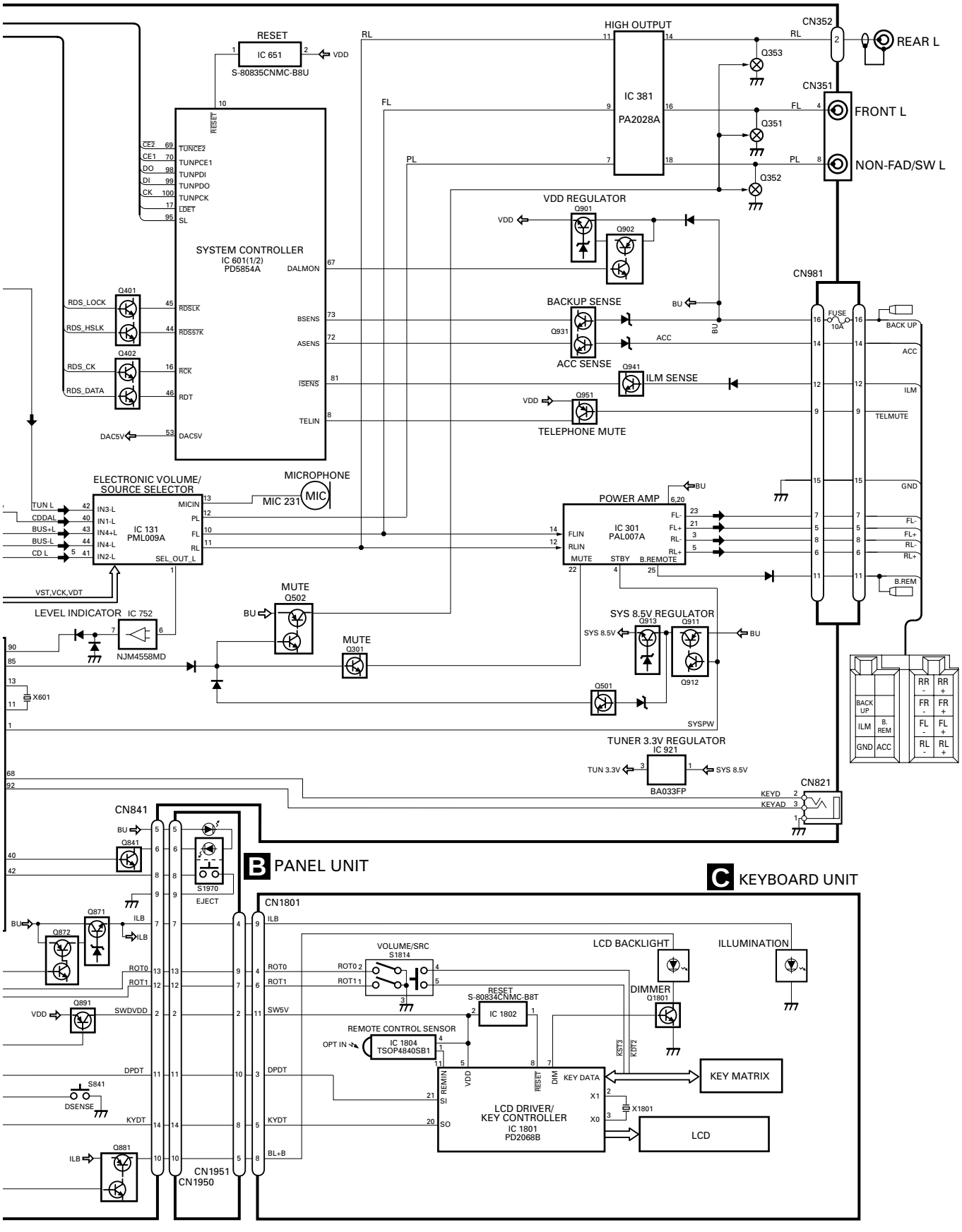
Mark	No.	Description	Part No.
	1	CD Core Unit(S10MP3)	CWX2745
	2	Connector(CN101)	CKS4182
	3	Connector(CN901)	CKS4021
	4	Screw	BMZ20P035FTC
	5	Screw	BSZ20P040FTC
	6	Screw(M2x4)	CBA1362
	7	Screw(M2x3)	CBA1511
	8	Screw(M2x3)	CBA1527
	9	Washer	CBF1037
	10	Washer	CBF1038
	11	Washer	CBF1060
	12	Spring	CBH2390
	13	Spring	CBH2606
	14	Spring	CBH2607
	15	Spring	CBH2608
	16	Spring	CBH2609
	17	Spring	CBH2610
	18	Spring	CBH2611
	19	Spring	CBH2612
	20	Spring	CBH2613
	21	Spring	CBH2614
	22	Spring	CBH2615
	23	Spring	CBH2616
	24	Spring	CBH2617
	25	Spring	CBH2620
	26	Spring	CBH2621
	27	Spring	CBH2641
	28	Spring	CBH2642
	29	Spring	CBH2643
	30	Spring	CBH2659
	31	Spring	CBH2688
*	32	Spring	CBL1614
	33	Shaft	CLA3845
	34	Frame	CNC9962
	35	Frame	CNC9963
	36	Bracket	CNC9966
	37	Bracket	CNC9967
	38	Arm	CNC9968
	39	Arm	CNC9973
	40	Lever	CNC9983
	41	Lever	CNC9984
	42	Sheet	CNM8134
	43	Collar	CNV6906
	44	Guide	CNV6925
	45	Arm	CNV7198

Mark	No.	Description	Part No.
	46	Rack	CNV7199
	47	Holder	CNV7201
	48	Holder	CNV7202
	49	Arm	CNV7203
	50	Gear	CNV7207
	51	Gear	CNV7208
	52	Gear	CNV7209
	53	Gear	CNV7210
	54	Gear	CNV7211
	55	Gear	CNV7212
	56	Rack	CNV7214
	57	Arm	CNV7215
	58	Arm	CNV7216
	59	Guide	CNV7217
	60	Roller	CNV7218
	61	Gear	CNV7219
	62	Arm	CNV7221
	63	Arm	CNV7220
	64	Arm	CNV7222
	65	Damper	CNV7313
	66	Damper	CNV7314
	67	Arm	CNV7341
	68	Arm	CNV7342
	69	Guide	CNV7360
	70	Guide	CNV7361
	71	Holder	CNV7437
	72	Arm	CNV7444
	73	Gear	CNV7595
	74	Damper	CNV7618
	75	Motor Unit(M1)	CXB6007
	76	Chassis Unit	CXB8728
	77	Screw Unit	CXB8729
	78	Gear Unit	CXB8731
	79	Arm Unit	CXB8732
	80	Arm Unit	CXB8735
	81	Arm Unit	CXB8852
	82	Motor Unit(M2)	CXB8933
	83	Bracket	CNC9985
	84	Screw	JFZ20P020FTC
	85	Screw(M2x5)	EBA1028
	86	Screw	JFZ20P020FTC
	87	Screw	JGZ17P022FTC
	88	Washer	YE15FTC
	89	Washer	YE20FTC
	90	Pickup Unit(Service)(P10)	CXX1641
	91	Screw	IMS26P030FMC
	92	Connector(CN902)	CKS2195

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

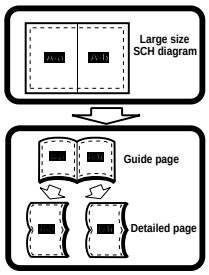
3.1 BLOCK DIAGRAM



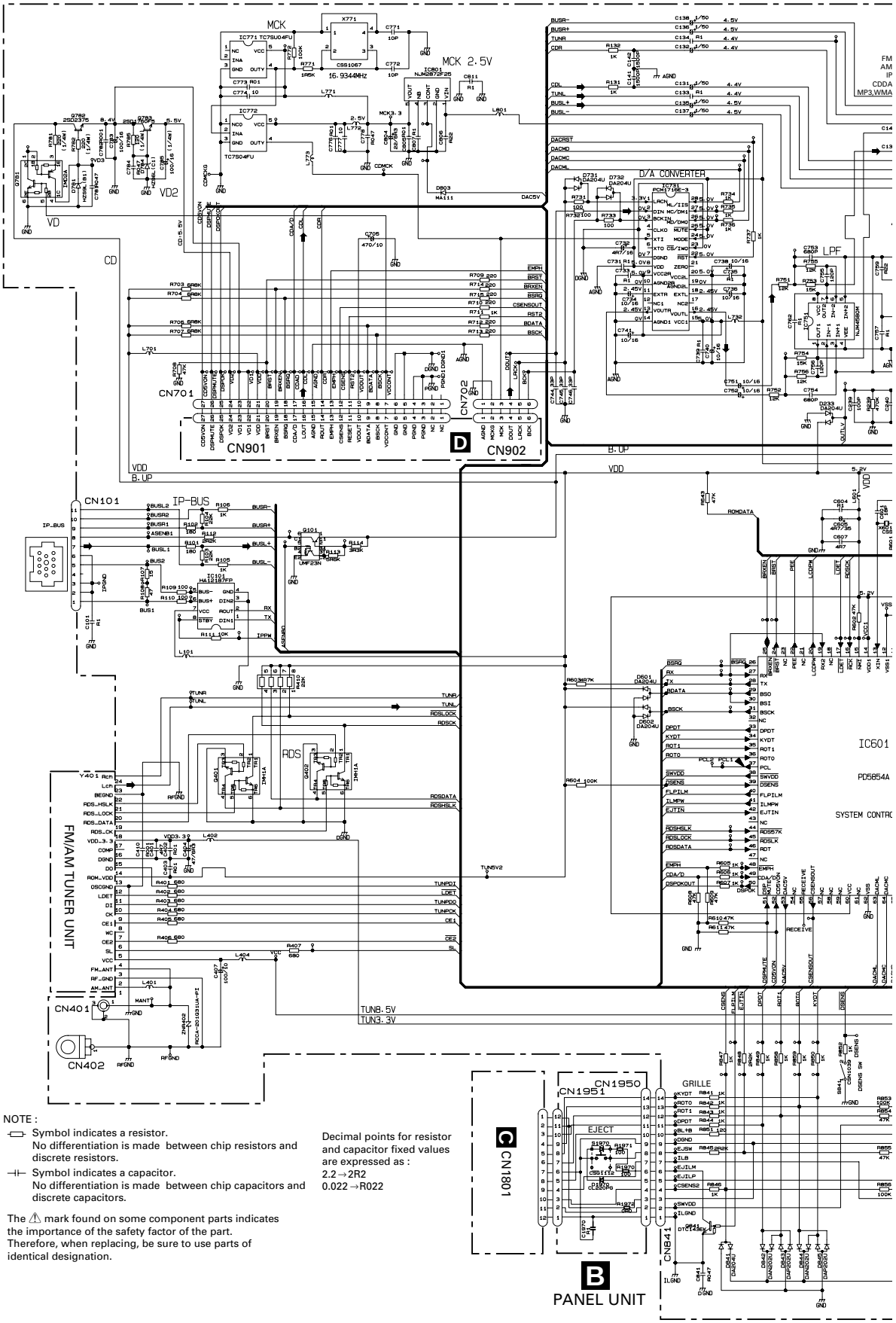

RESET
IC 651
S-80835CNMC-B8U
VDD
HIGH OUTPUT
IC 381
PA2028A
CN352
REAR L
CN351
FRONT L
NON-FAD/SW L
Q353
Q351
Q352
RL
FL
PL
SYSTEM CONTROLLER
IC 601(1/2)
PD5854A
VDD REGULATOR
Q901
Q902
CN981
BACKUP SENSE
Q931
ACC SENSE
ILM SENSE
Q941
Q951
TELEPHONE MUTE
FUSE
10A
BACK UP
ACC
ILM
TELMUTE
GND
B.REM
ELECTRONIC VOLUME/
SOURCE SELECTOR
IC 131
PML009A
MICROPHONE
MIC 231
MIC
POWER AMP
IC 301
PAL007A
MUTE
Q502
Q301
LEVEL INDICATOR
IC 752
NJM4558MD
SYS 8.5V REGULATOR
Q913
Q911
Q912
Q501
SYSPW
TUNER 3.3V REGULATOR
IC 921
BA033FP
TUN 3.3V
SYS 8.5V
CN821
KEYD
KEYAD
CN841
Q841
S1970
EJECT
B PANEL UNIT
C KEYBOARD UNIT
CN1801
Q871
Q872
Q891
Q881
S841
DSENSE
CN1951
CN1950
VOLUME/SRC
S1814
LCD BACKLIGHT
ILLUMINATION
DIMMER
Q1801
RESET
S-80834CNMC-B8T
IC 1802
REMOTE CONTROL SENSOR
IC 1804
TSOP4840SB1
KEY DATA
KEY MATRIX
LCD DRIVER/
KEY CONTROLLER
IC 1801
PD2068B
X1801
LCD

3.2 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)

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



A-a

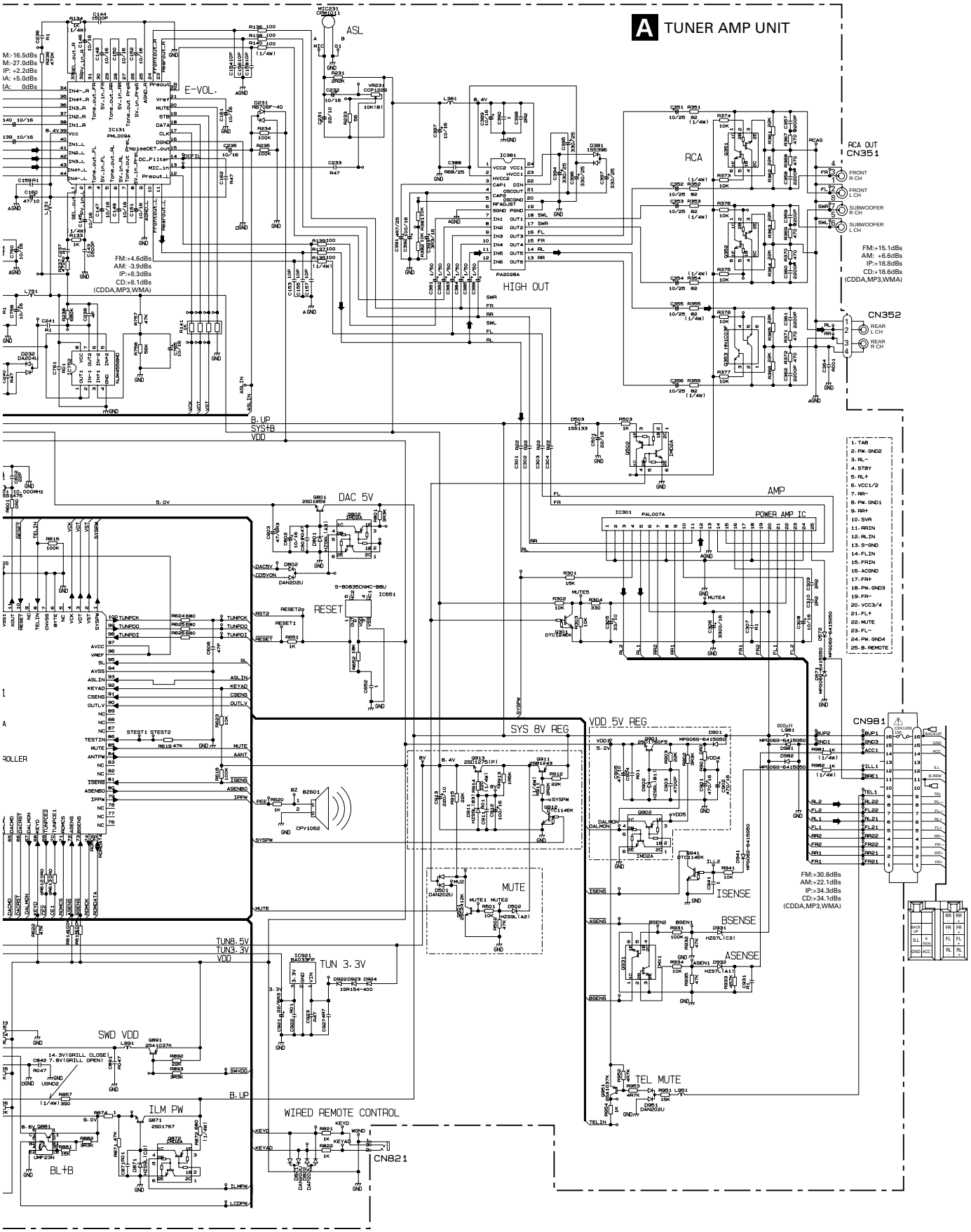


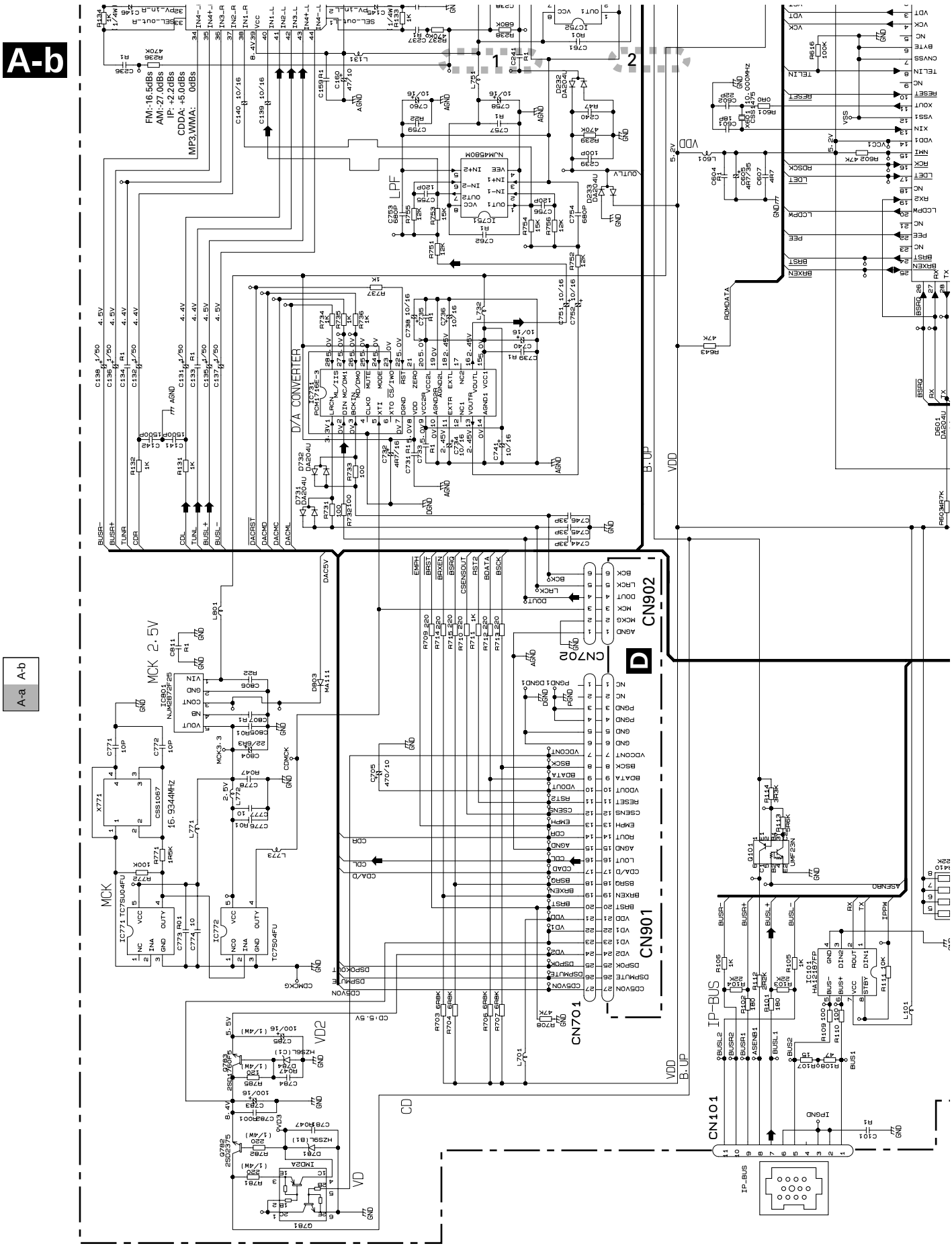
NOTE :

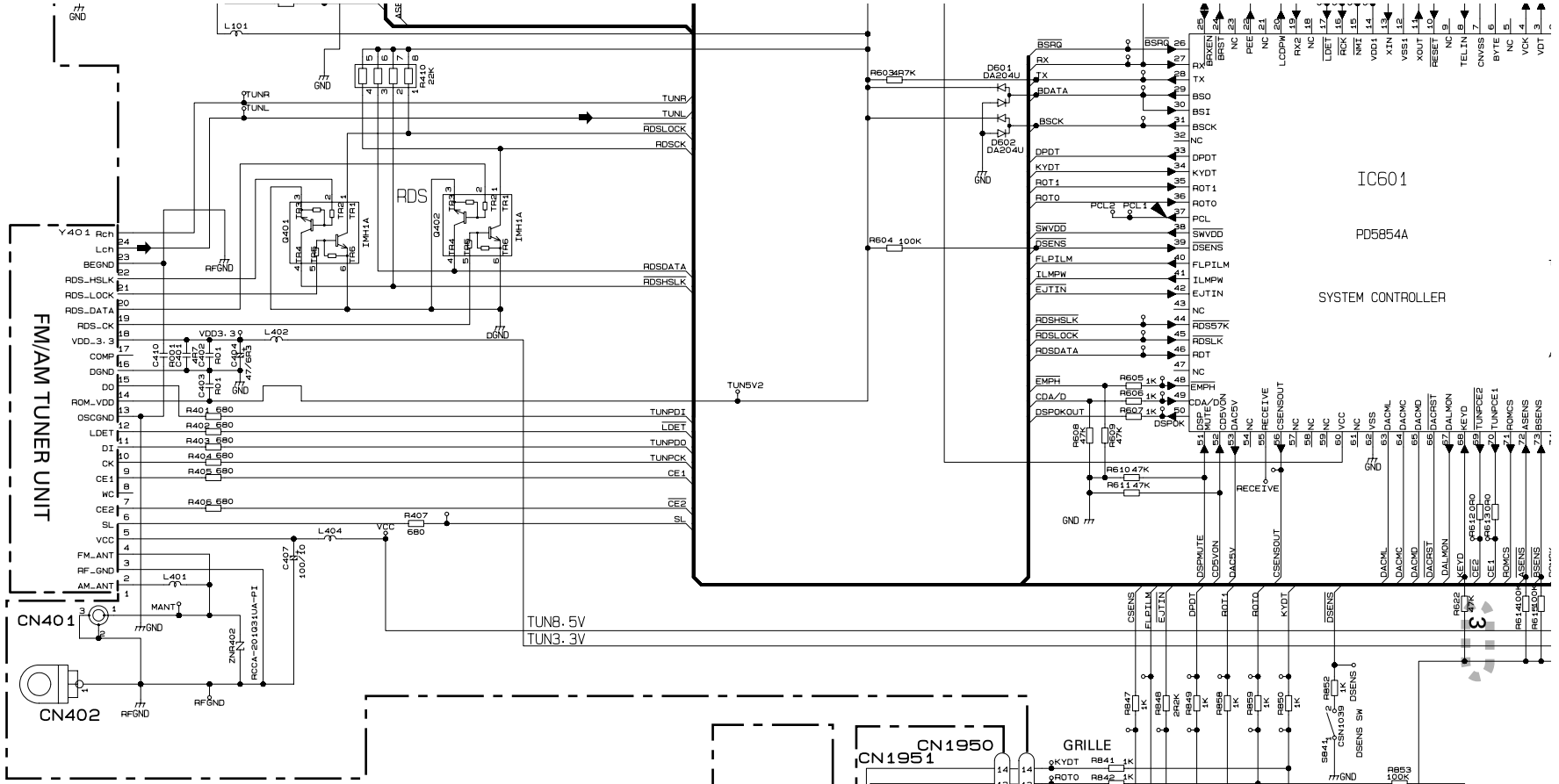
- Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

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

Decimal points for resistor and capacitor fixed values are expressed as :
2.2→2R2
0.022→R022


A TUNER AMP UNIT
ASL
E-VOL.
RCA
RCA OUT CN351
FRONT R CH
FRONT L CH
SUBWOOFER R CH
SUBWOOFER L CH
CN352
REAR L CH
REAR R CH
HIGH OUT
AMP
POWER AMP IC
DAC 5V
RESET
SYS 8V REG
VDD 5V REG
MUTE
ISENSE
BSENSE
ASENSE
TEL MUTE
TUN 3.3V
SWD VDD
ILM PW
BL+B
WIRED REMOTE CONTROL
CN821
CN981
B.UP
SYS+B
VDD
TUN8.5V
TUN3.3V
FM:+4.6dBs
AM: -3.9dBs
IP:+8.3dBs
CD:+8.1dBs
(CDDA,MP3,WMA)
FM:+15.1dBs
AM: +6.6dBs
IP:+18.8dBs
CD:+18.6dBs
(CDDA,MP3,WMA)
FM:+30.6dBs
AM:+22.1dBs
IP:+34.3dBs
CD:+34.1dBs
(CDDA,MP3,WMA)
1. TAB
2. PW. GND2
3. RL-
4. STBY
5. RL+
6. VCC1/2
7. RR-
8. PW. GND1
9. RR+
10. SVR
11. RRIN
12. RLIN
13. S-GND
14. FLIN
15. FRIN
16. ACGND
17. FR+
18. PW. GND3
19. FR-
20. VCC3/4
21. FL+
22. MUTE
23. FL-
24. PW. GND4
25. B. REMOTE


A-b
A-a
FM:-16.5dBs
AM:-27.0dBs
IP: +2.2dBs
CDDA: +5.0dBs
MP3,WMA: 0dBs
D/A CONVERTER
LPF
MCK 2.5V
MCK
CN902
CN702
CN901
CN701
CN101
IP-BUS
VDD
B.UP
CD
VD
VD2



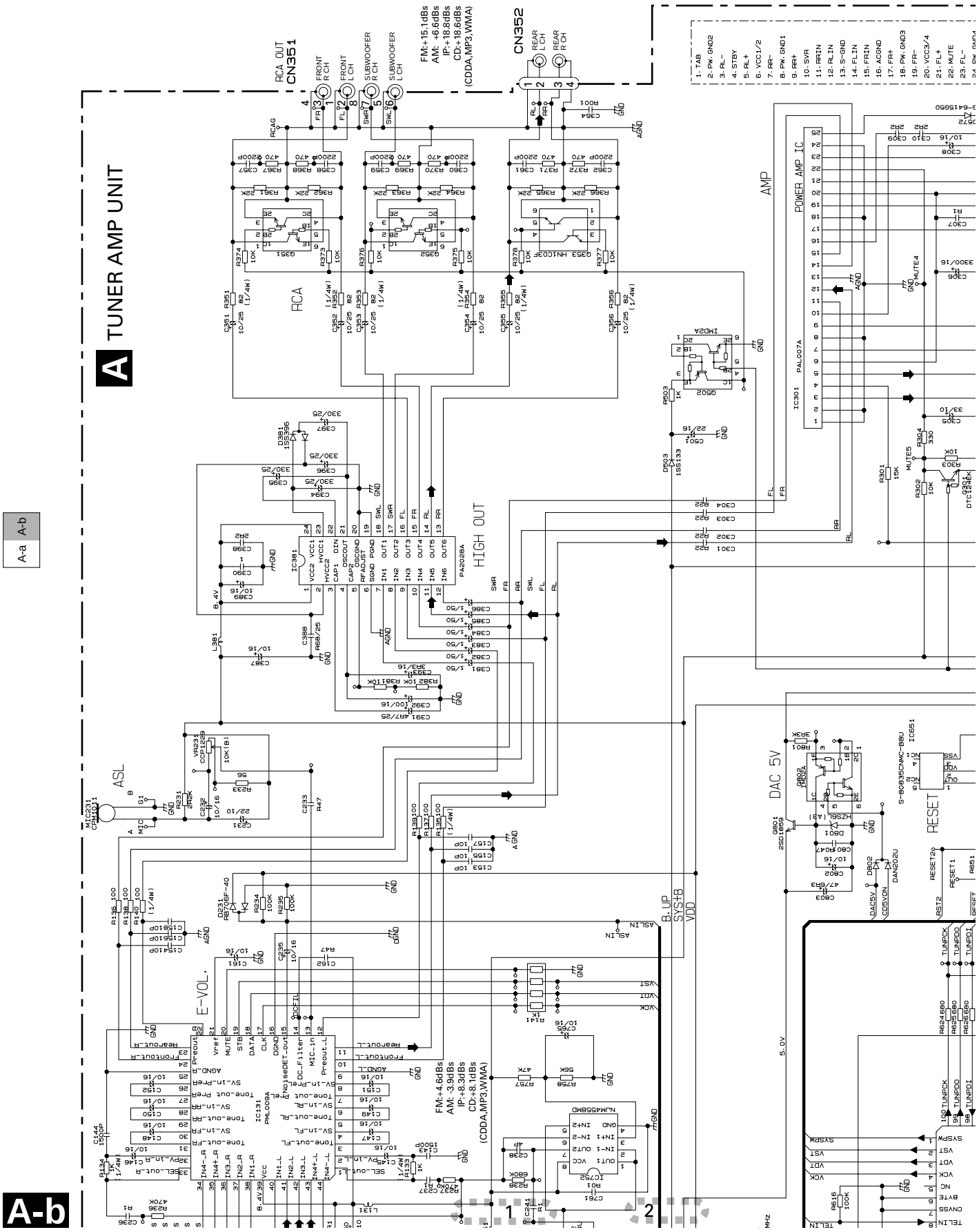
NOTE :

