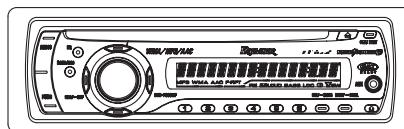


Service Manual



ORDER NO.
CRT3816

CD RECEIVER

DEH-P390MP /XU/UC DEH-P3900MP /XU/UC

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

Model No.	Order No.	Mech.Module	Remarks
CX-3195	CRT3815	S10.5COMP2	CD Mech. Module : Circuit Descriptions, Mech. Descriptions, Disassembly



For details, refer to "Important Check Points for Good Servicing".

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

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SAFETY INFORMATION

CAUTION

A This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

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

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

C

● Service Precaution



1. 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. 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.
3. To protect the pickup unit from electrostatic discharge during servicing, take an appropriate treatment (shorting-solder) by referring to "the DISASSEMBLY".
4. After replacing the pickup unit, be sure to check the grating.
5. Be careful in handling ICs. Some ICs such as MOS type are so fragile that they can be damaged by electrostatic induction.

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[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol.
Please be sure to confirm and follow these procedures.

1. Product safety



Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification(addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris.
Soldering should be finished with the proper quantity. (Refer to the example)

④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs.
In addition, be sure that there are no pinched wires, etc.

⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages.
If you find a damaged power cord, please exchange it with a suitable one.

⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries.
Please pay attention to your surroundings and repair safely.

2. Adjustments



To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification.
Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts



Use grease and adhesives that are equal to the specified substance.
Make sure the proper amount is applied.

4. Cleaning



For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws



To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

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1. SPECIFICATIONS

● DEH-P390MP/XU/UC

General

Power source 14.4 V DC (10.8 V to 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 × 162 mm (7 × 2 × 6-3/8 in.)
Nose	188 × 58 × 14 mm (7-3/8 × 2-1/4 × 1/2 in.)
D	Chassis 178 × 50 × 162 mm (7 × 2 × 6-3/8 in.)
Nose	170 × 46 × 14 mm (6-3/4 × 1-3/4 × 1/2 in.)
Weight	1.3 kg (2.9 lbs)

Audio

Continuous power output is 22 W per channel minimum into 4 ohms, both channels driven 50 to 15 000 Hz with no more than 5% THD.

Maximum power output 50 W × 4
 50 W × 2/4 Ω + 70 W × 1/2
 Ω (for subwoofer)

Load impedance 4 Ω to 8 Ω × 4
 4 Ω to 8 Ω × 2 + 2 Ω × 1

Preout max output level/output impedance
 2.2 V/1 kΩ

Equalizer (3-Band Parametric Equalizer):

Low
 Frequency 40/80/100/160 Hz
 Q Factor 0.35/0.59/0.95/1.15 (+6 dB
 when boosted)
 Gain ±12 dB

Mid
 Frequency 200/500/1k/2k Hz
 Q Factor 0.35/0.59/0.95/1.15 (+6 dB
 when boosted)
 Gain ±12 dB

High
 Frequency 3.15k/8k/10k/12.5k Hz
 Q Factor 0.35/0.59/0.95/1.15 (+6 dB
 when boosted)
 Gain ±12 dB

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)

HPF:

Frequency 50/63/80/100/125 Hz
 Slope -12 dB/oct

Subwoofer:

Frequency 50/63/80/100/125 Hz
 Slope -18 dB/oct
 Gain +6 dB to -24 dB
 Phase Normal/Reverse

Bass boost:

Gain +12 dB to 0 dB

A

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 Hz to 20 000 Hz (±1 dB)

Signal-to-noise ratio 94 dB (1 kHz) (IHF-A network)

Dynamic range 92 dB (1 kHz)

Number of channels 2 (stereo)

MP3 decoding format MPEG-1 & 2 Audio Layer 3

WMA decoding format Ver. 7, 7.1, 8, 9, 10 (2ch
 audio)

(Windows Media Player)

AAC decoding format MPEG-4 AAC (iTunes® en-
 coded only)

WAV signal format Linear PCM & MS ADPCM

B

C

FM tuner

Frequency range 87.9 MHz to 107.9 MHz

Usable sensitivity 8 dBf (0.7 μV/75 Ω, mono,
 S/N: 30 dB)

Signal-to-noise ratio 75 dB (IHF-A network)

Distortion 0.3 % (at 65 dBf, 1 kHz,
 stereo)

0.1 % (at 65 dBf, 1 kHz,
 mono)

Frequency response 30 Hz to 15 000 Hz (±3 dB)

Stereo separation 45 dB (at 65 dBf, 1 kHz)

D

AM tuner

Frequency range 530 kHz to 1 710 kHz (10
 kHz)

Usable sensitivity 18 μV (S/N: 20 dB)

Signal-to-noise ratio 65 dB (IHF-A network)

E



Note

Specifications and the design are subject to pos-
 ible modifications without notice due to im-
 provements. ■

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● DEH-P3900MP/XU/UC

General

A Power source 14.4 V DC (10.8 V to 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 × 162 mm
(7 × 2 × 6-3/8 in.)
Nose 188 × 58 × 14 mm
(7-3/8 × 2-1/4 × 1/2 in.)

B D
Chassis 178 × 50 × 162 mm
(7 × 2 × 6-3/8 in.)
Nose 170 × 46 × 14 mm
(6-3/4 × 1-3/4 × 1/2 in.)

Weight 1.3 kg (2.9 lbs)

Audio

Continuous power output is 22 W per channel minimum into 4 ohms, both channels driven 50 to 15 000 Hz with no more than 5% THD.

C Maximum power output 50 W × 4
50 W × 2/4 Ω + 70 W × 1/2
Ω (for subwoofer)

Load impedance 4 Ω to 8 Ω × 4
4 Ω to 8 Ω × 2 + 2 Ω × 1

Preout max output level/output impedance 2.2 V/1 kΩ

Equalizer (3-Band Parametric Equalizer):
Low
Frequency 40/80/100/160 Hz
Q Factor 0.35/0.59/0.95/1.15 (+6 dB
when boosted)
Gain ±12 dB

D Mid
Frequency 200/500/1k/2k Hz
Q Factor 0.35/0.59/0.95/1.15 (+6 dB
when boosted)
Gain ±12 dB

High
Frequency 3.15k/8k/10k/12.5k Hz
Q Factor 0.35/0.59/0.95/1.15 (+6 dB
when boosted)
Gain ±12 dB

E Loudness contour:
Low +3.5 dB (100 Hz), +3 dB (10 kHz)

Mid +10 dB (100 Hz), +6.5 dB
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High +11 dB (100 Hz), +11 dB
(10 kHz)
(volume: -30 dB)

HPF:

Frequency 50/63/80/100/125 Hz
Slope -12 dB/oct

Subwoofer:

Frequency 50/63/80/100/125 Hz
Slope -18 dB/oct
Gain +6 dB to -24 dB
Phase Normal/Reverse

Bass boost:

Gain +12 dB to 0 dB

CD player

System Compact disc audio system

Usable discs Compact disc

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Sampling frequency 44.1 kHz

Number of quantization bits

..... 16; linear

Frequency characteristics ... 5 Hz to 20 000 Hz (±1 dB)

Signal-to-noise ratio 94 dB (1 kHz) (IHF-A net-
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Dynamic range 92 dB (1 kHz)

Number of channels 2 (stereo)

MP3 decoding format MPEG-1 & 2 Audio Layer 3

WMA decoding format Ver. 7, 7.1, 8, 9, 10 (2ch
audio)

(Windows Media Player)

AAC decoding format MPEG-4 AAC (iTunes® en-
coded only)

WAV signal format Linear PCM & MS ADPCM

FM tuner

Frequency range 87.9 MHz to 107.9 MHz

Usable sensitivity 8 dBf (0.7 μV/75 Ω, mono,
S/N: 30 dB)

Signal-to-noise ratio 75 dB (IHF-A network)

Distortion 0.3 % (at 65 dBf, 1 kHz,
stereo)

0.1 % (at 65 dBf, 1 kHz,
mono)

Frequency response 30 Hz to 15 000 Hz (±3 dB)

Stereo separation 45 dB (at 65 dBf, 1 kHz)

AM tuner

Frequency range 530 kHz to 1 710 kHz (10
kHz)

Usable sensitivity 18 μV (S/N: 20 dB)

Signal-to-noise ratio 65 dB (IHF-A network)



Note

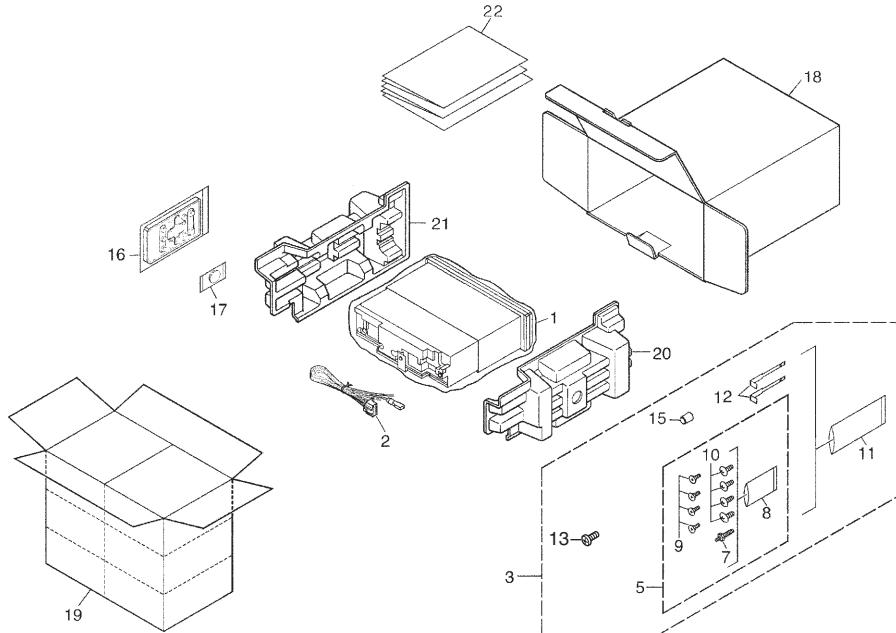
Specifications and the design are subject to pos-
sible modifications without notice due to im-
provements. ■

2. EXPLODED VIEWS AND PARTS LIST

NOTES : • Parts marked by " * " are generally unavailable because they are not in our Master Spare Parts List.

- 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.
- Screw 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.)

2.1 PACKING



PACKING SECTION PARTS LIST

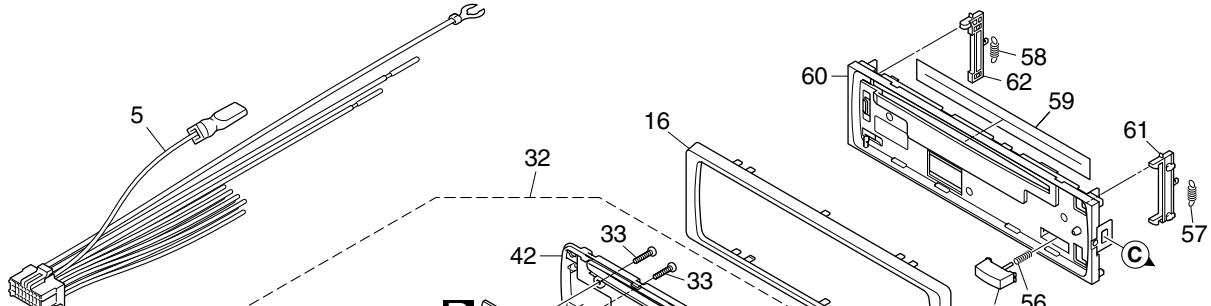
<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	
1	Polyethylene Bag	CEG1173	*	17	Battery	CEX1065
2	Cord Assy	CDP1017		18	Carton(P390MP)	YHG5112
3	Accessory Assy	YEA5012		Carton(P3900MP)	YHG5109	
4			19	Contain Box(P390MP)	YHL5100
5	Screw Assy	CEA3849		Contain Box(P3900MP)	YHL5097	
6		20	Protector	YHP5008	
7	Screw	CBA1650	21	Protector	YHP5009	
*	8 Polyethylene Bag	CEG-127	22-1	Owner's Manual(P390MP)	YRD5075	
	9 Screw	CRZ50P090FTC		Owner's Manual(P3900MP)	YRD5073	
	10 Screw	TRZ50P080FTC	22-2	Installation Manual(P390MP)	YRD5076	
				Installation Manual(P3900MP)	YRD5074	
*	11 Polyethylene Bag	CEG-158	22-3	Caution Card	CRP1310	
	12 Handle	CND3707	*	22-4	Warranty Card(P390MP)	CRY1070
	13 Screw	BPZ20P080FTC	*	Warranty Card(P3900MP)	CRY1246	
	14			22-5	Caution Card(P3900MP)	CRP1294
15	Bush	CNV3930				
16	Remote Control Assy	CXC5719				

Owner's Manual, Installation Manual

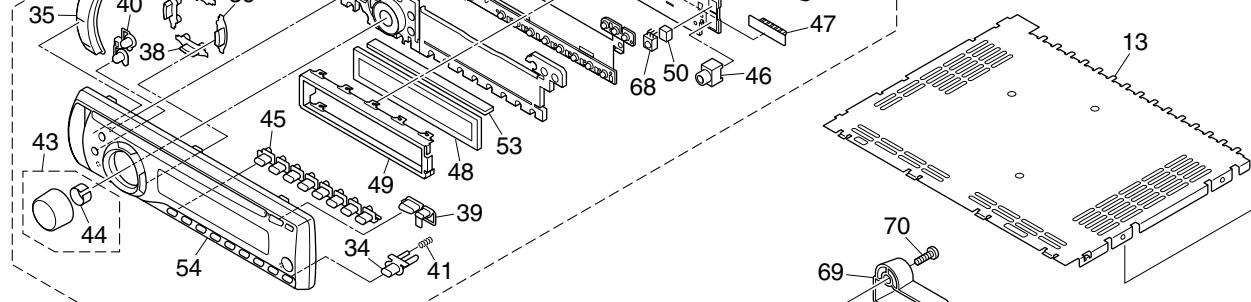
Part No.	Language
YRD5075, YRD5076, YRD5073, YRD5074	English, French, Spanish

1 2 3 4
2.2 EXTERIOR

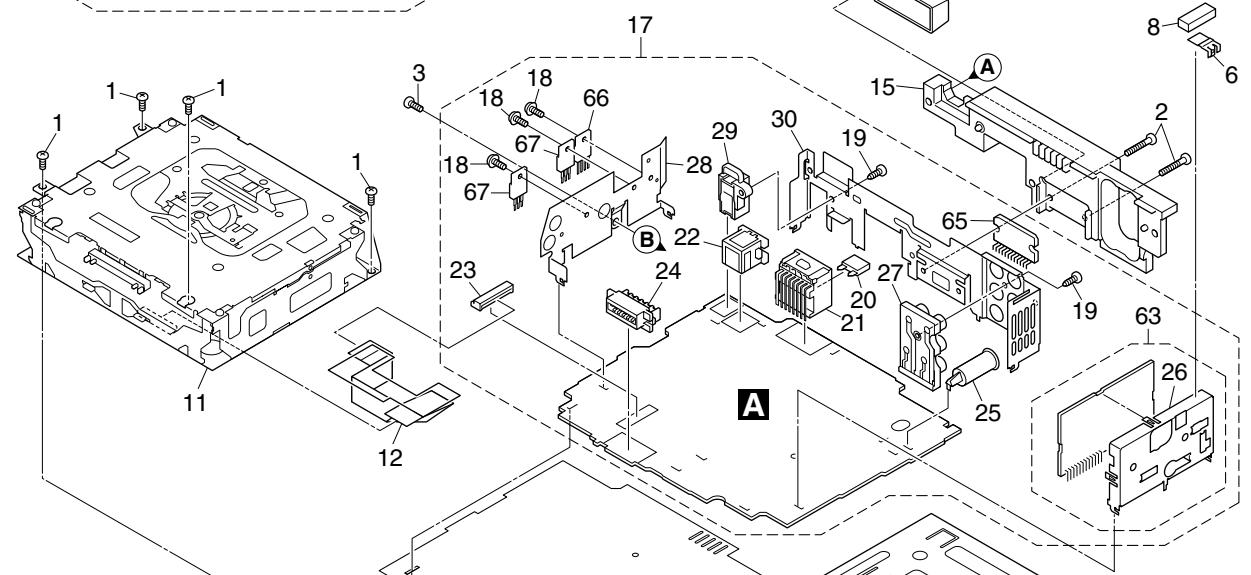
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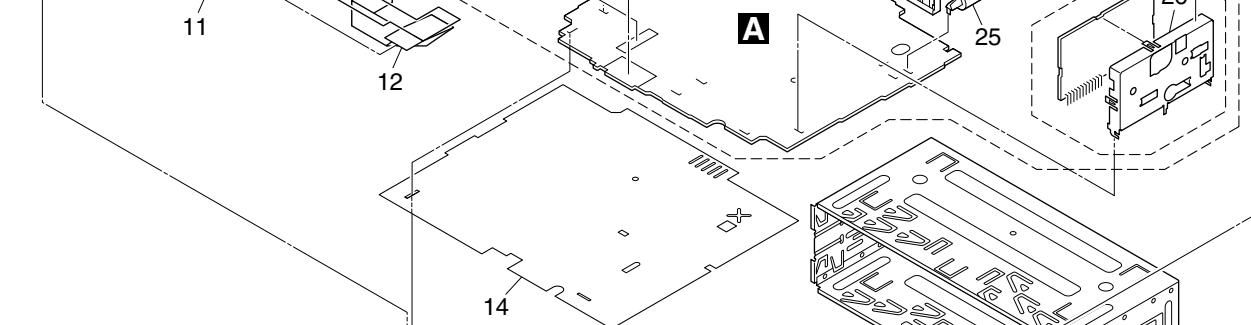
B



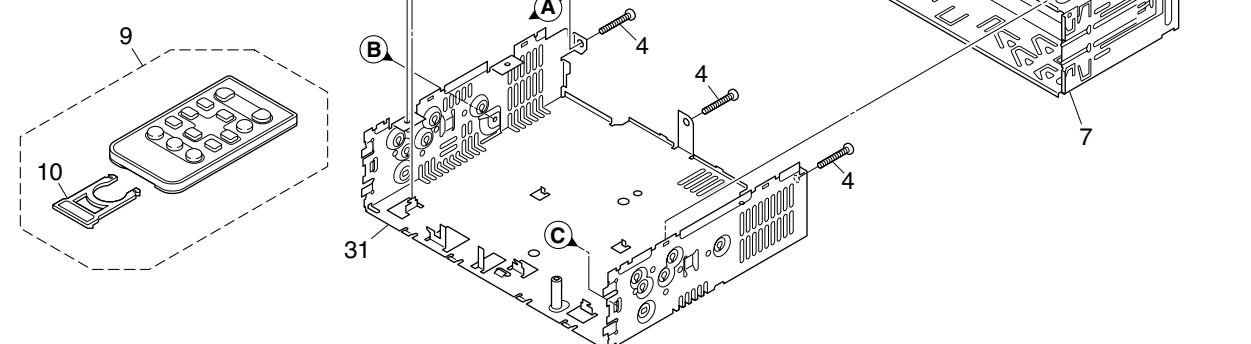
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(1) EXTERIOR SECTION PARTS LIST

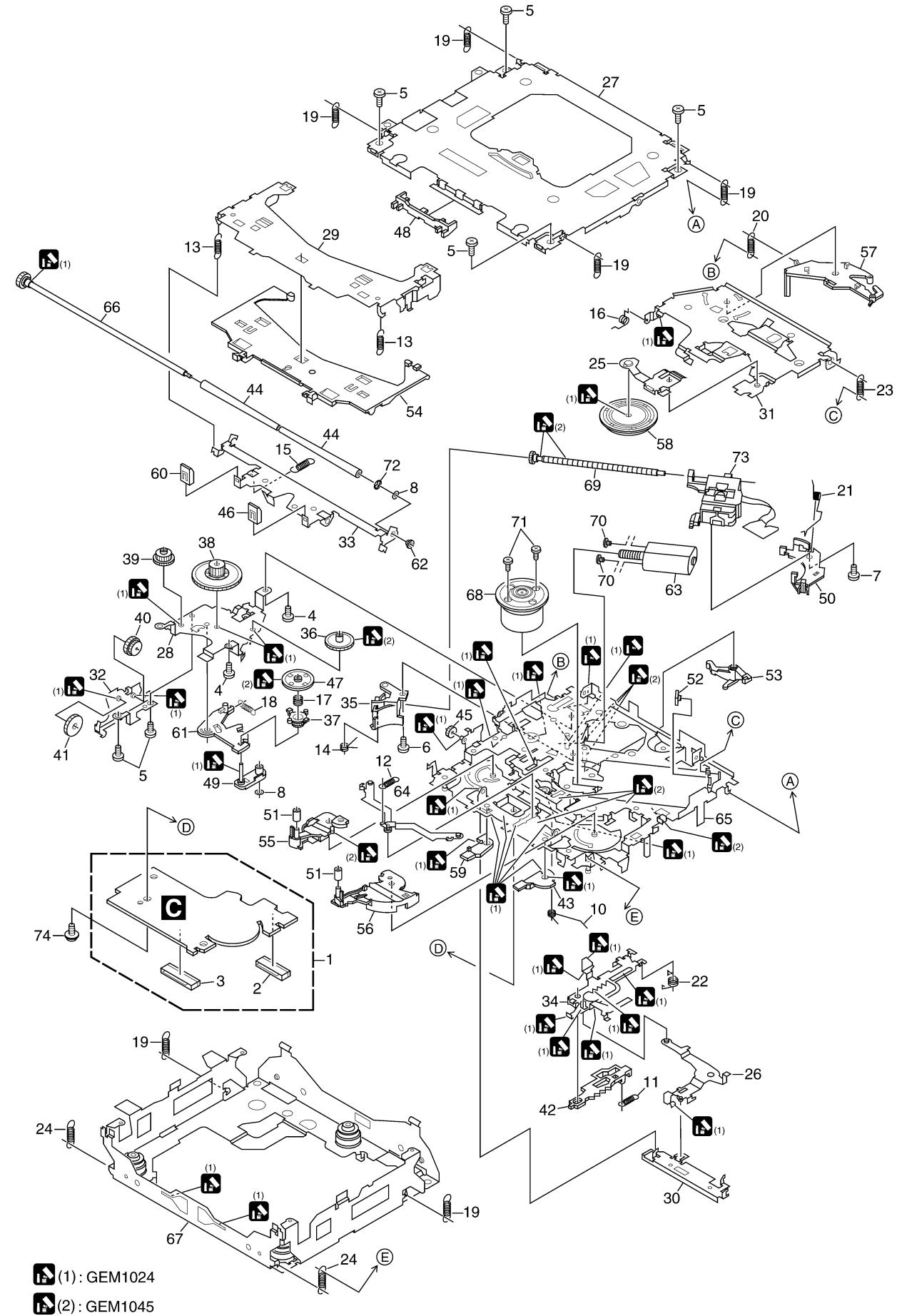
<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
1	Screw	BSZ26P060FTC	36	Button(L/R)	CAC9946
2	Screw	BSZ26P200FTC	37	Button(UP)	CAC9947
3	Screw	BSZ30P060FTC	38	Button(DOWN)	CAC9948
4	Screw	BSZ30P200FTC	39	Button(EJECT)	CAC9949
5	Cord Assy	CDP1017	40	Button(EQ/BAND)	CAC9950
6	Earth Plate	CNC8915	41	Spring	CBH2210
7	Holder	CND3598	42	Cover	CNS8758
8	Cushion	CNM8890	43	Knob Unit(SOURCE,VOLUME)	CXC7054
9	Remote Control Assy	CXC5719	44	Spring	CBL1761
10	Cover	CNS7068	45	Button(1-6)	See Contrast table(2)
11	CD Mechanism Module(S10.5)	CXK5760	46	Jack	CKN1047
12	Cable	YDE5025	47	Connector(CN1801)	CKS5663
13	Case	YNB5014	48	LCD(LCD1801)	YAW5080
14	Insulator	YNM5062	49	Holder	YNC5025
15	Heat Sink	YNR5031	50	Cushion	YNM5029
16	Panel	See Contrast table(2)	51	Lighting Conductor	YNV5066
17	Tuner Amp Unit	See Contrast table(2)	52	Rubber	YNV5067
18	Screw	BSZ26P060FTC	53	Connector	YNV5068
19	Screw	BPZ26P080FTC	54	Grille Unit	See Contrast table(2)
⚠ 20	Fuse(10 A)	CEK1208	55	Button(DETACH)	CAC4836
21	Plug(CN901)	CKM1376	56	Spring	CBH2367
22	Connector(CN101)	CKS3408	57	Spring	CBH2961
23	Connector(CN701)	CKS3829	58	Spring	CBH2962
24	Connector(CN803)	CKS5664	59	Cover	CNN1665
25	Antenna Jack(CN401)	CKX1056	60	Panel	CNS8760
26	Holder	CND1054	61	Arm	CNV9311
27	Pin Jack(CN351)	XKB7001	62	Arm	CNV9312
28	Holder	XNC7030	63	FM/AM Tuner Unit	CWE1952
29	Jack(CN621)	YKS5002	64	
30	Holder	YNC5039	65	IC(IC301)	PAL007C
31	Chassis Unit	YXA5196	66	IC(IC921)	NJM2388F84
32	Detachable Assy	See Contrast table(2)	67	Transistor (Q702,Q911)	2SD2396
33	Screw	BPZ20P100FTB	68	IC(IC1802)	GP1UX51RK
34	Button(Detach)	CAC9941	69	Holder	See Contrast table(2)
35	Button(AUDIO/FUNC)	CAC9942	70	Screw	See Contrast table(2)

(2) CONTRAST TABLE

DEH-P390MP/XU/UC and DEH-P3900MP/XU/UC are constructed the same except for the following:

<u>Mark</u>	<u>No.</u>	<u>Description</u>	<u>DEH-P390MP/XU/UC</u>	<u>DEH-P3900MP/XU/UC</u>
	16	Panel	YNS5191	YNS5190
	17	Tuner Amp Unit	YWM5137	YWM5139
	32	Detachable Assy	YXA5205	YXA5206
	45	Button(1-6)	YAC5118	CAC9943
	54	Grille Unit	YXA5232	YXA5197
	69	Holder	Not used	CNV7619
	70	Screw	Not used	BMZ40P140FTC

