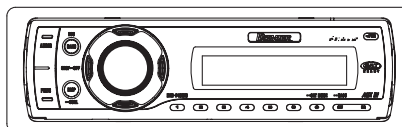


# Service Manual



DEH-P490IB/XN/UC

ORDER NO.  
**CRT3846**

CD RECEIVER

# DEH-P490IB<sub>/XN/UC</sub> DEH-P4900IB<sub>/XN/UC</sub>

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".

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# 1. SPECIFICATIONS

## ● DEH-P490IB/XN/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 × 15 mm (7-3/8 × 2-1/4 × 5/8 in.)

D

Chassis .....	178 × 50 × 162 mm (7 × 2 × 6-3/8 in.)
Nose .....	170 × 46 × 15 mm (6-3/4 × 1-3/4 × 5/8 in.)

Weight ..... 1.5 kg (3.3 lbs)

### Audio

Maximum power output ..... 50 W × 4  
50 W × 2/4  $\Omega$  + 70 W × 1/2  $\Omega$  (for subwoofer)

Continuous power output ... 22 W × 4 (50 Hz to 15 000 Hz, 5% THD, 4  $\Omega$  load, both channels driven)

Load impedance ..... 4  $\Omega$  to 8  $\Omega$  × 4  
4  $\Omega$  to 8  $\Omega$  × 2 + 2  $\Omega$  × 1

Preout max output level/output impedance ..... 4 V/100  $\Omega$

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 .....  $\pm 12$  dB

Mid

Frequency ..... 200/500/1k/2k Hz  
Q Factor ..... 0.35/0.59/0.95/1.15 (+6 dB when boosted)  
Gain .....  $\pm 12$  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 .....  $\pm 12$  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 (mono):

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

Signal format:

Sampling frequency ..... 44.1 kHz

Number of quantization bits

..... 16; linear

Frequency characteristics ... 5 Hz to 20 000 Hz ( $\pm 1$  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)

AAC decoding format ..... MPEG-4 AAC (iTunes® encoded 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  $\mu$ V/75  $\Omega$ , 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 ( $\pm 3$  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  $\mu$ V (S/N: 20 dB)

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



### Note

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

## DEH-P4900IB/XN/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 × 15 mm (7-3/8 × 2-1/4 × 5/8 in.)

#### D

Chassis .....	178 × 50 × 162 mm (7 × 2 × 6-3/8 in.)
Nose .....	170 × 46 × 15 mm (6-3/4 × 1-3/4 × 5/8 in.)

Weight .....	1.5 kg (3.3 lbs)
--------------	------------------

### Audio

Maximum power output .....	50 W × 4 50 W × 2/4 $\Omega$ + 70 W × 1/2 $\Omega$ (for subwoofer)
----------------------------	---

Continuous power output ...	22 W × 4 (50 Hz to 15 000 Hz, 5% THD, 4 $\Omega$ load, both channels driven)
-----------------------------	--

Load impedance .....	4 $\Omega$ to 8 $\Omega$ × 4 4 $\Omega$ to 8 $\Omega$ × 2 + 2 $\Omega$ × 1
----------------------	---

Preout max output level/output impedance .....	4 V/100 $\Omega$
--	------------------

### 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 (mono):

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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### 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)
---------------------------	-----------------------------------

AAC decoding format .....	MPEG-4 AAC (iTunes® encoded 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 $\mu$ V/75 $\Omega$ , 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 $\mu$ V (S/N: 20 dB)
--------------------------	-------------------------

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



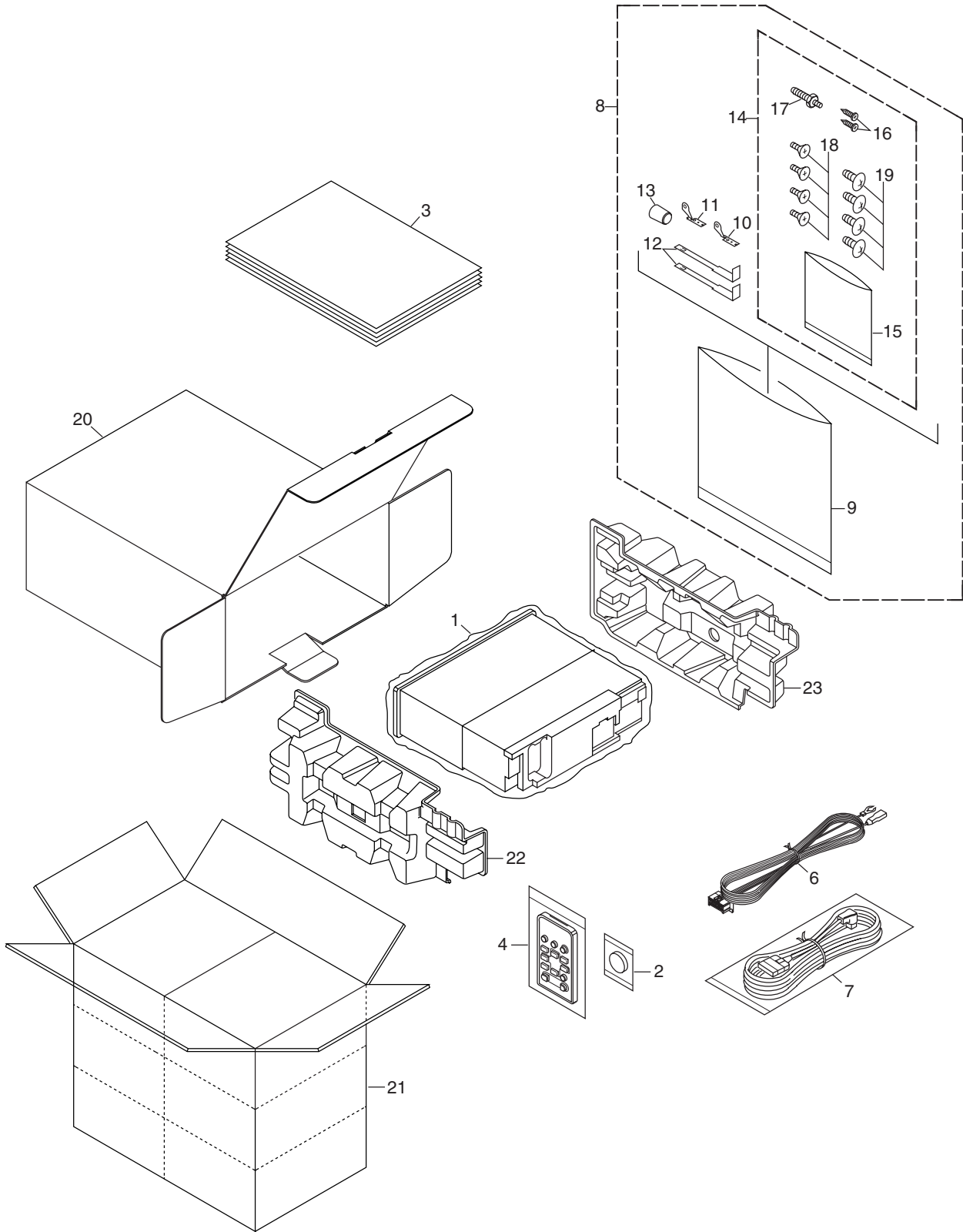
### Note

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

## 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



## (1) PACKING SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Polyethylene Bag	CEG1173			
* 2	Battery	CEX1065	11	Holder	CND1250
3-1	Caution Card	CRP1310	12	Handle	CND3707
* 3-2	Caution Card	See Contrast table(2)	13	Bush	CNV3930
* 3-3	Warranty Card	See Contrast table(2)	14	Screw Assy	CEA5317
			* 15	Polyethylene Bag	CEG-127
3-4	Owner's Manual	See Contrast table(2)			
3-5	Installation Manual	See Contrast table(2)	16	Screw	BPZ20P060FTB
* 3-6	Caution Card	XRP7008	17	Screw	CBA1650
4	Remote Control Assy	CXC5719	18	Screw	CRZ50P090FTC
5	.....		19	Screw	TRZ50P080FTC
			20	Unit Box	See Contrast table(2)
6	Cord Assy	XDP7001			
7	Cord Assy	See Contrast table(2)	21	Contain Box	See Contrast table(2)
8	Accessory Assy	XEA7011	22	Protector	XHP7016
9	Polyethylene Bag	CEG1160	23	Protector	XHP7017
10	Holder	CND1249			

## (2) CONTRAST TABLE

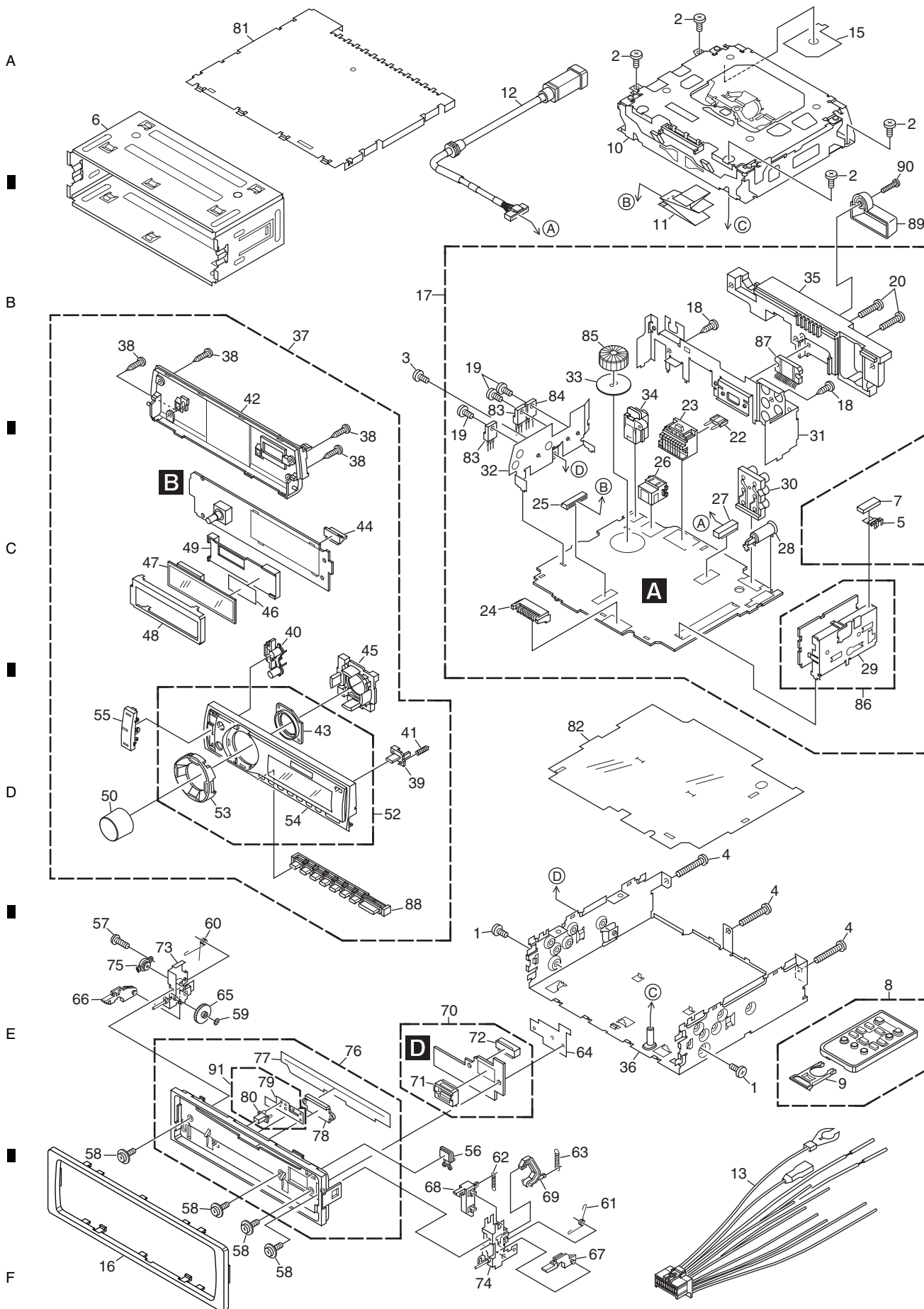
DEH-P490IB/XN/UC and DEH-P4900IB/XN/UC are constructed the same except for the following:

Mark	No.	Description	DEH-P490IB/XN/UC	DEH-P4900IB/XN/UC
*	3-2	Caution Card	Not used	CRP1294
*	3-3	Warranty Card	CRY1070	CRY1246
	3-4	Owner's Manual	XRD7129	XRD7127
	3-5	Installation Manual	XRD7130	XRD7128
	7	Cord Assy	XDP7005	Not used
	20	Unit Box	XHG7126	XHG7125
	21	Contain Box	XHL7126	XHL7125

### Owner's Manual, Installation Manual

Part No.	Language
XRD7127, XRD7128, XRD7129, XRD7130	English, French, Spanish

## 2.2 EXTERIOR



# EXTERIOR SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.	
1	Screw	BMZ30P040FTB	50	Knob Assy	XXA7472	
2	Screw	BSZ26P060FTC				A
3	Screw	BSZ30P060FTC	51	*****		
4	Screw	BSZ30P200FTC	52	Sub Grille Assy	See Contrast table(2)	
5	Earth Plate	CNC8915	53	Plate	XNS7184	
			54	Grille Unit	See Contrast table(2)	
6	Holder	CND3598	55	Button Unit(AUDIO,FUNC)	XXA7491	
7	Cushion	CNM8890				
8	Remote Control Assy	CXC5719	56	Button	CAC7752	
9	Cover	CZN7068	57	Screw(M2 x 4)	CBA1649	
10	CD Mechanism Module(S10.5)	CXK5763	58	Screw(M2 x 4.5)	CBA1925	
			59	Washer	CBF1038	
11	Cable	XDE7022	60	Spring	CBH2650	B
12	Cord Assy	XDE7026				
13	Cord Assy	XDP7001	61	Spring	CBH2651	
14	*****		62	Spring	CBH2652	
15	Insulator	XNM7106	63	Spring	CBH2653	
			64	Holder	CND1254	
16	Panel	See Contrast table(2)	65	Gear	CNV5997	
17	Tuner Amp Unit	See Contrast table(2)				
18	Screw	BPZ26P070FTC	66	Arm	CNV7400	
19	Screw	BSZ26P060FTC	67	Arm	CNV7401	
20	Screw	BSZ26P200FTC	68	Arm	CNV7402	
			69	Arm	CNV7403	C
21	*****		70	Panel Unit	CWM8758	
⚠ 22	Fuse(10 A)	CEK1208				
23	Plug(CN901)	CKM1376	71	Connector(CN1951)	CKS4806	
24	Plug(CN801)	CKS3537	72	Connector(CN1950)	CKS5192	
25	Connector(CN651)	CKS3829	73	Holder Unit	CXB9501	
			74	Holder Unit	CXB9502	
26	Connector(CN101)	CKS5271	75	Damper Unit	CXB9503	
27	Connector(CN701)	CKS5691				
28	Antenna Jack(CN401)	CKX1056	76	Sub Panel Assy	XXA7511	
29	Holder	CND1054	77	Cover	CNM6854	
30	Pin Jack(CN352)	XKB7001	78	Lighting Conductor	CNV6487	D
			79	Spring	CBL1512	
31	Holder	XNC7026	80	Pin	CNV6486	
32	Holder	XNC7030				
33	Insulator	XNM7031	81	Case	YNB5014	
34	Jack(CN171)	XKS7005	82	Insulator	YNM5062	
35	Heat Sink	YNR5031	83	Transistor(Q650,911)	2SD2396	
			84	IC(IC901)	NJM2388F84	
36	Chassis Unit	XXA7474	85	Choke Coil(L901)	CTH1280	
37	Detachable Assy	See Contrast table(2)				
38	Screw	BPZ20P080FTB	86	FM/AM Tuner Unit	CWE1952	E
39	Button	XAC7149	87	IC(IC301)	PAL007C	
40	Button(BAND,DISP)	XAC7146	88	Button(1-6,SW,EQ)	See Contrast table(2)	
			89	Holder	See Contrast table(2)	
41	Spring	XBH7001	90	Screw	See Contrast table(2)	
42	Cover	XNS7180				
43	Lighting Conductor	XNV7033	91	Sub Spring Assy	XXA7363	
44	Connector(CN1901)	CKS5207				
45	Button(UP,DOWN,L,R)	See Contrast table(2)				
46	Double side Tape	CNM8673				
47	OLED Unit	MXS8233				F
48	Holder	XNC7028				
49	Holder	XNV7034				



(2) CONTRAST TABLE

DEH-P490IB/XN/UC and DEH-P4900IB/XN/UC are constructed the same except for the following:

Mark	No.	Description	DEH-P490IB/XN/UC	DEH-P4900IB/XN/UC
A	16	Panel	XNS7182	XNS7181
	17	Tuner Amp Unit	XWM7175	XWM7176
	37	Detachable Assy	XXA7476	XXA7475
	45	Button(UP,DOWN.L,R)	XAC7150	XAC7147
	52	Sub Grille Assy	XXA7483	XXA7482
	54	Grille Unit	XXA7464	XXA7463
	88	Button(1-6,SW,EQ)	XAC7151	XAC7148
	89	Holder	Not used	CNV7619
	90	Screw	Not used	BMZ40P140FTC

B

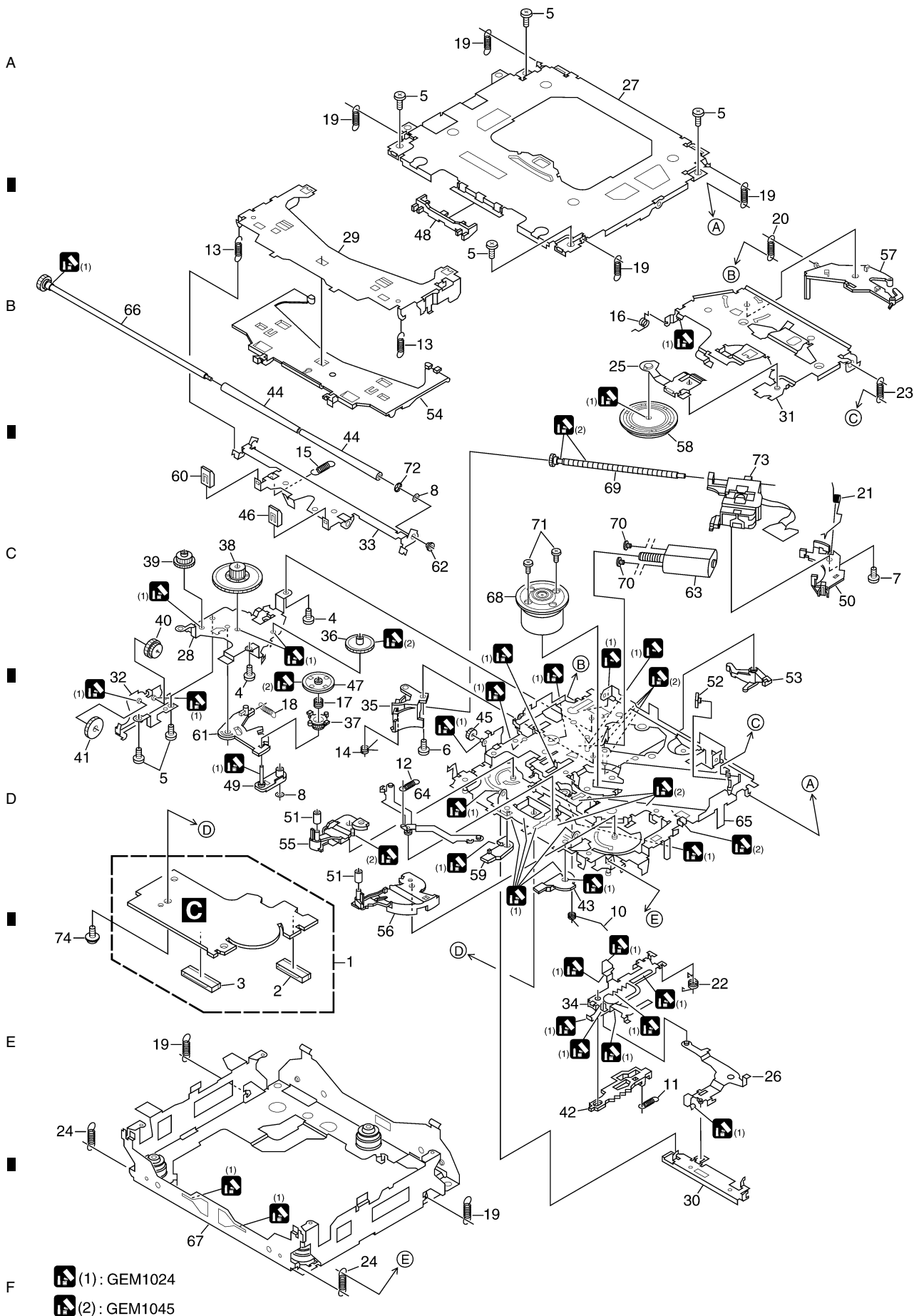
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## 2.3 CD MECHANISM MODULE



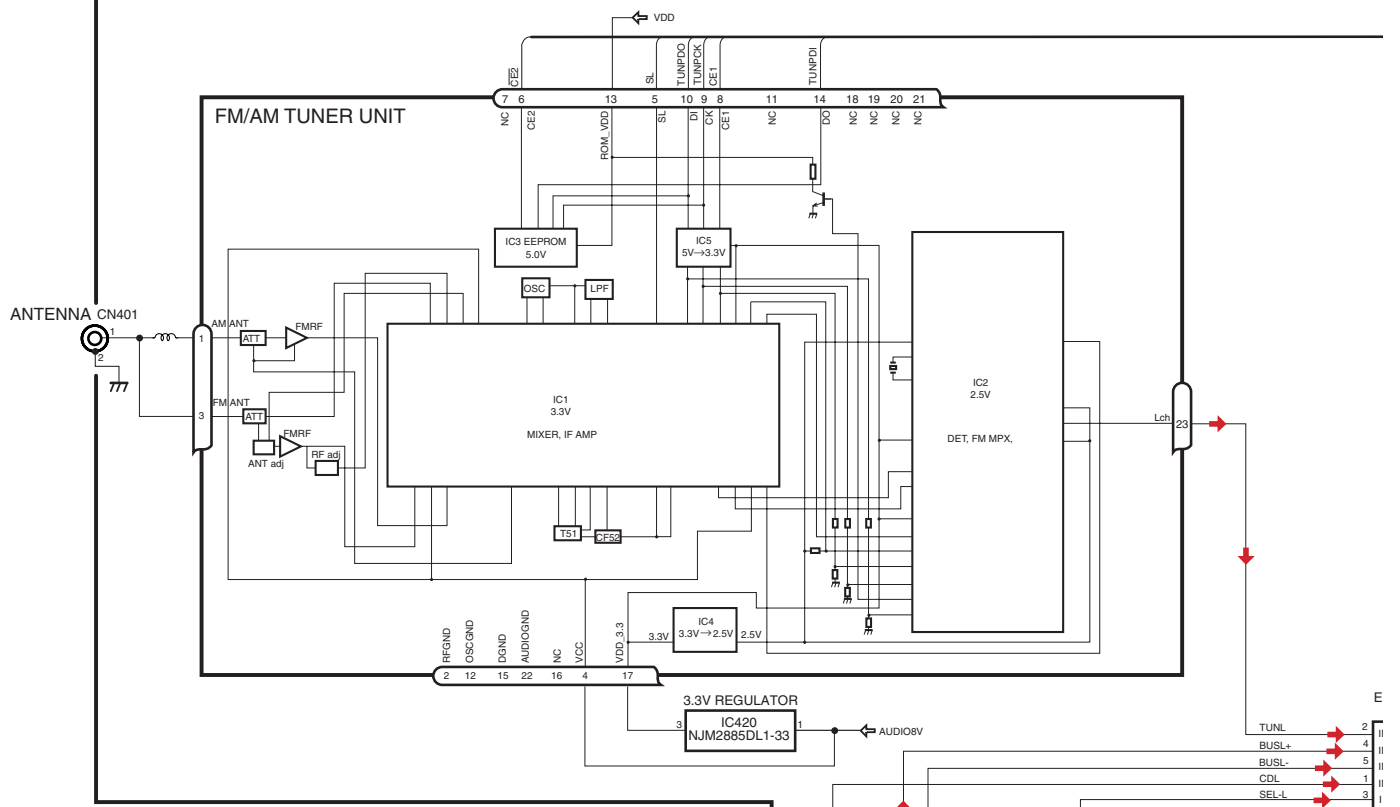
# CD MECHANISM MODULE SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.	
1	CD Core Unit(S10.5COMP2)	CWX3514	50	Rack	CNV8342	
2	Connector(CN101)	CKS4182				A
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	B
12	Spring	CBH2614				
13	Spring	CBH2616	61	Arm	CNV8413	
14	Spring	CBH2617	62	Collar	CNV8938	
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	C
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				D
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				E
40	Gear	CNV7211				
41	Gear	CNV7212				
42	Rack	CNV7214				
43	Arm	CNV7216				
44	Roller	CNV7218				
45	Gear	CNV7219				
46	Guide	CNV7361				
47	Gear	CNV7595				F
48	Guide	CNV7799				
49	Arm	CNV7805				