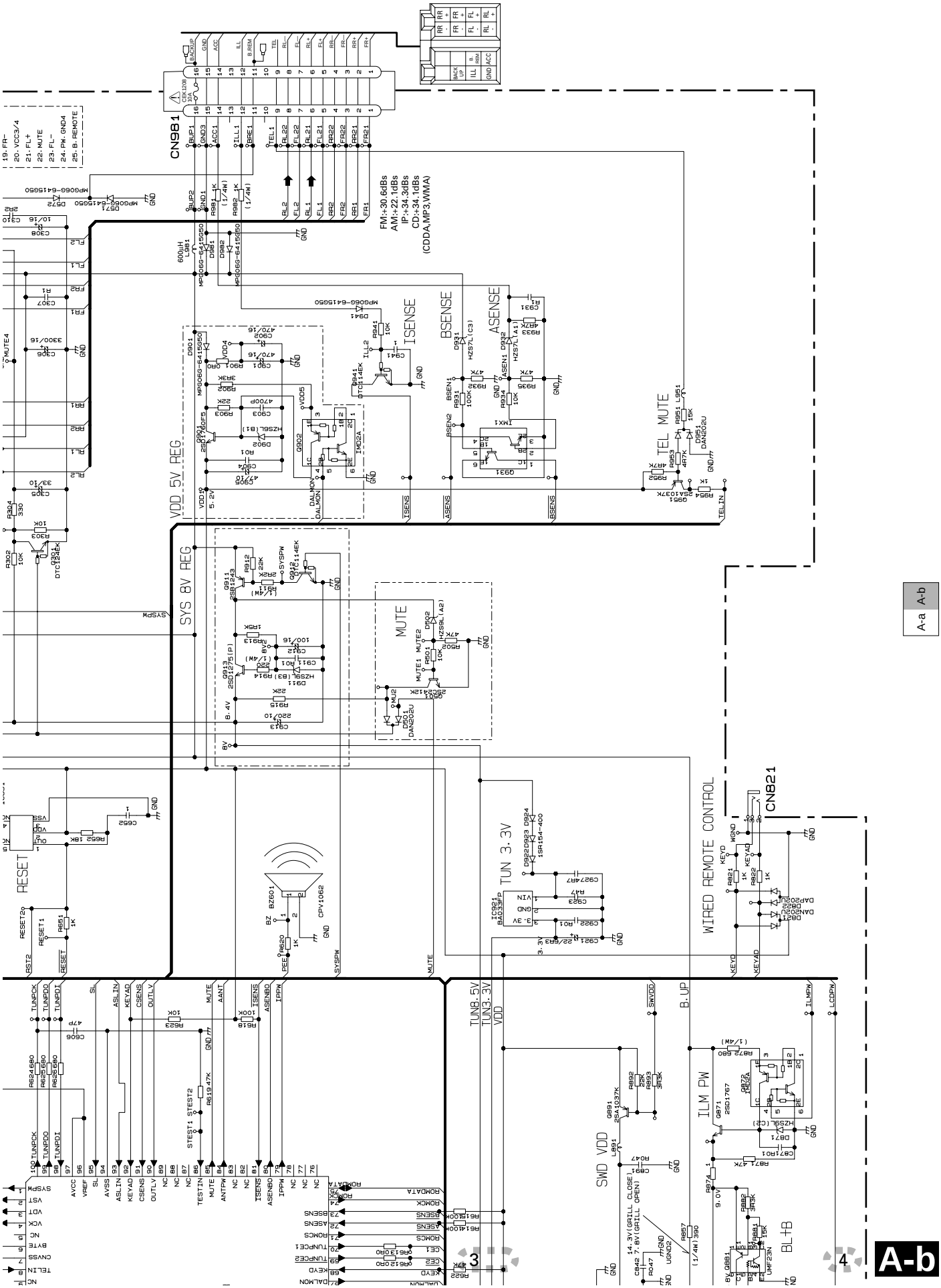
- Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

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

Decimal points for resistor and capacitor fixed values are expressed as :
2.2→2R2
0.022→R022

A-a A-b

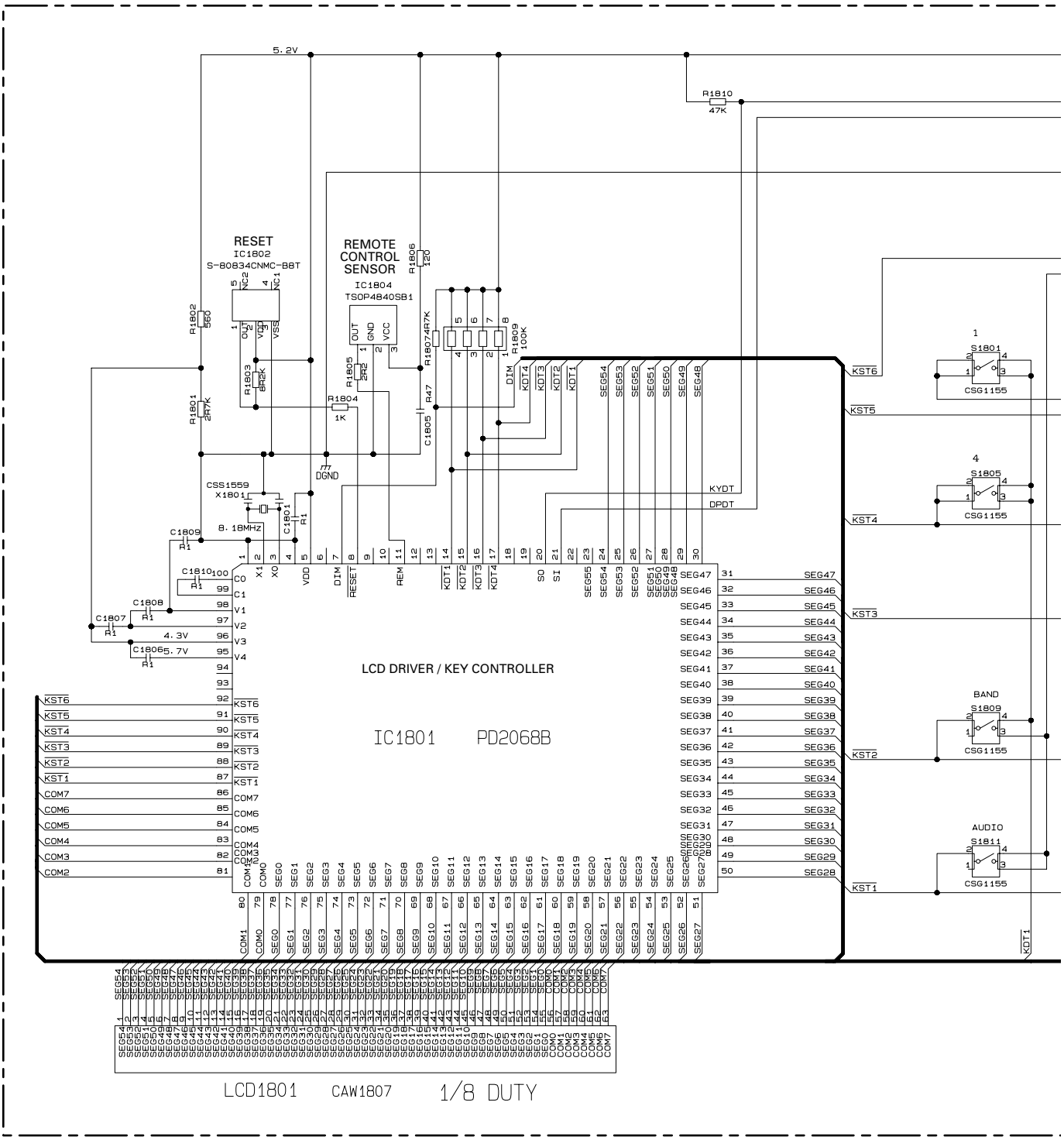

A TUNER AMP UNIT
RCA OUT CN351
CN352
FRONT R CH
FRONT L CH
SUBWOOFER R CH
SUBWOOFER L CH
REAR L CH
REAR R CH
FM:+15.1dBs AM: +6.6dBs IP:+18.8dBs CD:+18.6dBs (CDDA,MP3,WMA)
1. TAB
2. PW. GND2
3. RL−
4. STBY
5. RL+
6. VCC1/2
7. RR−
8. PW. GND1
9. RR+
10. SVR
11. RRIN
12. RLIN
13. S-GND
14. FLIN
15. FRIN
16. ACGND
17. FR+
18. PW. GND3
19. FR−
20. VCC3/4
21. FL+
22. MUTE
23. FL−
RCA
AMP
POWER AMP IC
PAL007A
IC301
HIGH OUT
PA2028A
IC381
ASL
E-VOL.
PML009A
IC131
DAC 5V
RESET
S-80835CNMC-B6U
IC651
B.UP SYS+B VDD
FM:+4.6dBs AM: -3.9dBs IP:+8.3dBs CD:+8.1dBs (CDDA,MP3,WMA)
NJM4558MD
IC751
A-b
A-a
1
2


CN981
VDD 5V REG
SYS 8V REG
MUTE
TEL MUTE
TSENSE
BSENSE
ASENSE
RESET
TUN 3.3V
WIRED REMOTE CONTROL
CN821
ILM PW
SWD VDD
BL+B
FM:+30.6dBs
AM:+22.1dBs
IP:+34.3dBs
CD:+34.1dBs
(CDDA,MP3,WMA)

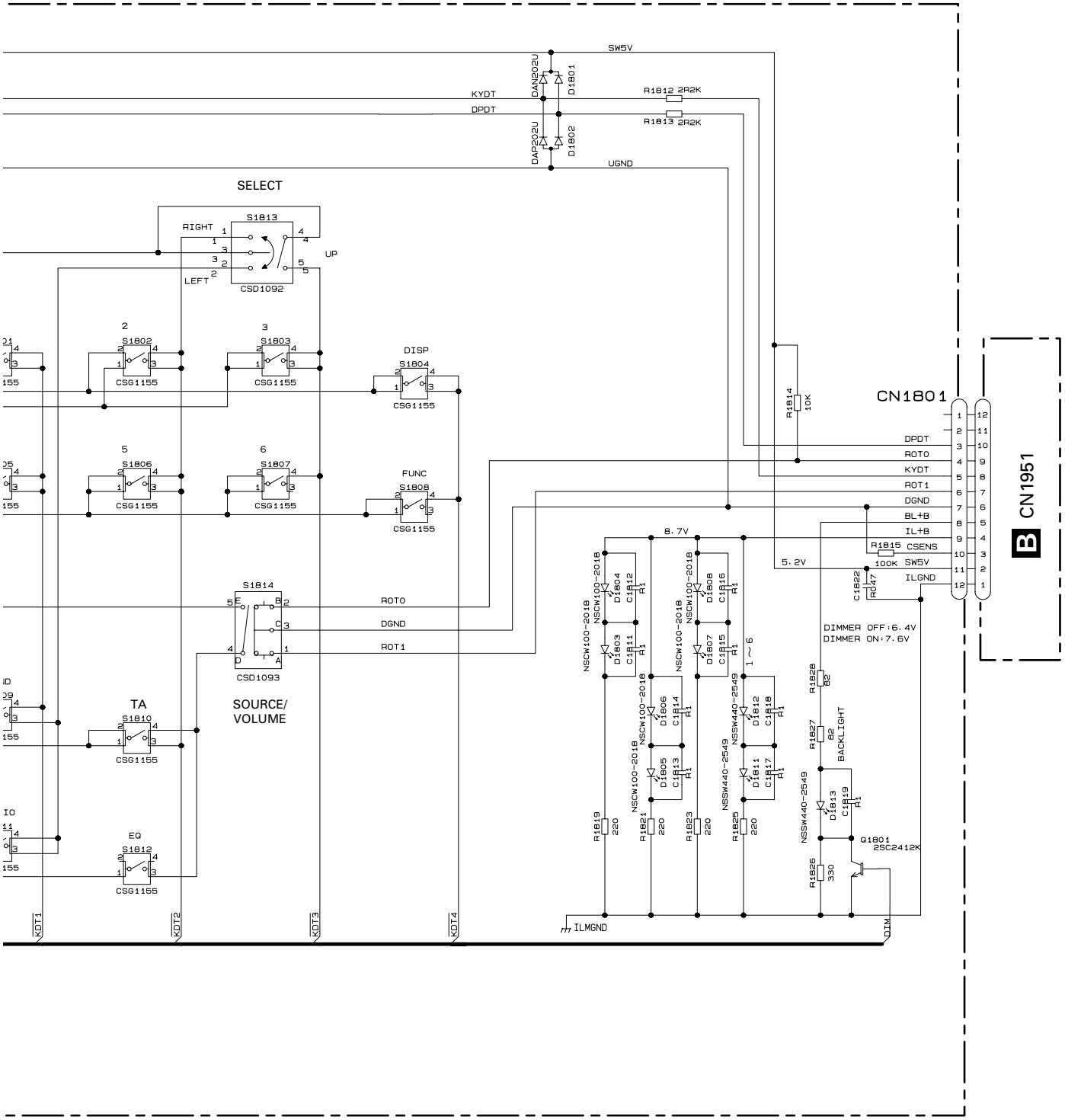
A-a A-b

A-b

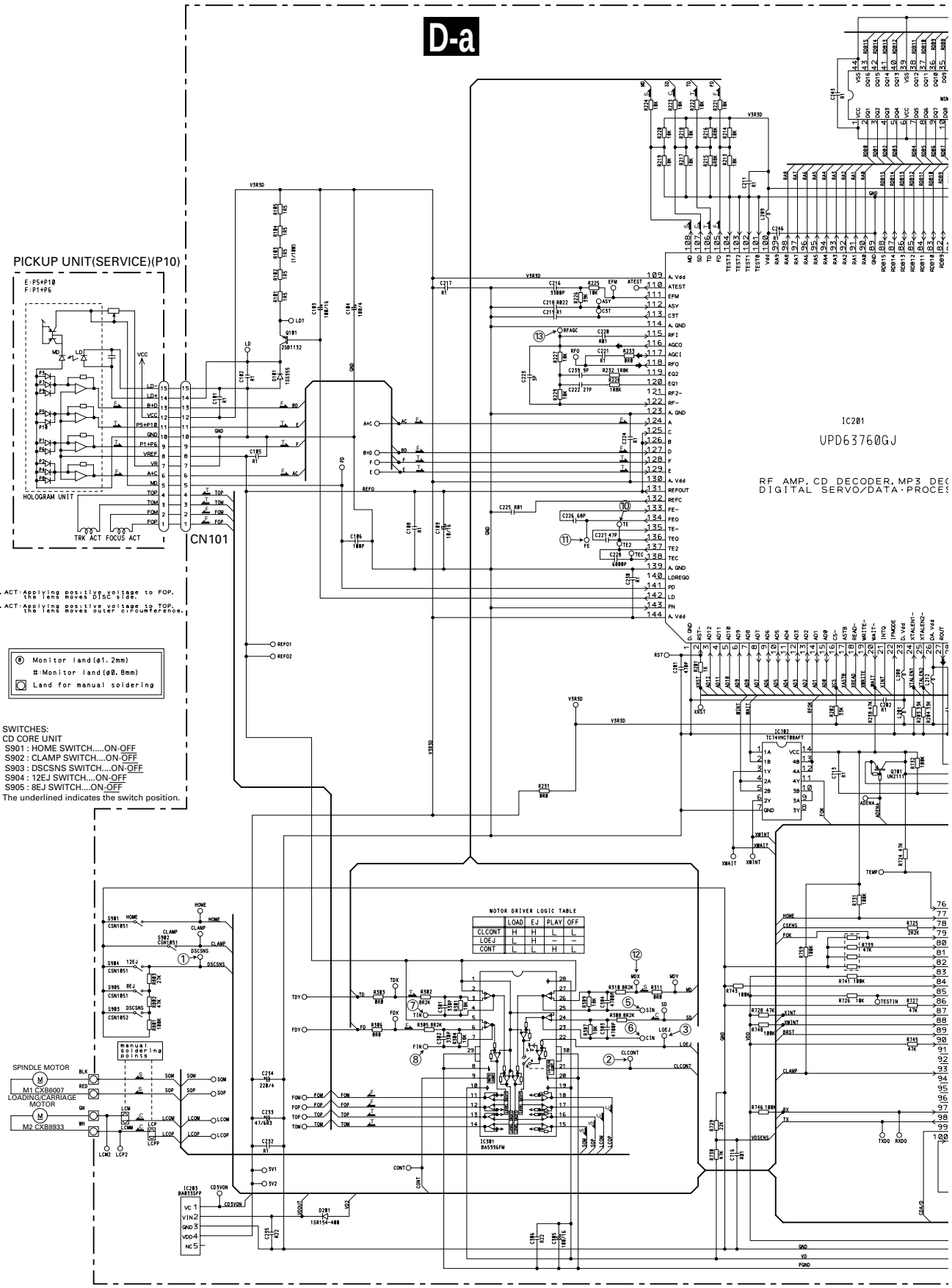
3.3 KEYBOARD UNIT

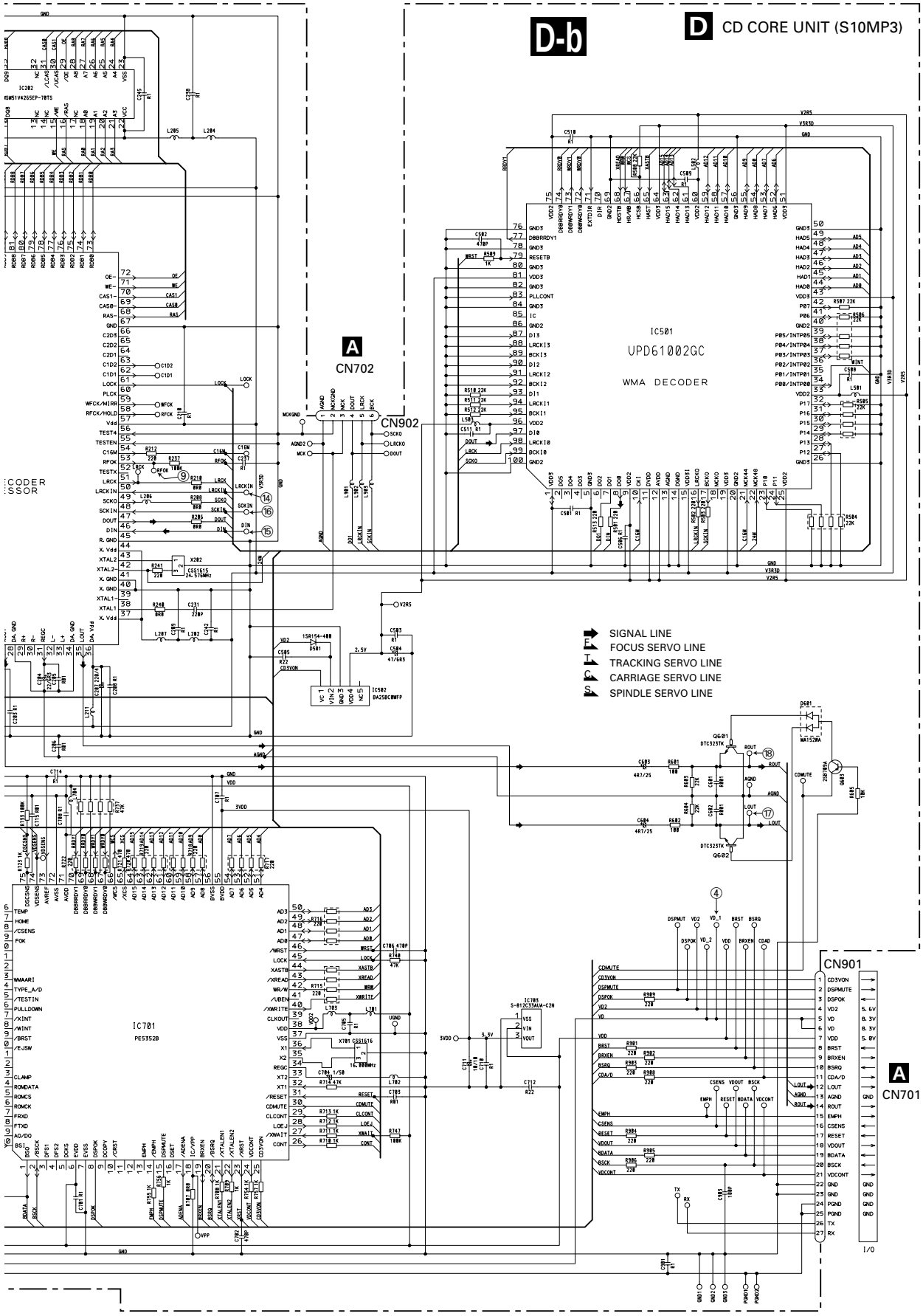


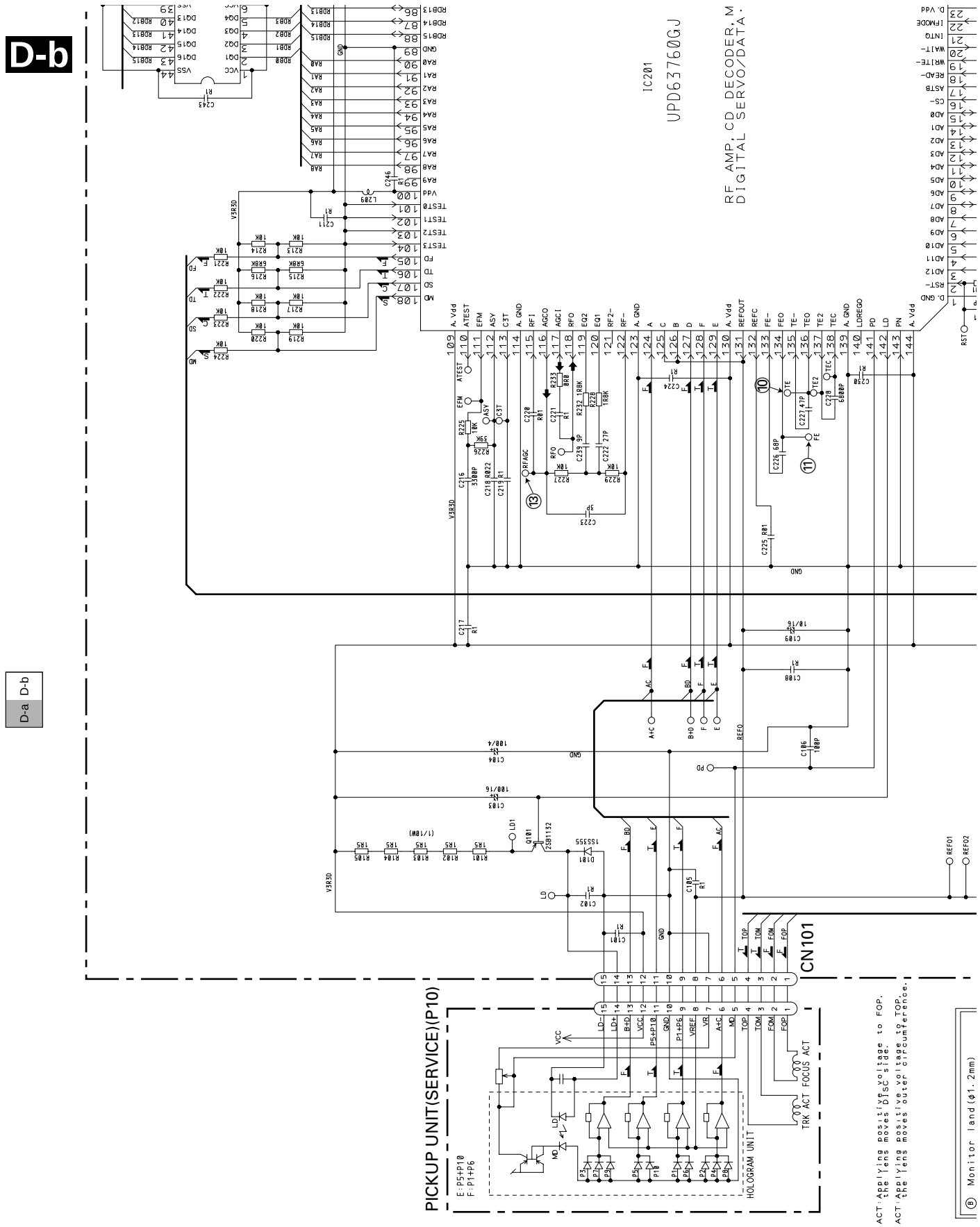
C KEYBOARD UNIT

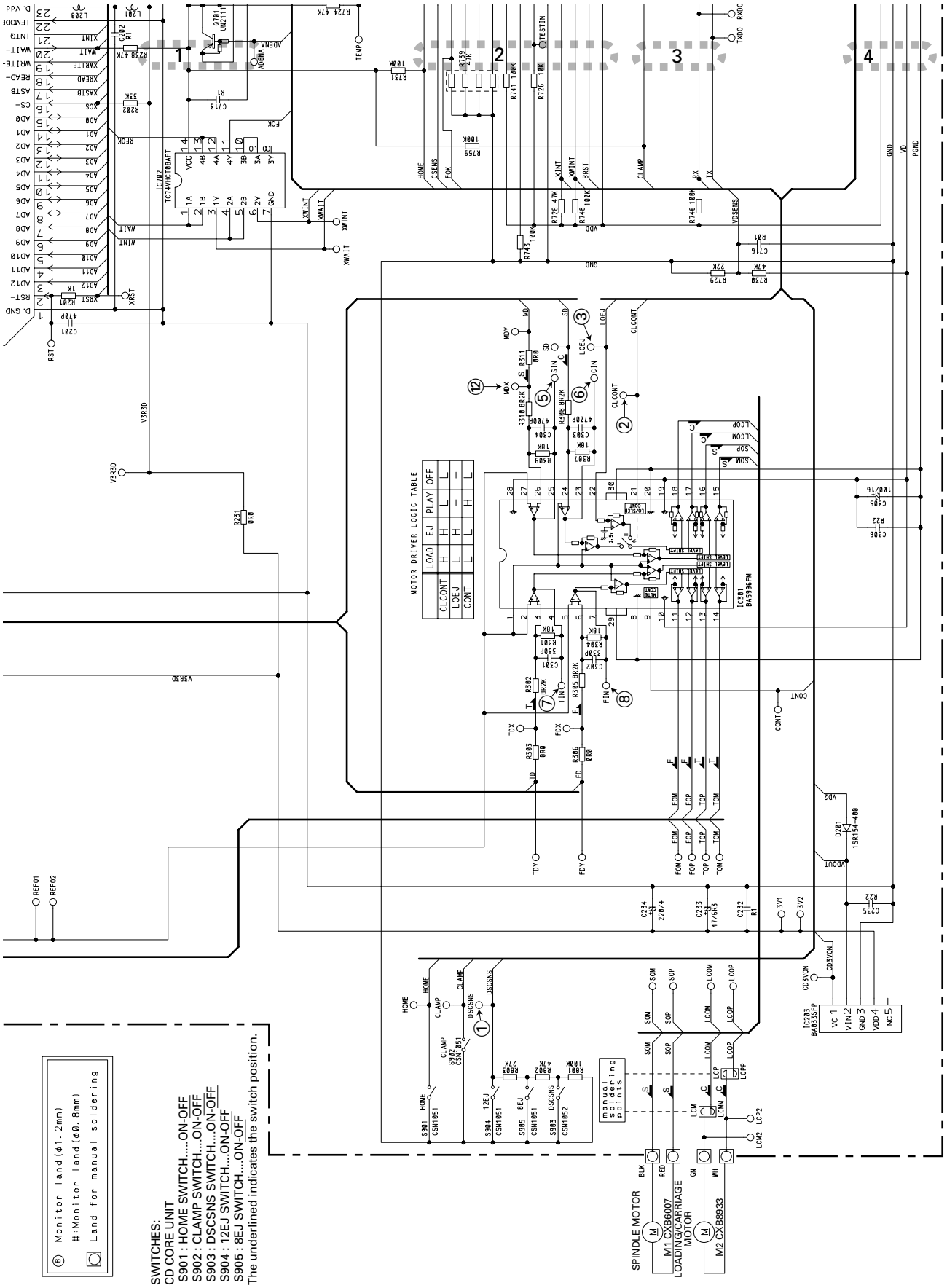


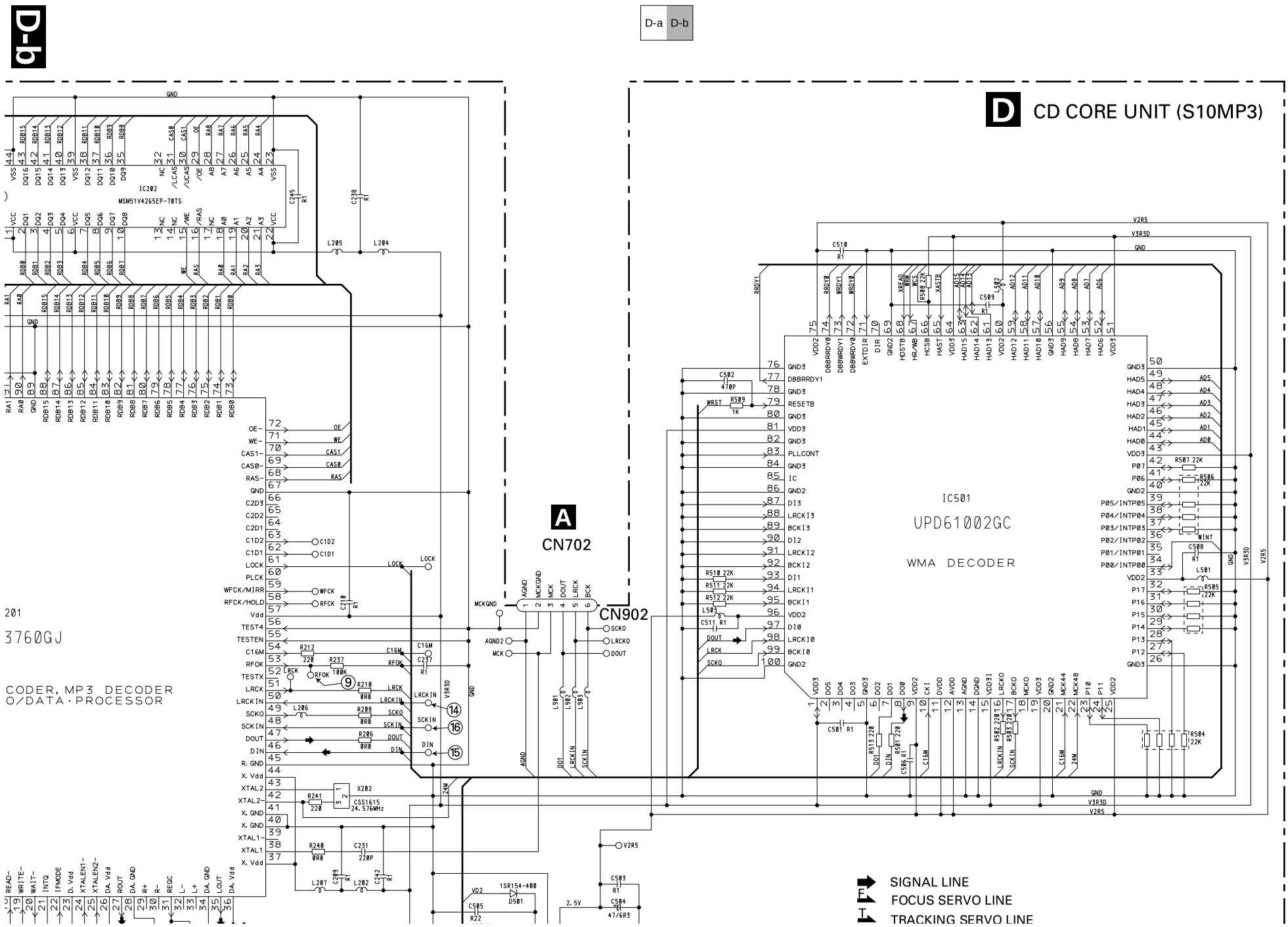
3.4 CD MECHANISM MODULE(GUIDE PAGE)