2.3 CD MECHANISM MODULE



(1): GEM1024

(2) · GFM1045

CD MECHANISM MODULE SECTION PARTS LIST

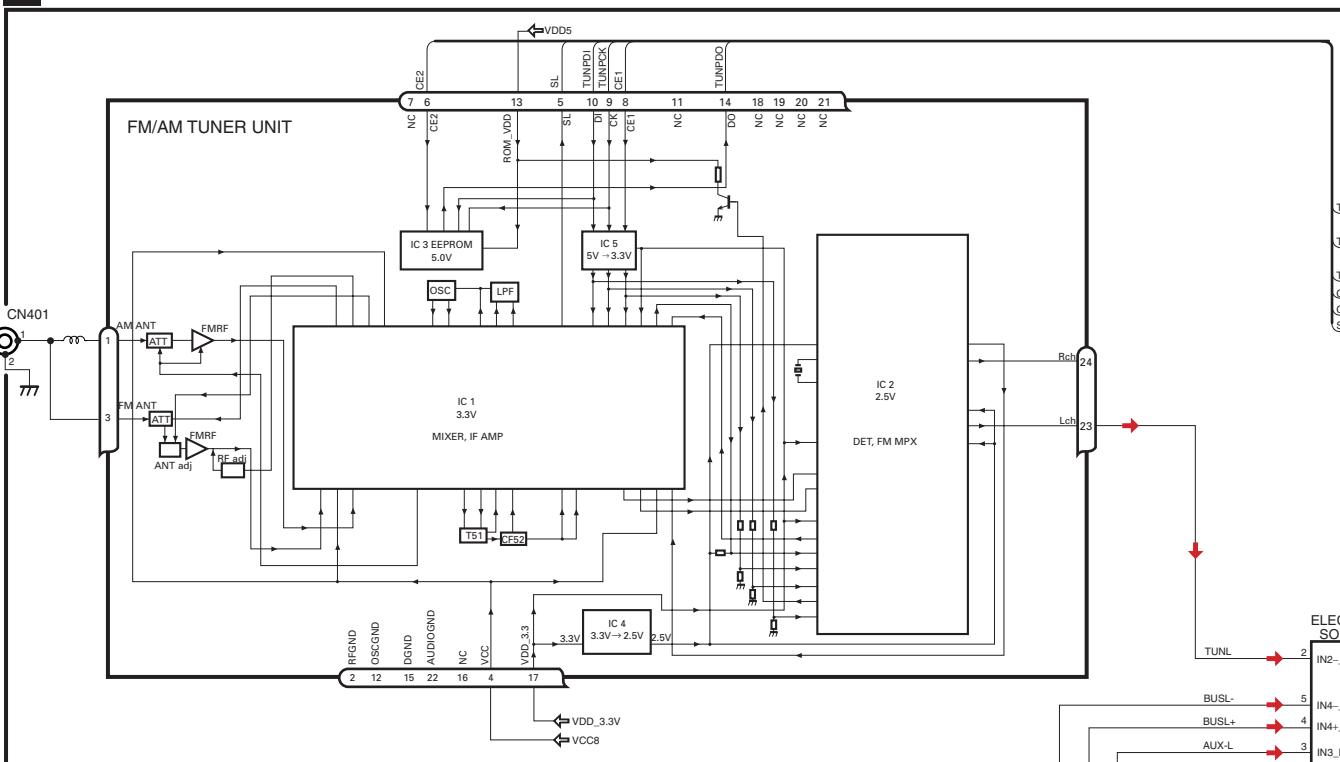
<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
1	CD Core Unit(S10.5COMP2)	CWX3350	50	Rack	CNV8342
2	Connector(CN101)	CKS4911			
3	Connector(CN701)	CKS4808	51	Roller	CNV8343
4	Screw	BMZ20P025FTC	52	Holder	CNV8344
5	Screw	BSZ20P040FTC	53	Arm	CNV8345
			54	Guide	CNV8347
6	Screw(M2 x 3)	CBA1511	55	Arm	CNV8348
7	Screw(M2 x 4)	CBA1835			
8	Washer	CBF1038	56	Arm	CNV8349
9		57	Arm	CNV8350
10	Spring	CBH2609	58	Clamper	CNV8365
			59	Arm	CNV8386
11	Spring	CBH2612	60	Guide	CNV8396
12	Spring	CBH2614			
13	Spring	CBH2616	61	Arm	CNV8413
14	Spring	CBH2617	62	Collar	CNV8447
15	Spring	CBH2620	63	Motor Unit(M2)	CXC4026
			64	Arm Unit	CXC4027
16	Spring	CBH2855	65	Chassis Unit	CXC4028
17	Spring	CBH2937			
18	Spring	CBH2735	66	Gear Unit	CXC4029
19	Spring	CBH2854	67	Frame Unit	CXC4031
20	Spring	CBH2642	68	Motor Unit(M1)	CXC7134
			69	Screw Unit	CXC6359
21	Spring	CBH2856	70	Screw	JFZ20P020FTC
22	Spring	CBH2857			
23	Spring	CBH2860	71	Screw	JGZ17P022FTC
24	Spring	CBH2861	72	Washer	YE20FTC
25	Spring	CBL1686	73	Pickup Unit(P10.5)(Service)	CXX1942
			74	Screw	IMS26P030FTC
26	Arm	CND1909			
27	Frame	CND2582			
28	Bracket	CND2583			
29	Arm	CND2584			
30	Lever	CND2585			
31	Arm	CND2586			
32	Bracket	CND2587			
33	Arm	CND2588			
34	Lever	CND2589			
35	Holder	CNV7201			
36	Gear	CNV7207			
37	Gear	CNV7208			
38	Gear	CNV7209			
39	Gear	CNV7210			
40	Gear	CNV7211			
41	Gear	CNV7212			
42	Rack	CNV7214			
43	Arm	CNV7216			
44	Roller	CNV8189			
45	Gear	CNV7219			
46	Guide	CNV7361			
47	Gear	CNV7595			
48	Guide	CNV8448			
49	Arm	CNV7805			

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

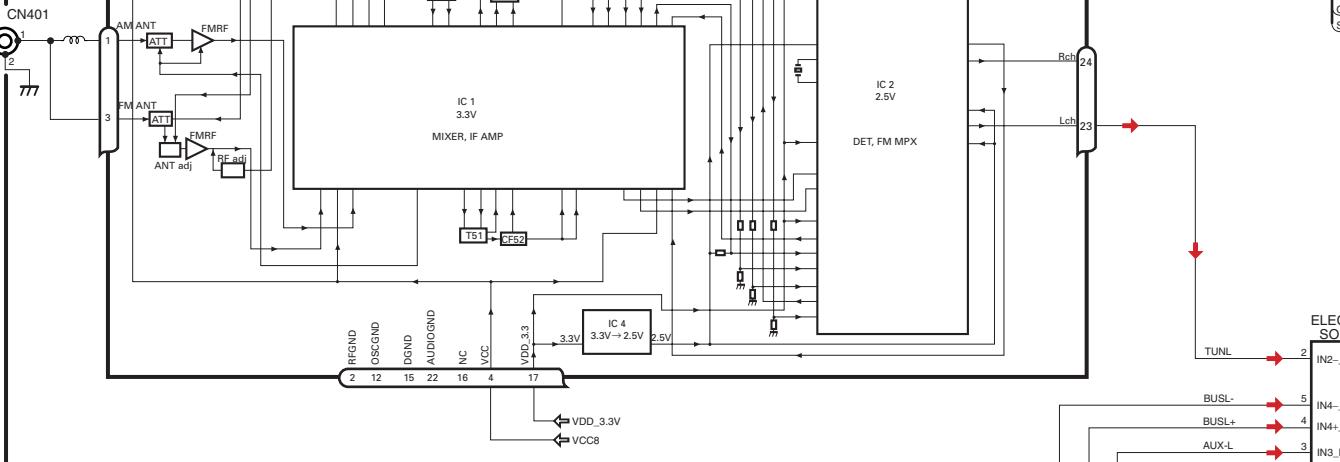
3.1 BLOCK DIAGRAM

A

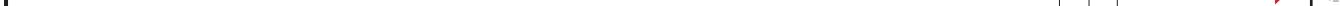
A TUNER AMP UNIT



B



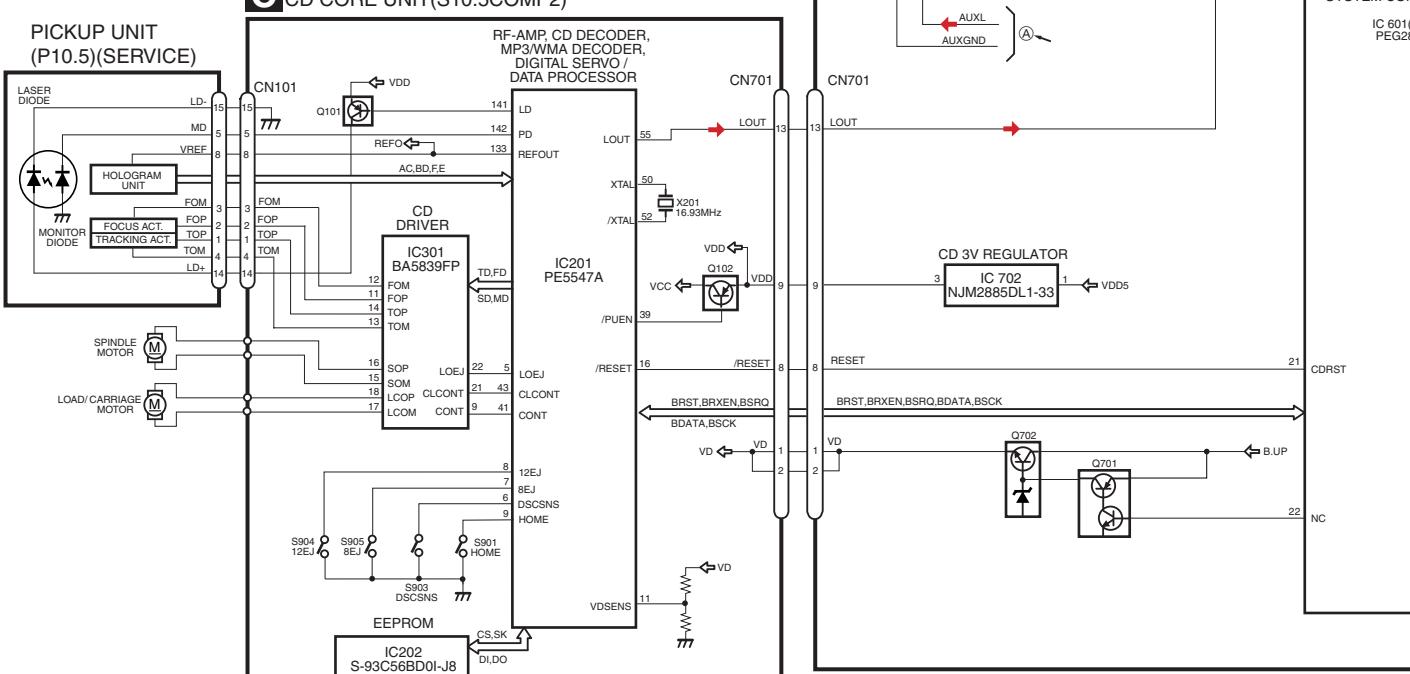
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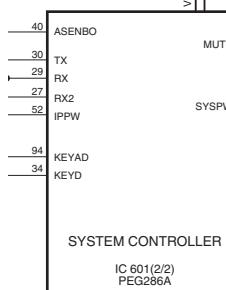
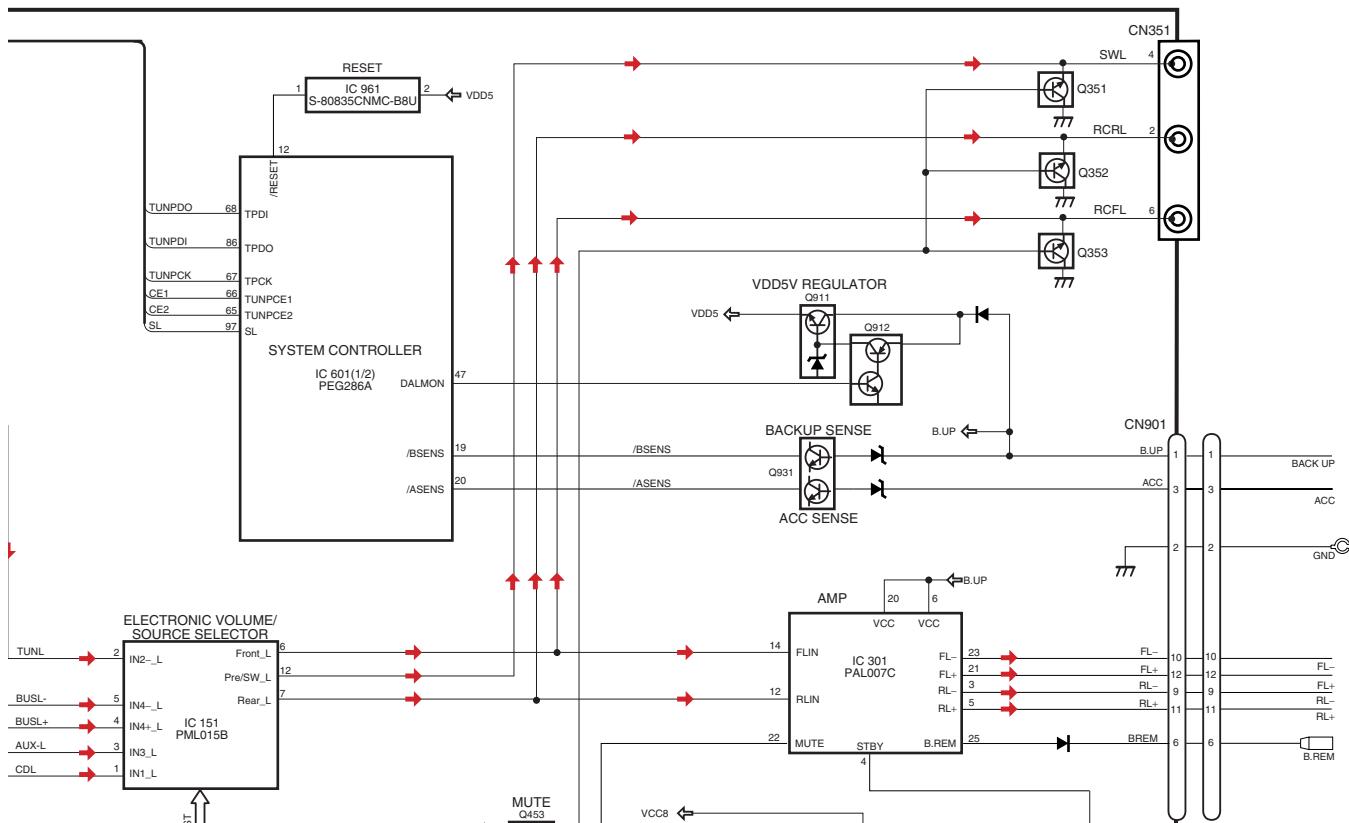
D

E

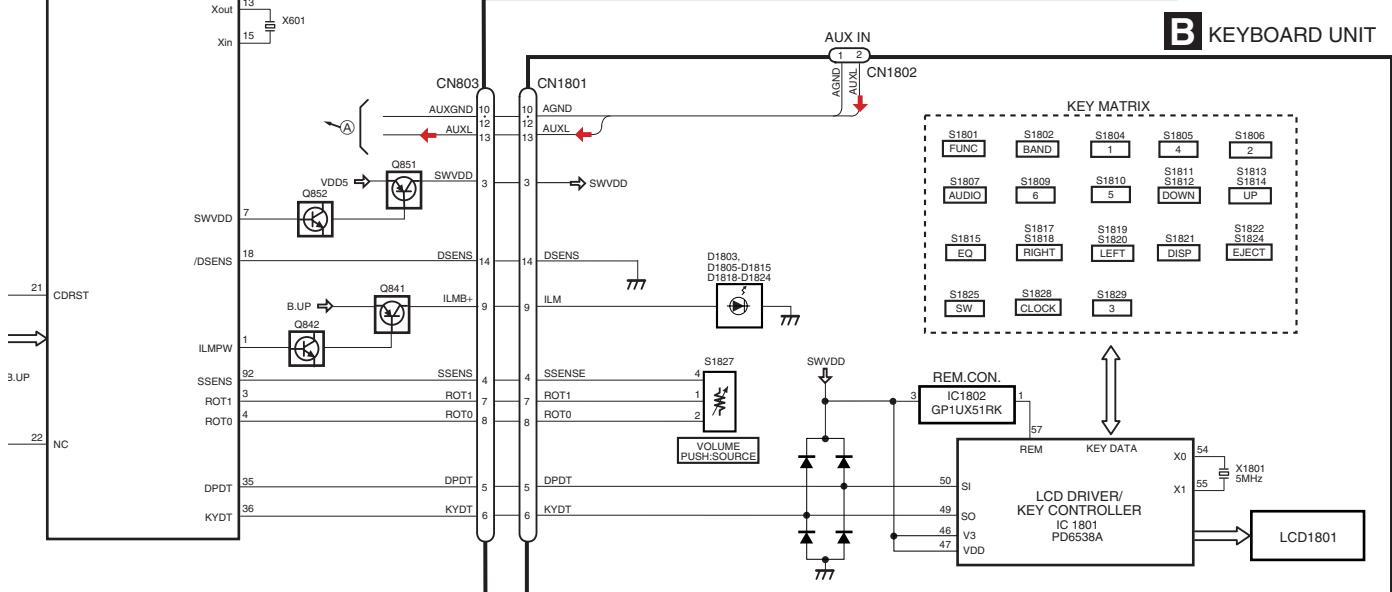
C CD CORE UNIT(S10.5COMP2)



F

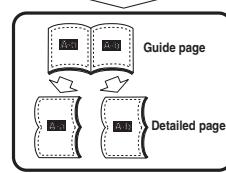
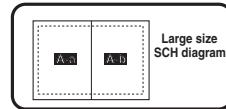


B KEYBOARD UNIT

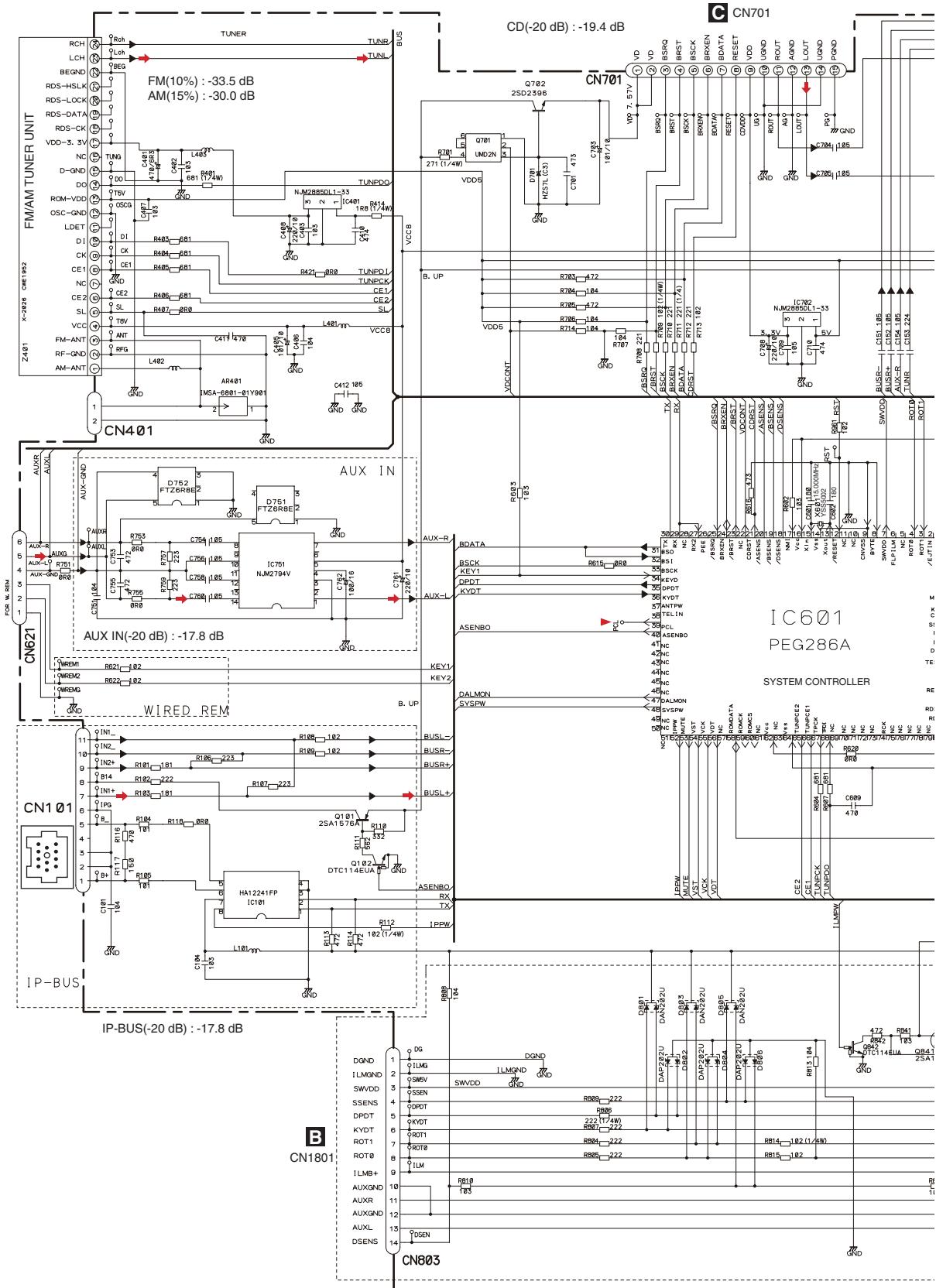


3.2 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)

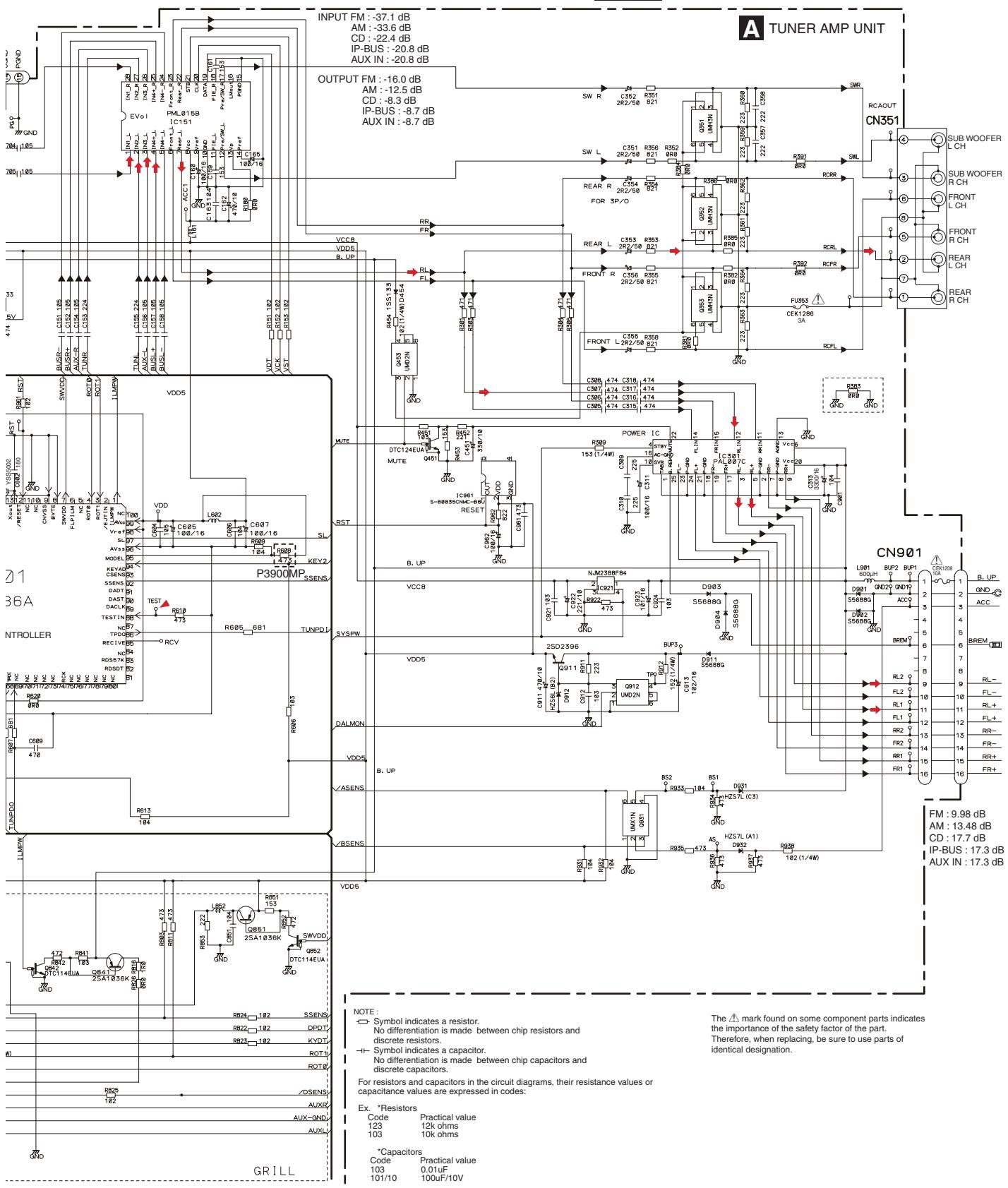
Note: When ordering service parts, be sure to refer to " EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".



