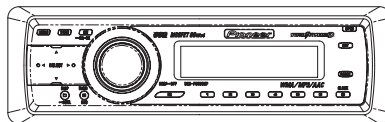


# Service Manual



DEH-P5850MP/XN/ES

ORDER NO.  
**CRT3565**

MULTI-CD CONTROL HIGH POWER CD/MP3/WMA/AAC PLAYER WITH FM/AM TUNER

## DEH-P5850MP /XN/ES

MULTI-CD CONTROL HIGH POWER CD/MP3/WMA PLAYER WITH FM/AM TUNER

## DEH-P5850MPH /XN/GS

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

Model No.	Order No.	Mech.Module	Remarks
CX-3164	CRT3583	S10.5COMP1	CD Mech. Module : Circuit Descriptions, Mech. Descriptions, Disassembly



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

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# SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer.

Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

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

## CAUTION

Danger of explosion if battery is incorrectly replaced.

Replaced only with the same or equivalent type recommended by the manufacture.

Discord used batteries according to the manufacture's instructions.

### ● CD Section 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.



## [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-P5850MP/XN/ES

### General

Rated power source .....	14.4 V DC
	(allowable voltage range: 12.0 – 14.4 V DC)
Grounding system .....	Negative type
Max. current consumption .....	10.0 A
Backup current .....	5 mA or less
Dimensions (W × H × D):	
DIN	
Chassis .....	178 × 50 × 157 mm
Nose .....	188 × 58 × 19 mm
D	
Chassis .....	178 × 50 × 162 mm
Nose .....	170 × 46 × 14 mm
Weight .....	1.3 kg

### 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 – 8 Ω × 4  
4 – 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 ..... ±12dB

Mid

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

High

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

Loudness contour:

Low ..... +3.5 dB (100 Hz), +3 dB (10  
kHz)

Mid ..... +10 dB (100 Hz), +6.5 dB  
(10 kHz)

High ..... +11 dB (100 Hz), +11 dB  
(10 kHz)  
(volume: –30 dB)

Tone controls:

Bass

Frequency ..... 40/63/100/160 Hz  
Gain ..... ±12dB

Treble

Frequency ..... 2.5k/4k/6.3k/10k Hz  
Gain ..... ±12dB

HPF:

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

Subwoofer:

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

### CD player

System ..... Compact disc audio system

Usable discs ..... Compact disc

Signal format:

Sampling frequency ..... 44.1 kHz  
Number of quantization bits

..... 16; linear

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

Signal-to-noise ratio ..... 94 dB (1 kHz) (IEC-A net-  
work)

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® en-  
coded only)

WAV signal format ..... Linear PCM & MS ADPCM

### FM tuner

Frequency range ..... 87.5 – 108.0 MHz

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

50 dB quieting sensitivity ..... 10 dBf (0.9 μV/75 Ω, mono)

Signal-to-noise ratio ..... 75 dB (IEC-A network)

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

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

Frequency response ..... 30 – 15 000 Hz (±3 dB)

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

### AM tuner

Frequency range ..... 531 – 1 602 kHz (9 kHz)

530 – 1 640 kHz (10 kHz)

Usable sensitivity ..... 18 μV (S/N: 20 dB)

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

### Infrared remote control

Wavelength ..... 940 nm ±50 nm

Output ..... typ: 12 mw/sr per Infrared  
LED



### Note

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

## DEH-P5850MPH/XN/GS

### General

A	Rated power source .....	14.4 V DC (allowable voltage range: 12.0 – 14.4 V DC)
	Grounding system .....	Negative type
	Max. current consumption .....	10.0 A
	Backup current .....	5 mA or less
	Dimensions (W × H × D): DIN	
	Chassis .....	178 × 50 × 157 mm
	Nose .....	188 × 58 × 19 mm
B	D	
	Chassis .....	178 × 50 × 162 mm
	Nose .....	170 × 46 × 14 mm
	Weight .....	1.3 kg

### 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)
C	Load impedance .....	4 – 8 Ω × 4 4 – 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 .....	±12dB
	Mid	
D	Frequency .....	200/500/1k/2k Hz
	Q Factor .....	0.35/0.59/0.95/1.15 (+6 dB when boosted)
	Gain .....	±12dB
	High	
	Frequency .....	3.15k/8k/10k/12.5k Hz
	Q Factor .....	0.35/0.59/0.95/1.15 (+6 dB when boosted)
	Gain .....	±12dB
	Loudness contour:	
	Low .....	+3.5 dB (100 Hz), +3 dB (10 kHz)
E	Mid .....	+10 dB (100 Hz), +6.5 dB (10 kHz)
	High .....	+11 dB (100 Hz), +11 dB (10 kHz) (volume: –30 dB)
	Tone controls:	
	Bass	
	Frequency .....	40/63/100/160 Hz
	Gain .....	±12dB
	Treble	
	Frequency .....	2.5k/4k/6.3k/10k Hz
F	Gain .....	±12dB

HPF:

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

### CD player

System .....	Compact disc audio system
Usable discs .....	Compact disc
Signal format:	
Sampling frequency .....	44.1 kHz
Number of quantization bits .....	16; linear
Frequency characteristics .....	5 – 20 000 Hz (±1 dB)
Signal-to-noise ratio .....	94 dB (1 kHz) (IEC-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)
WAV signal format .....	Linear PCM & MS ADPCM

### FM tuner

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

### AM tuner

Frequency range .....	531 – 1 602 kHz (9 kHz) 530 – 1 640 kHz (10 kHz)
Usable sensitivity .....	18 μV (S/N: 20 dB)
Signal-to-noise ratio .....	65 dB (IEC-A network)

### Infrared remote control

Wavelength .....	940 nm ±50 nm
Output .....	typ; 12 mw/sr per Infrared LED



### Note

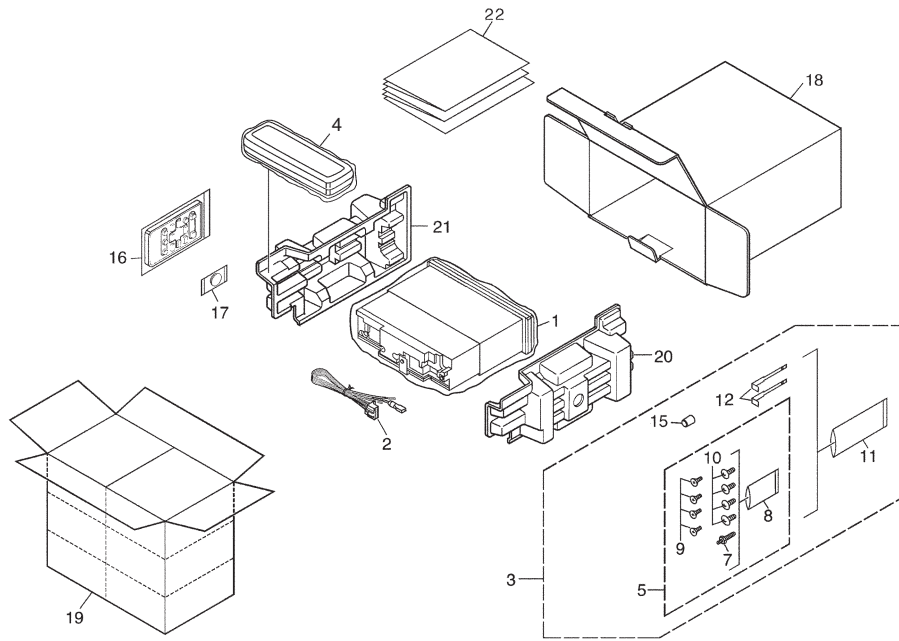
Specifications and the design are subject to possible modifications without notice due to improvements. ■

## 2. EXPLODED VIEWS AND PARTS LIST

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

- The  $\triangle$  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.
- Screw adjacent to  $\nabla$  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



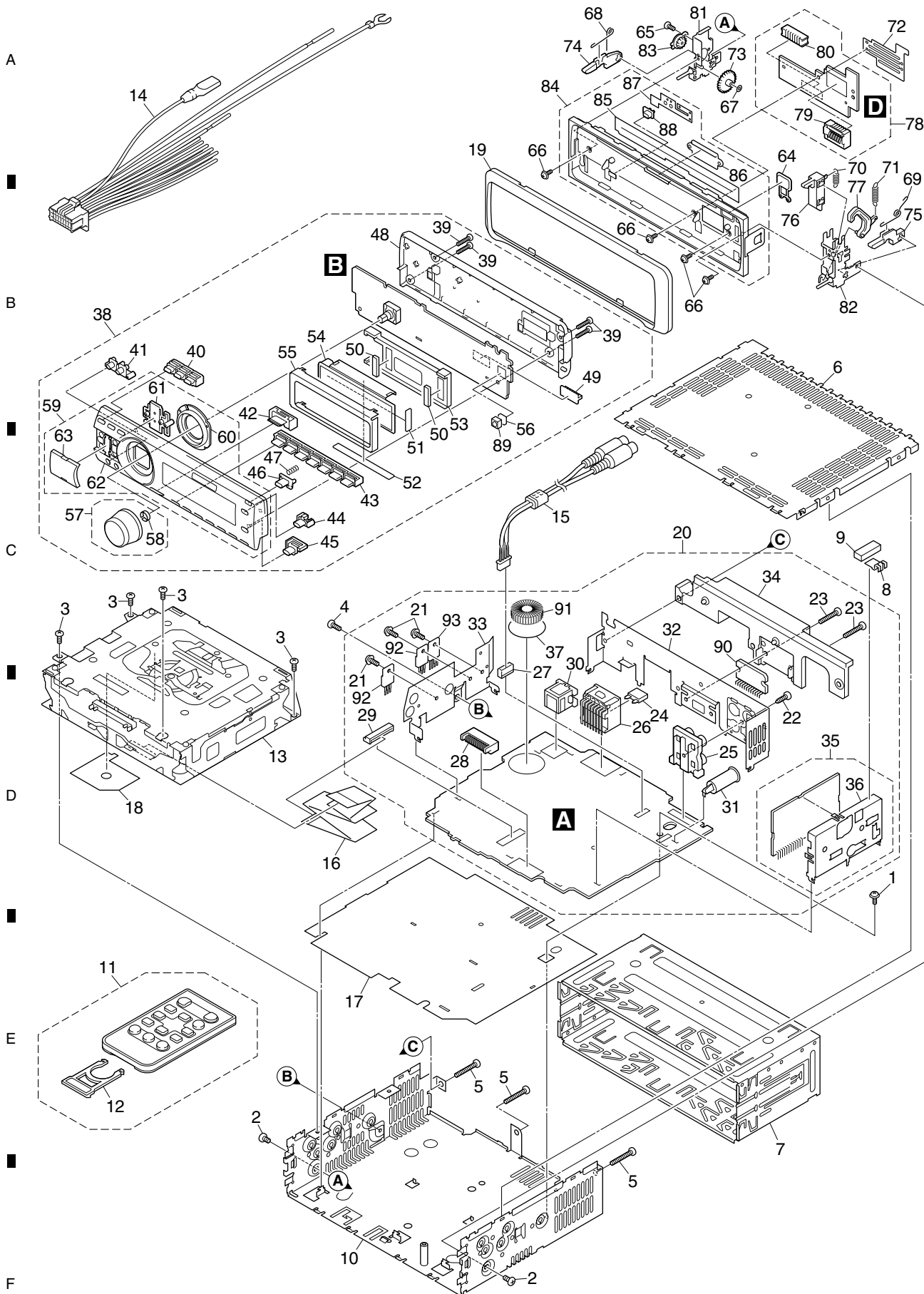
#### PACKING SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Polyethylene Bag	CEG-162	16	Remote Control Assy	CXC5719
2	Cord Assy	XDE7007	* 17	Battery	CEX1065
3	Accessory Assy	CEA4850	18	Carton(ES)	XHG7105
4	Case Assy	CXB3520		Carton(GS)	XHG7115
5	Screw Assy	CEA3849	19	Contain Box(ES)	XHL7105
6	.....			Contain Box(GS)	XHL7115
7	Screw	CBA1650	20	Protector	XHP7016
* 8	Polyethylene Bag	CEG-127	21	Protector	XHP7017
9	Screw	CRZ50P090FTC	22-1	Owner's Manual(ES)	XRD7103
10	Screw	TRZ50P080FTC		Owner's Manual(GS)	XRD7106
* 11	Polyethylene Bag	CEG-158	22-2	Owner's Manual(ES)	XRD7104
12	Handle	CNC5395	22-3	Installation Manual(ES)	XRD7105
13	.....			Installation Manual(GS)	XRD7108
14	.....		* 22-4	Caution Card	XRP7005
15	Bush	CNV3930	22-5	Caution Card	CRP1310

#### Owner's Manual, Installation Manual

Part No.	Language
XRD7103	English, Spanish, Portuguese(B)
XRD7104	Traditional Chinese, Arabic
XRD7105	English, Spanish, Portuguese(B), Traditional Chinese, Arabic
XRD7106	English, Traditional Chinese, Arabic
XRD7108	English, Traditional Chinese, Arabic

## 2.2 EXTERIOR

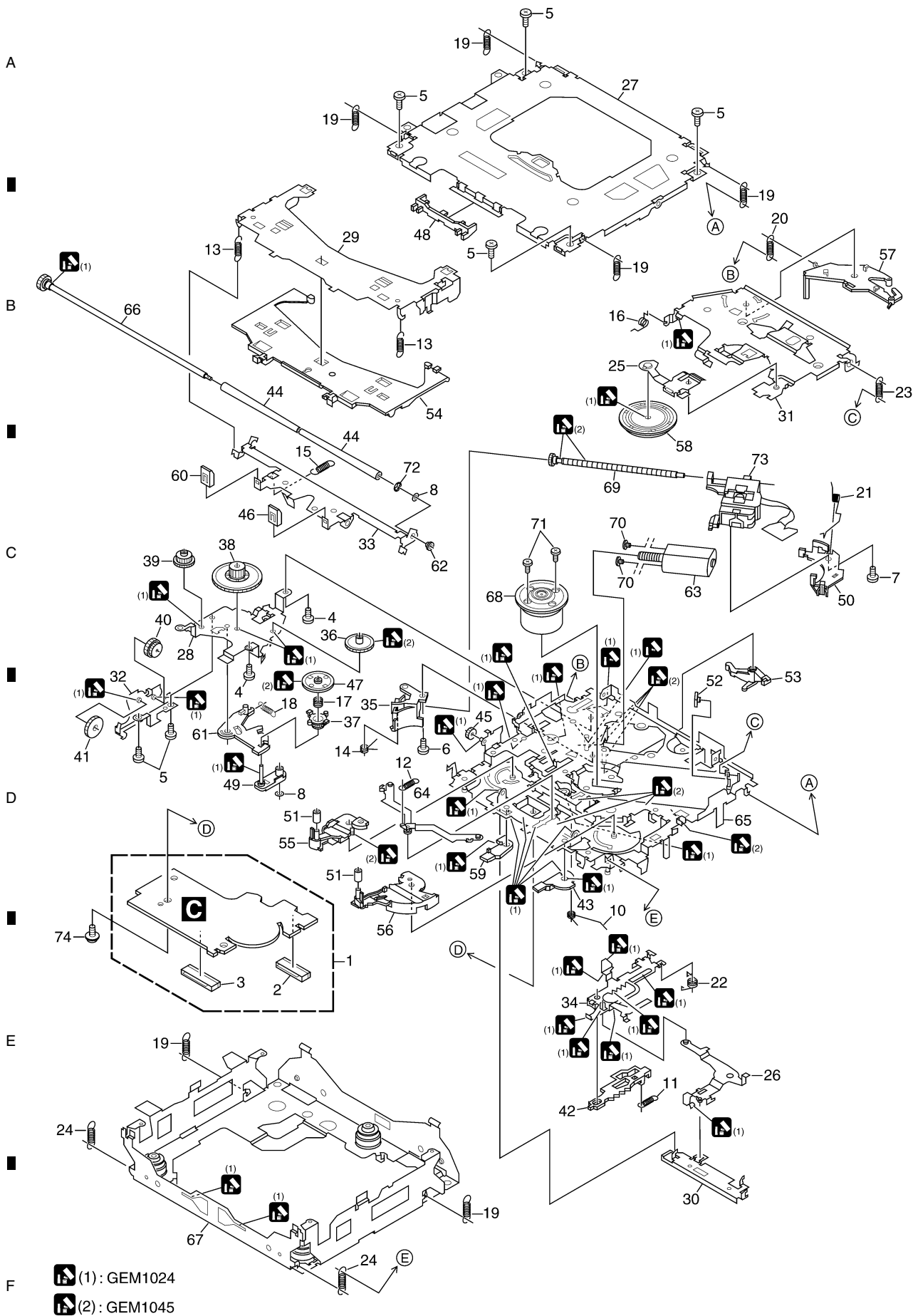




## EXTERIOR SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Screw	ASZ26P050FTC	49	Connector(CN1901)	CKS5207
2	Screw	BMZ30P040FTB			
3	Screw	BSZ26P060FTC	50	Cushion	CNM6633
4	Screw	BSZ30P060FTC	51	Spacer	CNM7697
5	Screw	BSZ30P200FTC	52	Spacer	CNM7698
			53	Holder	CNV6910
6	Case	CNB2793	54	OEL Unit	MXS8221
7	Holder	CNC8659			
8	Earth Plate	CNC8915	55	Holder	XNC7006
9	Cushion	CNM8890	56	Cushion	XNM7049
10	Chassis Unit	CXB9528	57	Knob Unit	XXA7398
			58	Spring	XBL7004
11	Remote Control Assy	CXC5719	59	Sub Grille Assy(ES)	XXA7431
12	Cover	CNS7068		Sub Grille Assy(GS)	XXA7395
13	CD Mechanism Module(S10.5)	CKX5752			
14	Cord Assy	XDE7007	60	Lighting Conductor	XNV7024
15	Cord Assy(ES)	XDE7009	61	Holder	XNV7025
			62	Grille Unit(ES)	XXA7385
16	Cable	XDE7016		Grille Unit(GS)	XXA7432
17	Insulator	XNM7100	63	Button Unit(ES)	XXA7387
18	Insulator	XNM7106		Button Unit(GS)	XXA7388
19	Panel(ES)	XNS7129			
	Panel(GS)	XNS7158	64	Button(EJECT)	CAC7752
			65	Screw(M2 x 4)	CBA1649
20	Tuner Amp Assy(ES)	XWM7132	66	Screw(M2 x 4.5)	CBA1925
	Tuner Amp Assy(GS)	XWM7133	67	Washer	CBF1038
21	Screw	ASZ26P060FTC	68	Spring	CBH2650
22	Screw	BPZ26P080FTC			
23	Screw	BSZ26P160FTC	69	Spring	CBH2651
			70	Spring	CBH2652
⚠ 24	Fuse(10 A)	CEK1208	71	Spring	CBH2653
25	Pin Jack(CN352)	CKB1051	72	Holder	CND1254
26	Plug(CN901)	CKM1376	73	Gear	CNV5997
27	Plug(CN351)(ES)	CKS1238			
28	Plug(CN801)	CKS3537	74	Arm	CNV7400
			75	Arm	CNV7401
29	Connector(CN651)	CKS3834	76	Arm	CNV7402
30	Connector(CN101)	CKS5271	77	Arm	CNV7403
31	Antenna Jack(CN401)	CKX1056	78	Panel Unit(ES)	CWM9835
32	Holder(ES)	CND1239		Panel Unit(GS)	CWM8758
	Holder(GS)	CND1477			
			79	Connector(CN1951)	CKS4806
33	Holder	CND1352	80	Connector(CN1950)	CKS5192
34	Heat Sink	CNR1668	81	Holder Unit	CXB9501
35	FM/AM Tuner Unit	CWE1952	82	Holder Unit	CXB9502
36	Holder	CND1054	83	Damper Unit	CXB9503
37	Insulator	XNM7031			
			84	Sub Panel Unit	XXA7361
38	Detachable Assy(ES)	XXA7430	85	Cover	CNM6854
	Detachable Assy(GS)	XXA7394	86	Lighting Conductor	CNV6487
39	Screw	BPZ20P100FTB	87	Spring	CBL1512
40	Button(AUDIO,FUNC,SW)(ES)	XAC7113	88	Pin	CNV6486
	Button(AUDIO,FUNC,SW)(GS)	XAC7131			
			89	IC(IC1901)	GP1UX30RK
41	Button(BAND,DISP)(ES)	XAC7115	90	IC(IC301)	PAL007B
	Button(BAND,DISP)(GS)	XAC7133	91	Choke Coil(L901)	CTH1280
42	Button(EQ)	XAC7116	92	Transistor(Q650,Q911)	2SD2396
43	Button(1-6)	XAC7117	93	IC(IC901)	NJM2388F84
44	Button(ENT)	XAC7118			
45	Button(PAUSE)	XAC7119			
46	Button(OPEN)	XAC7120			
47	Spring	XBH7001			
48	Cover	XNS7128			