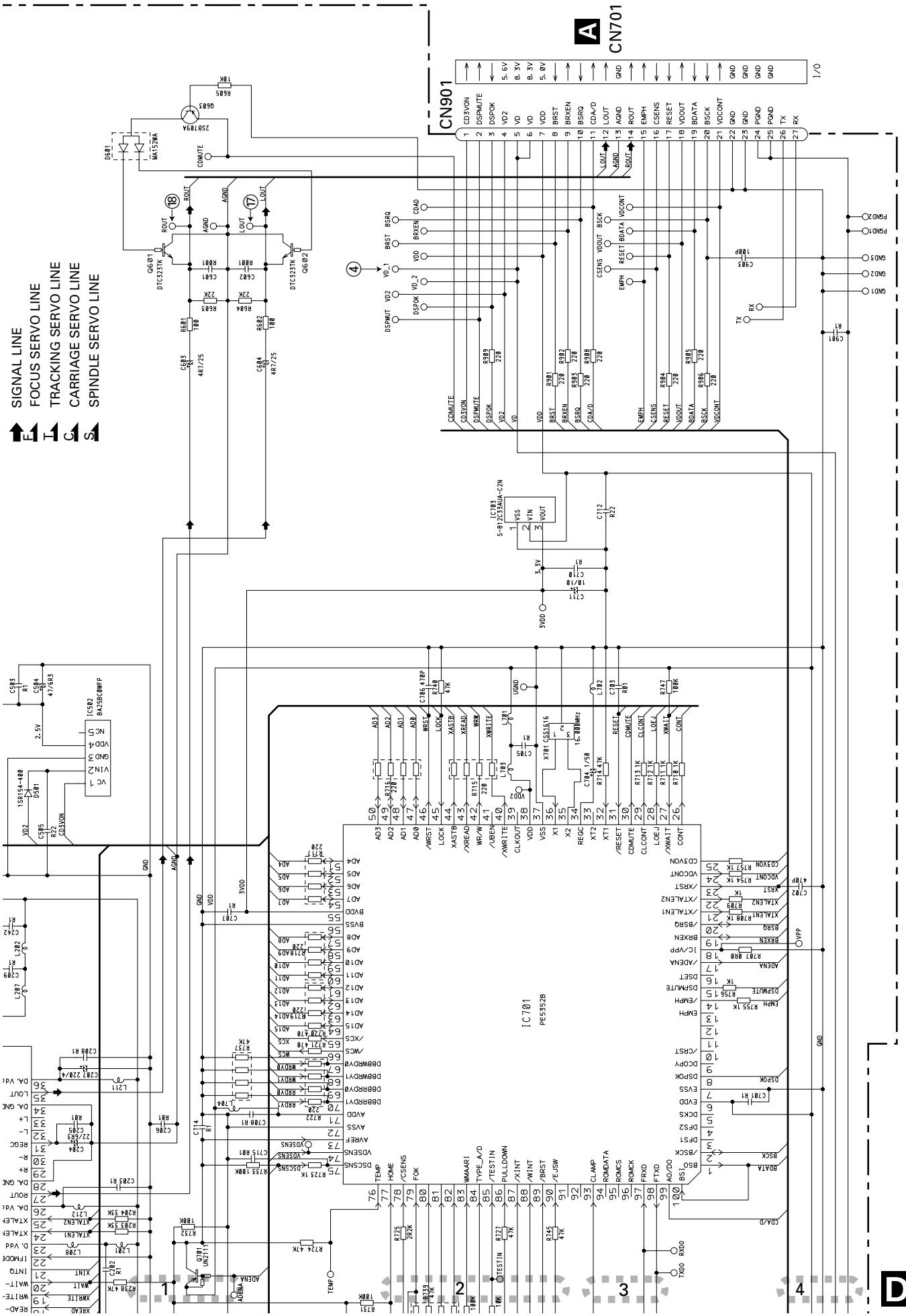



IC501
UPD61002GC
WMA DECODER
IC701
PE5352B
CN702
CN902
CN901
CN701
SIGNAL LINE
FOCUS SERVO LINE
TRACKING SERVO LINE
CARRIAGE SERVO LINE
SPINDLE SERVO LINE


D-b
D-a
IC201
UPD63760GJ
RF AMP, CD DECODER, M
DIGITAL SERVO/DATA.
CN101
PICKUP UNIT(SERVICE)(P10)
E: P5+P10
F: P1+P6
HOLOGRAM UNIT
TRK ACT FOCUS ACT
F. ACT Applying positive voltage to FOP.
the lens moves DISC side.
T. ACT Applying positive voltage to TOP.
the lens moves outer circumference.
⑧ Monitor land(φ1.2mm)
REF01
REF02


D-b
D-a
NOTE1) GND ...CD LSI,RFAMP,CPU
PGND ...Actuator,Motor Driver
AGND ...Audio
These GND's are not connected to each other on PCB.
PGND is connected to a floating mechanism part by a screw.
MOTOR DRIVER LOGIC TABLE
LOAD H EJ H PLAY L OFF L
CLCONT H L L
LOEJ L H –
CONT L L H L
SWITCHES:
CD CORE UNIT
S901 : HOME SWITCH.....ON-OFF
S902 : CLAMP SWITCH....ON-OFF
S903 : DSCSNS SWITCH...ON-OFF
S904 : 12EJ SWITCH....ON-OFF
S905 : 8EJ SWITCH....ON-OFF
The underlined indicates the switch position.
Ⓑ Monitor land(φ1.2mm)
Monitor land(φ0.8mm)
Land for manual soldering
SPINDLE MOTOR
M1 CXB6007
LOADING/CARRIAGE MOTOR
M2 CXB8933


D CD CORE UNIT (S10MP3)
A
CN702
CN902
IC202
MSM51V4265EP-70TS
IC501
UPD61002GC
WMA DECODER
201
3760GJ
CODER, MP3 DECODER
O/DATA · PROCESSOR
X202
CSS1615
24.576MHz
SIGNAL LINE
FOCUS SERVO LINE
TRACKING SERVO LINE

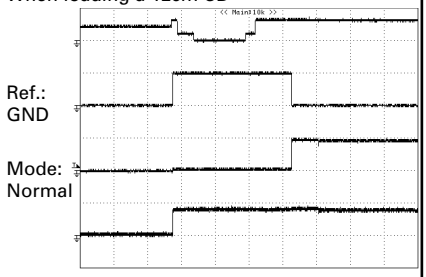

SIGNAL LINE
FOCUS SERVO LINE
TRACKING SERVO LINE
CARRIAGE SERVO LINE
SPINDLE SERVO LINE
CN701
CN901
IC701
PE5352B
D-a
D-b
D-b

● Waveforms

Note : 1. The encircled numbers denote measuring points in the circuit diagram.
2. Reference voltage REFO1(1.65V)

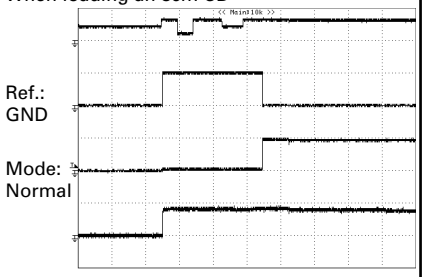
① DSCSNS 5V/div 500ms/div
② CLCONT 5V/div
③ LOEJ 5V/div
④ VD 10V/div

When loading a 12cm CD



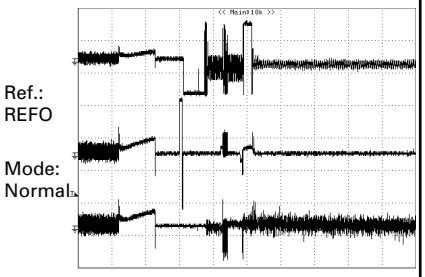
① DSCSNS 5V/div 500ms/div
② CLCONT 5V/div
③ LOEJ 5V/div
④ VD 10V/div

When loading an 8cm CD



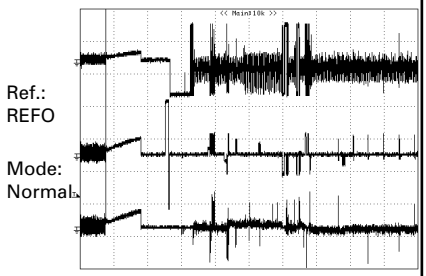
⑤ SIN 1V/div 2s/div
⑥ CIN 500mV/div
⑦ TIN 500mV/div

When setting up after loading a 12cm CD-DA disc



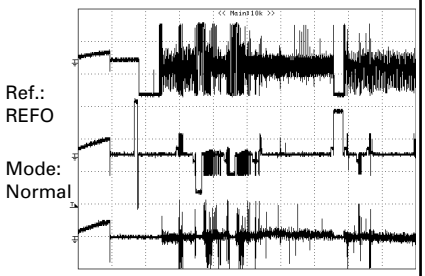
⑤ SIN 1V/div 2s/div
⑥ CIN 500mV/div
⑦ TIN 500mV/div

When setting up after loading a 12cm CD-ROM disc(1 session)



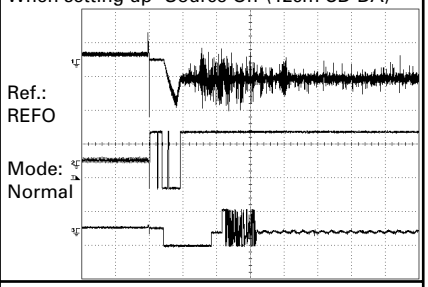
⑤ SIN 1V/div 2s/div
⑥ CIN 500mV/div
⑦ TIN 500mV/div

When setting up after loading a 12cm CD-ROM disc(3 session)



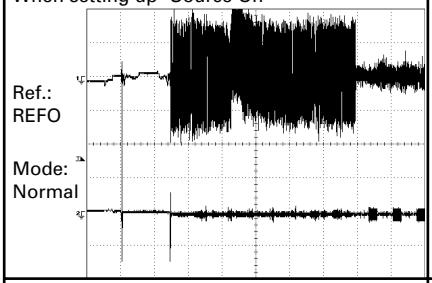
⑧ FIN 200mV/div 500ms/div
⑨ RFOK 2V/div
⑤ SIN 2V/div

When setting up "Source On"(12cm CD-DA)



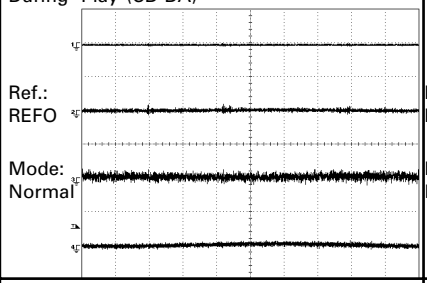
⑩ TE 500mV/div 200ms/div
⑪ FE 500mV/div

When setting up "Source On"



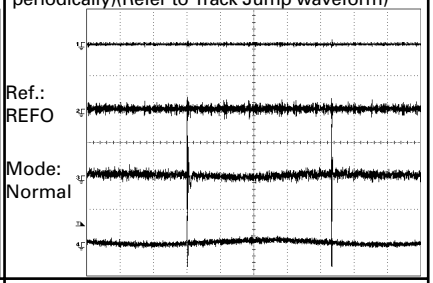
⑪ FE 500mV/div 20ms/div
⑧ FIN 500mV/div
⑩ TE 500mV/div
⑦ TIN 500mV/div

During "Play"(CD-DA)



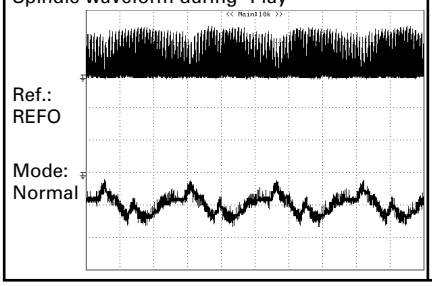
⑪ FE 500mV/div 20ms/div
⑧ FIN 500mV/div
⑩ TE 500mV/div
⑦ TIN 500mV/div

During "Play"(CD-ROM)(Track Jump is generated periodically)(Refer to Track Jump waveform)



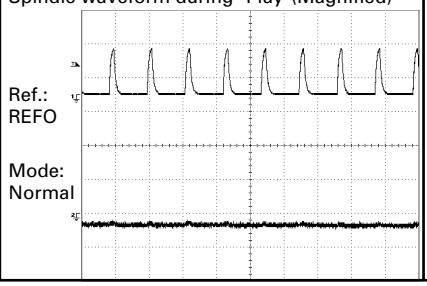
⑫ MDX 500mV/div 50ms/div
⑤ SIN 200mV/div

Spindle waveform during "Play"



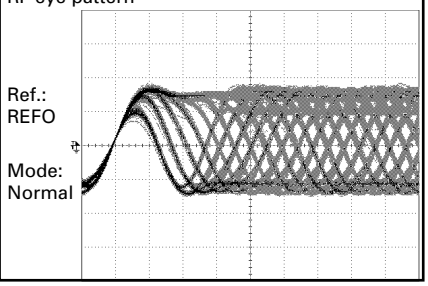
⑫ MDX 500mV/div 5µs/div
⑤ SIN 1V/div

Spindle waveform during "Play"(Magnified)



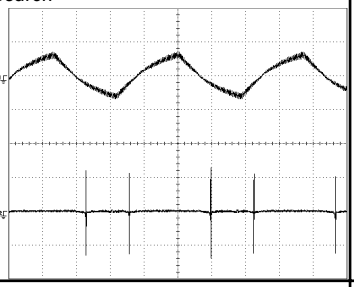
⑬ RFAGC 500mV/div 5µs/div

RF eye pattern



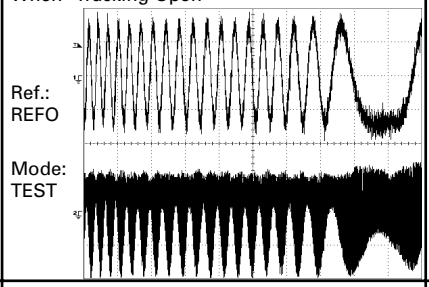
⑧ FIN 500mV/div 200ms/div
⑪ FE 500mV/div

Focus Search



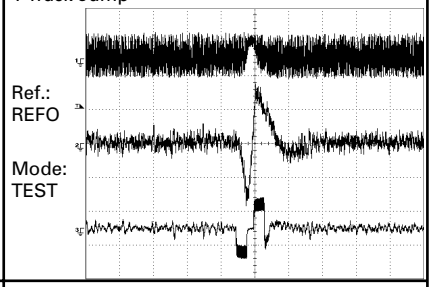
⑩ TE 500mV/div 2ms/div
⑬ RFAGC 500mV/div

When "Tracking Open"



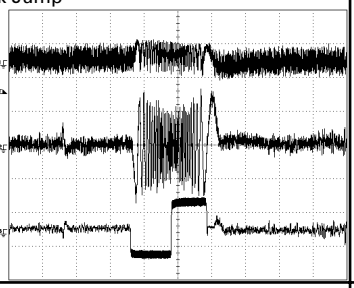
⑬ RFAGC 1V/div 500µs/div
⑩ TE 500mV/div
⑦ TIN 500mV/div

1 Track Jump



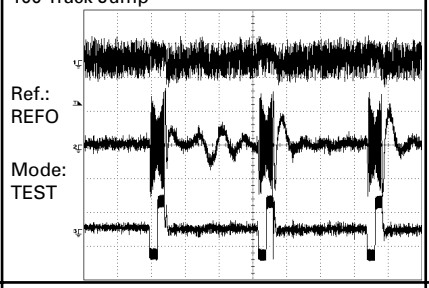
⑬ RFAGC 1V/div 1ms/div
⑩ TE 500mV/div
⑦ TIN 500mV/div

32 Track Jump



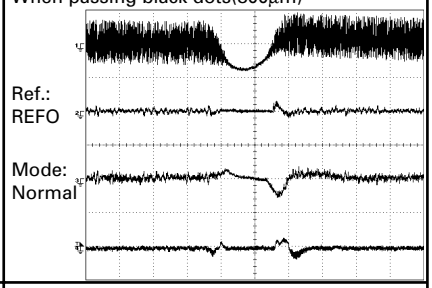
⑬ RFAGC 1V/div 5ms/div
⑩ TE 500mV/div
⑦ TIN 500mV/div

100 Track Jump



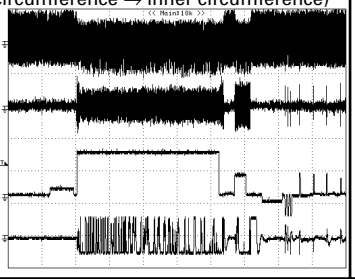
⑬ RFAGC 1V/div 500µs/div
⑦ TIN 1V/div
⑩ TE 1V/div
⑧ FIN 1V/div

When passing black dots(800µm)



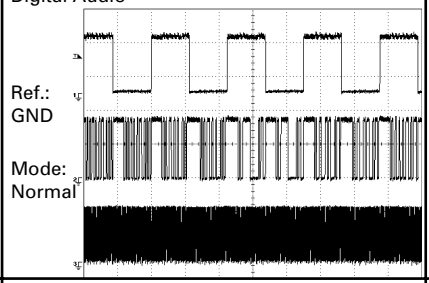
⑬ RFAGC 1V/div 200ms/div
⑮ TE 1V/div
⑥ CIN 500mV/div
⑤ SIN 2V/div

During inside/outside search
(outer circumference → inner circumference)



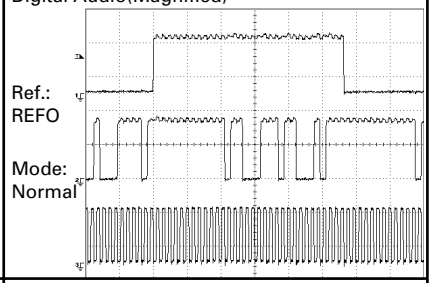
⑭ LRCKIN 2V/div 10µs/div
⑮ DIN 2V/div
⑯ SCKIN 2V/div

Digital Audio



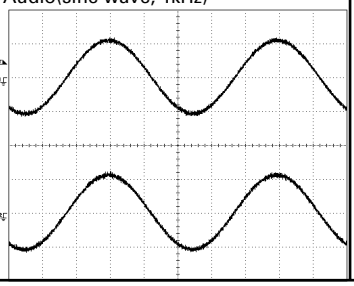
⑭ LRCKIN 2V/div 2µs/div
⑮ DIN 2V/div
⑯ SCKIN 2V/div

Digital Audio(Magnified)



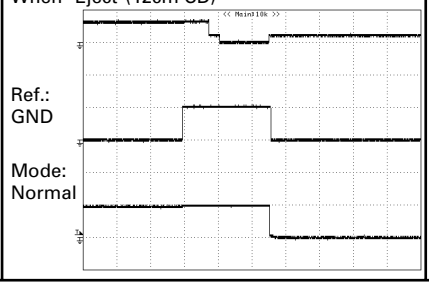
⑰ LOUT 1V/div 200µs/div
⑱ ROUT 1V/div

Analog Audio(sine wave, 1kHz)



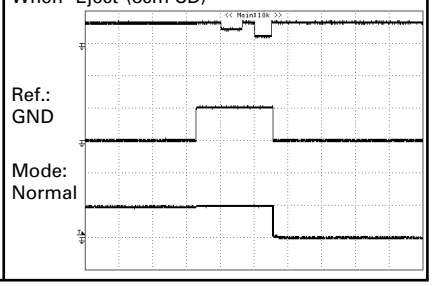
① DSCSNS 5V/div 500ms/div
② CLCONT 5V/div
③ LOEJ 5V/div

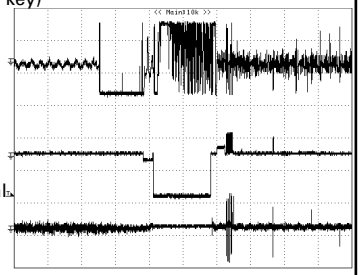
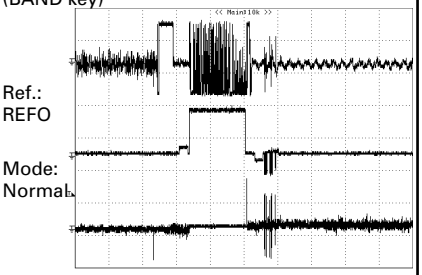
When "Eject"(12cm CD)



① DSCSNS 5V/div 10µs/div
② CLCONT 5V/div
③ LOEJ 5V/div

When "Eject"(8cm CD)



⑤ SIN 1V/div 500ms/div ⑥ CIN 500mV/div ⑦ TIN 500mV/div When switching to CD-ROM from CD-DA (BAND key)  	⑤ SIN 1V/div 500ms/div ⑥ CIN 500mV/div ⑦ TIN 500mV/div When switching to CD-DA from CD-ROM (BAND key)  	