B



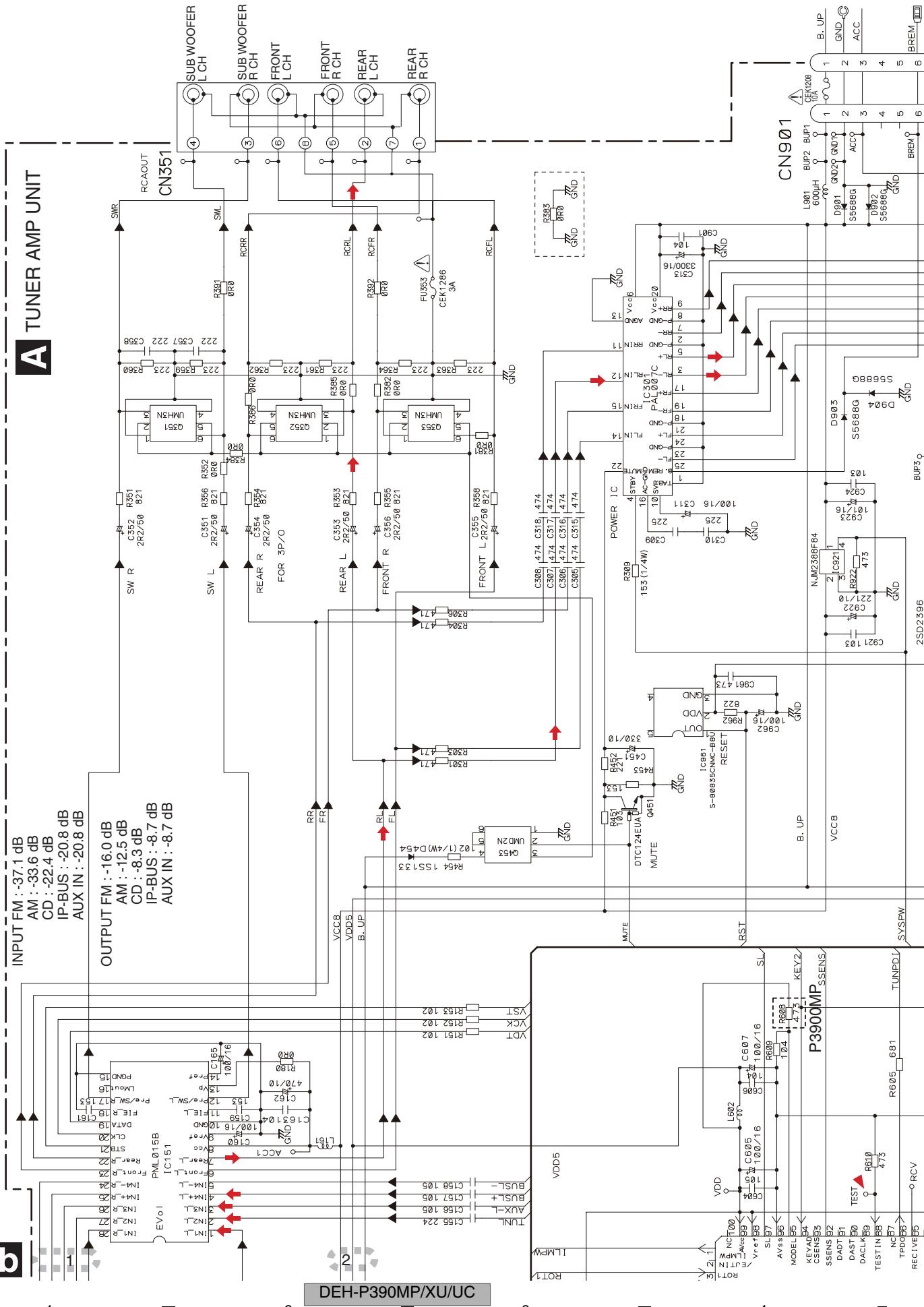
1

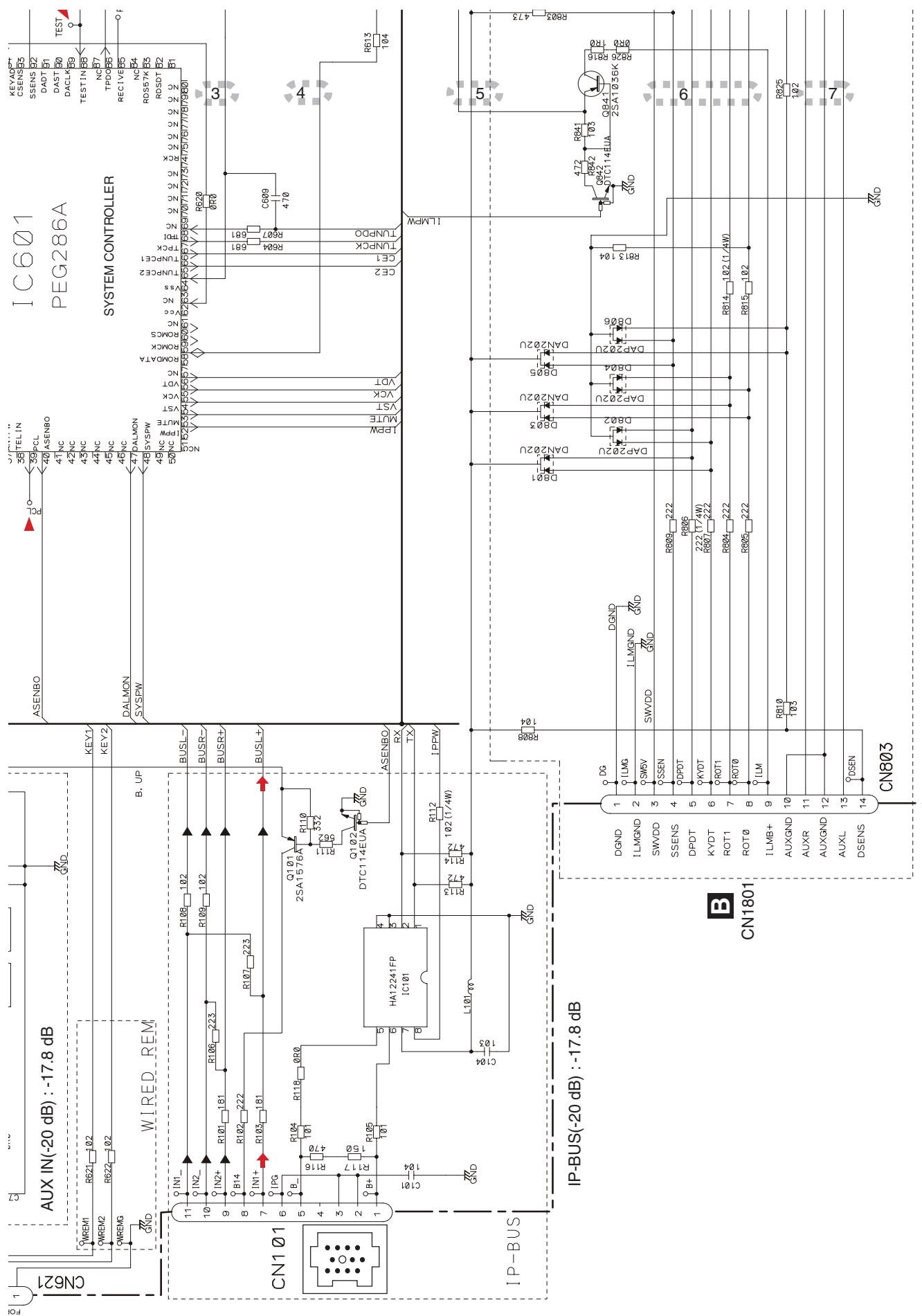
A-b**A TUNER AMP UNIT**

A

A TUNER AMP UNIT

A-b





A-a

A-b

A

B

C

D

E

F

3.3 KEYBOARD UNIT

1

2

3

4

A

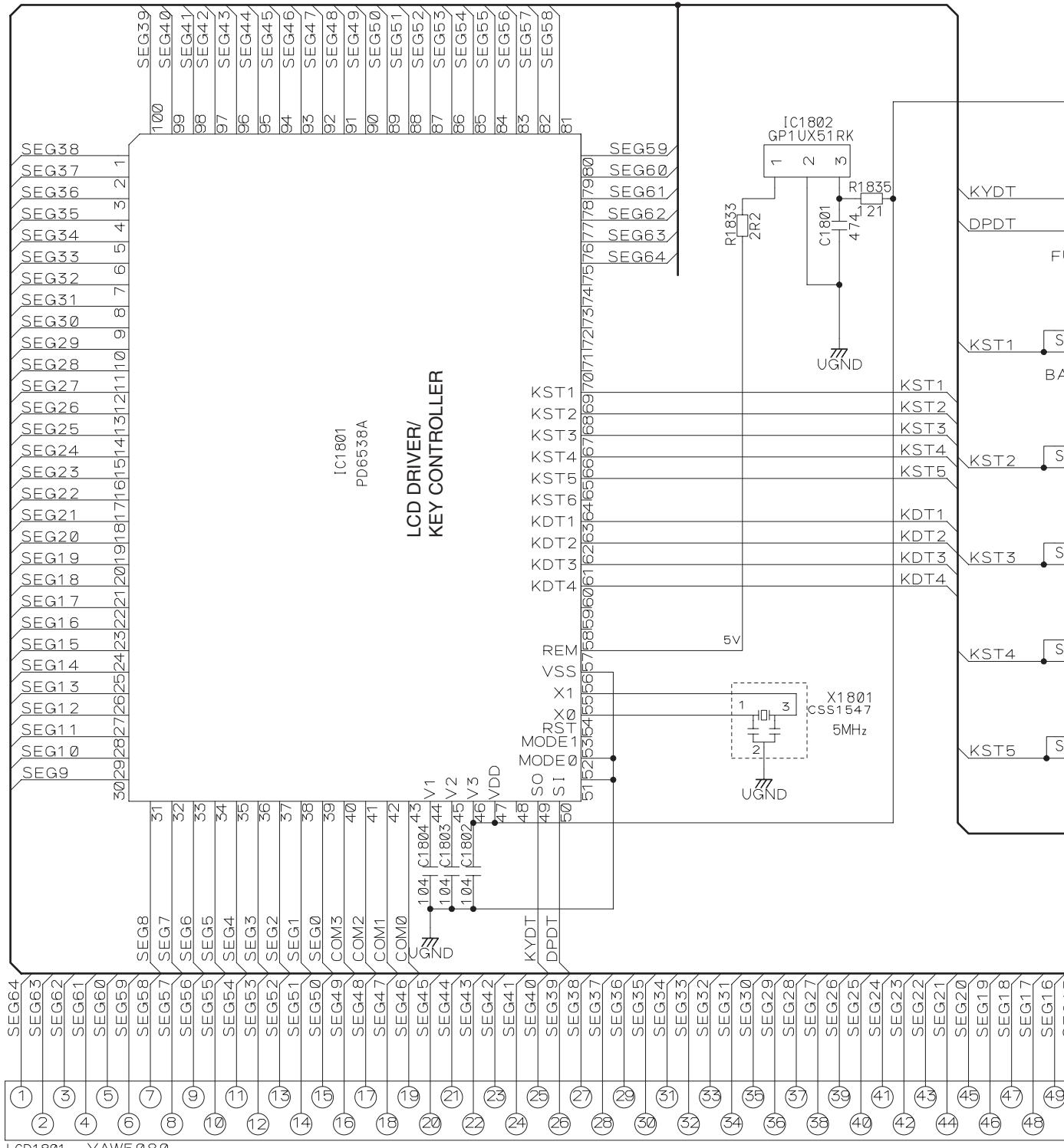
B

C

D

E

F

**B**

DEH-P390MP/XU/UC

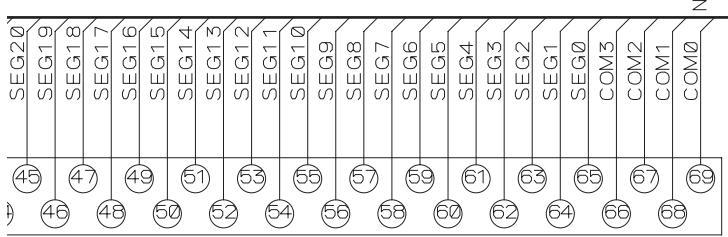
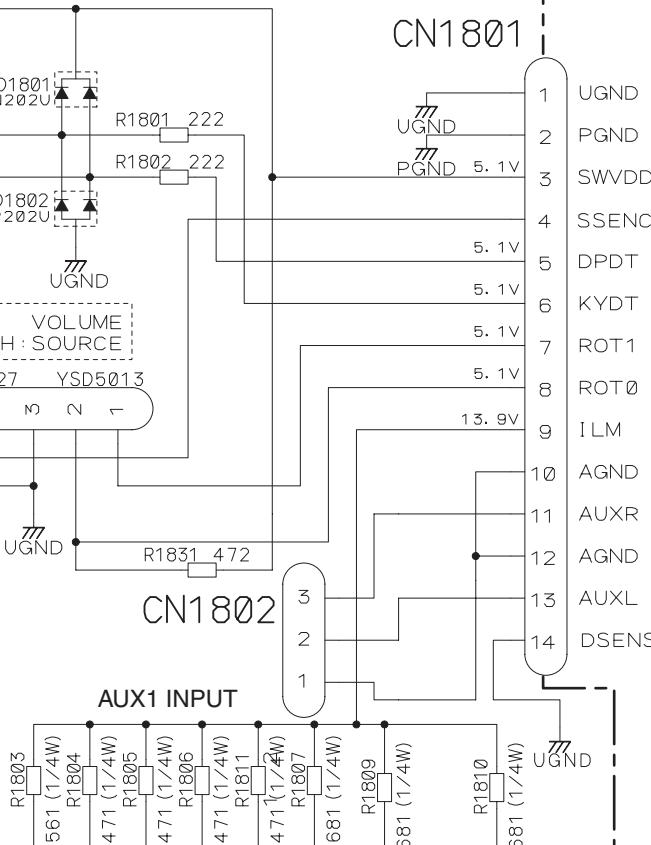
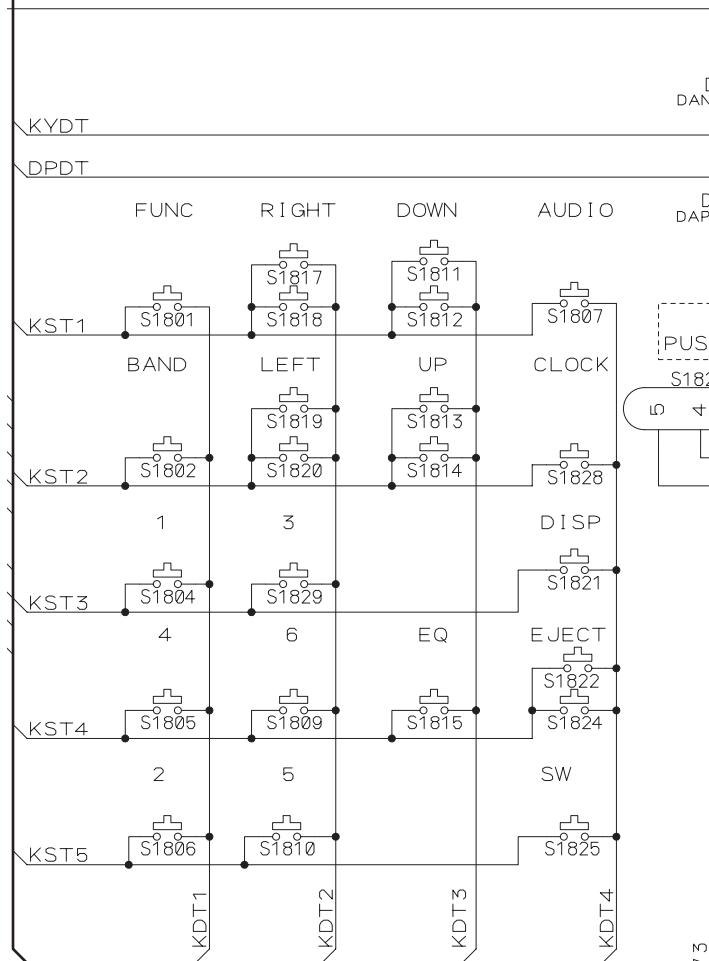
20

1

2

3

4

B KEYBOARD UNIT

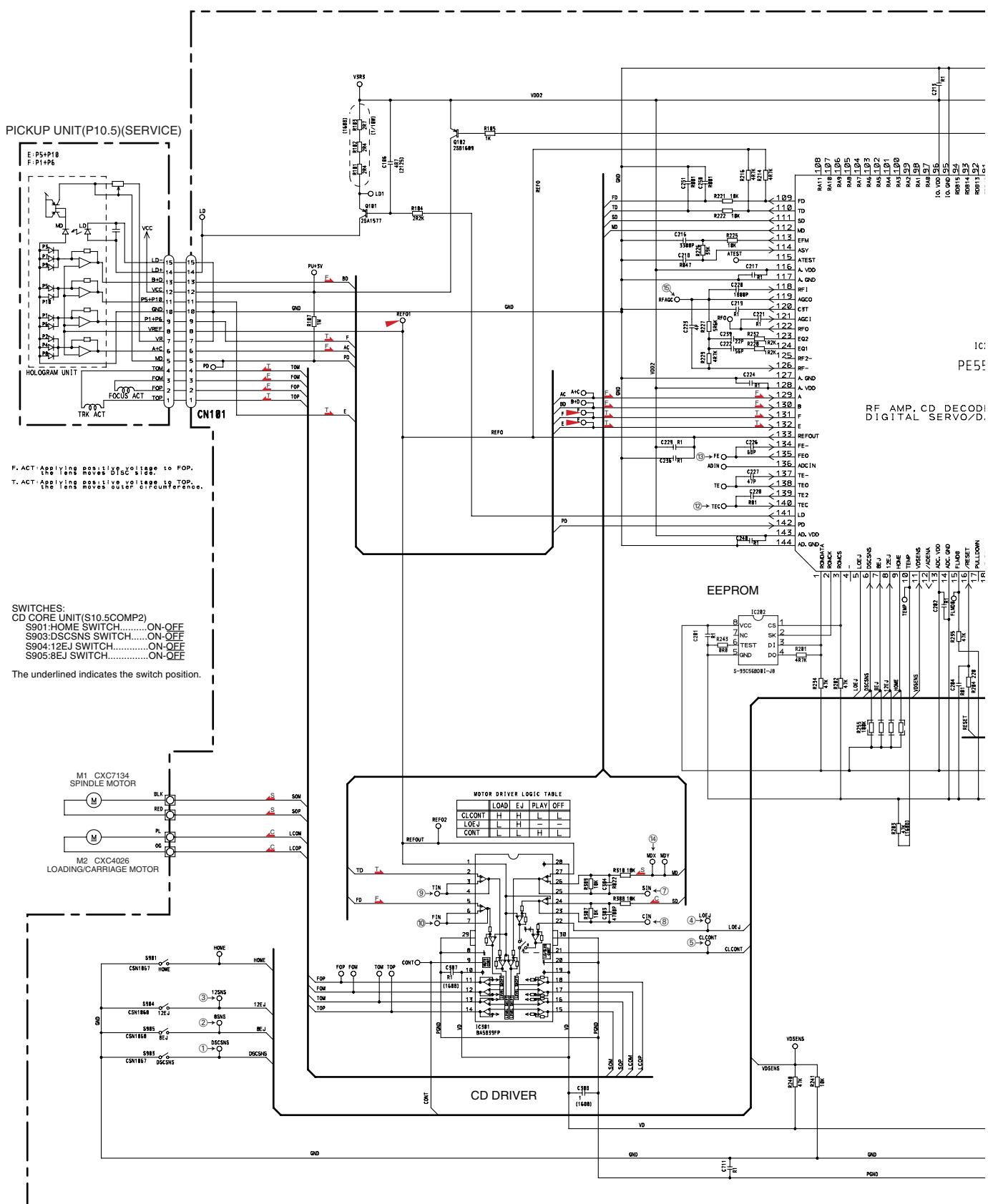
D1805-1815,D1822-1824 : SML-310PT

A CN803**B**

3.4 CD MECHANISM MODULE(GUIDE PAGE)

A

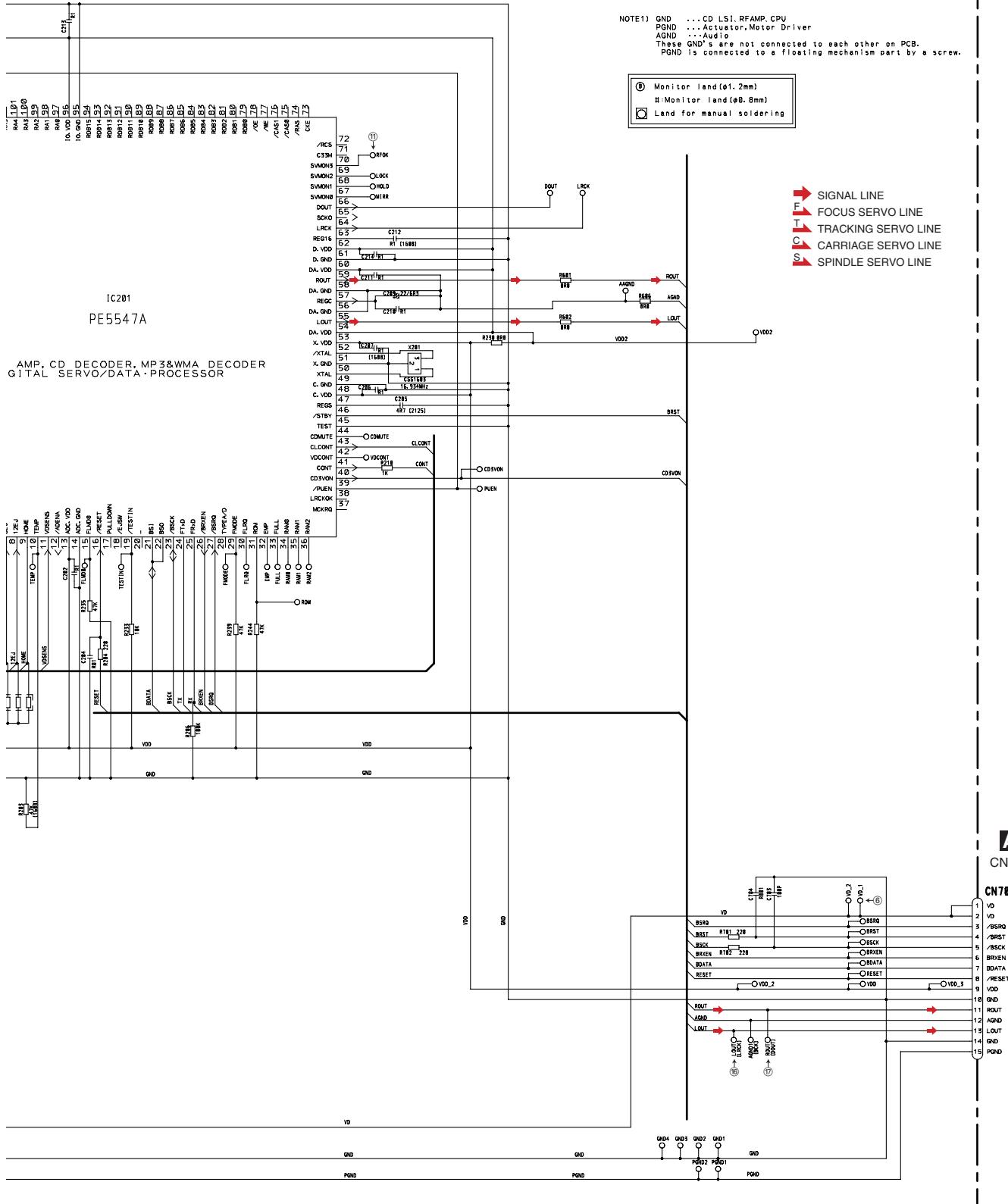
C-a



C

C-b

C CD CORE UNIT(S10.5COMP2)



A

B

C

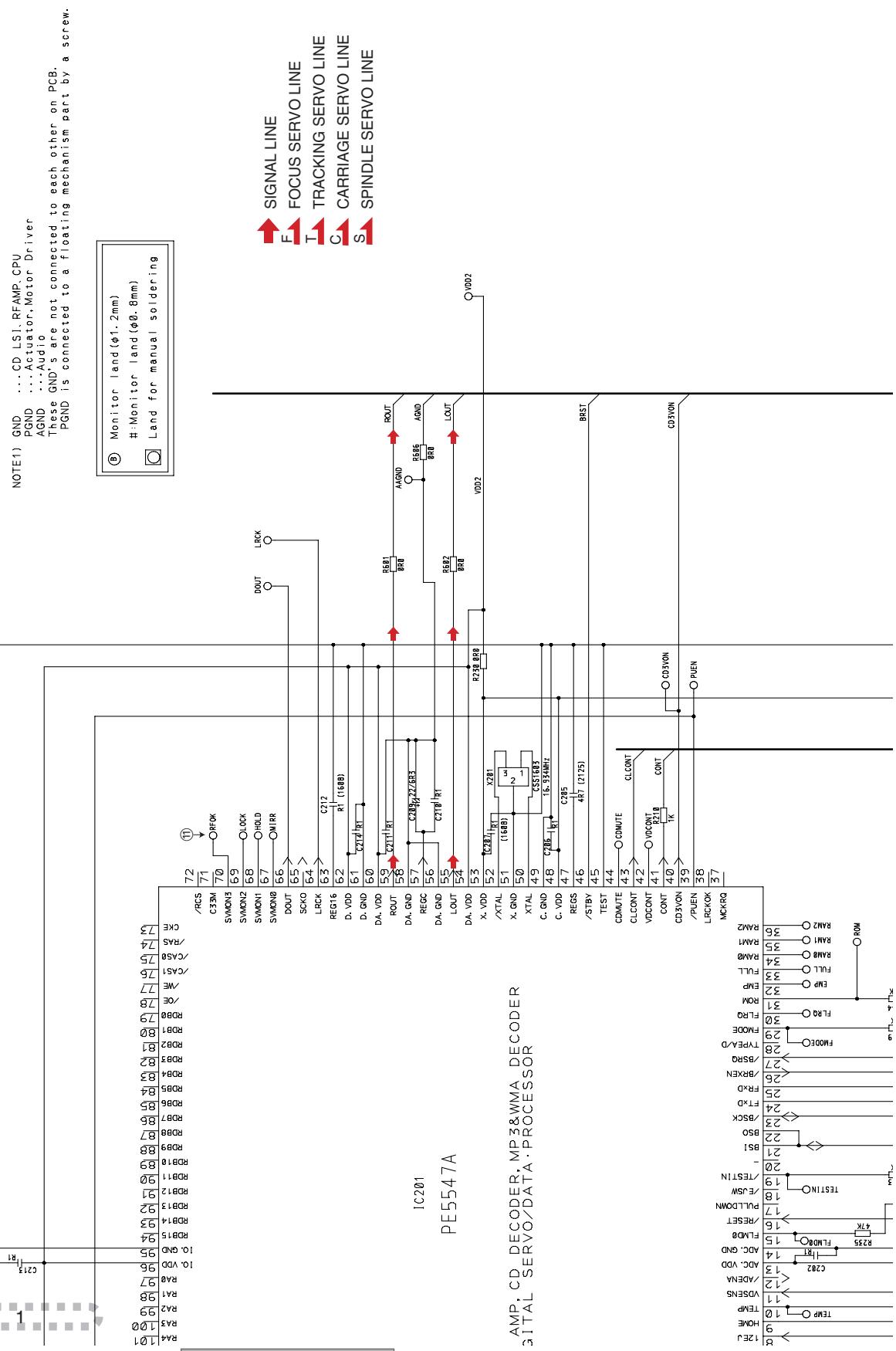
D

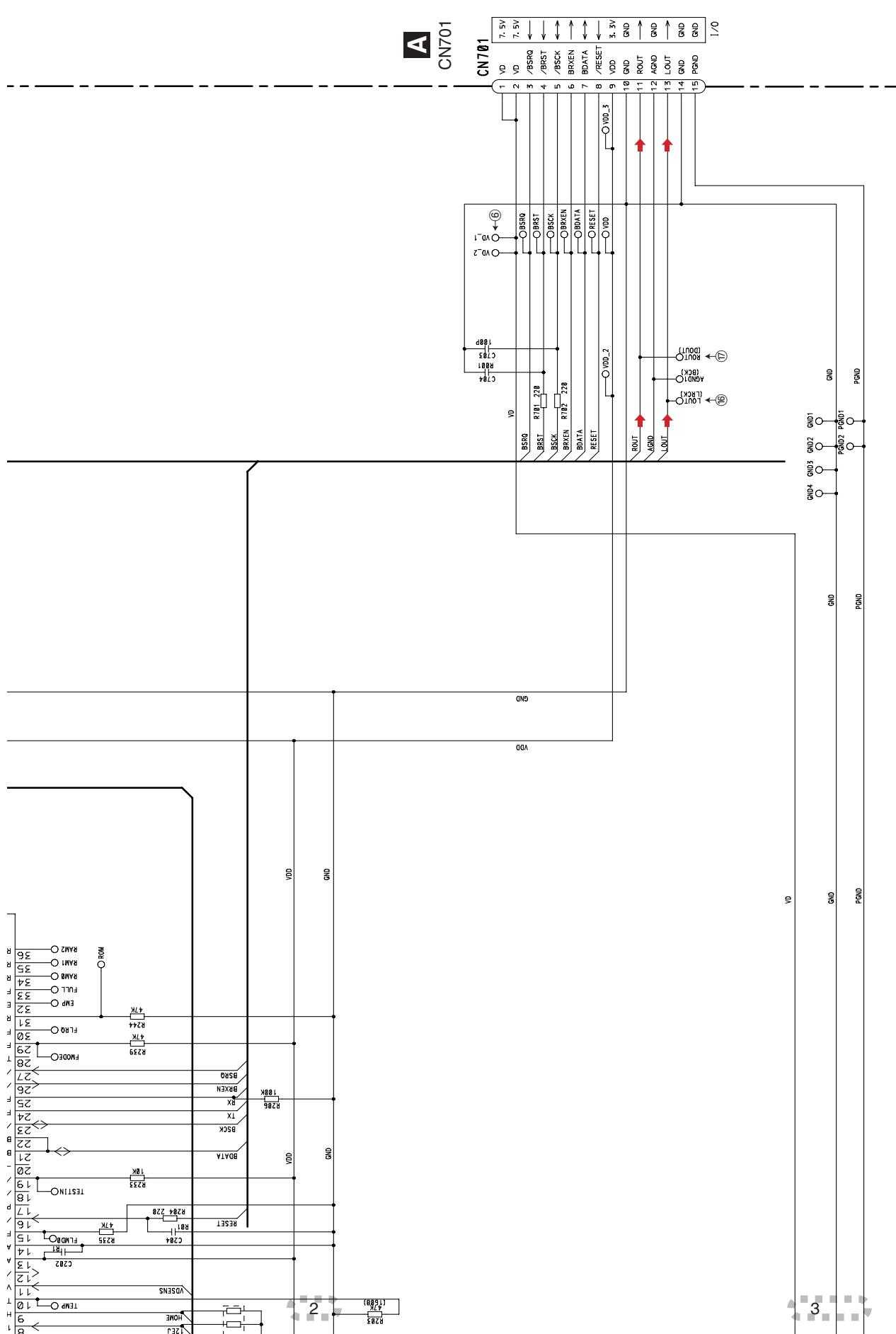
E

F

C-b

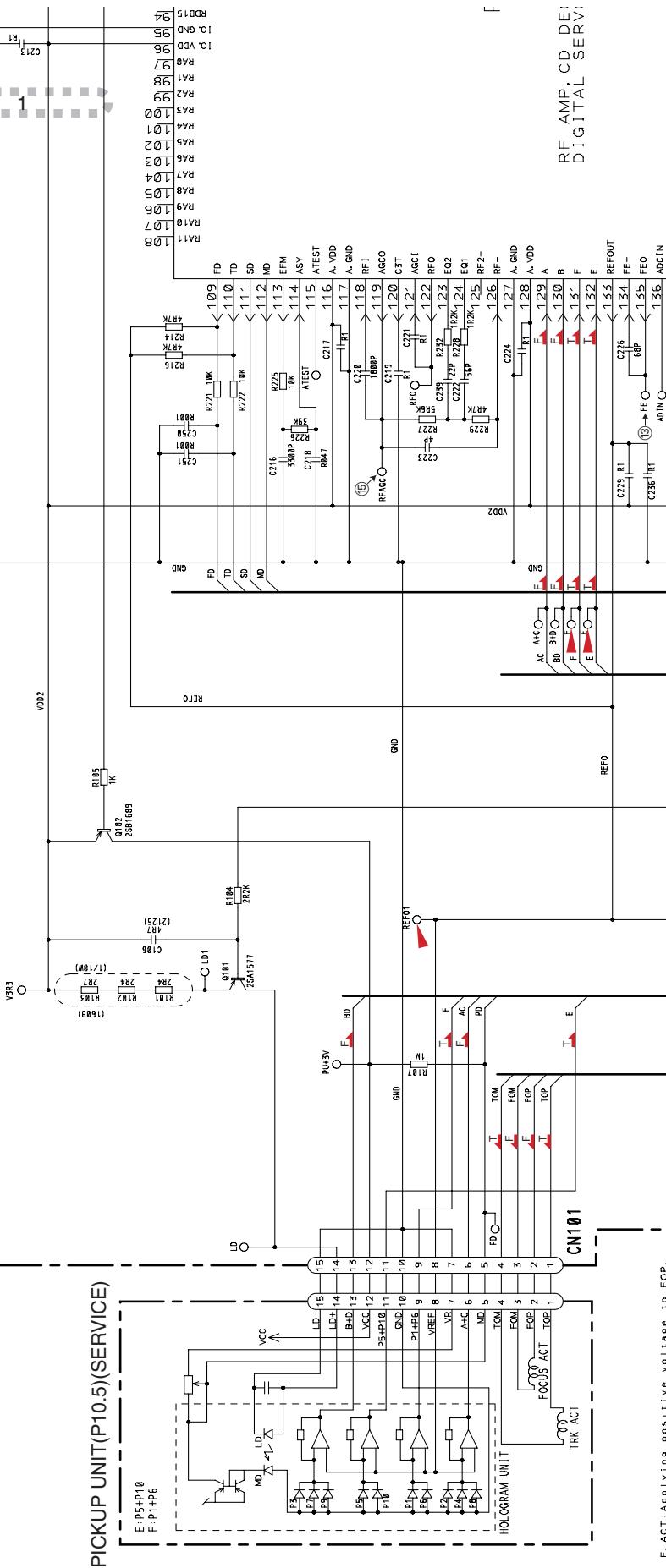
C CD CORE UNIT(S10.5COMP2)