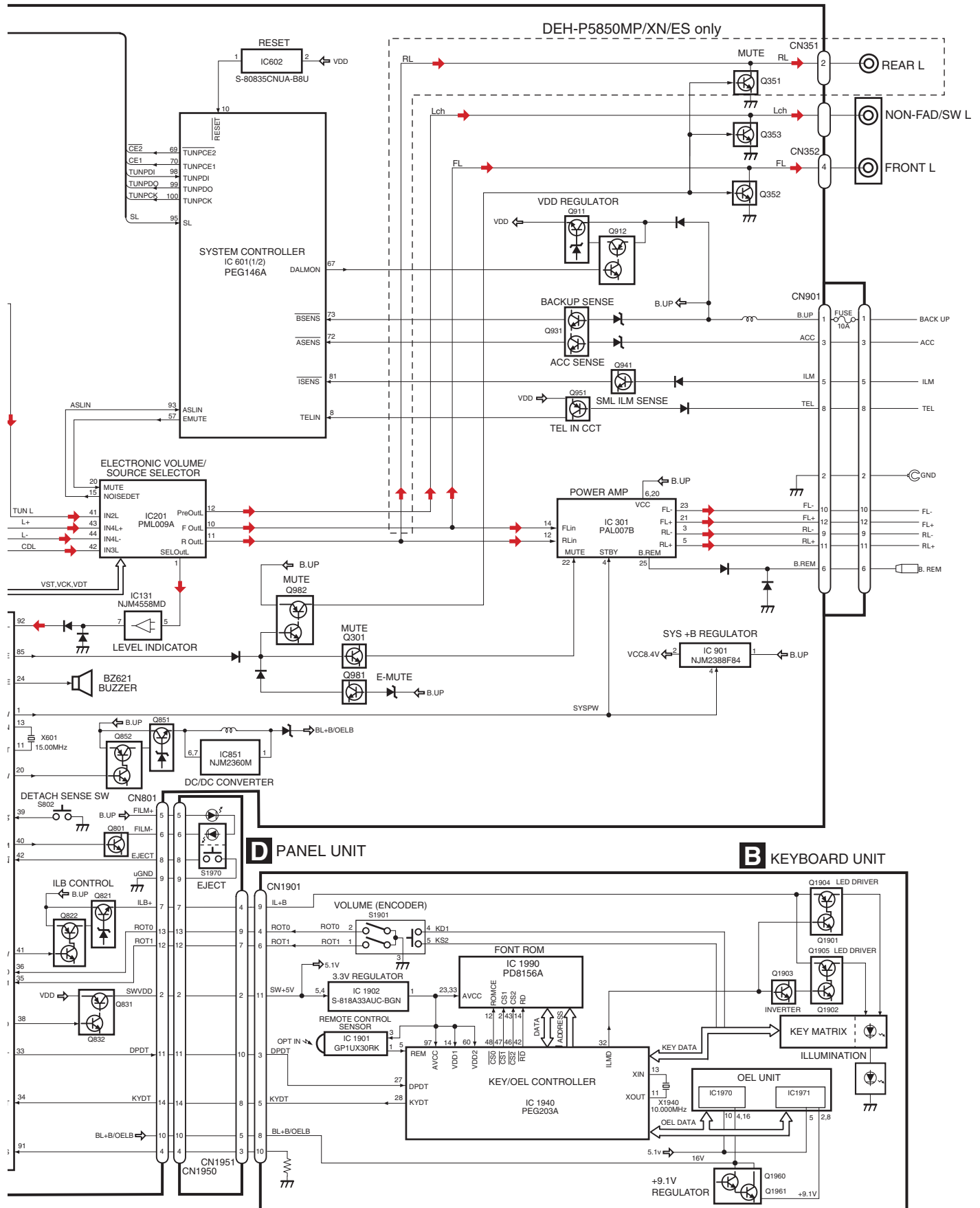
## 2.3 CD MECHANISM MODULE



# CD MECHANISM MODULE SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.	
1	CD Core Unit(S10.5COMP1)	CWX3176	50	Rack	CNV8342	
2	Connector(CN101)	CKS4182				A
3	Connector(CN901)	CKS5284	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)	CXC6742	
			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				

## 4



## 4

A



F

F

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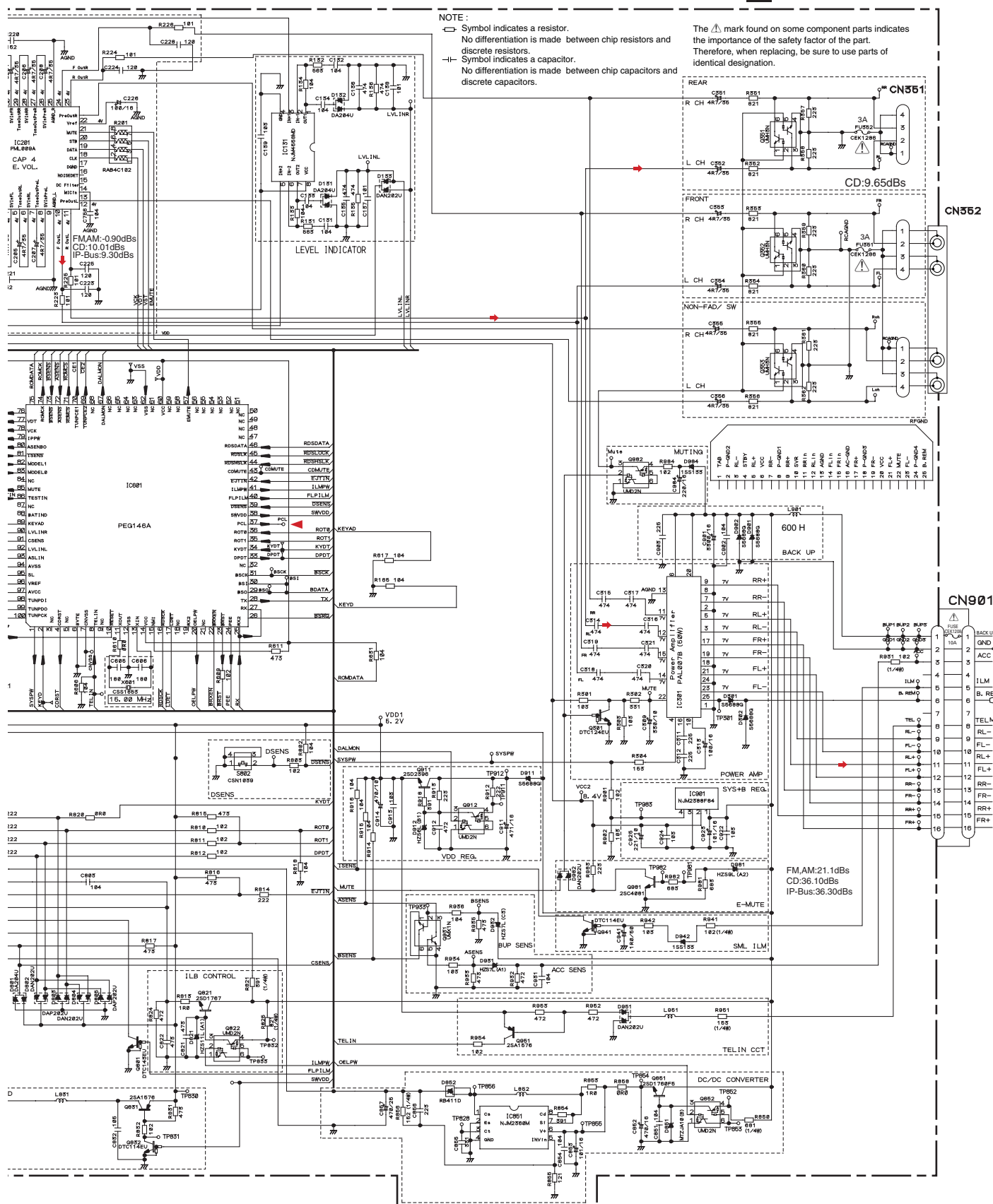
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A-b

## A TUNER AMP ASSY

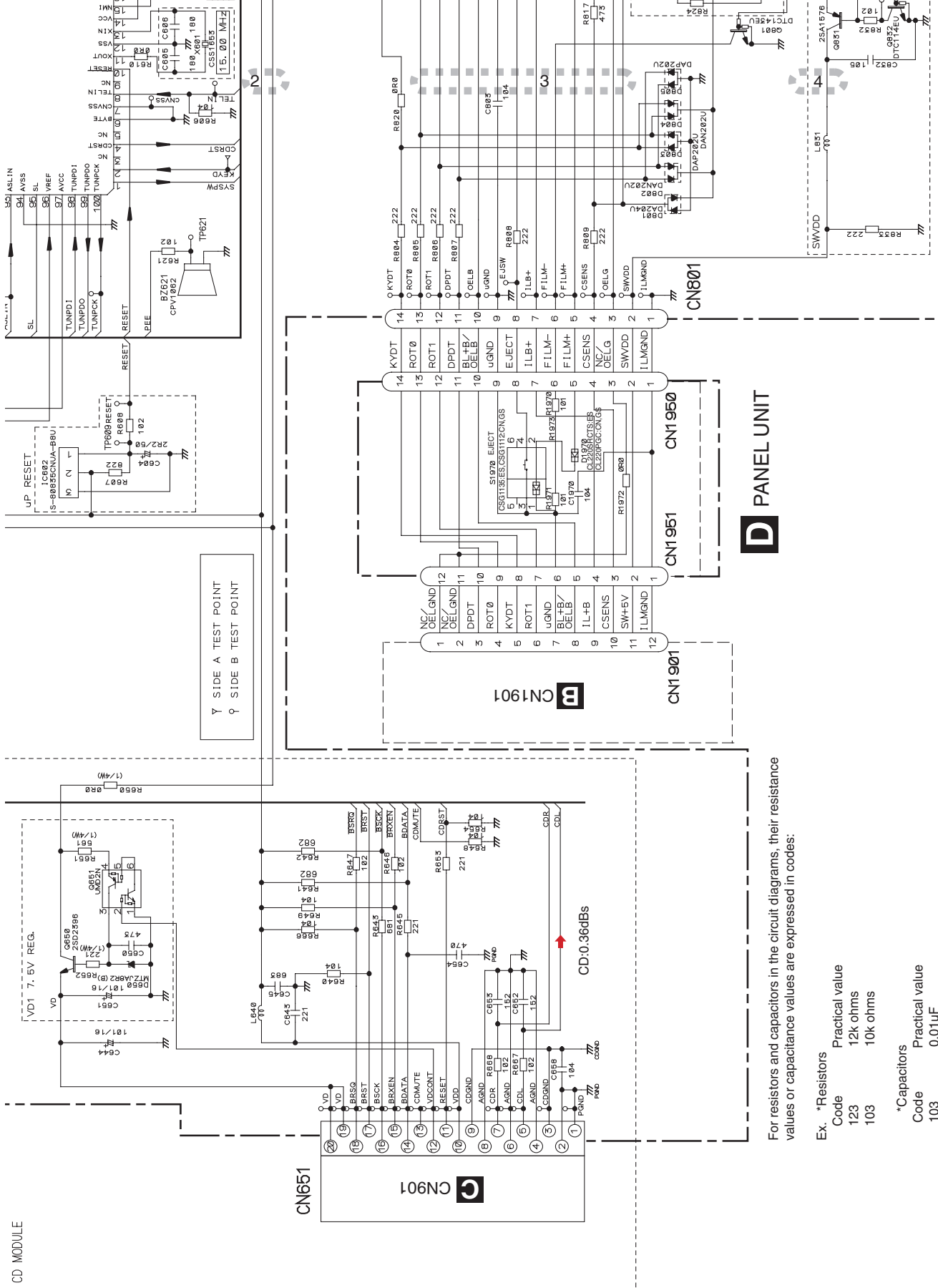


F

A-a	A-b
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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-b

A-a A-b

A-a D

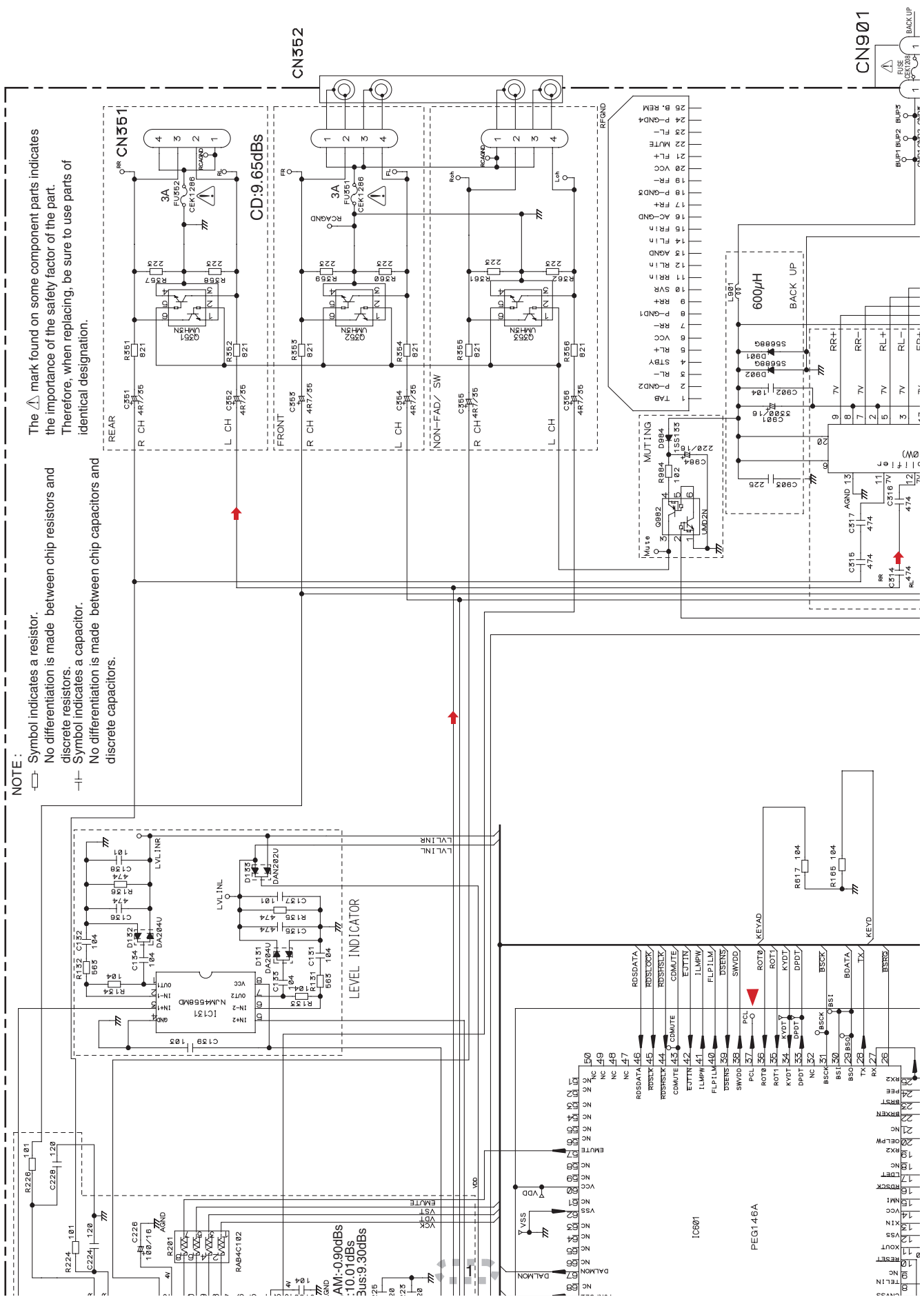
A-a A-b

# A TUNER AMP ASSY

## NOTE :

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

The  $\Delta$  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-b**

## 4





IC1940  
PEG203A  
**KEY/OEL CONTROLLER**

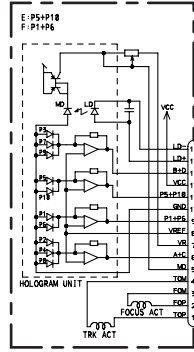
OEL UNIT

DEH-P5850MP/XN/ES

# 3.4 CD MECHANISM MODULE(GUIDE PAGE)

C-a

PICKUP UNIT(P10.5)(SERVICE)

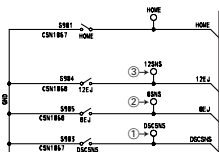


F. ACT: APPLYING POSITIVE SIGNAL TO FOP.  
T. ACT: APPLYING POSITIVE SIGNAL TO TOP.

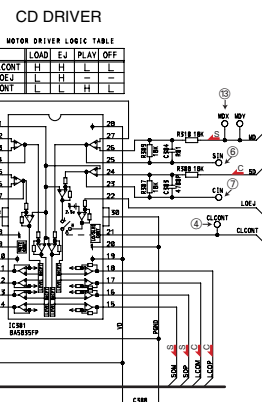
SWITCHES:  
CD CORE UNIT(S10.5COMP1)  
S901:HOME SWITCH.....ON-OFF  
S903:DSCSNS SWITCH.....ON-OFF  
S904:12EJ SWITCH.....ON-OFF  
S905:8EJ SWITCH.....ON-OFF

The underlined indicates the switch position.