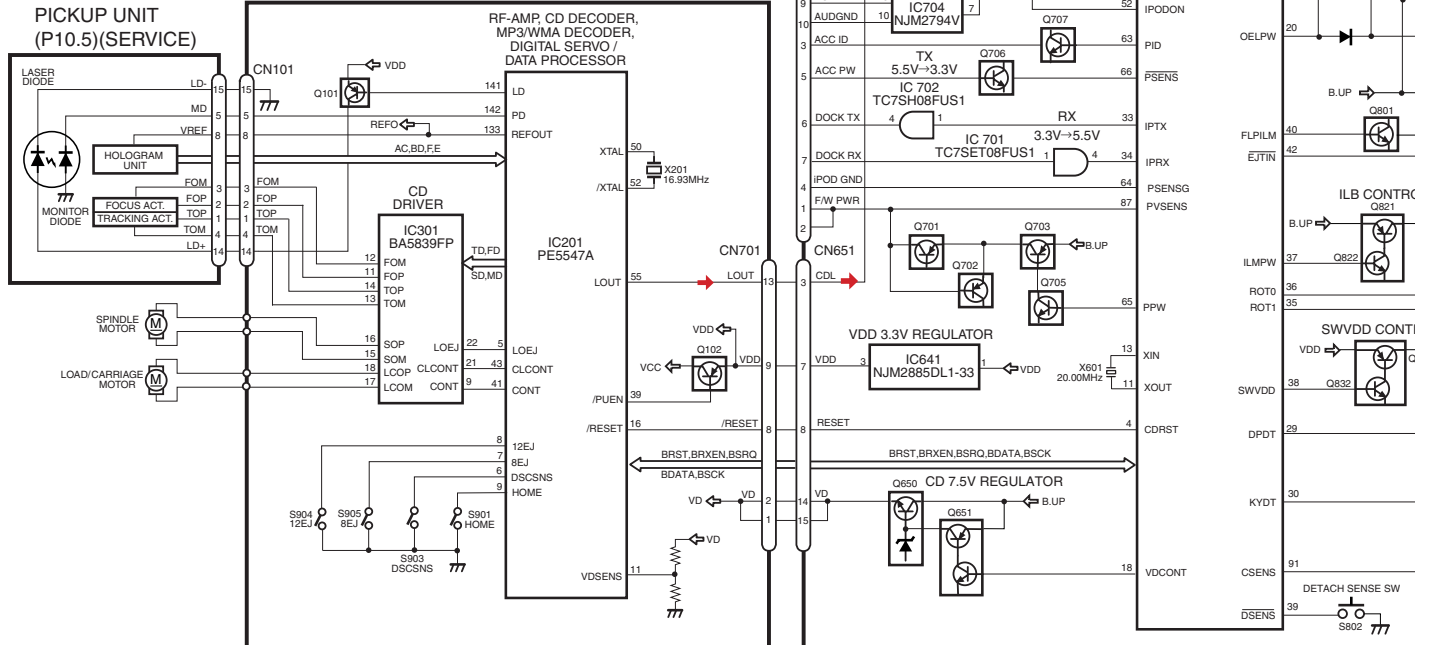
# 3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

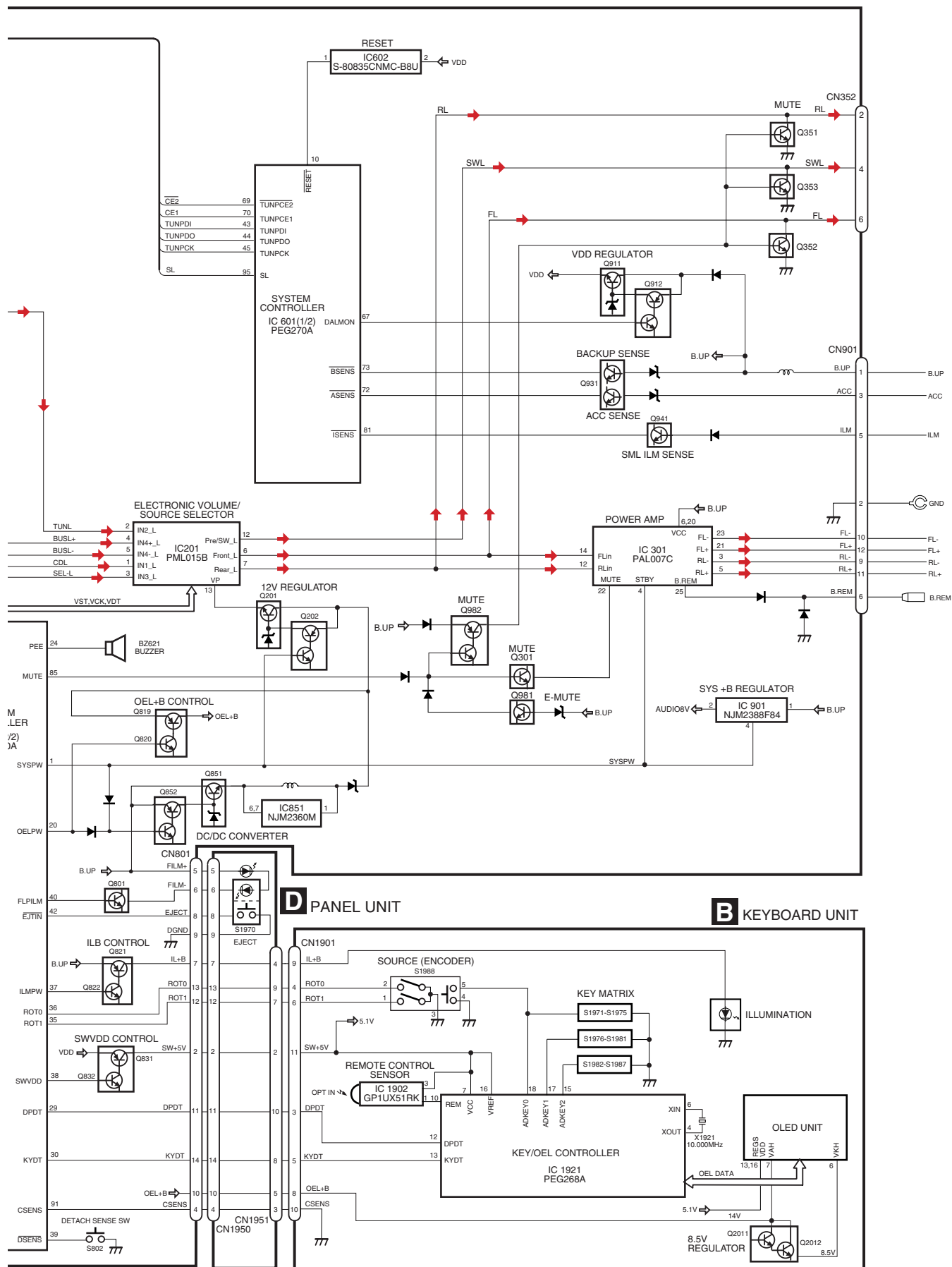
## 3.1 BLOCK DIAGRAM

### A TUNER AMP UNIT



### C CD CORE UNIT(S10.5COMP2)





## 4

A



F

A

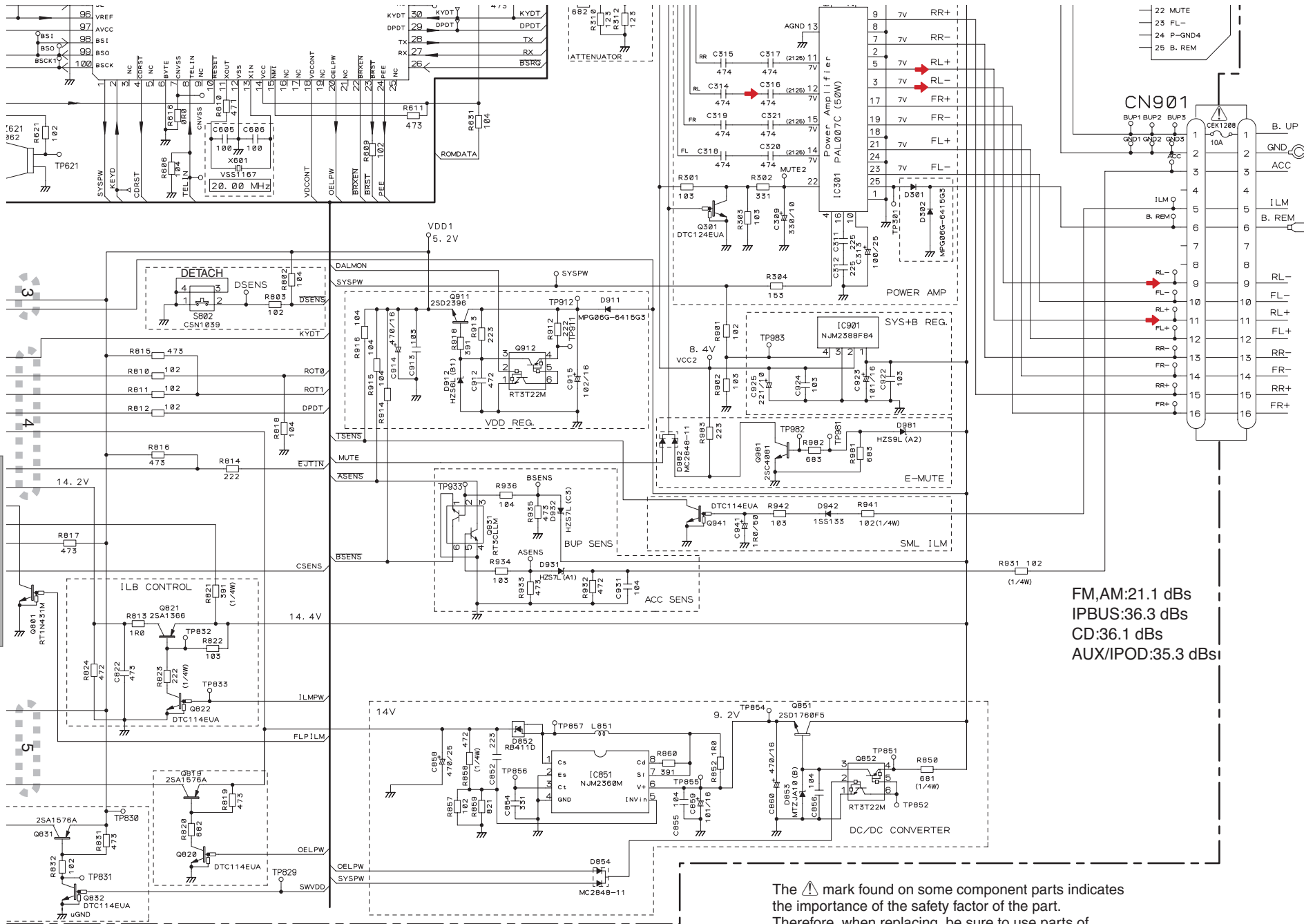


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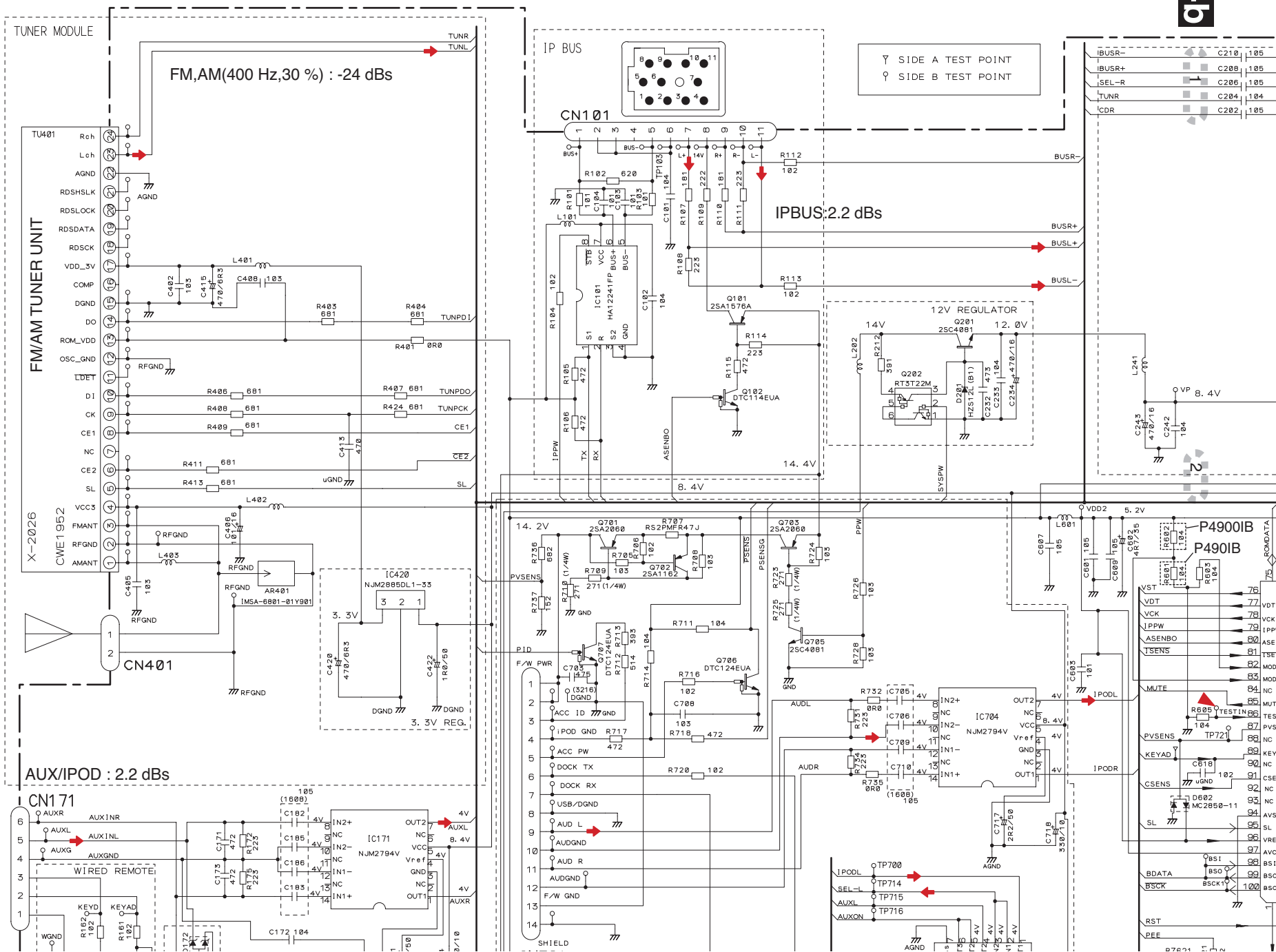


FM,AM:21.1 dBs  
 IPBUS:36.3 dBs  
 CD:36.1 dBs  
 AUX/IPOD:35.3 dBs

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.

A-a A-b

A-b



5

6

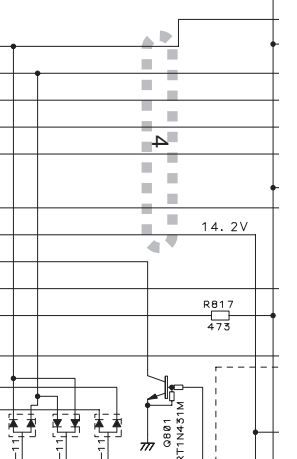
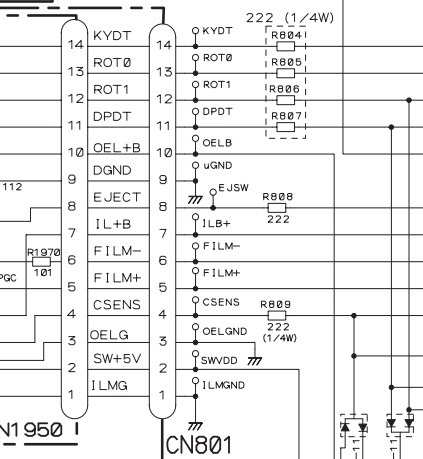
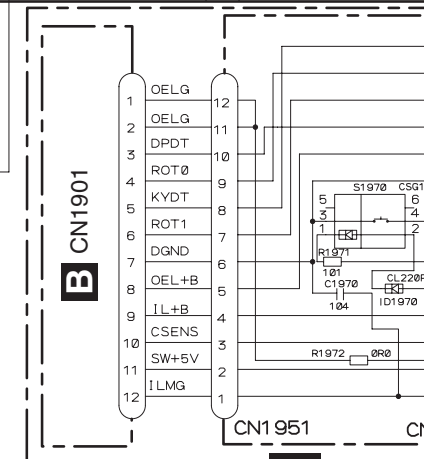
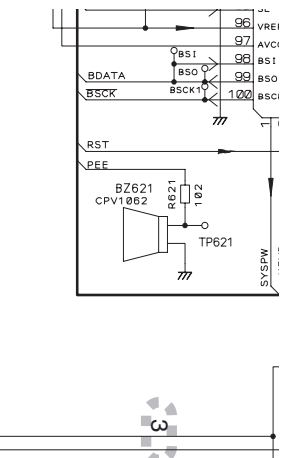
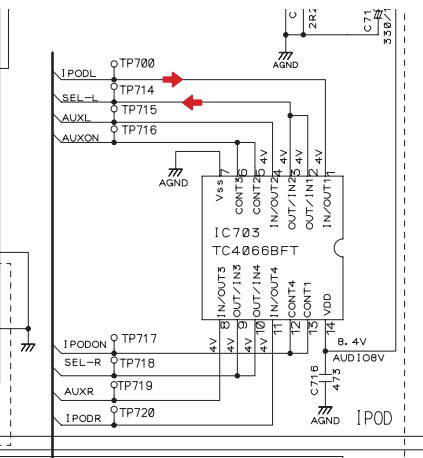
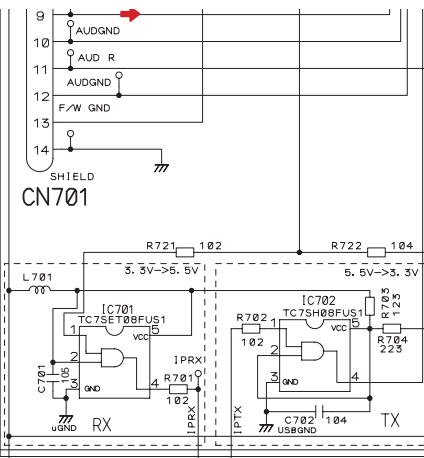
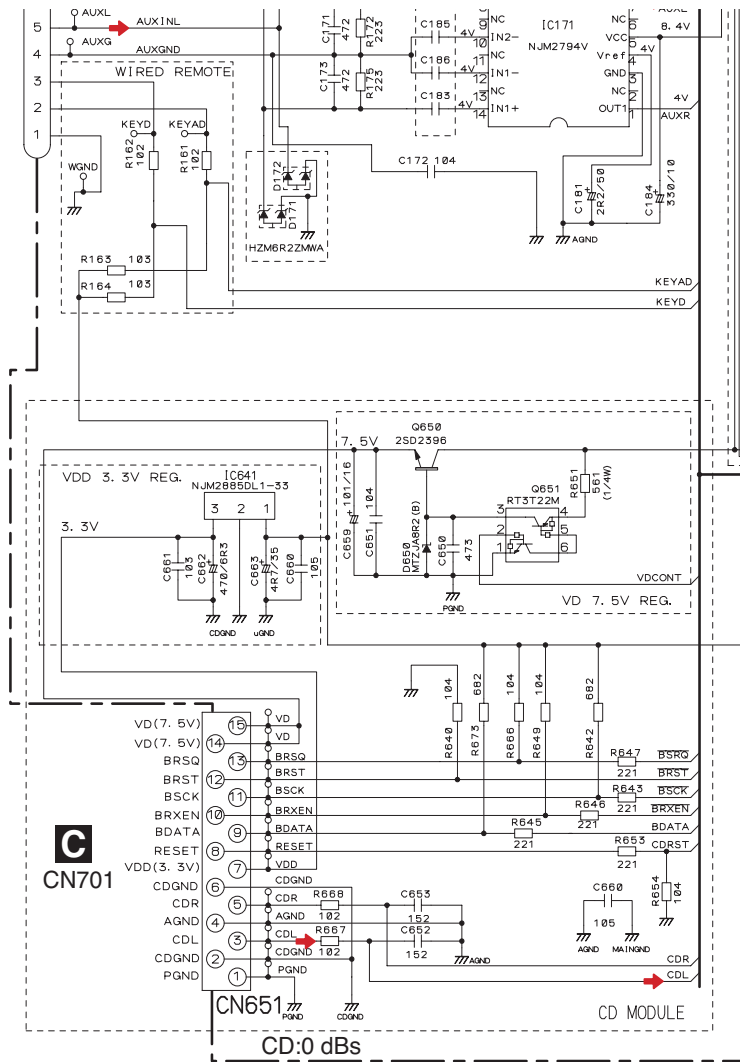
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23

DEH-P490B/XN/UC

A-a D



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.

For resistors and capacitors in the circuit diagrams, their resistance values or capacitance values are expressed in codes:

Ex. \*Resistors

Code	Practical value
123	12k ohms
103	10k ohms

\*Capacitors

Code	Practical value
103	0.01uF
101/10	100uF/10V

A-a A-b

A-b

5

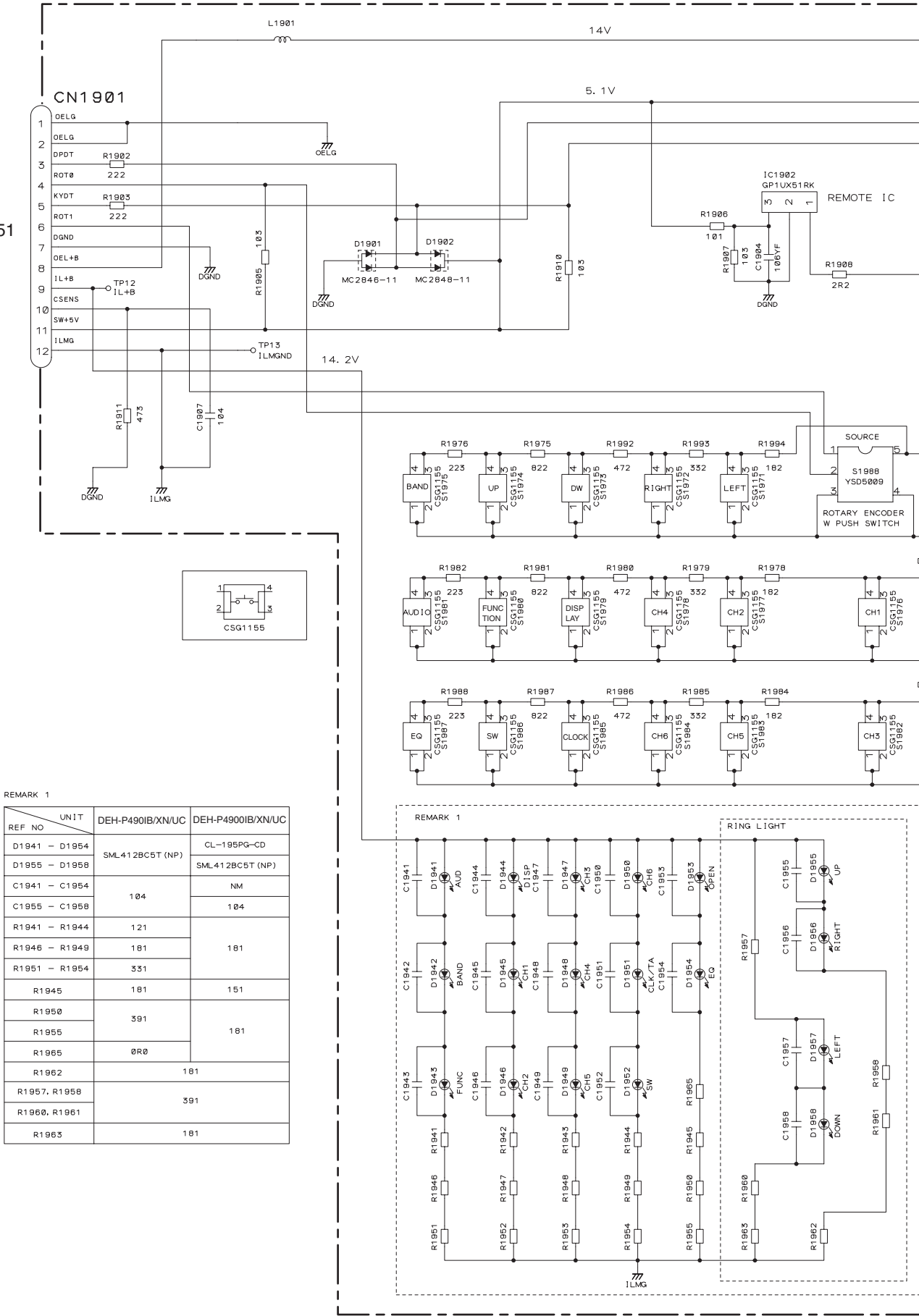
6

7

8

3.3 KEYBOARD UNIT

D  
CN1951



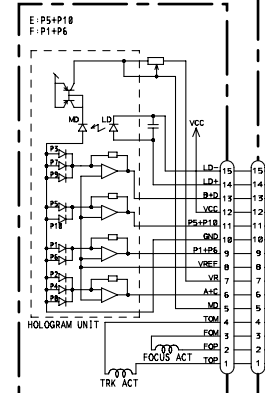
## F



# 3.4 CD MECHANISM MODULE(GUIDE PAGE)

C-a

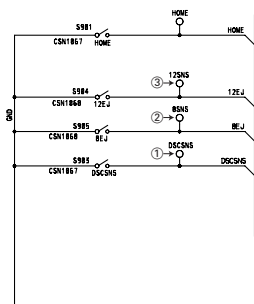
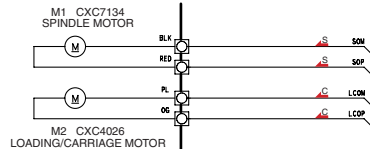
## PICKUP UNIT(P10.5)(SERVICE)



F. ACT: Applying positive voltage to FOP.  
T. ACT: Applying positive voltage to TOP.  
The lens moves out of the center.

SWITCHES:  
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.



	LOAD	EJ	PLAY	OFF
CLCONT	H	H	L	L
LOEJ	L	H	-	-
CONT	L	L	H	L

## CD DRIVER

IC:  
PE55  
RF AMP, CD DECODE,  
DIGITAL SERVO/D.