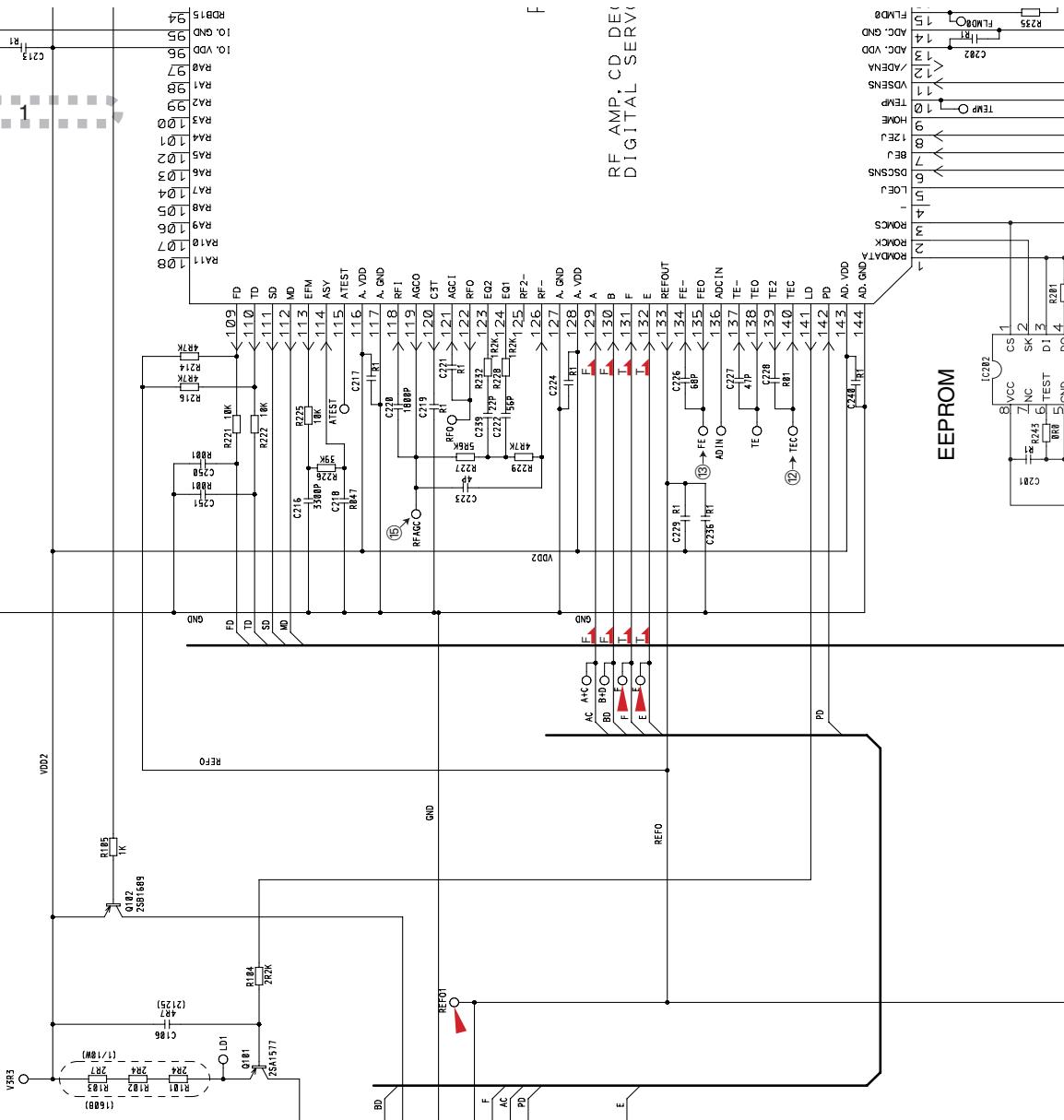


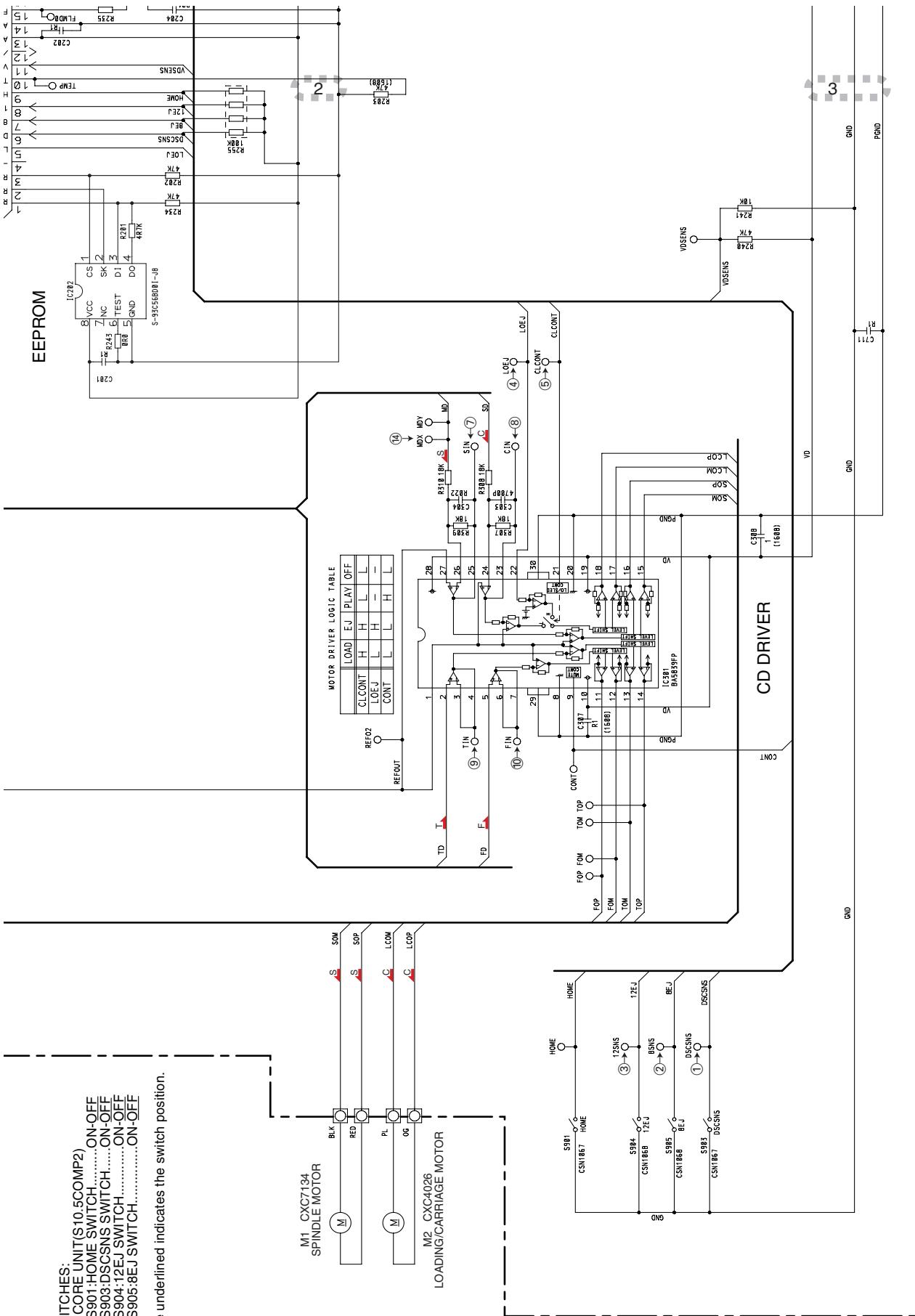
C-a

PICKUP UNIT(P10.5)(SERVICE)

C-a
C-b

C-b




C-b
CD CORE UNIT(S10.5COMP2)
 S901:HOME SWITCH.....ON-OFF
 S903:DSCSNS SWITCH.....ON-OFF
 S904:12EJ SWITCH.....ON-OFF
 S905:8EJ SWITCH.....ON-OFF

The underlined indicates the switch position.

CXC7134

SPINDLE MOTOR

Black: S, SW, S, SOP, C, LCON

Red: S, SOP, C, LCP

CXC4026

LOADING/CARRIAGE MOTOR

Black: S, SW, S, SOP, C, LCON

Red: S, SOP, C, LCP

S901:HOME

S903: DSCSNS

S904: 12EJ

S905: 8EJ

S906: HOME

S907: DSCSNS

S908: 12EJ

S909: 8EJ

S910: HOME

S911: DSCSNS

S912: 12EJ

S913: 8EJ

S914: HOME

S915: DSCSNS

S916: 12EJ

S917: 8EJ

S918: HOME

S919: DSCSNS

S920: 12EJ

S923: 8EJ

S924: HOME

S925: DSCSNS

S926: 12EJ

S927: 8EJ

S928: HOME

S929: DSCSNS

S930: 12EJ

S932: 8EJ

S933: HOME

S934: DSCSNS

S935: 12EJ

S936: 8EJ

S937: HOME

S938: DSCSNS

S939: 12EJ

S940: 8EJ

S941: HOME

S942: DSCSNS

S944: 12EJ

S945: 8EJ

S946: HOME

S947: DSCSNS

S948: 12EJ

S949: 8EJ

S950: HOME

S951: DSCSNS

S952: 12EJ

S953: 8EJ

S954: HOME

S955: DSCSNS

S956: 12EJ

S957: 8EJ

S958: HOME

S959: DSCSNS

S960: 12EJ

S963: 8EJ

S964: HOME

S965: DSCSNS

S966: 12EJ

S967: 8EJ

S968: HOME

S969: DSCSNS

S970: 12EJ

S971: 8EJ

S972: HOME

S973: DSCSNS

S974: 12EJ

S975: 8EJ

S976: HOME

S977: DSCSNS

S978: 12EJ

S979: 8EJ

S980: HOME

S981: DSCSNS

S982: 12EJ

S983: 8EJ

S984: HOME

S985: DSCSNS

S986: 12EJ

S987: 8EJ

S988: HOME

S989: DSCSNS

S980: 12EJ

S982: 8EJ

S983: HOME

S984: DSCSNS

S985: 12EJ

S987: 8EJ

S988: HOME

S989: DSCSNS

S990: 12EJ

S991: 8EJ

S992: HOME

S993: DSCSNS

S996: 12EJ

S997: 8EJ

S998: HOME

S999: DSCSNS

S990: 12EJ

S991: 8EJ

S992: HOME

S993: DSCSNS

S994: 12EJ

S995: 8EJ

S996: HOME

S997: DSCSNS

S998: 12EJ

S999: 8EJ

S990: HOME

S991: DSCSNS

S992: 12EJ

S995: 8EJ

S996: HOME

S997: DSCSNS

S998: 12EJ

S999: 8EJ

S990: HOME

S991: DSCSNS

S992: 12EJ

S995: 8EJ

S996: HOME

S997: DSCSNS

S998: 12EJ

S999: 8EJ

S990: HOME

S991: DSCSNS

S992: 12EJ

S995: 8EJ

S996: HOME

S997: DSCSNS

S998: 12EJ

S999: 8EJ

S990: HOME

S991: DSCSNS

S992: 12EJ

S995: 8EJ

S996: HOME

S997: DSCSNS

S998: 12EJ

S999: 8EJ

S990: HOME

S991: DSCSNS

S992: 12EJ

S995: 8EJ

S996: HOME

S997: DSCSNS

S998: 12EJ

S999: 8EJ

S990: HOME

S991: DSCSNS

S992: 12EJ

S995: 8EJ

S996: HOME

S997: DSCSNS

S998: 12EJ

S999: 8EJ

S990: HOME

S991: DSCSNS

S992: 12EJ

S995: 8EJ

S996: HOME

S997: DSCSNS

S998: 12EJ

S999: 8EJ

S990: HOME

S991: DSCSNS

S992: 12EJ

S995: 8EJ

S996: HOME

S997: DSCSNS

S998: 12EJ

S999: 8EJ

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S991: DSCSNS

S992: 12EJ

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S998: 12EJ

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S992: 12EJ

S995: 8EJ

S996: HOME

S997: DSCSNS

S998: 12EJ

S999: 8EJ

S990: HOME

S991: DSCSNS

S992: 12EJ

S995: 8EJ

S996: HOME

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S990: HOME

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S995: 8EJ

S996: HOME

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S998: 12EJ

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S990: HOME

S991: DSCSNS

S992: 12EJ

S995: 8EJ

S996: HOME

S997: DSCSNS

S998: 12EJ

S999: 8EJ

S990: HOME

S991: DSCSNS

S992: 12EJ

S995: 8EJ

S996: HOME

S997: DSCSNS

S998: 12EJ

S999: 8EJ

S990: HOME

S991: DSCSNS

S992: 12EJ

S995: 8EJ

S996: HOME

S997: DSCSNS

S998: 12EJ

S999: 8EJ

S990: HOME

S991: DSCSNS

S992: 12EJ

S995: 8EJ

S996: HOME

S997: DSCSNS

S998: 12EJ

S999: 8EJ

S990: HOME

S991: DSCSNS

S992: 12EJ

S995: 8EJ

S996: HOME

S997: DSCSNS

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S999: 8EJ

S990: HOME

S991: DSCSNS

S992: 12EJ

S995: 8EJ

S996: HOME

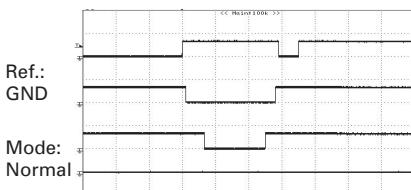
S997:

● Waveforms

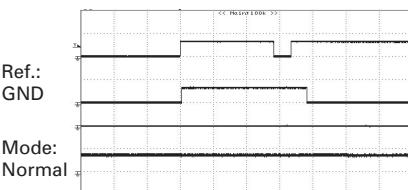
Note : 1. The encircled numbers denote measuring points in the circuit diagram.
 2. Reference voltage REFO1(1.65 V)

A

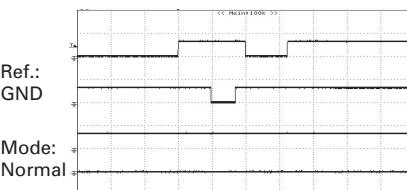
①DSCSNS 5 V/div 500 ms/div
 ②8SNS 5 V/div
 ③12SNS 5 V/div
 ④LOEJ 5 V/div
 12 cm CD Loading operation



①DSCSNS 5 V/div 500 ms/div
 ⑤CLCONT 5 V/div
 ④LOEJ 5 V/div
 ⑥VD 10 V/div
 12 cm CD Loading operation



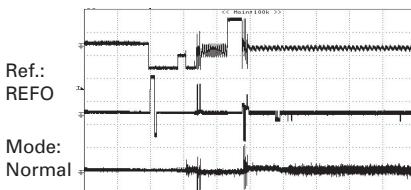
①DSCSNS 5 V/div 500 ms/div
 ②8SNS 5 V/div
 ③12SNS 5 V/div
 ④LOEJ 5 V/div
 8 cm CD Loading operation



B

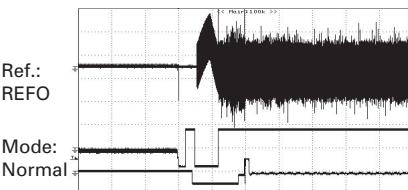
⑦SIN 1 V/div 1 s/div
 ⑧CIN 500 mV/div
 ⑨TIN 1 V/div

12 cm CD-DA setup operation after loading



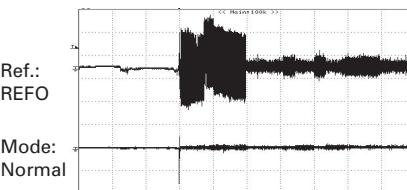
⑩FIN 200 mV/div 500 ms/div
 ⑪RFOK(MONI_2) 2 V/div
 ⑦SIN 2 V/div

12 cm CD-DA Source On setup operation



⑫TE 500 mV/div 200 ms/div
 ⑬FE 500 mV/div

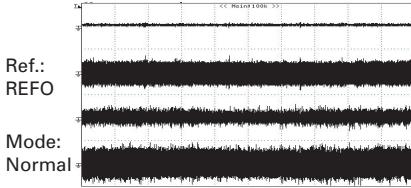
Source On setup operation



C

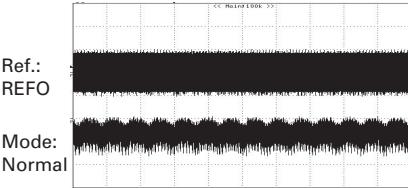
⑬FE 500 mV/div 20 ms/div
 ⑩FIN 500 mV/div
 ⑫TE 500 mV/div
 ⑨TIN 500 mV/div

CD-DA Play operation



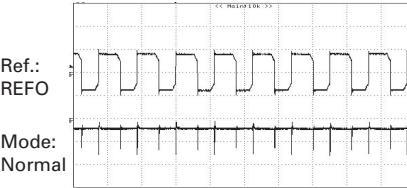
⑭MDX 2 V/div 200 ms/div
 ⑦SIN 500 mV/div

Spindle waveform during play operation



⑭MDX 2 V/div 5 μs/div
 ⑦SIN 500 mV/div

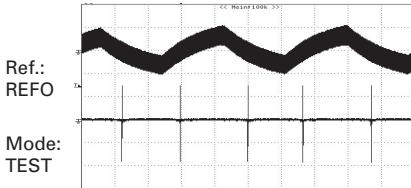
Spindle waveform during play operation (Wider)



D

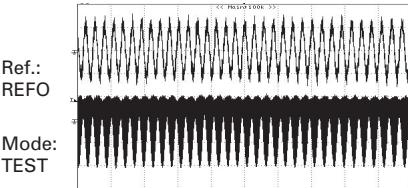
⑩FIN 500 mV/div 200 ms/div
 ⑬FE 500 mV/div

Focus Search waveform



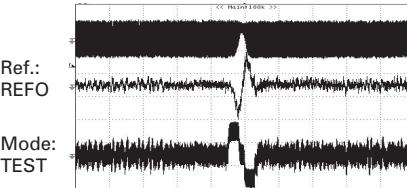
⑫TE 500 mV/div 2 ms/div
 ⑮RFAGC 500 mV/div