A

B

C

D

E

F

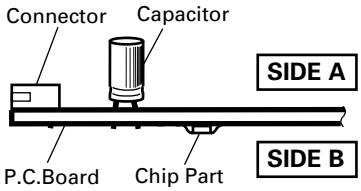
5 6 7 8

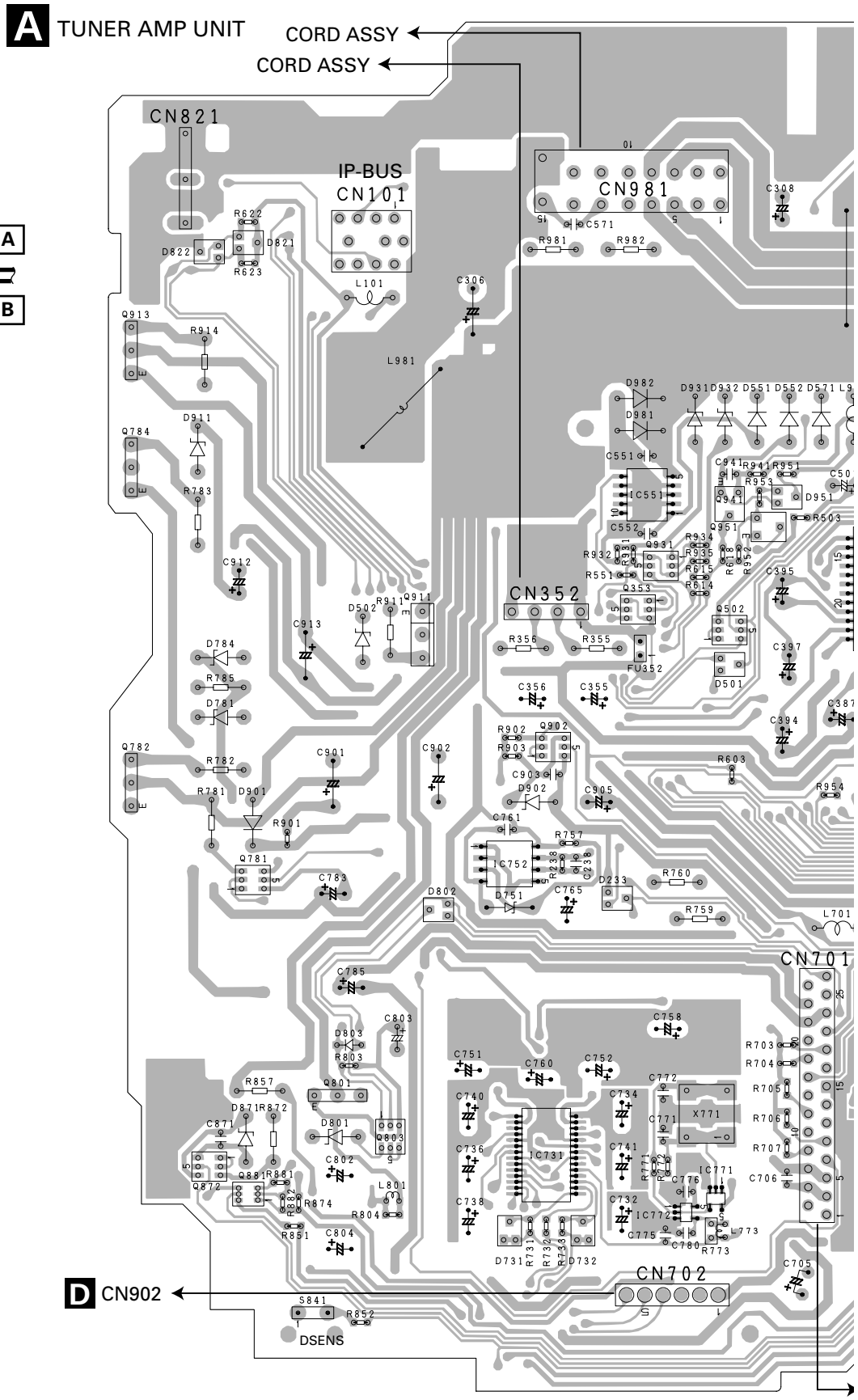
4. PCB CONNECTION DIAGRAM

4.1 TUNER AMP UNIT

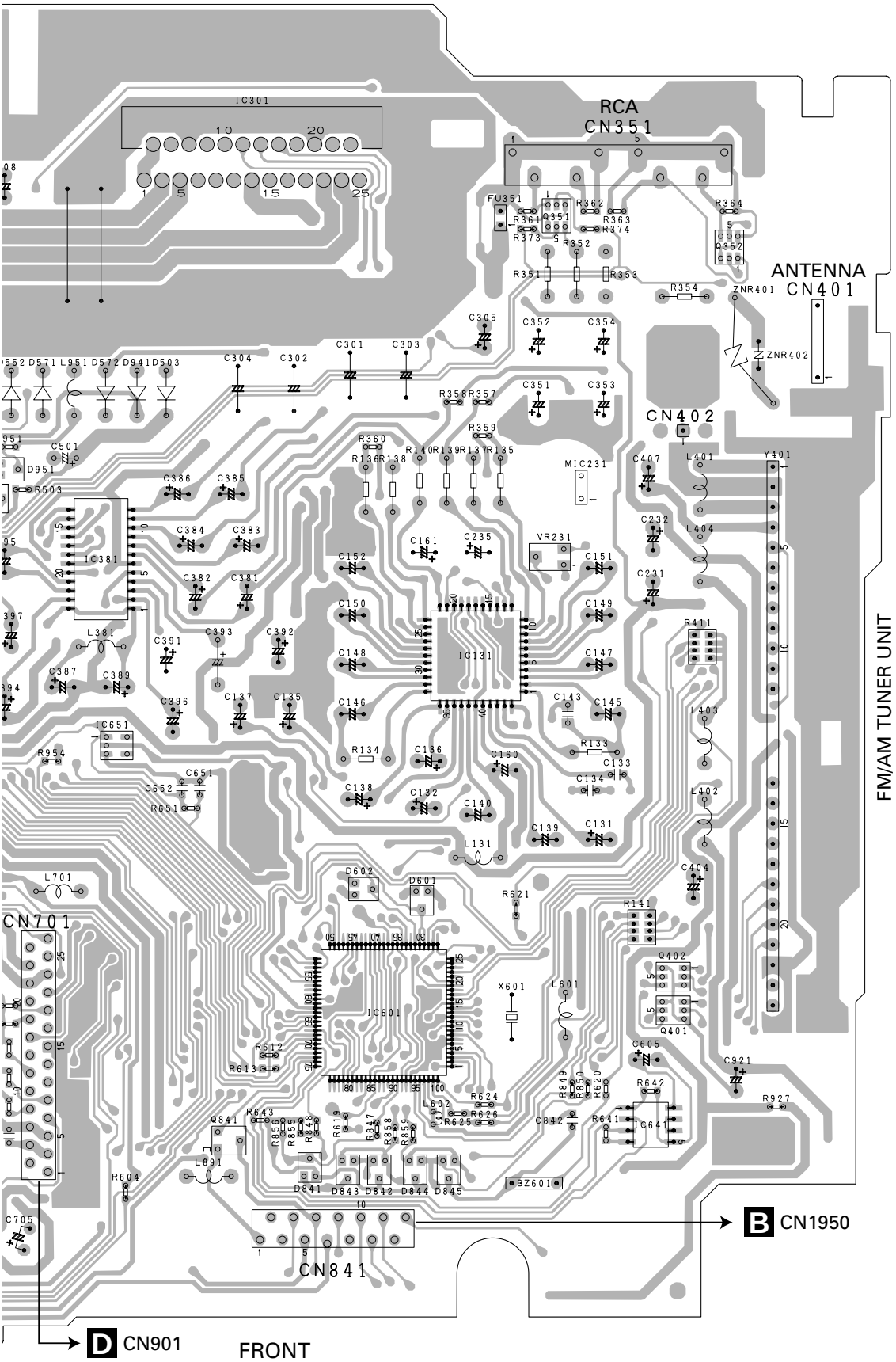
NOTE FOR PCB DIAGRAMS

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

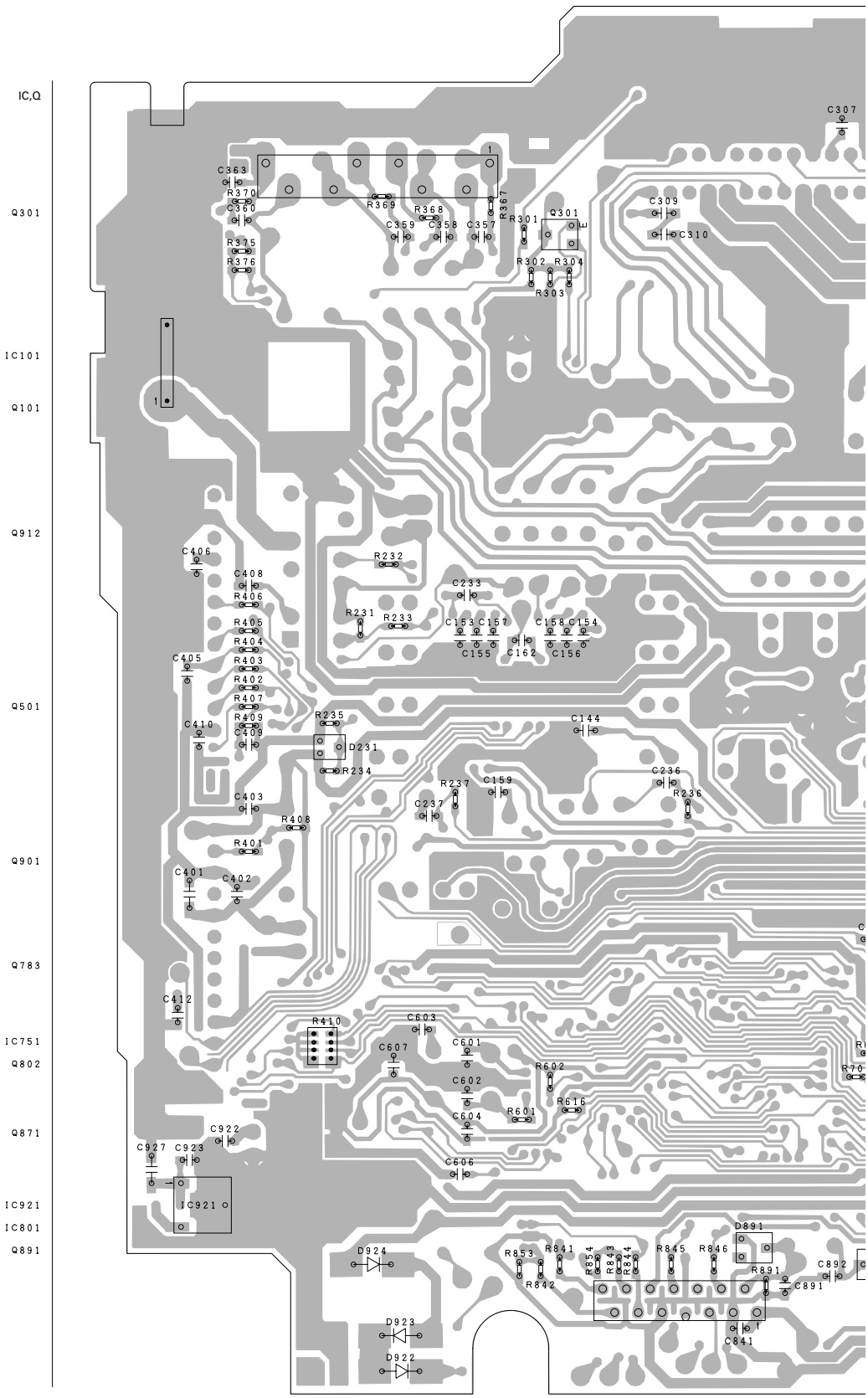




SIDE A

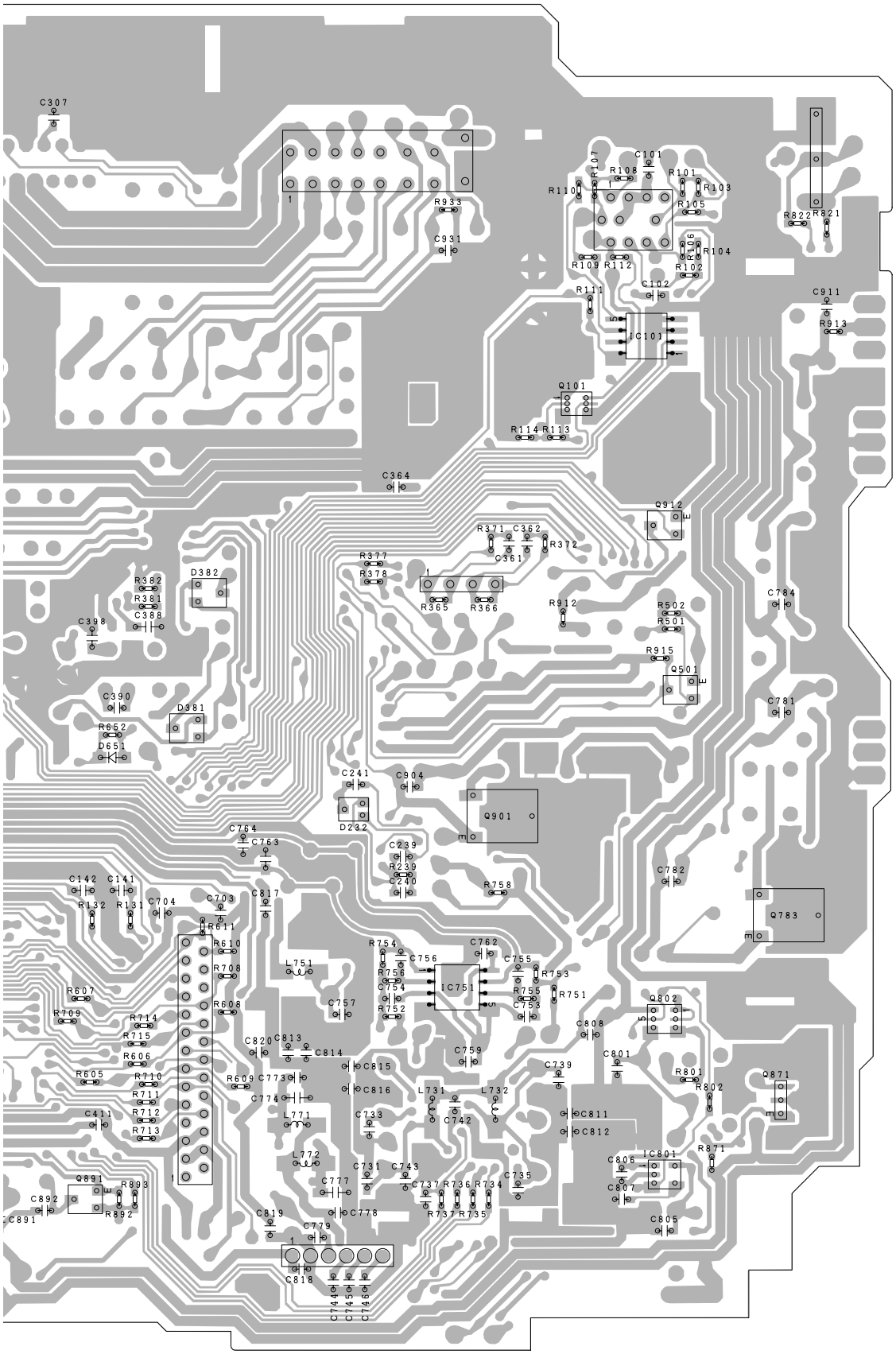

RCA
CN351
ANTENNA
CN401
CN402
IC301
FM/AM TUNER UNIT
CN701
CN841
CN901
CN1950
FRONT
IC131
IC381
IC601
IC641
IC651
IC731
IC771
IC772
Q351
Q352
Q913
Q784
IC551 Q941
Q951
Q931
VR231
Q353 IC381 Q911
Q502
Q902
Q782
Q781 IC752
Q402
Q401 IC601
Q801
Q803
IC731 Q841 Q872 IC641
IC771 Q881
IC772

A TUNER AMP UNIT



A

SIDE B

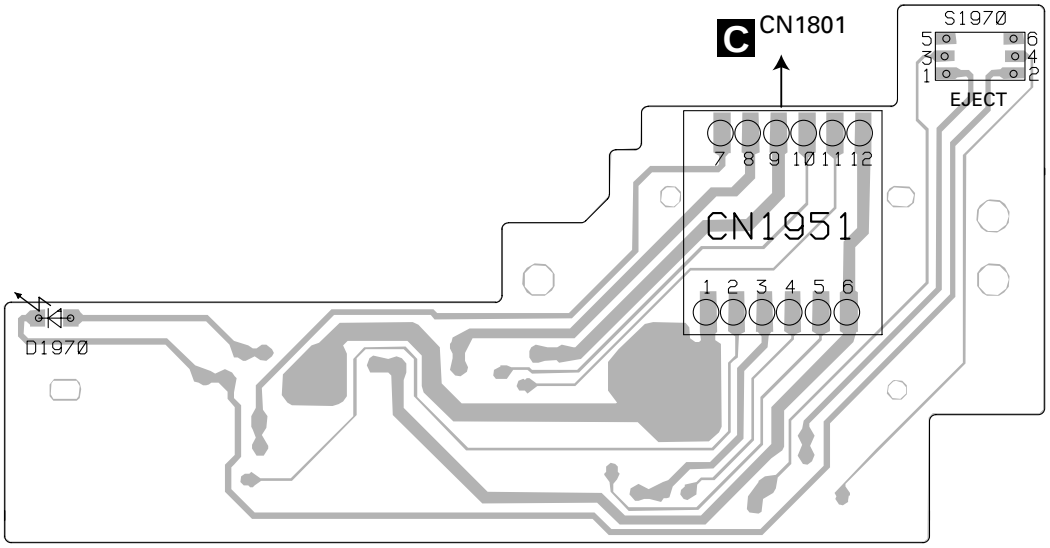

C307
R933
C931
C101
R108
R107
R101
R103
R110
R105
R822
R821
R104
R109
R112
R102
C102
R111
C911
R913
IC101
Q101
R114
R113
C364
Q912
R371
C362
R372
C361
R377
R378
R365
R366
R912
C784
R382
D382
R381
C388
C398
R502
R501
R915
Q501
C390
D381
C781
R652
D651
C241
C904
D232
Q901
C764
C763
C239
R239
C240
R758
C782
C142
C141
R132
R131
C704
C703
C817
Q783
R611
R610
R708
L751
R754
C762
C756
C755
R607
R756
R753
C754
IC751
R755
R751
R709
C757
R752
C753
Q802
C808
R714
R715
C820
C813
C814
C759
C801
R606
C815
C739
R605
R710
R609
C773
C816
L731
L732
R801
Q871
R711
C774
C742
R802
C411
R712
L771
C733
C811
R713
C812
L772
C806
IC801
R871
C731
C743
C737
R736
R734
C735
C807
Q891
R893
C892
C777
R737
R735
C805
C891
R892
C819
C778
C779
C818
C744
C745
C746

A

4.2 PANEL UNIT

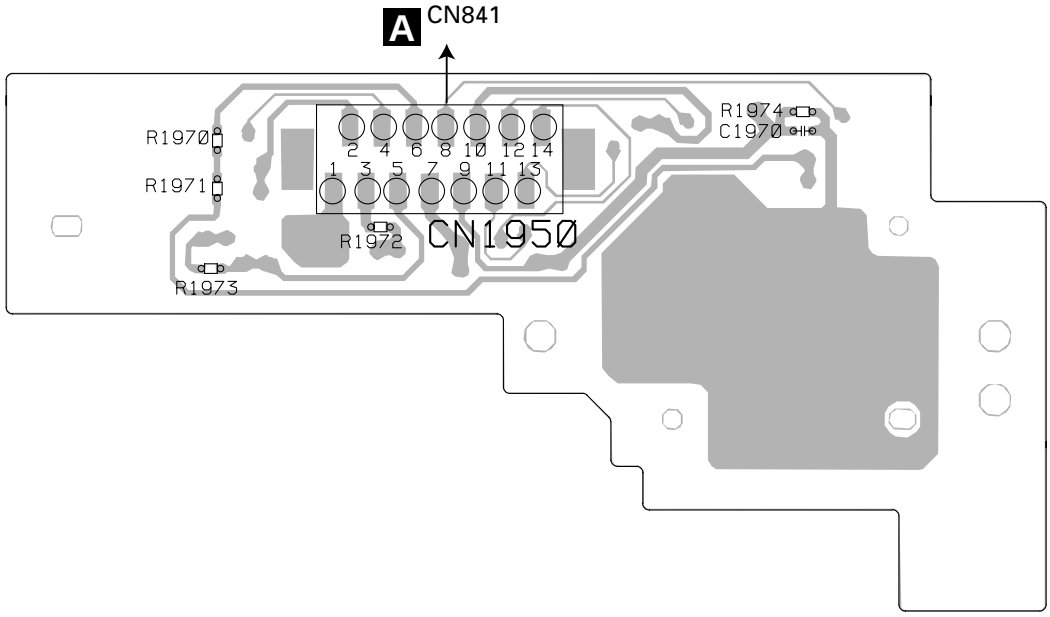
B PANEL UNIT

SIDE A



B PANEL UNIT

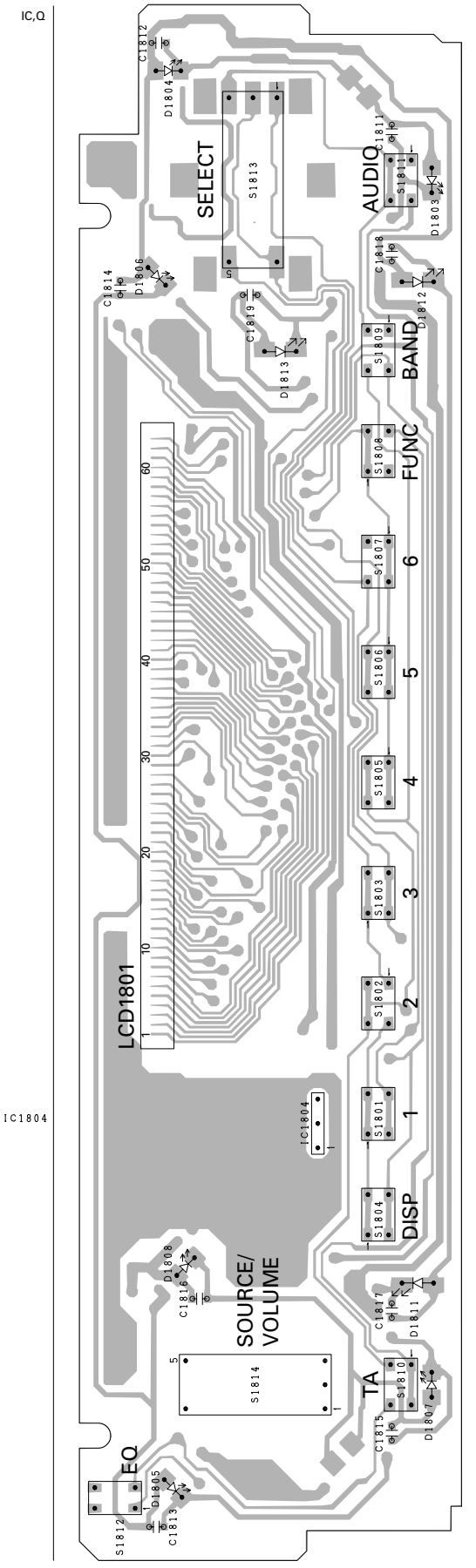
SIDE B



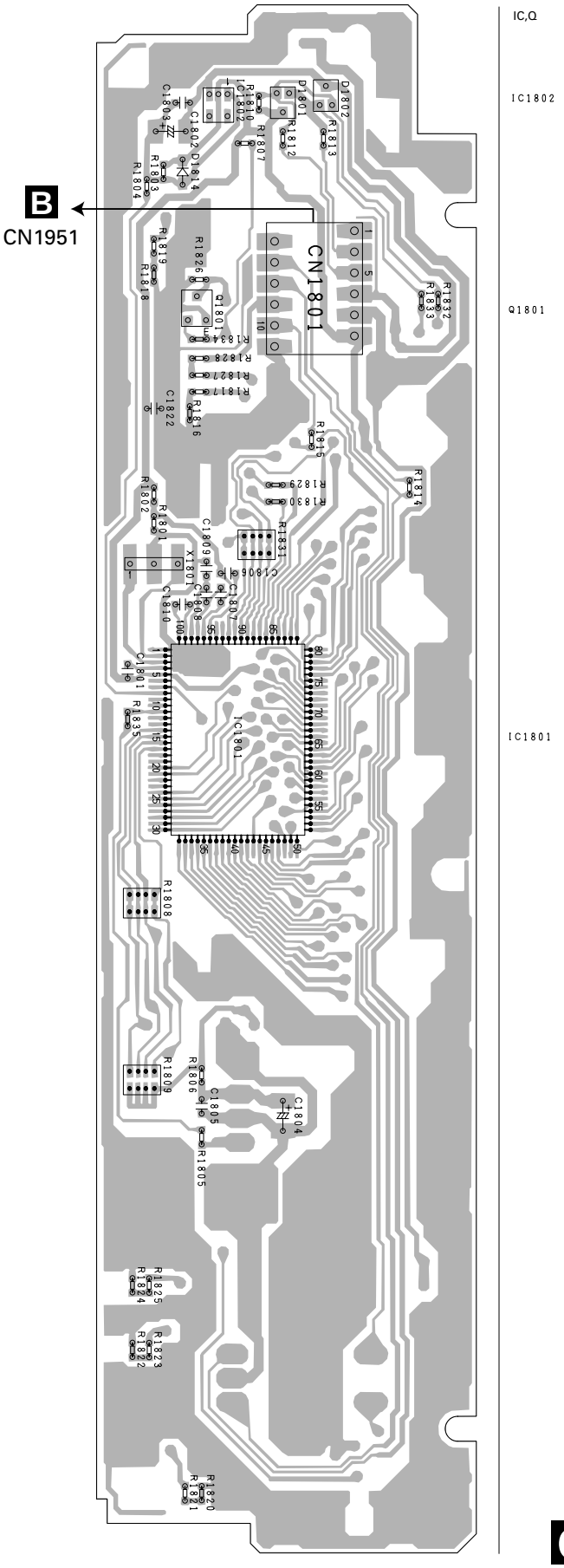
B

4.3 KEYBOARD UNIT

C KEYBOARD UNIT **SIDE A**



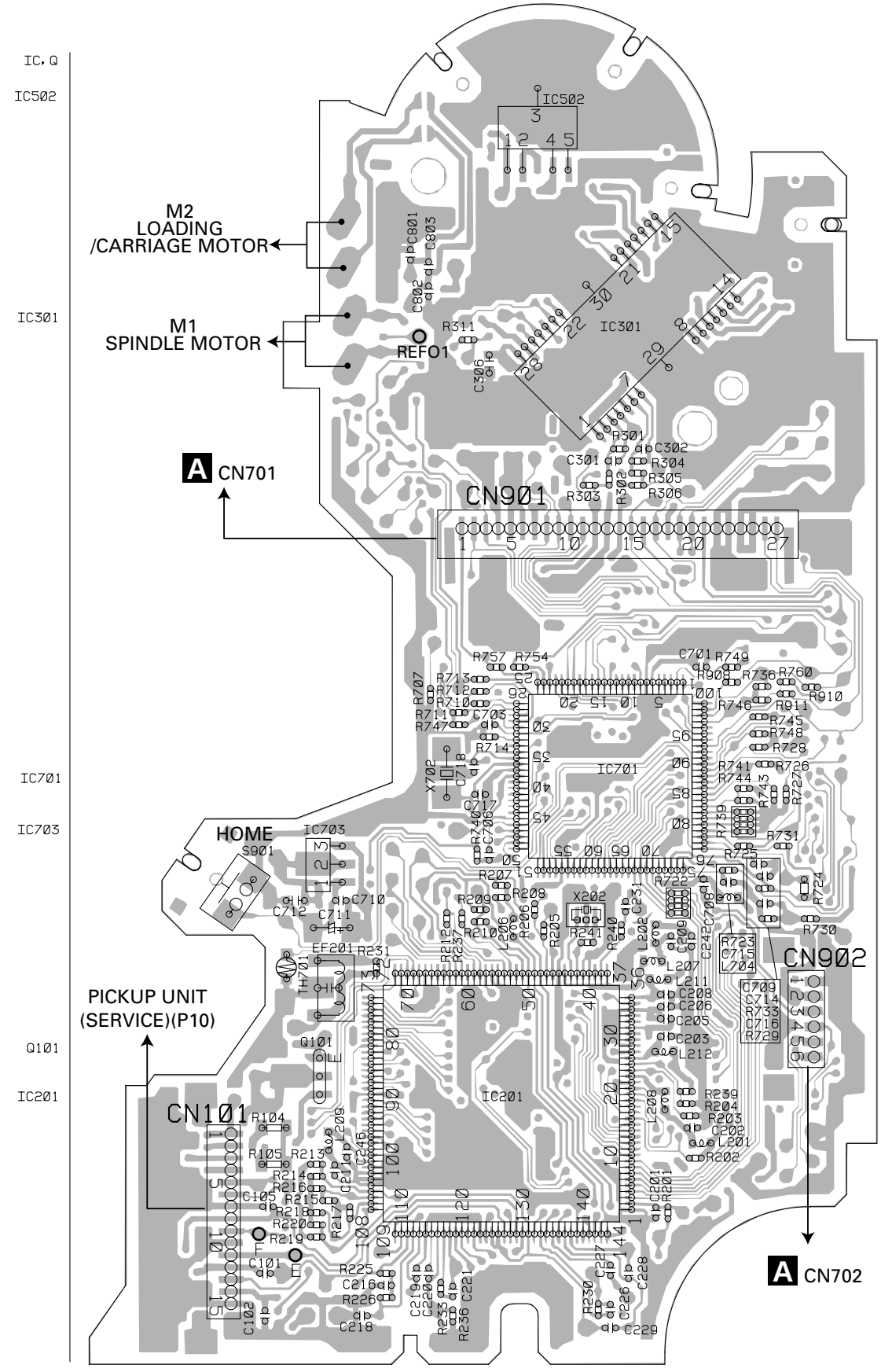
C KEYBOARD UNIT **SIDE B**



4.4 CD MECHANISM MODULE

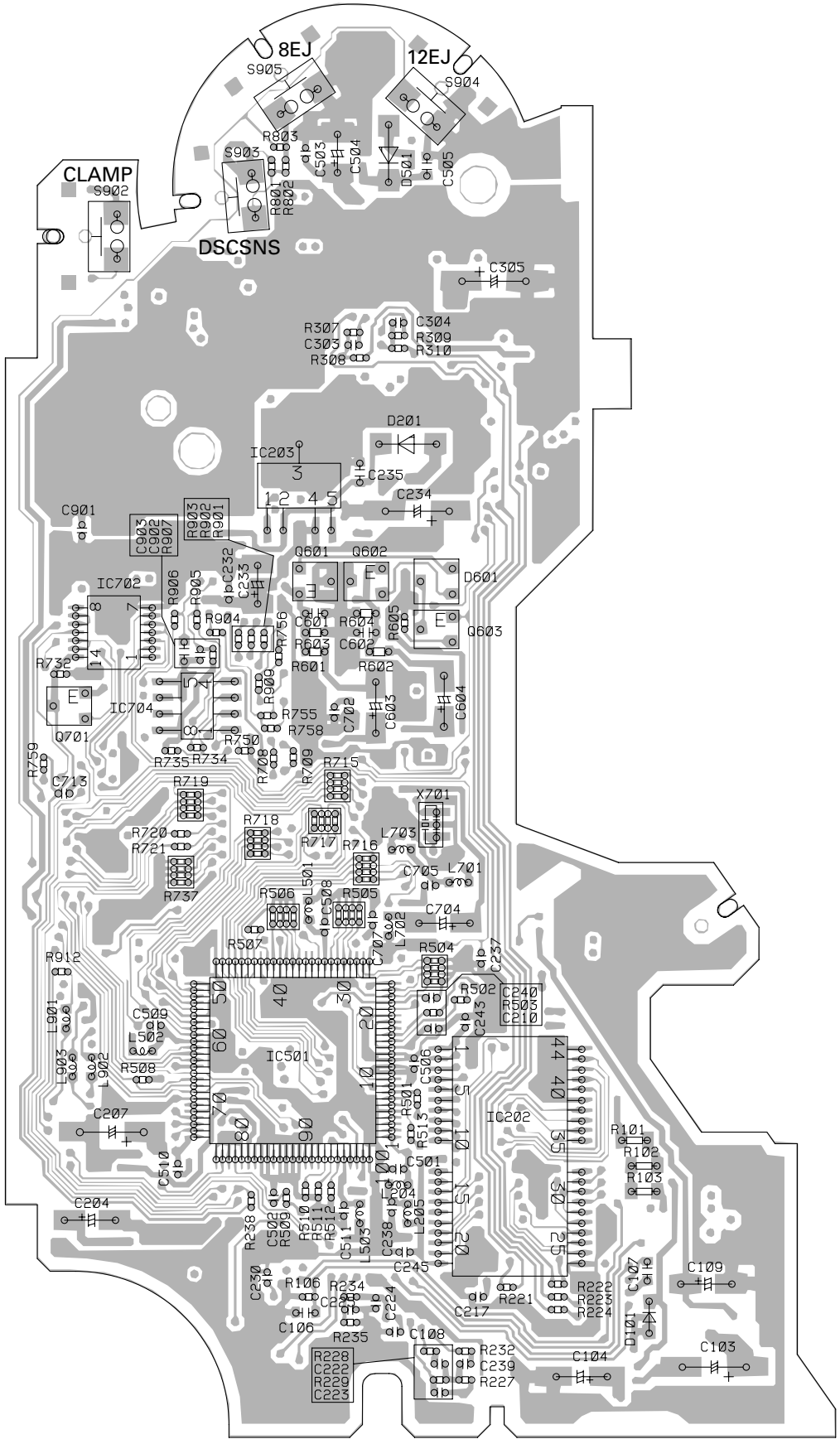
D CD CORE UNIT(S10MP3)

SIDE A



D CD CORE UNIT(S10MP3)

SIDE B



IC, Q

IC203

Q601 Q602

IC702

Q603

IC704

Q701

IC501

IC202

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.....

A Unit Number : CWM8750
Unit Name : Tuner Amp Unit

MISCELLANEOUS

=====Circuit Symbol and No.		===Part Name	Part No.
IC	101	IC	HA12187FP
IC	131	IC	PML009A
IC	301	IC	PAL007A
IC	381	IC	PA2028A
IC	601	IC	PD5854A
IC	651	IC	S-80835CNMC-B8U
IC	731	IC	PCM1716E-3
IC	751	IC	NJM4580M
IC	752	IC	NJM4558MD
IC	771	IC	TC7SU04FU
IC	772	IC	TC7S04FU
IC	801	IC	NJM2872F25
IC	921	IC	BA033FP
Q	101	Transistor	UMF23N
Q	301	Transistor	DTC124EK
Q	351	Transistor	HN1C03F
Q	352	Transistor	HN1C03F
Q	353	Transistor	HN1C03F
Q	401	Transistor	IMH1A
Q	402	Transistor	IMH1A
Q	501	Transistor	2SC2412K
Q	502	Transistor	IMD2A
Q	781	Transistor	IMD2A
Q	782	Transistor	2SD2375
Q	783	Transistor	2SD1760F5
Q	801	Transistor	2SD1859
Q	802	Transistor	IMD2A
Q	841	Transistor	DTC143EK
Q	871	Transistor	2SD1767
Q	872	Transistor	IMD2A
Q	881	Transistor	UMF23N
Q	891	Transistor	2SA1037K
Q	901	Transistor	2SD1760F5
Q	902	Transistor	IMD2A
Q	911	Transistor	2SB1243
Q	912	Transistor	DTC114EK
Q	913	Transistor	2SD2375
Q	931	Transistor	IMX1
Q	941	Transistor	DTC114EK
Q	951	Transistor	2SA1037K
D	231	Diode	RB706F-40
D	232	Diode Network	DA204U
D	233	Diode Network	DA204U
D	381	Diode	1SS396
D	501	Diode	DAN202U
D	502	Diode	HZS9L(A2)
D	503	Diode	1SS133
D	571	Diode	MPG06G-6415G50
D	572	Diode	MPG06G-6415G50
D	601	Diode Network	DA204U
D	602	Diode Network	DA204U
D	731	Diode Network	DA204U
D	732	Diode Network	DA204U
D	781	Diode	HZS9L(B1)
D	784	Diode	HZS6L(C1)
D	801	Diode	HZS6L(A3)
D	802	Diode	DAN202U
D	803	Diode	MA111
D	821	Diode	DAN202U
D	822	Diode	DAP202U
D	841	Diode Network	DA204U
D	842	Diode	DAN202U
D	843	Diode	DAP202U
D	844	Diode	DAN202U
D	845	Diode	DAP202U
D	871	Diode	HZS9L(C2)
D	901	Diode	MPG06G-6415G50
D	902	Diode	HZS6L(B1)
D	911	Diode	HZS9L(B3)
D	922	Diode	1SR154-400
D	923	Diode	1SR154-400
D	924	Diode	1SR154-400
D	931	Diode	HZS7L(C3)
D	932	Diode	HZS7L(A1)
D	941	Diode	MPG06G-6415G50
D	951	Diode	DAN202U
D	981	Diode	MPG06G-6415G50
D	982	Diode	MPG06G-6415G50
ZNR	402	Surge Protector	RCCA-201Q31UA-PI
L	101	Inductor	LAU2R2K
L	131	Inductor	LAU2R2K
L	381	Ferri-Inductor	LAU470K
L	401	Ferri-Inductor	LAU4R7K
L	402	Inductor	LAU1R0K
L	404	Inductor	LAU1R0K
L	601	Inductor	LAU2R2K
L	701	Inductor	LAU2R2K
L	732	Inductor	LCTA1R0J2520
L	751	Inductor	LCTA1R0J2520
L	771	Inductor	LCTA100J2520
L	772	Inductor	LCTA100J2520
L	773	Inductor	LCYB39NJ1608
L	801	Inductor	CTF1558
L	891	Ferri-Inductor	LAU100K
L	951	Inductor	LAU2R2K
L	981	Choke Coil 600µH	CTH1280
X	601	Radiator 10.00MHz	CSS1475
X	771	Crystal Resonator 16.9344MHz	CSS1067
S	841	Switch(DSENS)	CSN1039
VR	231	Semi-fixed 10kΩ(B)	CCP1229
MIC	231	Microphone	CPM1011
		Fuse 10A	CEK1208
BZ	601	Buzzer	CPV1062

=====Circuit Symbol and No.	===Part Name	Part No.
RESISTORS		
R 101		RS1/16S181J
R 102		RS1/16S181J
R 103		RS1/16S223J
R 104		RS1/16S223J
R 105		RS1/16S102J
R 106		RS1/16S102J
R 107		RS1/16S150J
R 108		RS1/16S470J
R 109		RS1/16S101J
R 110		RS1/16S101J
R 111		RS1/16S103J
R 112		RS1/16S222J
R 113		RS1/16S562J
R 114		RS1/16S332J
R 131		RS1/16S102J
R 132		RS1/16S102J
R 133		RD1/4PU102J
R 134		RD1/4PU102J
R 135		RD1/4PU101J
R 136		RD1/4PU101J
R 137		RD1/4PU101J
R 138		RD1/4PU101J
R 139		RD1/4PU101J
R 140		RD1/4PU101J
R 141		RAB4C102J
R 231		RS1/16S222J
R 233		RS1/16S560J
R 234		RS1/16S104J
R 235		RS1/16S104J
R 236		RS1/16S474J
R 237		RS1/16S474J
R 238		RS1/16S684J
R 239		RS1/16S474J
R 301		RS1/16S153J
R 302		RS1/16S103J
R 303		RS1/16S103J
R 304		RS1/16S331J
R 351		RD1/4PU820J
R 352		RD1/4PU820J
R 353		RD1/4PU820J
R 354		RD1/4PU820J
R 355		RD1/4PU820J
R 356		RD1/4PU820J
R 361		RS1/16S223J
R 362		RS1/16S223J
R 363		RS1/16S223J
R 364		RS1/16S223J
R 365		RS1/16S223J
R 366		RS1/16S223J
R 367		RS1/16S471J
R 368		RS1/16S471J
R 369		RS1/16S471J
R 370		RS1/16S471J
R 371		RS1/16S471J
R 372		RS1/16S471J
R 373		RS1/16S103J
R 374		RS1/16S103J
R 375		RS1/16S103J
R 376		RS1/16S103J
R 377		RS1/16S103J
R 378		RS1/16S103J
R 381		RS1/16S103J
R 382		RS1/16S103J
R 401		RS1/16S681J
R 402		RS1/16S681J