M1 CX6742  
SPINDLE MOTOR  
M2 CX4026  
LOADING/CARRIAGE MOTOR



① Monitor land(ø1.2mm)  
② Monitor land(ø8.8mm)  
③ Land for manual soldering

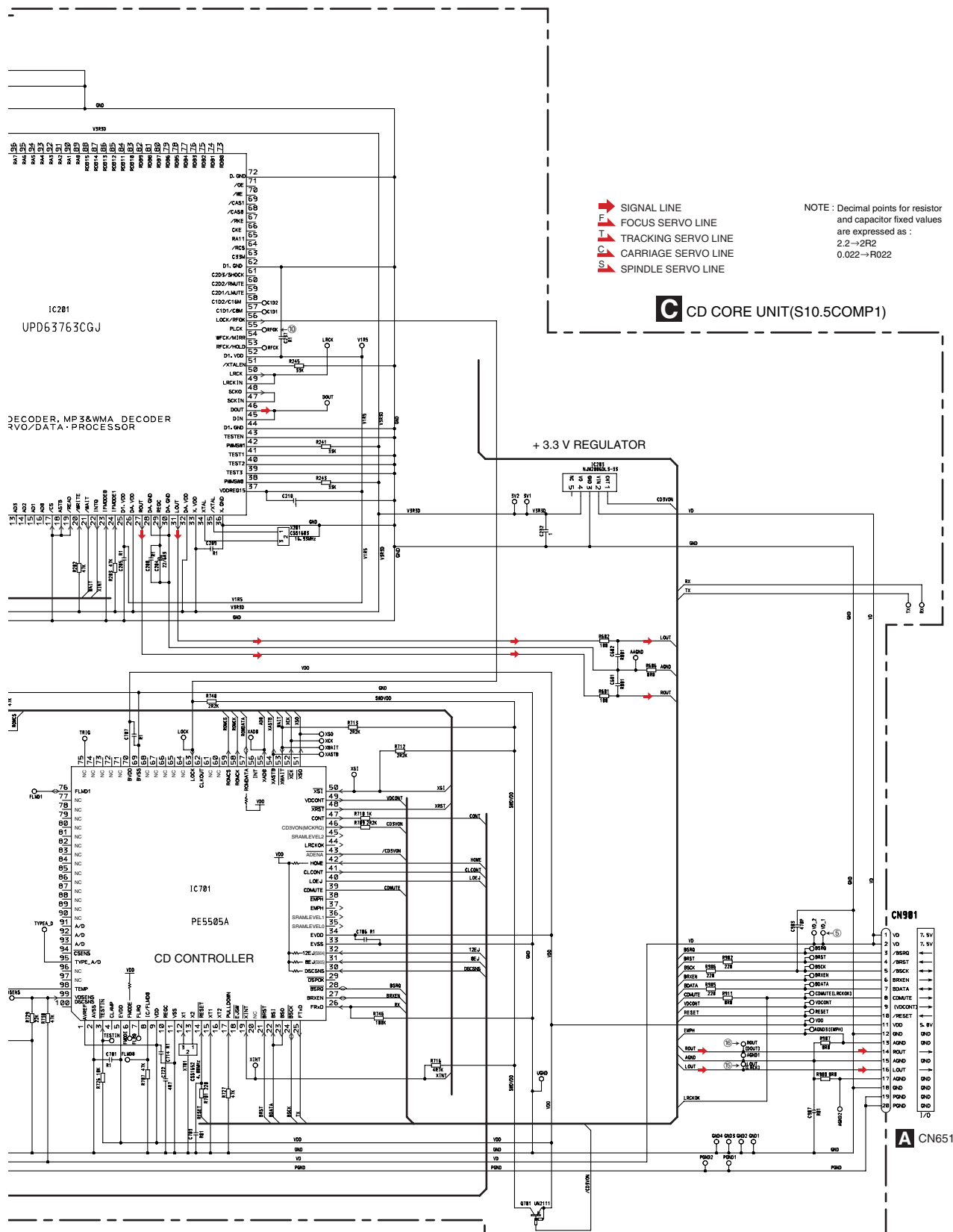


	LOAD	EJ	PLAY	OFF
CLCONT	H	H	L	L
LOEJ	L	H	-	-
CONT	L	L	H	L

IC281  
UPD63763CGJ  
RF AMP, CD DECODER, MP3&WMA  
DIGITAL SERVO/DATA PROCESS

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.

C-b





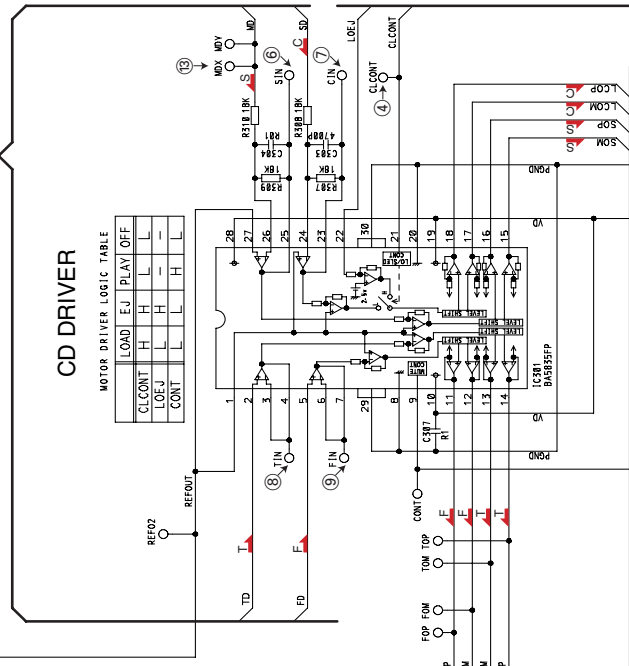


SWITCHES:  
 CD CORE UNIT(S10.5COMP1) ON-OFF  
 S901:HOME SWITCH.....ON-OFF  
 S903:DSCSNS SWITCH.....ON-OFF  
 S904:12EJ SWITCH.....ON-OFF  
 S905:8EJ SWITCH.....ON-OFF

The underlined indicates the switch position.

M1 CXG6742  
 SPINDLE MOTOR

M2 CXG4026  
 LOADING/CARRIAGE MOTOR



Ⓑ Monitor land (ø1.2mm)  
 Ⓕ Monitor land (ø0.8mm)  
 □ Land for manual soldering

C-a

NOTE1) GND ....CD LSI, RFAMP, CPU  
 PGND ....Actuator, Motor Driver  
 AGND ....Audio  
 These GND's are not connected to each other on PCB.  
 PGND is connected to a floating mechanism part by a screw.

C-a C-b

C-b

A

B

C

D

E

F

C-a C-b

C-b

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

↑ SIGNAL LINE  
↑ FOCUS SERVO LINE  
↑ TRACKING SERVO LINE  
↑ CARRIAGE SERVO LINE  
↑ SPINDLE SERVO LINE

CD CORE UNIT(S10.5COMP1)

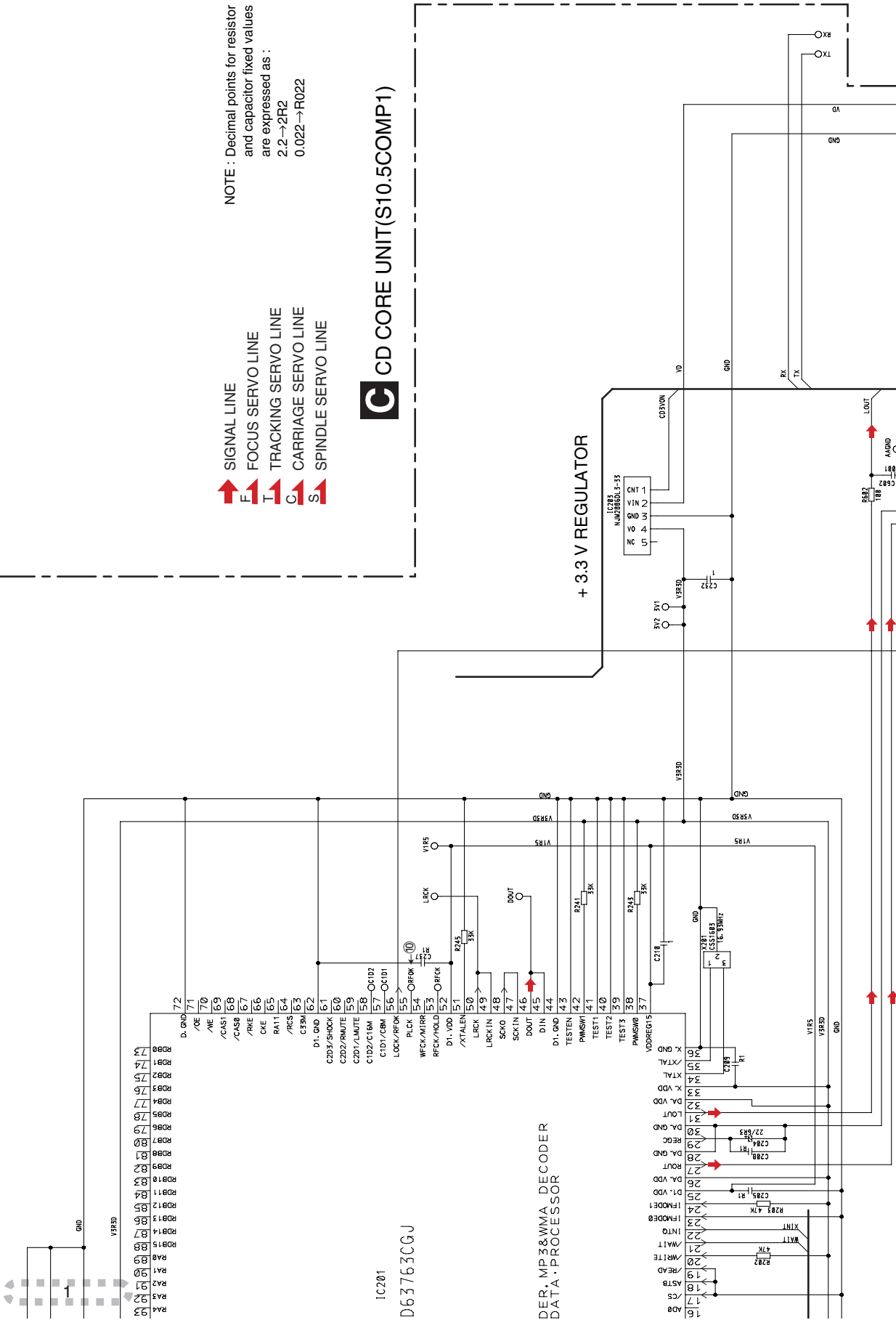
+ 3.3 V REGULATOR

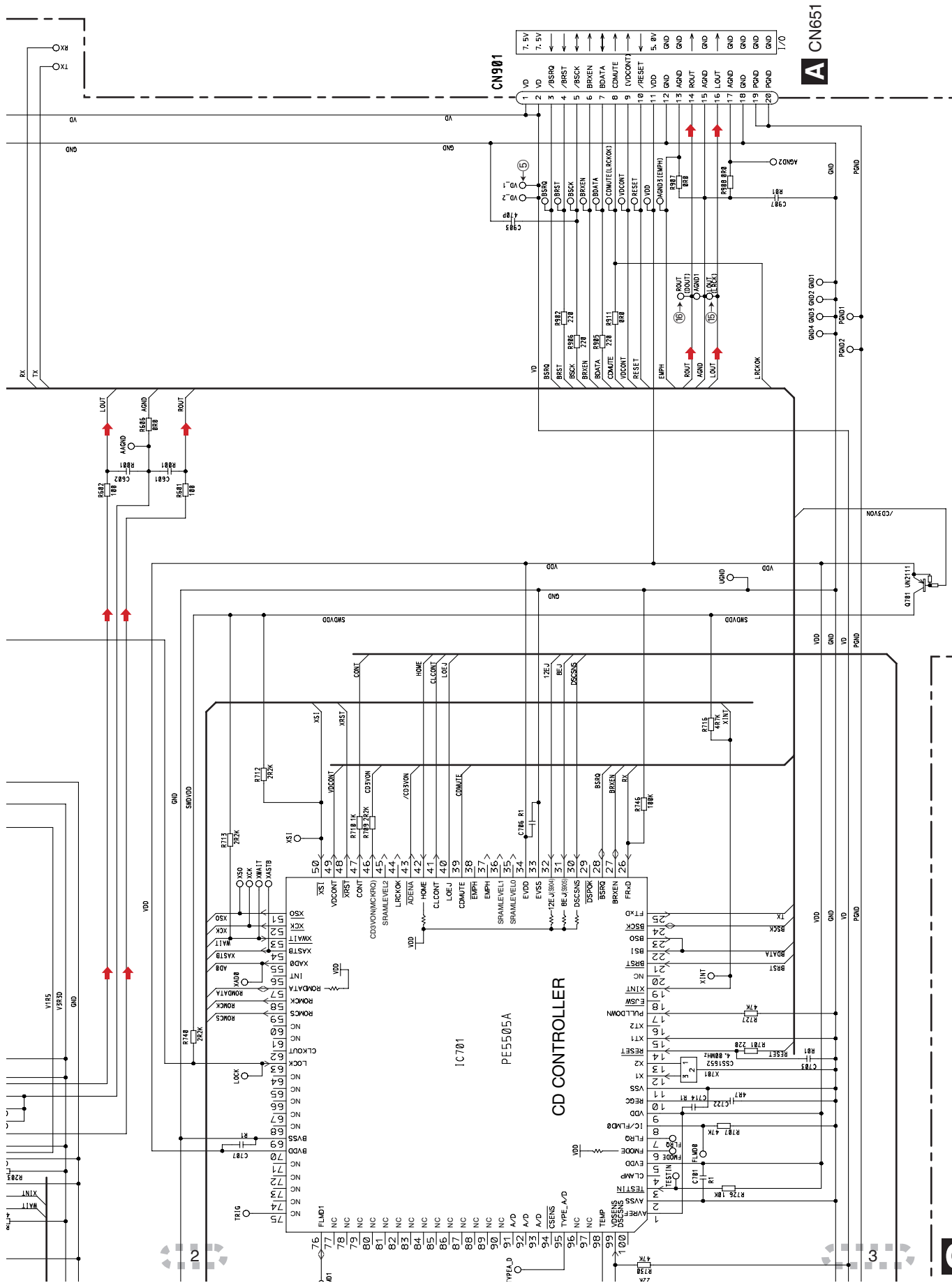
DER. MP38WMA DECODER  
DATA • PROCESSOR

DEH-P5850MP/XN/ES

IC201

D63763CGJ





DEH-P5850MP/XN/ES

C-a C-b

C-b

A B C D E F

5

6

7

8

5

6

7

8

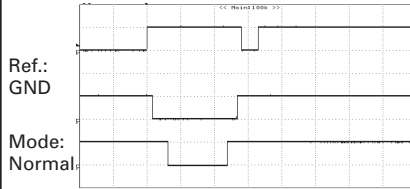
# Waveforms

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

A

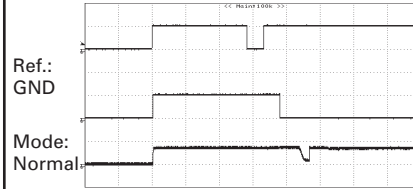
① DSCSNS 5 V/div 500 ms/div  
② 8SNS 5 V/div  
③ 12SNS 5 V/div

12 cm CD Loading operation



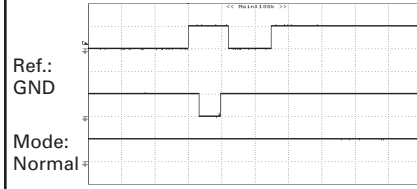
① DSCSNS 5 V/div 500 ms/div  
④ CLCONT 5 V/div  
⑤ VD 10 V/div

12 cm CD Loading operation



① DSCSNS 5 V/div 500 ms/div  
② 8SNS 5 V/div  
③ 12SNS 5 V/div

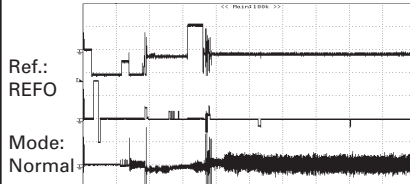
8 cm CD Loading operation



B

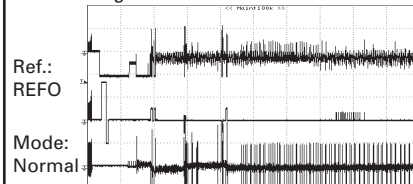
⑥ SIN 1 V/div 1 s/div  
⑦ CIN 500 mV/div  
⑧ TIN 500 mV/div

12 cm CD-DA setup operation after loading



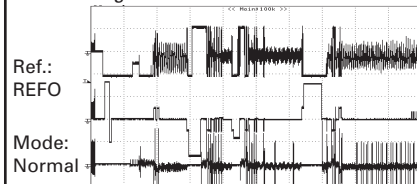
⑥ SIN 1 V/div 1 s/div  
⑦ CIN 500 mV/div  
⑧ TIN 500 mV/div

12 cm CD-ROM(1 session) setup operation after loading



⑥ SIN 1 V/div 1 s/div  
⑦ CIN 500 mV/div  
⑧ TIN 500 mV/div

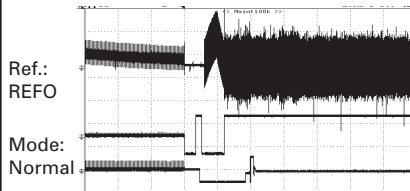
12 cm CD-ROM(3 sessions) setup operation after loading