Track Open waveform

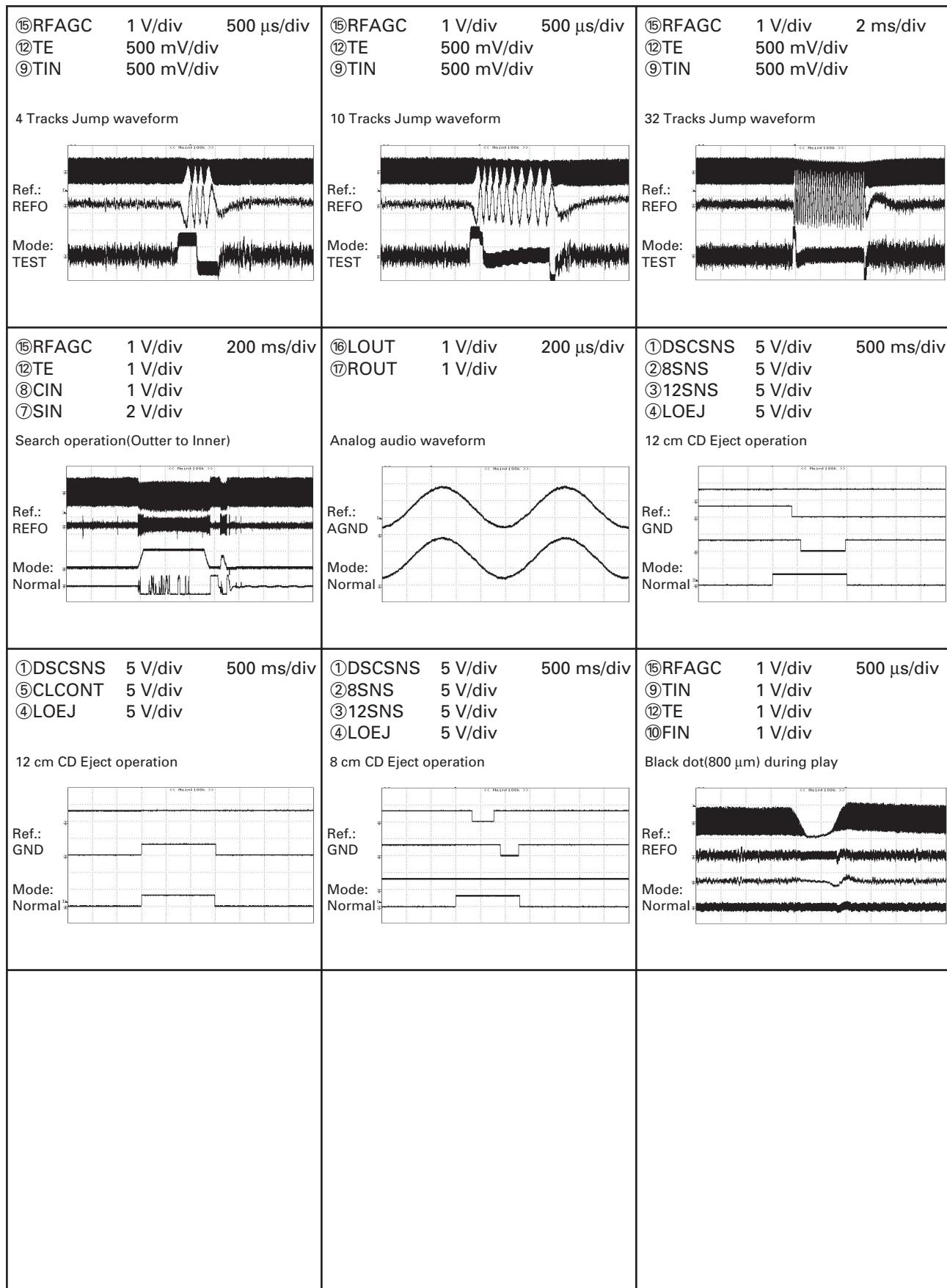


⑯RFAGC 1 V/div 500 μs/div
 ⑫TE 500 mV/div
 ⑨TIN 500 mV/div

1 Track Jump waveform



E



4. PCB CONNECTION DIAGRAM

4.1 TUNER AMP UNIT

1

2

3

4

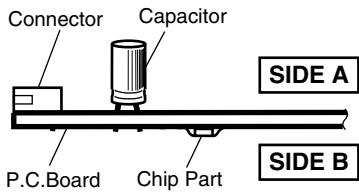
A

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



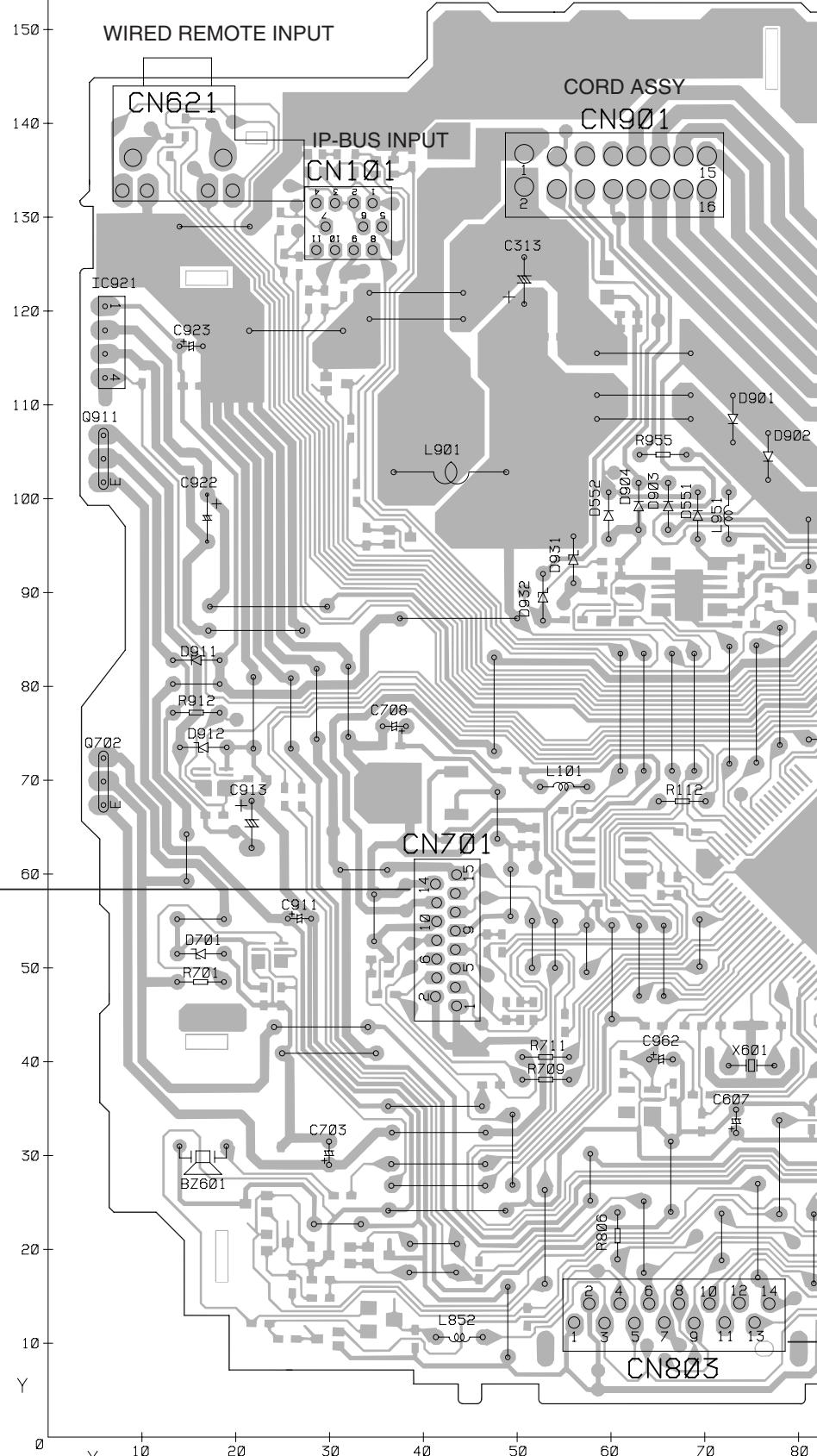
B

C

D

E

F

A TUNER AMP UNIT**C**
CN701**A**

30

1

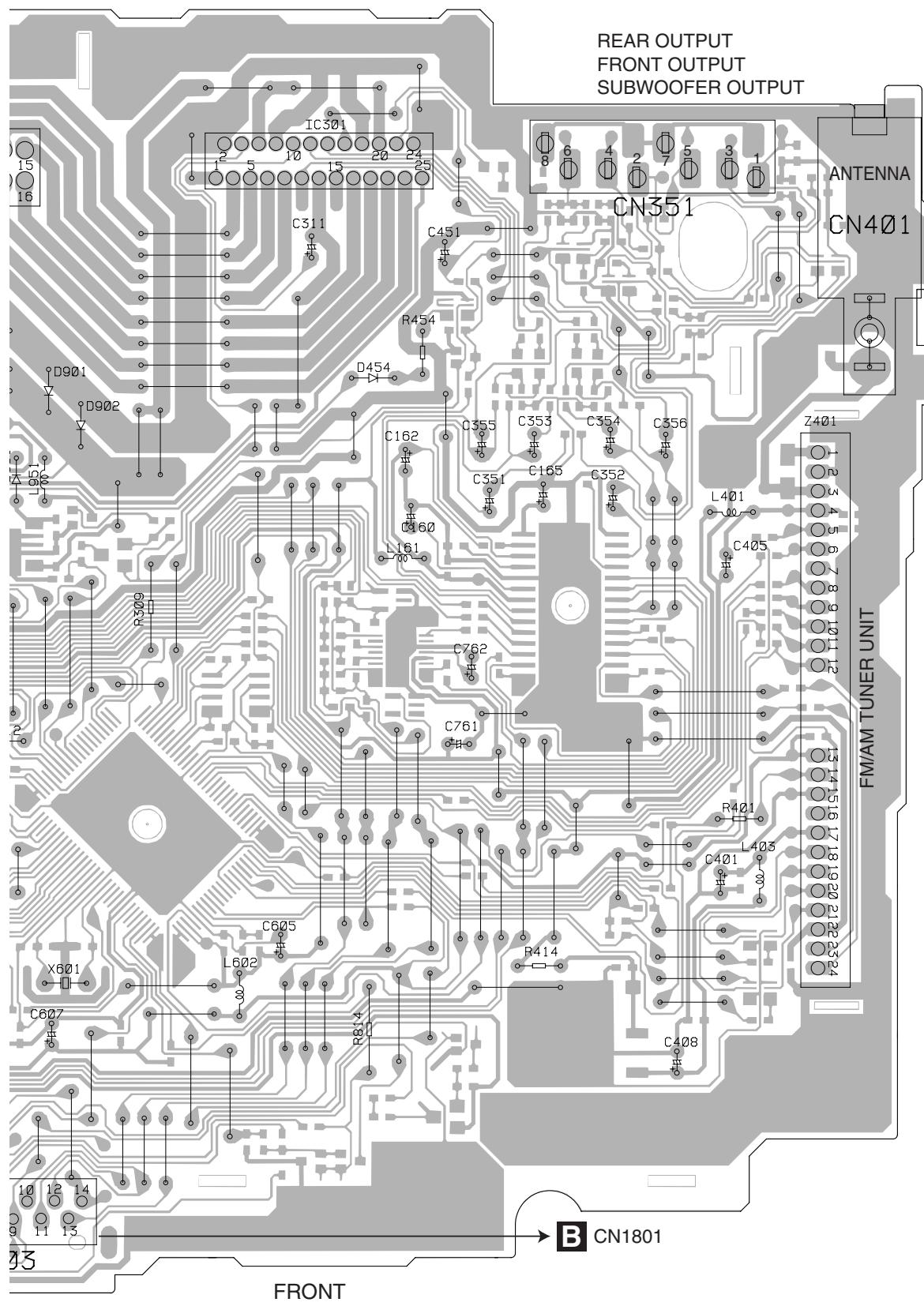
2

3

4

DEH-P390MP/XU/UC

SIDE A



70 80 90 100 110 120 130 140 150 160 170

A

A TUNER AMP UNIT

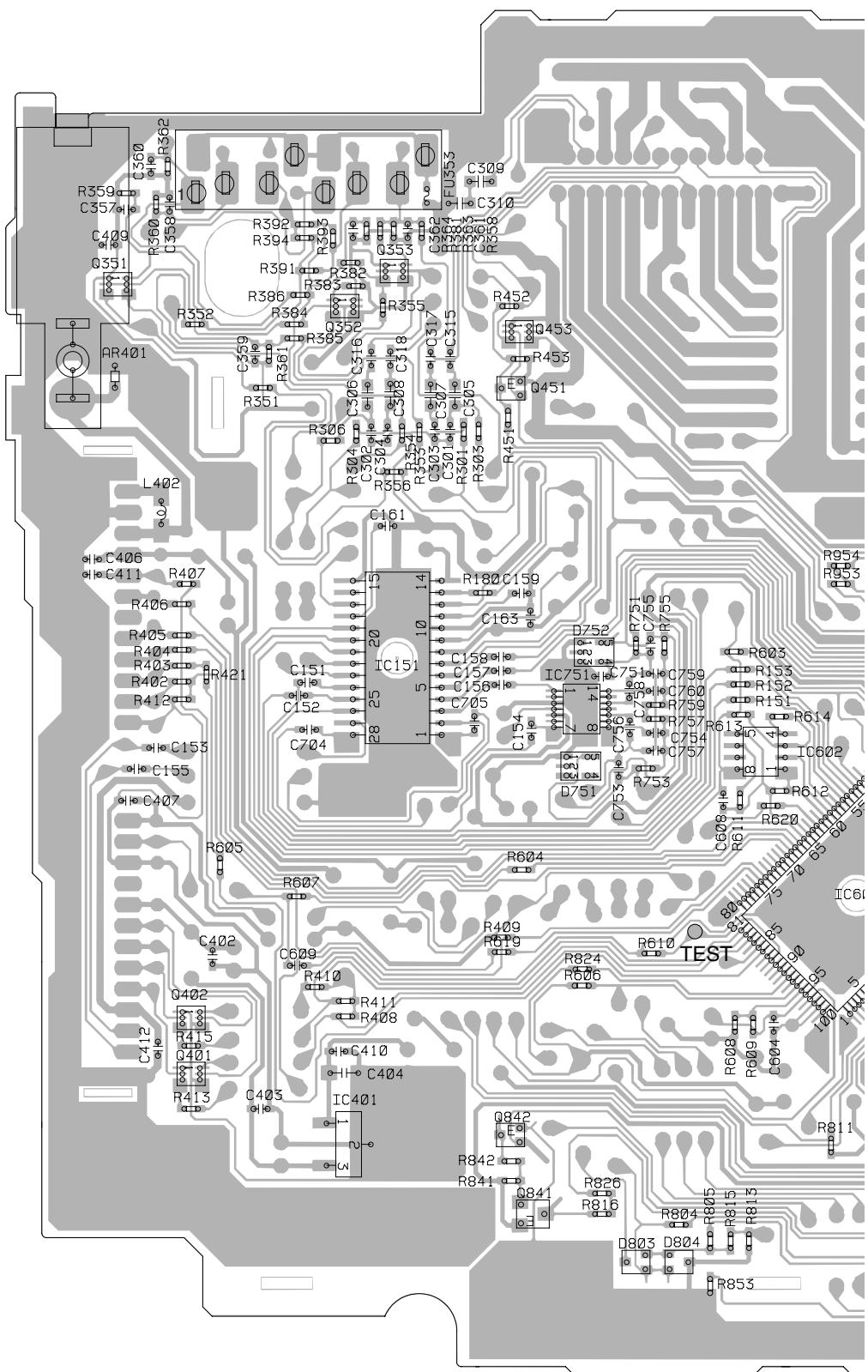
B

C

D

F

F



5

6

7

8

A

SIDE B

B

C

D

E

F

This image shows a detailed layout of a printed circuit board (PCB) with various electronic components and interconnects. The board features a central component labeled "PCL" and several integrated circuits (ICs) such as IC551, IC601, IC602, IC702, IC961, and IC981. Numerous resistors (R), capacitors (C), and diodes (D) are placed across the board, connected by a complex network of tracks. A coordinate system is visible on the right side, ranging from X=0 to 150 and Y=0 to 150.

DEH-P390MP/XU/UC

5

6

7

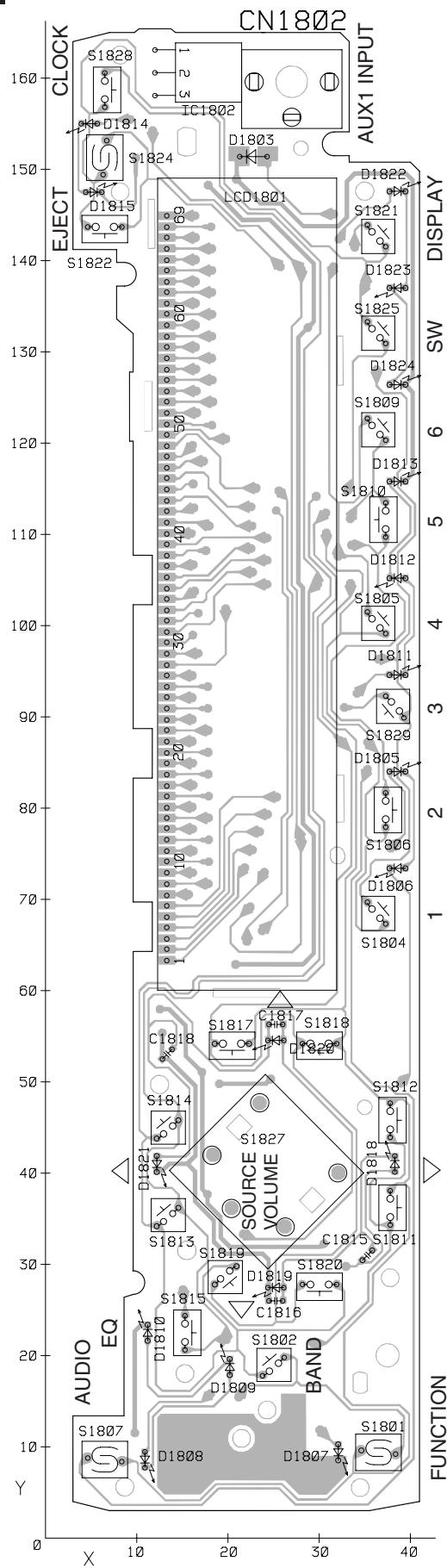
8

33

4.2 KEYBOARD UNIT

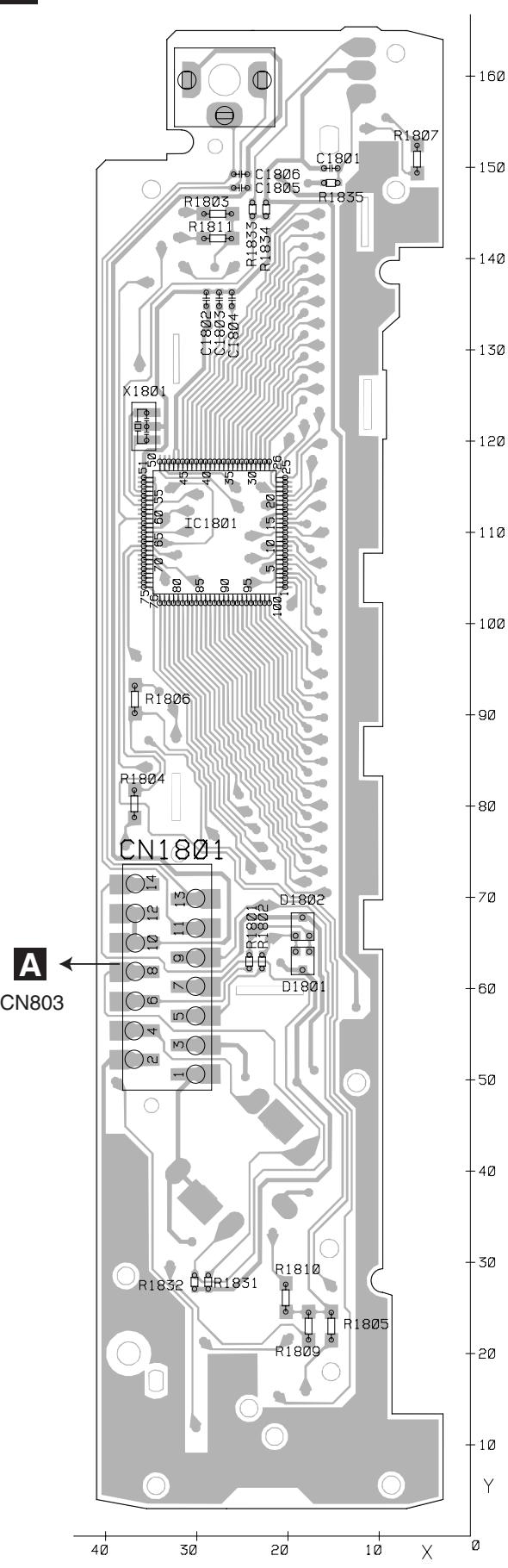
B KEYBOARD UNIT

SIDE A



B KEYBOARD UNIT

SIDE B



A

B

C

D

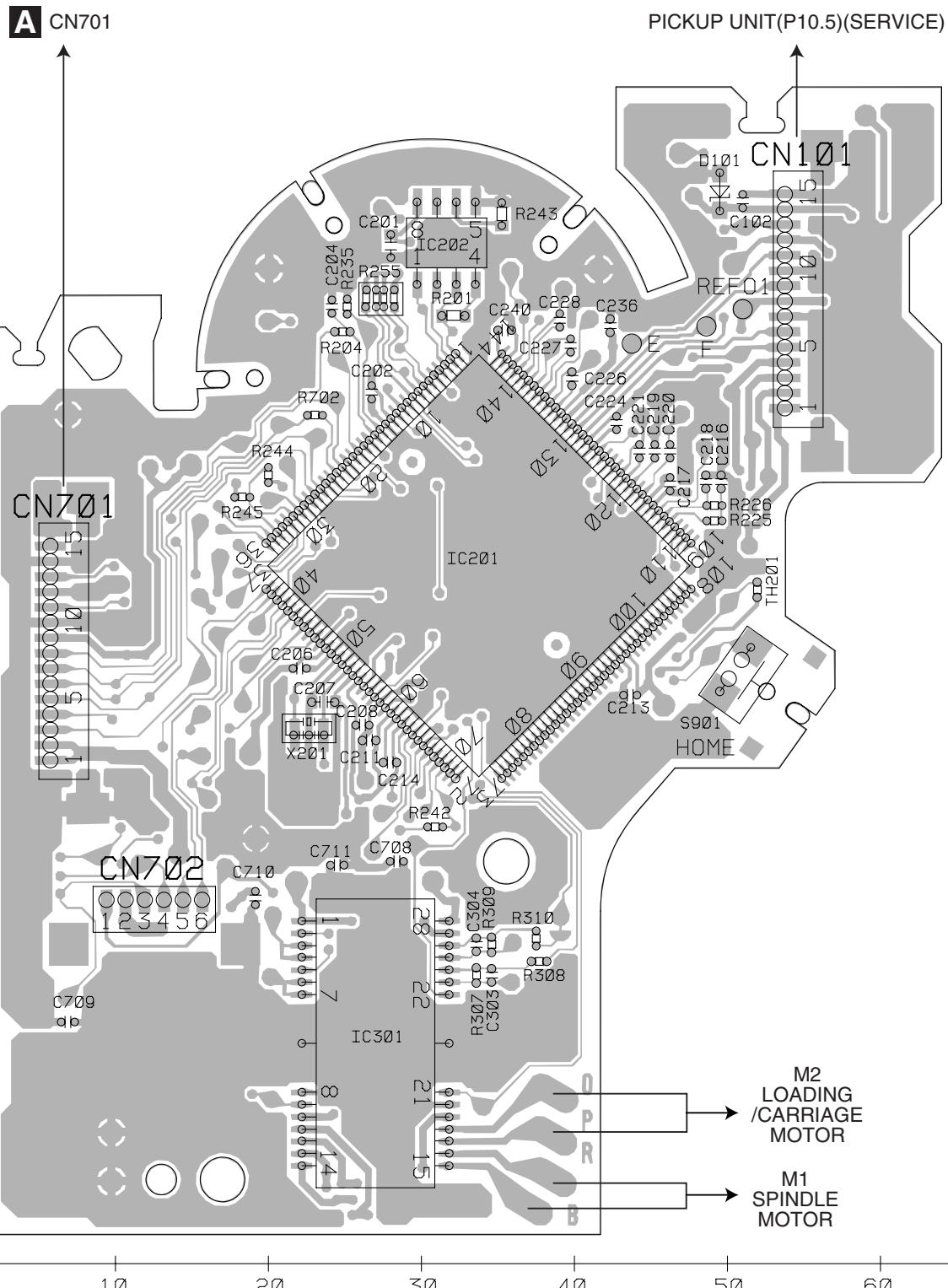
E

F

4.3 CD CORE UNIT(S10.5COMP2)

C CD CORE UNIT(S10.5COMP2)

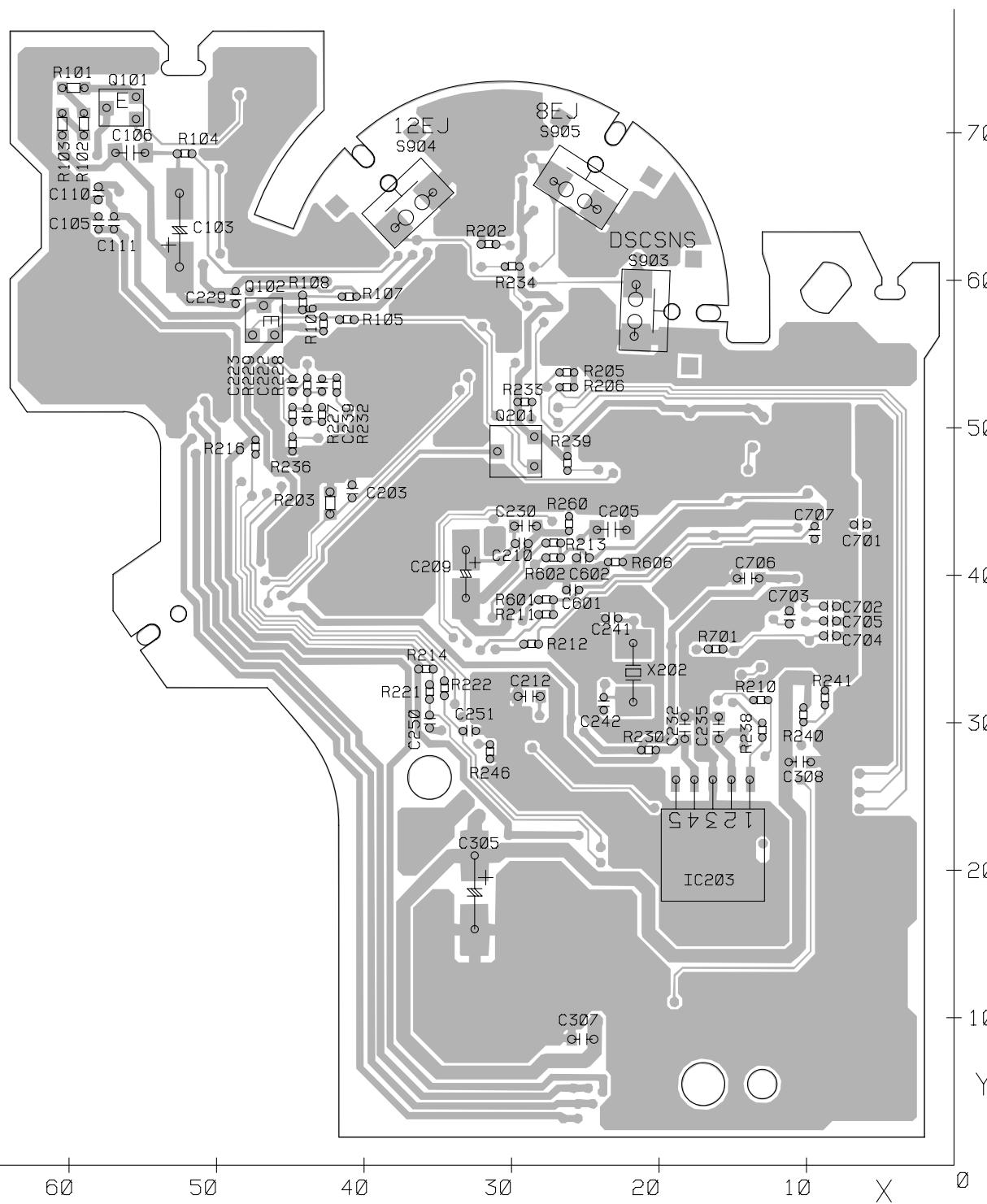
SIDE A



C CD CORE UNIT(S10.5COMP2)

SIDE B

A



5. ELECTRICAL PARTS LIST

NOTE:

- A • 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.....

- 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.
- Meaning of the figures and others in the parentheses in the parts list.
- B Example) IC 301 is on the point (face A, 91 of x-axis, and 111 of y-axis) of the corresponding PC board.

IC 301 (A, 91, 111) IC NJM2068V

Circuit Symbol and No. Part No.

Circuit Symbol and No. Part No.

Unit Number : YWM5137(P390MP)

Q 851	(B,36,13)	Transistor	2SA1036K
-------	-----------	------------	----------

Unit Number : YWM5139(P3900MP)

Q 852	(B,30,10)	Transistor	DTC114EUA
-------	-----------	------------	-----------

Unit Name : Tuner Amp Unit

Q 911	(A,6,102)	Transistor	2SD2396
-------	-----------	------------	---------

Unit Number :

Q 912	(B,18,71)	Transistor	UMD2N
-------	-----------	------------	-------

Unit Name : Keyboard Unit

Q 931	(B,60,88)	Transistor	UMX1N
-------	-----------	------------	-------

Unit Number : CWX3350

D 454	(A,108,110)	Diode	1SS133
-------	-------------	-------	--------

Unit Name : CD Core

D 701	(A,19,52)	Diode	HZS7L(C3)
-------	-----------	-------	-----------

Unit(S10.5COMP2)

D 751	(B,114,72)	Diode	FTZ6R8E
-------	------------	-------	---------

Unit Name : CD Core

D 752	(B,113,84)	Diode	FTZ6R8E
-------	------------	-------	---------

Unit(S10.5COMP2)

D 801	(B,31,19)	Diode	DAN202U
-------	-----------	-------	---------

D 802	(B,35,19)	Diode	DAP202U
-------	-----------	-------	---------

D 803	(B,108,19)	Diode	DAN202U
-------	------------	-------	---------

D 804	(B,104,19)	Diode	DAP202U
-------	------------	-------	---------

D 805	(B,24,21)	Diode	DAN202U
-------	-----------	-------	---------

D 806	(B,22,25)	Diode	DAP202U
-------	-----------	-------	---------

Unit Number : YWM5137(P390MP)

D 901	(A,73,111)	Diode	S5688G
-------	------------	-------	--------

Unit Number : YWM5139(P3900MP)

D 902	(A,77,107)	Diode	S5688G
-------	------------	-------	--------

Unit Name : Tuner Amp Unit

D 903	(A,66,97)	Diode	S5688G
-------	-----------	-------	--------

D 904	(A,63,97)	Diode	S5688G
-------	-----------	-------	--------

D 911	(A,18,83)	Diode	S5688G
-------	-----------	-------	--------

MISCELLANEOUS

D 912	(A,19,74)	Diode	HZS6L(B2)
-------	-----------	-------	-----------

D 931	(A,56,91)	Diode	HZS7L(C3)
-------	-----------	-------	-----------

D 932	(A,53,87)	Diode	HZS7L(A1)
-------	-----------	-------	-----------

L 101	(A,52,69)	Inductor	LAU2R2K
-------	-----------	----------	---------

L 161	(A,112,89)	Inductor	LAU2R2K
-------	------------	----------	---------

IC 101 (B,60,62) IC HA12241FP

L 401	(A,155,94)	Inductor	LAU1R0K
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IC 151 (B,134,84) IC PML015B

L 402	(B,159,99)	Inductor	LCTAW220J2520
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IC 301 (A,92,133) IC PAL007C

L 403	(A,156,54)	Inductor	LAU1R0K
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IC 401 (B,137,31) IC NJM2885DL1-33

L 602	(A,95,41)	Inductor	LAU2R2K
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IC 601 (B,84,58) IC PEG286A

L 852	(A,46,11)	Inductor	LAU2R2K
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IC 702 (B,39,69) IC NJM2885DL1-33

L 901	(A,36,103)	Choke Coil 600 μ H CTH1280	
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IC 751 (B,114,78) IC NJM2794V

X 601	(A,73,40)	Resonator 15.000 MHz YSS5002	
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IC 921 (A,6,121) IC NJM2388F84

△FU353	(B,131,133)	Fuse 3 A CEK1286	
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IC 961 (B,63,36) IC S-80835CNMC-B8U

Z 401	(A,163,101)	FM/AM Tuner Unit CWE1952	
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Q 101 (B,37,96) Transistor 2SA1576A

AR401	(B,164,114)	Surge Protector IMSA-6801-01Y901	
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Q 102 (B,31,112) Transistor DTC114EUA

△	Fuse 10 A	CEK1208	
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Q 351 (B,164,124) Transistor UMH3N

Q 352 (B,139,121) Transistor UMH3N			
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Q 353 (B,134,125) Transistor UMH3N

Q 451 (B,122,112) Transistor DTC124EUA			
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Q 453 (B,121,118) Transistor UMD2N			
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Q 701 (B,24,52) Transistor UMD2N			
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Q 702 (A,6,67) Transistor 2SD2396			
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Q 841 (B,119,24) Transistor 2SA1036K			
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Q 842 (B,122,32) Transistor DTC114EUA			
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RESISTORS

R 101 (B,32,123)			
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R 102 (B,33,101)			
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RS1/16S181J			
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RS1/16S222J			
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Circuit Symbol and No.	Part No.	Circuit Symbol and No.	Part No.
R 103 (B,25,130)	RS1/16S181J	R 605 (B,153,61)	RS1/16S681J
R 104 (B,36,135)	RS1/16S101J	R 606 (B,114,48)	RS1/16S103J
R 105 (B,33,136)	RS1/16S101J	R 607 (B,144,58)	RS1/16S681J
			A
R 106 (B,29,121)	RS1/16S223J	R 608 (B,98,44) (P3900MP)	RS1/16S473J
R 107 (B,25,125)	RS1/16S223J	R 609 (B,96,44)	RS1/16S104J
R 108 (B,27,125)	RS1/16S102J	R 610 (B,106,52)	RS1/16S473J
R 109 (B,28,121)	RS1/16S102J	R 613 (B,97,77)	RS1/16S104J
R 110 (B,34,96)	RS1/16S332J	R 615 (B,68,64)	RS1/16S0R0J
R 111 (B,32,107)	RS1/16S562J	R 616 (B,35,51)	RS1/16S473J
R 112 (A,65,68)	RD1/4PU102J	R 620 (B,94,68)	RS1/16S0R0J
R 113 (B,67,59)	RS1/16S472J	R 621 (B,15,140)	RS1/16S102J
R 114 (B,65,59)	RS1/16S472J	R 622 (B,13,137)	RS1/16S102J
R 116 (B,31,136)	RS1/16S470J	R 701 (A,14,49)	RD1/4PU271J
R 117 (B,29,136)	RS1/16S150J	R 703 (B,47,53)	RS1/16S472J
R 118 (B,56,67)	RS1/16S0R0J	R 704 (B,47,38)	RS1/16S104J
R 151 (B,97,79)	RS1/16S102J	R 705 (B,50,45)	RS1/16S472J
R 152 (B,97,81)	RS1/16S102J	R 706 (B,52,45)	RS1/16S104J
R 153 (B,97,82)	RS1/16S102J	R 707 (B,36,47)	RS1/16S104J
			B
R 180 (B,125,91)	RS1/16S0R0J	R 708 (B,55,44)	RS1/16S221J
R 301 (B,127,108)	RS1/16S471J	R 709 (A,56,38)	RD1/4PU102J
R 303 (B,125,108)	RS1/16S471J	R 710 (B,49,45)	RS1/16S221J
R 304 (B,138,108)	RS1/16S471J	R 711 (A,56,41)	RD1/4PU221J
R 306 (B,141,107)	RS1/16S471J	R 712 (B,48,53)	RS1/16S221J
R 309 (A,85,78)	RD1/4PU153J	R 713 (B,35,49)	RS1/16S102J
R 351 (B,148,112)	RS1/16S821J	R 714 (B,25,47)	RS1/16S104J
R 352 (B,155,119)	RS1/16S0R0J	R 751 (B,108,85)	RS1/16S0R0J
R 353 (B,131,108)	RS1/16S821J	R 753 (B,107,72)	RS1/16S0R0J
R 354 (B,133,108)	RS1/16S821J	R 755 (B,105,85)	RS1/16S0R0J
			C
R 355 (B,135,121)	RS1/16S821J	R 757 (B,106,77)	RS1/16S223J
R 356 (B,134,103)	RS1/16S821J	R 759 (B,106,79)	RS1/16S223J
R 358 (B,131,129)	RS1/16S821J	R 803 (B,28,19)	RS1/16S473J
R 359 (B,163,133)	RS1/16S223J	R 804 (B,104,23)	RS1/16S222J
R 360 (B,160,132)	RS1/16S223J	R 805 (B,100,21)	RS1/16S222J
R 361 (B,147,116)	RS1/16S223J	R 806 (A,61,19)	RD1/4PU222J
R 362 (B,158,136)	RS1/16S223J	R 807 (B,46,18)	RS1/16S222J
R 363 (B,134,129)	RS1/16S223J	R 808 (B,29,17)	RS1/16S104J
R 364 (B,137,129)	RS1/16S223J	R 809 (B,51,13)	RS1/16S222J
R 381 (B,136,129)	RS1/16S0R0J	R 810 (B,29,15)	RS1/16S103J
			D
R 382 (B,139,126)	RS1/16S0R0J	R 811 (B,87,31)	RS1/16S473J
R 383 (B,138,123)	RS1/16S0R0J	R 813 (B,96,21)	RS1/16S104J
R 384 (B,145,119)	RS1/16S0R0J	R 814 (A,110,29)	RD1/4PU102J
R 385 (B,145,118)	RS1/16S0R0J	R 815 (B,98,21)	RS1/16S102J
R 386 (B,144,122)	RS1/16S0R0J	R 816 (B,112,24)	RS1/16S1R0J
R 391 (B,143,125)	RS1/16S0R0J	R 822 (B,27,68)	RS1/16S102J
R 392 (B,144,130)	RS1/16S0R0J	R 823 (B,25,68)	RS1/16S102J
R 401 (A,156,59)	RD1/4PU681J	R 824 (B,114,50)	RS1/16S102J
R 403 (B,157,83)	RS1/16S681J	R 825 (B,26,16)	RS1/16S102J
R 404 (B,157,84)	RS1/16S681J	R 826 (B,112,26)	RS1/16S0R0J
			E
R 405 (B,157,86)	RS1/16S681J	R 841 (B,121,28)	RS1/16S103J
R 406 (B,157,89)	RS1/16S681J	R 842 (B,121,30)	RS1/16S472J
R 407 (B,156,91)	RS1/16S0R0J	R 851 (B,23,12)	RS1/16S153J
R 414 (A,133,42)	RD1/4PU1R8J	R 852 (B,25,10)	RS1/16S472J
R 421 (B,154,82)	RS1/16S0R0J	R 853 (B,100,16)	RS1/16S222J
R 451 (B,122,109)	RS1/16S103J	R 911 (B,18,66)	RS1/16S223J
R 452 (B,122,121)	RS1/16S221J	R 912 (A,18,77)	RD1/4PU152J
R 453 (B,121,116)	RS1/16S153J	R 922 (B,10,113)	RS1/16S473J
R 454 (A,117,115)	RD1/4PU102J	R 931 (B,60,57)	RS1/16S104J
R 602 (B,69,44)	RS1/16S103J	R 932 (B,54,59)	RS1/16S104J
			F
R 603 (B,98,84)	RS1/16S103J	R 933 (B,60,90)	RS1/16S104J
R 604 (B,120,61)	RS1/16S681J	R 934 (B,60,92)	RS1/16S473J