=====Circuit Symbol and No.	===Part Name	Part No.
R 403		RS1/16S681J
R 404		RS1/16S681J
R 405		RS1/16S681J
R 406		RS1/16S681J
R 407		RS1/16S681J
R 410		RAB4C223J
R 501		RS1/16S103J
R 502		RS1/16S473J
R 503		RS1/16S102J
R 601		RS1/16S0R0J
R 602		RS1/16S473J
R 603		RS1/16S472J
R 604		RS1/16S104J
R 605		RS1/16S102J
R 606		RS1/16S102J
R 607		RS1/16S102J
R 608		RS1/16S473J
R 609		RS1/16S473J
R 610		RS1/16S473J
R 611		RS1/16S473J
R 612		RS1/16S0R0J
R 613		RS1/16S0R0J
R 614		RS1/16S104J
R 615		RS1/16S104J
R 616		RS1/16S104J
R 618		RS1/16S104J
R 619		RS1/16S473J
R 620		RS1/16S102J
R 622		RS1/16S473J
R 623		RS1/16S103J
R 624		RS1/16S681J
R 625		RS1/16S681J
R 626		RS1/16S681J
R 643		RS1/16S473J
R 651		RS1/16S102J
R 652		RS1/16S183J
R 703		RS1/16S682J
R 704		RS1/16S682J
R 706		RS1/16S682J
R 707		RS1/16S682J
R 708		RS1/16S473J
R 709		RS1/16S221J
R 710		RS1/16S221J
R 711		RS1/16S102J
R 712		RS1/16S221J
R 713		RS1/16S221J
R 714		RS1/16S221J
R 715		RS1/16S221J
R 731		RS1/16S101J
R 732		RS1/16S101J
R 733		RS1/16S101J
R 734		RS1/16S102J
R 735		RS1/16S102J
R 736		RS1/16S102J
R 737		RS1/16S102J
R 751		RS1/16S123J
R 752		RS1/16S123J
R 753		RS1/16S153J
R 754		RS1/16S153J
R 755		RS1/16S123J
R 756		RS1/16S123J
R 757		RS1/16S473J
R 758		RS1/16S563J
R 771		RS1/16S152J
R 772		RN1/16SE1003D

=====Circuit Symbol and No.	===	Part Name	Part No.
R	781		RD1/4PU221J
R	782		RD1/4PU221J
R	785		RD1/4PU121J
R	801		RS1/16S332J
R	821		RS1/16S102J
R	822		RS1/16S102J
R	841		RS1/16S102J
R	842		RS1/16S102J
R	843		RS1/16S102J
R	844		RS1/16S102J
R	845		RS1/16S222J
R	846		RS1/16S102J
R	847		RS1/16S102J
R	848		RS1/16S222J
R	849		RS1/16S102J
R	850		RS1/16S102J
R	851		RS1/16S121J
R	852		RS1/16S102J
R	853		RS1/16S104J
R	854		RS1/16S473J
R	855		RS1/16S473J
R	856		RS1/16S104J
R	857		RD1/4PU391J
R	858		RS1/16S102J
R	859		RS1/16S102J
R	871		RS1/16S473J
R	872		RD1/4PU681J
R	874		RS1/16S1R0J
R	881		RS1/16S153J
R	882		RS1/16S332J
R	892		RS1/16S223J
R	893		RS1/16S332J
R	901		RS1/16S0R0J
R	902		RS1/16S332J
R	903		RS1/16S223J
R	911		RD1/4PU222J
R	912		RS1/16S223J
R	913		RS1/16S152J
R	914		RD1/4PU221J
R	915		RS1/16S223J
R	931		RS1/16S104J
R	932		RS1/16S473J
R	933		RS1/16S472J
R	934		RS1/16S103J
R	935		RS1/16S473J
R	941		RS1/16S103J
R	951		RS1/16S153J
R	952		RS1/16S472J
R	953		RS1/16S472J
R	954		RS1/16S102J
R	981		RD1/4PU102J
R	982		RD1/4PU102J

CAPACITORS

=====Circuit Symbol and No.	===	Part Name	Part No.
C	101		CKSRYB104K16
C	131		CEAL1R0M50
C	132		CEAL1R0M50
C	133		CKSRYB104K16
C	134		CKSRYB104K16
C	135		CEAL1R0M50
C	136		CEAL1R0M50
C	137		CEAL1R0M50
C	138		CEAL1R0M50
C	139	10µF/16V	CCH1563
C	140	10µF/16V	CCH1563
C	141		CCSQCH152J50
C	142		CCSQCH152J50
C	143		CCSQCH152J50
C	144		CCSQCH152J50
C	145	10µF/16V	CCH1563
C	146	10µF/16V	CCH1563
C	147	10µF/16V	CCH1563
C	148	10µF/16V	CCH1563
C	149	10µF/16V	CCH1563
C	150	10µF/16V	CCH1563
C	151	10µF/16V	CCH1563
C	152	10µF/16V	CCH1563
C	153		CCSRCH100D50
C	154		CCSRCH100D50
C	155		CCSRCH100D50
C	156		CCSRCH100D50
C	157		CCSRCH100D50
C	158		CCSRCH100D50
C	159		CKSRYB104K16
C	160	47µF/10V	CCH1558
C	161	10µF/16V	CCH1509
C	162		CKSRYB474K10
C	231		CEJQ220M10
C	232		CEJQ100M16
C	233		CKSRYB474K10
C	235		CEAL100M16
C	236		CKSRYB104K16
C	237		CKSRYB104K16
C	238		CCSRCH4R0C50
C	239		CCSRCH101J50
C	240		CKSRYB474K10
C	241		CKSRYB104K16
C	301		CFTNA224J50
C	302		CFTNA224J50
C	303		CFTNA224J50
C	304		CFTNA224J50
C	305		CEJQ330M10
C	306	3300µF/16V	CCH1547
C	307		CKSRYB104K16
C	308		CEHAR100M16
C	309		CKSQYB225K10
C	310		CKSQYB225K10
C	351	10µF/25V	CCH1559
C	352	10µF/25V	CCH1559
C	353	10µF/25V	CCH1559
C	354	10µF/25V	CCH1559
C	355	10µF/25V	CCH1559
C	356	10µF/25V	CCH1559
C	357		CKSRYB222K50
C	358		CKSRYB222K50
C	359		CKSRYB222K50
C	360		CKSRYB222K50
C	361		CKSRYB222K50
C	362		CKSRYB222K50
C	364		CKSRYB102K50
C	381	1µF/50V	CCH1531
C	382	1µF/50V	CCH1531
C	383	1µF/50V	CCH1531
C	384	1µF/50V	CCH1531
C	385	1µF/50V	CCH1531
C	386	1µF/50V	CCH1531
C	387	10µF/16V	CCH1532
C	388		CKSYB684K25
C	389	10µF/16V	CCH1532

=====Circuit Symbol and No.		===Part Name	Part No.
C	390		CKSRYB105K10
C	391	4.7µF/25V	CCH1562
C	392		CEJQ101M16
C	393		CASAQ3R3M16
C	394	33µF/25V	CCH1564
C	395	33µF/25V	CCH1564
C	396	33µF/25V	CCH1564
C	397	33µF/25V	CCH1564
C	398		CKSQYB225K10
C	401		CKSYB475K10
C	402		CKSRYB103K50
C	403		CKSRYB103K50
C	404		CEJQ470M6R3
C	407		CEJQ101M10
C	410		CKSRYB102K50
C	501		CEAL220M16
C	601		CCSRCH180J50
C	602		CCSRCH220J50
C	604		CKSRYB104K16
C	605		CEJQ4R7M35
C	606		CCSRCH470J50
C	607		CKSQYB475K6R3
C	652		CKSRYB105K6R3
C	705	470µF/10V	CCH1438
C	731		CKSRYB104K16
C	732		CEAL4R7M16
C	733		CKSRYB104K16
C	734	10µF/16V	CCH1532
C	735		CKSRYB104K16
C	736	10µF/16V	CCH1532
C	738	10µF/16V	CCH1532
C	739		CKSRYB104K16
C	740	10µF/16V	CCH1532
C	741	10µF/16V	CCH1532
C	744		CCSRCH330J50
C	745		CCSRCH330J50
C	746		CCSRCH330J50
C	751	10µF/16V	CCH1563
C	752	10µF/16V	CCH1563
C	753		CCSRCH681J50
C	754		CCSRCH681J50
C	755		CCSRCH121J50
C	756		CCSRCH121J50
C	757		CKSRYB104K16
C	758	10µF/16V	CCH1532
C	759		CKSRYB224K10
C	760	10µF/16V	CCH1532
C	761		CKSRYB103K50
C	762		CKSRYB104K16
C	765	10µF/16V	CCH1509
C	771		CCSRCH100D50
C	772		CCSRCH100D50
C	773		CKSRYB103K50
C	774		CKSYB106K6R3
C	776		CKSRYB103K50
C	777		CKSYB106K6R3
C	778		CKSRYB473K25
C	781		CKSRYB473K25
C	782		CKSRYB102K50
C	783		CEJQ101M16
C	784		CKSRYB473K25
C	785		CEJQ101M16
C	801		CKSRYB473K25
C	802	10µF/16V	CCH1509
C	803	47µF/6.3V	CCH1561

=====Circuit Symbol and No.		===Part Name	Part No.
C	804		CEJQ220M6R3
C	805		CKSRYB103K50
C	806		CKSRYB224K10
C	807		CKSRYB104K16
C	811		CKSRYB104K16
C	841		CKSRYB473K25
C	842		CKSRYB473K25
C	871		CKSRYB103K50
C	891		CKSRYB473K25
C	901	470µF/16V	CCH1331
C	902	470µF/16V	CCH1331
C	903		CKSRYB472K50
C	904		CKSRYB103K50
C	905		CEJQ470M10
C	911		CKSRYB103K50
C	912		CEJQ101M16
C	913		CEJQ221M10
C	921		CEJQ220M6R3
C	922		CKSRYB103K50
C	923		CKSRYB474K10
C	927		CKSYB475K10
C	931		CKSRYB104K25
C	941		CKSRYB105K10

C Unit Number : CWM8756
Unit Name : Keyboard Unit

MISCELLANEOUS

IC	1801	IC	PD2068B
IC	1802	IC	S-80834CNMC-B8T
IC	1804	IC	TSOP4840SB1
Q	1801	Transistor	2SC2412K
D	1801	Diode	DAN202U
D	1802	Diode	DAP202U
D	1803	LED	NSCW100-2018
D	1804	LED	NSCW100-2018
D	1805	LED	NSCW100-2018
D	1806	LED	NSCW100-2018
D	1807	LED	NSCW100-2018
D	1808	LED	NSCW100-2018
D	1811	LED	NSSW440-2549
D	1812	LED	NSSW440-2549
D	1813	LED	NSSW440-2549
X	1801	Radiator 8.18MHz	CSS1559
S	1801	Push Switch	CSG1155
S	1802	Push Switch	CSG1155
S	1803	Push Switch	CSG1155
S	1804	Push Switch	CSG1155
S	1805	Push Switch	CSG1155
S	1806	Push Switch	CSG1155
S	1807	Push Switch	CSG1155
S	1808	Push Switch	CSG1155
S	1809	Push Switch	CSG1155
S	1810	Push Switch	CSG1155
S	1811	Push Switch	CSG1155
S	1812	Push Switch	CSG1155
S	1813	Switch(SELECT)	CSD1092
S	1814	Encoder(SOURCE/VOLUME)	CSD1093
LCD	1801	LCD	CAW1807

RESISTORS

R	1801	RS1/16S2701D
R	1802	RS1/16S5600D
R	1803	RS1/16S822J
R	1804	RS1/16S102J
R	1805	RS1/16S2R2J

=====Circuit Symbol and No.	===Part Name	Part No.
R 1806		RS1/16S121J
R 1807		RS1/16S472J
R 1809		RAB4C104J
R 1810		RS1/16S473J
R 1812		RS1/16S222J
R 1813		RS1/16S222J
R 1814		RS1/16S103J
R 1815		RS1/16S104J
R 1819		RS1/16S221J
R 1821		RS1/16S221J
R 1823		RS1/16S221J
R 1825		RS1/16S221J
R 1826		RS1/16S331J
R 1827		RS1/16S820J
R 1828		RS1/16S820J

CAPACITORS

C 1801		CKSRYB104K16
C 1802		CSZSR2R2M20
C 1805		CKSRYB474K10
C 1806		CKSRYB104K16
C 1807		CKSRYB104K16
C 1808		CKSRYB104K16
C 1809		CKSRYB104K16
C 1810		CKSRYB104K16
C 1811		CKSRYB104K16
C 1812		CKSRYB104K16
C 1813		CKSRYB104K16
C 1814		CKSRYB104K16
C 1815		CKSRYB104K16
C 1816		CKSRYB104K16
C 1817		CKSRYB104K16
C 1818		CKSRYB104K16
C 1819		CKSRYB104K16
C 1822		CKSRYB473K25

B Unit Number : CWM8758
Unit Name : Panel Unit

MISCELLANEOUS

D 1970	LED		CL220PGC
S 1970	Push Switch(EJECT)		CSG1112

RESISTORS

R 1970		RS1/16S101J
R 1971		RS1/16S101J
R 1972		RS1/16S0R0J

CAPACITORS

C 1970		CKSRYB104K16

D Unit Number : CWX2745
Unit Name : CD Core Unit(S10MP3)

MISCELLANEOUS

IC 201	IC		UPD63760GJ
IC 202	IC		MSM51V4265EP-70TS
IC 203	IC		BA033SFP
IC 301	IC		BA5996FM
IC 501	IC		UPD61002GC
IC 502	IC		BA25BC0WFP
IC 701	IC		PE5352B
IC 702	IC		TC74VHCT08AFT
IC 703	IC		S-812C33AUA-C2N
Q 101	Transistor		2SB1132

=====Circuit Symbol and No.	===Part Name	Part No.
Q 601	Transistor	DTC323TK
Q 602	Transistor	DTC323TK
Q 603	Transistor	2SB709A
Q 701	Transistor	UN2111
D 101	Diode	1SS355
D 201	Diode	1SR154-400
D 501	Diode	1SR154-400
D 601	Diode	MA152WA
L 201	Inductor	CTF1386
L 202	Inductor	CTF1386
L 204	Inductor	CTF1386
L 205	Inductor	CTF1386
L 206	Inductor	CTF1386
L 207	Inductor	CTF1386
L 208	Inductor	CTF1386
L 209	Inductor	CTF1386
L 211	Inductor	CTF1386
L 212	Inductor	CTF1386
L 501	Inductor	CTF1386
L 502	Inductor	CTF1386
L 503	Inductor	CTF1386
L 701	Inductor	CTF1386
L 702	Inductor	LCYBR22J1608
L 703	Inductor	CTF1386
L 704	Inductor	CTF1386
L 901	Inductor	CTF1306
L 902	Inductor	CTF1306
L 903	Inductor	CTF1306
X 202	Ceramic Resonator 24.576MHz	CSS1615
X 701	Ceramic Resonator 16.000MHz	CSS1616
S 901	Switch(HOME)	CSN1051
S 902	Switch(CLAMP)	CSN1051
S 903	Spring Switch(DSCSNS)	CSN1052
S 904	Switch(12EJ)	CSN1051
S 905	Switch(8EJ)	CSN1051

RESISTORS

R 101	RS1/10S1R5J
R 102	RS1/10S1R5J
R 103	RS1/10S1R5J
R 104	RS1/10S1R5J
R 105	RS1/10S1R5J
R 201	RS1/16SS102J
R 202	RS1/16SS333J
R 203	RS1/16SS333J
R 204	RS1/16SS333J
R 206	RS1/16SS0R0J
R 208	RS1/16SS0R0J
R 210	RS1/16SS0R0J
R 212	RS1/16SS221J
R 213	RS1/16SS1002D
R 214	RS1/16SS1002D
R 215	RS1/16SS6801D
R 216	RS1/16SS6801D
R 217	RS1/16SS1002D
R 218	RS1/16SS1002D
R 219	RS1/16SS1002D
R 220	RS1/16SS1002D
R 221	RS1/16SS103J
R 222	RS1/16SS103J
R 223	RS1/16SS103J
R 224	RS1/16SS103J
R 225	RS1/16SS103J
R 226	RS1/16SS393J
R 227	RS1/16SS103J
R 228	RS1/16SS182J
R 229	RS1/16SS103J

=====Circuit Symbol and No.		===Part Name	Part No.
R	231		RS1/16SS0R0J
R	232		RS1/16SS182J
R	233		RS1/16SS0R0J
R	237		RS1/16SS104J
R	238		RS1/16SS473J
R	240		RS1/16SS0R0J
R	241		RS1/16SS221J
R	301		RS1/16SS183J
R	302		RS1/16SS822J
R	303		RS1/16SS0R0J
R	304		RS1/16SS183J
R	305		RS1/16SS822J
R	306		RS1/16SS0R0J
R	307		RS1/16SS183J
R	308		RS1/16SS822J
R	309		RS1/16SS183J
R	310		RS1/16SS822J
R	311		RS1/16SS0R0J
R	501		RS1/16SS221J
R	502		RS1/16SS221J
R	503		RS1/16SS221J
R	504		RAB4CQ223J
R	505		RAB4CQ223J
R	506		RAB4CQ223J
R	507		RS1/16SS223J
R	508		RS1/16SS223J
R	509		RS1/16SS102J
R	510		RS1/16SS223J
R	511		RS1/16SS223J
R	512		RS1/16SS223J
R	513		RS1/16SS221J
R	601		RS1/16S101J
R	602		RS1/16S101J
R	603		RS1/16S223J
R	604		RS1/16S223J
R	605		RS1/16SS103J
R	707		RS1/16SS0R0J
R	708		RS1/16SS102J
R	709		RS1/16SS102J
R	710		RS1/16SS102J
R	711		RS1/16SS102J
R	712		RS1/16SS102J
R	713		RS1/16SS102J
R	714		RS1/16SS473J
R	715		RAB4CQ221J
R	716		RAB4CQ221J
R	717		RAB4CQ221J
R	718		RAB4CQ221J
R	719		RAB4CQ221J
R	720		RS1/16SS471J
R	721		RS1/16SS471J
R	722		RAB4CQ221J
R	723		RS1/16SS102J
R	724		RS1/16S473J
R	725		RS1/16SS222J
R	726		RS1/16SS103J
R	727		RS1/16SS473J
R	728		RS1/16SS473J
R	729		RS1/16SS223J
R	730		RS1/16SS473J
R	731		RS1/16SS104J
R	732		RS1/16SS104J
R	733		RS1/16SS104J
R	737		RAB4CQ473J
R	739		RAB4CQ473J
R	740		RS1/16SS473J
R	741		RS1/16SS104J
R	743		RS1/16SS104J
R	745		RS1/16SS473J
R	746		RS1/16SS104J
R	747		RS1/16SS104J
R	748		RS1/16SS104J
R	754		RS1/16SS102J
R	755		RS1/16SS102J
R	756		RS1/16SS102J
R	757		RS1/16SS102J
R	759		RS1/16SS104J
R	801		RS1/16SS104J
R	802		RS1/16SS473J
R	803		RS1/16SS273J
R	901		RS1/16SS221J
R	902		RS1/16SS221J
R	903		RS1/16SS221J
R	904		RS1/16SS221J
R	905		RS1/16SS221J
R	906		RS1/16SS221J
R	908		RS1/16SS221J
R	909		RS1/16SS221J

CAPACITORS

=====Circuit Symbol and No.		===Part Name	Part No.
C	101		CKSSYB104K10
C	102		CKSSYB104K10
C	103		CEV101M16
C	104		CEV101M4
C	105		CKSSYB104K10
C	106		CCSRCH101J50
C	108		CKSSYB104K10
C	109		CEV100M16
C	201		CKSSYB471K50
C	202		CKSSYB104K10
C	203		CKSSYB104K10
C	204		CEV220M6R3
C	205		CKSSYB103K16
C	206		CKSSYB103K16
C	207		CEV221M4
C	208		CKSSYB104K10
C	209		CKSSYB104K10
C	210		CKSSYB104K10
C	211		CKSSYB104K10
C	216		CKSSYB332K50
C	217		CKSSYB104K10
C	218		CKSSYB223K16
C	219		CKSSYB104K10
C	220		CKSSYB103K16
C	221		CKSSYB104K10
C	222		CCSSCH270J50
C	223		CCSSCJ3R0C50
C	224		CKSSYB104K10
C	225		CKSSYB103K16
C	226		CCSSCH680J50
C	227		CCSSCH470J50
C	228		CKSSYB682K25
C	230		CKSSYB104K10
C	231		CKSSYB221K50
C	232		CKSSYB104K10
C	233	47µF/6.3V	CCH1436
C	234		CEV221M4
C	235		CKSRYB224K16
C	237		CKSSYB104K10
C	238		CKSSYB104K10

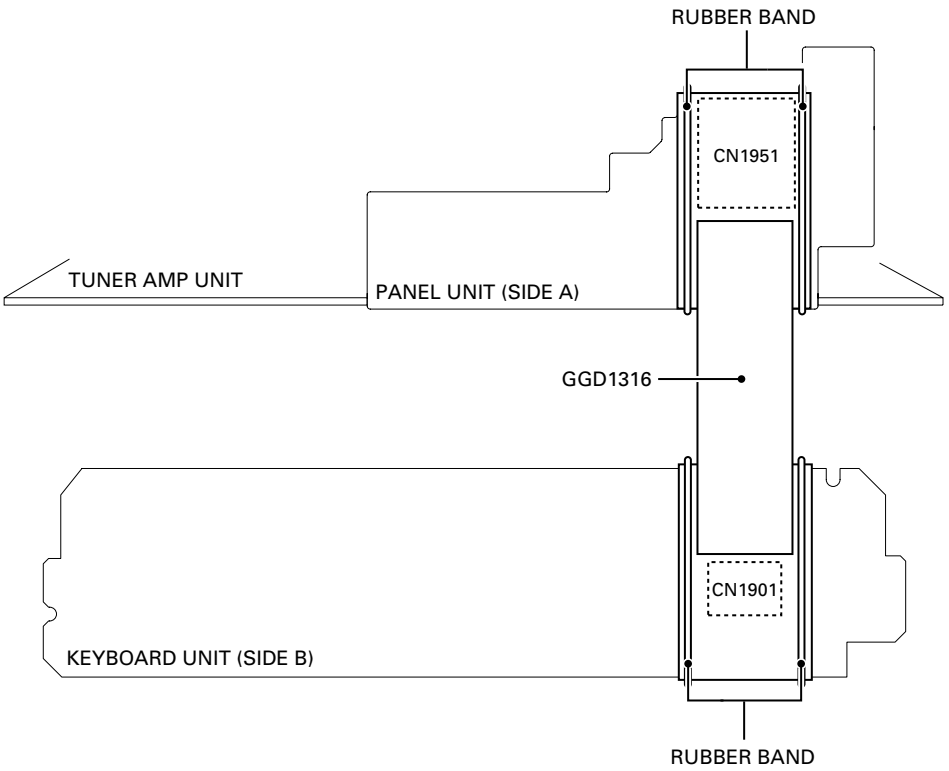
			=====Circuit Symbol and No.===Part Name	Part No.
	C	239		CCSSCH9R0D50
	C	242		CKSSYB104K10
	C	243		CKSSYB104K10
	C	245		CKSSYB104K10
	C	246		CKSSYB104K10
	C	301		CKSSYB331K50
	C	302		CKSSYB331K50
	C	303		CKSSYB472K25
	C	304		CKSSYB472K25
	C	305		CEV101M16
	C	306		CKSRYB224K16
	C	501		CKSSYB104K10
B	C	502		CKSSYB471K50
	C	503		CKSSYB104K10
	C	504	47µF/6.3V	CCH1436
	C	505		CKSRYB224K16
	C	506		CKSSYB104K10
	C	508		CKSSYB104K10
	C	509		CKSSYB104K10
	C	510		CKSSYB104K10
	C	511		CKSSYB104K10
	C	601		CCSRCH102J50
	C	602		CCSRCH102J50
	C	603	4.7µF/25V	CCH1508
	C	604	4.7µF/25V	CCH1508
C	C	701		CKSSYB104K10
	C	702		CKSSYB471K50
	C	703		CKSSYB103K16
	C	704		CEV1R0M50
	C	705		CKSSYB104K10
	C	706		CKSSYB471K50
	C	707		CKSSYB104K10
	C	708		CKSSYB104K10
	C	710		CKSSYB104K10
	C	711	10µF/10V	CCH1349
	C	712		CKSRYB224K16
	C	713		CKSSYB104K10
	C	714		CKSSYB104K10
	C	715		CKSSYB103K16
D	C	716		CKSSYB103K16
	C	901		CKSSYB104K10
	C	903		CCSRCH101J50

Miscellaneous Parts List

		Pickup Unit(Service)(P10)	CXX1641
M	1	Motor Unit(SPINDLE)	CXB6007
M	2	Motor Unit(LOADING/CARRIAGE)	CXB8933

6. ADJUSTMENT

6.1 JIG CONNECTION DIAGRAM



6.2 CD ADJUSTMENT

1) Cautions on adjustments

• In this product the single voltage (3.3V) is used for the regulator. The reference voltage is the REFO1 (1.65V) instead of the GND.
If you should mistakenly short the REFO1 with the GND during adjustment, accurate voltage will not be obtained, and the servo's misoperation will apply excessive shock to the pickup. To avoid such problems:
a. Do not mix up the REFO1 with the GND when connecting the (-) probe of measuring instruments. Especially on an oscilloscope, avoid connecting the (-) probe for CH1 to the GND.
b. In many cases, measuring instruments have the same potential as that for the (-) probe. Be sure to set the measuring instruments to the floating state.
c. If you have mistakenly connected the REFO1 to the GND, turn off the regulator or the power immediately.

• Before mounting and removing filters or leads for adjustment, be sure to turn off the regulator.

• For stable circuit operation, keep the mechanism operating for about one minute or more after the regulator is turned on.

• In the test mode, any software protections will not work. Avoid applying any mechanical or electrical shock to the mechanism during adjustment.

• The RFI and RFO signals with a wide frequency range are easy to oscillate. When observing the signals, insert a resistor of 1k ohms in series.

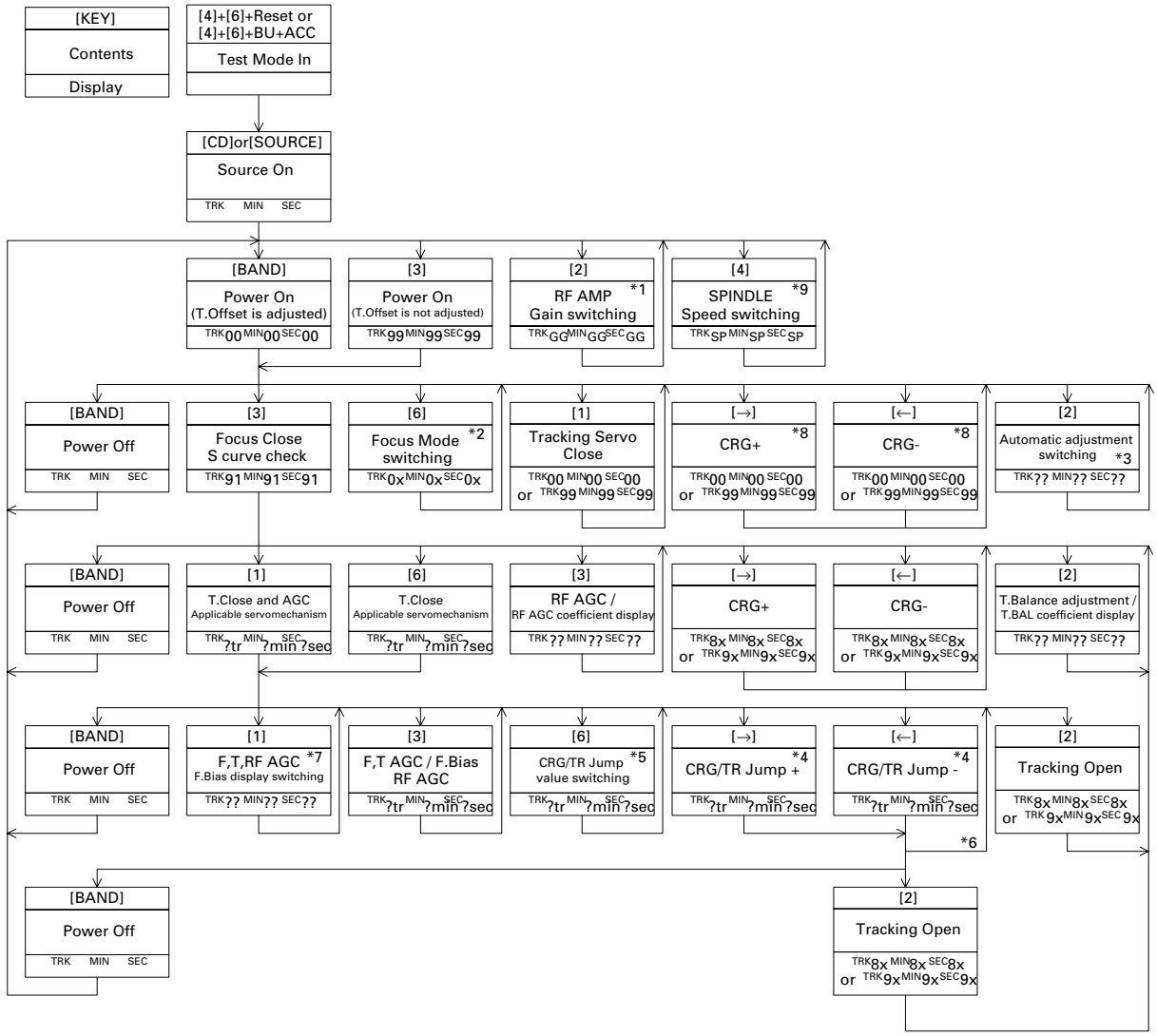
• The load and eject operation is not guarantied with the mechanism upside down. If the mechanism is blocked due to mistaken eject operation, reset the product or turn off and on the ACC to restore it.