C

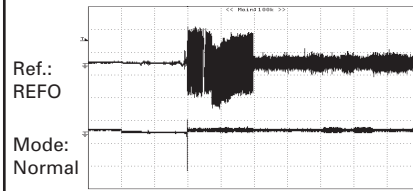
⑨ FIN 200 mV/div 500 ms/div  
⑩ RFOK 2 V/div  
⑥ SIN 2 V/div

12 cm CD-DA Source On setup operation



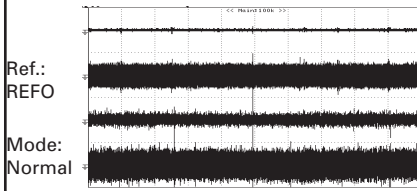
⑪ TE 500 mV/div 200 ms/div  
⑫ FE 500 mV/div

Source On setup operation



⑫ FE 500 mV/div 20 ms/div  
⑨ FIN 500 mV/div  
⑪ TE 500 mV/div  
⑧ TIN 500 mV/div

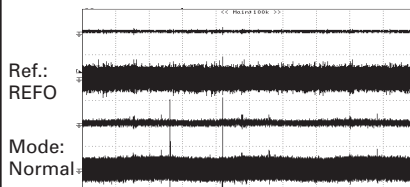
CD-DA Play operation



D

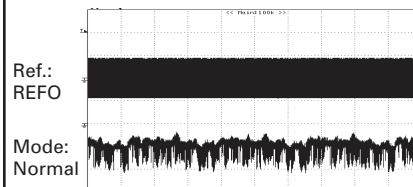
⑫ FE 500 mV/div 20 ms/div  
⑨ FIN 500 mV/div  
⑪ TE 500 mV/div  
⑧ TIN 500 mV/div

CD-ROM play operation(Regular track Jump)



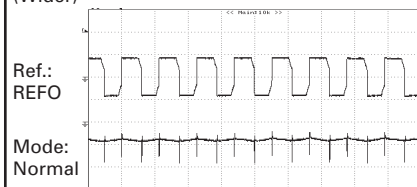
⑬ MDX 2 V/div 50 ms/div  
⑥ SIN 200 mV/div

Spindle waveform during play operation



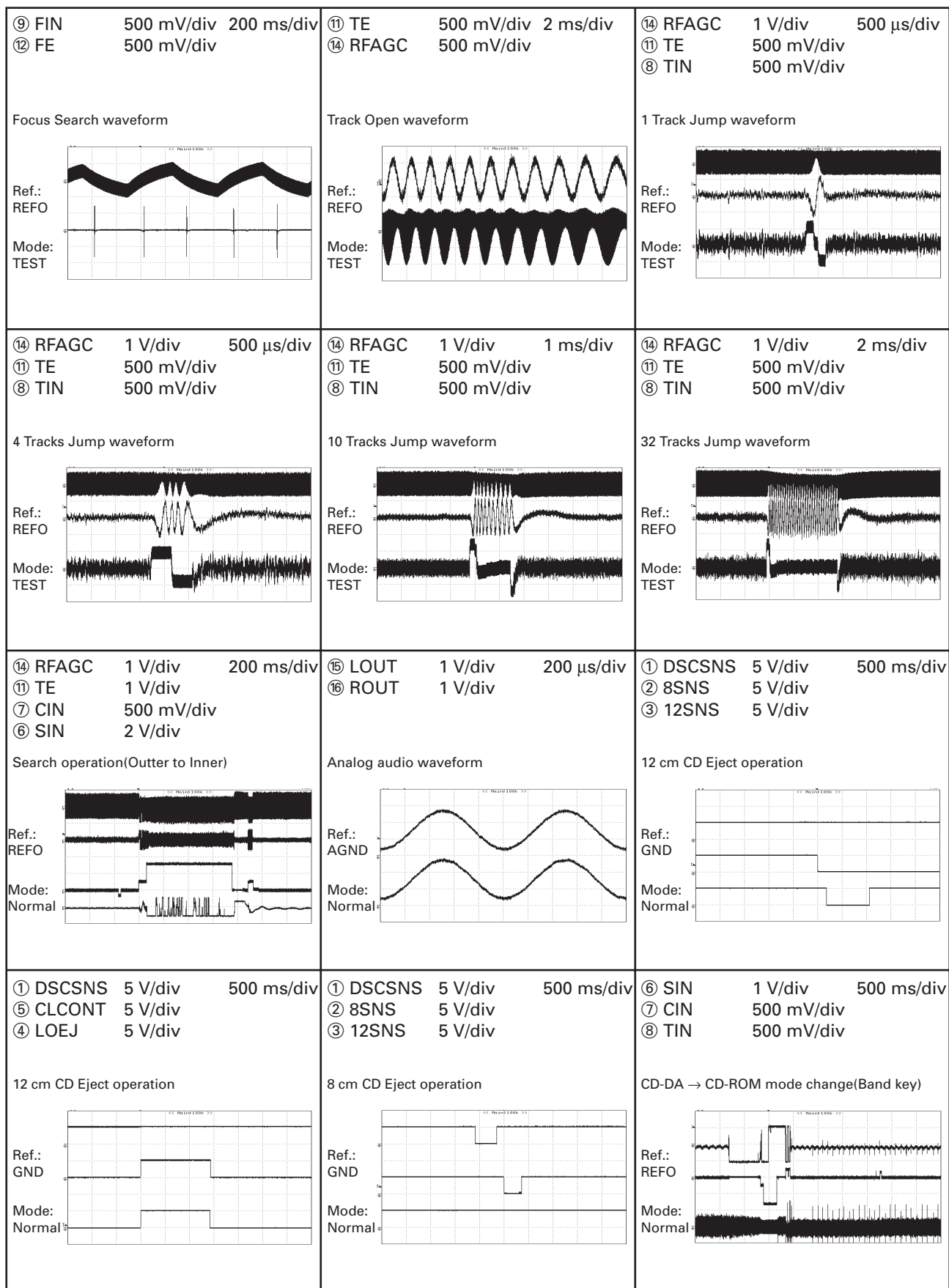
⑬ MDX 2 V/div 5 μs/div  
⑥ SIN 500 mV/div

Spindle waveform during play operation (Wider)



E

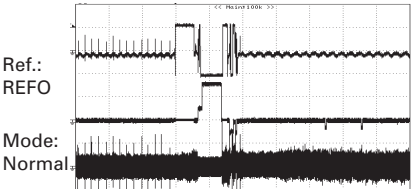
F



A

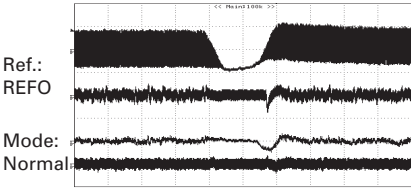
⑥ SIN 1 V/div 500 ms/div  
⑦ CIN 500 mV/div  
⑧ TIN 500 mV/div

CD-ROM → CD-DA mode change(Band key)



⑭ RFAGC 1 V/div 500 μs/div  
⑧ TIN 1 V/div  
⑪ TE 1 V/div  
⑨ FIN 1 V/div

Black dot(800 μm) during play



B

C

D

E

F

■

5

■

6

■

7

■

8

■

A

■

B

■

C

■

D

■

E

■

F

■

5

■

6

DEH-P5850MP/XN/ES

■

7

■

8

■

## 4



## SIDE A

A

B

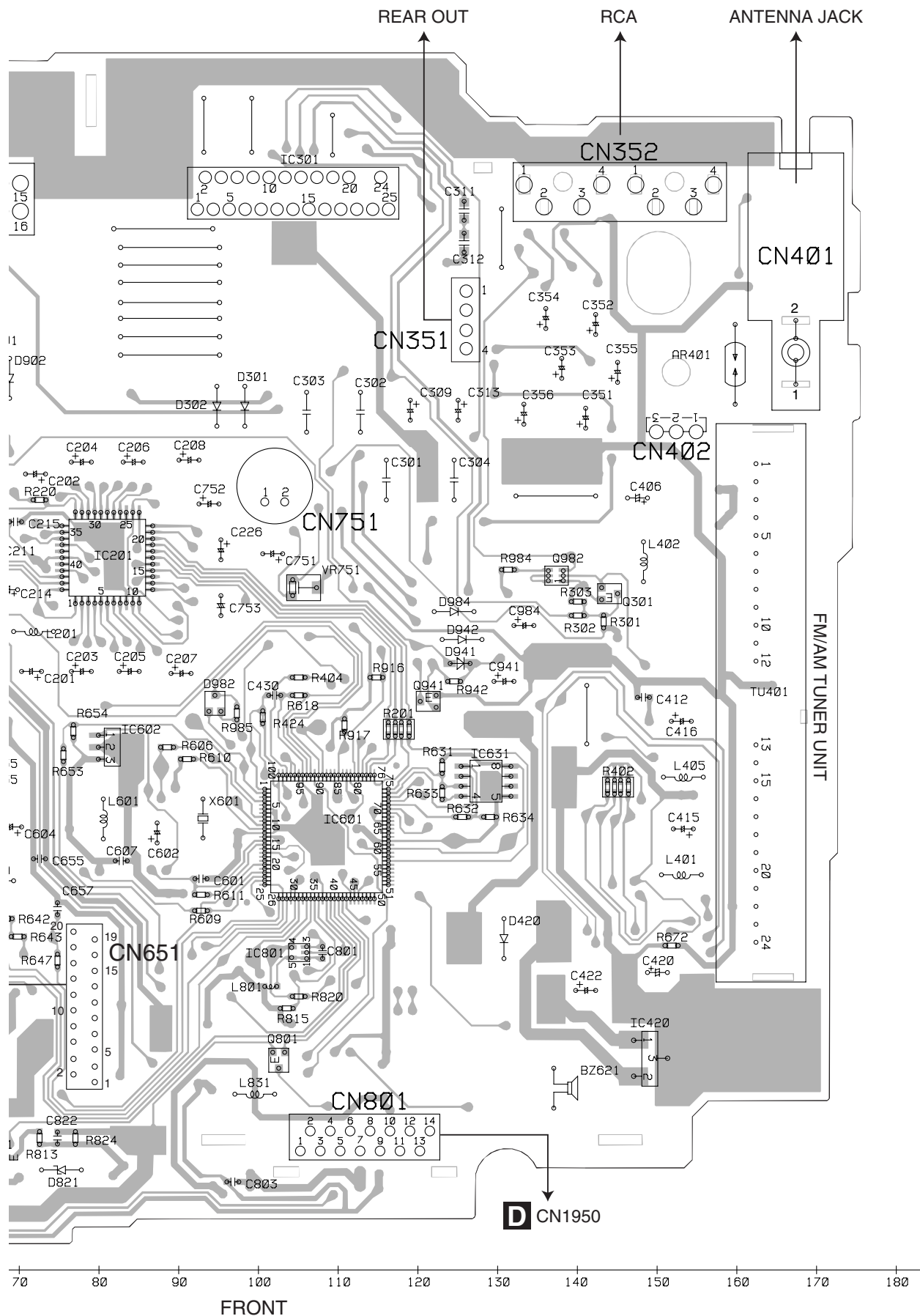
C

D

**E**

F

A



A



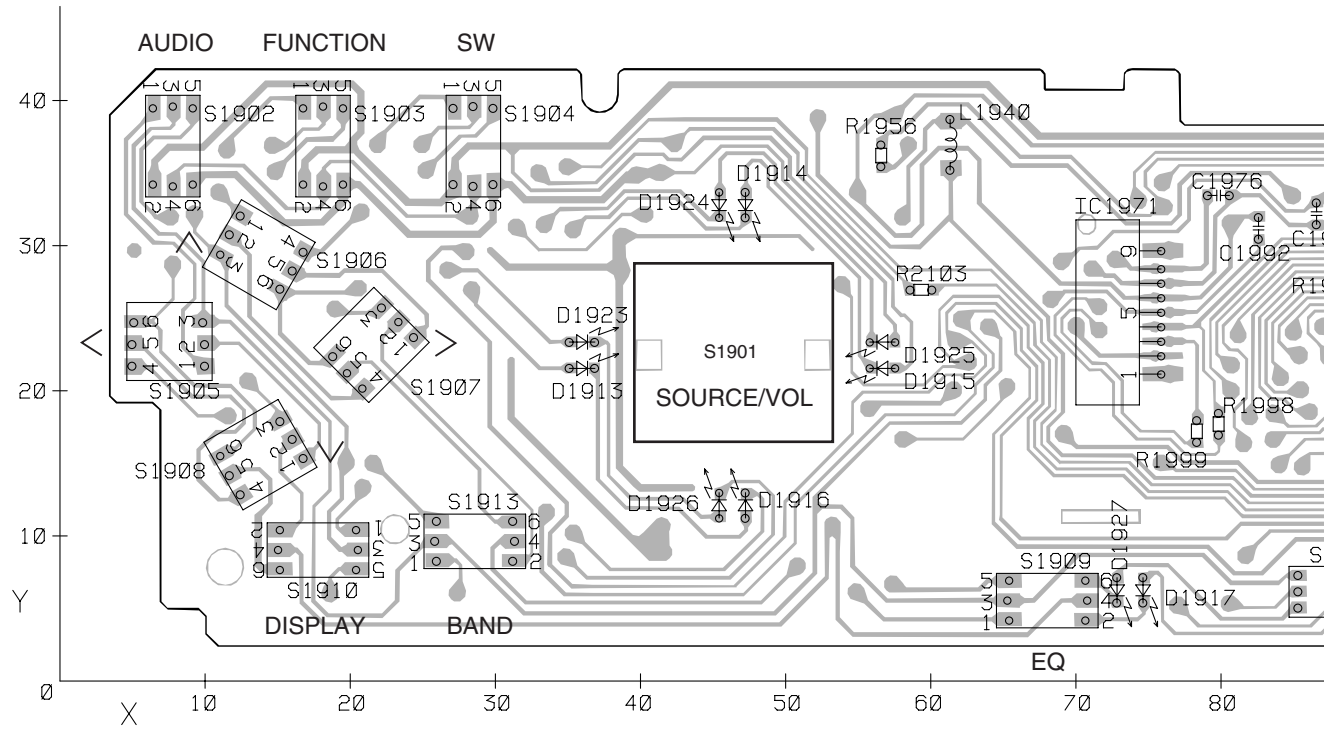
**A**

34

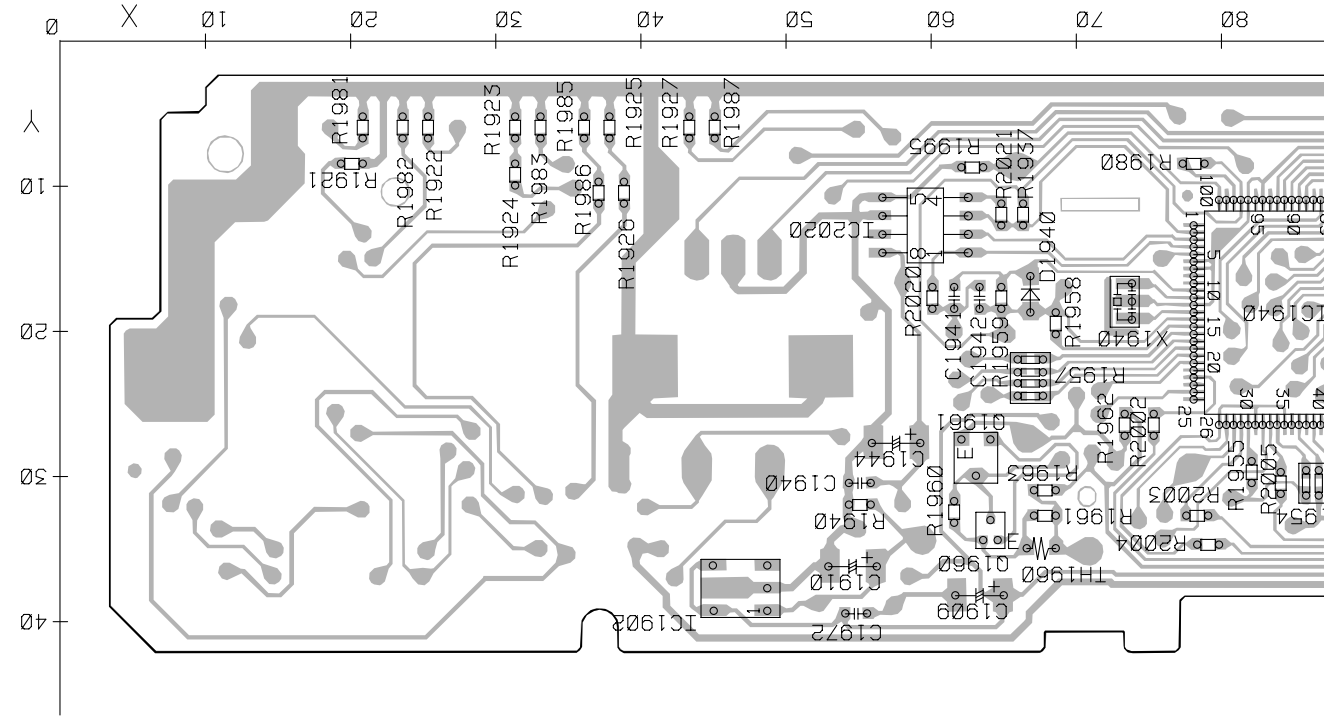


4.2 KEYBOARD UNIT

B KEYBOARD UNIT



B KEYBOARD UNIT



B

A



D



F

DEH-P5850MP/XN/ES

## 4.3 CD CORE UNIT(S10.5COMP1)

### C CD CORE UNIT(S10.5COMP1)

SIDE A

A

PICKUP UNIT(P10.5)(SERVICE)