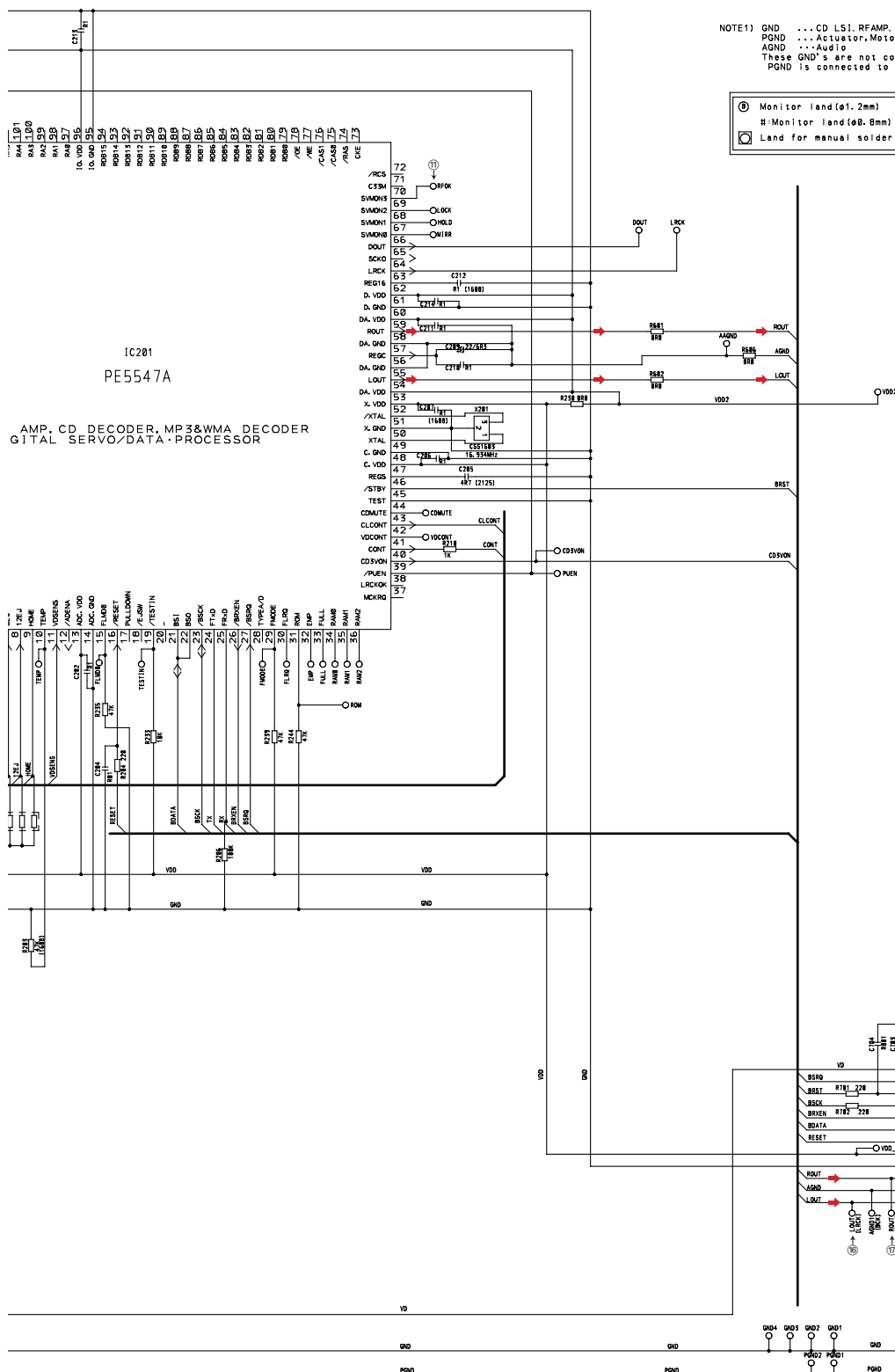
C-b

## C CD CORE UNIT(S10.5COMP2)

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.


- ① Monitor land(φ1.2mm)  
⊞ Monitor land(φ0.8mm)  
□ Land for manual soldering

- SIGNAL LINE  
F FOCUS SERVO LINE  
T TRACKING SERVO LINE  
C CARRIAGE SERVO LINE  
S SPINDLE SERVO LINE

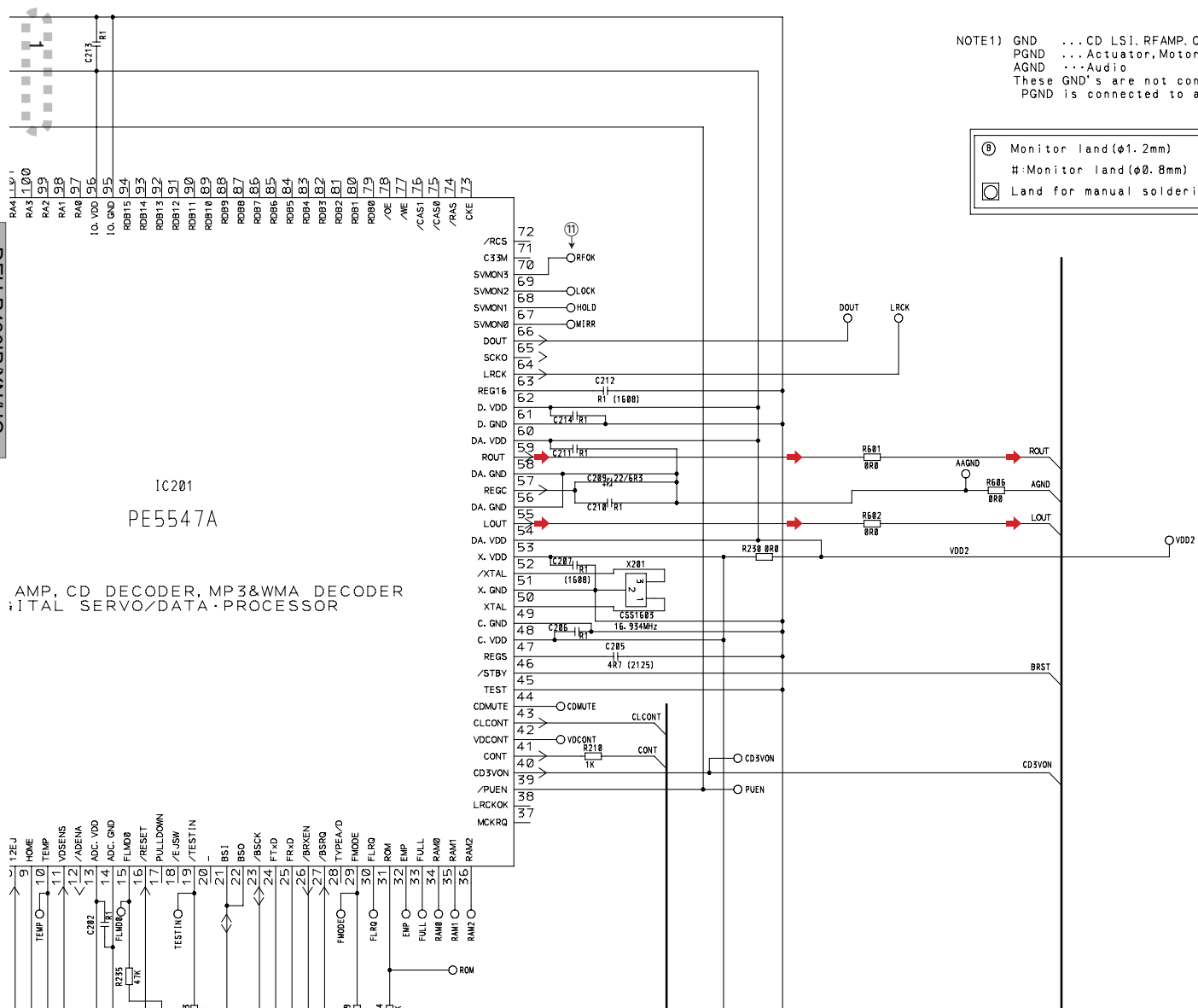


**C** CD CORE UNIT(S10.5COMP2)

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.

⑪ Monitor land(φ1.2mm)  
 # Monitor land(φ0.8mm)  
 Land for manual soldering

➔ SIGNAL LINE  
 F ➔ FOCUS SERVO LINE  
 T ➔ TRACKING SERVO LINE  
 C ➔ CARRIAGE SERVO LINE  
 S ➔ SPINDLE SERVO LINE





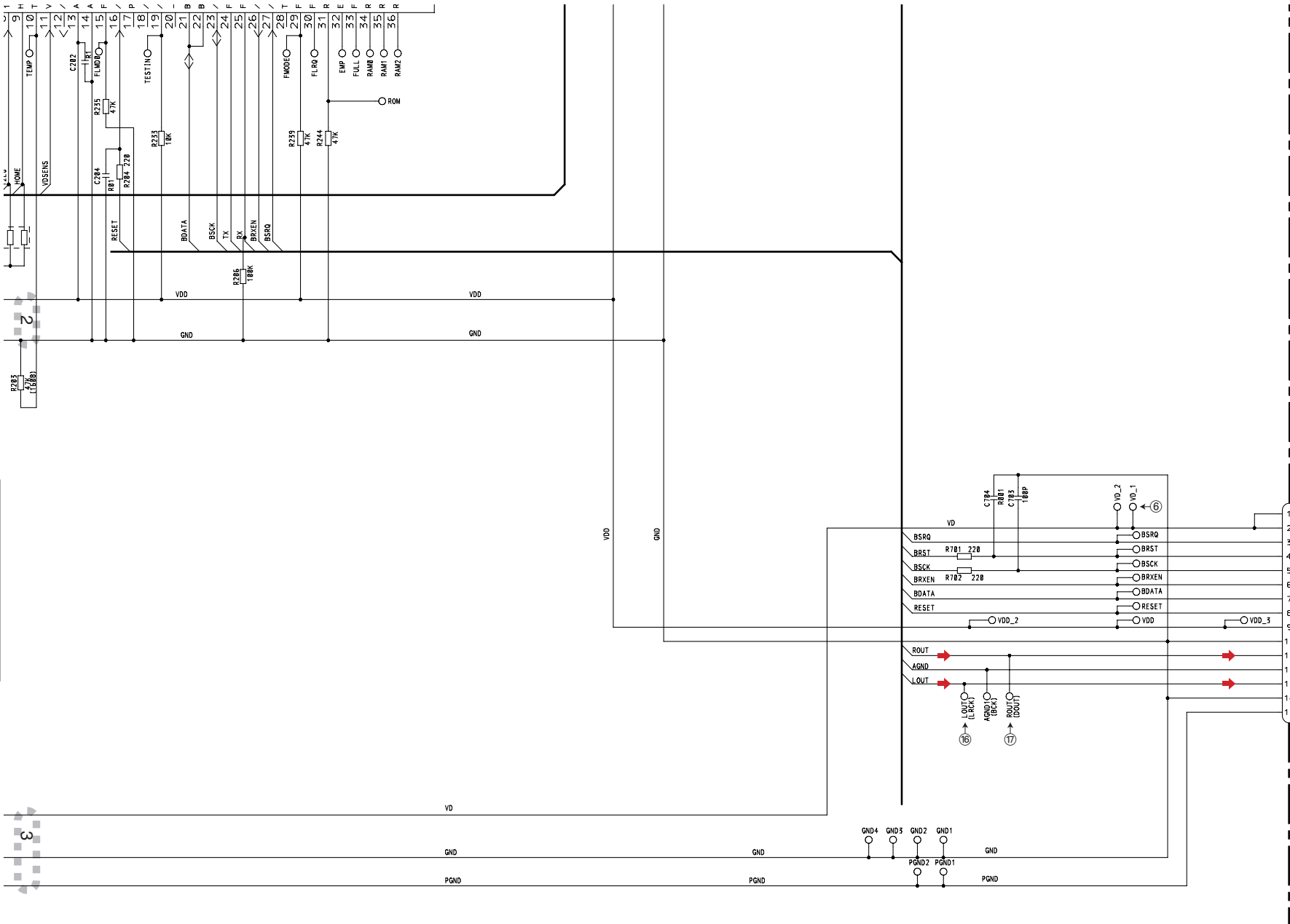
**A**  
CN651

CN701

1	VD	7.5V
2	VD	7.5V
3	/BSRQ	↔
4	/BRST	↔
5	/BSCK	↔
6	BRXEN	↔
7	BDATA	↔
8	/RESET	↔
9	VDD	3.3V
10	GND	GND
11	ROUT	↔
12	AGND	GND
13	LOUT	↔
14	GND	GND
15	PGND	GND

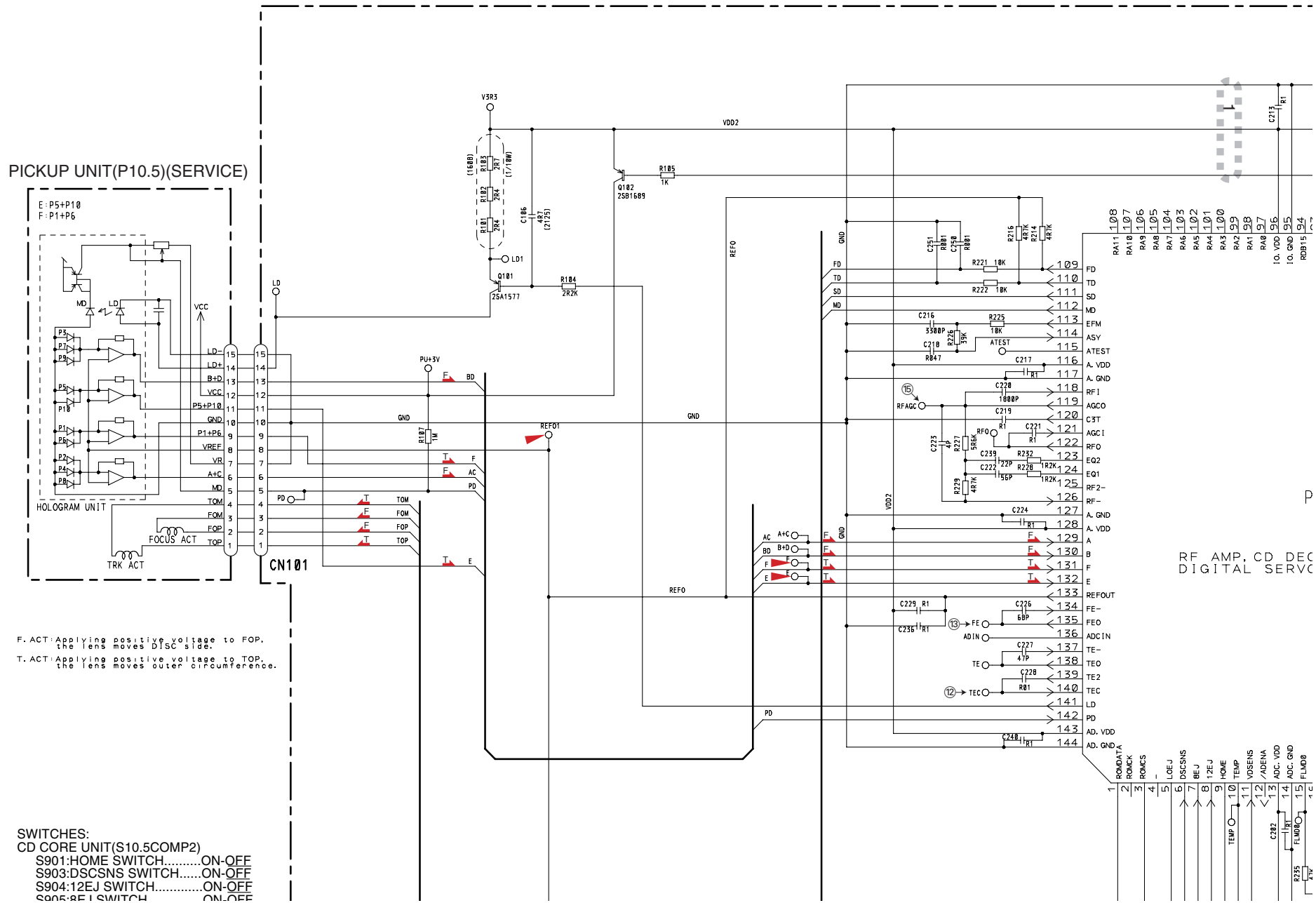
I/O

C-a C-b



DEH-P490B/XN/UC

C-b



SWITCHES:  
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

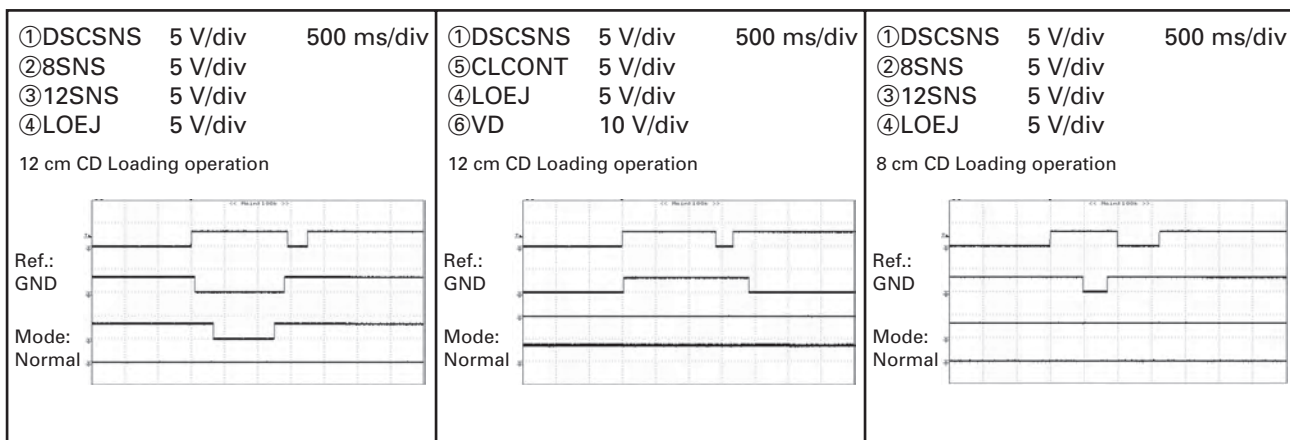
The underlined indicates the switch position.