2) Test mode

This mode is used to adjust the CD mechanism module.
• To enter the test mode.
While pressing the 4 and 6 keys at the same time, reset.
• To exit from the test mode.
Turn off the ACC and back up.

Notes:
a. During ejection, do not press any other keys than the EJECT key until the loaded disc is ejected.
b. If you have pressed the (→) key or (←) key during focus search, turn off the power immediately to protect the actuator from damage caused by the lens stuck.
c. For the TR jump modes except 100TR, the track jump operation will continue even if the key is released.
d. For the CRG move and 100TR jump modes, the tracking loop will be closed at the same time when the key is released.
e. When the power is turned off and on, the jump mode is reset to the single TR (91), the RF amp gain is set to 0dB, and the auto-adjustment values are reset to the default settings.

● Flow Chart



*1) TYP (TRK MIN SEC) → -6dB (TRK 06 MIN 06 SEC 06) → -12dB (TRK 12 MIN 12 SEC 12)

*2) Focus Close (TRK 00 MIN 00 SEC 00 / TRK 99 MIN 99 SEC 99) → S.Curve check setting (TRK 01 MIN 01 SEC 01) → F EQ measurement setting (TRK 02 MIN 02 SEC 02)

*3) F.Offset Display → T.Offset Display → Switch to the order of the original display

*4) 1TR / 32TR / 100TR

*5) Single TR → 32TR → 100TR → CRG Move
9x(8x) : 91(81) 92(82) 93(83) 94(84)

*6) Only at the time of CRG move, 100TR jump

*7) TRK/MIN/SEC → F.AGC → T.AGC → F Bias → RF AGC

*8) CRG motor voltage = 2[V]

*9) Applicability : A, B, C, D, E, F
TYP(1X) (TRK MIN SEC) → 2X (TRK 22 MIN 22 SEC 22) → 1X (TRK 11 MIN 11 SEC 11)
As for the double speed (2x), audio output cannot be supported

Applicability : G
TYP(2X) (TRK MIN SEC) → 1X (TRK 11 MIN 11 SEC 11) → 2X (TRK 22 MIN 22 SEC 22)

[Key]	Operation Test Mode
[BAND]	Power On / Off
[→]	CRG + / TR Jump + (Direction of the external surface)
[←]	CRG - / TR Jump - (Direction of the internal surface)
[1]	U.CLS and AGC and Applicable servomechanism / AGC, AGC display setting
[2]	RF Gain switching / Offset adjustment display / T.Balance adjustment / T.Open
[3]	Close, S.Curve / Rough Servo and RF AGC / F, T, RF AGC
[4]	SPDL 1X / 2X switching As for the double speed (2x), audio output cannot be supported.
[5]	Error Rate measurement 1st - ON : ERR count Beginning (30Sec) 2nd - ON : BER display data [%]
[6]	F.Mode switching / Tracking Close / CRG • TR Jump switching

6.3 CHECKING THE GRATING AFTER CHANGING THE PICKUP UNIT

• **Note :**
The grating angle of the PU unit cannot be adjusted after the PU unit is changed. The PU unit in the CD mechanism module is adjusted on the production line to match the CD mechanism module and is thus the best adjusted PU unit for the CD mechanism module. Changing the PU unit is thus best considered as a last resort. However, if the PU unit must be changed, the grating should be checked using the procedure below.

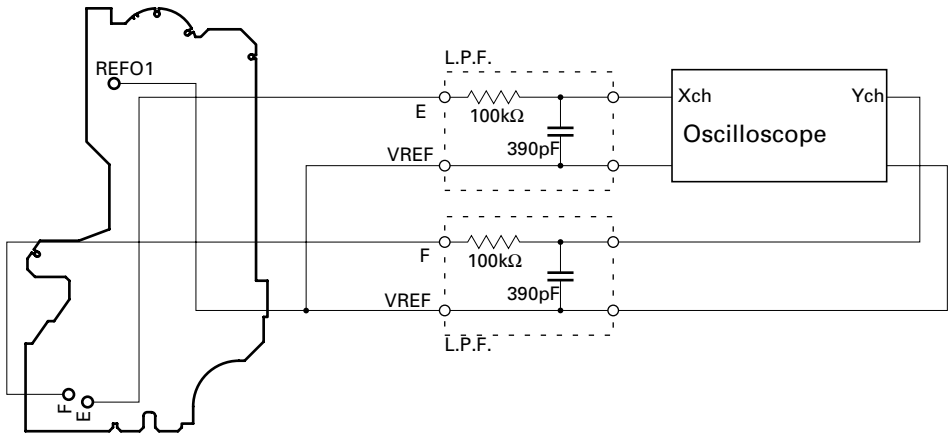
• **Purpose :**
To check that the grating is within an acceptable range when the PU unit is changed.

• **Symptoms of Mal-adjustment :**
If the grating is off by a large amount symptoms such as being unable to close tracking, being unable to perform track search operations, or taking a long time for track searching.

• **Method :**

• Measuring Equipment	• Oscilloscope, Two L.P.F.
• Measuring Points	• E, F, REFO1
• Disc	• ABEX TCD-782
• Mode	• TEST MODE

CD CORE UNIT(S10MP3)



• **Checking Procedure**

1. In test mode, load the disc and switch the 3V regulator on.
2. Using the → and ← buttons, move the PU unit to the innermost track.
3. Press key 3 to close focus, the display should read "91". Press key 2 to implement the tracking balance adjustment the display should now read "81". Press key 3. The display will change, returning to "81" on the fourth press.
4. As shown in the diagram above, monitor the LPF outputs using the oscilloscope and check that the phase difference is within 75° . Refer to the photographs supplied to determine the phase angle.
5. If the phase difference is determined to be greater than 75° try changing the PU unit to see if there is any improvement. If, after trying this a number of times, the grating angle does not become less than 75° then the mechanism should be judged to be at fault.

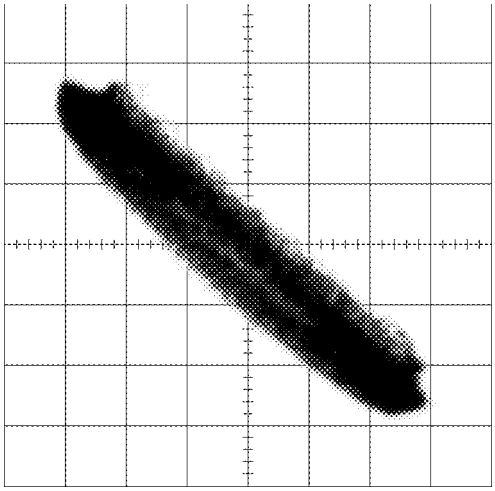
• **Note**
Because of eccentricity in the disc and a slight misalignment of the clamping center the grating waveform may be seen to "wobble" (the phase difference changes as the disc rotates). The angle specified above indicates the average angle.

• **Hint**
Reloading the disc changes the clamp position and may decrease the "wobble".

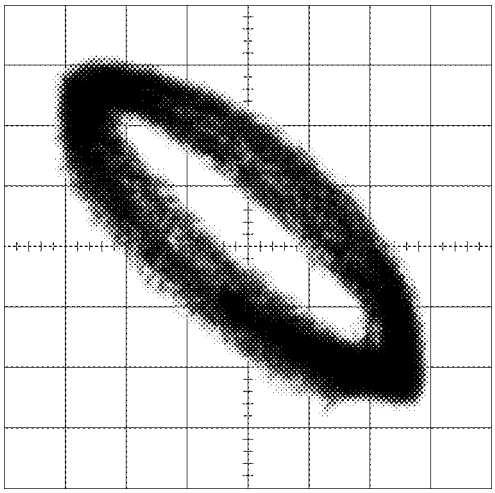
Grating waveform

Ech → Xch 20mV/div, AC
Fch → Ych 20mV/div, AC

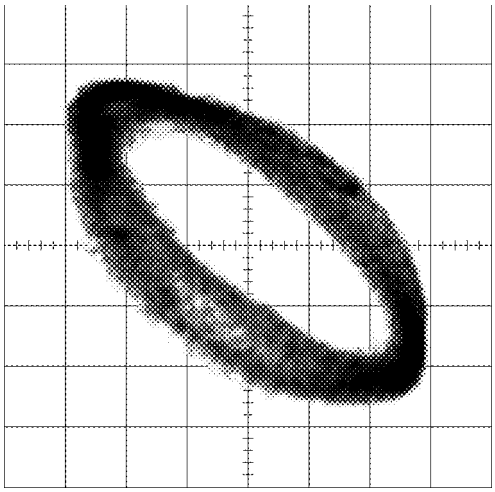
0°



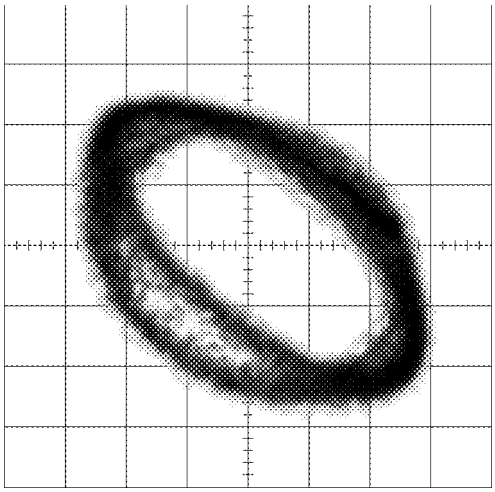
30°



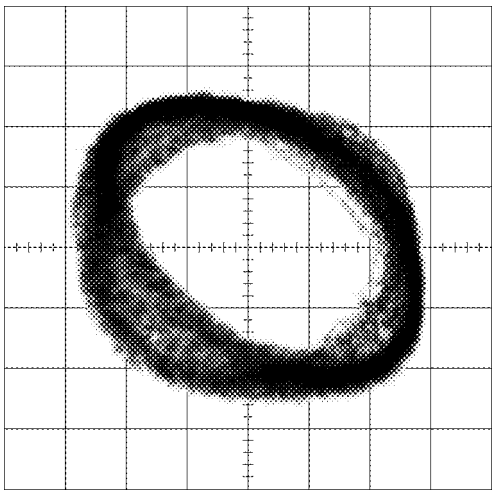
45°



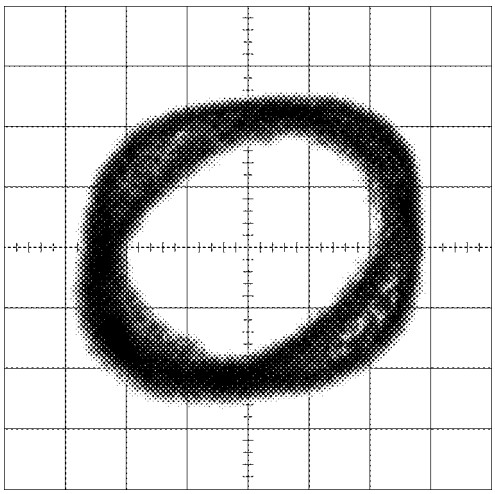
60°



75°



90°



6.4 ERROR MODE

● Error Messages

Error is displayed with number for Error cause when CD is inoperative or stops with Error during operation. The purpose is to reduce nonsense calls from users as well as to assist all related analysis and repair for defects at service station.

(1) Basic Display Method

1) When CSMOD (CD mode area for system) is SERRORM, Error code will be written in DMIN (minutes area for display), DSEC (seconds area for display). The same data shall be written in DMIN and DSEC. DTNO is blank as usual.

2) Display Example of Head Unit

The following is about LCD display ability. xx is Error number.

8 digits	6 digits	4 digits
ERROR–xx	ERR–xx OR Err–xx	E–xx

*) In case of OEM, Error display will follow the specification defined by OEM makers.

(2) Error Code List

No.	Classification	Contents	Details • Cause
10	Electricity	Carriage Home NG	CRG can't move to the inner. CRG can't move from the inner. → HOME SW failure, CRG movement failure.
11	Electricity	Focus Search NG	Focus can't be caught. → Back of Disc / Severe dirt and vibration.
12	Electricity	Spindle Lock NG Subcode NG RF-amp NG	Not spindle, lock. Wrong subcode (can't read). → Defective Spindle. Scratch and dirt on Disc. Intense vibration. The appropriate gain of the RF amp cannot be obtained. → Defective spindle. → Scratched or dirty disc. Severe vibration. Abnormal CD signals. → Blanc CD-R disc. Disc inserted upside down.
17	Electricity	Setup NG	AGC protection doesn't work, out of Focus soon. → Scratch on Disc/Severe dirt and vibration.
22	Disc	Impossible to play	There is no playable MP3 or WMA file present in a disc. → No MP3 or WMA file exists in a CD-ROM disc inserted.
23	Disc	File Format NG	Contents are stored in an incompatible file format. → The contents in a CD-ROM disc inserted are recorded in a file format other than ISO9660 Level-1 and 2.
30	Electricity	Search Time Out	Can't reach the target address. → Defective CRG/tracking, or scratch on Disc.
44	Disc	Impossible to play	There is no playable TRK No. present in a disc. → All TRK Nos. In a disc inserted are specified as a track which should be skipped, in the track skip information.
50	Mecha	Disc Load / Eject NG	Disc loading/ejection cannot be complete. → Foreign objects entered into the mechanism. Disc caught in between during loading/ejection.
A0	System	Power NG	Power supply (VD) isn't connected to the ground. → Defective SW transistor. Abnormal power (failed connector)

Note : Error doesn't display in mechanism only. (CD off causes mechanism off)
If TOC can't be read, error wouldn't occur, but mechanism still continues its operation.
The upper digits of error code is mainly classified by 3 kinds as follows:
1x: Setup related error, 3x: Search related error, Ax: Other errors.

6.5 SYSTEM MICROCOMPUTER TEST PROGRAM

1. PCL output

In the normal operation mode (with the detachable panel installed, the ACC switched ON, the standby mode cancelled), shift the TESTIN terminal to H. The clock signal is output from the PCL terminal (Pin 37). The frequency of the clock signal is 312.5KHz that is one 32nd of the fundamental frequency.

7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 DISASSEMBLY

● Removing the Case (not shown)

1. Remove the Case.

● Removing the CD Mechanism Module (Fig.1)

1 Remove the four screws.

Disconnect the connector and then remove the CD Mechanism Module.

● Removing the Grille Assy (Fig.1)

2 Remove the two screws and then remove the Grille Assy.

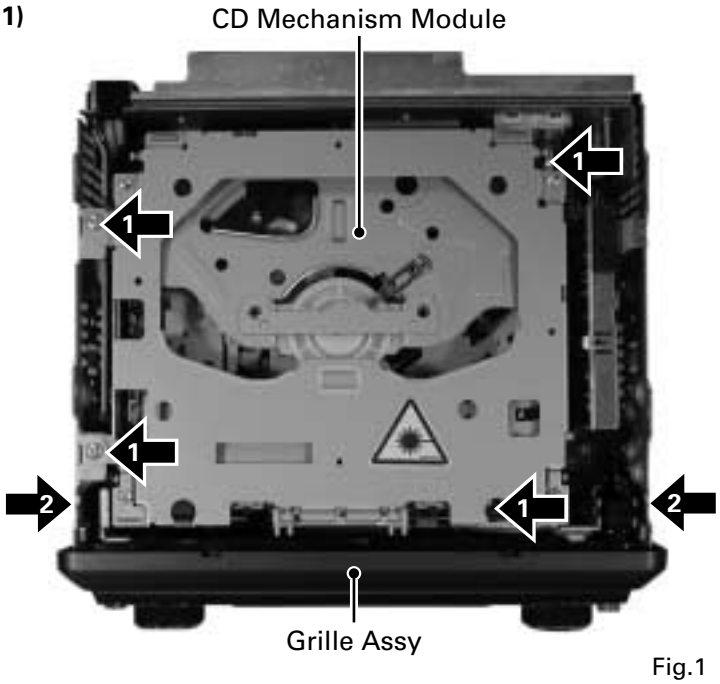


Fig.1

● Removing the Tuner Amp Unit (Fig.2)

1 Remove the screw.

2 Remove the three screws.

3 Straighten the tabs at three locations indicated.

4 Remove the screw and then remove the Tuner Amp Unit.

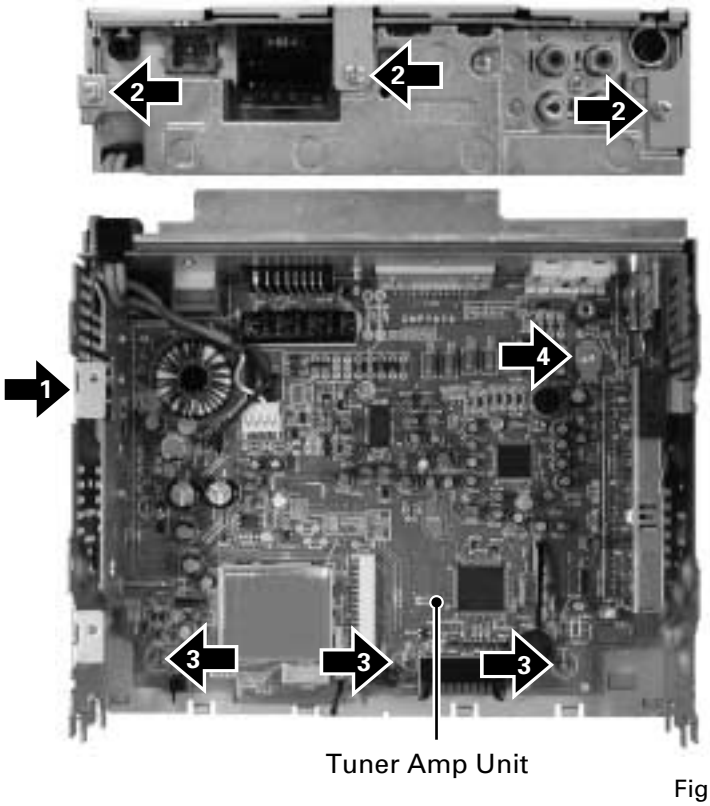
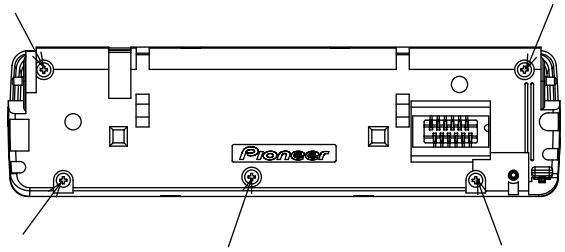


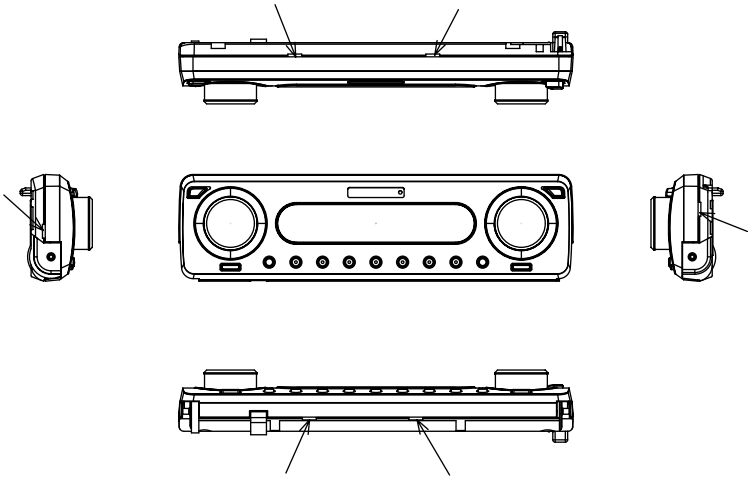
Fig.2

● Removing the Detach Grille Assy

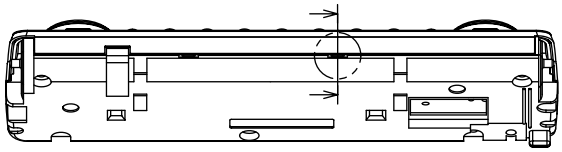
1. Remove the 5 screws from the rear side of the detachable grille.

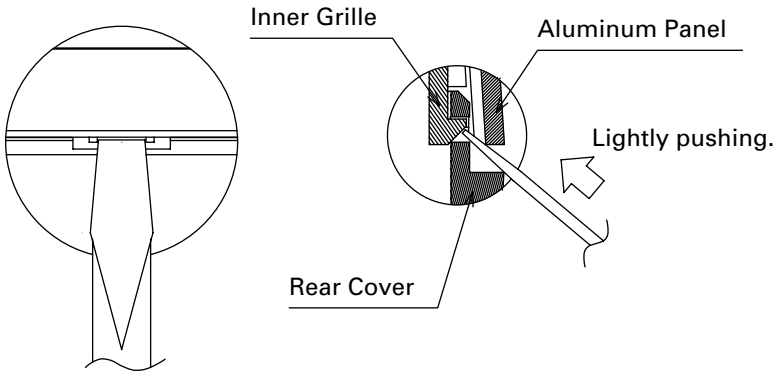


2. The grille and the rear cover are locked with 6 hooks.



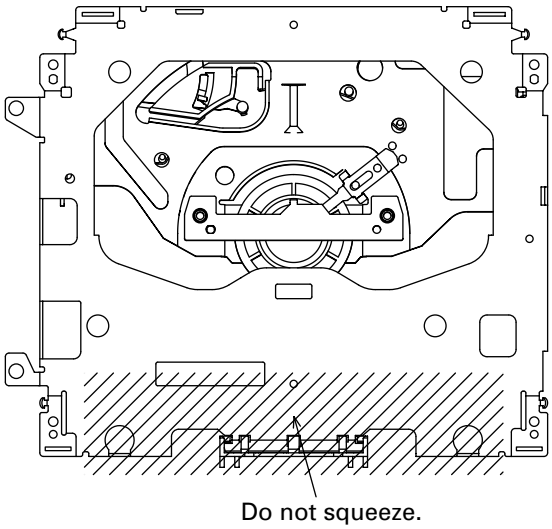
3. Insert a flat-headed screwdriver into the hook portion as shown below.
While lightly pushing the hook with the screwdriver, lift the cover and unhook it.
In the same manner, release the cover from all the 6 hooks.
Be careful not to push the hooks extremely strong.





● How to hold the Mechanism Unit

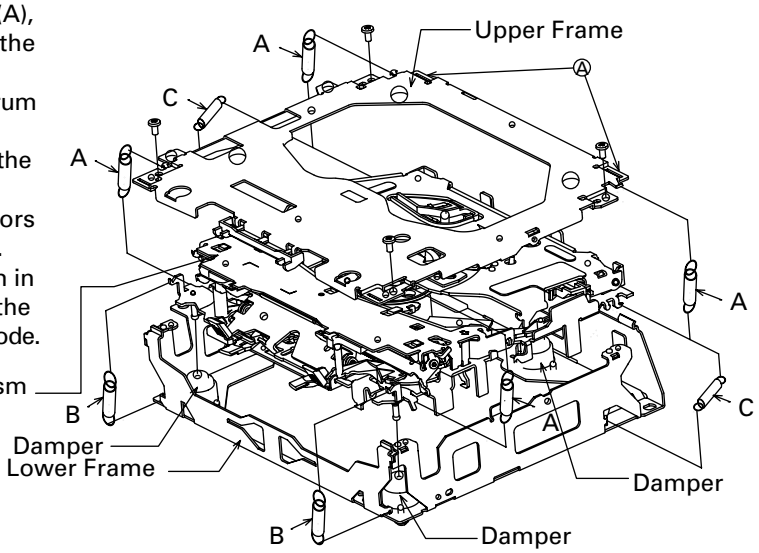
1. Hold the top and bottom frame.
2. Do not squeeze top frame's front portion too tight, because it is fragile.



● Removing the Upper and Lower Frames

1. With a disc clamped, remove the four springs (A), the two springs (B), the two springs (C), and the four screws.
2. To remove the upper frame, open it on the fulcrum A.
3. While lifting the carriage mechanism, remove the three dampers.
4. With the frames removed, insert the connectors coming from the main unit and eject the disc.

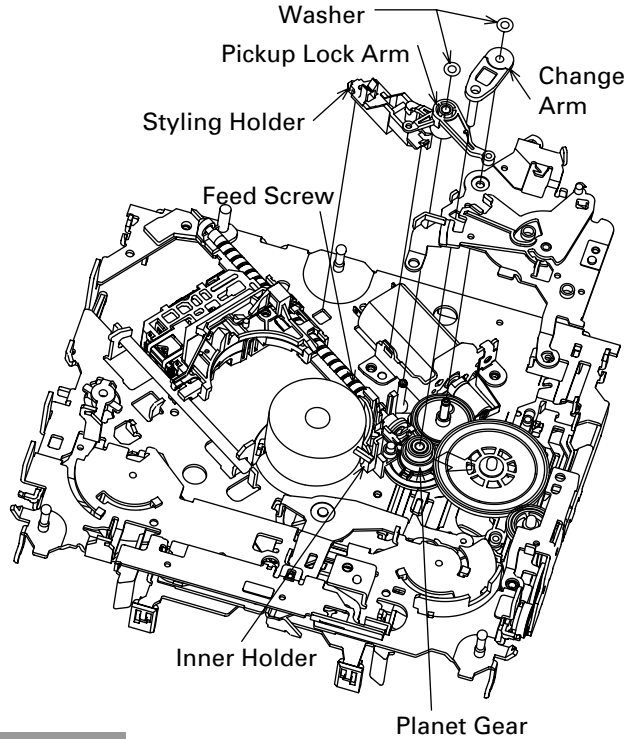
Caution: Before installing the carriage mechanism in the frames, be sure to apply some alcohol to the dampers and set the mechanism to the clamp mode.



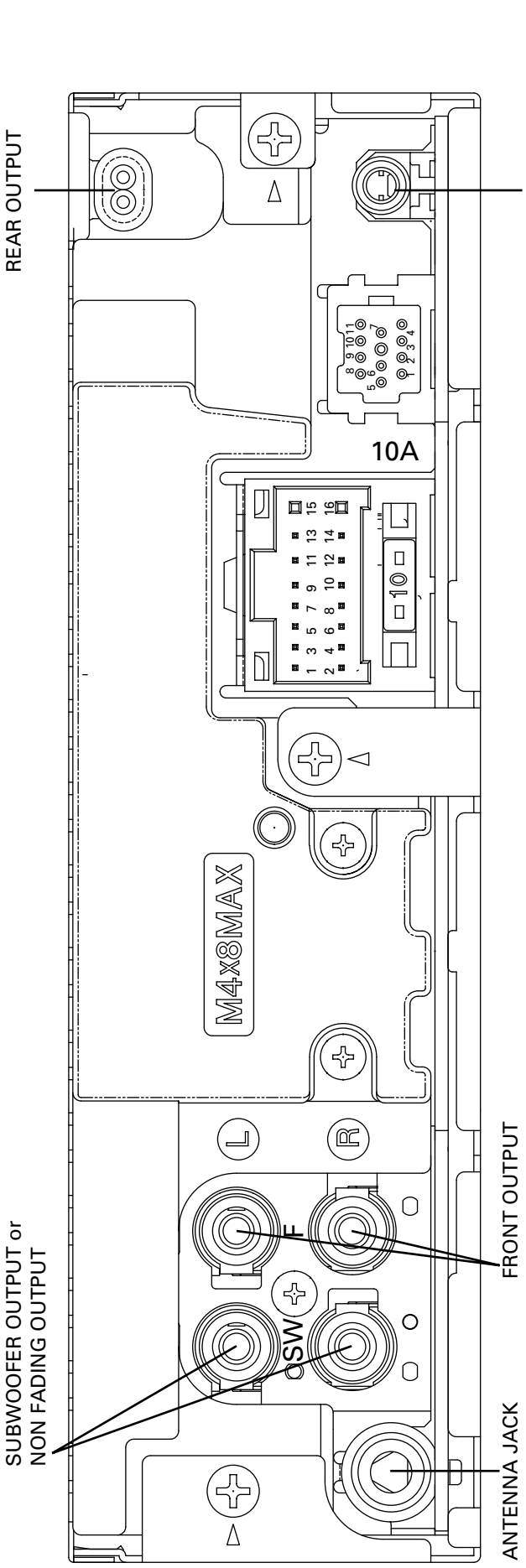
● Removing the Pickup Unit

1. Set the mechanism to the clamp mode.
2. Remove the lead wires from the inner holder.
3. Remove the two washers, styling holder, change arm, and pickup lock arm.
4. While releasing from the hook of the inner holder, lift the end of the feed screw.

Caution: In assembling, move the planet gear to the load/eject position before setting the feed screw in the inner holder.