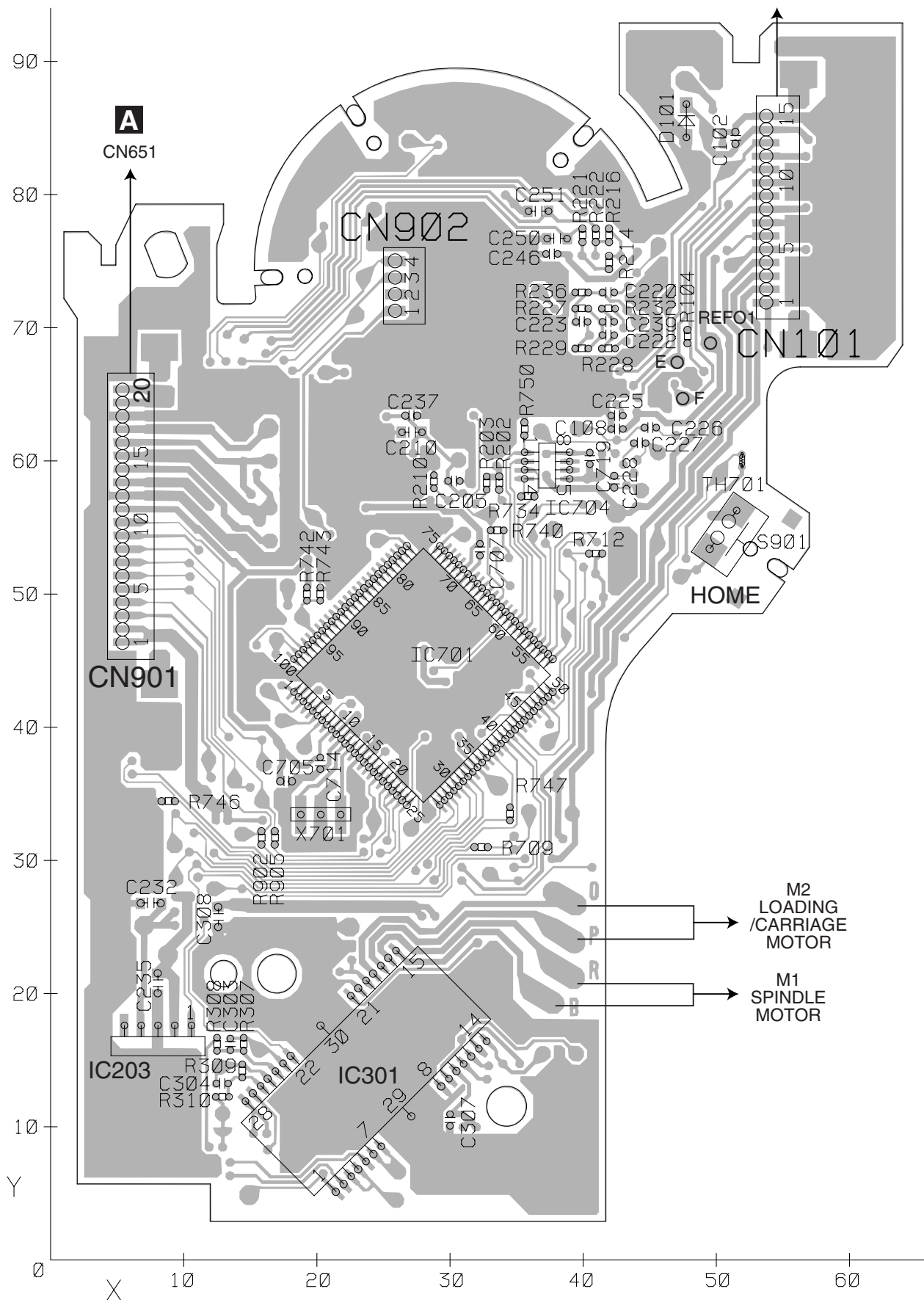
B

C

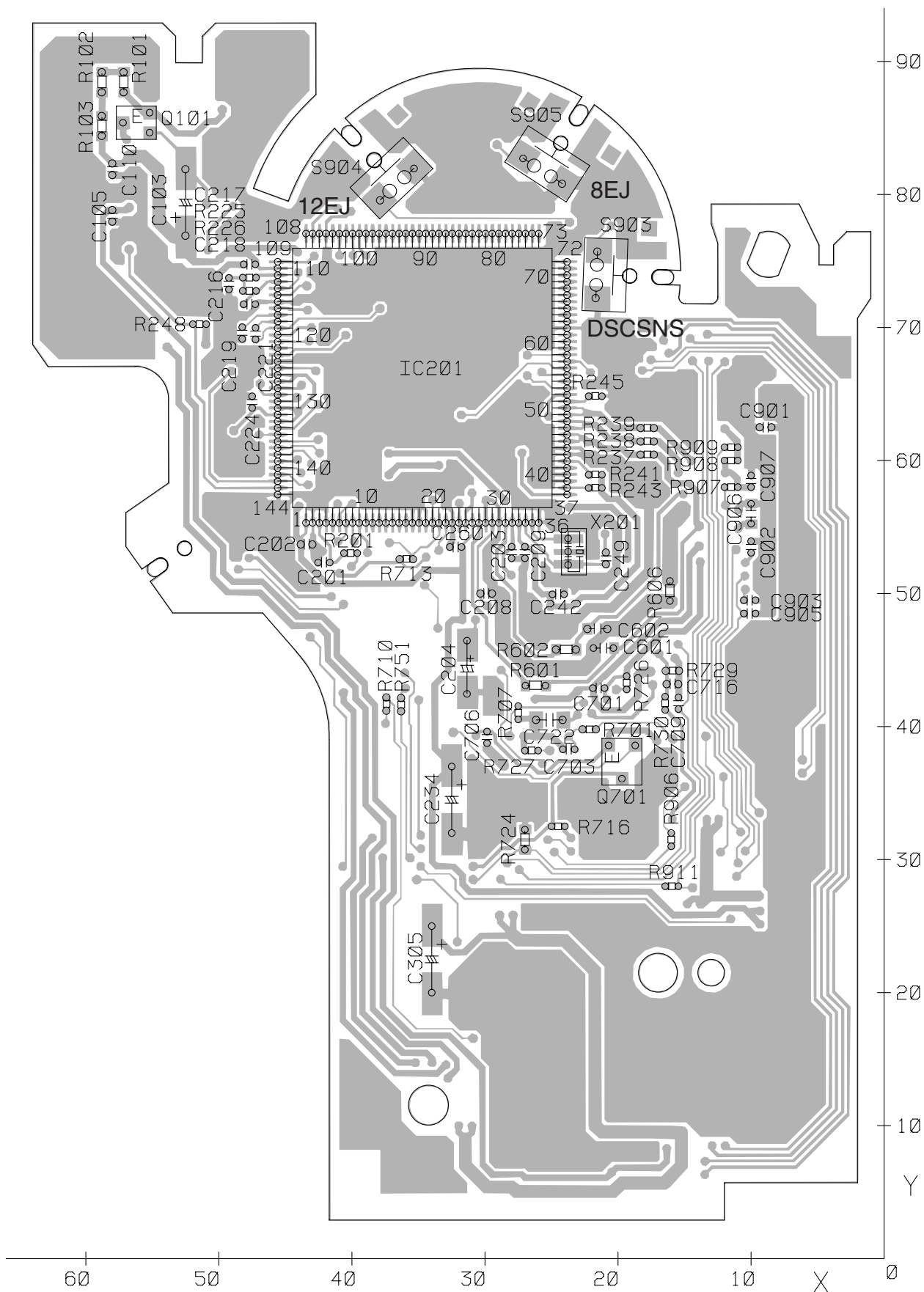
D

E

F







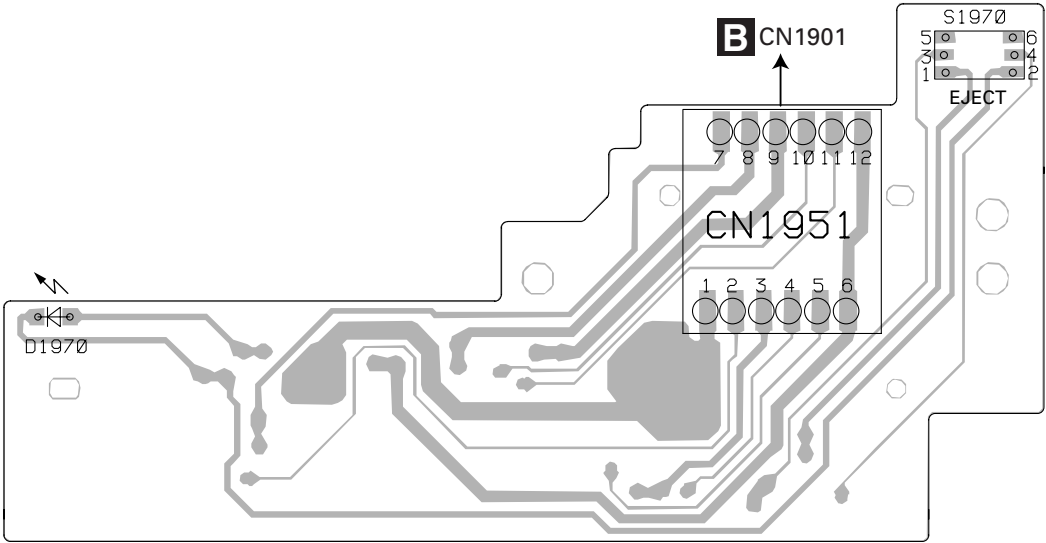
1 2 3 4

4.4 PANEL UNIT

A

**D** PANEL UNIT

**SIDE A**



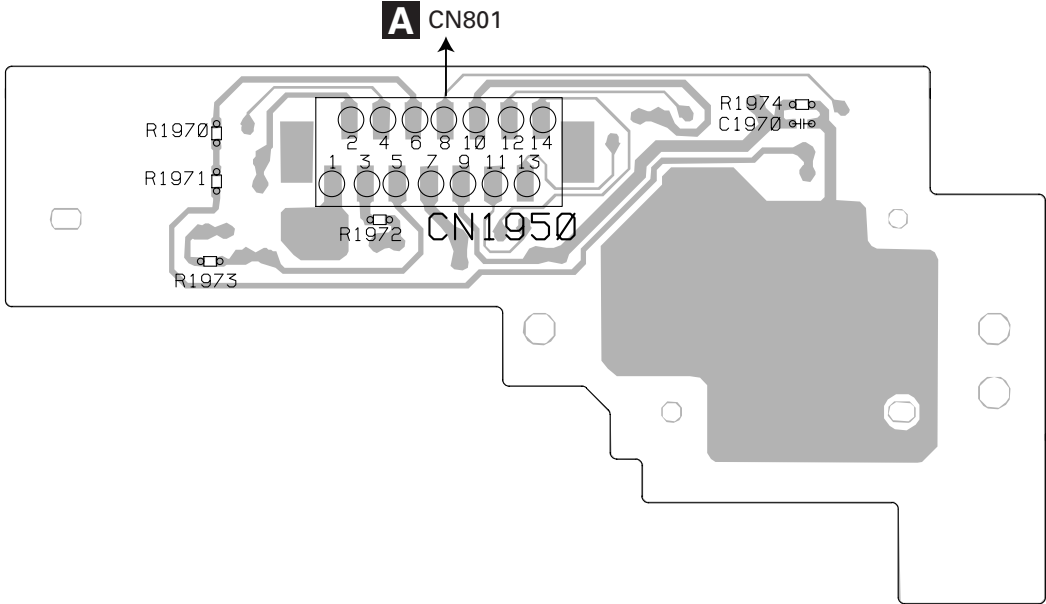
B

C

D

**D** PANEL UNIT

**SIDE B**



E

F

**D**



## 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 : XWM7132(ES)</b>		Q 650 (A,6,67) Transistor	2SD2396
<b>Unit Number : XWM7133(GS)</b>		Q 651 (B,23,57) Transistor	UMD2N
<b>Unit Name : Tuner Amp Assy</b>		Q 801 (A,103,26) Transistor	DTC143EU
<b>Unit Number :</b>		Q 821 (A,66,13) Transistor	2SD1767
<b>Unit Name : Keyboard Unit</b>		Q 822 (B,77,18) Transistor	UMD2N
<b>Unit Number : CWM9835(ES)</b>		Q 831 (B,99,30) Transistor	2SA1576
<b>Unit Number : CWM8758(GS)</b>		Q 832 (B,92,21) Transistor	DTC114EU
<b>Unit Name : Panel Unit</b>		Q 851 (A,17,32) Transistor	2SD1760F5
<b>Unit Number : CWX3176</b>		Q 852 (B,29,36) Transistor	UMD2N
<b>Unit Name : CD Core</b>		Q 911 (A,6,101) Transistor	2SD2396
<b>Unit(S10.5COMP1)</b>		Q 912 (B,20,77) Transistor	UMD2N
		Q 931 (B,50,98) Transistor	UMX1N
		Q 941 (A,121,71) Transistor	DTC114EU
		Q 951 (A,46,94) Transistor	2SA1576
		Q 981 (B,29,91) Transistor	2SC4081
		Q 982 (A,137,87) Transistor	UMD2N
		D 131 (A,63,66) Diode Network	DA204U
		D 132 (A,47,70) Diode Network	DA204U
		D 133 (A,57,61) Diode	DAN202U
		D 301 (A,98,111) Diode	S5688G
<b>Unit Number : XWM7132(ES)</b>		D 302 (A,95,111) Diode	S5688G
<b>Unit Number : XWM7133(GS)</b>		D 650 (A,12,70) Diode	MTZJA8R2(B)
<b>Unit Name : Tuner Amp Assy</b>		D 801 (B,103,33) Diode Network	DA204U
		D 802 (B,109,30) Diode	DAN202U
		D 803 (B,113,33) Diode	DAP202U
		D 804 (B,113,30) Diode	DAN202U
		D 805 (B,108,33) Diode	DAP202U
		D 821 (A,78,13) Diode	HZS11L(A1)
		D 851 (A,24,30) Diode	MTZJA10(B)
		D 852 (B,44,23) Diode	RB411D
		D 901 (A,65,117) Diode	S5688G
		D 902 (A,69,114) Diode	S5688G
		D 911 (A,18,84) Diode	S5688G
		D 912 (A,15,79) Diode	HZS6L(B1)
		D 931 (A,55,108) Diode	HZS7L(A1)
		D 932 (A,58,101) Diode	HZS7L(C3)
		D 942 (A,123,79) Diode	1SS133
		D 951 (A,42,94) Diode	DAN202U
		D 981 (A,20,90) Diode	HZS9L(A2)
		D 982 (A,95,71) Diode	DAN202U
		D 984 (A,122,83) Diode	1SS133
IC 101 (A,43,87) IC	HA12241FP		
IC 131 (A,55,72) IC	NJM4558MD		
IC 201 (A,81,89) IC	PML009A		
IC 301 (A,92,133) IC	PAL007B		
IC 420 (A,151,27) IC	NJM2885DL1-33		
IC 601 (A,109,54) IC	PEG146A		
IC 602 (A,81,66) IC	S-80835CNUA-B8U		
IC 851 (B,36,18) IC	NJM2360M		
IC 901 (A,6,120) IC	NJM2388F84		
Q 101 (B,41,104) Transistor	2SA1576		
Q 102 (B,37,102) Transistor	DTC114EU		
Q 301 (A,144,85) Transistor	DTC124EU		
Q 351 (B,131,119) Transistor(ES)	UMH3N		
Q 352 (B,136,128) Transistor	UMH3N		
Q 353 (B,161,128) Transistor	UMH3N		

**A**

### MISCELLANEOUS

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

A	L 101	(A,32,80) Inductor	LAU2R2K
	L 201	(A,74,80) Ferri-Inductor	LAU4R7K
	L 401	(A,156,50) Inductor	LAU1R0K
	L 402	(A,148,91) Inductor	LAU1R0K
	L 403	(B,155,96) Inductor	LCTAW220J2520
	L 405	(A,156,62) Ferri-Inductor	LAU4R7K
	L 601	(A,81,59) Ferri-Inductor	LAU100K
	L 640	(A,64,49) Inductor	LAU2R2K
	L 831	(A,102,22) Inductor	LAU2R2K
	L 852	(A,39,16) Inductor	CTF1660
	L 901	(A,31,107) Choke Coil 600 $\mu$ H	CTH1280
	L 951	(A,53,88) Inductor	LAU2R2K
	X 601	(A,93,59) Crystal Resonator 15.000MHz	CSS1653
	S 802	(A,22,9) Switch(DSENS)	CSN1039
B	△FU351	Fuse 3A(ES)	CEK1286
	△FU352	Fuse 3A	CEK1286
	TU401	(A,162,101) FM/AM Tuner Unit	CWE1952
	△	Fuse 10A	CEK1208
	BZ621	(A,137,23) Buzzer	CPV1062
	AR401	(A,160,119) Surge Protector	DSP-201M-S00B