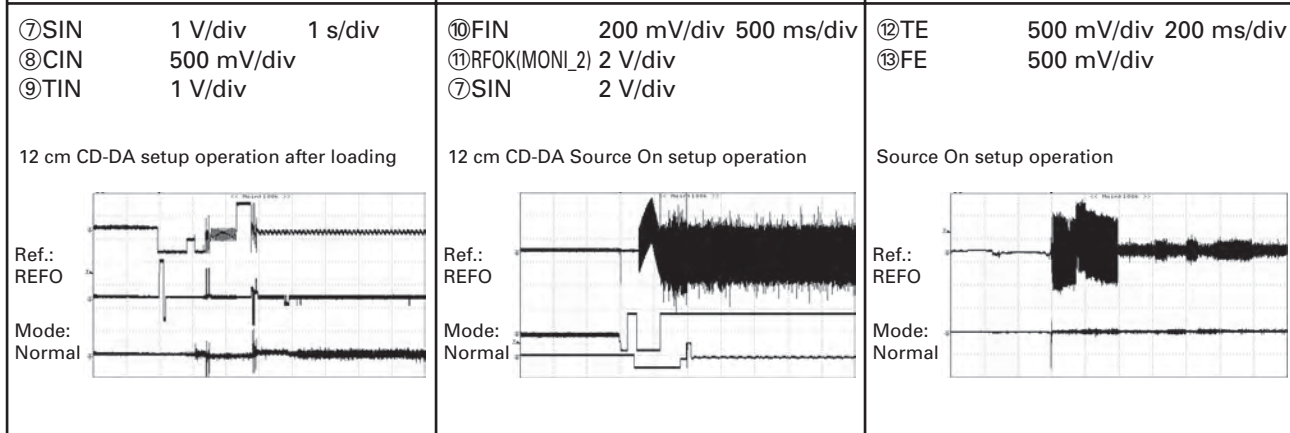
# Waveforms

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

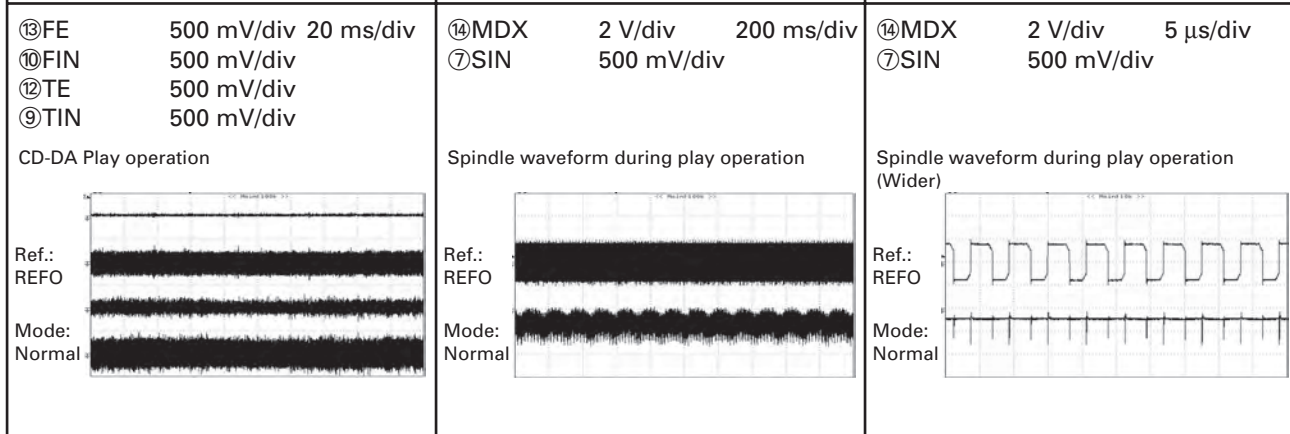
A



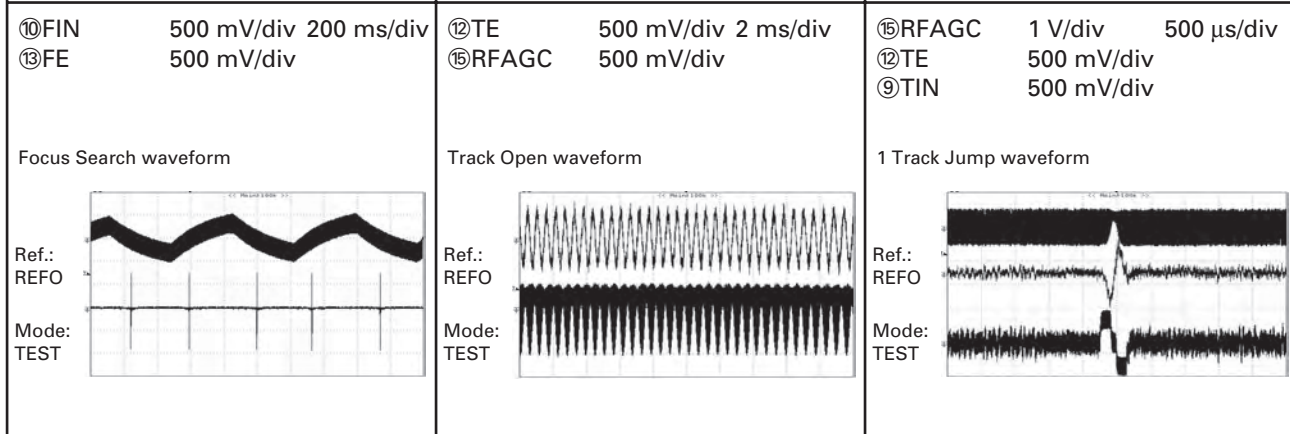
B



C

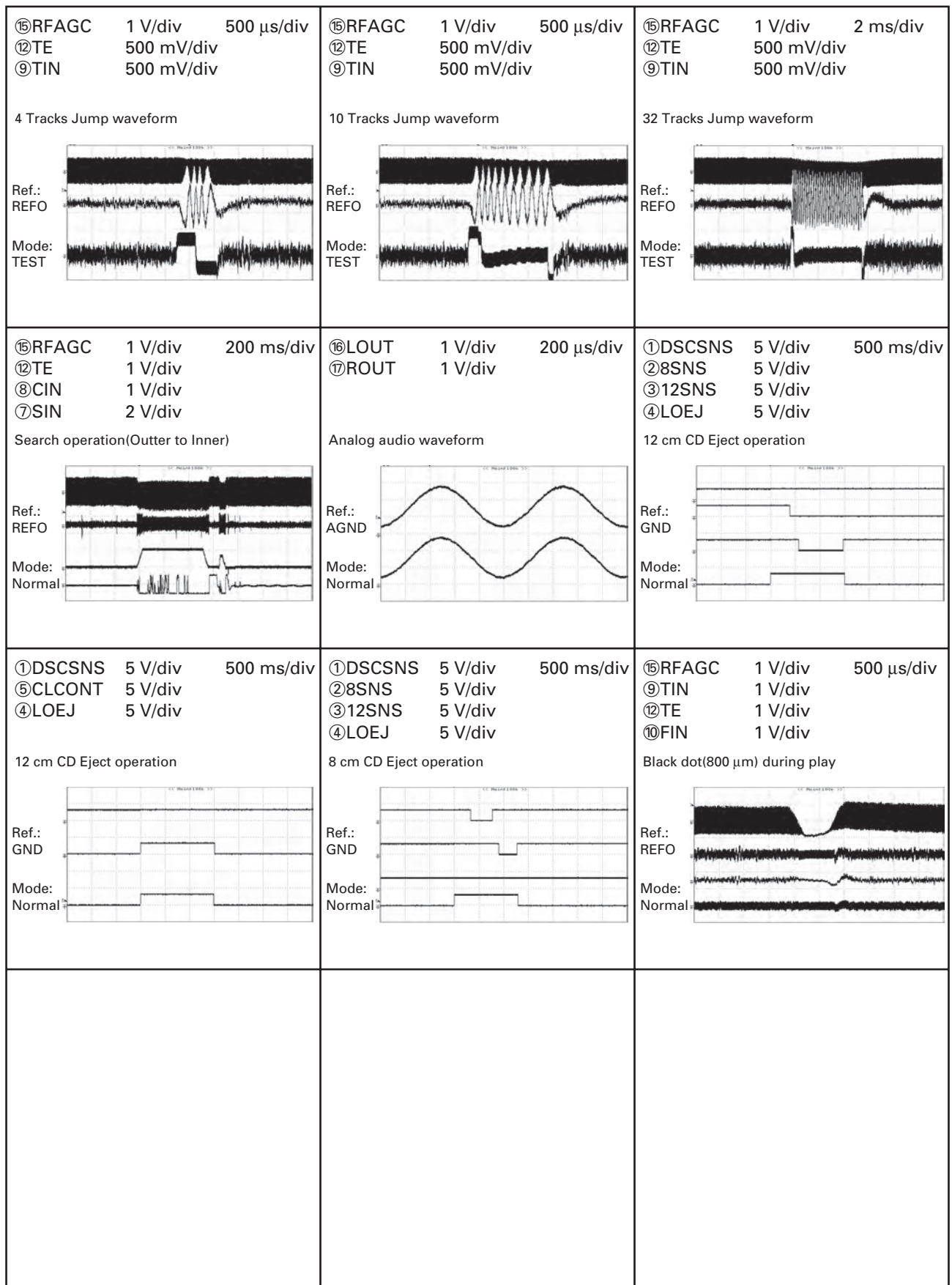


D



E

F



#### 4.1 TUNER AMP UNIT

## 2. Viewpoint of PCB diagrams

Connector      Capacitor

/

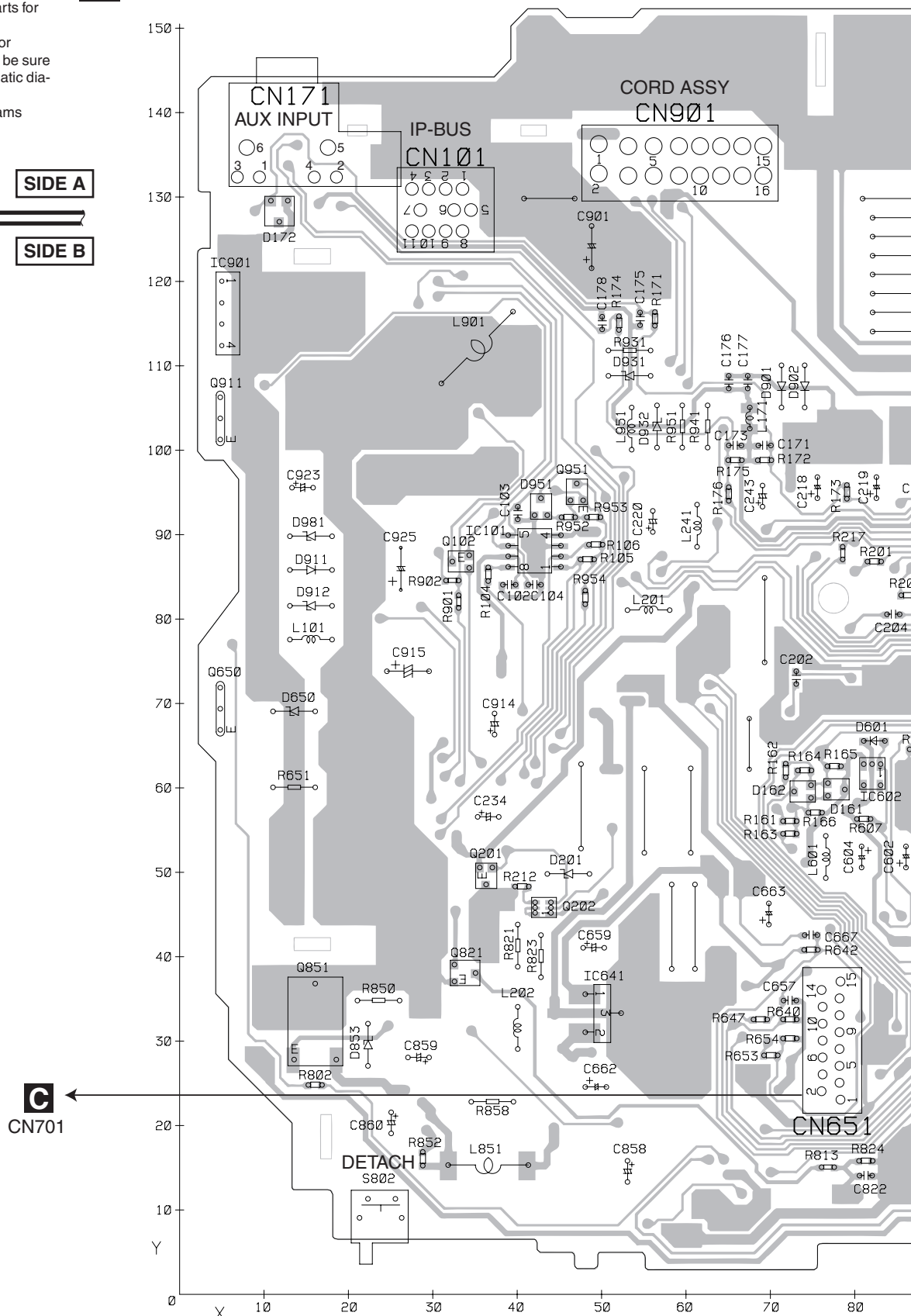
**SIDE A**

DC Board

Chip Port

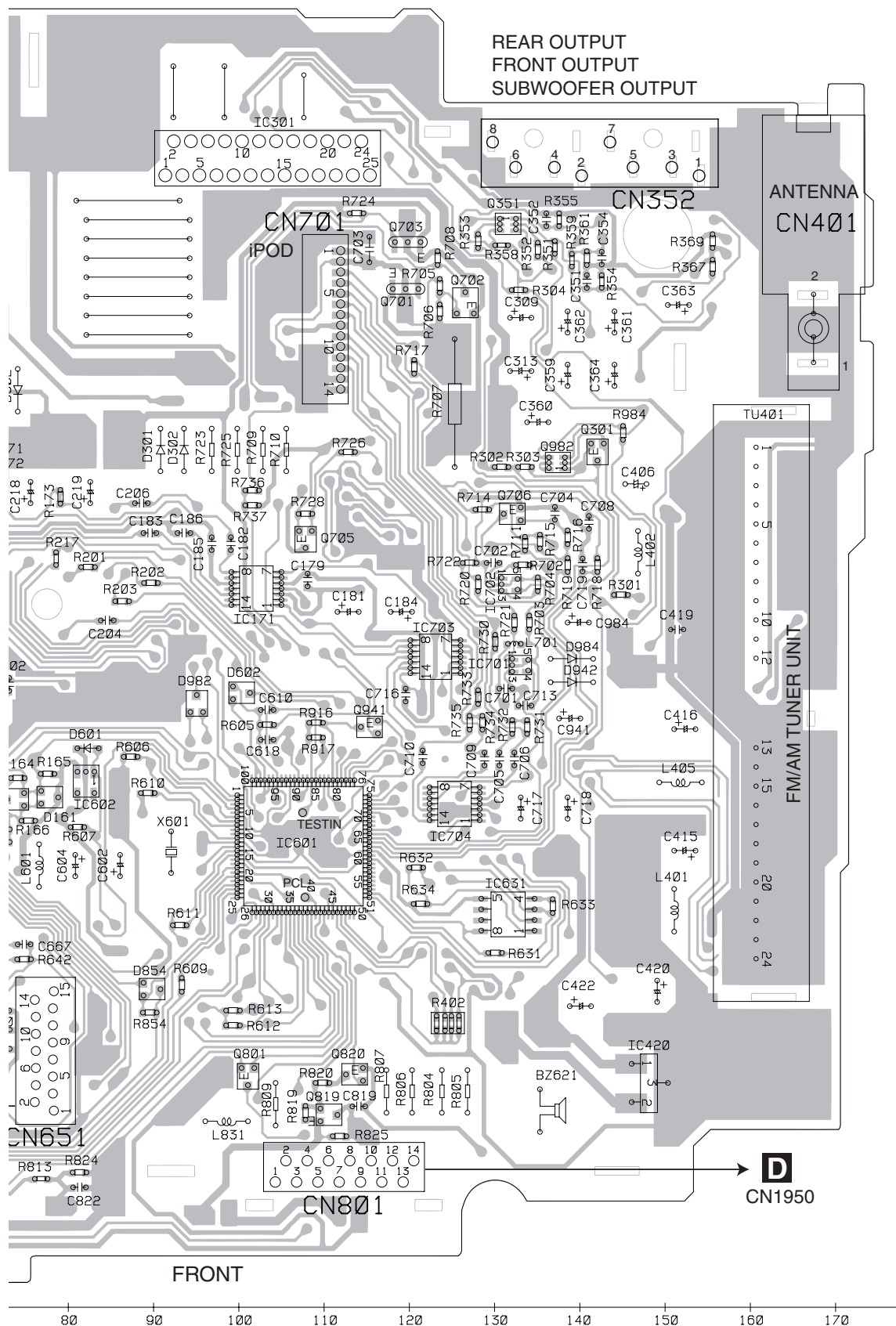
## SIDE B

## A TUNER AMP UNIT



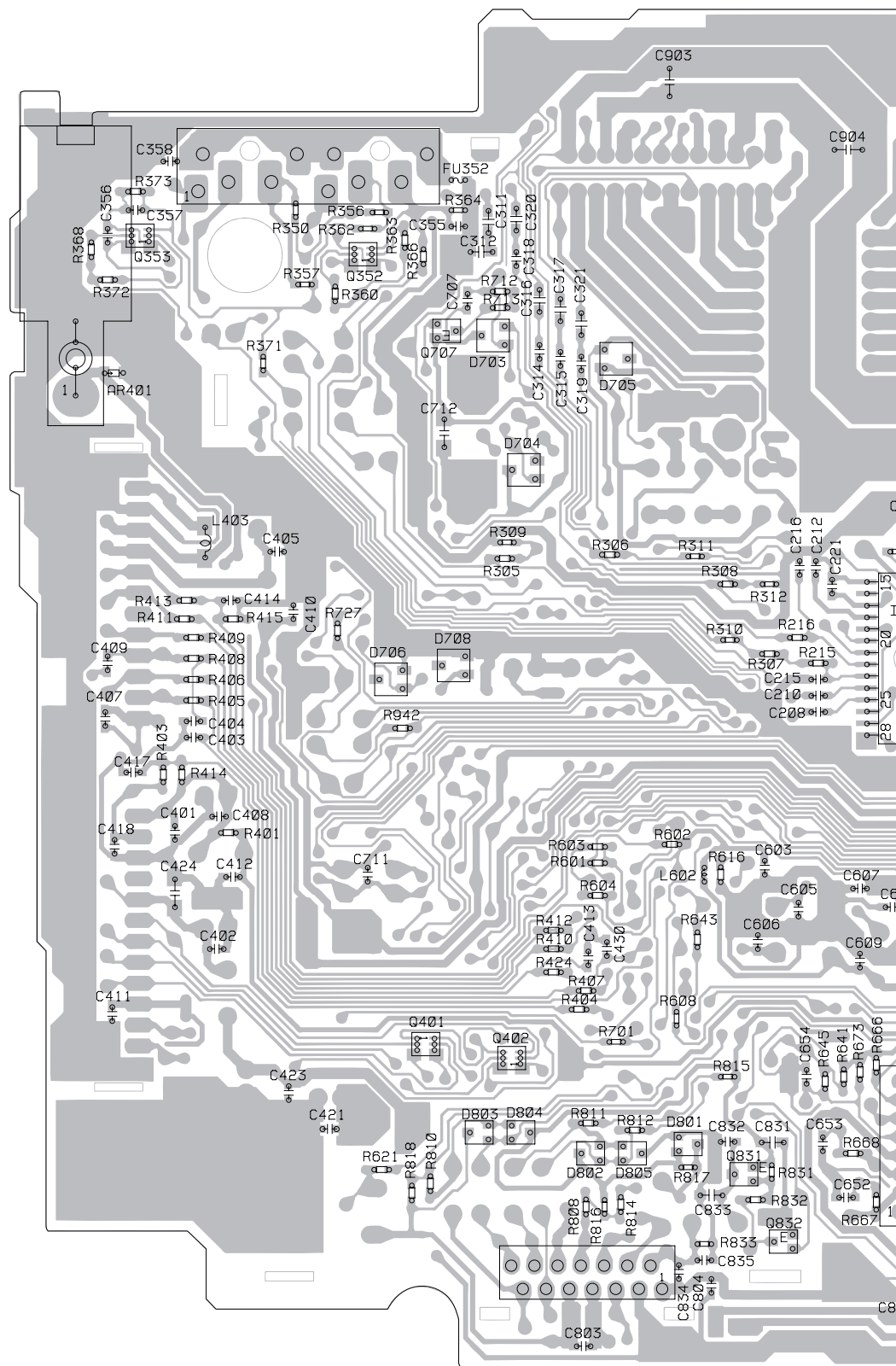
DEH-P490IB/XN/UC

SIDE A





# A TUNER AMP UNIT



170

160

150

140

130

120

110

100

90

80

DEH-P490IB/XN/UC



A

SIDE B

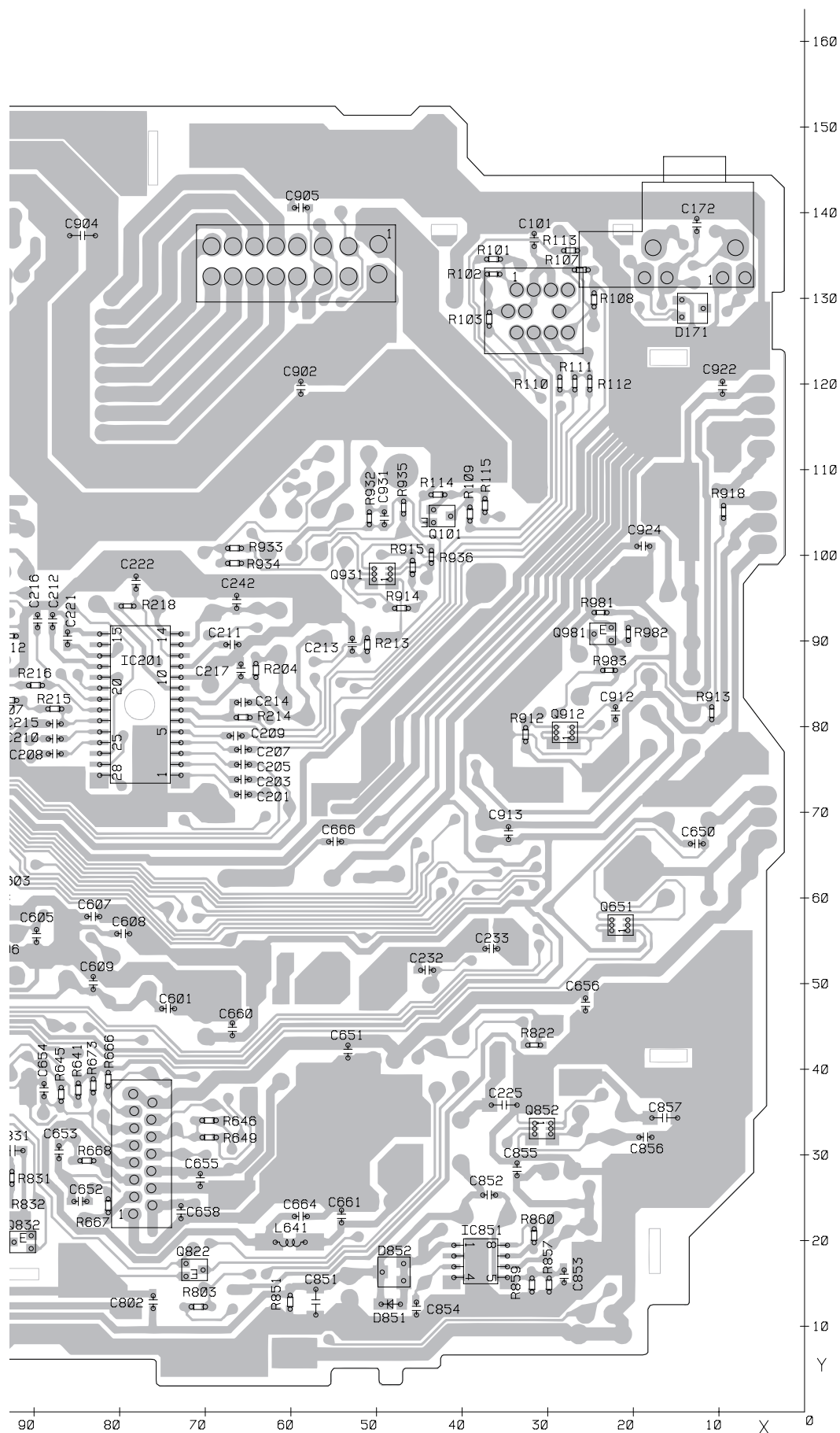
B

C

D

E

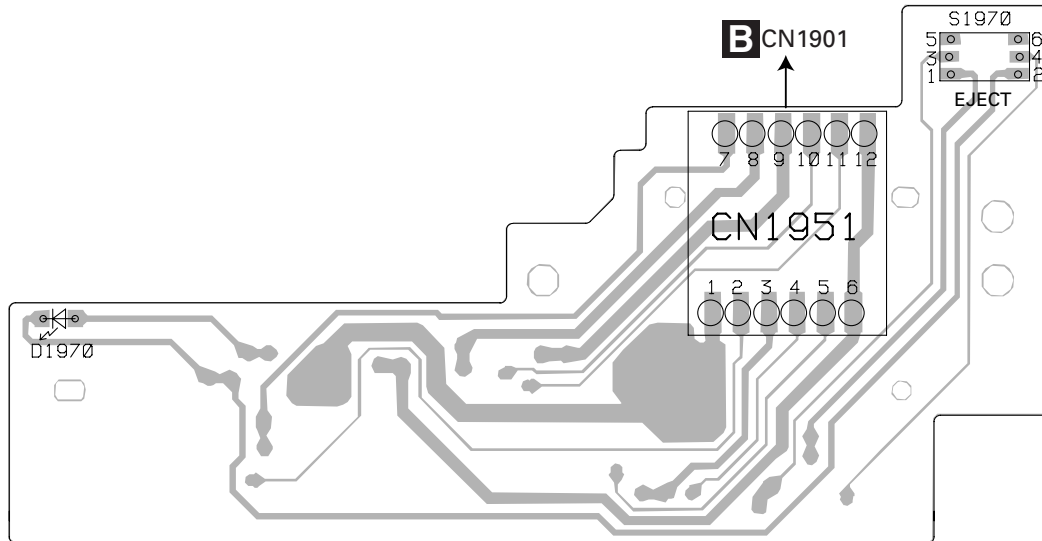
F



## 4.3 PANEL UNIT

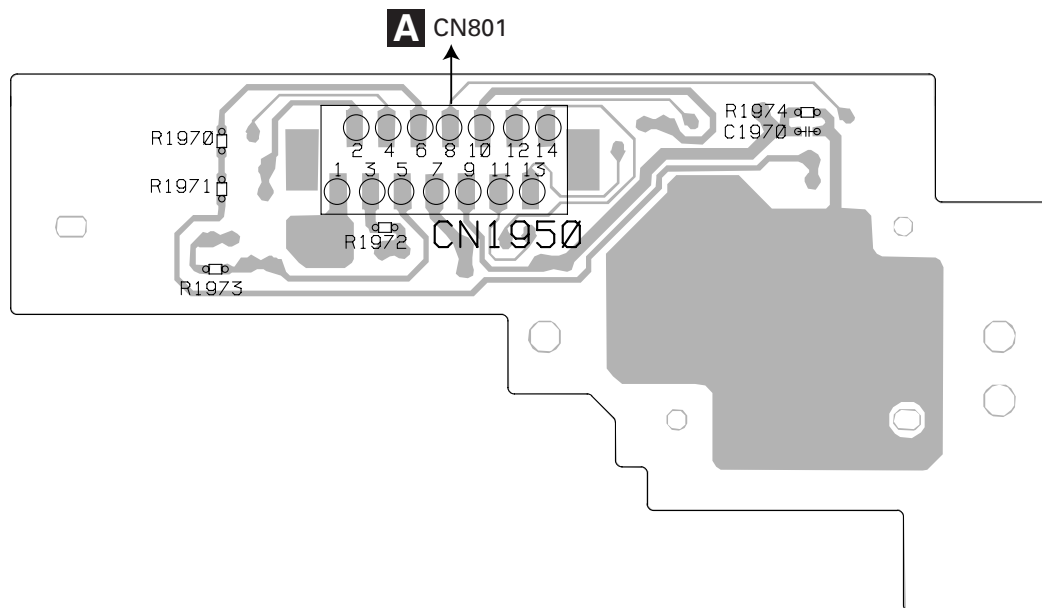
**D** PANEL UNIT

**SIDE A**



**D** PANEL UNIT

**SIDE B**



△

A

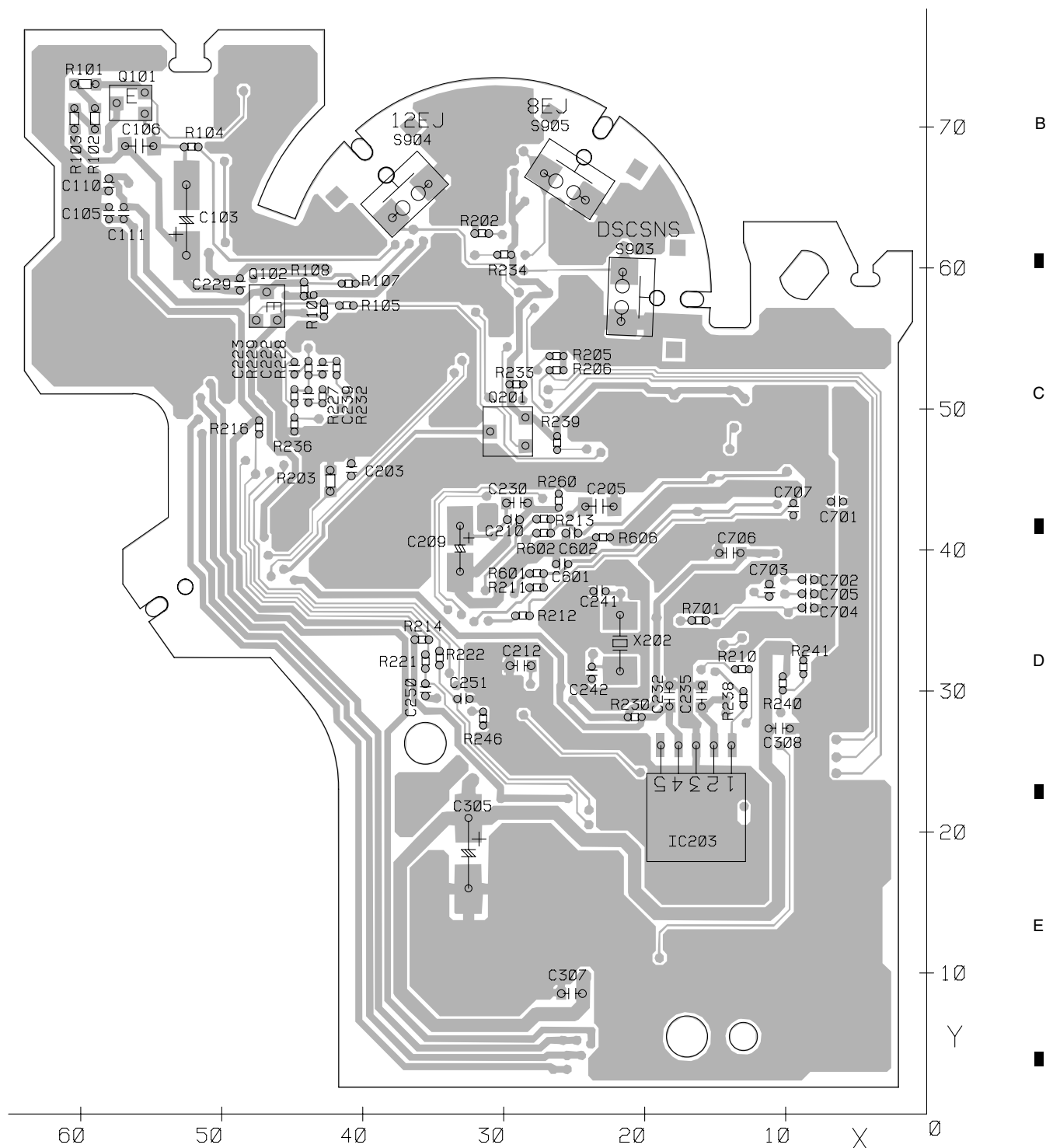


D

F

F

4



# 5. ELECTRICAL PARTS LIST

NOTE:

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

Chip Resistor

RS1/○S○○○○J,RS1/○○S○○○○J

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

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

- The  $\triangle$  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.