7.1.2 CONNECTOR FUNCTION DESCRIPTION



7.2 PARTS

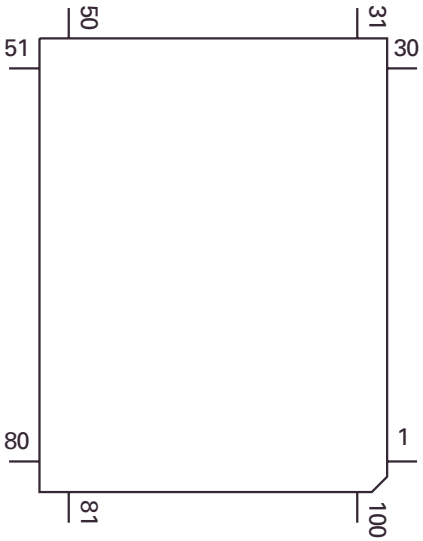
7.2.1 IC

PD2068B
S-80834CNMC-B8T
TSOP4840SB1
S-80835CNMC-B8U
NJM2872F25
PD5854A
UPD63760GJ
UPD61002GC
PE5352B
MSM51V4265EP-70TS
S-812C33AUA-C2N
BA25BC0WFP

● Pin Functions (PD2068B)

Pin No.	Pin Name	I/O	Format	Function and Operation
1	VSS			GND
2	X1			Crystal oscillator connection pin
3	X0			Crystal oscillator connection pin
4	NC			GND
5	VDD			Power supply
6	NC			Not used
7	DIM	O	C	Dimmer output
8	RESET			Reset
9,10	NC			Not used
11	REM	I		Remote control reception input
12,13	NC			Not used
14–17	KDT0-3	I		Key data input
18	VDD			Power supply
19	NC			Not used
20	S0	O	C	System micro computer UART communication data output
21	S1	I		System micro computer UART communication data input
22	NC			Not used
23–78	SEG55-0	O	L	LCD segment output
79–86	COM0-7	O	L	LCD common output
87–92	KST1-6	O	C	Key strobe output
93,94	NC			Not used
95-98	V4-1			LCD drive power supply
99,100	C1,C0			Not used

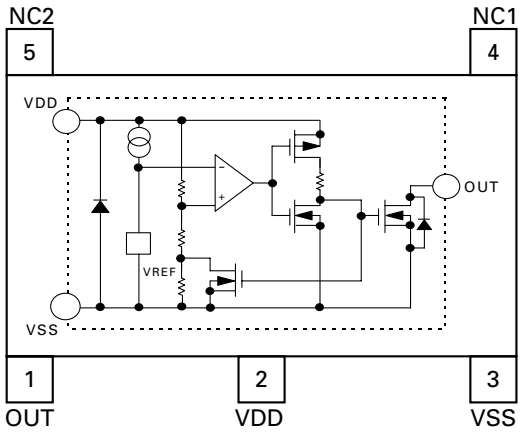
* PD2068B



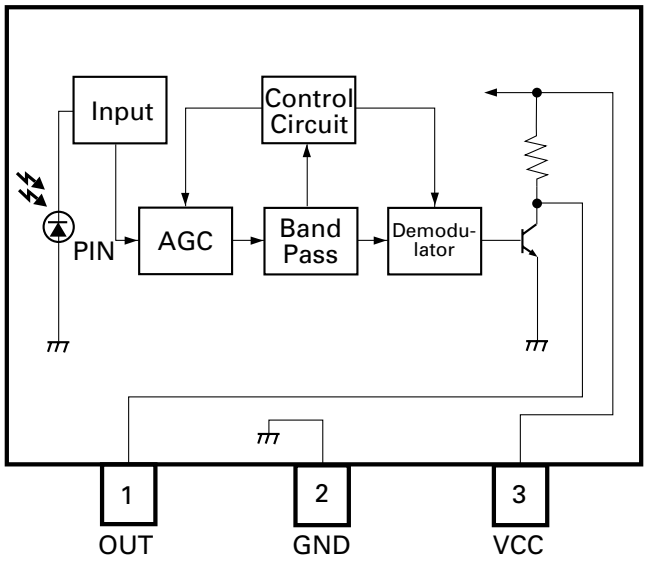
Format	Meaning
C	C MOS
L	LCD C output

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

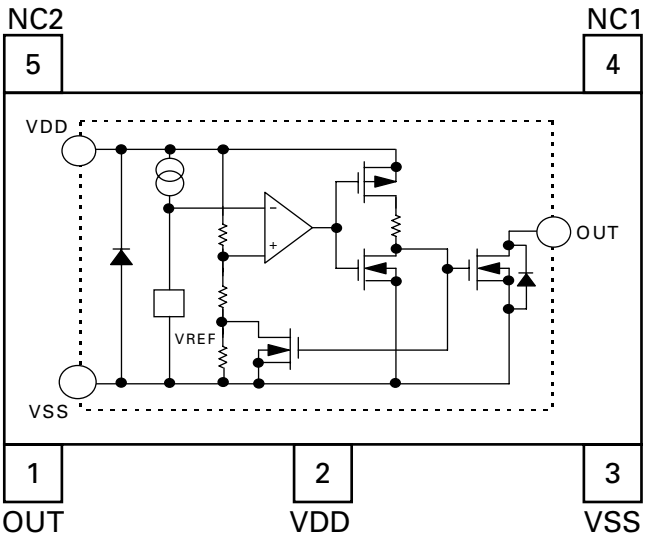
S-80834CNMC-B8T



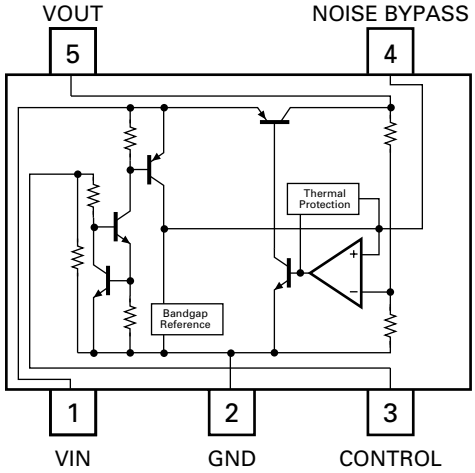
TSOP4840SB1



* S-80835CNMC-B8U



NJM2872F25

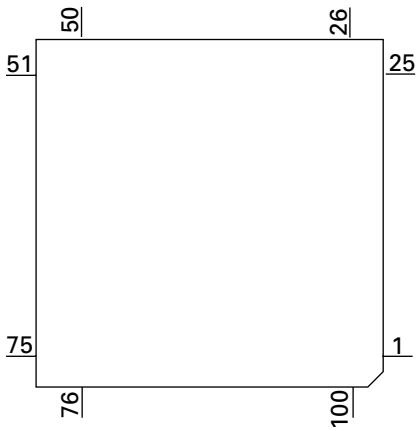


● Pin Functions(PD5854A)

Pin No.	Pin Name	I/O	Function and Operation
1	SYSPW	O	System power control output
2	VST	O	EVOL : Strobe output
3	VDT	O	EVOL : Data output
4	VCK	O	EVOL : Clock output
5	NC		Not used
6	BYTE		External data bus width change input
7	CNVSS		Processor mode change input
8	TELIN	I	TEL : Cellular mute input
9	NC		Not used
10	RESET		Reset input
11	XOUT		Clock output
12	VSS		GND
13	XIN		Clock input
14	VCC		Power supply input
15	NC		Not used
16	$\overline{\text{RCK}}$	I	RDS : Clock input
17	$\overline{\text{LDET}}$	I	RDS : PLL lock detection input
18	NC		Not used
19	RX2	I	IPBUS : Input 2
20	LCDPW	O	LCD power supply output
21	NC		Not used
22	PEE	O	PEE sound output
23	NC		Not used
24	$\overline{\text{BRST}}$	O	PBUS : Reset output
25	$\overline{\text{BRXEN}}$	I/O	PBUS : Communication input/output
26	$\overline{\text{BSRQ}}$	I	PBUS : Communication request input
27	RX	I	IPBUS : Input
28	TX	O	IPBUS : Output
29	BSO	O	PBUS : Output
30	BSI	I	PBUS : Input
31	BSCK	O	PBUS : Clock
32	NC		Not used
33	DPDT	O	GRILL : Data output
34	KYDT	I	GRILL : Data input
35, 36	ROT1, 0	I	Rotary encoder pulse input1, 0
37	PCL	O	Output for clock adjustment
38	$\overline{\text{SWVDD}}$	O	GRILL : Chip enable output
39	$\overline{\text{DSENS}}$	I	Detach sense input
40	FLPILM	O	Illumination output inside flap
41	ILMPW	O	Illumination output
42	$\overline{\text{EJTIN}}$	I	Eject key input
43	NC		Not used
44	$\overline{\text{RDS57K}}$	I	RDS : 57kHz pulse count input
45	$\overline{\text{RDSLK}}$	I	RDS : Lock signal input
46	RDT	I	RDS : Data input
47	NC		Not used
48	EMPH	I	Emphasis information input of CD
49	CDA/D	I	CD analog or digital output discrimination input H : Analog/L : Digital
50	DSPOK	O	DAC operation possible output(Output to CD microcomputer)
51	DSPMUTE	I	MUTE request input from CD
52	CD5VON	I	Trigger input of MCK output to CD
53	DAC5V	O	DAC power supply control output
54	NC		Not used
55	RECIVE	O	For RDS circuit operation check
56	CSENSOUT	O	FLAP open : H/FLAP close : L
57-59	NC		Not used
60	VCC		Power supply input
61	NC		Not used
62	VSS		Power supply input
63	$\overline{\text{DACML}}$	O	Mode control latch output for DAC

Pin No.	Pin Name	I/O	Function and Operation
64	DACMC	O	Mode control clock output for DAC
65	DACMD	O	Mode control data output for DAC
66	$\overline{\text{DACRST}}$	O	Reset output for DAC
67	DALMON	O	For consumption current reduction
68	KEYD	I	Wired remote control key input
69	$\overline{\text{TUNPCE2}}$	O	TUNER : Chip enable output(EEPROM)
70	TUNPCE1	O	TUNER : Chip enable output(PLL)
71	ROMCS	O	ROM correction : Chip select
72	$\overline{\text{ASENS}}$		ACC sense
73	$\overline{\text{BSENS}}$		Back up sense
74	ROMCK	O	ROM correction : Clock output
75	ROMDATA	I/O	ROM correction : Data input/output
76-78	NC		Not used
79	IPPW	O	IPBUS : Driver power supply control output
80	ASENBO	O	IPBUS : Slave ACC sense output
81	$\overline{\text{ISENS}}$	I	Illumination sense input
82-84	NC		Not used
85	MUTE	O	MUTE output
86	TESTIN	I	Test program input
87-89	NC		Not used
90	OUTLV		AUDIO output level detection(For ASL)
91	CSENS		Flap opening-and-closing sense input
92	KEYAD		Wired remote control key input
93	ASLIN		ASL input(Noise)
94	AVSS		AD converter power supply input terminal
95	SL		TUNER : Signal level input
96	VREF		AD converter reference voltage
97	AVCC		AD converter power supply input terminal
98	TUNPDI	I	TUNER : PLL communication
99	TUNPDO	O	TUNER : Data output(PLL)
100	TUNPCK	O	TUNER : Clock output(PLL)

* PD5854A

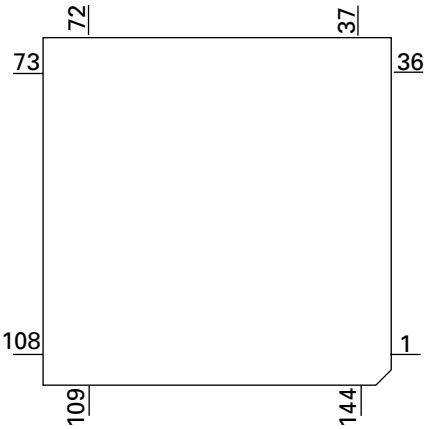


● Pin Functions (UPD63760GJ)

Pin No.	Pin Name	I/O	Function and Operation
1	R.GND		GND for DRAM I/F
2	$\overline{RST}$	I	Input of reset
3-7	AB12-8	I	Address bus 12-8 from the microcomputer
8-15	AD7-0	I/O	Address/data bus 7-0 to the microcomputer
16	$\overline{CS}$	I	Chip selection
17	ASTB	I	Address strobe
18	$\overline{READ}$	I	Control signals (read)
19	$\overline{WRITE}$	I	Control signals (write)
20	$\overline{WAIT}$	O	Control signals (wait)
21	INTQ		Interruption signals to the external microcomputer
22	IFMODE	I	Switching between the data buses (16bit/8bit)
23	D.VDD		Power supply for digital circuits
24	$\overline{XTALEN1}$	I	Permission to oscillate 16.9344MHz
25	$\overline{XTALEN2}$	I	Permission to oscillate 24.576MHz
26	DA.VDD		Power supply for DAC
27	ROUT	O	Output of audio for the right channel
28	DA.GND		GND for DAC
29	R+	O	Output of the right channel audio PWM
30	R-	O	Output of the right channel audio PWM
31	REGC		Connected to the capacitor for band gap
32	L-	O	Output of the left channel audio PWM
33	L+	O	Output of the left channel audio PWM
34	DA.GND		GND for DAC
35	LOUT	O	Output of audio for the left channel
36	DA.VDD		Power supply for DAC
37	X.VDD		Power supply for the crystal oscillator
38	XTAL1		Connected to the crystal oscillator (16.9344MHz)
39	$\overline{XTAL1}$		Connected to the crystal oscillator (16.9344MHz)
40, 41	X.GND		Ground for the crystal oscillator
42	$\overline{XTAL2}$		Connected to the crystal oscillator (24.576MHz)
43	XTAL2		Connected to the crystal oscillator (24.576MHz)
44	X.VDD		Power supply for the crystal oscillator
45	D.GND		GND for digital circuits
46	DIN	I	Input of audio data
47	DOUT	O	Output of audio data
48	SCKIN	I	Clock input for audio data
49	SCKO	O	Clock output for audio data
50	LRCKIN	I	Input of LRCK for audio data
51	LRCK	O	Output LRCK for audio data
52	TESTX	O	Output for tests
53	RFOK	O	Output of RFOK
54	C16M	O	Output of 16.9344MHz
55	TESTEN	I	Connected to GND
56	TEST4	I	Connected to GND
57	D.VDD		Power supply for digital circuits
58	RFCK/HOLD	O	Output of RFCK/HOLD signal
59	WFCK/MIRR	O	Output of WFCK/MIRR signal
60	PLCK	O	Output of PLCK
61	LOCK	O	Output of LOCK
62	C1D1	O	Information on error correction
63	C1D2	O	Information on error correction
64	C2D1(RMUTE)	O	Information on error correction (mute for Rch)
65	C2D2(LMUTE)	O	Information on error correction (mute for Lch)
66	C2D3	O	Information on error correction
67	D.GND		Ground for digital circuits
68	$\overline{RAS}$	O	Output of DRAM RAS
69	$\overline{CAS0}$	O	Output of DRAM Lower CAS
70	$\overline{CAS1}$	O	Output of DRAM Upper CAS
71	$\overline{WE}$	O	Output of DRAM WE
72	$\overline{OE}$	O	Output of DRAM OE

Pin No.	Pin Name	I/O	Function and Operation
73-88	RDB0-15	I/O	Input/output of DRAM Data0-15
89	D.GND		Ground for digital circuits
90-99	RA0-9	O	Output of DRAM Address0-9
100	D.VDD		Power supply for digital circuits
101-104	TEST0-3	I	Connected to GND
105	FD	O	Output of focus drive PWM
106	TD	O	Output of tracking drive PWM
107	SD	O	Output of thread drive PWM
108	MD	O	Output of spindle drive PWM
109	A.VDD		Power supply for the analog system
110	ATEST	O	Analog tests
111	EFM	O	Output of EFM signals
112	ASY	I	Input of asymmetry
113	C3T		Connection to the capacitor for detecting 3T
114	A.GND		Ground for the analog system
115	RFI	I	Input of RF
116	AGCO	O	Output of RF
117	AGCI	I	Input of AGC
118	RFO	O	Output of RF(AGC)
119, 120	EQ2, 1		Equalizer 2, 1
121	RF2-	I	Reversal input of RF2
122	RF-	I	Reversal input of RF
123	A.GND		Ground for the analog system
124	A	I	Input of A
125	C	I	Input of C
126	B	I	Input of B
127	D	I	Input of D
128	F	I	Input of F
129	E	I	Input of E
130	A.VDD		Power supply for the analog system
131	REFOUT	O	Output of reference voltage
132	REFC		Connected to the capacitor for output of REFOUT
133	FE-	I	Reversal input of FE
134	FEO	O	Output of FE
135	TE-	I	Reversal input of TE
136	TEO	O	Output of TE
137	TE2	O	TE2
138	TEC	I	TEC
139	A.GND		Ground for the analog system
140	LDREGO	O	Output of REG voltage for APC
141	PD	I	Input of PD
142	LD	O	Output of LD
143	PN	I	Assignment of pickup polarity
144	A.VDD		Power supply for the analog system

* UPD63760GJ

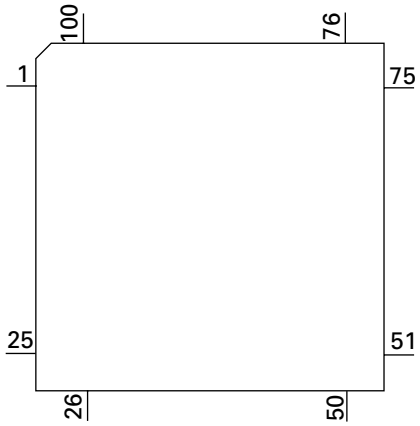


● Pin Function (UPD61002GC)

Pin No.	Pin Name	I/O	Function and Operation
1	VDD3	I/O	Power supply (3.3V)
2-4	NC		Not used
5	GND3		GND
6,7	NC		Not used
8	DO0	O	PCM output data
9	VDD2		Power supply (2.5V)
10	CKI	I	Clock input
11	DVDD		Power supply (PLL) (Digital)
12	AVDD		Power supply (PLL) (Analog)
13	AGND		GND (PLL) (Analog)
14	DGND		GND (PLL) (Digital)
15	VDD3I		Interface terminal protection
16	LRCKO	O	PCM output LRCK
17	BCKO	O	PCM output bit clock
18	NC		Not used
19	VDD3		Power supply (3.3V)
20	GND2		GND
21	MCK44	I	Audio master clock input
22	MCK48	I	Audio master clock input
23,24	P10, 11	I/O	Port
25	VDD2		Power supply (2.5V)
26	GND3		GND
27-32	P12-17	I/O	Port
33	VDD2		Power supply (2.5V)
34	P00/INTP00	I/O	Port
35,36	NC		Not used
37	P03/INTP03	I/O	Port
38	P04/INTP04	I/O	Port
39	P05/INTP05	I/O	Port
40	GND2		GND
41,42	P06, 07	I/O	Port
43	VDD3		Power supply (3.3V)
44-49	HAD0-5	I/O	Host address / Data bus
50	GND3		GND
51	VDD3		Power supply (3.3V)
52-55	HAD6-9	I/O	Host address / Data bus
56	GND3		GND
57-59	HAD10-12	I/O	Host address / Data bus
60	VDD2		Power supply (2.5V)
61-63	HAD13-15	I/O	Host address / Data bus
64	VDD3		Power supply (3.3V)
65	HAST	I	Host address strobe
66	HCSB	I	Host chip select
67	HR/WB	I	Host read / Write status
68	HDSTB	I	Host data strobe
69	GND2		GND
70	NC		Not used
71	EXTDIR	I	Bus direction flag from external
72,73	DBBWRDY0, 1	O	DBB write ready flag
74	DBBRRDY0	O	DBB read ready flag
75	VDD2		Power supply (2.5V)
76	GND3		GND
77	DBBRRDY1	O	DBB read ready flag
78	GND3		GND
79	RESETB	I	Reset
80	GND3		GND
81	VDD3		Power supply (3.3V)
82	GND3		GND
83	PLLCONT	I	PLL control
84	GND3		GND

Pin No.	Pin Name	I/O	Function and Operation
85	NC		Not used
86	GND2		GND
87	DI3	I	PCM input data
88	LRCKI3	I	PCM input LRCK
89	BCKI3	I	PCM input bit clock
90	DI2	I	PCM input data
91	LRCKI2	I	PCM input LRCK
92	BCKI2	I	PCM input bit clock
93	DI1	I	PCM input data
94	LRCKI1	I	PCM input LRCK
95	BCKI1	I	PCM input bit clock
96	VDD2		Power supply (2.5V)
97	DI0	I	PCM input data
98	LRCKI0	I	PCM input LRCK
99	BCKI0	I	PCM input bit clock
100	GND2		GND

*UPD61002GC

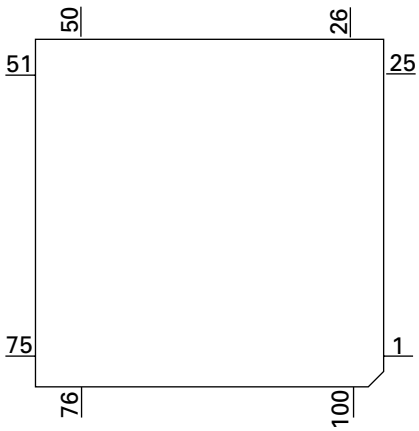


● Pin Functions (PE5352B)

Pin No.	Pin Name	I/O	Format	Function and Operation
1	BSO	O	C	P-Bus serial data output
2	$\overline{\text{BSCK}}$	I/O	/C	P-Bus serial clock input/output
3, 4	DFS1, 2	O	C	DA I/F IC sampling frequency setting output 1, 2
5	DCKS	O	C	DA I/F IC clock subharmonic number selection output
6	EVDD			E power supply Positive power supply
7	EVSS			E power supply GND
8	$\overline{\text{DSPOK}}$	I		DSP microcomputer initialization OK input
9	DCOPY	O	C	DA I/F IC copy flag setting output
10	$\overline{\text{CRST}}$	O	C	Compression IC reset control output
11, 12	NC			Not used
13	EMPH	O	C	Emphasis information output
14	$\overline{\text{EMPH}}$	O	C	Emphasis information output
15	DSPMUTE	O	C	DOUT mute output
16	DSET	O	C	Disc set indicator lighting output
17	$\overline{\text{ADENA}}$	O	C	A/D reference voltage supply control output
18	IC/VPP			IC : VSS direct connection/VPP : Pull-down
19	BRXEN	I/O	/C	P-Bus reception is possible
20	$\overline{\text{BSRQ}}$	I/O	/C	P-Bus service request demand
21	$\overline{\text{XTALEN1}}$	O	C	CD LSI 16.9344MHz oscillation permission output
22	$\overline{\text{XTALEN2}}$	O	C	CD LSI 24.576MHz oscillation permission output
23	$\overline{\text{XRST}}$	O	C	CD LSI reset control output
24	VDCONT	O	C	VD power supply control output
25	CD3VON	O	C	CD +3.3V power supply control output
26	CONT	O	C	Servo driver power supply control output
27	$\overline{\text{XWAIT}}$	I		CD LSI wait control signal input
28	LOEJ	O	C	The direction change output of LOAD/EJECT
29	CLCONT	O	C	Driver input change output
30	CDMUTE	O	C	CD mute control output
31	$\overline{\text{RESET}}$	I		System reset input
32	XT1	I		Connected to the oscillator for subclock (connected to VSS via the resistor)
33	XT2			Connected to the oscillator for subclock (Open)
34	REGC			Connected to the capacity stabilizing output of the regulator (an electrolytic capacitor of about 1μF)
35	X2			Oscillator connection for mainclock
36	X1	I		Oscillator connection for mainclock
37	VSS			GND
38	VDD			Positive power supply (5V)
39	CLKOUT	O	C	Internal system clock output (Open)
40	$\overline{\text{XWRITE}}$	O		CD LSI write control signal output
41	$\overline{\text{UBEN}}$	O		Not used (Open)
42	WR/W	O		WMA decoder Read/Write control signal output
43	$\overline{\text{XREAD}}$	O		CD LSI read control signal output
44	XASTB	O		CD LSI address strobe output
45	LOCK	I		Spindle lock input
46	$\overline{\text{WRST}}$	O	C	WMA decoder reset control output
47-54	AD0-7	I/O	/C	Address/Data bus 0-7
55	BVDD			B power supply Positive power supply (3.3V)
56	BVSS			B power supply GND
57-64	AD8-15	I/O	/C	Address/Data bus 8-15
65	$\overline{\text{XCS}}$	O	C	CD LSI chip selection output
66	$\overline{\text{WCS}}$	O	C	WMA decoder chip selection output
67, 68	DBBWRDY0, 1	I		Input of write-ready flag with WMA decoder DBBI0, 1
69, 70	DBBRRDY0, 1	I		Input of read-ready flag with WMA decoder DBBO0, 1
71	AVDD			A power supply Positive power supply (5V)
72	AVSS			A power supply GND
73	AVREF			The reference voltage input for A/D converter
74	VDSENS			VD power supply short sense input
75	DSCSNS			Disc state sense input
76	TEMP			Temperature information sense input

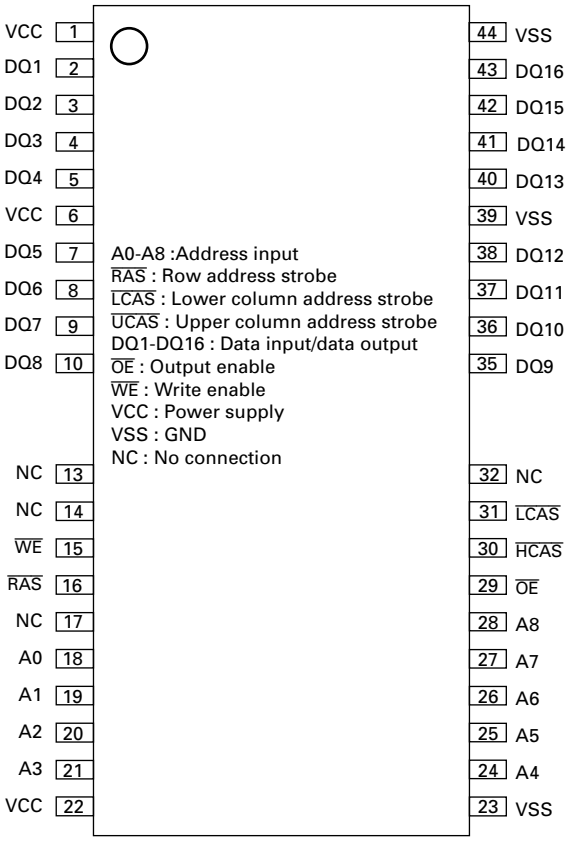
Pin No.	Pin Name	I/O	Format	Function and Operation
77	HOME	I		Home SW sense input
78	$\overline{\text{CSENS}}$	I		Flap closing sense input
79	RFOKIN	I		RFOK input chatter count input
80-82	NC			Connected to AVDD or AVSS via the resistor
83	WMAARI	I		Input of sensing existence of WMA decoder and DA I/F IC
84	TYPE_A/D	I		CD-DA Analog/Digital output change setup
85	$\overline{\text{TESTIN}}$	I		Chip check test program starting input
86	NC			Connected to EVDD or EVSS via the resistor
87	$\overline{\text{XINT}}$			CD LSI interruption signal input
88	$\overline{\text{WINT}}$			WMA decoder interruption signal input
89	$\overline{\text{BRST}}$	I		P-Bus reset input
90	$\overline{\text{EJSW}}$	I		Eject key input
91, 92	NC			Open
93	CLAMP	I	C	CLAMP SW sense input
94	ROMDATA	I/O	/C	E2PROM data input/output
95	ROMCS	O	C	E2PROM chip selection output
96	ROMCK	O	C	E2PROM clock output
97	FRXD	I		For flash rewriting (received signal)
98	FTXD	O	C	For flash rewriting (transmitted signal)
99	AO/DO	O	C	The output for Analog/Digital voice output distinction
100	BSI	I		P-Bus serial data input

* PE5352B

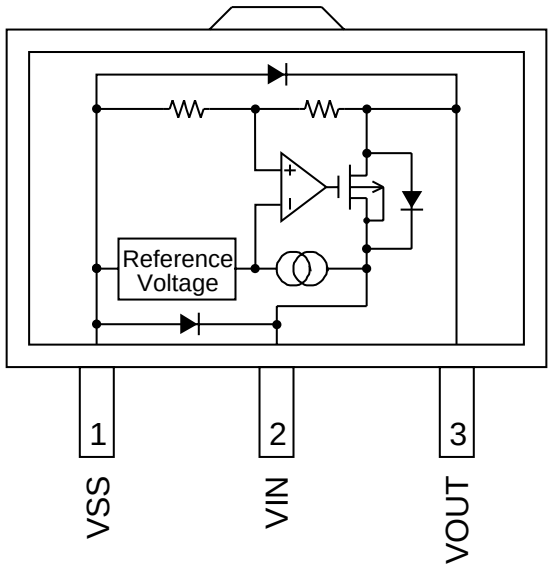


Format	Meaning
C	CMOS

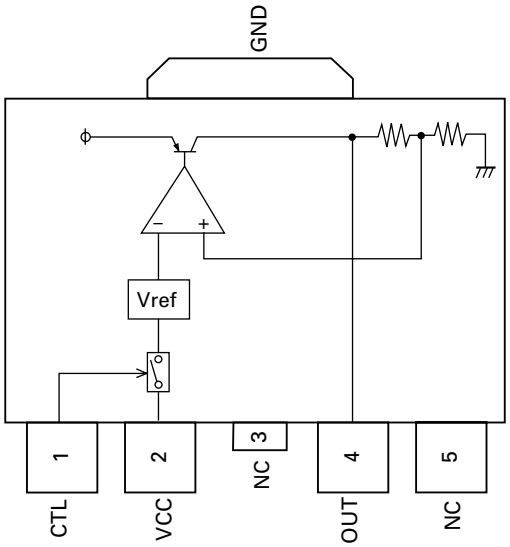
* MSM51V4265EP-70TS



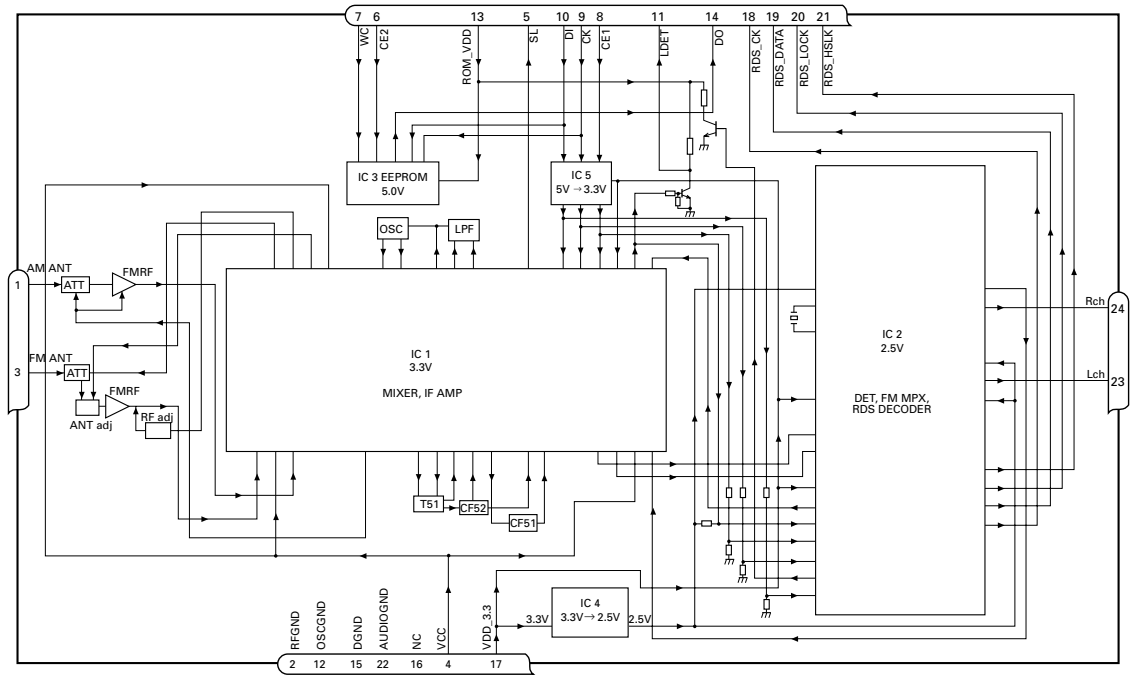
* S-812C33AUA-C2N



BA25BC0WFP



● FM/AM Tuner Unit

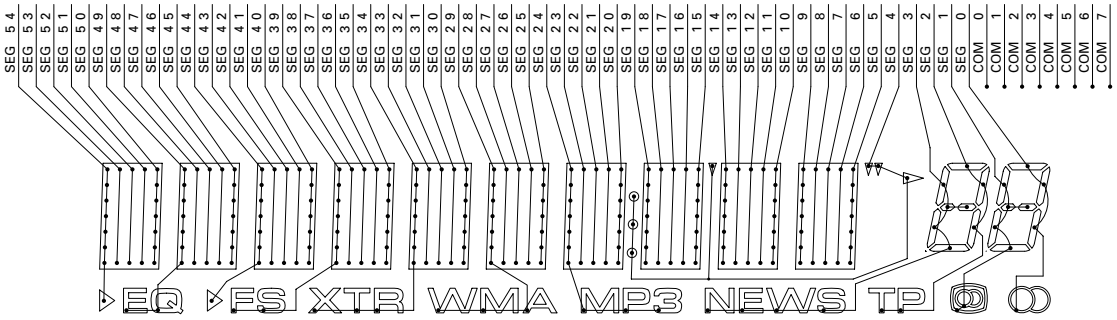


No.	Symbol	I/O	Explain	
1	AMANT	I	AM antenna input	AM antenna input high impedance AMANT pin is connected with an all antenna by way of 4.7μH. (LAU type inductor) A series circuit including an inductor and a resistor is connected with RF ground for the countermeasure against the ham of power transmission line.
2	RFGND		RF ground	Ground of antenna block
3	FMANT	I	FM antenna input	Input of FM antenna 75Ω Surge absorber(DSP-201M-S00B) is necessary.
4	VCC		power supply	The power supply for analog block. D.C 8.4V ± 0.3V
5	SL	O	signal level	Output of FM/AM signals level
6	CE2	I	chip enable-2	Chip enable for EEPROM "Low" active
7	WC	I	write control	You can write EEPROM, when EEPROM write control is "Low". Ordinary non connection
8	CE1	I	chip enable-1	Chip enable for AF•RF "High" active
9	CK	I	clock	Clock
10	DI	I	data in	Data input
11	LDET	O	lock detector	"Low" active
12	OSCGND		osc ground	Ground of oscillator block
13	ROM_VDD		power supply	Power supply for EEPROM pin 13 is connected with a power supply of micro computer.
14	DO	O	data out	Data output
15	DGND		digital ground	Ground of digital block
16	NC		non connection	Not used
17	VDD_3.3		power supply	The power supply for digital block. 3.3V ± 0.2V
18	RDS_CK	O	RDS clock	Output of RDS clock(2.5V)
19	RDS_DATA	O	RDS data	Output of RDS data(2.5V)
20	RDS_LOCK	O	RDS lock	Output unit "High" active(2.5V) (RDS_LOCK turns over by the external transistor. "Low" active)
21	RDS_HSLK	O	RDS high speed lock	Output unit "High" active(2.5V)(RDS_HSLK turns over by the external transistor. "Low" active)
22	AUDIOGND		audio ground	Ground of audio block
23	L ch	O	L channel output	FM stereo "L-ch" signal output or AM audio output
24	R ch	O	R channel output	FM stereo "R-ch" signal output or AM audio output