**RESISTORS**

C	R 101	(B,37,135)	RS1/16S101J
	R 102	(B,37,133)	RS1/16S620J
	R 103	(B,38,127)	RS1/16S101J
	R 104	(A,39,83)	RS1/16S102J
	R 105	(A,47,83)	RS1/16S472J
	R 106	(A,48,87)	RS1/16S472J
	R 107	(B,25,128)	RS1/16S821J
	R 108	(B,23,128)	RS1/16S223J
	R 109	(B,34,105)	RS1/16S222J
	R 110	(B,31,121)	RS1/16S821J
	R 111	(B,29,121)	RS1/16S223J
	R 112	(B,27,121)	RS1/16S102J
D	R 113	(B,25,133)	RS1/16S102J
	R 114	(B,43,107)	RS1/16S223J
	R 115	(B,38,107)	RS1/16S472J
	R 131	(A,62,63)	RS1/16S563J
	R 132	(A,50,71)	RS1/16S563J
	R 133	(A,60,71)	RS1/16S104J
	R 134	(A,50,74)	RS1/16S104J
	R 135	(A,64,62)	RS1/16S474J
	R 136	(A,55,65)	RS1/16S474J
	R 165	(A,20,136)	RS1/16S104J
E	R 201	(A,118,68)	RAB4C102J
	R 220	(A,73,97)	RS1/16S102J
	R 221	(B,74,86)	RS1/16S102J
	R 223	(B,98,80)	RS1/16S101J
	R 224	(B,90,92)	RS1/16S101J
	R 225	(B,98,76)	RS1/16S101J
	R 226	(B,96,78)	RS1/16S101J
	R 301	(A,143,81)	RS1/16S103J
	R 302	(A,140,82)	RS1/16S331J
	R 303	(A,140,84)	RS1/16S103J
	R 304	(B,119,128)	RS1/16S153J
	R 351	(B,145,108) (ES)	RS1/16S821J
F	R 352	(B,145,119) (ES)	RS1/16S821J
	R 353	(B,140,122)	RS1/16S821J
	R 354	(B,139,119)	RS1/16S821J
	R 355	(B,157,120)	RS1/16S821J
	R 356	(B,144,128)	RS1/16S821J
	R 357	(B,133,112) (ES)	RS1/16S223J
	R 358	(B,131,121) (ES)	RS1/16S223J
	R 359	(B,143,128)	RS1/16S223J
	R 360	(B,126,131)	RS1/16S223J
	R 361	(B,159,133)	RS1/16S223J
	R 362	(B,158,128)	RS1/16S223J
	R 403	(B,159,70)	RS1/16S681J
	R 404	(A,105,74)	RS1/16S681J
	R 406	(B,156,80)	RS1/16S681J
	R 408	(B,156,83)	RS1/16S681J
	R 409	(B,156,85)	RS1/16S681J
	R 411	(B,156,87)	RS1/16S681J
	R 413	(B,157,89)	RS1/16S681J
	R 601	(B,112,61) (ES)	RS1/16S104J
	R 602	(B,107,63) (GS)	RS1/16S104J
	R 604	(B,117,55)	RS1/16S104J
	R 605	(B,108,61)	RS1/16S104J
	R 606	(A,89,66)	RS1/16S104J
	R 607	(B,63,57)	RS1/16S822J
	R 608	(B,97,48)	RS1/16S102J
	R 609	(A,93,45)	RS1/16S102J
	R 610	(A,91,64)	RS1/16S0R0J
	R 611	(A,93,47)	RS1/16S473J
	R 617	(A,50,65)	RS1/16S104J
	R 621	(B,132,29)	RS1/16S102J
	R 631	(A,123,63)	RS1/16S104J
	R 640	(B,79,48)	RS1/16S104J
	R 641	(B,59,39)	RS1/16S682J
	R 642	(A,68,44)	RS1/16S682J
	R 643	(A,70,42)	RS1/16S681J
	R 645	(B,63,37)	RS1/16S221J
	R 646	(B,84,43)	RS1/16S102J
	R 647	(A,75,39)	RS1/16S102J
	R 648	(B,92,43)	RS1/16S104J
	R 649	(B,84,41)	RS1/16S104J
	R 650	(A,12,64)	RD1/4PU0R0J
	R 651	(A,17,61)	RD1/4PU561J
	R 652	(A,17,67)	RD1/4PU221J
	R 653	(A,76,65)	RS1/16S221J
	R 654	(A,77,68)	RS1/16S104J
	R 666	(B,66,42)	RS1/16S104J
	R 667	(B,84,27)	RS1/16S102J
	R 668	(B,87,34)	RS1/16S102J
	R 802	(A,15,24)	RS1/16S104J
	R 803	(A,19,24)	RS1/16S102J
	R 804	(B,122,24)	RS1/16S222J
	R 805	(B,125,24)	RS1/16S222J
	R 806	(B,120,24)	RS1/16S222J
	R 807	(B,118,24)	RS1/16S222J
	R 808	(B,112,23)	RS1/16S222J
	R 809	(B,104,24)	RS1/16S222J
	R 810	(B,129,23)	RS1/16S102J
	R 811	(B,122,30)	RS1/16S102J
	R 812	(B,119,29)	RS1/16S102J
	R 813	(A,73,17)	RS1/16S1R0J
	R 814	(B,108,24)	RS1/16S222J
	R 815	(A,104,33)	RS1/16S473J
	R 816	(B,112,25)	RS1/16S473J

5		6		7		8	
<u>Circuit Symbol and No.</u>		<u>Part No.</u>		<u>Circuit Symbol and No.</u>		<u>Part No.</u>	
R 817	(B,103,28)	RS1/16S473J		C 209	(A,67,96)	CEJQ1R0M50	
R 818	(B,129,26)	RS1/16S104J					
R 820	(A,105,34)	RS1/16S0R0J		C 210	(A,60,96)	CEJQ1R0M50	
R 821	(A,53,22)	RD1/4PU391J		C 211	(A,68,91)	CEJQ1R0M50	A
				C 212	(A,60,86)	CEJQ1R0M50	
R 824	(A,77,17)	RS1/16S472J		C 213	(B,82,81)	CKSRYB104K16	
R 825	(A,64,20)	RD1/4PU821J		C 214	(A,70,85)	CEJQ470M16	
R 831	(B,95,28)	RS1/16S473J					
R 832	(B,96,25)	RS1/16S102J		C 215	(A,70,94)	CKSRYB105K10	
R 833	(B,101,18)	RS1/16S222J		C 216	(B,82,83)	CKSRYB104K16	
				C 217	(A,62,91)	CEJQ1R0M50	
R 850	(A,32,40)	RD1/4PU681J		C 218	(A,60,81)	CEJQ1R0M50	
R 853	(B,33,23)	RS1/16S1R0J		C 220	(B,74,95)	CKSRYB152K50	
R 854	(B,33,21)	RS1/16S391J					
R 855	(B,42,29)	RS1/16S121J		C 221	(B,76,90)	CKSRYB152K50	
R 856	(A,50,22)	RD1/4PU152J		C 223	(B,87,84)	CCSRCH120J50	
				C 224	(B,88,90)	CCSRCH120J50	B
R 858	(B,28,22)	RS1/16S0R0J		C 225	(B,87,81)	CCSRCH120J50	
R 901	(B,18,99)	RS1/16S102J		C 226	(A,95,92)	CEJQ100M16	
R 902	(B,20,101)	RS1/16S103J					
R 912	(B,11,81)	RS1/16S222J		C 228	(B,87,82)	CCSRCH120J50	
R 913	(B,12,86)	RS1/16S223J		C 240	(B,54,85)	CKSQYB225K10	
				C 309	(A,119,109)	CEJQ330M10	
R 914	(B,48,94)	RS1/16S104J		C 311	(A,126,133)	CKSQYB225K10	
R 915	(B,47,98)	RS1/16S104J		C 312	(A,126,129)	CKSQYB225K10	
R 916	(A,115,74)	RS1/16S104J					
R 918	(B,11,105)	RS1/16S391J		C 313	(A,125,109)	CEJQ100M16	
R 931	(A,51,108)	RD1/4PU102J		C 314	(B,116,106)	CKSRYB474K10	
				C 315	(B,119,97)	CKSRYB474K10	
R 932	(B,47,104)	RS1/16S472J		C 316	(B,116,109)	CKSRYB474K10	C
R 933	(B,53,102)	RS1/16S473J		C 317	(B,119,101)	CKSRYB474K10	
R 934	(B,55,102)	RS1/16S103J					
R 935	(B,49,104)	RS1/16S473J		C 318	(B,128,97)	CKSRYB474K10	
R 936	(B,45,99)	RS1/16S104J		C 319	(B,110,105)	CKSRYB474K10	
				C 320	(B,128,101)	CKSRYB474K10	
R 941	(A,64,101)	RD1/4PU102J		C 321	(B,110,109)	CKSRYB474K10	
R 942	(A,125,74)	RS1/16S103J		C 351	(A,141,106) (ES)	CEJQ4R7M35	
R 951	(A,61,106)	RD1/4PU153J					
R 952	(A,43,91)	RS1/16S472J		C 352	(A,142,117) (ES)	CEJQ4R7M35	
R 953	(A,46,91)	RS1/16S472J		C 353	(A,138,112)	CEJQ4R7M35	
				C 354	(A,136,118)	CEJQ4R7M35	
R 954	(A,48,94)	RS1/16S102J		C 355	(A,145,111)	CEJQ4R7M35	
R 981	(B,24,92)	RS1/16S683J		C 356	(A,133,106)	CEJQ4R7M35	D
R 982	(B,24,90)	RS1/16S683J					
R 983	(B,24,84)	RS1/16S223J		C 402	(B,158,56)	CKSRYB103K50	
R 984	(A,131,88)	RS1/16S102J		C 405	(B,147,94)	CKSRYB103K50	
				C 406	(A,149,97)	CEJQ101M16	
<b><u>CAPACITORS</u></b>				C 408	(B,158,59)	CKSRYB103K50	
				C 411	(B,165,45)	CCSRCH101J50	
C 101	(B,29,135)	CKSRYB104K16					
C 102	(A,43,81)	CKSRYB473K50		C 415	(A,155,55)	CEJQ470M6R3	
C 131	(A,62,61)	CKSRYB104K16		C 420	(A,149,37)	CEJQ470M10	
C 132	(A,51,67)	CKSRYB104K16		C 422	(A,140,35)	CEJQ1R0M50	
C 133	(A,62,71)	CKSRYB104K16		C 430	(A,102,72)	CCSRCH101J50	
				C 601	(A,93,49)	CKSRYB103K50	
C 134	(A,48,73)	CKSRYB104K16					
C 135	(A,64,64)	CKSRYB474K10		C 602	(A,87,54)	CEJQ4R7M35	
C 136	(A,52,65)	CKSRYB474K10		C 603	(B,84,55)	CCSRCH101J50	
C 137	(A,64,60)	CCSRCH101J50		C 604	(A,70,56)	CEJQ2R2M50	
C 138	(A,53,65)	CCSRCH101J50		C 605	(B,91,58)	CCSRCH180J50	
				C 606	(B,90,54)	CCSRCH180J50	
C 139	(A,55,76)	CKSRYB103K50					
C 201	(A,73,75)	CEJQ4R7M35		C 643	(B,67,32)	CKSRYB221K50	
C 202	(A,73,100)	CEJQ4R7M35		C 644	(A,59,30)	CEJQ101M16	
C 203	(A,77,75)	CEJQ4R7M35		C 645	(B,43,57)	CKSRYB683K16	
C 204	(A,77,101)	CEJQ4R7M35		C 650	(B,18,58)	CKSRYB473K50	
				C 651	(A,14,55)	CEJQ101M16	
C 205	(A,83,75)	CEJQ4R7M35					
C 206	(A,83,101)	CEJQ4R7M35		C 652	(B,87,30)	CKSRYB152K50	F
C 207	(A,89,75)	CEJQ4R7M35		C 653	(B,85,30)	CKSRYB152K50	
C 208	(A,90,102)	CEJQ4R7M35		C 654	(B,66,35)	CCSRCH470J50	
				C 658	(B,83,22)	CKSRYB104K16	

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

C 756	(B,88,86)	CKSRYB104K16
C 803	(A,97,11)	CKSRYB104K16
C 821	(B,76,14)	CKSRYB473K50
C 822	(A,75,17)	CKSRYB473K50
C 832	(B,99,33)	CKSQYB105K16
C 851	(B,27,32)	CKSRYB104K16
C 852	(A,27,25)	CEJQ470M16
C 853	(A,28,18)	CEJQ101M16
C 854	(B,27,20)	CKSRYB104K16
C 855	(B,43,17)	CCSRCH331J50
C 856	(B,39,21)	CKSRYB223K50

C 857	(A,50,13)	CEJQ470M25
C 901	(A,50,122) 3300 $\mu$ F/16V	CCH1486
C 902	(B,60,120)	CKSRYB104K25
C 903	(B,105,145)	CKSYB225K16
C 911	(A,25,75) 470 $\mu$ F/16V	CCH1331

C 912	(B,29,78)	CKSRYB472K50
C 913	(B,13,77)	CKSRYB103K50
C 914	(A,14,75)	CEJQ470M10
C 922	(B,15,115)	CKSRYB103K50
C 923	(A,14,118)	CEJQ101M16

C 924	(B,28,85)	CKSRYB103K50
C 925	(A,26,82)	CEJQ221M10
C 931	(B,45,103)	CKSRYB104K16
C 941	(A,130,74)	CEJQ1R0M50
C 984	(A,132,81)	CEJQ220M16

**B****Unit Number : (ES)****Unit Name : Keyboard Unit****MISCELLANEOUS**

IC 1901	(A,163,23) IC	GP1UX30RK
IC 1902	(B,47,38) IC	S-818A33AUC-BGN
IC 1940	(B,86,19) IC	PEG203A
IC 1990	(A,108,24) IC	PD8156A
Q 1960	(B,64,34) Transistor	2SC4617

Q 1961	(B,63,29) Transistor	2SC2411K
D 1913	(A,36,22) LED	CL-195SR-CD
D 1914	(A,47,33) LED	CL-195SR-CD
D 1915	(A,57,22) LED	CL-195SR-CD
D 1916	(A,47,12) LED	CL-195SR-CD

D 1917	(A,75,6) LED	CL-195SR-CD
D 1918	(A,159,40) LED	CL-195SR-CD
D 1940	(B,67,17) Diode	1SS355
L 1901	(A,138,19) Inductor	CTF1617
L 1940	(A,61,37) Inductor	CTF1617

TH1960	(B,68,35) Thermistor	CCX1037
X 1940	(B,74,18) Radiator 10.0MHz	CSS1577
S 1902	(A,8,37) Push Switch	CSG1135
S 1903	(A,18,37) Push Switch	CSG1135
S 1904	(A,28,37) Push Switch	CSG1135

S 1905	(A,7,22) Push Switch	CSG1185
S 1906	(A,14,30) Push Switch	CSG1134
S 1907	(A,22,22) Push Switch	CSG1185
S 1908	(A,14,15) Push Switch	CSG1133
S 1909	(A,68,6) Push Switch	CSG1135

S 1910	(A,18,9) Push Switch	CSG1135
S 1911	(A,156,35) Push Switch	CSG1135

S 1912	(A,157,16) Push Switch	CSG1135
S 1913	(A,29,10) Push Switch	CSG1135
S 1914	(A,88,6) Push Switch	CSG1175
S 1915	(A,99,6) Push Switch	CSG1175
S 1916	(A,110,6) Push Switch	CSG1175
S 1917	(A,121,6) Push Switch	CSG1175
S 1918	(A,132,6) Push Switch	CSG1175
S 1919	(A,143,6) Push Switch	CSG1175
S 1920	(A,154,6) Push Switch	CSG1175
VR1970	(B,114,11) Semi-fixed 15k $\Omega$ (B)	CCP1230
VR1971	(B,119,11) Semi-fixed 15k $\Omega$ (B)	CCP1230

**RESISTORS**

R 1901	(B,152,31)	RS1/16S222J
R 1902	(B,141,37)	RS1/16S222J
R 1903	(B,132,14)	RS1/16S473J
R 1911	(B,123,12)	RS1/16S103J
R 1913	(B,157,18)	RS1/16S101J

R 1914	(B,157,29)	RS1/16S103J
R 1915	(B,157,20)	RS1/16S2R2J
R 1921	(B,20,8)	RS1/16S101J
R 1922	(B,25,6)	RS1/16S101J
R 1923	(B,31,6)	RS1/16S101J

R 1924	(B,31,9)	RS1/16S121J
R 1925	(B,38,6)	RS1/16S181J
R 1926	(B,39,10)	RS1/16S181J
R 1927	(B,43,6)	RS1/16S101J
R 1928	(B,117,5)	RS1/16S101J

R 1929	(B,152,6)	RS1/16S101J
R 1935	(A,139,31)	RS1/16S0R0J
R 1937	(B,66,12)	RS1/16S104J
R 1940	(B,55,32)	RS1/16S222J
R 1941	(B,103,8)	RS1/16S101J

R 1943	(A,94,32)	RAB4C101J
R 1944	(A,90,17)	RAB4C101J
R 1945	(A,92,28)	RAB4C101J
R 1946	(B,100,12)	RAB4C101J
R 1947	(A,94,23)	RAB4C101J

R 1948	(A,94,19)	RAB4C101J
R 1949	(B,104,18)	RAB4C101J
R 1950	(B,101,22)	RAB4C101J
R 1952	(B,94,31)	RS1/16S101J
R 1953	(B,91,31)	RS1/16S473J

R 1954	(B,87,30)	RAB4C473J
R 1955	(B,82,30)	RS1/16S473J
R 1956	(A,57,36)	RS1/16S103J
R 1957	(B,67,23)	RAB4C101J
R 1958	(B,69,19)	RS1/16S473J

R 1959	(B,65,18)	RS1/16S154J
R 1960	(B,62,32)	RS1/16S333J
R 1961	(B,68,33)	RS1/16S683J
R 1962	(B,73,26)	RS1/16S392J
R 1963	(B,68,31)	RS1/16S393J

R 1980	(B,78,8)	RS1/16S473J
R 1991	(B,107,22)	RS1/16S101J
R 1992	(B,108,24)	RS1/16S101J
R 1993	(B,94,29)	RS1/16S101J
R 1994	(B,94,32)	RS1/16S101J

R 1995	(B,63,9)	RS1/16S473J
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<u>Circuit Symbol and No.</u>		<u>Part No.</u>
R 1996	(B,117,16)	RS1/16S222J
R 1997	(B,113,16)	RS1/16S222J
R 1998	(A,80,18)	RS1/16S102J
R 1999	(A,78,17)	RS1/16S102J
R 2002	(B,75,26)	RS1/16S102J
R 2003	(B,78,33)	RS1/16S102J
R 2004	(B,79,35)	RS1/16S102J
R 2005	(B,84,30)	RS1/16S102J
R 2100	(B,98,7)	RS1/16S101J
R 2101	(B,96,9)	RS1/16S101J
R 2102	(B,105,11)	RS1/16S101J
R 2103	(A,59,27)	RS1/16S101J

### CAPACITORS

C 1908	(B,156,24)	CKSYF106Z10
C 1909	(B,63,38)	CSZSR4R7M16
C 1910	(B,55,36)	CSZSR4R7M10
C 1940	(B,55,30)	CKSRYB103K50
C 1941	(B,62,18)	CKSRYB104K16
C 1942	(B,63,18)	CKSRYB105K10
C 1943	(B,97,17)	CKSRYB103K50
C 1944	(B,58,28)	CSZSR4R7M10
C 1972	(B,55,39)	CKSRYB104K16
C 1973	(A,125,18)	CKSRYB104K25
C 1974	(A,89,34)	CKSRYB104K25
C 1975	(A,127,18)	CKSRYB104K25
C 1976	(A,80,33)	CKSRYB104K25
C 1990	(A,113,16)	CKSRYB103K50
C 1991	(A,87,32)	CKSRYB104K25
C 1992	(A,83,31)	CKSRYB104K16

**B**

**Unit Number : (GS)**

**Unit Name : Keyboard Unit**

### MISCELLANEOUS

IC 1901	(A,163,23) IC	GP1UX30RK
IC 1902	(B,47,38) IC	S-818A33AUC-BGN
IC 1940	(B,86,19) IC	PEG203A
IC 1990	(A,108,24) IC	PD8156A
Q 1960	(B,64,34) Transistor	2SC4617
Q 1961	(B,63,29) Transistor	2SC2411K
D 1913	(A,36,22) LED	CL-195PG-CD
D 1914	(A,47,33) LED	CL-195PG-CD
D 1915	(A,57,22) LED	CL-195PG-CD
D 1916	(A,47,12) LED	CL-195PG-CD
D 1917	(A,75,6) LED	CL-195PG-CD
D 1918	(A,159,40) LED	CL-195PG-CD
D 1940	(B,67,17) Diode	1SS355
L 1901	(A,138,19) Inductor	CTF1617
L 1940	(A,61,37) Inductor	CTF1617
TH1960	(B,68,35) Thermistor	CCX1037
X 1940	(B,74,18) Radiator 10.0MHz	CSS1577
S 1902	(A,8,37) Push Switch	CSG1112
S 1903	(A,18,37) Push Switch	CSG1112
S 1904	(A,28,37) Push Switch	CSG1112
S 1905	(A,7,22) Push Switch	CSG1186
S 1906	(A,14,30) Switch	CSG1108
S 1907	(A,22,22) Push Switch	CSG1186