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.
<b>Unit Number: XWM7175(P490IB)</b>			Q 101	(B,42,105) Transistor	2SA1576A
<b>Unit Number: XWM7176(P4900IB)</b>			Q 102	(A,33,87) Transistor	DTC114EUA
<b>Unit Name : Tuner Amp Unit</b>			Q 201	(A,36,50) Transistor	2SC4081
<b>Unit Number: (P490)</b>			Q 202	(A,43,46) Transistor	RT3T22M
<b>Unit Name : Keyboard Unit</b>			Q 301	(A,142,100) Transistor	DTC124EUA
<b>Unit Number:(P4900IB)</b>			Q 351	(A,132,127) Transistor	RT3C99M
<b>Unit Name : Keyboard Unit</b>			Q 352	(B,137,126) Transistor	RT3C99M
<b>Unit Number:(P4900IB)</b>			Q 353	(B,161,128) Transistor	RT3C99M
<b>Unit Name : Keyboard Unit</b>			Q 650	(A,5,67) Transistor	2SD2396
<b>Unit Number: CWM8758</b>			Q 651	(B,22,57) Transistor	RT3T22M
<b>Unit Name : Panel Unit</b>			Q 701	(A,120,118) Transistor	2SA2060
<b>Unit Number: CWM8758</b>			Q 702	(A,127,118) Transistor	2SA1162
<b>Unit Name : Panel Unit</b>			Q 703	(A,120,126) Transistor	2SA2060
<b>Unit Number: CWM8758</b>			Q 705	(A,108,90) Transistor	2SC4081
<b>Unit Name : Panel Unit</b>			Q 706	(A,132,93) Transistor	DTC124EUA
<b>Unit Number: CWM8758</b>			Q 707	(B,128,118) Transistor	DTC124EUA
<b>Unit Name : Panel Unit</b>			Q 801	(A,101,27) Transistor	RT1N431M
<b>Unit Number: CWM8758</b>			Q 819	(A,111,23) Transistor	2SA1576A
<b>Unit Name : Panel Unit</b>			Q 820	(A,114,27) Transistor	DTC114EUA
<b>Unit Number: CWM8758</b>			Q 821	(A,34,38) Transistor	2SA1366
<b>Unit Name : Panel Unit</b>			Q 822	(B,71,17) Transistor	DTC114EUA
<b>Unit Number: CWM8758</b>			Q 831	(B,96,27) Transistor	2SA1576A
<b>Unit Name : Panel Unit</b>			Q 832	(B,91,20) Transistor	DTC114EUA
<b>Unit Number: CWM8758</b>			Q 851	(A,16,32) Transistor	2SD1760F5
<b>Unit Name : Panel Unit</b>			Q 852	(B,31,33) Transistor	RT3T22M
<b>Unit Number: CWM8758</b>			Q 911	(A,5,101) Transistor	2SD2396
<b>Unit Name : Panel Unit</b>			Q 912	(B,28,79) Transistor	RT3T22M
<b>Unit Number: CWM8758</b>			Q 931	(B,49,98) Transistor	RT3CLLM
<b>Unit Name : Panel Unit</b>			Q 941	(A,115,68) Transistor	DTC114EUA
<b>Unit Number: CWM8758</b>			Q 981	(B,24,91) Transistor	2SC4081
<b>Unit Name : Panel Unit</b>			Q 982	(A,137,99) Transistor	RT3T22M
<b>Unit Number: CWM8758</b>			D 171	(B,13,129) Diode	HZM6R2ZMWA
<b>Unit Name : Panel Unit</b>			D 172	(A,12,128) Diode	HZM6R2ZMWA
<b>Unit Number: CWM8758</b>			D 201	(A,49,50) Diode	HZS12L(B1)
<b>Unit Name : Panel Unit</b>			D 301	(A,91,98) Diode	MPG06G-6415G3
<b>Unit Number: CWM8758</b>			D 302	(A,94,98) Diode	MPG06G-6415G3
<b>Unit Name : Panel Unit</b>			D 602	(A,100,72) Diode	MC2850-11
<b>Unit Number: CWM8758</b>			D 650	(A,16,69) Diode	MTZJA8R2(B)
<b>Unit Name : Panel Unit</b>			D 801	(B,102,30) Diode	MC2850-11
<b>Unit Number: CWM8758</b>			D 802	(B,112,29) Diode	MC2848-11
<b>Unit Name : Panel Unit</b>			D 803	(B,124,32) Diode	MC2846-11

## MISCELLANEOUS

IC 101	(A,42,88) IC	HA12241FP
IC 171	(A,102,84) IC	NJM2794V
IC 201	(B,78,83) IC	PML015B
IC 301	(A,91,133) IC	PAL007C
IC 420	(A,150,26) IC	NJM2885DL1-33
IC 601	(A,108,54) IC	PEG270A
IC 602	(A,82,62) IC	S-80835CNMC-B8U
IC 641	(A,52,33) IC	NJM2885DL1-33
IC 701	(A,133,75) IC	TC7SET08FUS1
IC 702	(A,132,85) IC	TC7SH08FUS1
IC 703	(A,123,76) IC	TC4066BFT
IC 704	(A,125,59) IC	NJM2794V
IC 851	(B,38,18) IC	NJM2360M
IC 901	(A,5,120) IC	NJM2388F84

5			6			7			8		
<u>Circuit Symbol and No.</u>			<u>Part No.</u>			<u>Circuit Symbol and No.</u>			<u>Part No.</u>		
D 804	(B,120,32)	Diode	MC2848-11			R 203	(A,86,83)		RS1/16S102J		
D 805	(B,108,29)	Diode	MC2846-11			R 212	(A,41,48)		RS1/16S391J		
D 852	(B,48,16)	Diode	RB411D			R 213	(B,51,90)		RS1/16S0R0J		A
D 853	(A,22,27)	Diode	MTZJA10(B)			R 214	(B,66,81)		RS1/16S0R0J		
D 854	(A,90,37)	Diode	MC2848-11			R 215	(B,88,82)		RS1/16S0R0J		
D 901	(A,71,110)	Diode	MPG06G-6415G3			R 216	(B,90,85)		RS1/16S0R0J		
D 902	(A,74,110)	Diode	MPG06G-6415G3			R 217	(A,79,88)		RS1/16S0R0J		
D 911	(A,13,86)	Diode	MPG06G-6415G3			R 218	(B,79,94)		RS1/16S0R0J		
D 912	(A,18,82)	Diode	HZS6L(B1)			R 301	(A,145,84)		RS1/16S103J		
D 931	(A,56,109)	Diode	HZS7L(A1)			R 302	(A,131,99)		RS1/16S331J		
D 932	(A,57,100)	Diode	HZS7L(C3)			R 303	(A,134,99)		RS1/16S103J		
D 942	(A,137,73)	Diode	1SS133			R 304	(A,133,119)		RS1/16S153J		
D 981	(A,18,90)	Diode	HZS9L(A2)			R 305	(B,121,93)		RS1/16S682J		
D 982	(A,95,71)	Diode	MC2848-11			R 306	(B,110,94)		RS1/16S682J		B
D 984	(A,137,76)	Diode	1SS133			R 307	(B,93,83)		RS1/16S682J		
L 101	(A,13,78)	Inductor	LAU2R2K			R 308	(B,97,91)		RS1/16S682J		
L 201	(A,53,81)	Ferri-Inductor	LAU100K			R 309	(B,121,95)		RS1/16S123J		
L 202	(A,40,29)	Ferri-Inductor	LAU100K			R 310	(B,97,85)		RS1/16S123J		
L 241	(A,61,94)	Ferri-Inductor	LAU100K			R 311	(B,101,94)		RS1/16S123J		
L 401	(A,151,49)	Inductor	LAU1R0K			R 312	(B,93,91)		RS1/16S123J		
L 402	(A,147,91)	Inductor	LAU1R0K			R 350	(B,144,131)		RS1/16S0R0J		
L 403	(B,154,95)	Chip Coil	LCTAW4R7J2520			R 351	(A,137,124)		RS1/16S390J		
L 601	(A,77,54)	Ferri-Inductor	LAU100K			R 352	(A,135,124)		RS1/16S472J		
L 701	(A,132,78)	Inductor	CTF1382			R 353	(A,128,125)		RS1/16S472J		
L 831	(A,101,22)	Ferri-Inductor	LAU100K			R 354	(A,143,120)		RS1/16S223J		C
L 851	(A,37,15)	Inductor	CTF1660			R 355	(A,138,128)		RS1/16S223J		
L 901	(A,30,107)	Choke Coil 600 $\mu$ H	CTH1280			R 358	(A,131,125)		RS1/16S390J		
X 601	(A,92,56)	Crystal 20 MHz	VSS1167			R 359	(A,139,123)		RS1/16S390J		
S 802	(A,21,9)	Switch(DETACH)	CSN1039			R 360	(B,140,122)		RS1/16S472J		
△FU352	(B,126,134)	Fuse 3 A	CEK1286			R 361	(A,141,123)		RS1/16S223J		
TU401	(A,161,101)	FM/AM Tuner Unit	CWE1952			R 362	(B,136,129)		RS1/16S0R0J		
BZ621	(A,135,23)	Buzzer	CPV1062			R 363	(B,132,128)		RS1/16S472J		
AR401	(B,163,113)	Surge Protector	IMSA-6801-01Y901			R 364	(B,126,131)		RS1/16S223J		
△	Fuse 10 A		CEK1208			R 366	(B,130,126)		RS1/16S390J		
<b>RESISTORS</b>						R 367	(A,156,122)		RS1/16S390J		
R 101	(B,36,135)		RS1/16S101J			R 368	(B,166,127)		RS1/16S472J		D
R 102	(B,36,133)		RS1/16S620J			R 369	(A,156,125)		RS1/16S223J		
R 103	(B,37,128)		RS1/16S101J			R 371	(B,147,114)		RS1/16S390J		
R 104	(A,37,85)		RS1/16S102J			R 372	(B,164,123)		RS1/16S472J		
R 105	(A,48,87)		RS1/16S472J			R 373	(B,161,133)		RS1/16S223J		
R 106	(A,49,89)		RS1/16S472J			R 401	(B,151,64)		RS1/16S0R0J		
R 107	(B,26,133)		RS1/16S181J			R 403	(B,158,70)		RS1/16S681J		
R 108	(B,25,130)		RS1/16S223J			R 404	(B,113,45)		RS1/16S681J		
R 109	(B,39,105)		RS1/16S222J			R 406	(B,155,80)		RS1/16S681J		
R 110	(B,29,120)		RS1/16S181J			R 407	(B,113,47)		RS1/16S681J		
R 111	(B,27,120)		RS1/16S223J			R 408	(B,155,83)		RS1/16S681J		E
R 112	(B,25,120)		RS1/16S102J			R 409	(B,155,85)		RS1/16S681J		
R 113	(B,27,136)		RS1/16S102J			R 411	(B,156,87)		RS1/16S681J		
R 114	(B,43,107)		RS1/16S223J			R 413	(B,156,89)		RS1/16S681J		
R 115	(B,37,106)		RS1/16S472J			R 424	(B,116,49)		RS1/16S681J		
R 161	(A,72,56)		RS1/16S102J			R 601	(B,111,61) (P490IB)		RS1/16S104J		
R 162	(A,72,62)		RS1/16S102J			R 602	(B,103,63) (P4900IB)		RS1/16S104J		
R 163	(A,72,55)		RS1/16S103J			R 603	(B,111,62)		RS1/16S104J		
R 164	(A,74,62)		RS1/16S103J			R 605	(A,103,68)		RS1/16S104J		
R 172	(A,69,99)		RS1/16S223J			R 606	(A,87,65)		RS1/16S104J		
R 175	(A,66,99)		RS1/16S223J			R 607	(A,81,56)		RS1/16S822J		
R 201	(A,82,87)		RS1/16S102J			R 608	(B,103,44)		RS1/16S102J		F
R 202	(A,90,85)		RS1/16S102J			R 609	(A,93,38)		RS1/16S102J		
						R 610	(A,89,60)		RS1/16S471J		
						R 611	(A,93,45)		RS1/16S473J		

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

R 613 (A,99,35)  
R 616 (B,98,59)

RS1/16S473J  
RS1/16S0R0J

R 813 (A,77,15)  
R 814 (B,109,24)

RS1/16S1R0J  
RS1/16S222J

A R 621 (B,135,28)  
R 631 (A,130,42)  
R 640 (A,72,33)  
R 642 (A,75,41)  
R 643 (B,101,52)

RS1/16S102J  
RS1/16S104J  
RS1/16S104J  
RS1/16S682J  
RS1/16S221J

R 815 (B,97,38)  
R 816 (B,111,24)  
R 817 (B,102,28)  
R 818 (B,131,25)  
R 819 (A,108,23)

RS1/16S473J  
RS1/16S473J  
RS1/16S473J  
RS1/16S104J  
RS1/16S473J

R 645 (B,87,37)  
R 646 (B,70,34)  
R 647 (A,69,33)  
R 649 (B,70,32)  
R 651 (A,16,60)

RS1/16S221J  
RS1/16S221J  
RS1/16S221J  
RS1/16S104J  
RD1/4PU561J

R 820 (A,110,26)  
R 821 (A,40,44)  
R 822 (B,32,43)  
R 823 (A,43,38)  
R 824 (A,81,16)

RS1/16S682J  
RD1/4PU391J  
RS1/16S103J  
RD1/4PU222J  
RS1/16S472J

B R 653 (A,70,28)  
R 654 (A,72,30)  
R 666 (B,81,39)  
R 667 (B,81,24)  
R 668 (B,84,29)

RS1/16S221J  
RS1/16S104J  
RS1/16S104J  
RS1/16S102J  
RS1/16S102J

R 831 (B,93,27)  
R 832 (B,94,24)  
R 833 (B,100,20)  
R 850 (A,26,35)  
R 852 (A,29,16)

RS1/16S473J  
RS1/16S102J  
RS1/16S222J  
RD1/4PU681J  
RS1/16S1R0J

R 673 (B,83,38)  
R 701 (B,109,41)  
R 702 (A,133,87)  
R 703 (A,134,80)  
R 704 (A,135,85)

RS1/16S682J  
RS1/16S102J  
RS1/16S102J  
RS1/16S123J  
RS1/16S223J

R 857 (B,30,15)  
R 858 (A,35,23)  
R 859 (B,32,15)  
R 860 (B,32,21)  
R 901 (A,33,82)

RS1/16S102J  
RD1/4PU472J  
RS1/16S821J  
RS1/16S391J  
RS1/16S102J

C R 705 (A,124,120)  
R 706 (A,124,117)  
R 707 (A,125,106)  
R 708 (A,123,123)  
R 709 (A,103,98)

RS1/16S103J  
RS1/16S102J  
RS2PMFR47J  
RS1/16S103J  
RD1/4PU271J

R 902 (A,32,85)  
R 912 (B,33,79)  
R 913 (B,11,82)  
R 914 (B,47,94)  
R 915 (B,46,99)

RS1/16S103J  
RS1/16S222J  
RS1/16S223J  
RS1/16S104J  
RS1/16S104J

R 710 (A,106,103)  
R 711 (A,134,90)  
R 712 (B,122,122)  
R 713 (B,122,120)  
R 714 (A,129,94)

RD1/4PU271J  
RS1/16S104J  
RS1/16S514J  
RS1/16S393J  
RS1/16S104J

R 916 (A,109,69)  
R 918 (B,9,105)  
R 931 (A,51,112)  
R 932 (B,51,104)  
R 933 (B,67,101)

RS1/16S104J  
RS1/16S391J  
RD1/4PU102J  
RS1/16S472J  
RS1/16S473J

D R 716 (A,139,90)  
R 717 (A,121,110)  
R 718 (A,142,87)  
R 720 (A,128,85)  
R 721 (A,132,80)

RS1/16S102J  
RS1/16S472J  
RS1/16S472J  
RS1/16S102J  
RS1/16S102J

R 934 (B,67,99)  
R 935 (B,47,106)  
R 936 (B,44,100)  
R 941 (A,63,100)  
R 942 (B,132,75)

RS1/16S103J  
RS1/16S473J  
RS1/16S104J  
RD1/4PU102J  
RS1/16S103J

R 722 (A,127,87)  
R 723 (A,97,98)  
R 724 (A,114,128)  
R 725 (A,100,103)  
R 726 (A,113,100)

RS1/16S104J  
RD1/4PU271J  
RS1/16S103J  
RD1/4PU271J  
RS1/16S103J

R 981 (B,24,93)  
R 982 (B,21,91)  
R 983 (B,23,87)  
R 984 (A,145,103)

RS1/16S683J  
RS1/16S683J  
RS1/16S223J  
RS1/16S102J

**CAPACITORS**

E R 728 (A,108,93)  
R 731 (A,134,68)  
R 732 (A,132,68)  
R 734 (A,129,69)  
R 735 (A,127,69)

RS1/16S103J  
RS1/16S223J  
RS1/16S0R0J  
RS1/16S223J  
RS1/16S0R0J

C 101 (B,32,137)  
C 102 (A,39,84)  
C 103 (A,40,93)  
C 104 (A,42,84)  
C 171 (A,69,101)

CKSRYB104K16  
CKSRYB104K16  
CCSRCH101J50  
CCSRCH101J50  
CKSRYB472K50

R 736 (A,102,96)  
R 737 (A,102,94)  
R 802 (A,16,25)  
R 803 (B,71,12)  
R 804 (A,124,23)

RS1/16S682J  
RS1/16S152J  
RS1/16S104J  
RS1/16S102J  
RD1/4PU222J

C 172 (B,13,139)  
C 173 (A,66,101)  
C 181 (A,112,82)  
C 182 (A,99,90)  
C 183 (A,90,91)

CKSRYB104K16  
CKSRYB472K50  
CEJQ2R2M50  
CKSRYB105K10  
CKSRYB105K10

F R 805 (A,127,23)  
R 806 (A,120,23)  
R 807 (A,117,23)  
R 808 (B,113,24)  
R 809 (A,104,21)

RD1/4PU222J  
RD1/4PU222J  
RD1/4PU222J  
RS1/16S222J  
RD1/4PU222J

C 184 (A,120,82)  
C 185 (A,97,90)  
C 186 (A,94,91)  
C 201 (B,66,72)  
C 202 (A,73,73)

CEJQ330M10  
CKSRYB105K10  
CKSRYB105K10  
CKSRYB105K10  
CKSRYB105K10

R 810 (B,129,26)  
R 811 (B,112,33)  
R 812 (B,107,32)

RS1/16S102J  
RS1/16S102J  
RS1/16S102J

C 203 (B,66,74)

CKSRYB104K16

5		6		7		8	
<u>Circuit Symbol and No.</u>		<u>Part No.</u>		<u>Circuit Symbol and No.</u>		<u>Part No.</u>	
C 204	(A,85,81)	CKSRYB104K16		C 662	(A,48,25)	CEJQ470M6R3	
C 205	(B,66,76)	CKSRYB105K10		C 663	(A,70,44)	CEJQ4R7M35	
C 206	(A,89,94)	CKSRYB105K10		C 666	(B,55,67)	CKSRYB105K10	A
C 207	(B,66,77)	CKSRYB105K10					
C 208	(B,88,77)	CKSRYB105K10		C 701	(A,131,73)	CKSRYB105K10	
C 209	(B,66,79)	CKSRYB105K10		C 702	(A,130,87)	CKSRYB104K16	
C 210	(B,88,79)	CKSRYB105K10		C 703	(A,115,124)	CKSYB475K16	
C 211	(B,67,90)	CKSRYB153K50		C 705	(A,131,64)	CKSRYB105K10	
C 212	(B,88,92)	CKSRYB153K50		C 706	(A,132,64)	CKSRYB105K10	
C 217	(B,66,87)	CKSRYB104K16		C 708	(A,141,92)	CKSRYB103K50	
C 218	(A,76,94)	CEJQ100M25		C 709	(A,129,64)	CKSRYB105K10	
C 219	(A,83,94)	CEJQ100M25		C 710	(A,122,65)	CKSRYB105K10	
C 220	(A,56,90)	CEJQ470M16		C 716	(A,120,72)	CKSRYB473K50	
C 232	(B,44,52)	CKSRYB473K50		C 717	(A,133,60)	CEJQ2R2M50	
C 233	(B,37,54)	CKSRYB104K16		C 718	(A,139,60)	CEJQ330M10	B
C 234	(A,35,57)	CEJQ470M16		C 822	(A,81,14)	CKSRYB473K50	
C 242	(B,66,95)	CKSRYB104K16		C 833	(B,99,25)	CKSRYB105K10	
C 243	(A,69,93)	CEJQ470M16		C 852	(B,37,25)	CKSRYB223K50	
C 309	(A,132,116)	CEJQ330M10		C 854	(B,45,12)	CCSRCH331J50	
C 311	(B,123,130)	CKSQYB225K10		C 855	(B,34,28)	CKSRYB104K16	
C 312	(B,124,126)	CKSQYB225K10		C 856	(B,19,32)	CKSRYB104K16	
C 313	(A,134,110)	CEJQ100M25		C 858	(A,53,16)	CEJQ470M25	
C 314	(B,118,116)	CKSRYB474K10		C 859	(A,30,28)	CEJQ101M16	
C 315	(B,115,115)	CKSRYB474K10		C 860	(A,25,22)	CEJQ470M16	
C 316	(B,118,121)	CKSQYB474K25		C 901	(A,49,122)	3 300 $\mu$ F/16 V CCH1486	C
C 317	(B,115,120)	CKSQYB474K25		C 902	(B,59,120)	CKSRYB104K16	
C 318	(B,120,126)	CKSRYB474K10		C 912	(B,22,82)	CKSRYB472K50	
C 319	(B,113,114)	CKSRYB474K10		C 913	(B,35,68)	CKSRYB103K50	
C 320	(B,120,130)	CKSQYB474K25		C 914	(A,37,66)	CEJQ470M16	
C 321	(B,113,119)	CKSQYB474K25		C 915	(A,27,74)	CEAT102M16	
C 359	(A,139,108)	CEJQ100M25		C 922	(B,10,120)	CKSRYB103K50	
C 360	(A,134,104)	CEJQ100M25		C 923	(A,13,96)	CEJQ101M16	
C 361	(A,144,114)	CEJQ100M25		C 924	(B,19,101)	CKSRYB103K50	
C 362	(A,139,114)	CEJQ100M25		C 925	(A,26,83)	CEJQ221M16	
C 363	(A,153,118)	CEJQ100M25		C 931	(B,49,104)	CKSRYB104K16	
C 364	(A,144,108)	CEJQ100M25		C 941	(A,138,69)	CEJQ1R0M50	D
C 402	(B,152,51)	CKSRYB103K50		C 984	(A,139,80)	CEJQ220M16	
C 405	(B,146,94)	CKSRYB103K50					
C 406	(A,148,97)	CEJQ101M16					
C 408	(B,152,66)	CKSRYB103K50					
C 413	(B,112,50)	CCSRCH470J50					
C 415	(A,154,54)	CEJQ470M6R3					
C 420	(A,149,38)	CEJQ470M6R3					
C 422	(A,139,35)	CEJQ1R0M50		IC 1902	(A,13,67) Remote IC	GP1UX51RK	
C 601	(B,74,47)	CKSRYB105K10		IC 1921	(B,23,91) IC	PEG268A	
C 602	(A,86,51)	CEJQ4R7M35		Q 2011	(B,16,76) Transistor	2SC4617	E
C 603	(B,93,60)	CCSRCH101J50		Q 2012	(B,21,75) Transistor	2SC2411K	
C 604	(A,81,53)	CEJQ2R2M50		D 1901	(B,13,114) Diode	MC2846-11	
C 605	(B,90,56)	CCSRCH100D50		D 1902	(B,13,118) Diode	MC2848-11	
C 606	(B,94,52)	CCSRCH100D50		D 1921	(B,33,93) Diode	1SS355	
C 607	(B,83,58)	CKSRYB105K10		D 1941	(A,8,10) LED	SML412BC5T(NP)	
C 609	(B,83,50)	CKSRYB105K10		D 1942	(A,11,19) LED	SML412BC5T(NP)	
C 618	(A,103,67)	CKSRYB102K50		D 1943	(A,34,10) LED	SML412BC5T(NP)	
C 650	(B,13,66)	CKSRYB473K50		D 1944	(A,31,19) LED	SML412BC5T(NP)	
C 651	(B,53,42)	CKSRYB104K16		D 1945	(A,40,67) LED	SML412BC5T(NP)	
C 652	(B,85,25)	CKSRYB152K50		D 1946	(A,40,78) LED	SML412BC5T(NP)	
C 653	(B,87,30)	CKSRYB152K50		D 1947	(A,40,89) LED	SML412BC5T(NP)	
C 659	(A,48,41)	CEJQ101M16		D 1948	(A,40,100) LED	SML412BC5T(NP)	F
C 660	(B,67,45)	CKSRYB105K10		D 1949	(A,40,110) LED	SML412BC5T(NP)	
C 661	(B,54,23)	CKSRYB103K50		D 1950	(A,40,121) LED	SML412BC5T(NP)	

**B**  
**Unit Number : (P490IB)**  
**Unit Name : Keyboard Unit**

#### MISCELLANEOUS



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

D 1951 (A,40,132) LED SML412BC5T(NP)  
 D 1952 (A,40,146) LED SML412BC5T(NP)  
 D 1953 (A,6,158) LED SML412BC5T(NP)

R 1960 (B,36,43)  
 R 1961 (B,33,35)

RS1/16S391J  
 RS1/16S391J

A

D 1954 (A,40,154) LED SML412BC5T(NP)  
 D 1955 (A,4,45) LED SML412BC5T(NP)  
 D 1956 (A,21,62) LED SML412BC5T(NP)  
 D 1957 (A,21,27) LED SML412BC5T(NP)  
 D 1958 (A,38,45) LED SML412BC5T(NP)

R 1962 (B,36,33)  
 R 1963 (B,36,45)  
 R 1965 (B,27,157)  
 R 1975 (B,9,36)  
 R 1976 (B,12,31)

RS1/16S181J  
 RS1/16S181J  
 RS1/16S0R0J  
 RS1/16S822J  
 RS1/16S223J

L 1901 (B,21,70) Inductor CTF1617  
 TH2011 (B,17,82) Thermistor CCX1037  
 X 1921 (B,23,85) Radiator 10.000 MHz CSS1577  
 S 1971 (A,27,28) Push Switch CSG1155  
 S 1972 (A,27,61) Push Switch CSG1155

R 1977 (B,32,62)  
 R 1978 (B,32,58)  
 R 1979 (B,32,54)  
 R 1980 (B,29,21)  
 R 1981 (B,26,19)

RS1/16S821J  
 RS1/16S182J  
 RS1/16S332J  
 RS1/16S472J  
 RS1/16S822J

B

S 1973 (A,37,38) Push Switch CSG1155  
 S 1974 (A,5,38) Push Switch CSG1155  
 S 1975 (A,7,20) Push Switch CSG1155  
 S 1976 (A,40,71) Push Switch CSG1155  
 S 1977 (A,40,82) Push Switch CSG1155

R 1982 (B,17,18)  
 R 1983 (B,33,116)  
 R 1984 (B,33,117)  
 R 1985 (B,33,120)  
 R 1986 (B,35,122)

RS1/16S223J  
 RS1/16S821J  
 RS1/16S182J  
 RS1/16S332J  
 RS1/16S472J

S 1978 (A,40,103) Push Switch CSG1155  
 S 1979 (A,35,20) Push Switch CSG1155  
 S 1980 (A,37,9) Push Switch CSG1155  
 S 1981 (A,5,9) Push Switch CSG1155  
 S 1982 (A,40,92) Push Switch CSG1155

R 1987 (B,32,135)  
 R 1988 (B,32,139)  
 R 1989 (B,29,99)  
 R 1990 (B,29,98)  
 R 1991 (B,29,96)

RS1/16S822J  
 RS1/16S223J  
 RS1/16S103J  
 RS1/16S103J  
 RS1/16S103J

C

S 1983 (A,40,114) Push Switch CSG1155  
 S 1984 (A,40,125) Push Switch CSG1155  
 S 1985 (A,40,136) Push Switch CSG1155  
 S 1986 (A,40,142) Push Switch CSG1155  
 S 1987 (A,40,157) Push Switch CSG1155

R 1992 (B,9,39)  
 R 1993 (B,10,35)  
 R 1994 (B,12,35)  
 R 1995 (B,14,37)  
 R 2011 (B,14,77)

RS1/16S472J  
 RS1/16S332J  
 RS1/16S182J  
 RS1/16S821J  
 RS1/16S273J

S 1988 (A,21,45) Rotary Encoder YSD5009

R 2012 (B,26,80)  
 R 2013 (B,17,80)  
 R 2014 (B,26,78)  
 R 2015 (B,9,99)  
 R 2016 (A,24,97)

RS1/16S473J  
 RS1/16S683J  
 RS1/16S392J  
 RS1/16S2202D  
 RS1/16S101J

**RESISTORS**

R 1902 (B,5,135) RS1/16S222J  
 R 1903 (B,6,135) RS1/16S222J  
 R 1905 (B,8,123) RS1/16S103J  
 R 1906 (B,21,63) RS1/16S101J  
 R 1907 (B,16,60) RS1/16S103J

R 2017 (A,27,103)  
 R 2018 (A,26,109)  
 R 2019 (B,22,100)  
 R 2020 (B,30,92)  
 R 2022 (A,25,101)

RS1/16S102J  
 RAB4C101J  
 RS1/16S473J  
 RS1/16S473J  
 RS1/16S102J

R 1908 (B,14,81) RS1/16S2R2J  
 R 1910 (B,15,119) RS1/16S103J  
 R 1911 (B,33,126) RS1/16S473J  
 R 1922 (B,32,92) RS1/16S154J  
 R 1923 (B,10,87) RS1/16S473J

R 2023 (B,10,103)