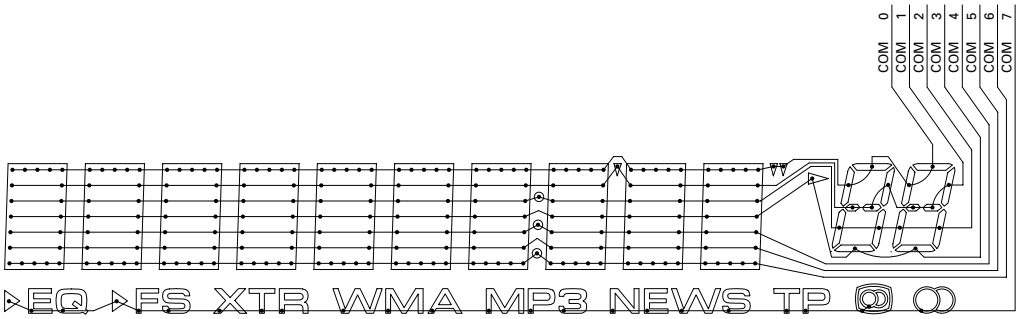
7.2.2 DISPLAY

● LCD(CAW1807)

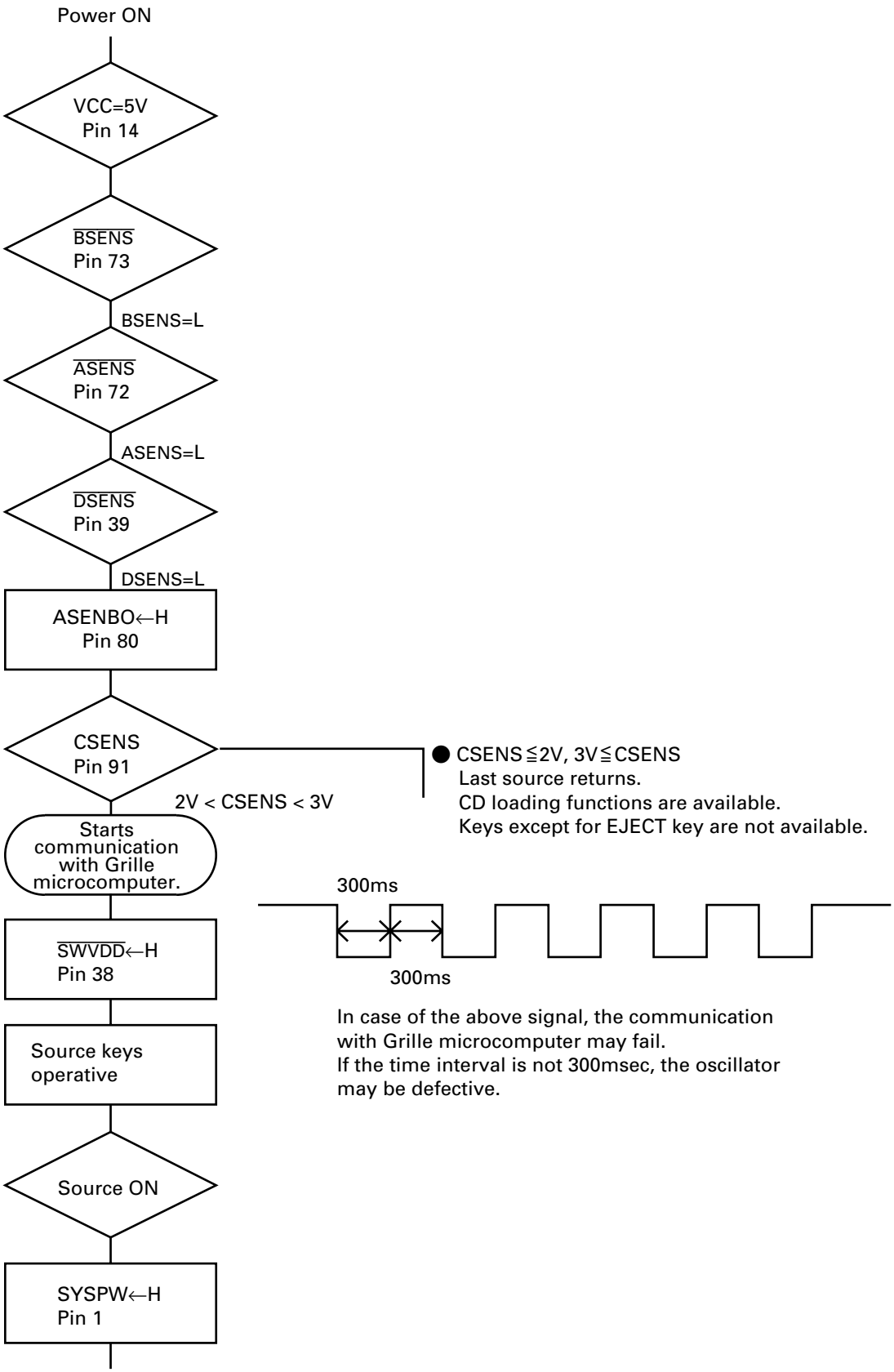
SEGMENT



COMMON



7.3 OPERATIONAL FLOW CHART



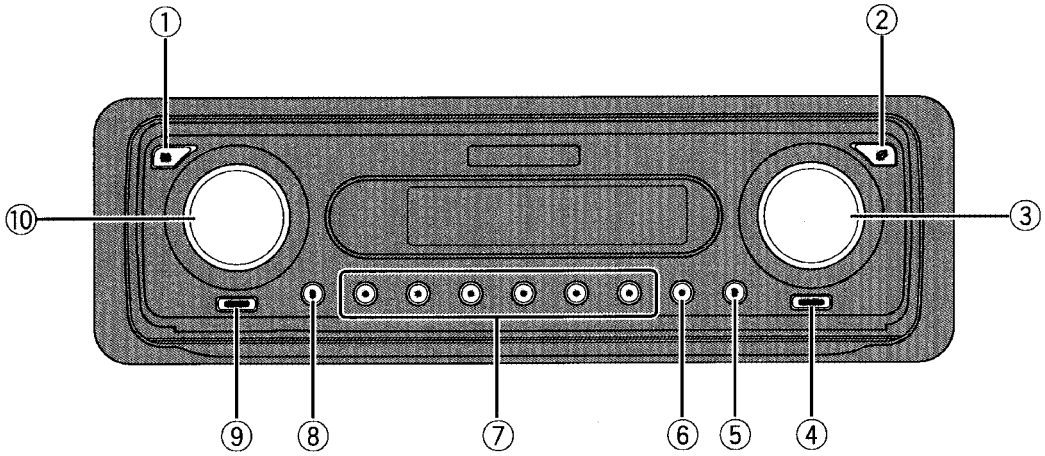
Completes power-on operation.
(After that, proceed to each source operation)

7.4 CLEANING

Before shipping out the product, be sure to clean the following portions by using the prescribed cleaning tools:

Portions to be cleaned	Cleaning tools
CD pickup lenses	Cleaning liquid : GEM1004 Cleaning paper : GED-008

8. OPERATIONS



Head unit

① EQ button
Press to select various equalizer curves.

② OPEN button
Press to open the front panel.

③ ROTARY ENCODER
Press to turn the functions on or off.
Rotate clockwise or counterclockwise to control functions.

④ AUDIO button
Press to select various sound quality controls.

⑤ BAND button
Press to select among three FM and MW/LW bands and cancel the control mode of functions.

⑥ FUNCTION button
Press to select functions.

⑦ 1–6 buttons
Press for preset tuning and disc number search when using a multi-CD player.

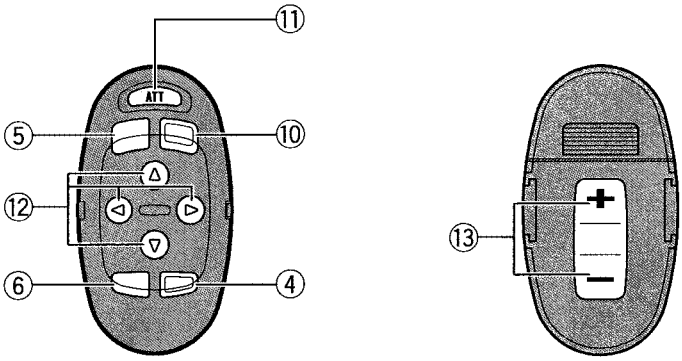
⑧ DISPLAY button
Press to select different displays.

⑨ TA button
Press to turn traffic announcements function on or off.

⑩ SOURCE button, VOLUME
This unit is turned on by selecting a source.
Press to cycle through all of the available sources.
Rotate to increase or decrease the volume.

Optional remote control

The steering remote control CD-SR100 is sold separately.
Operation is the same as when using the button on the head unit. See the explanation of the head unit about the operation of each button with the exception of **ATT**, which is explained below.



⑪ ATT button

Press to quickly lower the volume level, by about 90%. Press once more to return to the original volume level.

⑫ ▲/▼/◄/► buttons

Press to do manual seek tuning, fast forward, reverse and track search controls. Also used for controlling functions.

⑬ VOLUME button

Press to increase or decrease the volume.

Turning the unit on

● **Press SOURCE to turn the unit on.**
When you select a source the unit is turned on.▣

Selecting a source

You can select a source you want to listen to. To switch to the built-in CD player, load a disc in this unit.

● **Press SOURCE to select a source.**
Press **SOURCE** repeatedly to switch between the following sources:
DAB (Digital Audio Broadcasting)—**Tuner**—**Television**—**Built-in CD player**—**Multi-CD player**—**External unit 1**—**External unit 2**—**AUX**

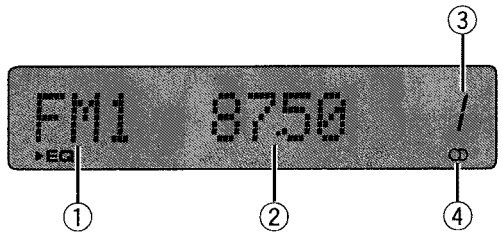
Notes

- In the following cases, the sound source will not change:
  - — When a unit corresponding to each source is not connected to this unit.
  - — When no disc is set in this unit.
  - — When no magazine is set in the multi-CD player.
  - — When the AUX (auxiliary input) is set to off.
- External unit refers to a Pioneer product (such as one available in the future) that, although incompatible as a source, enables control of basic functions by this unit. Two external units can be controlled by this unit. When two external units are connected, the allocation of them to external unit 1 or external unit 2 is automatically set by this unit.
- When this unit's blue/white lead is connected to the car's auto-antenna relay control terminal, the car's antenna extends when this unit's source is turned on. To retract the antenna, turn the source off.▣

Turning the unit off

● **Press SOURCE and hold until the unit turns off.**▣

Listening to the radio



These are the basic steps necessary to operate the radio.
This unit's AF (alternative frequencies search) function can be turned on and off. AF should be off for normal tuning operation.

① **Band indicator**
Shows which band the radio is tuned to, MW, LW or FM.

② **Frequency indicator**
Shows to which frequency the tuner is tuned.

③ **Preset number indicator**
Shows what preset has been selected.

④ **Stereo (◌) indicator**
Shows that the frequency selected is being broadcast in stereo.

1 Press SOURCE to select the tuner.
Press **SOURCE** until you see **Tuner** displayed.

2 Use VOLUME to adjust the sound level.
Rotate to increase or decrease the volume.

3 Press BAND to select a band.
Press **BAND** until the desired band is displayed, **FM1**, **FM2**, **FM3** for FM or **MW/LW**.

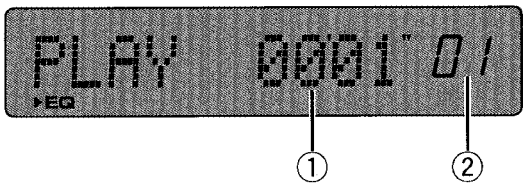
4 To perform manual tuning, rotate ROTARY ENCODER.
The frequencies move up or down step by step.

5 To perform seek tuning, rotate ROTARY ENCODER for about one second and release.
The tuner will scan the frequencies until a broadcast strong enough for good reception is found.
- You can cancel seek tuning by rotating **ROTARY ENCODER**.
- If you rotate and hold **ROTARY ENCODER**, you can skip broadcasting stations. Seek tuning starts as soon as you release **ROTARY ENCODER**.

Note

When the frequency selected is being broadcast in stereo the stereo (◌) indicator will light.

Playing a CD



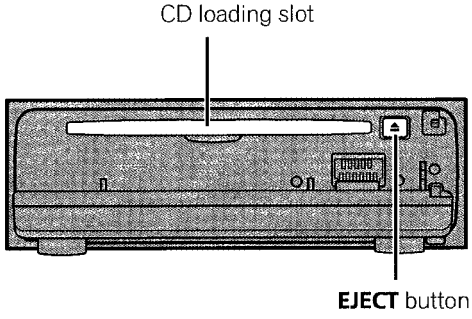
These are the basic steps necessary to play a CD with your built-in CD player.

① Play time indicator
Shows the elapsed playing time of the current track.

② Track number indicator
Shows the track currently playing.

1 Press OPEN to open the front panel.
CD loading slot appears.
- After a CD has been inserted, press **SOURCE** to select the built-in CD player.

2 Insert a CD into the CD loading slot.
Playback will automatically start.



- You can eject a CD by pressing **EJECT**.
- To avoid a malfunction, make sure that no metal object comes into contact with the terminals when the front panel is open.

3 Close the front panel.

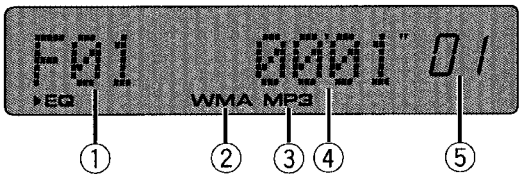
4 Use VOLUME to adjust the sound level.
Rotate to increase or decrease the volume.

5 To perform fast forward or reverse, rotate and hold ROTARY ENCODER.
- If you select the search method to **ROUGH SRCH**, rotating and holding **ROTARY ENCODER** enables you to search every ten track in the current disc.

6 To skip back or forward to another track, rotate ROTARY ENCODER.
Rotating clockwise skips to the start of the next track. Rotating counterclockwise once skips to the start of the current track. Rotating counterclockwise again will skip to the previous track.

Notes
- The built-in CD player plays one, standard, 12-cm or 8-cm (single) CD at a time. Do not use an adapter when playing 8-cm CDs.
- Do not insert anything other than a CD into the CD loading slot.
- If you cannot insert a disc completely or if after you insert a disc the disc does not play, check that the label side of the disc is up. Press **EJECT** to eject the disc, and check the disc for damage before inserting the disc again.
- If the built-in CD player does not operate properly, an error message such as **CD ERR-11** may be displayed. [■]

Playing a MP3/WMA



These are the basic steps necessary to play an MP3/WMA with your built-in CD player.

① Folder number indicator
Shows the folder number currently playing.

② WMA indicator
Shows when the WMA file is playing.

③ MP3 indicator
Shows when the MP3 file is playing.

④ Play time indicator
Shows the elapsed playing time of the current track (file).

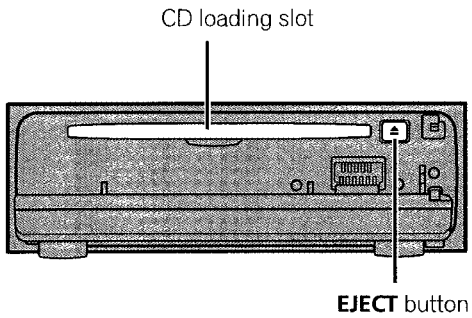
⑤ Track number indicator
Shows the track (file) currently playing.

- If a track number 100 to 199 is selected, ▶ on the left of the track number indicator will light.
- If a track number 200 or more is selected, ▶ on the left of the track number indicator will blink.

1 Press OPEN to open the front panel.
CD loading slot appears.

- After a CD-ROM has been inserted, press **SOURCE** to select the built-in CD player.

2 Insert a CD-ROM into the CD loading slot.
Playback will automatically start.



- You can eject a CD-ROM by pressing **EJECT**.
- To avoid a malfunction, make sure that no metal object comes into contact with the terminals when the front panel is open.

3 Close the front panel.

4 Use VOLUME to adjust the sound level.
Rotate to increase or decrease the volume.

5 Press ROTARY ENCODER to select a folder.

- You cannot select a folder that does not have an MP3/WMA file recorded in it.
- To return to folder 01 (ROOT), press and hold **BAND**. However, if folder 01 (ROOT) contains no files, playback commences with folder 02.

6 To perform fast forward or reverse, rotate and hold ROTARY ENCODER.

- This is fast forward and reverse operation only for the file being played. This operation is canceled when the previous or next file is reached.
- If you select the search method to **ROUGH SRCH**, rotating and holding **ROTARY ENCODER** enables you to search every ten track in the current folder.

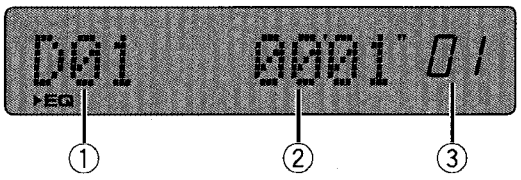
7 To skip back or forward to another track, rotate ROTARY ENCODER.
Rotating clockwise skips to the start of the next track. Rotating counterclockwise once skips to the start of the current track. Rotating

counterclockwise again will skip to the previous track.

Notes

- When playing discs with MP3/WMA files and audio data (CD-DA) such as CD-EXTRA and MIXED-MODE CDs, both types can be played only by switching mode between MP3/WMA and CD-DA with **BAND**.
- If you have switched between playback of MP3/WMA files and audio data (CD-DA), playback starts at the first track on the disc.
- The built-in CD player can play back an MP3/WMA file recorded on CD-ROM.
- Do not insert anything other than a CD into the CD loading slot.
- There is sometimes a delay between starting up playback and the sound being issued. This is particularly the case when playing back multi-session and many folders. When being read in, **FRMT READ** is displayed.
- If you cannot insert a disc completely or if after you insert a disc the disc does not play, check that the label side of the disc is up. Press **EJECT** to eject the disc, and check the disc for damage before inserting the disc again.
- Playback is carried out in order of file number. Folders are skipped if they contain no files. (If folder 01 (ROOT) contains no files, playback commences with folder 02.)
- When playing back files recorded as VBR (variable bit rate) files, the play time will not be correctly displayed if fast forward or reverse operations are used.
- If inserted disc contains no files that can be played back, **NO AUDIO** is displayed.
- There is no sound on fast forward or reverse.
- If the built-in CD player does not operate properly, an error message such as **CD ERR-11** may be displayed. ▣

Playing a CD



You can use this unit to control a multi-CD player, which is sold separately.
These are the basic steps necessary to play a CD with your multi-CD player.

① **Disc number indicator**
Shows the disc currently playing.

② **Play time indicator**
Shows the elapsed playing time of the current track.

③ **Track number indicator**
Shows the track currently playing.

1 Press SOURCE to select the multi-CD player.
Press **SOURCE** until you see **Multi-CD** displayed.

2 Use VOLUME to adjust the sound level.
Rotate to increase or decrease the volume.

3 Select a disc you want to listen to with the 1–6 buttons.
For discs located at 1 to 6, press the corresponding number button.
If you want to select a disc located at 7 to 12, press and hold the corresponding numbers such as **1** for disc 7, until the disc number appears in the display.
- You can also sequentially select a disc by pressing **ROTARY ENCODER**.

4 To perform fast forward or reverse, rotate and hold ROTARY ENCODER.

5 To skip back or forward to another track, rotate ROTARY ENCODER.
Rotating clockwise skips to the start of the next track. Rotating counterclockwise once skips to the start of the current track. Rotating counterclockwise again will skip to the previous track.

Notes
- When the multi-CD player performs the preparatory operations, **READY** is displayed.
- If the multi-CD player does not operate properly, an error message such as **CD ERR-11** may be displayed. Refer to the multi-CD player owner's manual.
- If there are no discs in the multi-CD player magazine, **NO DISC** is displayed. ▣

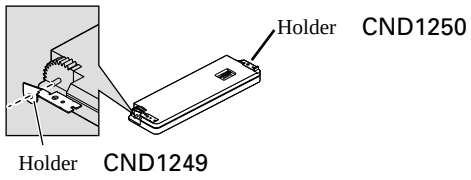
50-disc multi-CD player

Only those functions described in this manual are supported for 50-disc multi-CD players. ▣

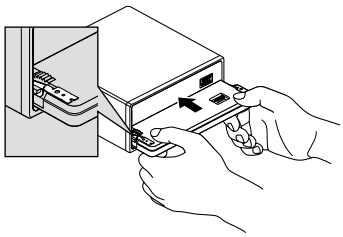
Fixing the Front Panel

If you do not operate the Detaching and Replacing the Front Panel Function, use the supplied fixing screws and fix the front panel to this unit.

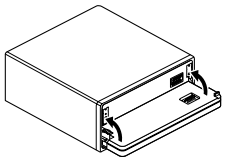
1. Attach the holders to both sides of the front panel.



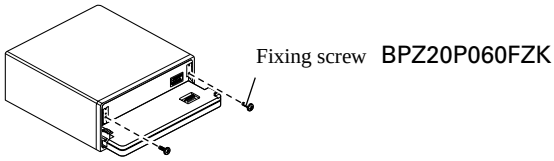
2. Replace the front panel to the unit.

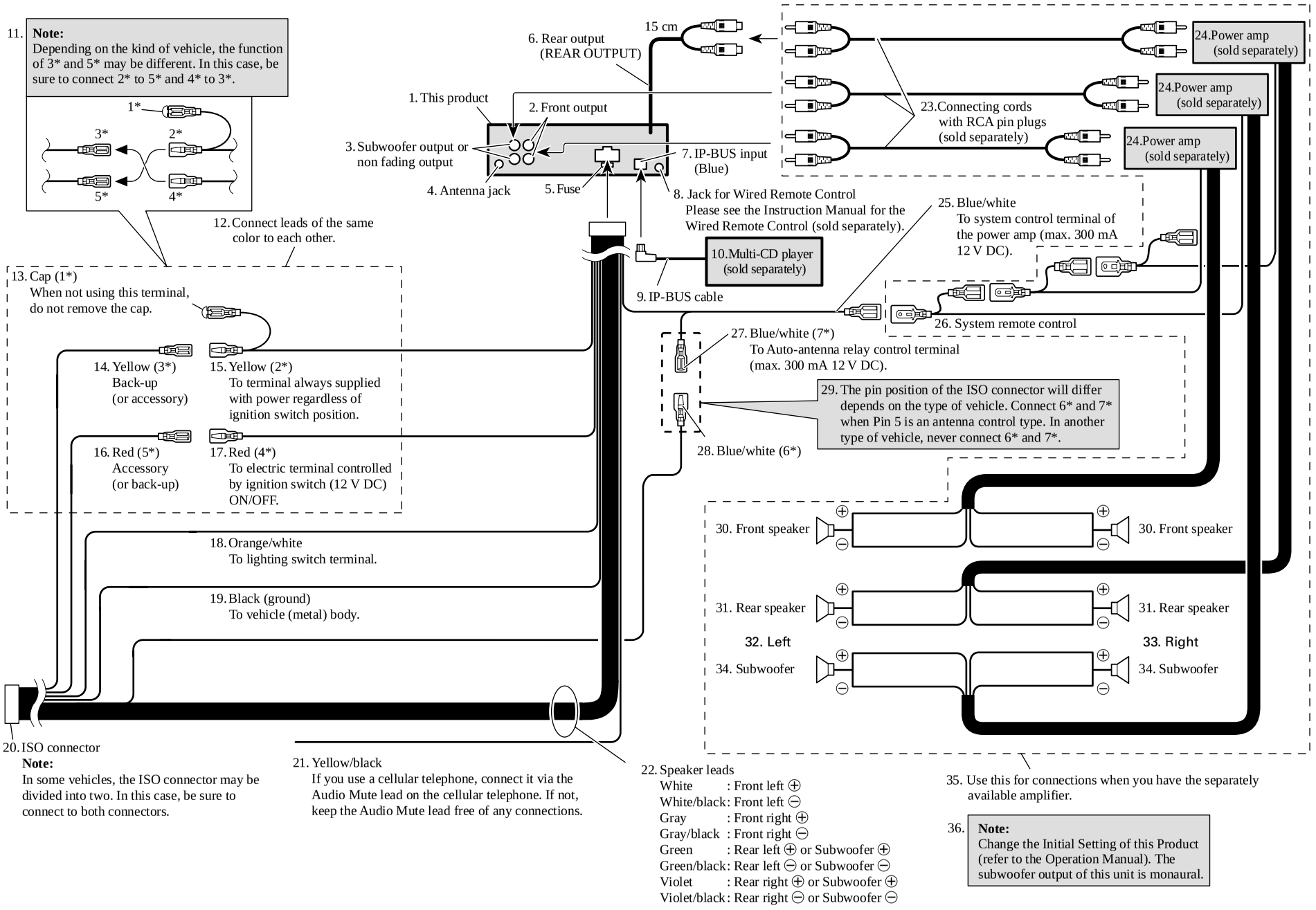


3. Flip the holders into upright positions.



4. Fix the front panel to the unit using fixing screws.




11. Note:
Depending on the kind of vehicle, the function of 3* and 5* may be different. In this case, be sure to connect 2* to 5* and 4* to 3*.
1*
2*
3*
4*
5*
12. Connect leads of the same color to each other.
13. Cap (1*)
When not using this terminal, do not remove the cap.
14. Yellow (3*)
Back-up
(or accessory)
15. Yellow (2*)
To terminal always supplied with power regardless of ignition switch position.
16. Red (5*)
Accessory
(or back-up)
17. Red (4*)
To electric terminal controlled by ignition switch (12 V DC) ON/OFF.
18. Orange/white
To lighting switch terminal.
19. Black (ground)
To vehicle (metal) body.
20. ISO connector
Note:
In some vehicles, the ISO connector may be divided into two. In this case, be sure to connect to both connectors.
21. Yellow/black
If you use a cellular telephone, connect it via the Audio Mute lead on the cellular telephone. If not, keep the Audio Mute lead free of any connections.
22. Speaker leads
White : Front left ⊕
White/black: Front left ⊖
Gray : Front right ⊕
Gray/black : Front right ⊖
Green : Rear left ⊕ or Subwoofer ⊕
Green/black: Rear left ⊖ or Subwoofer ⊖
Violet : Rear right ⊕ or Subwoofer ⊕
Violet/black: Rear right ⊖ or Subwoofer ⊖
1. This product
2. Front output
3. Subwoofer output or non fading output
4. Antenna jack
5. Fuse
6. Rear output (REAR OUTPUT)
15 cm
7. IP-BUS input (Blue)
8. Jack for Wired Remote Control
Please see the Instruction Manual for the Wired Remote Control (sold separately).
9. IP-BUS cable
10. Multi-CD player (sold separately)
23. Connecting cords with RCA pin plugs (sold separately)
24. Power amp (sold separately)
24. Power amp (sold separately)
24. Power amp (sold separately)
25. Blue/white
To system control terminal of the power amp (max. 300 mA 12 V DC).
26. System remote control
27. Blue/white (7*)
To Auto-antenna relay control terminal (max. 300 mA 12 V DC).
28. Blue/white (6*)
29. The pin position of the ISO connector will differ depends on the type of vehicle. Connect 6* and 7* when Pin 5 is an antenna control type. In another type of vehicle, never connect 6* and 7*.
30. Front speaker
30. Front speaker
31. Rear speaker
31. Rear speaker
32. Left
33. Right
34. Subwoofer
34. Subwoofer
35. Use this for connections when you have the separately available amplifier.
36. Note:
Change the Initial Setting of this Product (refer to the Operation Manual). The subwoofer output of this unit is monaural.