<u>Circuit Symbol and No.</u>		<u>Part No.</u>
S 1908	(A,14,15) Switch	CSG1107
S 1909	(A,68,6) Push Switch	CSG1112
S 1910	(A,18,9) Push Switch	CSG1112
S 1911	(A,156,35) Push Switch	CSG1112
S 1912	(A,157,16) Push Switch	CSG1112
S 1913	(A,29,10) Push Switch	CSG1112
S 1914	(A,88,6) Push Switch	CSG1174
S 1915	(A,99,6) Push Switch	CSG1174
S 1916	(A,110,6) Push Switch	CSG1174
S 1917	(A,121,6) Push Switch	CSG1174
S 1918	(A,132,6) Push Switch	CSG1174
S 1919	(A,143,6) Push Switch	CSG1174
S 1920	(A,154,6) Push Switch	CSG1174
VR1970	(B,114,11) Semi-fixed 15kΩ(B)	CCP1230
VR1971	(B,119,11) Semi-fixed 15kΩ(B)	CCP1230

### RESISTORS

R 1901	(B,152,31)	RS1/16S222J
R 1902	(B,141,37)	RS1/16S222J
R 1903	(B,132,14)	RS1/16S473J
R 1911	(B,123,12)	RS1/16S103J
R 1913	(B,157,18)	RS1/16S101J
R 1914	(B,157,29)	RS1/16S103J
R 1915	(B,157,20)	RS1/16S2R2J
R 1921	(B,20,8)	RS1/16S390J
R 1922	(B,25,6)	RS1/16S390J
R 1923	(B,31,6)	RS1/16S101J
R 1924	(B,31,9)	RS1/16S820J
R 1925	(B,38,6)	RS1/16S181J
R 1926	(B,39,10)	RS1/16S151J
R 1927	(B,43,6)	RS1/16S390J
R 1928	(B,117,5)	RS1/16S390J
R 1929	(B,152,6)	RS1/16S390J
R 1935	(A,139,31)	RS1/16S0R0J
R 1937	(B,66,12)	RS1/16S104J
R 1940	(B,55,32)	RS1/16S222J
R 1941	(B,103,8)	RS1/16S101J
R 1943	(A,94,32)	RAB4C101J
R 1944	(A,90,17)	RAB4C101J
R 1945	(A,92,28)	RAB4C101J
R 1946	(B,100,12)	RAB4C101J
R 1947	(A,94,23)	RAB4C101J
R 1948	(A,94,19)	RAB4C101J
R 1949	(B,104,18)	RAB4C101J
R 1950	(B,101,22)	RAB4C101J
R 1952	(B,94,31)	RS1/16S101J
R 1953	(B,91,31)	RS1/16S473J
R 1954	(B,87,30)	RAB4C473J
R 1955	(B,82,30)	RS1/16S473J
R 1956	(A,57,36)	RS1/16S103J
R 1957	(B,67,23)	RAB4C101J
R 1958	(B,69,19)	RS1/16S473J
R 1959	(B,65,18)	RS1/16S154J
R 1960	(B,62,32)	RS1/16S333J
R 1961	(B,68,33)	RS1/16S683J
R 1962	(B,73,26)	RS1/16S392J
R 1963	(B,68,31)	RS1/16S393J
R 1980	(B,78,8)	RS1/16S473J
R 1991	(B,107,22)	RS1/16S101J

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

R 1992	(B,108,24)	RS1/16S101J
R 1993	(B,94,29)	RS1/16S101J
R 1994	(B,94,32)	RS1/16S101J
R 1995	(B,63,9)	RS1/16S473J
R 1996	(B,117,16)	RS1/16S222J
R 1997	(B,113,16)	RS1/16S222J
R 1998	(A,80,18)	RS1/16S102J
R 1999	(A,78,17)	RS1/16S102J

R 2002	(B,75,26)	RS1/16S102J
R 2003	(B,78,33)	RS1/16S102J
R 2004	(B,79,35)	RS1/16S102J
R 2005	(B,84,30)	RS1/16S102J
R 2100	(B,98,7)	RS1/16S101J

R 2101	(B,96,9)	RS1/16S101J
R 2102	(B,105,11)	RS1/16S101J
R 2103	(A,59,27)	RS1/16S101J

**CAPACITORS**

C 1908	(B,156,24)	CKSYF106Z10
C 1909	(B,63,38)	CSZSR4R7M16
C 1910	(B,55,36)	CSZSR4R7M10
C 1940	(B,55,30)	CKSRYB103K50
C 1941	(B,62,18)	CKSRYB104K16

C 1942	(B,63,18)	CKSRYB105K10
C 1943	(B,97,17)	CKSRYB103K50
C 1944	(B,58,28)	CSZSR4R7M10
C 1972	(B,55,39)	CKSRYB104K16
C 1973	(A,125,18)	CKSRYB104K25

C 1974	(A,89,34)	CKSRYB104K25
C 1975	(A,127,18)	CKSRYB104K25
C 1976	(A,80,33)	CKSRYB104K25
C 1990	(A,113,16)	CKSRYB103K50
C 1991	(A,87,32)	CKSRYB104K25

C 1992	(A,83,31)	CKSRYB104K16
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**D****Unit Number: CWM9835(ES)****Unit Number: CWM8758(GS)****Unit Name : Panel Unit****MISCELLANEOUS**

D 1970	LED(ES)	CL220SRCTS
D 1970	LED(GS)	CL220SPGC
S 1970	Push Switch(EJECT)(ES)	CSG1135
S 1970	Push Switch(EJECT)(GS)	CSG1112
R 1970		RS1/16S101J

R 1971		RS1/16S101J
R 1972		RS1/16S0R0J
C 1970		CKSRYB104K16

**C****Unit Number: CWX3176****Unit Name : CD Core****Unit(S10.5COMP1)****MISCELLANEOUS****Circuit Symbol and No.****Part No.**

IC 201	(B,39,70)	IC	UPD63763CGJ
IC 203	(A,12,16)	IC	NJM2886DL3-33
IC 301	(A,28,18)	IC	BA5835FP
IC 701	(A,32,48)	IC	PE5505A
Q 101	(B,60,89)	Transistor	2SA1577
Q 701	(B,24,41)	Transistor	UN2111
X 201	(B,28,57)	Ceramic Resonator	16.934MHz CSS1603
X 701	(A,24,37)	Ceramic Resonator	4.000MHz CSS1652
S 901	(A,57,57)	Switch(HOME)	CSN1067
S 903	(B,23,78)	Switch(DSCSNS)	CSN1067

S 904	(B,42,87)	Switch(12EJ)	CSN1068
S 905	(B,28,88)	Switch(8EJ)	CSN1068

**RESISTORS**

R 101	(B,61,92)	RS1/10SR2R4J
R 102	(B,63,92)	RS1/10SR2R4J
R 103	(B,63,89)	RS1/10SR2R7J
R 104	(A,52,73)	RS1/16SS102J
R 201	(B,44,57)	RS1/16SS102J

R 202	(A,38,62)	RS1/16SS473J
R 203	(A,37,62)	RS1/16SS473J
R 214	(A,46,79)	RS1/16SS472J
R 216	(A,46,81)	RS1/16SS472J
R 221	(A,44,81)	RS1/16SS103J

R 222	(A,45,81)	RS1/16SS103J
R 225	(B,52,78)	RS1/16SS103J
R 226	(B,52,77)	RS1/16SS393J
R 227	(A,44,75)	RS1/16SS562J
R 228	(A,46,72)	RS1/16SS122J

R 229	(A,44,72)	RS1/16SS472J
R 232	(A,46,75)	RS1/16SS122J
R 241	(B,26,63)	RS1/16SS333J
R 243	(B,26,62)	RS1/16SS333J
R 245	(B,26,69)	RS1/16SS333J

R 248	(B,55,74)	RS1/16SS105J
R 307	(A,19,20)	RS1/16SS183J
R 308	(A,17,20)	RS1/16SS183J
R 309	(A,18,18)	RS1/16SS183J
R 310	(A,17,16)	RS1/16SS183J

R 601	(B,30,47)	RS1/16S101J
R 602	(B,28,50)	RS1/16S101J
R 606	(B,20,54)	RS1/16S0R0J
R 701	(B,26,44)	RS1/16SS221J
R 707	(B,32,45)	RS1/16SS473J

R 709	(A,36,35)	RS1/16SS222J
R 710	(B,41,46)	RS1/16SS102J
R 712	(A,45,57)	RS1/16SS222J
R 713	(B,40,57)	RS1/16SS222J
R 716	(B,29,37)	RS1/16SS472J

R 724	(B,31,36)	RS1/16S473J
R 726	(B,23,47)	RS1/16SS103J
R 727	(B,31,42)	RS1/16SS473J
R 729	(B,20,48)	RS1/16SS223J
R 730	(B,20,46)	RS1/16SS473J

R 740	(A,38,59)	RS1/16SS222J
R 746	(A,13,38)	RS1/16SS104J
R 750	(A,40,66)	RS1/16SS473J
R 902	(A,20,36)	RS1/16SS221J
R 905	(A,21,36)	RS1/16SS221J

	5		6		7		8	
	<b><u>Circuit Symbol and No.</u></b>		<b><u>Part No.</u></b>					
R 906	(B,20,36)		RS1/16SS221J					
R 907	(B,16,62)		RS1/16SS0R0J					
R 908	(B,16,64)		RS1/16SS0R0J					
R 911	(B,20,32)		RS1/16SS0R0J					

## **CAPACITORS**

C 103	(B,57,83)		CEVW101M16					
C 108	(A,47,66)		CKSSYB104K10					
C 201	(B,46,56)		CKSSYB102K50					
C 202	(B,47,58)		CKSSYB104K10					
C 204	(B,35,48)		CEVW220M6R3					
C 205	(A,34,63)		CKSSYB104K10					
C 208	(B,34,54)		CKSSYB104K10					
C 209	(B,31,57)		CKSSYB104K10					
C 210	(A,31,66)		CKSRYB105K10					
C 216	(B,53,77)		CKSSYB332K50					
C 217	(B,52,79)		CKSSYB104K10					
C 218	(B,52,76)		CKSSYB473K10					
C 219	(B,52,74)		CKSSYB104K10					
C 220	(A,46,77)		CKSSYB182K50					
C 221	(B,51,74)		CKSSYB104K10					
C 222	(A,46,73)		CCSSCH560J50					
C 223	(A,44,74)		CCSSCH4R0C50					
C 224	(B,52,68)		CKSSYB104K10					
C 225	(A,47,67)		CKSSYB103K16					
C 226	(A,49,67)		CCSSCH680J50					
C 227	(A,48,65)		CCSSCH470J50					
C 228	(A,46,62)		CKSSYB103K16					
C 232	(A,12,31)		CKSRYB105K10					
C 237	(A,31,67)		CKSSYB104K10					
C 239	(A,46,74)		CCSSCH220J50					
C 246	(A,42,80)		CKSSYB104K10					
C 250	(A,42,81)		CKSRYB102K50					
C 251	(A,41,83)		CKSRYB102K50					
C 303	(A,18,20)		CKSSYB472K25					
C 304	(A,17,17)		CKSSYB103K16					
C 307	(A,34,15)		CKSSYB104K10					
C 308	(A,17,30)		CKSRYB105K10					
C 601	(B,25,50)		CCSRCH102J50					
C 602	(B,26,51)		CCSRCH102J50					
C 701	(B,25,47)		CKSSYB104K10					
C 703	(B,28,42)		CKSSYB103K16					
C 706	(B,34,43)		CKSSYB104K10					
C 707	(A,36,57)		CKSSYB104K10					
C 714	(A,24,41)		CKSSYB104K10					
C 722	(B,29,45)		CKSQYB475K6R3					
C 903	(B,14,54)		CKSSYB471K50					
C 907	(B,14,62)		CKSSYB103K16					

## **Miscellaneous Parts List**

	Pickup Unit(P10.5)(Service)	CXX1942	
M 1	Motor Unit(SPINDLE)	CXC6742	
M 2	Motor Unit(LOADING/CARRIAGE)	CXC4026	

# 6. ADJUSTMENT

## 6.1 CD ADJUSTMENT

A

### 1) Cautions on adjustments

• In this product the single voltage (3.3V) is used for the regulator. The reference voltage is the REFO1 (1.65V) instead of the GND.

If you should mistakenly short the REFO1 with the GND during adjustment, accurate voltage will not be obtained, and the servo's misoperation will apply excessive shock to the pickup. To avoid such problems:

- a. Do not mix up the REFO1 with the GND when connecting the (-) probe of measuring instruments. Especially on an oscilloscope, avoid connecting the (-) probe for CH1 to the GND.
- b. In many cases, measuring instruments have the same potential as that for the (-) probe. Be sure to set the measuring instruments to the floating state.
- c. If you have mistakenly connected the REFO1 to the GND, turn off the regulator or the power immediately.

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

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

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

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

• The load and eject operation is not 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:

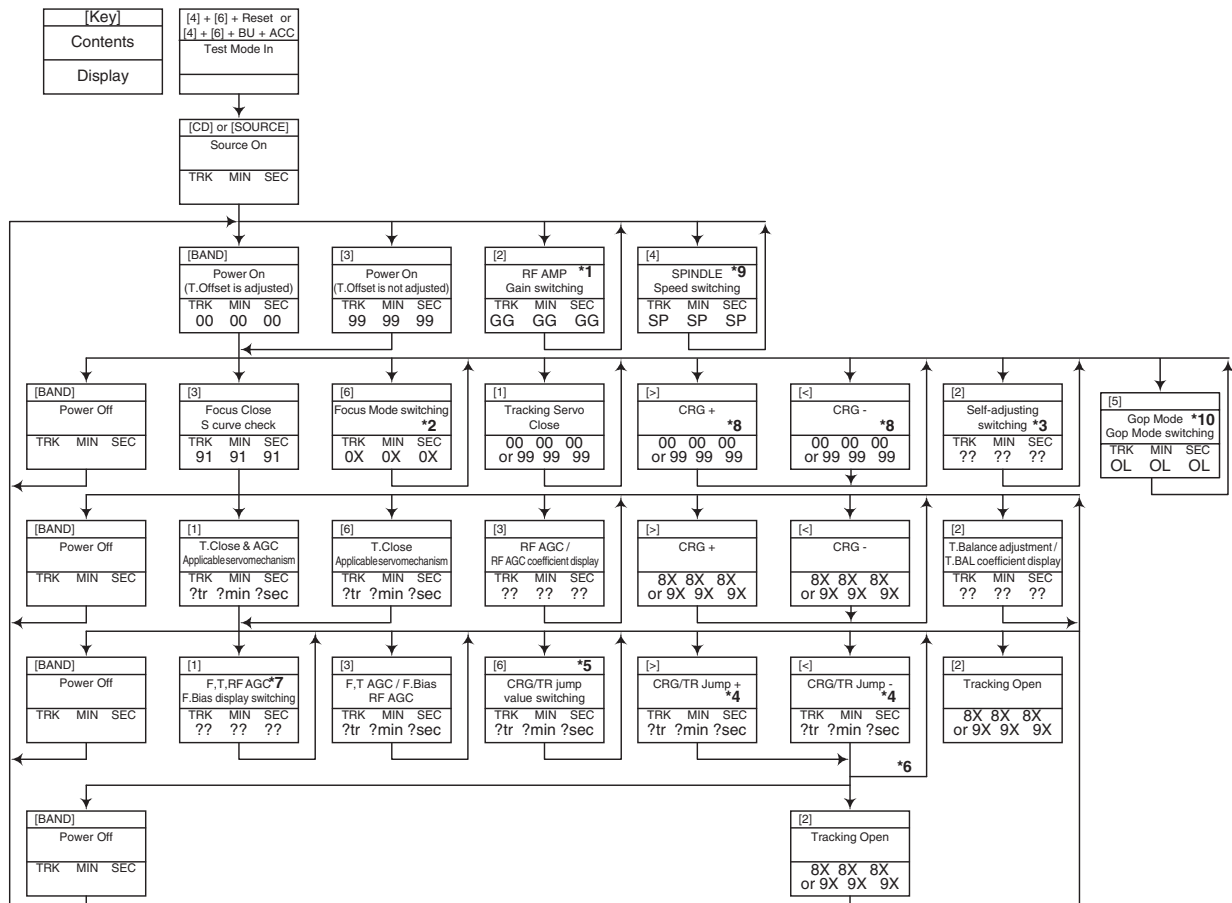
- a. During ejection, do not press any other keys than the EJECT key until the loaded disc is ejected.
- b. If you have pressed the (→) key or (←) key during focus search, turn off the power immediately to protect the actuator from damage caused by the lens stuck.
- c. For the TR jump modes except 100TR, 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 0dB, and the auto-adjustment values are reset to the default settings.

E

F



## 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 :

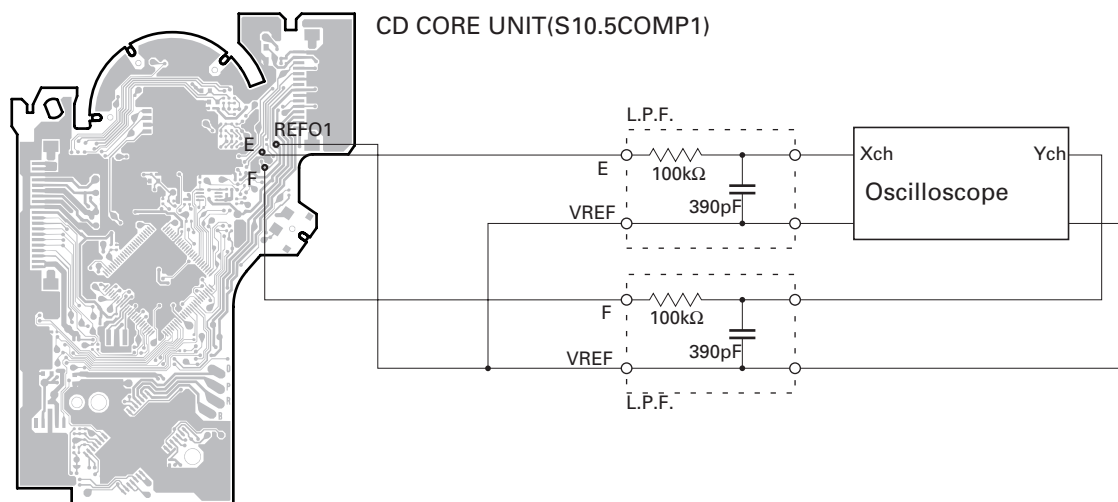
To check that the grating is within an acceptable range when the PU unit is changed.