<u>Circuit Symbol and No.</u>		<u>Part No.</u>	<u>Circuit Symbol and No.</u>	<u>Part No.</u>
A	R 935	(B,56,87)	RS1/16S473J	C 606 (B,81,34)
	R 936	(B,60,93)	RS1/16S473J	C 607 (A,73,32)
	R 937	(B,62,118)	RS1/16S473J	C 609 (B,144,51)
	R 938	(B,60,123)	RS1/4SA102J	C 701 (B,23,47)
	R 961	(B,70,36)	RS1/16S102J	C 703 (A,30,29)
	R 962	(B,61,40)	RS1/16S822J	C 704 (B,143,76)
	CAPACITORS		C 705 (B,125,77)	C 705 (B,125,77)
	C 101	(B,28,136)	C 708 (A,38,76)	C 708 (A,38,76)
	C 104	(B,50,71)	C 709 (B,37,74)	C 709 (B,37,74)
B	C 151	(B,143,81)	CKSRYB104K25	CKSRYB104K25
	C 152	(B,144,80)	CKSRYB103K50	CKSRYB103K50
	C 153	(B,160,74)	CKSRYB105K10	CKSRYB105K10
	C 154	(B,119,76)	CKSRYB105K10	CKSRYB105K10
	C 155	(B,162,72)	CKSRYB224K10	CKSRYB224K10
	C 156	(B,123,81)	CKSRYB105K10	CKSRYB105K10
	C 157	(B,123,82)	CKSRYB105K10	CKSRYB105K10
	C 158	(B,123,84)	CKSRYB105K10	CKSRYB105K10
	C 159	(B,120,90)	CKSRYB153K50	CKSRYB153K50
C	C 160	(A,115,93)	CEJQ100M16	C 851 (B,39,10)
	C 161	(B,135,98)	CKSRYB153K50	CKSRYB104K25
	C 162	(A,115,102)	CEJQ470M10	C 901 (B,54,117)
	C 163	(B,119,88)	CKSRYB104K25	C 911 (A,26,55)
	C 165	(A,131,95)	CEJQ100M16	C 912 (B,22,70)
	C 305	(B,128,112)	CKSQYB474K16	C 913 (A,22,63)
	C 306	(B,137,112)	CKSQYB474K16	CKSRYB103K50
	C 307	(B,130,112)	CKSQYB474K16	CEJQ221M10
	C 308	(B,134,112)	CKSQYB474K16	CEJQ101M16
D	C 309	(B,125,135)	CKSQYB225K10	C 921 (B,15,104)
	C 310	(B,127,132)	CKSQYB225K10	C 922 (A,17,100)
	C 311	(A,104,124)	CEJQ100M16	C 923 (A,14,116)
	C 313	(A,51,121) 3 300 μ F/16 V	CCH1494	C 924 (B,15,112)
	C 315	(B,128,116)	CKSRYB474K10	C 961 (B,67,37)
	C 316	(B,136,116)	CKSRYB474K10	C 962 (A,64,40)
	C 317	(B,130,116)	CKSRYB474K10	CEJQ100M16
	C 318	(B,134,116)	CKSRYB474K10	
	C 351	(A,124,94)	CEJQ2R2M50	
E	C 352	(A,139,95)	CEJQ2R2M50	
	C 353	(A,130,101)	CEJQ2R2M50	IC 1801 (B,28,110) IC
	C 354	(A,138,102)	CEJQ2R2M50	IC 1802 (A,12,161) IC
	C 355	(A,123,101)	CEJQ2R2M50	D 1801 (B,18,63) Diode
	C 356	(A,145,101)	CEJQ2R2M50	D 1802 (B,18,67) Diode
	C 357	(B,163,132)	CKSRYB222K50	D 1803 (A,23,151) Diode
	C 358	(B,158,132)	CKSRYB222K50	D 1805 (A,39,84) LED
	C 401	(A,151,53)	CEJQ470M6R3	D 1806 (A,39,73) LED
	C 402	(B,153,52)	CKSRYB103K50	D 1807 (A,32,9) LED
F	C 403	(B,148,35)	CKSRYB103K50	D 1808 (A,11,9) LED
	C 405	(A,152,90)	CEJQ101M10	D 1809 (A,20,19) LED
	C 406	(B,166,94)	CKSRYB104K25	D 1810 (A,11,23) LED
	C 407	(B,163,68)	CKSRYB103K50	D 1811 (A,39,95) LED
	C 408	(A,146,29)	CEJQ220M10	D 1812 (A,39,105) LED
	C 410	(B,140,41)	CKSRYB474K10	D 1813 (A,39,116) LED
	C 411	(B,166,92)	CCSRCH470J50	D 1814 (A,5,155) LED
	C 412	(B,160,40)	CKSRYB105K10	D 1815 (A,5,148) LED
	C 451	(A,119,123)	CEJQ330M10	D 1818 (A,38,41) LED
G	C 601	(B,73,44)	CCSRCH180J50	D 1819 (A,25,27) LED
	C 602	(B,77,44)	CCSRCH180J50	D 1820 (A,25,55) LED
	C 604	(B,93,44)	CKSRYB105K10	D 1821 (A,12,41) LED
	C 605	(A,100,43)	CEJQ100M16	D 1822 (A,39,148) LED
			D 1823 (A,39,137) LED	SML-310PT

B

Unit Number :
Unit Name : Keyboard Unit

MISCELLANEOUS

IC 1801 (B,28,110) IC	PD6538A
IC 1802 (A,12,161) IC	GP1UX51RK
D 1801 (B,18,63) Diode	DAN202U
D 1802 (B,18,67) Diode	DAP202U
D 1803 (A,23,151) Diode	NESW505C-5273
D 1805 (A,39,84) LED	SML-310PT
D 1806 (A,39,73) LED	SML-310PT
D 1807 (A,32,9) LED	SML-310PT
D 1808 (A,11,9) LED	SML-310PT
D 1809 (A,20,19) LED	SML-310PT
D 1810 (A,11,23) LED	SML-310PT
D 1811 (A,39,95) LED	SML-310PT
D 1812 (A,39,105) LED	SML-310PT
D 1813 (A,39,116) LED	SML-310PT
D 1814 (A,5,155) LED	SML-310PT
D 1815 (A,5,148) LED	SML-310PT
D 1818 (A,38,41) LED	CL-197HB1-D(CDE)
D 1819 (A,25,27) LED	CL-197HB1-D(CDE)
D 1820 (A,25,55) LED	CL-197HB1-D(CDE)
D 1821 (A,12,41) LED	CL-197HB1-D(CDE)
D 1822 (A,39,148) LED	SML-310PT
D 1823 (A,39,137) LED	SML-310PT

<u>Circuit Symbol and No.</u>	<u>Part No.</u>	<u>Circuit Symbol and No.</u>	<u>Part No.</u>
D 1824 (A,39,126) LED	SML-310PT	R 206 (B,26,53)	RS1/16SS104J
X 1801 (B,36,122) Ceramic Resonator 5.00 MHz	CSS1547	R 210 (B,13,32)	RS1/16SS102J
S 1827 (A,25,41) Switch(SOURCE VOLUME)	YSD5013	R 214 (B,36,34)	RS1/16SS472J
LCD1801 (A,13,63) LCD	YAW5080	R 216 (B,47,49)	RS1/16SS472J
		R 221 (B,36,32)	RS1/16SS103J

RESISTORS

R 1801 (B,24,63)	RS1/16S222J	R 222 (B,35,32)	RS1/16SS103J
R 1802 (B,23,63)	RS1/16S222J	R 225 (A,49,49)	RS1/16SS103J
R 1803 (B,28,145)	RS1/4SA561J	R 226 (A,49,50)	RS1/16SS393J
R 1804 (B,37,80)	RS1/4SA471J	R 227 (B,45,51)	RS1/16SS562J
R 1805 (B,15,23)	RS1/4SA471J	R 228 (B,42,53)	RS1/16SS122J
R 1806 (B,37,92)	RS1/4SA471J	R 229 (B,44,53)	RS1/16SS472J
R 1807 (B,6,151)	RS1/4SA681J	R 230 (B,21,28)	RS1/16SS0R0J
R 1809 (B,18,23)	RS1/4SA681J	R 232 (B,43,51)	RS1/16SS122J
R 1810 (B,20,26)	RS1/4SA681J	R 233 (B,29,52)	RS1/16SS103J
R 1811 (B,28,142)	RS1/4SA471J	R 234 (B,30,61)	RS1/16SS473J
R 1831 (B,29,28)	RS1/16S472J	R 235 (A,25,63)	RS1/16SS473J
R 1833 (B,24,145)	RS1/16S2R2J	R 239 (B,26,48)	RS1/16SS473J
R 1835 (B,15,148)	RS1/16S121J	R 240 (B,10,31)	RS1/16SS473J
		R 241 (B,9,32)	RS1/16SS103J
		R 243 (A,35,69)	RS1/16S0R0J

CAPACITORS

C 1801 (B,15,150)	CKSRYB474K10	R 244 (A,20,52)	RS1/16SS473J
C 1802 (B,29,136)	CKSRYF104Z25	R 255 (A,27,63)	RAB4CQ104J
C 1803 (B,28,136)	CKSRYF104Z25	R 307 (A,34,19)	RS1/16SS183J
C 1804 (B,26,136)	CKSRYF104Z25	R 308 (A,38,20)	RS1/16SS183J
C 1815 (A,35,31)	CKSRYF104Z25	R 309 (A,35,21)	RS1/16SS183J
C 1816 (A,25,26)	CKSRYF104Z25	R 310 (A,38,21)	RS1/16SS183J
C 1817 (A,25,56)	CKSRYF104Z25	R 601 (B,28,38)	RS1/16SS0R0J
C 1818 (A,13,53)	CKSRYF104Z25	R 602 (B,27,41)	RS1/16SS0R0J
		R 606 (B,23,41)	RS1/16SS0R0J
		R 701 (B,16,35)	RS1/16SS221J

C**Unit Number : CWX3350****Unit Name : CD Core****Unit(S10.5COMP2)****MISCELLANEOUS**

IC 201 (A,34,46) IC	PE5547A	C 106 (B,56,69)	CKSQYB475K6R3
IC 202 (A,32,67) IC	S-93C56BD0I-J8	C 201 (A,28,67)	CKSRYB104K16
IC 301 (A,27,14) IC	BA5839FP	C 202 (A,27,57)	CKSSYB104K10
Q 101 (B,56,72) Transistor	2SA1577	C 209 (B,33,40)	CEVW220M6R3
Q 102 (B,47,57) Transistor	2SB1689	C 210 (B,29,42)	CKSSYB104K10
X 201 (A,23,35) Ceramic Resonator 16.934 MHz	CSS1603	C 211 (A,27,34)	CKSSYB104K10
S 901 (A,53,37) Switch(HOME)	CSN1067	C 212 (B,29,32)	CKSRYB104K16
S 903 (B,19,58) Switch(DSCSNS)	CSN1067	C 213 (A,44,37)	CKSSYB104K10
S 904 (B,38,67) Switch(12EJ)	CSN1068	C 214 (A,28,33)	CKSSYB104K10
S 905 (B,24,68) Switch(8EJ)	CSN1068	C 216 (A,50,51)	CKSSYB332K50
		C 217 (A,46,51)	CKSSYB104K10

RESISTORS

R 101 (B,60,73)	RS1/10SR2R4J	C 218 (A,49,51)	CKSSYB473K10
R 102 (B,59,71)	RS1/10SR2R4J	C 219 (A,45,53)	CKSSYB104K10
R 103 (B,60,71)	RS1/10SR2R7J	C 220 (A,46,53)	CKSSYB182K50
R 104 (B,52,69)	RS1/16SS222J	C 221 (A,44,53)	CKSSYB104K10
R 105 (B,41,57)	RS1/16SS102J	C 222 (B,43,53)	CCSSCH560J50
R 107 (B,41,59)	RS1/16SS105J	C 223 (B,45,53)	CCSSCH4R0C50
R 201 (A,32,62)	RS1/16S472J	C 224 (A,43,55)	CKSSYB104K10
R 202 (B,32,62)	RS1/16SS473J	C 226 (A,40,58)	CCSSCH680J50
R 203 (B,42,45)	RS1/16S473J	C 227 (A,40,60)	CCSSCH470J50
R 204 (A,25,61)	RS1/16SS221J	C 228 (A,39,62)	CKSSYB103K16

Circuit Symbol and No.**Part No.**

A	C 229 C 236 C 239 C 240 C 250	(B,49,59) (A,42,61) (B,44,51) (A,35,61) (B,36,30)	CKSSYB104K10 CKSSYB104K10 CCSSCH220J50 CKSSYB104K10 CKSSYB102K50
	C 251 C 303 C 304 C 307 C 308	(B,33,29) (A,35,19) (A,34,21) (B,25,9) (B,10,27)	CKSSYB102K50 CKSSYB472K25 CKSSYB223K16 CKSRYB104K16 CKSRYB105K10
	C 703 C 704 C 711	(B,11,37) (B,8,36) (A,25,26)	CCSSCH101J50 CKSSYB102K50 CKSSYB104K10

B Miscellaneous Parts List

Pickup Unit(P10.5)(Service) CXX1942

M 1 Motor Unit(SPINDLE) CXC7134

M 2 Motor Unit(LOADING/CARRIAGE) CXC4026

C

D

E

F

6. ADJUSTMENT

6.1 CD ADJUSTMENT

1) Cautions on adjustments

- In this product the single voltage (3.3 V) is used for the regulator. The reference voltage is the REFO1 (1.65 V) 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 guaranteed 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 0 dB, and the auto-adjustment values are reset to the default settings.

A

B

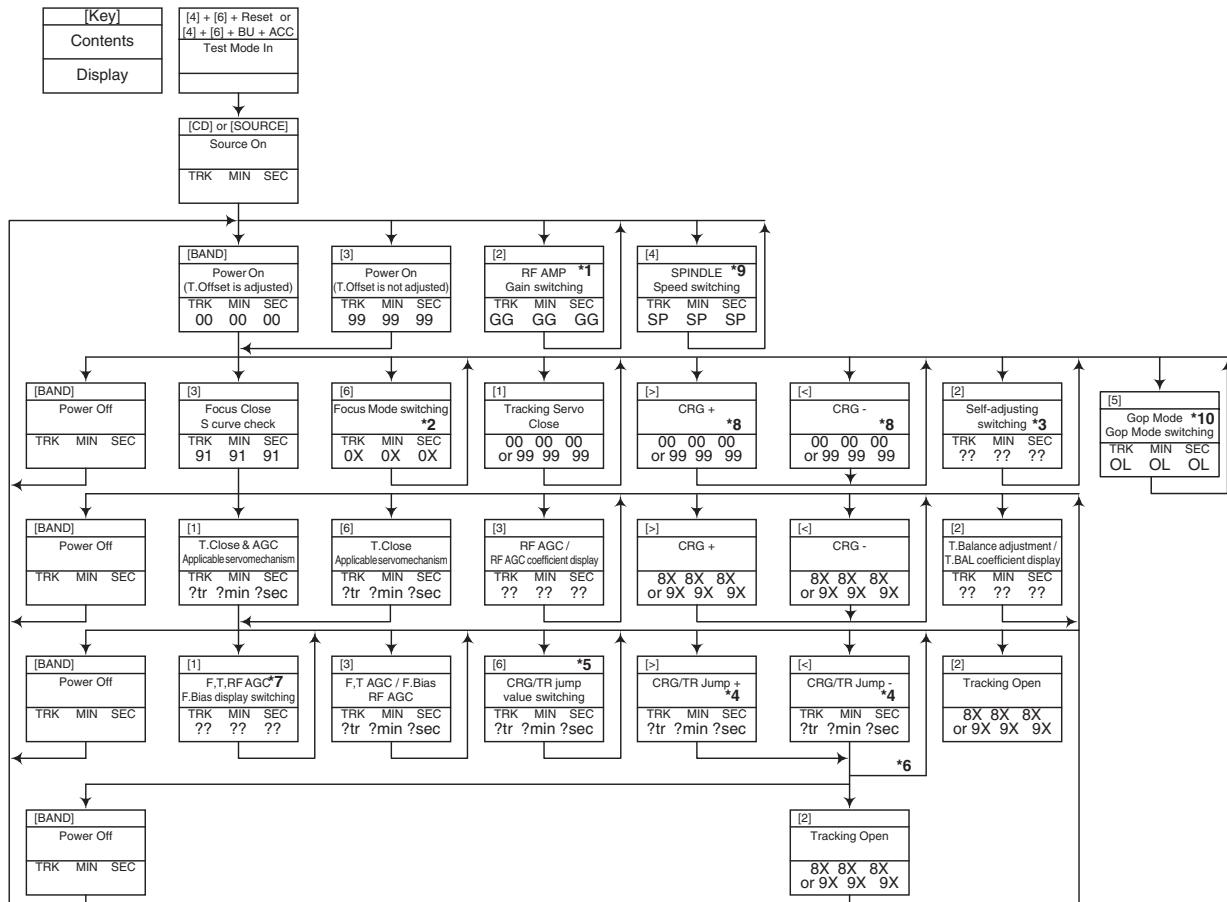
C

D

E

F

● Flow Chart



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

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

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

*4) 1TR/4TR/10TR/32TR/100TR
 *5) Single → 4TR → 10TR → 32TR → 100TR → CRG Move
 9x(8x):91(81) 92(82) 93(83) 94(84) 95(85) 96(86)

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

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

*8) CRG motor voltage = 2 [V]

*9) TYP (1X) → 2X → 1X
 TRK MIN SEC → TRK 22 MIN 22 SEC 22 → TRK 11 MIN 11 SEC 11

[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]	T. CLS & AGC & Applicable servomechanism / AGC,AGC display setting
[2]	RF Gain switching / Offset adjustment display / T.Balance adjustment / T. Open
[3]	F. 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 <u>cannot</u> be supported.
[5]	Error Rate measurement ON : ERR 30Counts Start BER display data[%]
[6]	F. Mode switching / Tracking Close / CRG•TR Jump Switching

*10) OFF(TYP) → FORCUS → TRACKING
 TRK MIN SEC → TRK 70 MIN 70 SEC 70 → TRK 71 MIN 71 SEC 71

- As for the double speed (2x), audio output cannot be supported

- * After the [Eject] key is pressed keys other than the [Eject] key should not be pressed, until disc ejection is complete.
- When the key [2] or [3] is pressed during the Focus Search, the power supply should be immediately turned off (otherwise the lens sticks to Wall, causing the actuator to be damaged).
- In the case of TR jump other than to 100TR, the function shall continue to be processed even if the TR jump key is released. As for the CRG Move and 100TR Jump, the mechanism shall be set to the Tracking Close mode when the key is released.
- When the power is turned on/off the jump mode is reset to the Single TR (91) while the gain of the RFAMP is reset to 0 dB. At the same time all the self-adjusting values shall return to the default setting.

6.2 CHECKING THE GRATING AFTER CHANGING THE PICKUP UNIT



A

• 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 :

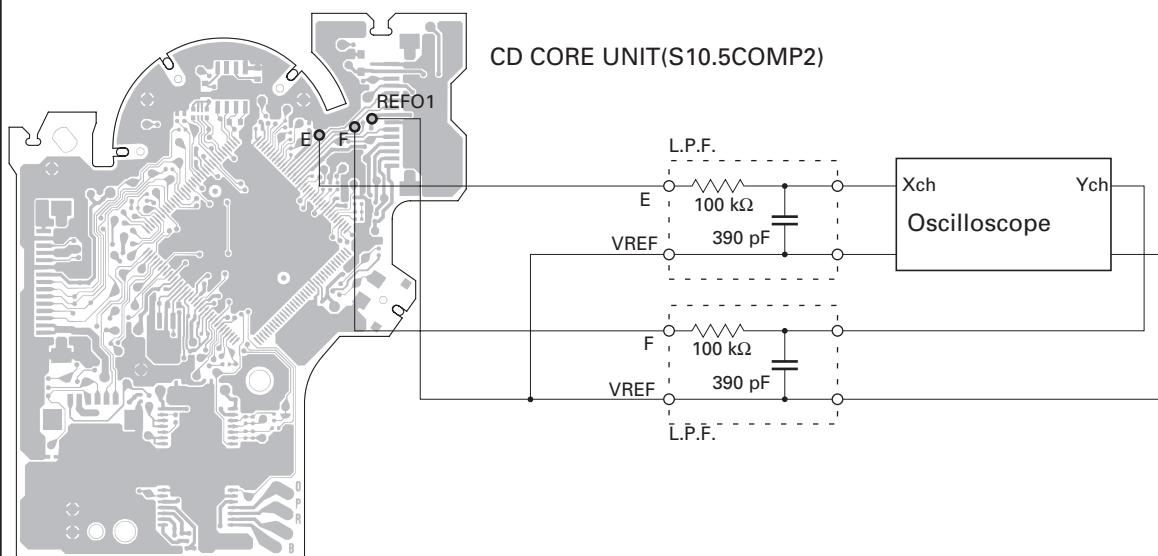
To check that the grating is within an acceptable range when the PU unit is changed.

• 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 | • TCD-782 |
| • Mode | • TEST MODE |



• Checking Procedure

1. In test mode, load the disc and switch the 3 V 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".

B

C

D

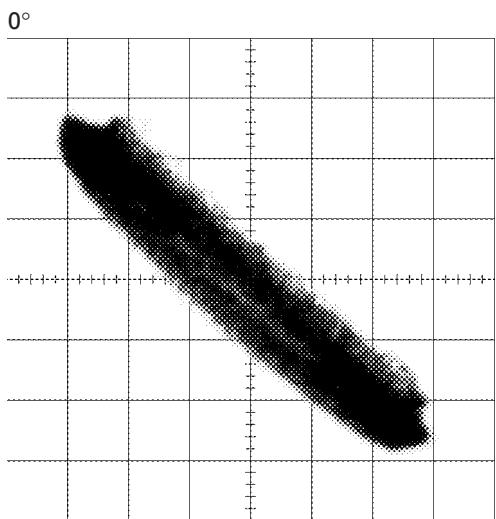
E

F

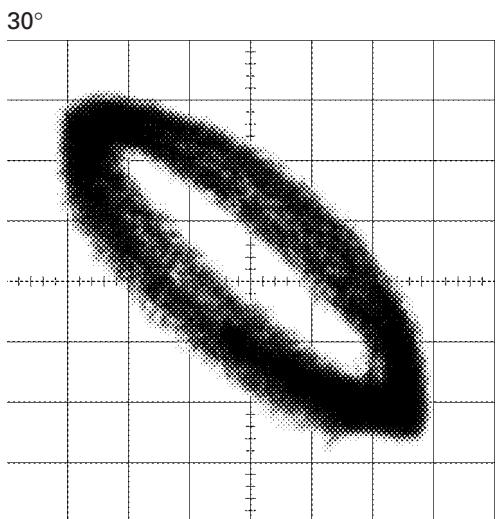
Grating waveform

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

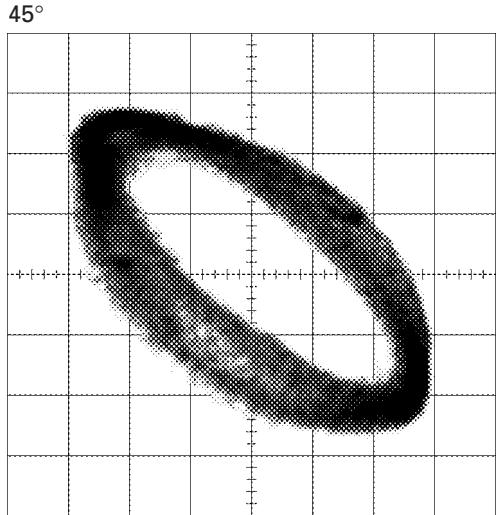
A



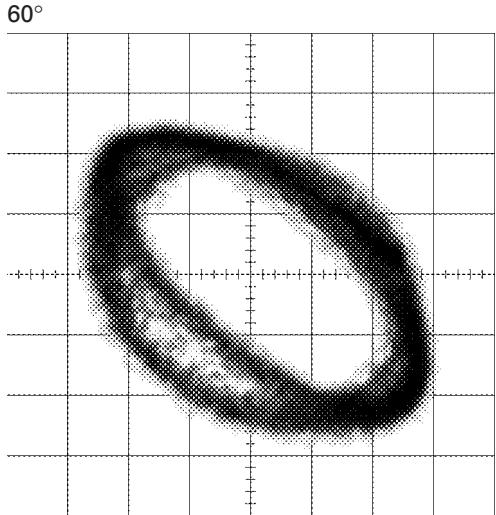
B



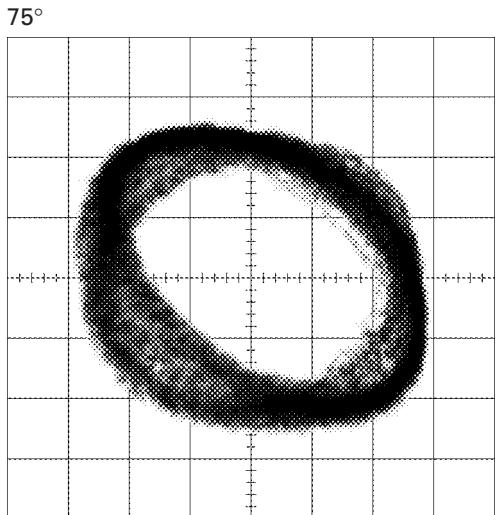
C



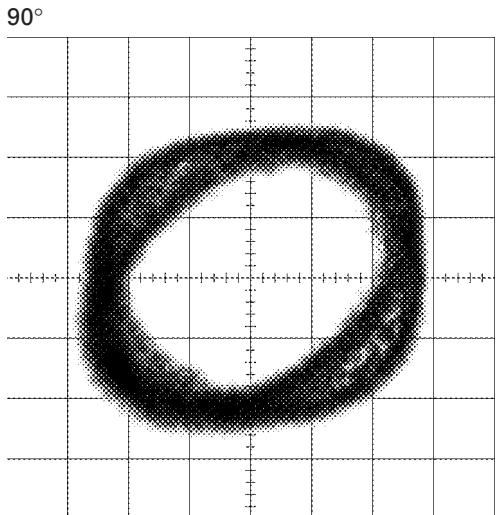
D



E



F



6.3 ERROR MODE

● Error Messages

If a CD is not operative or stopped during operation due to an error, the error mode is turned on and cause(s) of the error is indicated with a corresponding number. This arrangement is intended at reducing nonsense calls from the users and also for facilitating trouble analysis and repair work in servicing.

(1) Basic Indication Method

1) When SERRORM is selected for the CSMOD (CD mode area for the system), error codes are written to DMIN (minutes display area) and DSEC (seconds display area). The same data is written to DMIN and DSEC. DTNO remains in blank as before.

2) Head unit display examples

Depending on display capability of LCD used, display will vary as shown below. xx contains the error number.

8-digit display	6-digit display	4-digit display
ERROR-xx	ERR-xx	E-xx

(2) Error Code List

Code	Class	Displayed error code	Description of the code and potential cause(s)
10	Electricity	Carriage Home NG SERVO LSI Communication Error	CRG can't be moved to inner diameter. CRG can't be moved from inner diameter. → Failure on home switch or CRG move mechanism. Communication error between microcomputer and SERVO LSI.
11	Electricity	Focus Servo NG	Focusing not available. → Stains on rear side of disc or excessive vibrations on REWRITABLE.
12	Electricity	Spindle Lock NG Subcode NG	Spindle not locked. Sub-code is strange (not readable). → Failure on spindle, stains or damages on disc, or excessive vibrations. A disc not containing CD-R data is found. Turned over disc are found, though rarely. CD signal error.
17	Electricity	Setup NG	AGC protection doesn't work. Focus can be easily lost. → Damages or stains on disc, or excessive vibrations on REWRITABLE.
30	Electricity	Search Time Out	Failed to reach target address. → CRG tracking error or damages on disc.
44	Electricity	ALL Skip	Skip setting for all track. (CD-R/RW)
50	Mechanism	CD On Mech Error	Mechanical error during CD ON. → Defective loading motor, mechanical lock and mechanical sensor.
A0	System	Power Supply NG	Power (VD) is ground faulted. → Failure on SW transistor or power supply (failure on connector).

Remarks: Mechanical errors are not displayed (because a CD is turned off in these errors).

Unreadable TOC does not constitute an error. An intended operation continues in this case.

Upper digits of an error code are subdivided as shown below:

1x: Setup relevant errors, 3x: Search relevant errors, Ax: Other errors.

6.4 SYSTEM MICROCOMPUTER TEST PROGRAM



● PCL Output

In the normal operation mode (with the detachable panel installed, the ACC switched ON, the standby mode cancelled), shift the TESTIN IC601(Pin 88) terminal to H.

The clock signal is output from the PCL terminal IC601(Pin 39).

The frequency of the clock signal is 468 750 Hz that is one 32th of the fundamental frequency.

The clock signal should be 468 750 Hz(- 10 Hz, + 15 Hz).

If the clock signal is out of the range, the X'tal (X601) should be replaced with new one.