RS1/16S3002D

**CAPACITORS**

R 1925 (B,8,87) RS1/16S473J  
 R 1941 (B,32,19) RS1/16S121J  
 R 1942 (B,31,120) RS1/16S121J  
 R 1943 (B,36,127) RS1/16S121J  
 R 1944 (B,36,142) RS1/16S121J

C 1904 (B,18,61)  
 C 1907 (B,31,127)  
 C 1922 (B,26,85)  
 C 1923 (B,30,103)  
 C 1941 (A,11,10)

CKSYF106Z10  
 CKSRYB104K16  
 CKSRYB104K16  
 CKSRYB103K50  
 CKSRYF104Z50

E

R 1945 (B,25,158) RS1/16S181J  
 R 1946 (B,32,23) RS1/16S181J  
 R 1947 (B,31,123) RS1/16S181J  
 R 1948 (B,36,128) RS1/16S181J  
 R 1949 (B,36,139) RS1/16S181J

C 1942 (A,16,19)  
 C 1943 (A,31,9)  
 C 1944 (A,26,19)  
 C 1945 (A,39,65)  
 C 1946 (A,39,76)

CKSRYF104Z50  
 CKSRYF104Z50  
 CKSRYF104Z50  
 CKSRYF104Z50  
 CKSRYF104Z50

R 1950 (B,25,155) RS1/16S391J  
 R 1951 (B,30,24) RS1/16S331J  
 R 1952 (B,33,124) RS1/16S331J  
 R 1953 (B,36,131) RS1/16S331J  
 R 1954 (B,36,136) RS1/16S331J

C 1947 (A,39,87)  
 C 1948 (A,39,98)  
 C 1949 (A,39,109)  
 C 1950 (A,39,119)  
 C 1951 (A,39,130)

CKSRYF104Z50  
 CKSRYF104Z50  
 CKSRYF104Z50  
 CKSRYF104Z50  
 CKSRYF104Z50

F

R 1955 (B,27,154) RS1/16S391J  
 R 1957 (B,28,33) RS1/16S391J  
 R 1958 (B,32,33) RS1/16S391J

C 1952 (A,40,147)  
 C 1953 (A,18,154)  
 C 1954 (A,40,152)  
 C 1955 (A,6,45)

CKSRYF104Z50  
 CKSRYF104Z50  
 CKSRYF104Z50  
 CKSRYF104Z50

5			6	7			8
<u>Circuit Symbol and No.</u>			<u>Part No.</u>	<u>Circuit Symbol and No.</u>			<u>Part No.</u>
C 1956	(A,21,60)		CKSRYF104Z50	S 1988	(A,21,45) Rotary Encoder		YSD5009
C 1957	(A,21,29)		CKSRYF104Z50	<b>RESISTORS</b>			
C 1958	(A,37,45)		CKSRYF104Z50	R 1902	(B,5,135)		RS1/16S222J
C 2011	(A,24,84)		CKSRYB104K16	R 1903	(B,6,135)		RS1/16S222J
C 2012	(B,13,94)		CKSRYB105K10	R 1905	(B,8,123)		RS1/16S103J
C 2013	(A,24,88)		CKSRYB224K16	R 1906	(B,21,63)		RS1/16S101J
C 2014	(A,24,93)		CKSRYB104K16	R 1907	(B,16,60)		RS1/16S103J
<b>B</b>				R 1908	(B,14,81)		RS1/16S2R2J
				R 1910	(B,15,119)		RS1/16S103J
<b>Unit Number :(P4900IB)</b>				R 1911	(B,33,126)		RS1/16S473J
<b>Unit Name : Keyboard Unit</b>				R 1922	(B,32,92)		RS1/16S154J
<b>MISCELLANEOUS</b>				R 1923	(B,10,87)		RS1/16S473J
IC 1902	(A,13,67) Remote IC		GP1UX51RK	R 1925	(B,8,87)		RS1/16S473J
IC 1921	(B,23,91) IC		PEG268A	R 1941	(B,32,19)		RS1/16S181J
Q 2011	(B,16,76) Transistor		2SC4617	R 1942	(B,31,120)		RS1/16S181J
Q 2012	(B,21,75) Transistor		2SC2411K	R 1943	(B,36,127)		RS1/16S181J
D 1901	(B,13,114) Diode		MC2846-11	R 1944	(B,36,142)		RS1/16S181J
D 1902	(B,13,118) Diode		MC2848-11	R 1945	(B,25,158)		RS1/16S151J
D 1921	(B,33,93) Diode		1SS355	R 1946	(B,32,23)		RS1/16S181J
D 1941	(A,8,10) LED		CL-195PG-CD	R 1947	(B,31,123)		RS1/16S181J
D 1942	(A,11,19) LED		CL-195PG-CD	R 1948	(B,36,128)		RS1/16S181J
D 1943	(A,34,10) LED		CL-195PG-CD	R 1949	(B,36,139)		RS1/16S181J
D 1944	(A,31,19) LED		CL-195PG-CD	R 1950	(B,25,155)		RS1/16S181J
D 1945	(A,40,67) LED		CL-195PG-CD	R 1951	(B,30,24)		RS1/16S181J
D 1946	(A,40,78) LED		CL-195PG-CD	R 1952	(B,33,124)		RS1/16S181J
D 1947	(A,40,89) LED		CL-195PG-CD	R 1953	(B,36,131)		RS1/16S181J
D 1948	(A,40,100) LED		CL-195PG-CD	R 1954	(B,36,136)		RS1/16S181J
D 1949	(A,40,110) LED		CL-195PG-CD	R 1955	(B,27,154)		RS1/16S181J
D 1950	(A,40,121) LED		CL-195PG-CD	R 1957	(B,28,33)		RS1/16S391J
D 1951	(A,40,132) LED		CL-195PG-CD	R 1958	(B,32,33)		RS1/16S391J
D 1952	(A,40,146) LED		CL-195PG-CD	R 1960	(B,36,43)		RS1/16S391J
D 1953	(A,6,158) LED		CL-195PG-CD	R 1961	(B,33,35)		RS1/16S391J
D 1954	(A,40,154) LED		CL-195PG-CD	R 1962	(B,36,33)		RS1/16S181J
D 1955	(A,4,45) LED		SML412BC5T(NP)	R 1963	(B,36,45)		RS1/16S181J
D 1956	(A,21,62) LED		SML412BC5T(NP)	R 1965	(B,27,157)		RS1/16S181J
D 1957	(A,21,27) LED		SML412BC5T(NP)	R 1975	(B,9,36)		RS1/16S822J
D 1958	(A,38,45) LED		SML412BC5T(NP)	R 1976	(B,12,31)		RS1/16S223J
L 1901	(B,21,70) Inductor		CTF1617	R 1977	(B,32,62)		RS1/16S821J
TH2011	(B,17,82) Thermistor		CCX1037	R 1978	(B,32,58)		RS1/16S182J
X 1921	(B,23,85) Radiator 10.0 MHz		CSS1577	R 1979	(B,32,54)		RS1/16S332J
S 1971	(A,27,28) Push Switch		CSG1155	R 1980	(B,29,21)		RS1/16S472J
S 1972	(A,27,61) Push Switch		CSG1155	R 1981	(B,26,19)		RS1/16S822J
S 1973	(A,37,38) Push Switch		CSG1155	R 1982	(B,17,18)		RS1/16S223J
S 1974	(A,5,38) Push Switch		CSG1155	R 1983	(B,33,116)		RS1/16S821J
S 1975	(A,7,20) Push Switch		CSG1155	R 1984	(B,33,117)		RS1/16S182J
S 1976	(A,40,71) Push Switch		CSG1155	R 1985	(B,33,120)		RS1/16S332J
S 1977	(A,40,82) Push Switch		CSG1155	R 1986	(B,35,122)		RS1/16S472J
S 1978	(A,40,103) Push Switch		CSG1155	R 1987	(B,32,135)		RS1/16S822J
S 1979	(A,35,20) Push Switch		CSG1155	R 1988	(B,32,139)		RS1/16S223J
S 1980	(A,37,9) Push Switch		CSG1155	R 1989	(B,29,99)		RS1/16S103J
S 1981	(A,5,9) Push Switch		CSG1155	R 1990	(B,29,98)		RS1/16S103J
S 1982	(A,40,92) Push Switch		CSG1155	R 1991	(B,29,96)		RS1/16S103J
S 1983	(A,40,114) Push Switch		CSG1155	R 1992	(B,9,39)		RS1/16S472J
S 1984	(A,40,125) Push Switch		CSG1155	R 1993	(B,10,35)		RS1/16S332J
S 1985	(A,40,136) Push Switch		CSG1155	R 1994	(B,12,35)		RS1/16S182J
S 1986	(A,40,142) Push Switch		CSG1155	R 1995	(B,14,37)		RS1/16S821J
S 1987	(A,40,157) Push Switch		CSG1155	R 2011	(B,14,77)		RS1/16S273J
				R 2012	(B,26,80)		RS1/16S473J

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

R 2013	(B,17,80)	RS1/16S683J
R 2014	(B,26,78)	RS1/16S392J
R 2015	(B,9,99)	RS1/16S2202D
R 2016	(A,24,97)	RS1/16S101J
R 2017	(A,27,103)	RS1/16S102J
R 2018	(A,26,109)	RAB4C101J
R 2019	(B,22,100)	RS1/16S473J
R 2020	(B,30,92)	RS1/16S473J
R 2022	(A,25,101)	RS1/16S102J
R 2023	(B,10,103)	RS1/16S3002D

**CAPACITORS**

C 1904	(B,18,61)	CKSYF106Z10
C 1907	(B,31,127)	CKSRYB104K16
C 1922	(B,26,85)	CKSRYB104K16
C 1923	(B,30,103)	CKSRYB103K50
C 1955	(A,6,45)	CKSRYF104Z50
C 1956	(A,21,60)	CKSRYF104Z50
C 1957	(A,21,29)	CKSRYF104Z50
C 1958	(A,37,45)	CKSRYF104Z50
C 2011	(A,24,84)	CKSRYB104K16
C 2012	(B,13,94)	CKSRYB105K10
C 2013	(A,24,88)	CKSRYB224K16
C 2014	(A,24,93)	CKSRYB104K16

**Unit Number: CWX3514****Unit Name : CD Core****Unit(S10.5COMP2)****MISCELLANEOUS**

IC 201	(A,34,46)	IC	PE5547A
IC 301	(A,27,14)	IC	BA5839FP
Q 101	(B,56,72)	Transistor	2SA1577
Q 102	(B,47,57)	Transistor	2SB1689
X 201	(A,23,35)	Ceramic Resonator	16.934 MHz CSS1603
S 901	(A,53,37)	Switch(HOME)	CSN1067
S 903	(B,19,58)	Switch(DSCSNS)	CSN1067
S 904	(B,38,67)	Switch(12EJ)	CSN1068
S 905	(B,24,68)	Switch(8EJ)	CSN1068

**RESISTORS**

R 101	(B,60,73)	RS1/10SR2R4J
R 102	(B,59,71)	RS1/10SR2R4J
R 103	(B,60,71)	RS1/10SR2R7J
R 104	(B,52,69)	RS1/16SS222J
R 105	(B,41,57)	RS1/16SS102J
R 107	(B,41,59)	RS1/16SS105J
R 202	(B,32,62)	RS1/16SS473J
R 203	(B,42,45)	RS1/16S473J
R 204	(A,25,61)	RS1/16SS221J
R 206	(B,26,53)	RS1/16SS104J
R 210	(B,13,32)	RS1/16SS102J
R 214	(B,36,34)	RS1/16SS472J
R 216	(B,47,49)	RS1/16SS472J
R 221	(B,36,32)	RS1/16SS103J
R 222	(B,35,32)	RS1/16SS103J
R 225	(A,49,49)	RS1/16SS103J

R 226	(A,49,50)	RS1/16SS393J
R 227	(B,45,51)	RS1/16SS562J
R 228	(B,42,53)	RS1/16SS122J
R 229	(B,44,53)	RS1/16SS472J
R 230	(B,21,28)	RS1/16SS0R0J
R 232	(B,43,51)	RS1/16SS122J
R 233	(B,29,52)	RS1/16SS103J
R 234	(B,30,61)	RS1/16SS473J
R 235	(A,25,63)	RS1/16SS473J
R 239	(B,26,48)	RS1/16SS473J
R 240	(B,10,31)	RS1/16SS473J
R 241	(B,9,32)	RS1/16SS103J

R 244	(A,20,52)	RS1/16SS473J
R 255	(A,27,63)	RAB4CQ104J
R 307	(A,34,19)	RS1/16SS183J
R 308	(A,38,20)	RS1/16SS183J
R 309	(A,35,21)	RS1/16SS183J
R 310	(A,38,21)	RS1/16SS183J
R 601	(B,28,38)	RS1/16SS0R0J
R 602	(B,27,41)	RS1/16SS0R0J
R 606	(B,23,41)	RS1/16SS0R0J
R 701	(B,16,35)	RS1/16SS221J

**CAPACITORS**

C 106	(B,56,69)	CKSQYB475K6R3
C 202	(A,27,57)	CKSSYB104K10
C 204	(A,24,63)	CKSSYB103K16
C 205	(B,23,43)	CKSQYB475K6R3
C 206	(A,22,39)	CKSSYB104K10
C 207	(A,24,37)	CKSRYB104K16
C 209	(B,33,40)	CEVW220M6R3
C 210	(B,29,42)	CKSSYB104K10
C 211	(A,27,34)	CKSSYB104K10
C 212	(B,29,32)	CKSRYB104K16
C 213	(A,44,37)	CKSSYB104K10
C 214	(A,28,33)	CKSSYB104K10
C 216	(A,50,51)	CKSSYB332K50
C 217	(A,46,51)	CKSSYB104K10
C 218	(A,49,51)	CKSSYB473K10
C 219	(A,45,53)	CKSSYB104K10
C 220	(A,46,53)	CKSSYB182K50
C 221	(A,44,53)	CKSSYB104K10
C 222	(B,43,53)	CCSSCH560J50
C 223	(B,45,53)	CCSSCH4R0C50
C 224	(A,43,55)	CKSSYB104K10
C 226	(A,40,58)	CCSSCH680J50
C 227	(A,40,60)	CCSSCH470J50
C 228	(A,39,62)	CKSSYB103K16
C 229	(B,49,59)	CKSSYB104K10
C 236	(A,42,61)	CKSSYB104K10
C 239	(B,44,51)	CCSSCH220J50
C 240	(A,35,61)	CKSSYB104K10
C 250	(B,36,30)	CKSSYB102K50
C 251	(B,33,29)	CKSSYB102K50
C 303	(A,35,19)	CKSSYB472K25
C 304	(A,34,21)	CKSSYB223K16
C 307	(B,25,9)	CKSRYB104K16
C 308	(B,10,27)	CKSRYB105K10

5

6

7

8

<u>Circuit Symbol and No.</u>	<u>Part No.</u>
-------------------------------	-----------------

C 703	(B,11,37)	CCSSCH101J50
C 704	(B,8,36)	CKSSYB102K50
C 711	(A,25,26)	CKSSYB104K10

D

Unit Number : CWM8758  
Unit Name : Panel Unit

MISCELLANEOUS

D 1970	LED	CL220PGC
S 1970	Push Switch	CSG1112

RESISTORS

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

CAPACITORS

C 1970	CKSRYB104K16
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Miscellaneous Parts List

	Pickup Unit(P10.5)(Service)	CXX1942
M 1	Motor Unit(SPINDLE)	CXC7134
M 2	Motor Unit(LOADING/CARRIAGE)	CXC4026

# 6. ADJUSTMENT

## 6.1 CD ADJUSTMENT

A

- 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.

B

- 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.

C

- 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.

D

- 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.

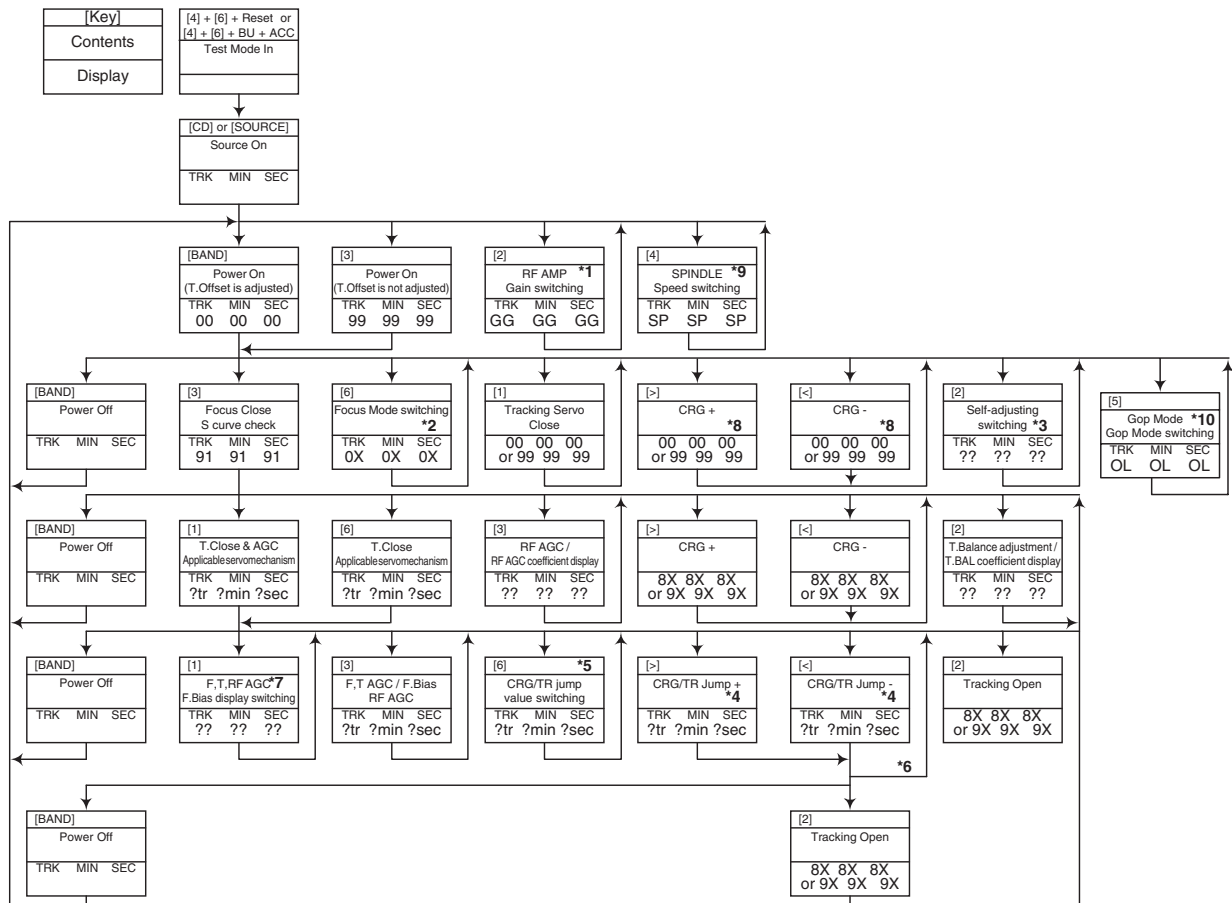
E

F

- 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.

## Flow Chart



\*1) TRK MIN SEC → + 6 dB → + 12 dB  
TRK<sub>06</sub> MIN<sub>06</sub> SEC<sub>06</sub> → TRK<sub>12</sub> MIN<sub>12</sub> SEC<sub>12</sub>

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

\*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<sub>22</sub> MIN<sub>22</sub> SEC<sub>22</sub> → TRK<sub>11</sub> MIN<sub>11</sub> SEC<sub>11</sub>

\*10) OFF(TYP) → FORCUS → TRACKING  
TRK MIN SEC → TRK<sub>70</sub> MIN<sub>70</sub> SEC<sub>70</sub> → TRK<sub>71</sub> MIN<sub>71</sub> SEC<sub>71</sub>

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

- \*1) • 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



### • 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 :

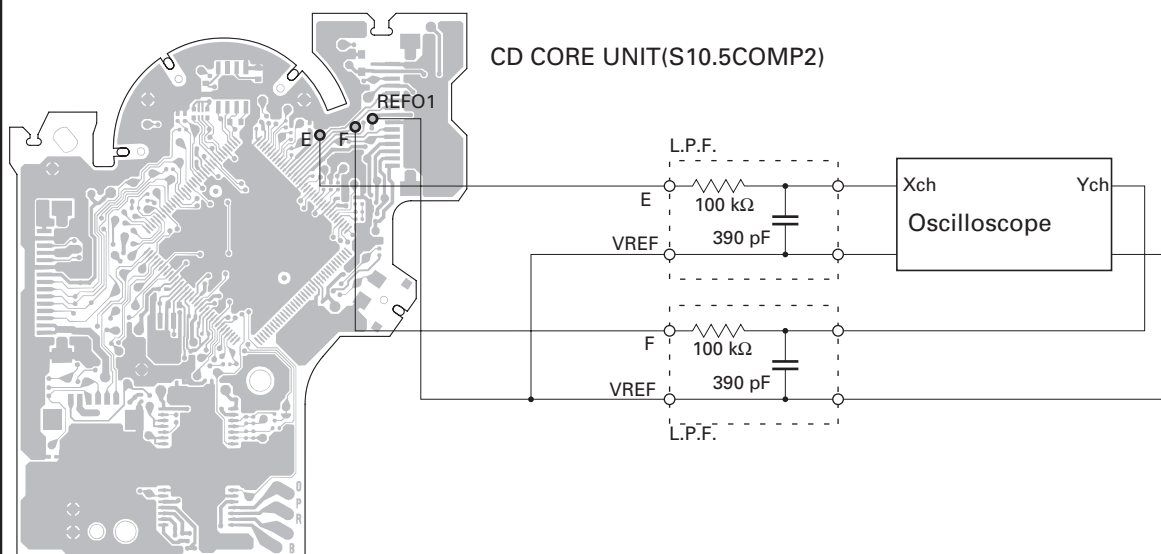
To check that the grating is within an acceptable range when the PU unit is changed.

### • 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

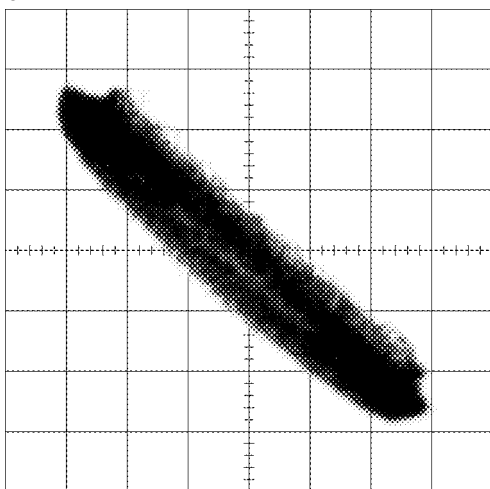
Reloading the disc changes the clamp position and may decrease the "wobble".

# Grating waveform

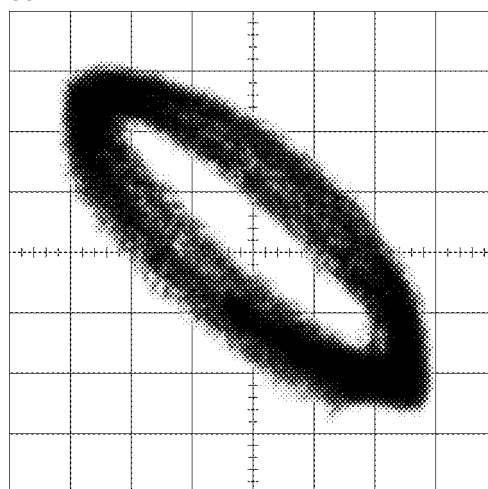
Ech → Xch 20 mV/div, AC

Fch → Ych 20 mV/div, AC

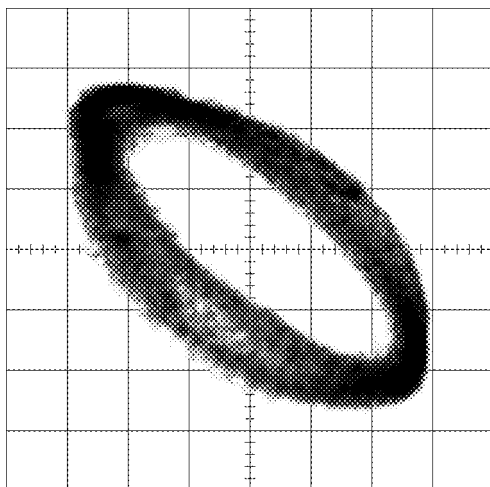
0°



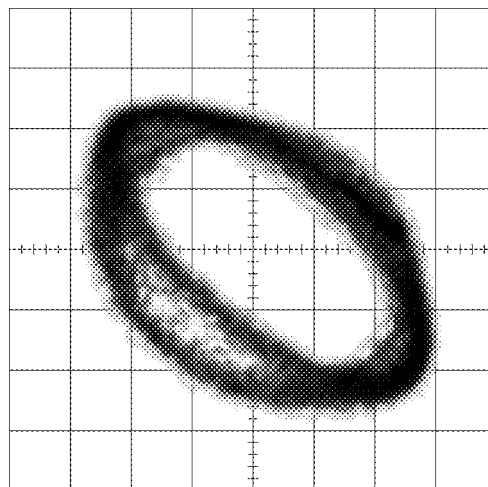
30°



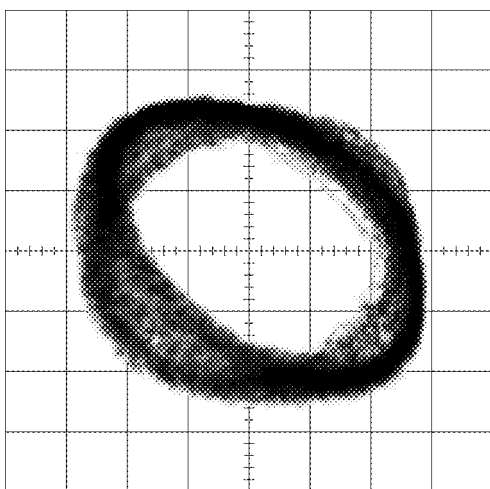
45°



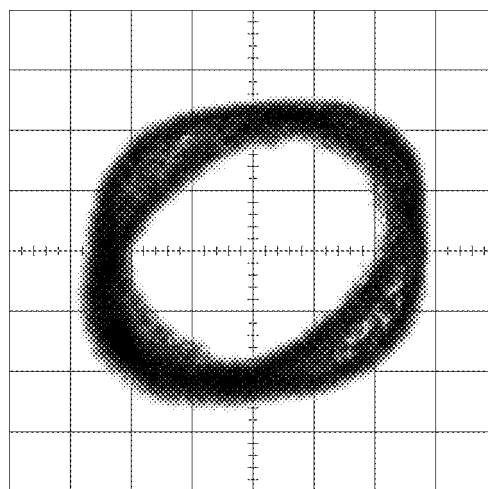
60°



75°



90°





Error Messages

A 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.