B

C

D

E

F

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 Detachable Assy (Fig.1)**

 2 Release the two latches and then remove the Detachable Assy.

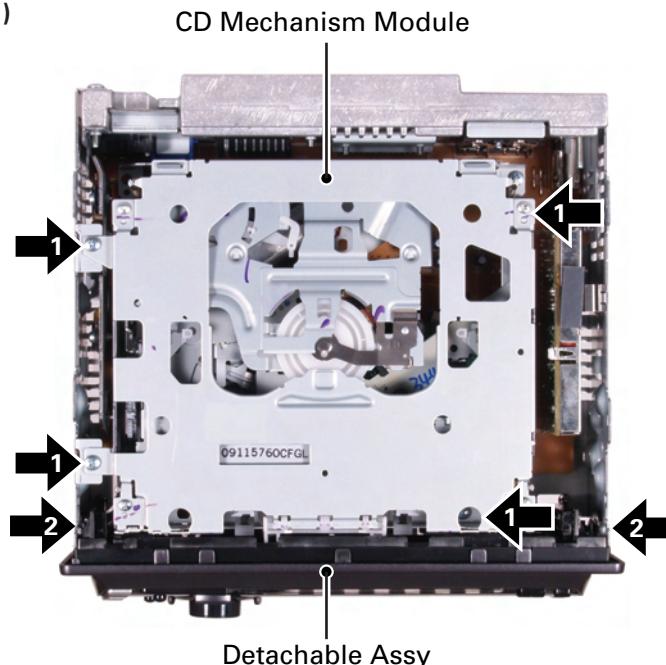


Fig.1

- **Removing the Tuner Amp Unit (Fig.2)**

 1 Remove the screw.

 2 Remove the three screws.

 3 Straighten the tabs at four locations indicated and then remove the Tuner Amp Unit.

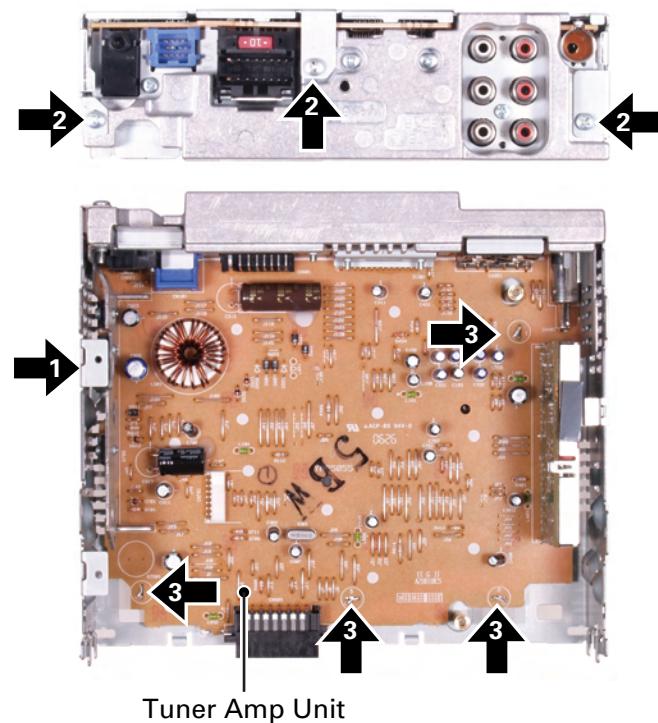
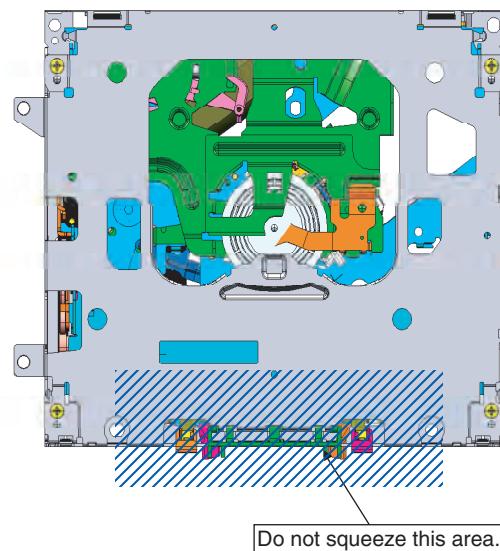


Fig.2

● How to hold the Mechanism Unit

1. Hold the Upper and Lower Frames.
2. Do not hold the front portion of the Upper Frame, because it is not very solid.

A



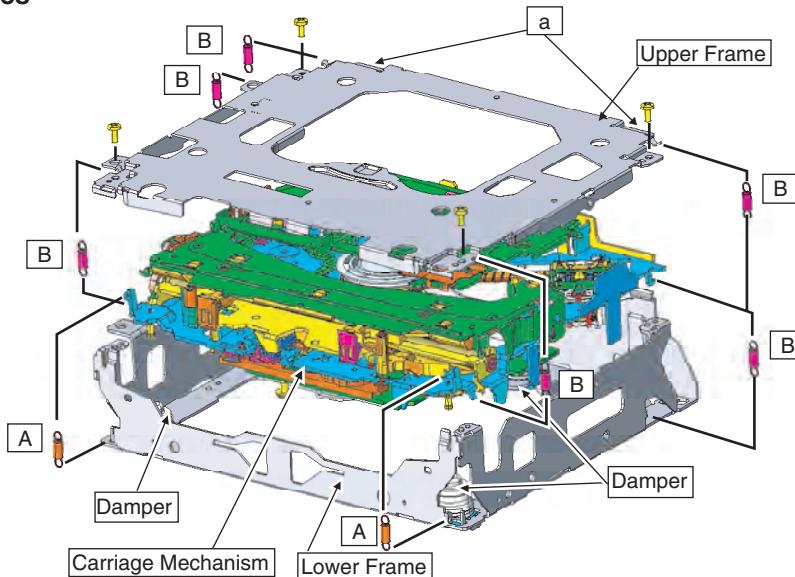
B

● Removing the Upper and Lower Frames

1. With a disc inserted and clamped in the mechanism, remove the two Springs (A), the six Springs (B), and the four Screws.
2. Turn the Upper Frame using the part "a" as a pivot, and remove the Upper Frame.
3. While lifting the Carriage Mechanism, remove it from the three Dampers.

Caution: When assembling, be sure to apply some alcohol to the Dampers and assemble the mechanism in a clamped state.

C



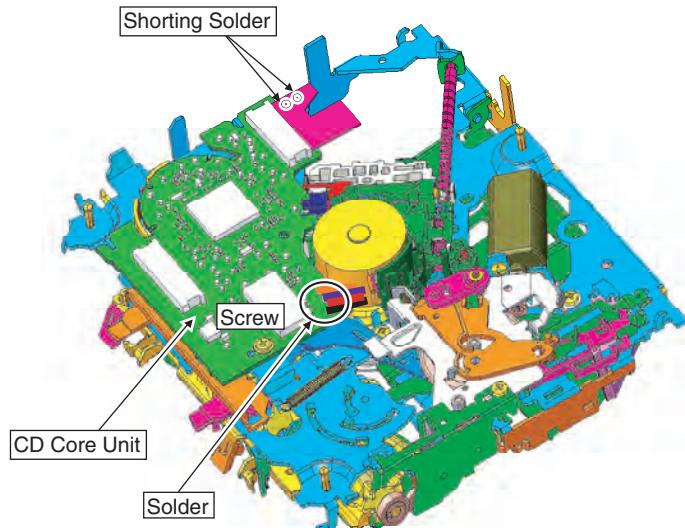
D

E

F

● How to remove the CD Core Unit

1. Apply Shorting Solder to the flexible cable of the Pickup, and disconnect it from the connector.
2. Unsolder the four leads, and loosen the Screw.
3. Remove the CD Core Unit.
Caution: When assembling the CD Core Unit, assemble it with the SW in a clamped state so as not to damage it.

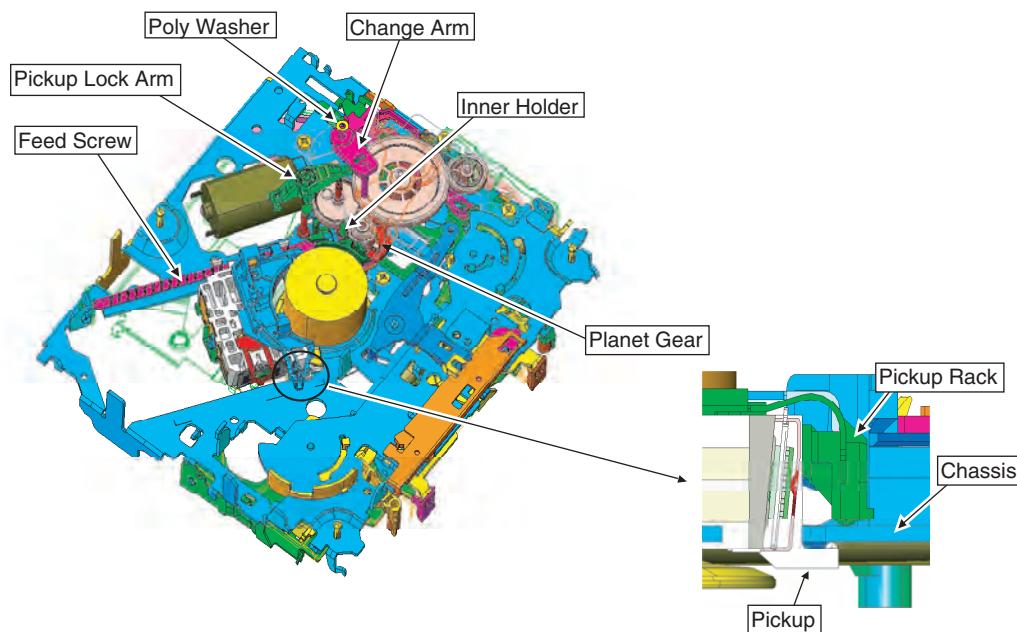


● How to remove the Pickup Unit

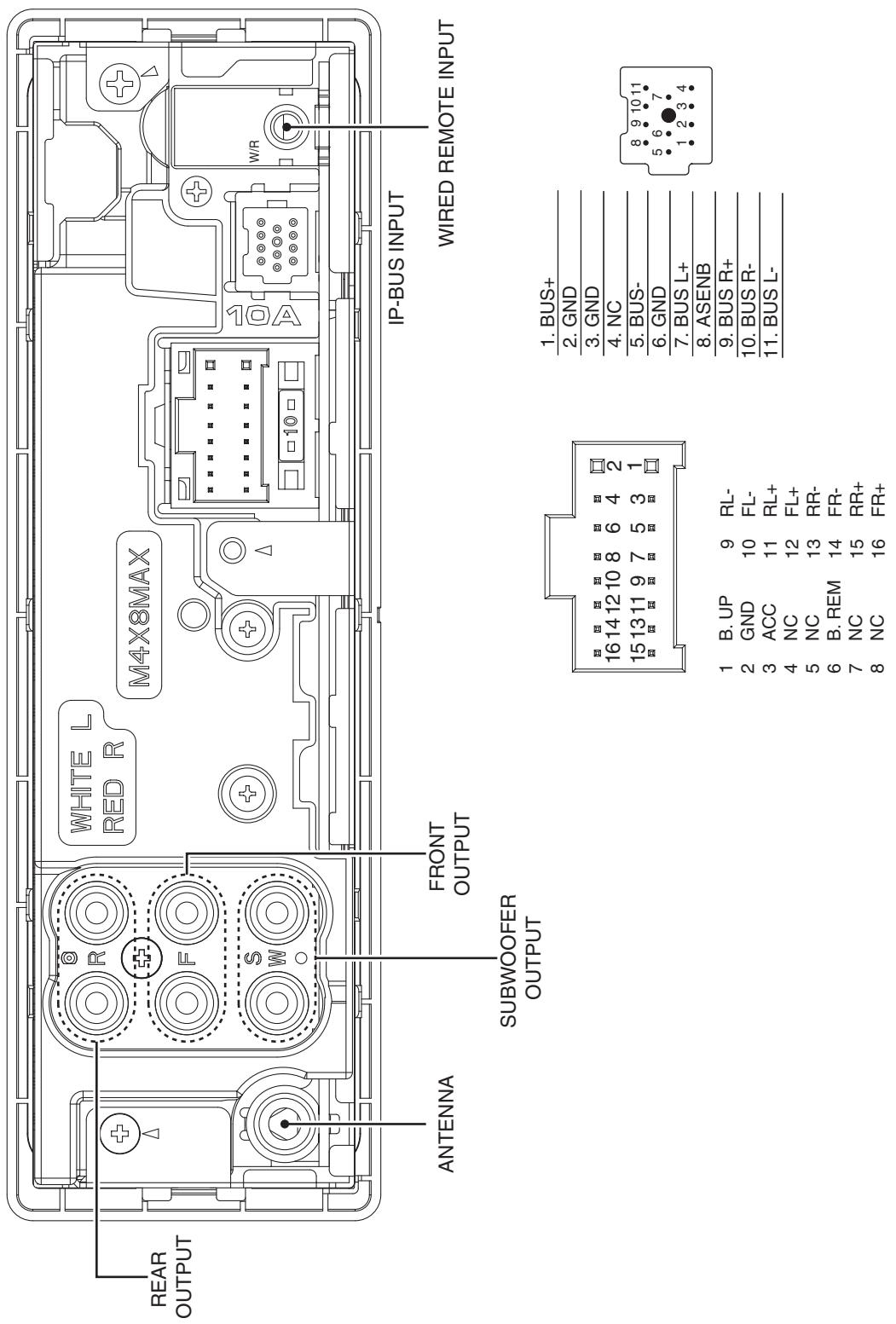
1. Make the system in the carriage mechanism mode, and have it clamped.
2. Remove the CD Core Unit and remove the leads from the Inner Holder.
3. Remove the Poly Washer, Change Arm, and Pickup Lock Arm.
4. While releasing from the hook of the Inner Holder, lift the end of the Feed Screw.

Caution: When assembling, move the Planet Gear to the load/eject position before setting the Feed Screw in the Inner Holder.

Assemble the sub unit side of the Pickup, taking the plate (Chassis) in-between. When treating the leads of the Load Carriage Motor Assy, do not make them loose over the Feed Screw.



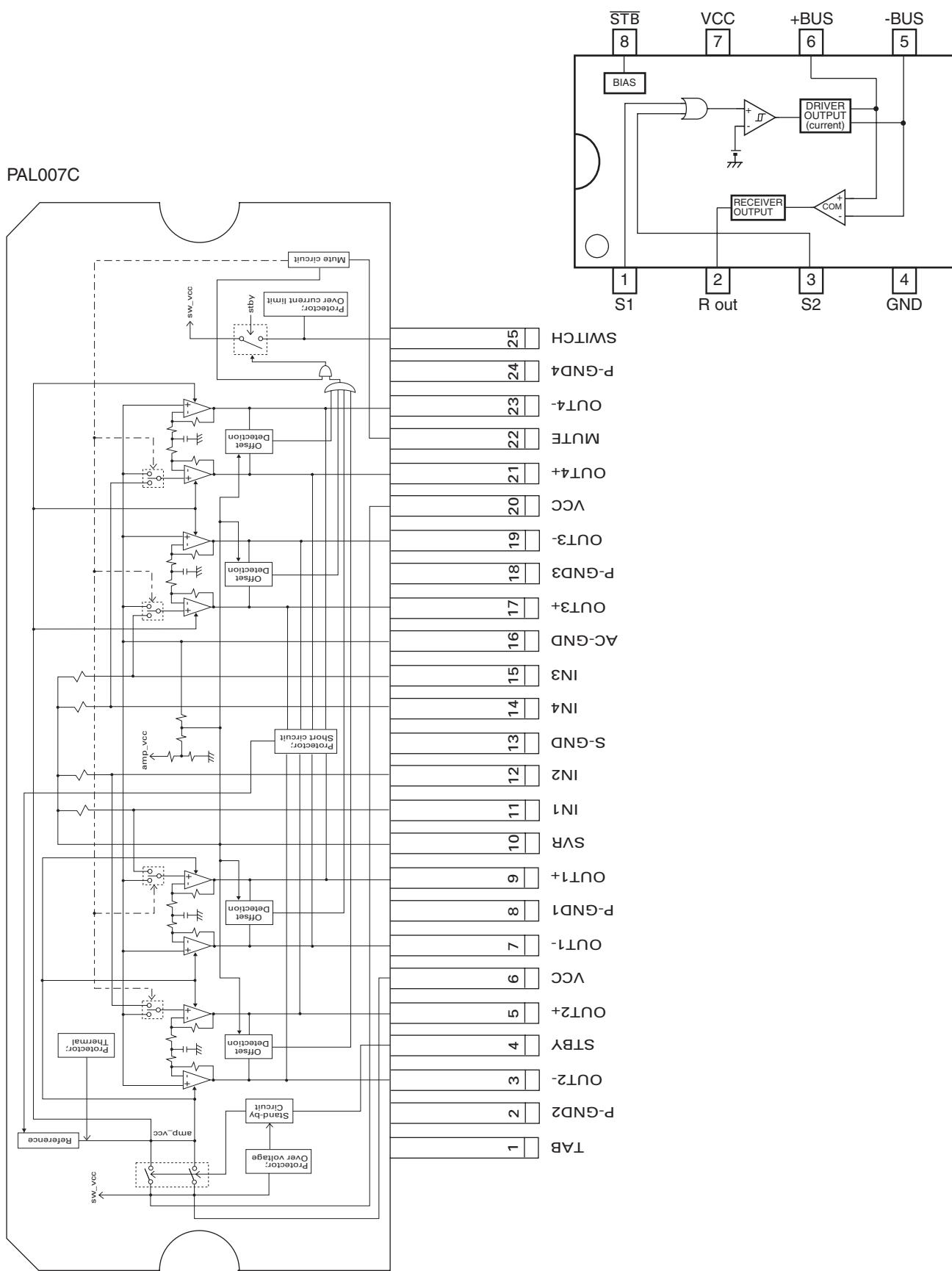
1 2 3 4
7.1.2 CONNECTOR FUNCTION DESCRIPTION



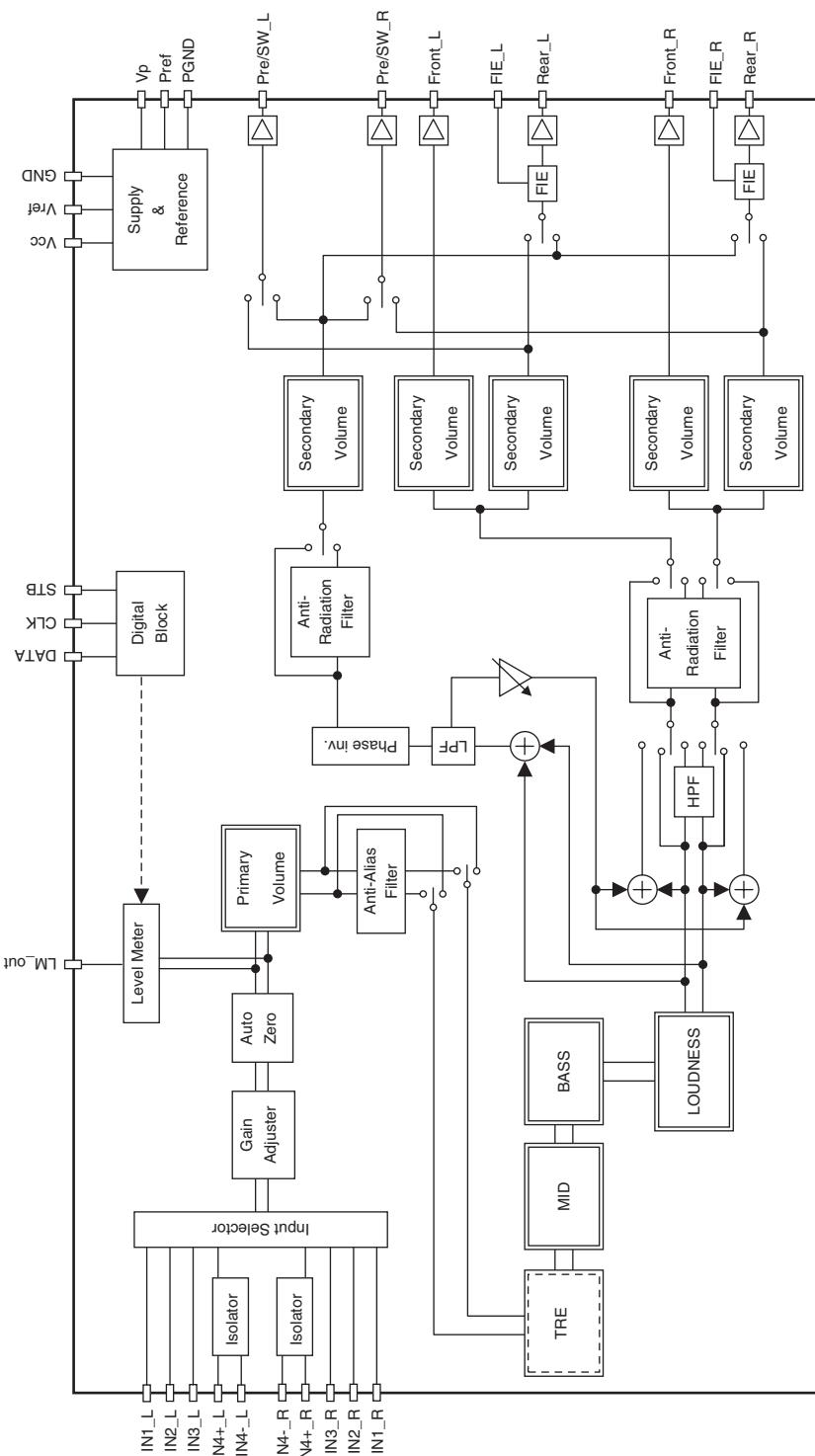
7.2 PARTS

7.2.1 IC

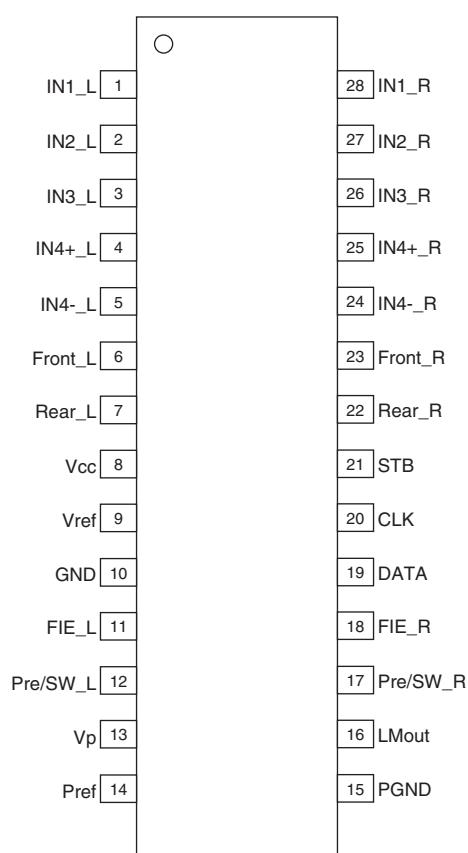
HA12241FP



PML015B
● Block Diagram



● Pin Layout



● Pin Functions (PEG286A)

Pin No.	Pin Name	I/O	Format	Function and Operation
1	ILMPW	O	C	Illumination power output
2	NC			Not used
3,4	ROT1,0	I		Rotary encoder pulse input 1, 0
5,6	NC			Not used
7	SWVDD	O	C	VDD for display microcomputer
8	BYTE	I		External data bus width change input
9	CNVSS	I		Processor mode change input
10,11	NC			Not used
12	RESET	I		Reset input
13	XOUT	O		Main clock output
14	VSS	I		GND
15	XIN	I		Main clock input
16	VCC	I		Power supply input(+)
17	NMI	I	C	NMI input
18	DSENS	I		Detach sense input
19	BSENS	I		Backup sense input
20	ASENS	I		ACC sense input
21	CD-RESET	O	C	CD mechanism RESET output
22	VDCONT	O	C	VD power supply output
23	BRST	O	C	P-BUS : Reset output
24	BRXEN	I/O	C	P-BUS : Reception enable input/output
25	BSRQ	I		P-BUS : Service request input
26	NC			Not used
27	RX2	I		IPBUS : Input 2
28	NC			Not used
29	RX	I		IPBUS : Input
30	TX	O	N	IPBUS : Output
31	BSO	O	C	PBUS : Output
32	BSI	I		PBUS : Input
33	BSCK	O	C	PBUS : Clock output
34	KEYD	I		Not used
35	DPDT	O	C	Display microcomputer communication data output
36	KYDT	I		Display microcomputer communication data input
37,38	NC			Not used
39	PCL	O	C	Output for clock adjustment
40	ASENBO	O	C	IPBUS : Slave ACC sense output
41-46	NC			Not used
47	DALMON	O	C	For consumption current reduction output
48	SYSPW	O	C	System power control output
49-51	NC			Not used
52	IPPW	O	C	IPBUS : Driver power supply control output
53	MUTE	O	C	System mute output
54	VST	O	C	E.VOL strobe output
55	VCK	O	C	E.VOL clock output
56	VDT	O	C	E.VOL data output
57	NC			Not used
58	ROMDATA	I/O	C	ROM correction data input/output
59	ROMCK	O	C	ROM correction clock output
60	ROMCS	O	C	ROM correction chip select output
61	NC			Not used
62	VCC	I		Power supply input(+)
63	NC			Not used
64	VSS	I		GND
65	CE2	O	C	TUNER : Chip enable output(EEPROM)
66	CE1	O	C	TUNER : Chip enable output(PLL)

A

B

C

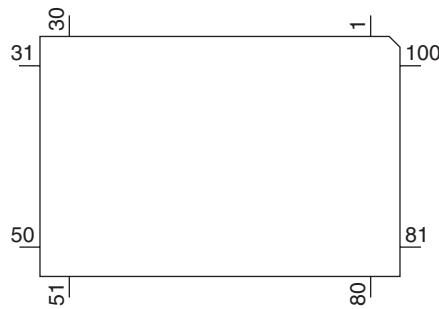
D

E

F

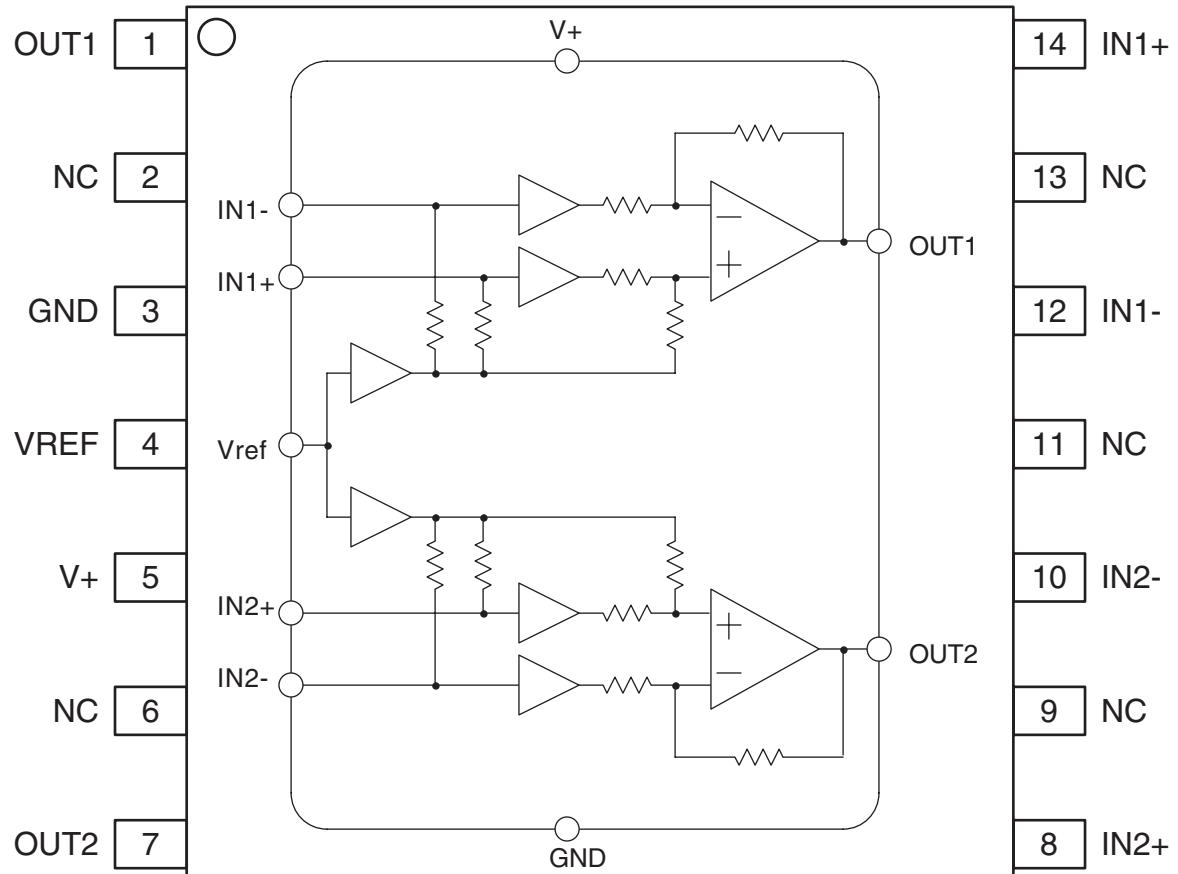
Pin No.	Pin Name	I/O	Format	Function and Operation
67	TUNPCK	O	C	TUNER : Clock output(PLL)
68	TUNPDI	I		TUNER : Data input(PLL)
69-85	NC			Not used
86	TUNPDO	O	C	TUNER : Data output(PLL)
87	NC			Not used
88	TESTIN	I		Test program input
89-91	NC			Not used
92	SSENS			Source key
93	NC			Not used
94	KEYAD	I		Not used
95	MODEL	I		Model select input
96	AVSS	I		A/D converter GND(Connected to VSS)
97	SL			Signal level input(Field intensity)
98	VREF	I		A/D converter reference voltage input
99	AVCC	I		A/D converter power supply input terminal(Connected to VCC)
100	NC			Not used