B 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 Com- munication 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).

E 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 IPOD TEST MODE

### [Built-in iPod Test Mode Specification (Test mode for service representatives)]

#### [Purpose of this test mode]

This is a specialized mode that aims to check malfunction condition of H/U and measure the product performance.

#### [Features of this test mode]

Enables switching at any time to the iPod source  
Disables communication with iPod  
Disables indication of logos (Pioneer) on iPod  
Functions regardless of connection of the iPod body to H/U

#### [How to shift to test mode]

The following describes how to enter and display the test mode.

- ① Disconnect the iPod body from H/U.  
↓ [Background]  
↓ If you try to start the test mode without disconnecting iPod, initial communication will start between iPod and H/U before you can enter the test mode. This will disable the iPod operation from the iPod body.  
↓ To enable the iPod operation during the test mode from the iPod body, make sure to disconnect the iPod body from H/U.  
↓
- ② Press [4] and [6] together to reset and start the test mode.  
↓
- ③ Press such as the [SOURCE] key to switch to the iPod source.  
↓
- ④ Connect the iPod body to H/U as need.

#### [Cancellation of test mode]

The test mode is cancelled by executing any of the following.

ACC\_OFF \*This applies to the case that the test mode is set to be cancelled with ACC\_OFF.

B. Up\_OFF

Pressing the H/U reset button

#### [Operational specifications for test mode]

The following specifies the key allocation and the actions.

Key	Action	Default	Remarks
1	Switches ON/OFF the charging circuit to iPod.	OFF	

#### [On-screen image]

The following are the on-screen display images.

The following are displayed as title information.

i	P	o	d	-	-	-	9
---	---	---	---	---	---	---	---

ON/OFF state of charging circuit (1: ON, 0: OFF)

1234

## 6.5 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 86) terminal to H.  
The clock signal is output from the PCL terminal IC601(Pin 41).  
The frequency of the clock signal is 625 kHz that is one 32th of the fundamental frequency(20 MHz/32).  
The clock signal should be 625 kHz(±25 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.

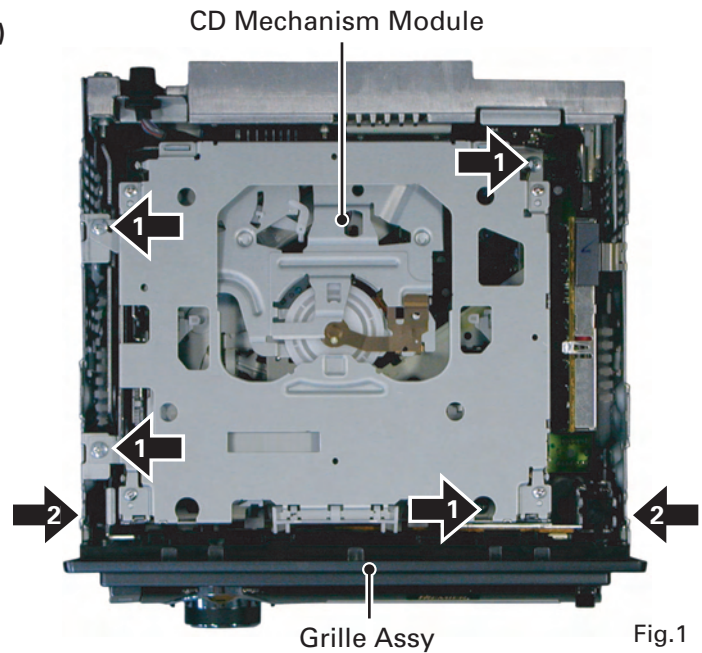
##### ● Removing the CD Mechanism Module (Fig.1)

- ➡ 1 Remove the four screws.

Disconnect the connector and then remove the CD Mechanism Module.

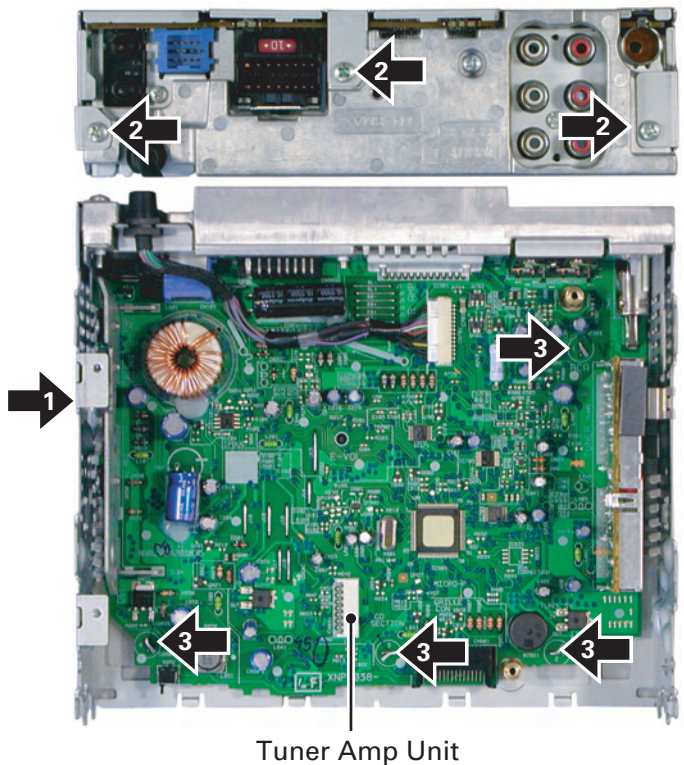
##### ● Removing the Grille Assy (Fig.1)

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



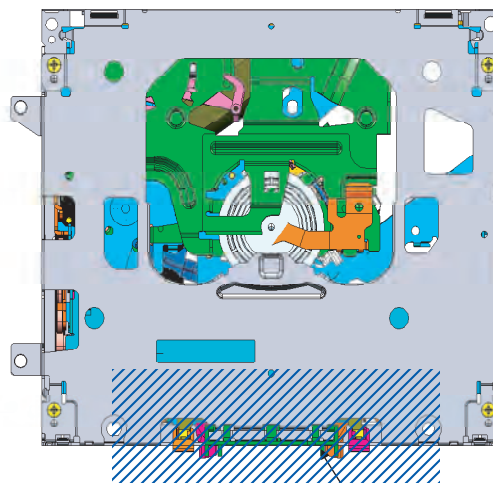
##### ● Removing the Tuner Amp Unit (Fig.2)

- ➡ 1 Remove the screw.
- ➡ 2 Remove the three screws.
- ➡ 3 Straighten the tabs at three locations indicated and then remove the Tuner Amp Unit.



### ● How to hold the Mechanism Unit

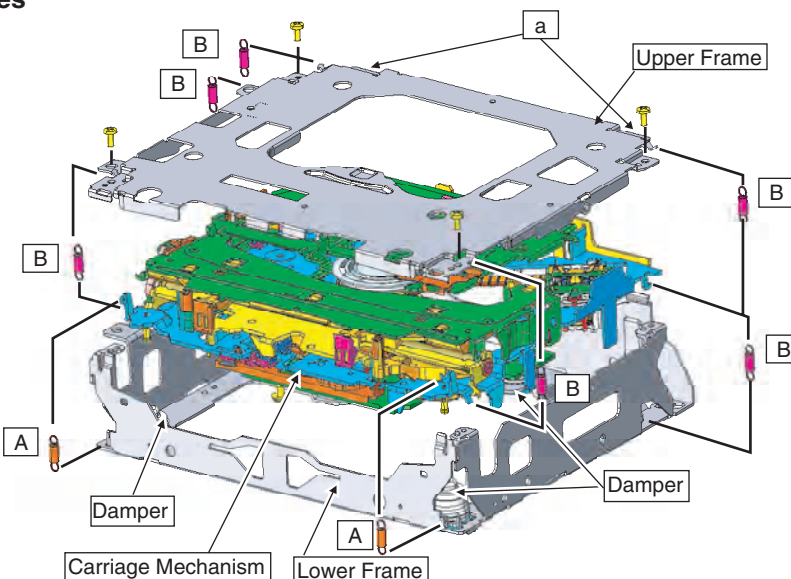
1. Hold the Upper and Lower Frames.
2. Do not hold the front portion of the Upper Frame, because it is not very solid.



Do not squeeze this area.

### ● Removing the Upper and Lower Frames

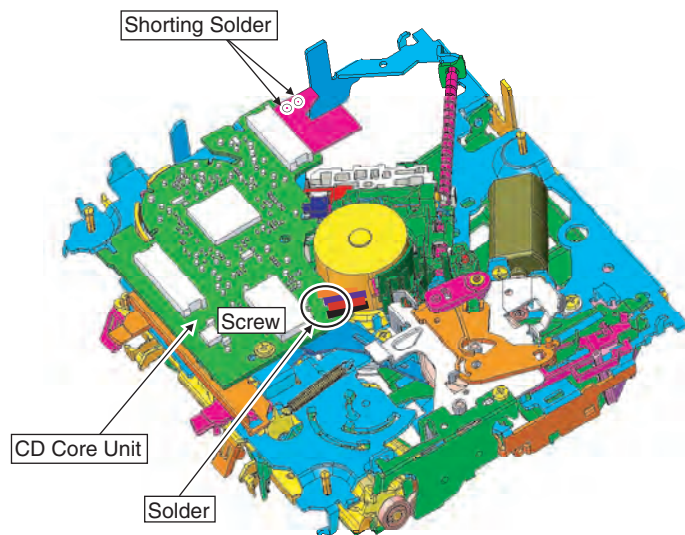
1. With a disc inserted and clamped in the mechanism, remove the two Springs (A), the six Springs (B), and the four Screws.
  2. Turn the Upper Frame using the part "a" as a pivot, and remove the Upper Frame.
  3. While lifting the Carriage Mechanism, remove it from the three Dampers.
- Caution: When assembling, be sure to apply some alcohol to the Dampers and assemble the mechanism in a clamped state.



### ● 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.

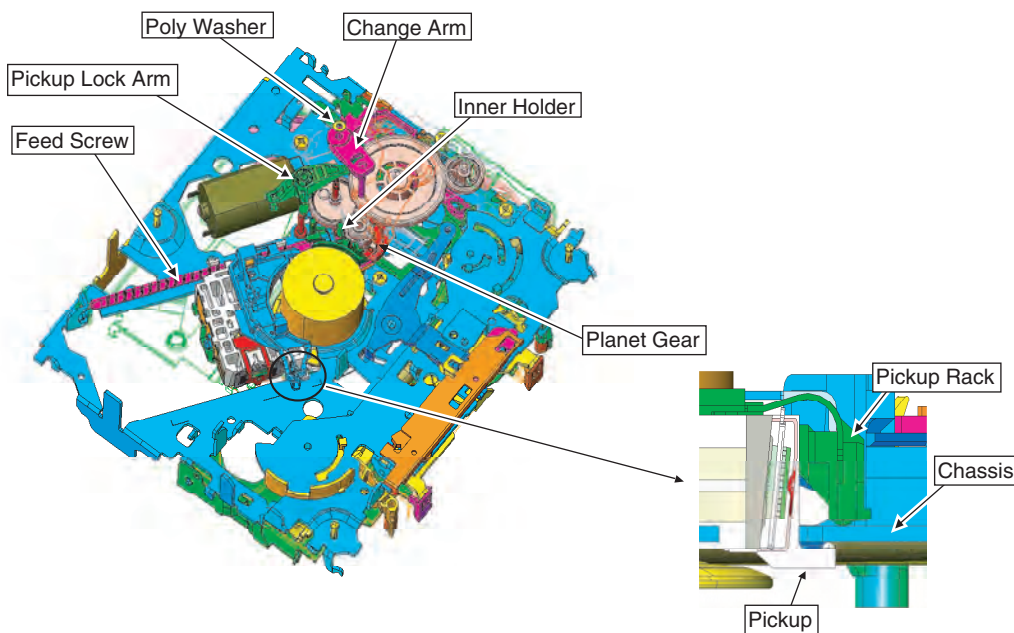


### ● How to remove the Pickup Unit

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.

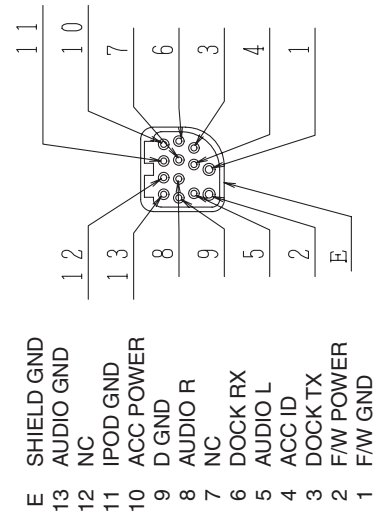
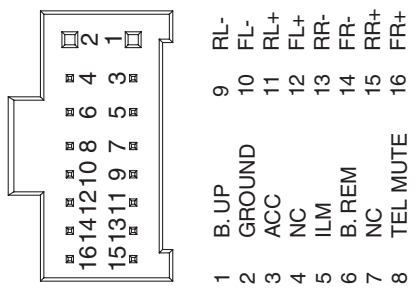
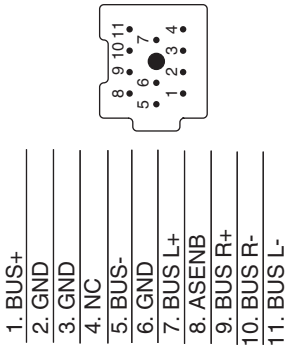
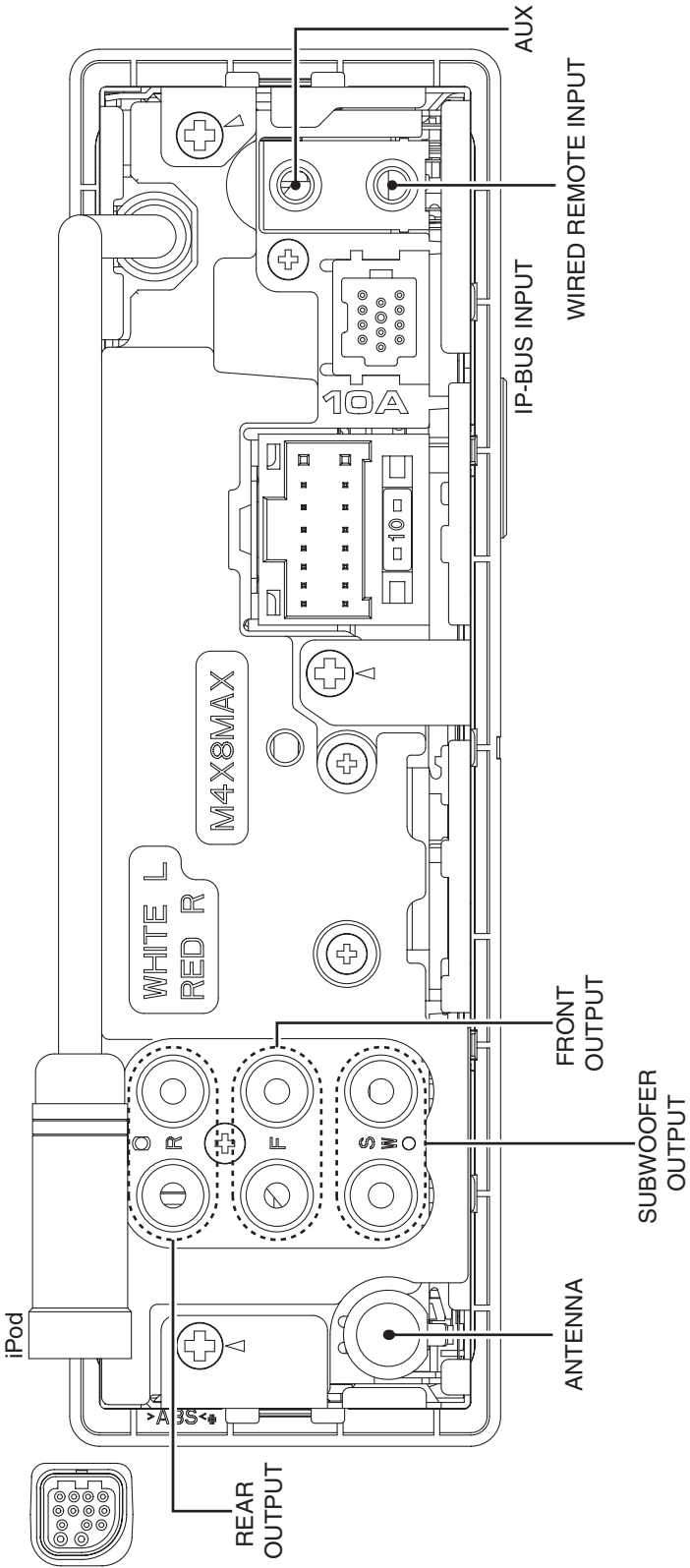
Assemble the sub unit side of the Pickup, taking the plate (Chassis) in-between. When treating the leads of the Load Carriage Motor Assy, do not make them loose over the Feed Screw.



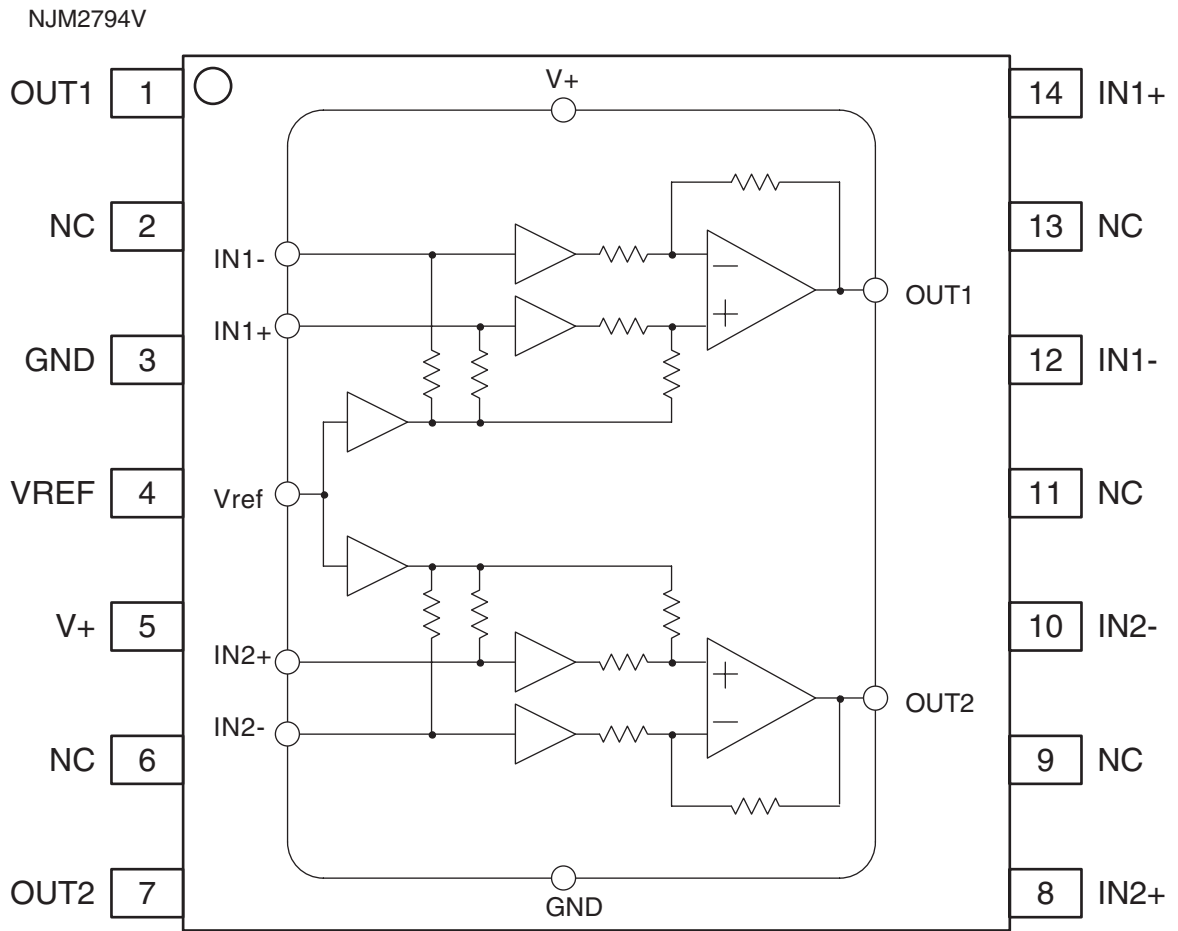


7.1.2 CONNECTOR FUNCTION DESCRIPTION

A  
B  
C  
D  
E  
F



## 7.2 IC





PML015B  
● Block Diagram

● Pin Layout

A

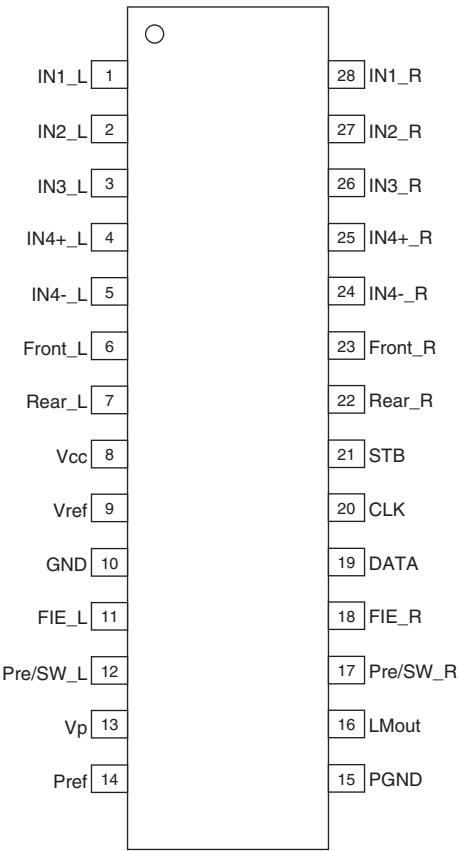
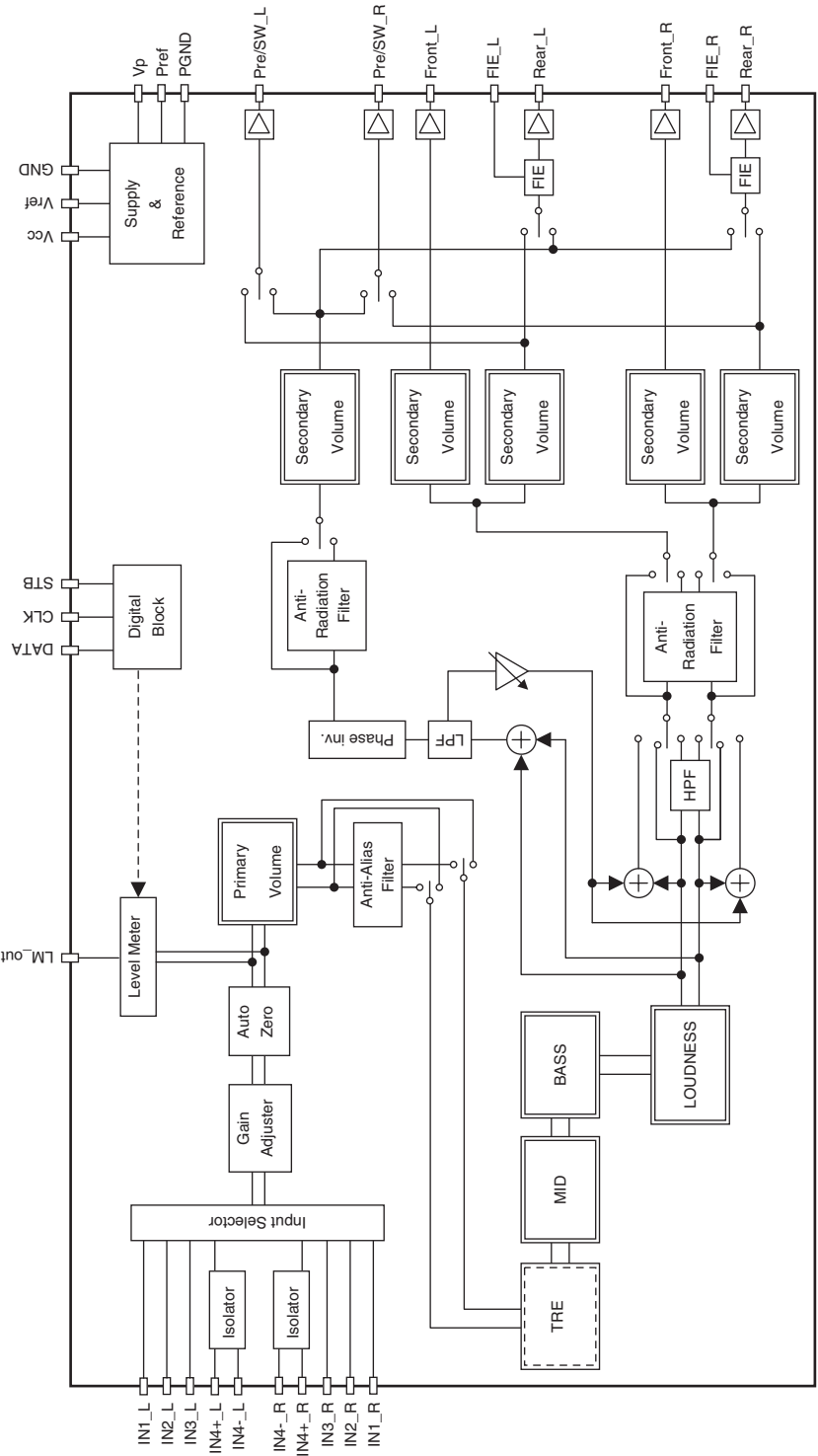
B