PEG286A



Format	Meaning
C	CMOS
N	Nch open drain

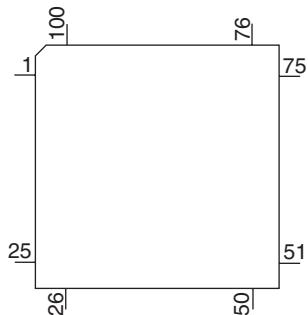
NJM2794V



● Pin Functions (PD6538A)

Pin No.	Pin Name	I/O	Format	Function and Operation
1-39	SEG38-0	O		LCD segment output
40-43	COM3-0	O		LCD common output
44-46	V1-3	O		LCD drive power supply
47	VCC	O		Power supply
48	NC			Not used
49	TXD	O	C	Communication data output
50	RXD	I	C	Communication data input
51,52	MOD0,1			Not used
53	RESET			Reset
54,55	X0,1			Crystal oscillator connection pin
56	VSS			Not used
57	REM	I	C	Remote control input
58,59	NC			Not used
60-63	KDT4-1	O	C	Key data 4-1 output
64-69	KST6-1	O	N	Key strobe 6-1 output
70-100	SEG69-39	O		LCD segment output

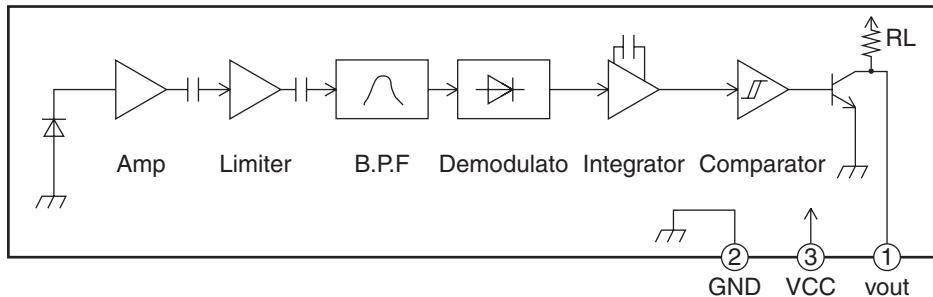
PD6538A



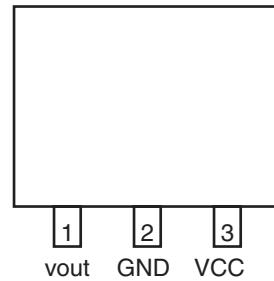
Format	Meaning
C	CMOS
N	Nch open drain

GP1UX51RK

● Block Diagram



● Pin Layout



● Pin Functions (PE5547A)

	Pin No.	Pin Name	I/O	Format	Function and Operation
A	1	ROMDATA	I/O	/C	E2PROM : Data input/output
	2	ROMCK	O	C	E2PROM : Clock output
	3	ROMCS	O	C	E2PROM : Chip select output
	4	NC			Not used
	5	LOEJ	O	C	LOAD/EJECT direction switching output
	6	DSCSNS	I		Disc sense input
	7	8SNS	I		8 cm disc detection input
	8	12SNS	I		12 cm disc detection input
	9	HOME	I		HOME SW sense input
	10	TEMP			Temperature information sense input
	11	VDSENS			VD power supply short circuit/earth fault sense input
B	12	ADENA	O	C	A/D reference voltage supply control output
	13	ADC.VDD			Power supply for A/D converter
	14	ADC.GND			Ground for A/D converter
	15	FLMD0	I		Flash writing control terminal
	16	RESET	I		Internal microcomputer reset terminal
	17	PULLDOWN	O	C	Pull-down
	18	NC			Not used
	19	TESTIN	I		Chip check, test program start-up input
	20	NC			Not used
	21	BSI	I	N	P-BUS : Serial data input
	22	BSO	O	N	P-BUS : Serial data output
C	23	BSCK	I/O	N	P-BUS : Serial clock input/output
	24	FTxD	O	N	Tx for flash rewriting
	25	FRxD	I		Rx for flash rewriting
	26	BRXEN	I/O	/C	P-BUS : Reception enable input/output
	27	BSRQ	I/O	/C	P-BUS : Service request input
	28	NC			Not used
	29	FMODE	I		Flash self-rewriting mode start-up input
	30	FLRQ	O	C	Flash self-rewriting reset voltage control
	31	ROM	I		Open(EMPH)
	32-36	NC			Not used
D	37	MCKRQ	O	N	CLOCK request
	38	LRCKOK	O	N	LRCK reference enable
	39	PUEN	O	C	Pickup hologram power supply control output
	40	CD3VON	O	C	CD + 3.3 V power supply control output
	41	CONT	O	C	Servo driver power supply control output
	42	VDCONT	O	C	VD power supply control output
	43	CLCONT	O	C	CRG/LOAD-EJECT switching control output
	44	CDMUTE	O	C	CD mute control output
	45	TEST	I		Test terminal
	46	BRST	I		P-BUS : Communication reset input
E	47	REGS			Capacitor connection for standby
	48	C.VDD			Power supply for internal microcomputer
	49	C.GND			Ground for internal microcomputer
	50	XTAL	I		Connected to the crystal oscillator
	51	X.GND			Ground for the crystal oscillator
	52	XTAL	O		Connected to the crystal oscillator
	53	X.VDD			Power supply for the crystal oscillator
	54	DA.VDD			Power supply for DAC
	55	LOUT	O		Output of audio for the left channel
	56	DA.GND			Ground for DAC
	57	REGC			Connected to the capacitor for band gap
F	58	DA.GND			Ground for DAC
	59	ROUT	O		Output of audio for the right channel

Pin No.	Pin Name	I/O	Format	Function and Operation
60	DA.VDD			Power supply for DAC
61	D.GND			Ground for digital circuits
62	D.VDD			Power supply for digital circuits
63	REG16			Capacitor connection for 1.6 V regulator
64	LRCK	O	C	3-wire audio LR clock output
65	SCKO	O	C	3-wire audio serial I/F clock output
66	DOUT	O	C	3-wire audio serial I/F data output
67-69	SVMON0-2	I/O	/C	Servo monitor input/output 0-2
70	SVMON3	I/O	/C	Servo monitor input/output 3(Ext MCK IN)
71	C33M	O	C	DRAM CLOCK
72	(RCS)	O	C	DRAM CS
73	(CKE)	O	C	DRAM CKE output
74	RAS	O	C	Output of DRAM RAS
75	CAS0(LDQM)	O	C	DRAM Lower CAS(LDQM) output
76	CAS1(UDQM)	O	C	DRAM Upper CAS(UDQM) output
77	WE	O	C	Output of DRAM WE
78	OE(CAS)	O	C	DRAM OE(CAS) output
79-94	RDB0-15	I/O	/C	Input/output of DRAM data 0-15
95	IO.GND			Ground for I/O terminal
96	IO.VDD			Power supply for I/O terminal
97-108	RA0-11	O	C	Output of DRAM address 0-11
109	FD	O	C	Output of focus drive PWM
110	TD	O	C	Output of tracking drive PWM
111	SD	O	C	Output of thread drive PWM
112	MD	O	C	Output of spindle drive PWM
113	EFM	O		Output of EFM signals
114	ASY	I		Asymmetry input
115	ATEST	O		Analog tests
116	A.VDD			Power supply for the analog system
117	A.GND			Ground for the analog system
118	RFI	I		Input of RF
119	AGCO	O		Output of RF
120	C3T			Connection to the capacitor for detecting 3T
121	AGCI	I		Input of AGC
122	RFO	O		Output of RF(AGC)
123,124	EQ2,1	I		Equalizer 2, 1
125	RF2-	I		Reversal input of RF2
126	RF-	I		Reversal input of RF
127	A.GND			Ground for the analog system
128	A.VDD			Power supply for the analog system
129	A	I		Input of A
130	B	I		Input of B
131	F	I		Input of F
132	E	I		Input of E
133	REFOUT	O		Output of reference voltage
134	FE-	I		Reversal input of FE
135	FEO	O		Output of FE
136	ADCIN	I		FE,TE A/D converter input
137	TE-	I		Reversal input of TE
138	TEO	O		Output of TE
139	TE2	O		TE2
140	TEC	I		TEC
141	LD	O		Output of LD
142	PD	I		Input of PD
143	AD.VDD			Power supply for servo ADC
144	AD.GND			Ground for servo ADC

A

B

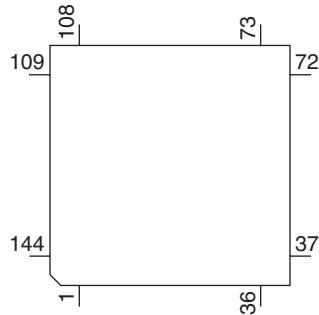
C

D

E

F

PE5547A

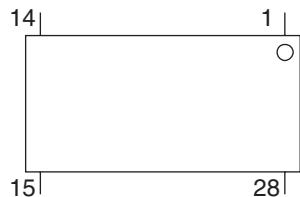


Format	Meaning
C	CMOS
N	Nch open drain

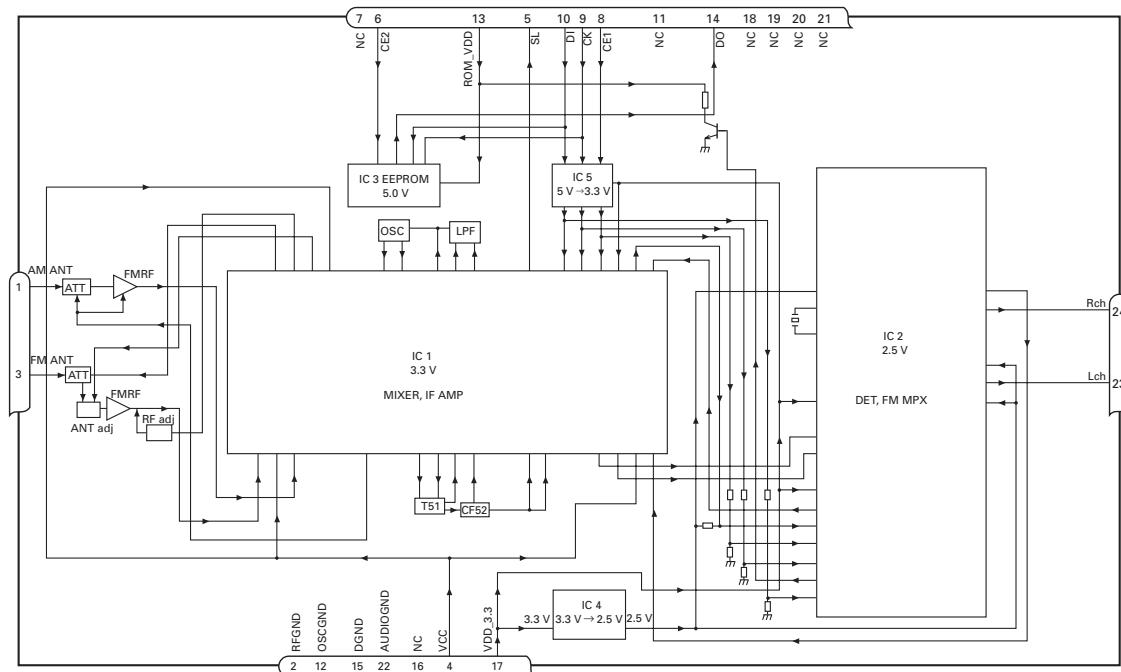
● Pin Functions(BA5839FP)

Pin No.	Pin Name	Function and Operation
1	VR	Input pin for reference voltage
2	OPIN2(+)	Input pin for non-inverting input for CH2 preamplifier
3	OPIN2(-)	Input pin for inverting input for CH2 preamplifier
4	OPOUT2	Output pin for CH2 preamplifier
5	OPIN1(+)	Input pin for non-inverting input for CH1 preamplifier
6	OPIN1(-)	Input pin for inverting input from CH1 preamplifier
7	OPOUT1	Output pin for CH1 preamplifier
8	GND	Ground pin
9	MUTE	Mute control pin
10	POWVCC1	Power supply pin for CH1, CH2, and CH3 at "Power" stage
11	VO1(-)	Driver CH1 - Negative output
12	VO1(+)	Driver CH2 - Positive output
13	VO2(-)	Driver CH2 - Negative output
14	VO2(+)	Driver CH2 - Positive output
15	VO3(+)	Driver CH2 - Positive output
16	VO3(-)	Driver CH2 - Negative output
17	VO4(+)	Driver CH4 - Positive output
18	VO4(-)	Driver CH4 - Negative output
19	POWVCC2	Power supply pin for CH4 at "Power" stage
20	GND	Ground pin
21	CNT	Control pin
22	LDIN	Loading input
23	OPOUTSL	Output pin for preamplifier for thread
24	OPINSL	Input pin for preamplifier for thread
25	OPOUT3	CH3 preamplifier output pin
26	OPIN3(-)	Input pin for inverting input for CH3 preamplifier
27	OPIN3(+)	Input pin for non-inverting input for CH3 preamplifier
28	PREVCC	PreVcc

BA5839FP

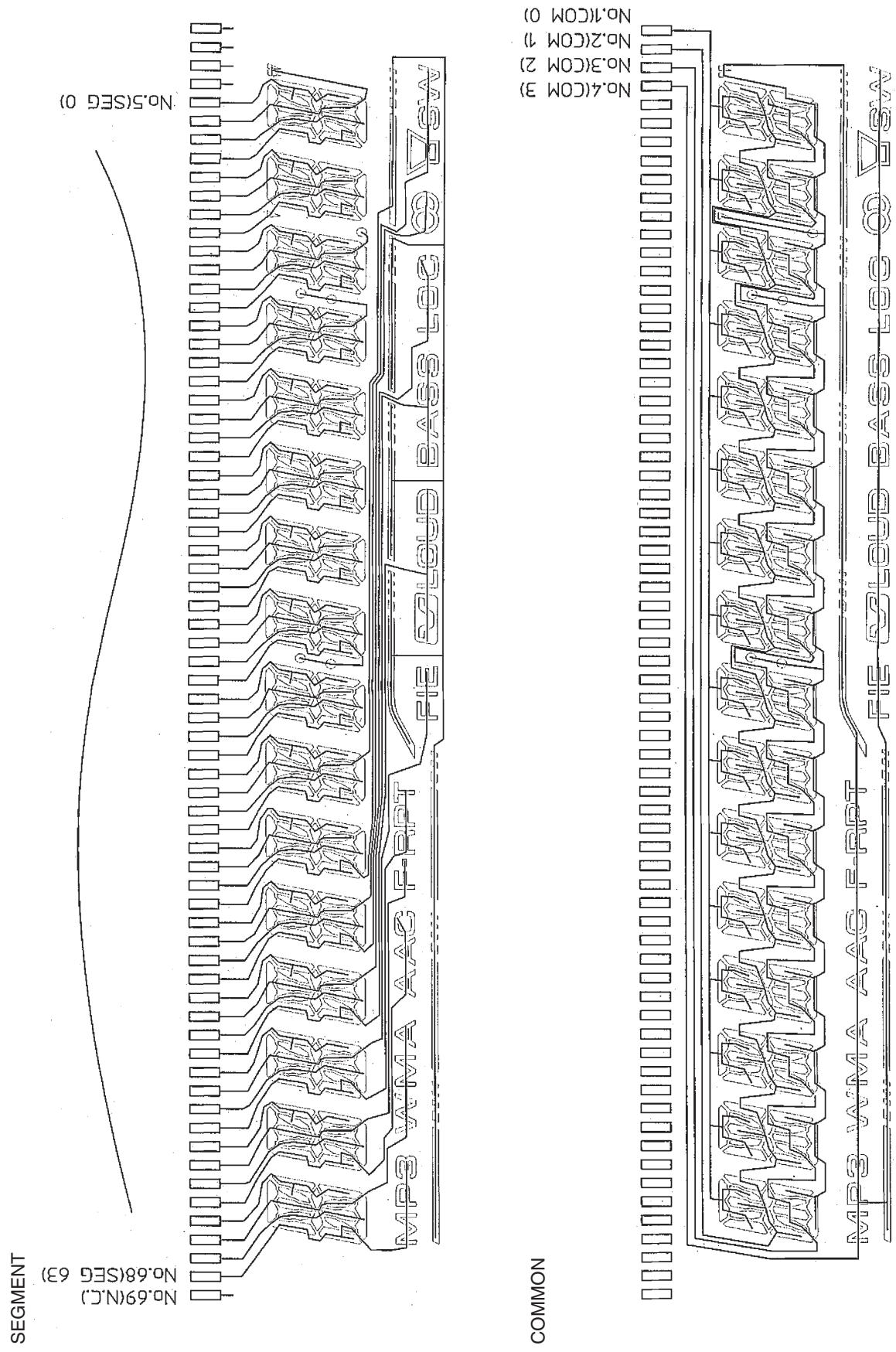


● FM/AM Tuner Unit

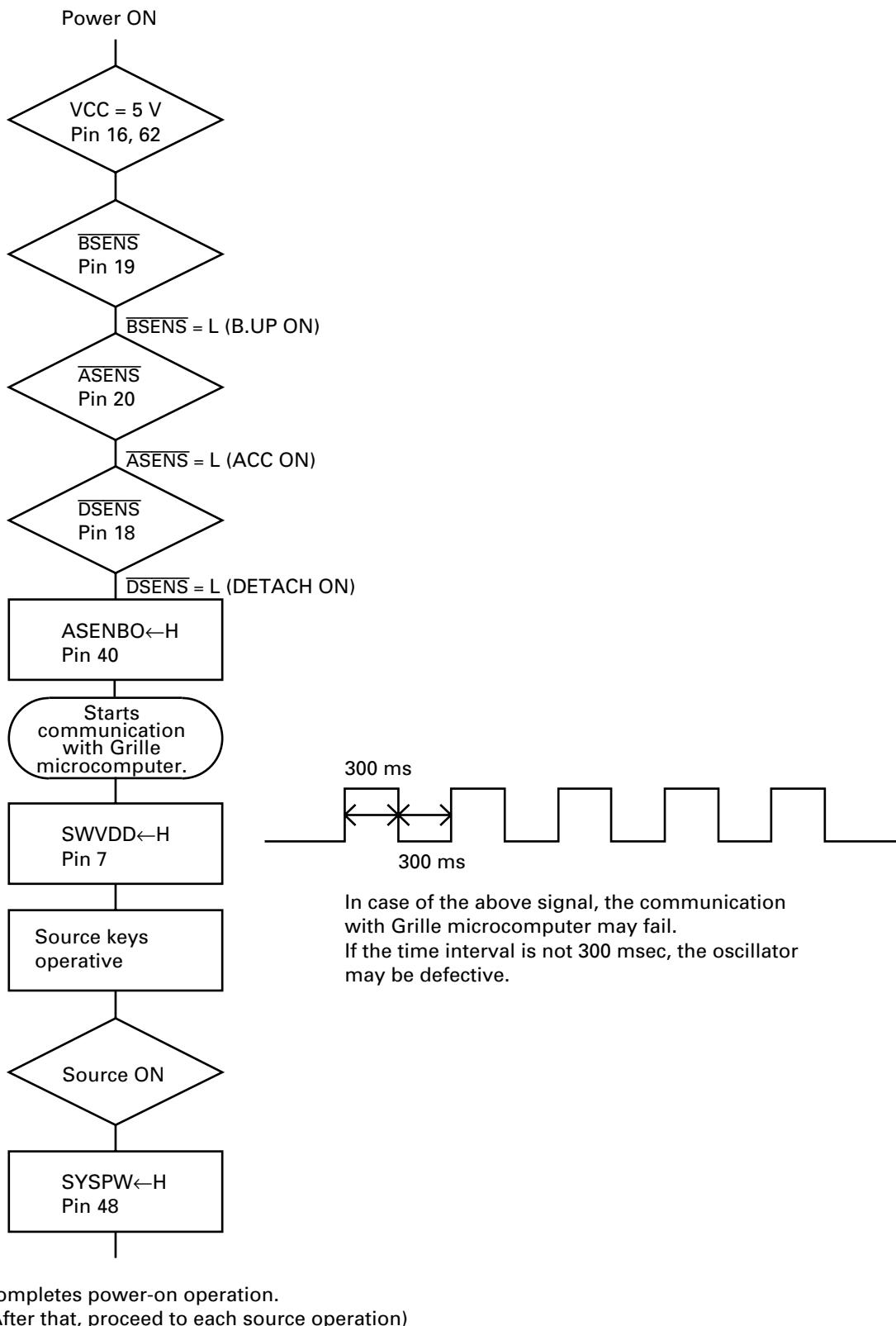


No.	Symbol	I/O	Explain
1	AMANT	I	AM antenna input high impedance AMANT pin is connected with an all antenna by way of 4.7 μ H. (LAU type inductor)A series circuit including an inductor and a resistor is connected with RF ground for the countermeasure against the hum of power transmission line.
2	RFGND		RF ground
3	FMANT	I	FM antenna input Input of FM antenna 75 Ω Surge absorber(DSP-201M-S00B)is necessary.
4	VCC		power supply The power supply for analog block. D.C 8.4 V \pm 0.3 V
5	SL	O	signal level Output of FM/AM signals level
6	CE2	I	chip enable-2 Chip enable for EEPROM "Low" active
7	NC		non connection Not used
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	NC		non connection Not used
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. 3.3 V \pm 0.2 V
18	NC		non connection Not used
19	NC		non connection Not used
20	NC		non connection Not used
21	NC		non connection Not used
22	AUDIOPND		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

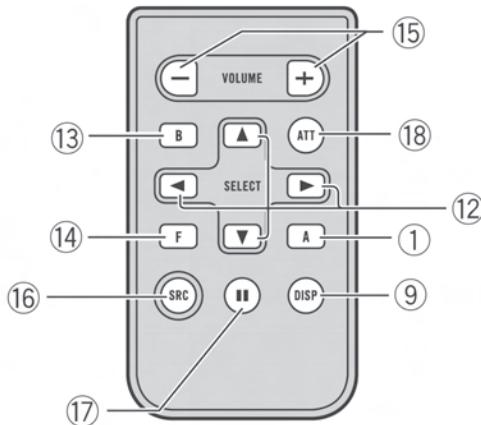
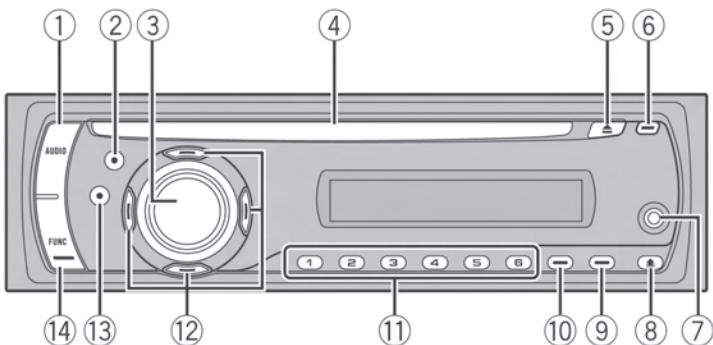
● LCD(YAW5080)



7.3 OPERATIONAL FLOW CHART



8. OPERATIONS



Head unit

① AUDIO button

Press to select various sound quality controls.

② EQ button

Press to select various equalizer curves.

③ SOURCE button, VOLUME

This unit is turned on by selecting a source.

Press to cycle through all the available sources.

Rotate it to increase or decrease the volume.

④ Disc loading slot

Insert a disc to play.

⑤ EJECT button

Press to eject a CD from your built-in CD player.

⑥ CLOCK button

Press to change to the clock display. Press and hold to change the channel select mode when XM tuner or SIRIUS tuner is selected as the source.

⑦ AUX1 input jack (3.5 mm stereo jack)

Use to connect an auxiliary equipment.

⑧ DETACH button

Press to remove the front panel from the head unit.

⑨ DISPLAY button

Press to select different displays.

⑩ SW button

Press to select the subwoofer setting menu.

Press and hold to select the bass boost setting menu.

⑪ 1 to 6 buttons

Press for preset tuning and disc number search when using a multi-CD player.

⑫ ▲/▼/◀/▶ buttons

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

⑬ BAND button

Press to select among three FM bands and one AM band and to cancel the control mode of functions.

⑭ FUNCTION button

Press to select functions.

Remote control

Operation is the same as when using the buttons on the head unit. See the explanation of the head unit about the operation of each button with the exception of **ATT** and **PAUSE**, which is explained below.

A

⑯ **VOLUME button**

Press to increase or decrease the volume.

B

⑯ **SOURCE button**

This unit is turned on by selecting a source.

Press to cycle through all the available sources.

C

⑯ **PAUSE button**

Press to turn pause on or off.

D

⑯ **ATT button**

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

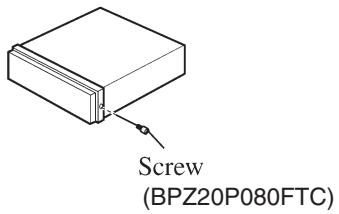
E

F

Fastening the front panel

A

If you do not plan to detach the front panel, the front panel can be fastened with supplied screw.



B

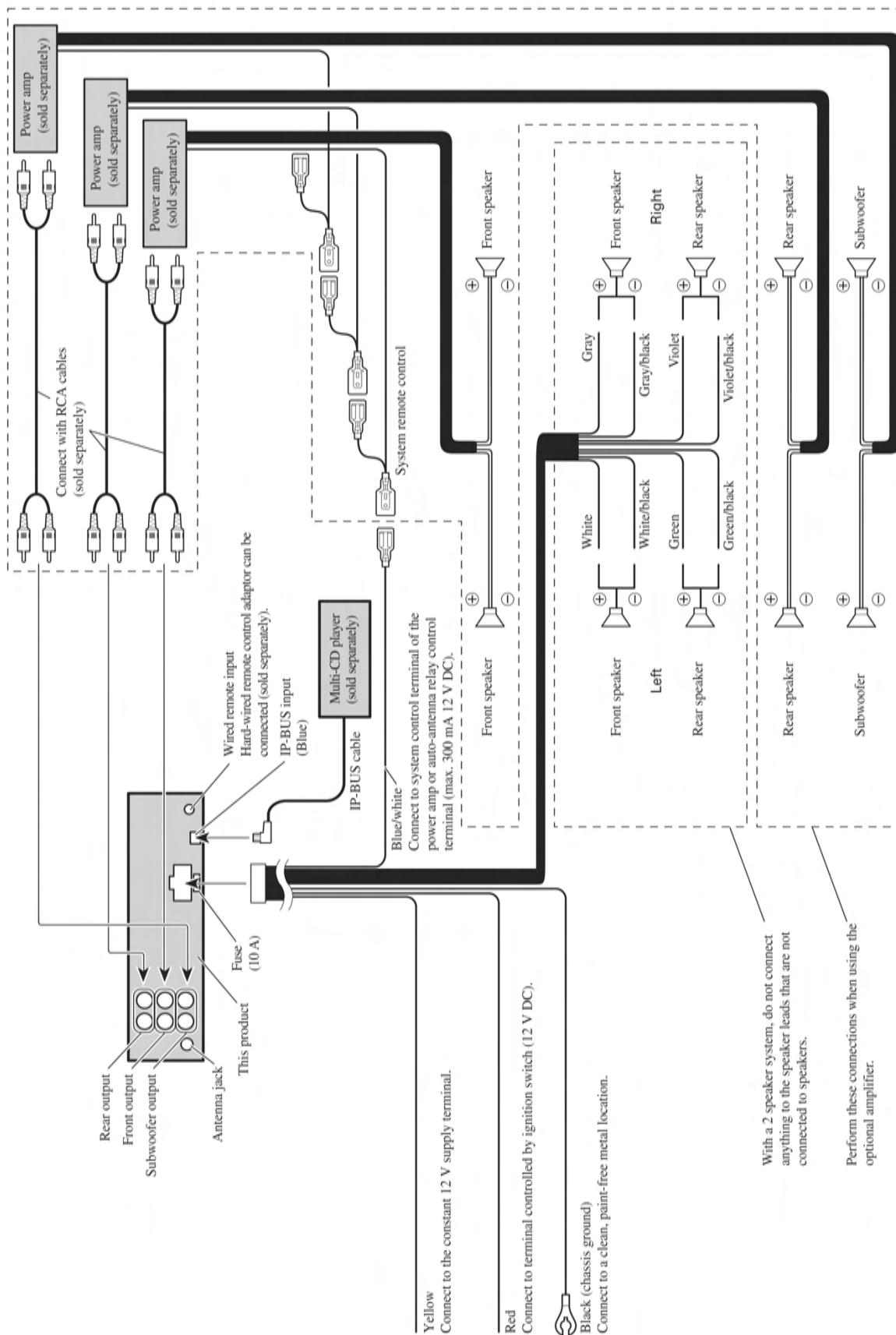
C

D

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F

● Connection Diagram



● Jigs List

Name	Jig No.	Remarks
Test Disc	TCD-782	Checking the grating
L.P.F.		Checking the grating (Two pieces)

● Grease List

Name	Grease No.	Remarks
Grease	GEM1024	CD Mechanism Module
Grease	GEM1045	CD Mechanism Module



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

C

D

E

F