C

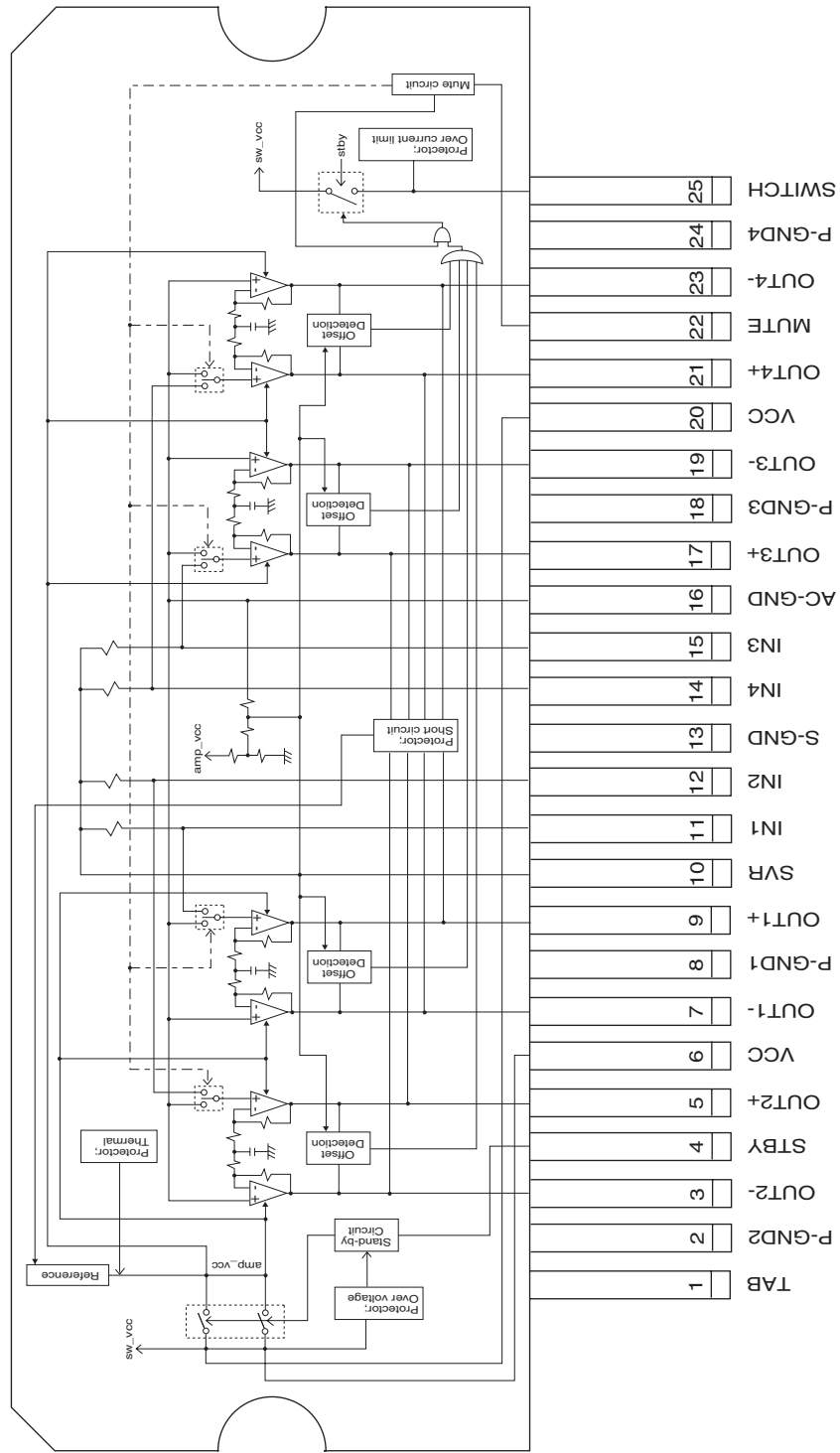
D

E

F



Soft step Blocks ( M.S. )

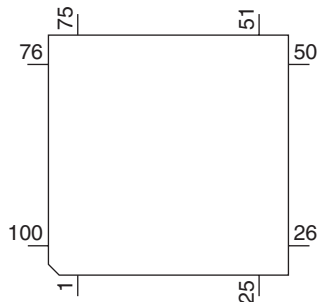


# **Pin Functions (PEG270A)**

Pin No.	Pin Name	I/O	Format	Function and Operation
1	SYSPW	O	C	System power control output
2	KEYD	I		Wired remote control input
3	NC			Not used
4	CDRST	O	C	CD mechanism reset output
5	NC			Not used
6	BYTE	I		External data bus width change input
7	CNVSS	I		Processor mode change input
8	TELIN	I		Not used
9	NC			Not used
10	RESET	I		Reset input
11	XOUT	O		Main clock output
12	VSS	I		GND
13	XIN	I		Main clock input
14	VCC	I		Power supply input(+)
15	NMI	I	C	NMI input
16,17	NC			Not used
18	VDCONT	O	C	VD power supply control
19	NC			Not used
20	OELPW	O	C	OEL power supply control
21	NC			Not used
22	BRXEN	I/O	C	P-BUS : Reception enable input/output
23	BRST	O	C	P-BUS : Reset output
24	PEE	O	C	BEEP sound output
25	NC			Not used
26	BSRQ	I		P-BUS : Service request input
27	RX	I	N	IPBUS : Input
28	TX	O	N	IPBUS : Output
29	DPDT	O	C	OEL display microcomputer communication data output
30	KYDT	I		OEL display microcomputer communication data input
31,32	NC			Not used
33	IPTX	O	C	iPod data output
34	IPRX	I		iPod data input
35,36	ROT1,0	I		Rotary encoder pulse input 1,0
37	ILMPW	O	C	Illumination power output
38	SWVDD	O	C	OEL display microcomputer chip enable output
39	DSNS	I		Detach sense input
40	FLPILM	O	C	Flap illumination output
41	PCL	O	C	Output for clock adjustment
42	EJTIN	I		Eject key input
43	TUNPDI	I		TUNER : Data input(PLL)
44	TUNPDO	O	C	TUNER : Data output(PLL)
45	TUNPCK	O	C	TUNER : Clock output(PLL)
46-50	NC			Not used
51	AUXON	O	C	EVOL : Source select(AUX)
52	IPODON	O	C	EVOL : Source select(iPod)
53-59	NC			Not used
60	VCC	I		Power supply input(+)
61	NC			Not used
62	VSS	I		GND
63	PID	O	C	Communication mode (UART) notification output
64	PSNSG	I		Connection sense input
65	PPOWER	O	C	Power supply control output
66	PSNS	I		Connection sense input
67	DALMON	O	C	For consumption current reduction output
68	NC			Not used

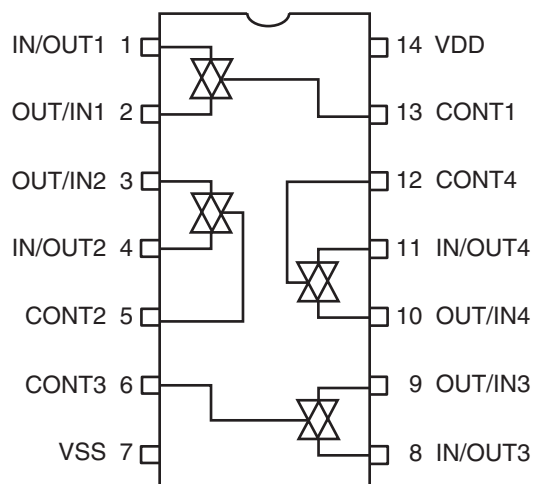
Pin No.	Pin Name	I/O	Format	Function and Operation
69	TUNPCE2	O	C	TUNER : Chip enable output(EEPROM)
70	TUNPCE1	O	C	TUNER : Chip enable output(PLL)
71	ROMCS	O	C	ROM correction chip select output
72	ASENS	I		ACC sense input
73	BSENS	I		Backup sense input
74	ROMCK	O	C	ROM correction clock output
75	ROMDATA	I/O	C	ROM correction data input/output
76	VST	O	C	EVOL : Strobe output
77	VDT	O	C	EVOL : Data output
78	VCK	O	C	EVOL : Clock output
79	IPPW	O	C	IPBUS : Driver power supply control output
80	ASENBO	O	C	IPBUS : Slave ACC sense output
81	ISENS	I		Illumination sense
82,83	MODEL1,0	I		Model select input 1,0
84	NC			Not used
85	MUTE	O	C	System mute output
86	TESTIN	I		Test program input
87	PVSENS			iPod short circuit sense
88	NC			Not used
89	KEYAD	I		Wired remote control AD input
90	NC			Not used
91	CSENS	I		Flap opening-and-closing sense input
92,93	NC			Not used
94	AVSS	I		A/D converter GND(Connected to VSS)
95	SL	I		Signal level input(Field intensity)
96	VREF	I		A/D converter reference voltage input
97	AVCC	I		A/D converter power supply input terminal(Connected to VCC)
98	BSI	I		PBUS : Input
99	BSO	O	C	PBUS : Output
100	BSCK	O	C	PBUS : Clock output

PEG270A



Format	Meaning
C	CMOS
N	Nch open drain

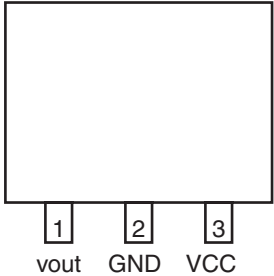
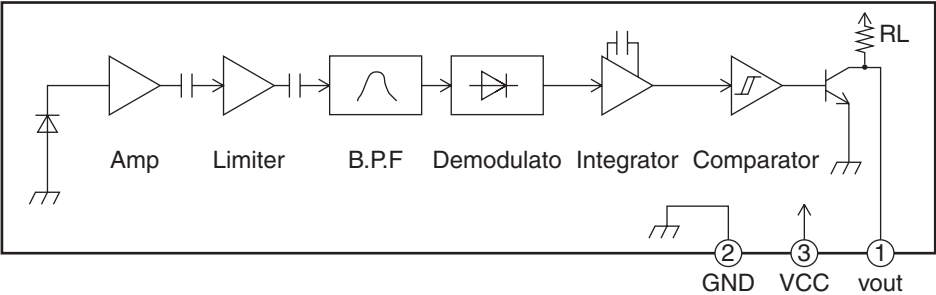
TC4066BFT



GP1UX51RK  
● Block Diagram

● Pin Layout

A



B

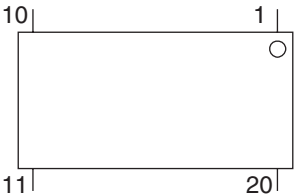
● Pin Functions (PEG268A)

Pin No.	Pin Name	I/O	Format	Function and Operation
1	D_CLK	O	C	OELD controller clock
2	D_OUT	O	C	OELD controller data output
3	RESET	I		MCU RESET
4	XOUT	O		10 MHz crystal oscillator
5	VSS	I		GND
6	XIN	I		10 MHz crystal oscillator
7	VCC	I		Power supply input
8	MODE	I		Terminal for debug
9	D_IN	I		OELD controller data input
10	REM	I		Remote control input
11	XRESET	O	C	Reset for OELD controller
12	DPDT	I		DISP data input from sytem
13	KYDT	O	C	KEY data output to system
14	MCLK	O	C	OELD master clock output
15	ADKEY2	I		AD KEY input 2
16	VREF	I		AD reference voltage input(VCC)
17,18	ADKEY1,0	I		AD KEY input 1,0
19	DIM	O	C	General purpose port(DIMMER output)
20	XCMD	O	C	Command select for OELD controller

C

PEG268A

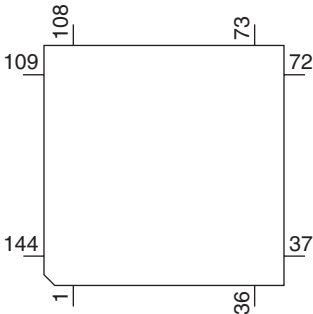
D



Format	Meaning
C	CMOS

E

PE5547A



Format	Meaning
C	CMOS
N	Nch open drain

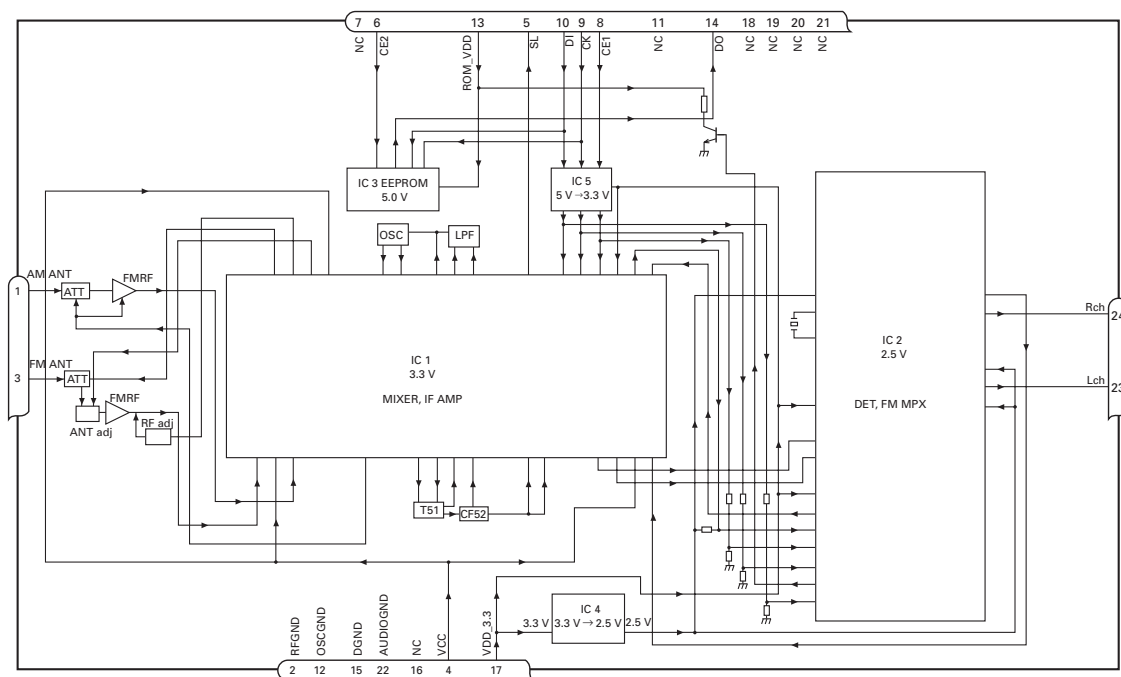
F

# **● Pin Functions (PE5547A)**

Pin No.	Pin Name	I/O	Format	Function and Operation
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	VDSSENS			VD power supply short circuit/earth fault sense input
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
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
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
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
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

# ● FM/AM Tuner Unit

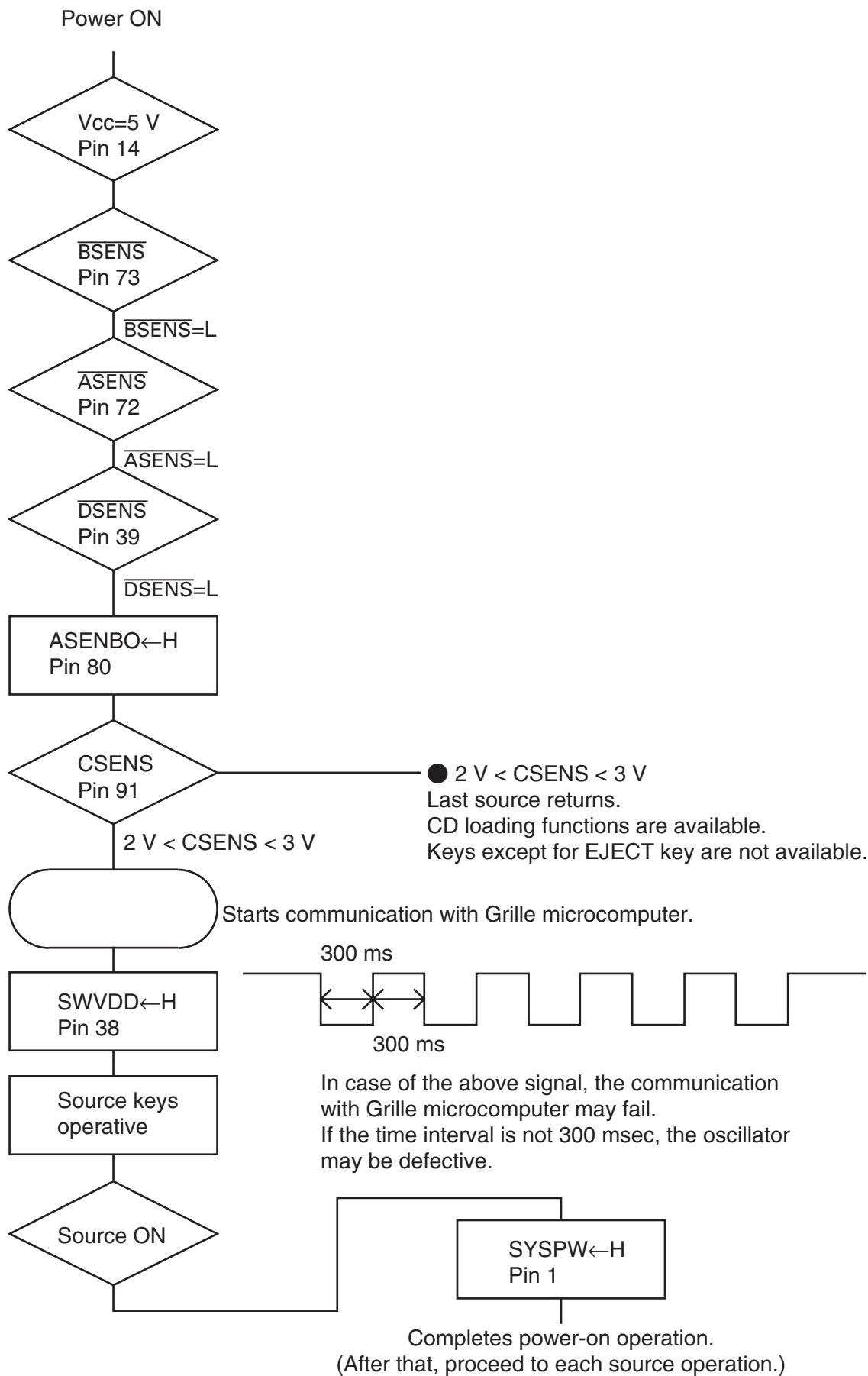


No.	Symbol	I/O	Explain	
1	AMANT	I	AM antenna input	AM antenna input high impedance AMANT pin is connected with an all antenna by way of 4.7 $\mu$ H. (LAU type inductor)A series circuit including an inductor and a resistor is connected with RF ground for the countermeasure against the hum of power transmission line.
2	RFGND		RF ground	Ground of antenna block
3	FMANT	I	FM antenna input	Input of FM antenna 75 $\Omega$ 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	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

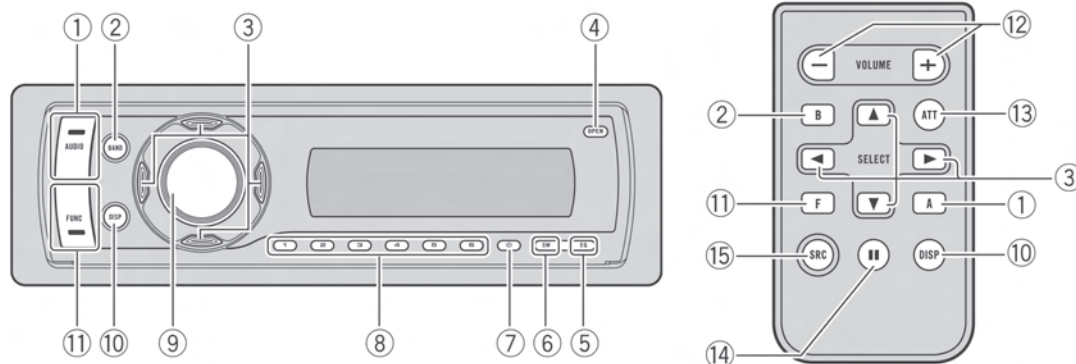


## 7.3 OPERATIONAL FLOW CHART

A  
B  
C  
D  
E  
F



## 8. OPERATIONS



### What's What

#### Head unit

- ① AUDIO button**  
Press to select various sound quality controls.
- ② BAND button**  
Press to select among three FM bands and one AM band and to cancel the control mode of functions.
- ③ ▲/▼/◀/▶ buttons**  
Press to perform manual seek tuning, fast forward, reverse and track search controls. Also used for controlling functions.
- ④ OPEN button**  
Press to open the front panel.
- ⑤ EQ button**  
Press to select various equalizer curves.
- ⑥ SW button**  
Press to directly select subwoofer setting menu.  
Press and hold to select bass boost setting menu.
- ⑦ 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.

- ⑧ 1 to 6 buttons**  
Press for preset tuning and disc number search when using a multi-CD player.
- ⑨ 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.
- ⑩ DISPLAY button**  
Press to select different displays.
- ⑪ FUNCTION button**  
Press to select functions.

#### Remote control

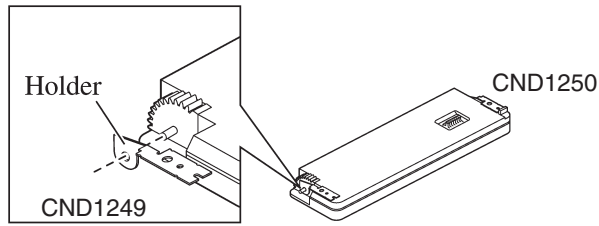
Operation is the same as when using the buttons on the head unit. See the explanation of the head unit about the operation of each button with the exception of **ATT** and **PAUSE**, which is explained below.

- ⑫ VOLUME buttons**  
Press to increase or decrease the volume.
- ⑬ ATT button**  
Press to quickly lower the volume level, by about 90%. Press once more to return to the original volume level.
- ⑭ PAUSE button**  
Press to turn pause on or off.
- ⑮ SOURCE button**  
This unit is turned on by selecting a source. Press to cycle through all the available sources. ■

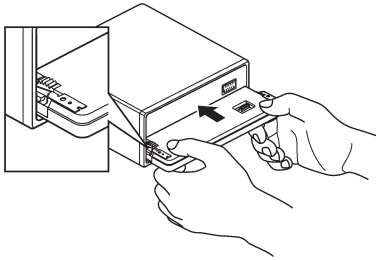
## Fastening the front panel

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

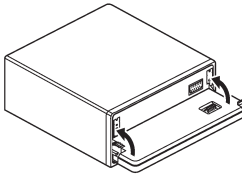
1. Attach the holders to both sides of the front panel.



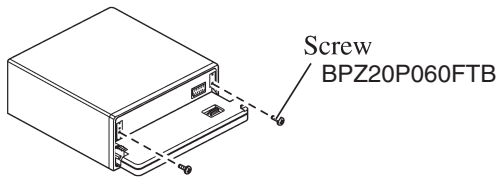
2. Replace the front panel to the unit.



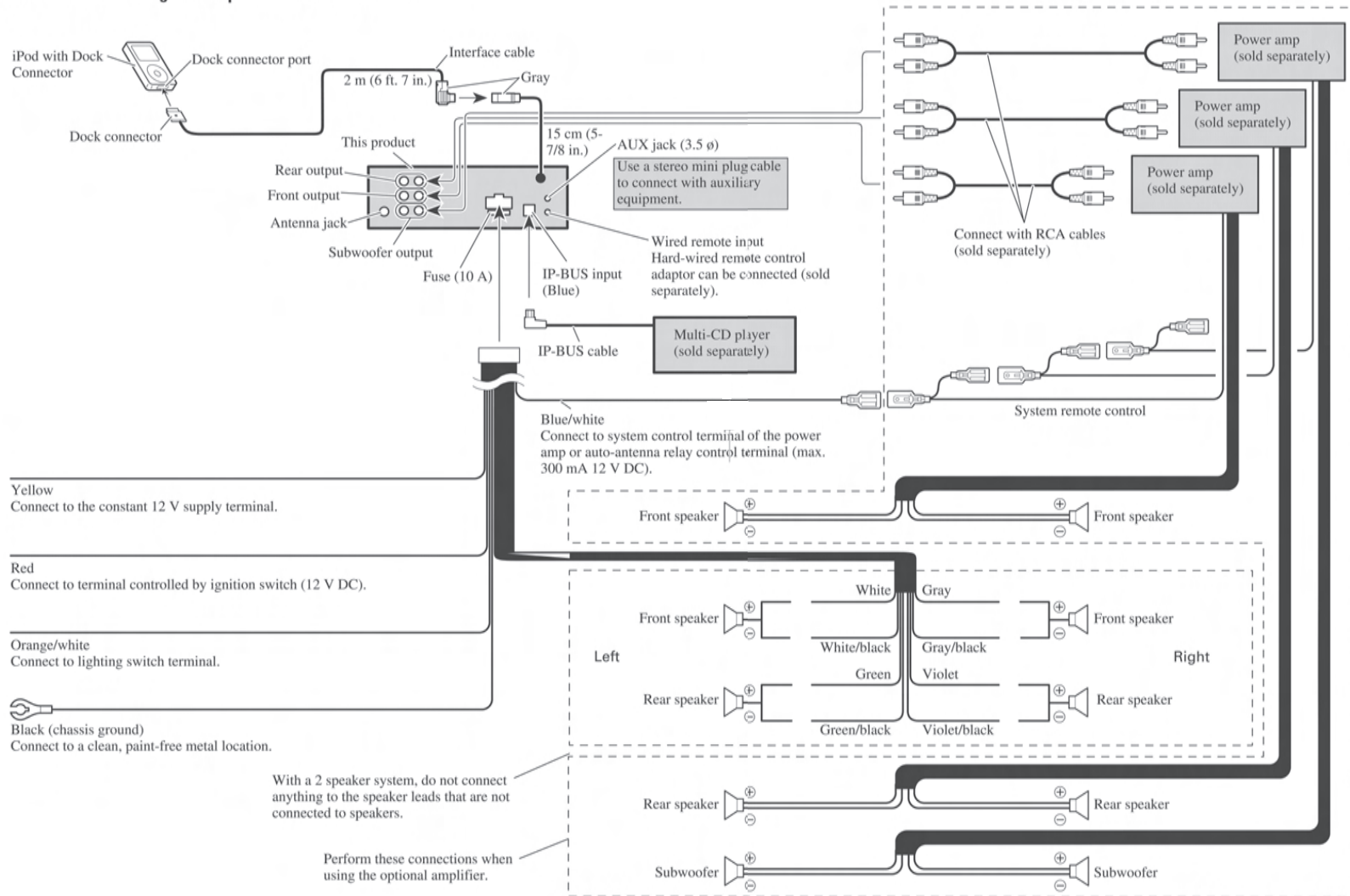
3. Flip the holders into upright positions.



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



■ When not connecting a rear speaker lead to a Subwoofer



● Jigs List

A

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

● Grease List

B

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:

C

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

D

E

F