### • 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 3V regulator on.
2. Using the → and ← buttons, move the PU unit to the innermost track.
3. Press key 3 to close focus, the display should read "91". Press key 2 to implement the tracking balance adjustment the display should now read "81". Press key 3. The display will change, returning to "81" on the fourth press.
4. As shown in the diagram above, monitor the LPF outputs using the oscilloscope and check that the phase difference is within  $75^\circ$ . Refer to the photographs supplied to determine the phase angle.
5. If the phase difference is determined to be greater than  $75^\circ$  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  $75^\circ$  then the mechanism should be judged to be at fault.

### • Note

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

### • Hint

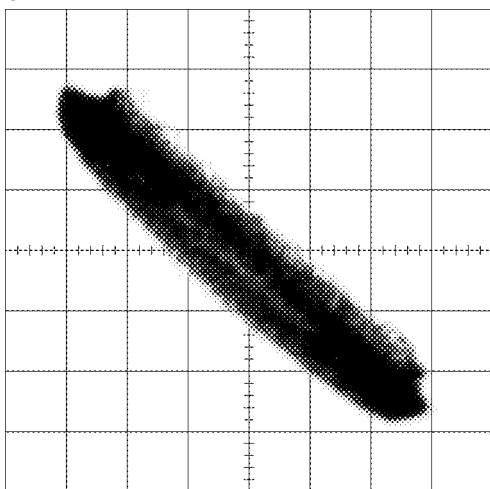
Reloading the disc changes the clamp position and may decrease the "wobble".

# Grating waveform

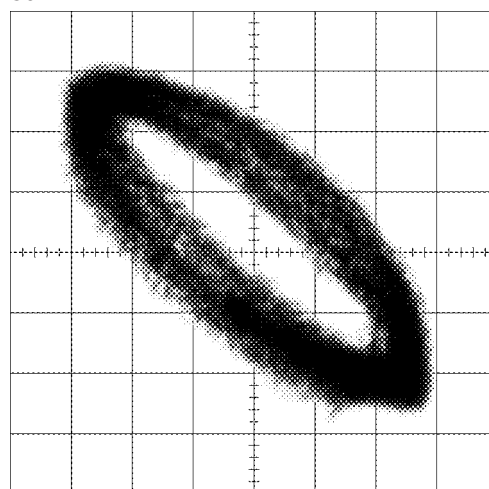
Ech → Xch 20mV/div, AC

Fch → Ych 20mV/div, AC

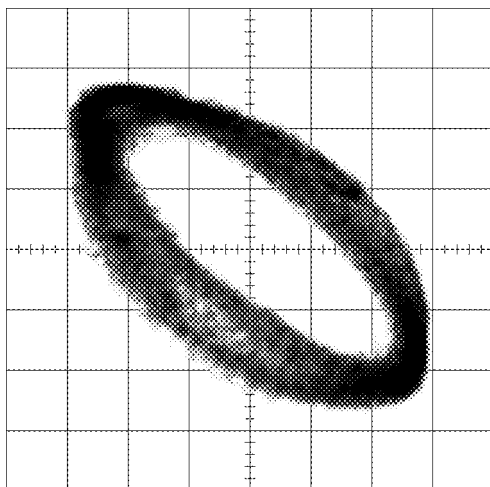
0°



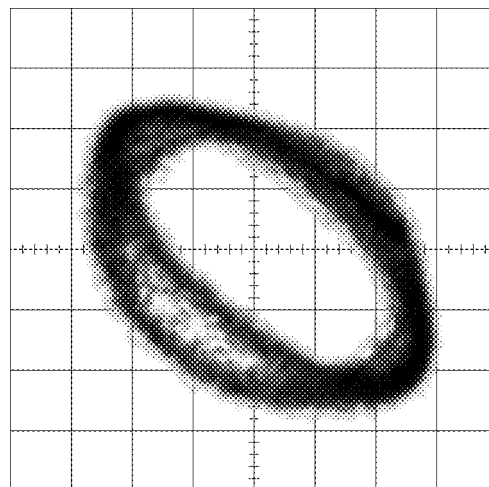
30°



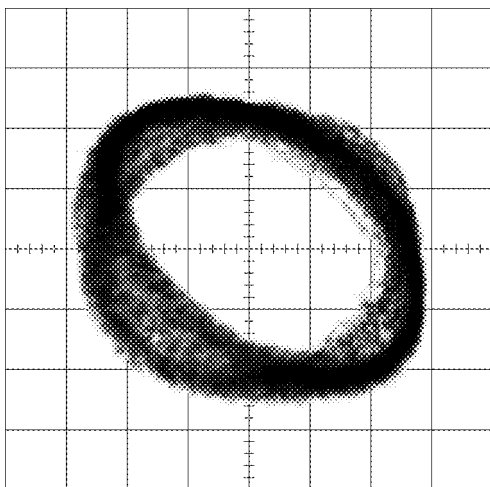
45°



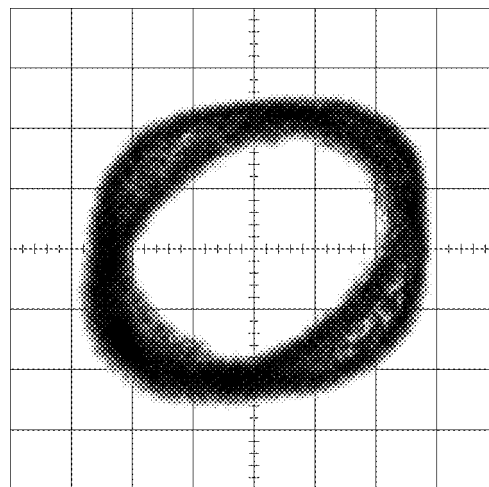
60°



75°



90°



## 6.3 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 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).

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 86) terminal to H.

The clock signal is output from the PCL terminal IC601 (Pin 37).

The frequency of the clock signal is 468.75 kHz that is one 32th of the fundamental frequency.

The clock signal should be  $468.75 \text{ kHz} \pm 19 \text{ Hz}$ .

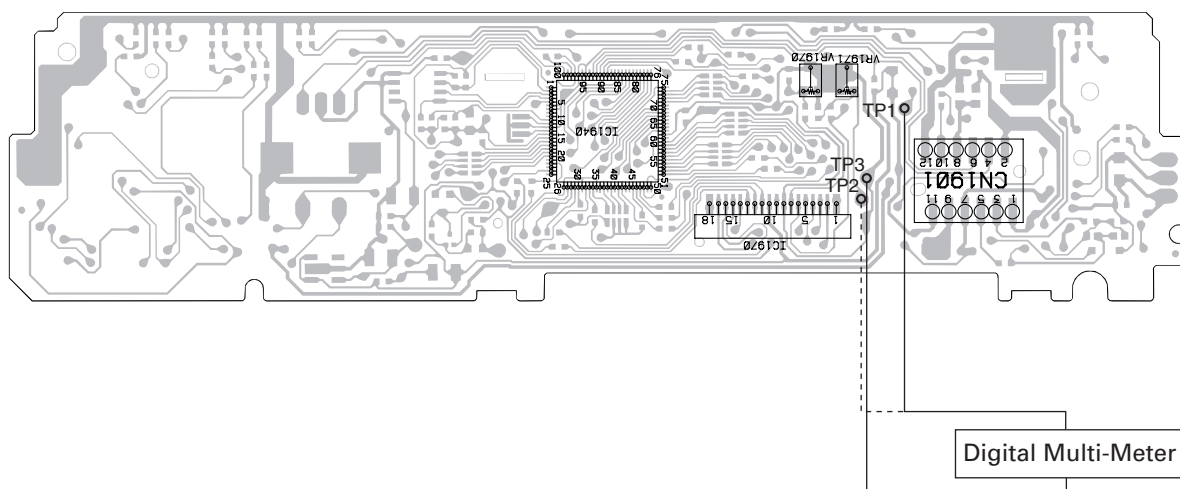
If the clock signal is out of the range, the X'tal (X601) should be replaced with new one.

## 6.5 OEL ADJUSTMENT



### ● Adjustment point

KEYBOARD UNIT(SIDE B)



### <When the OEL Unit has been replaced>

1. Use VR1970 to adjust the resistance between TP1 and TP3 to 6.2 k $\Omega$ .
2. Use VR1971 to adjust the resistance between TP2 and TP3 to 6.2 k $\Omega$ .

# 7. GENERAL INFORMATION

## 7.1 DIAGNOSIS

### 7.1.1 DISASSEMBLY

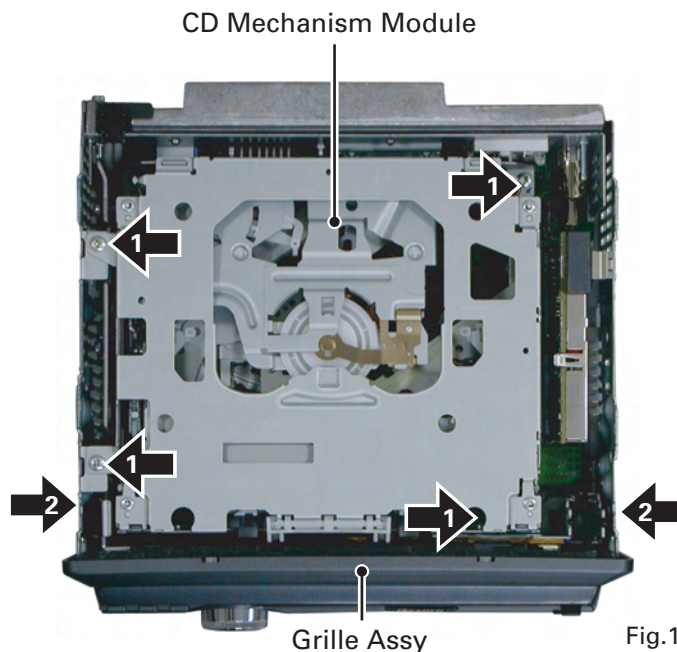
#### ● Removing the Case (not shown)

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.

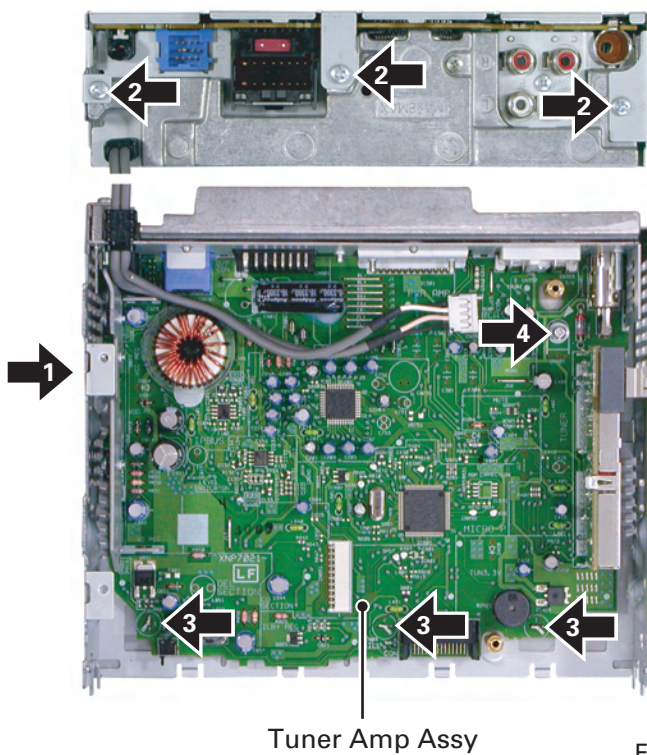
#### ● Removing the Tuner Amp Assy (Fig.2)

1 Remove the screw.

2 Remove the three screws.

3 Straighten the tabs at three locations indicated.

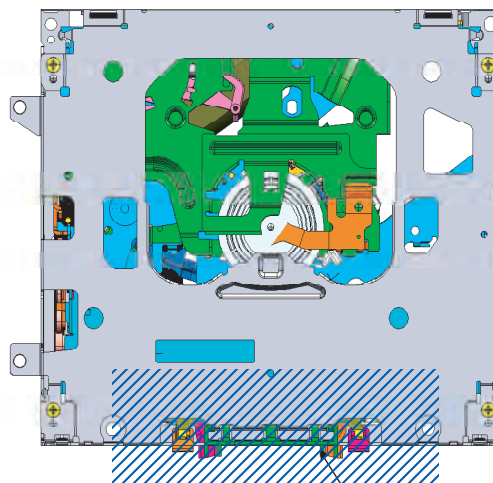
4 Remove the screw and then remove the Tuner Amp Assy.





### ● How to hold the Mechanism Unit

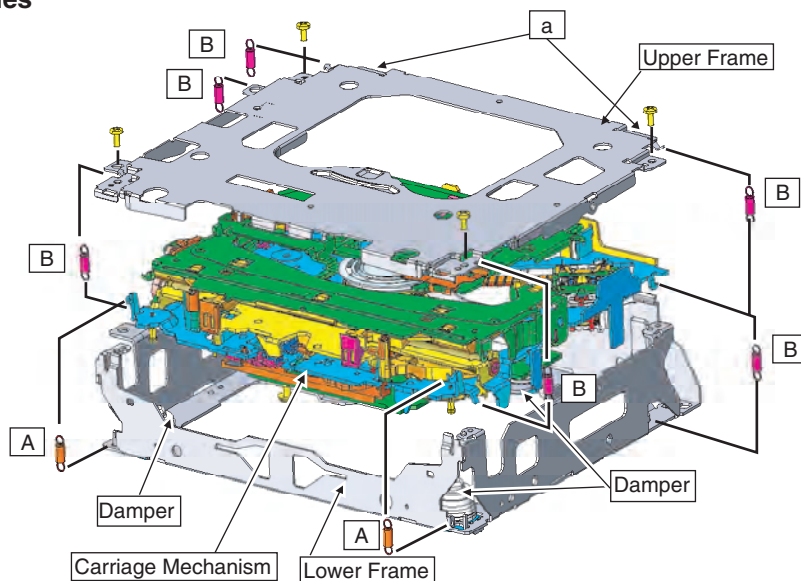
1. Hold the Upper and Lower Frames.
2. Do not hold the front portion of the Upper Frame, because it is not very solid.



Do not squeeze this area.

### ● Removing the Upper and Lower Frames

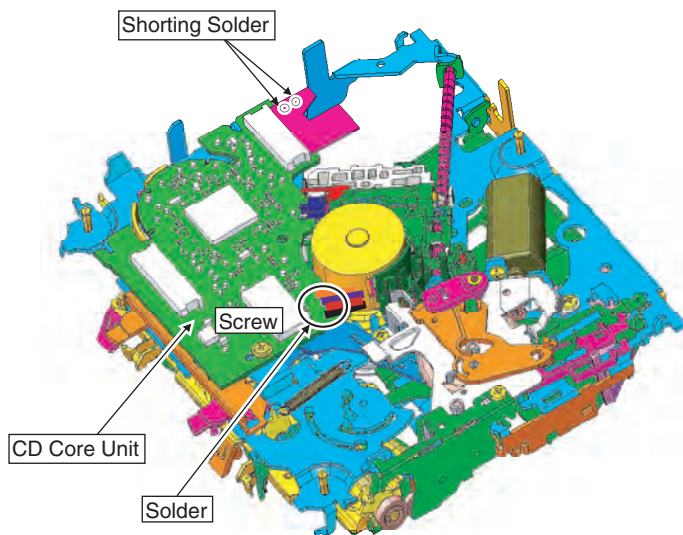
1. With a disc inserted and clamped in the mechanism, remove the two Springs (A), the six Springs (B), and the four Screws.
  2. Turn the Upper Frame using the part "a" as a pivot, and remove the Upper Frame.
  3. While lifting the Carriage Mechanism, remove it from the three Dampers.
- Caution: When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

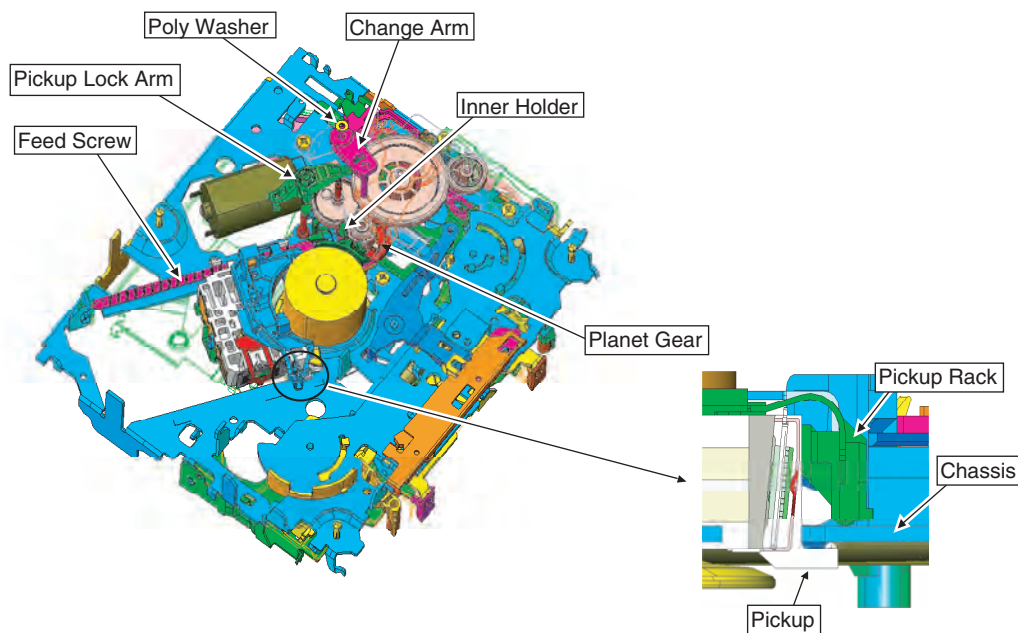


### ● How to remove the Pickup Unit

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.

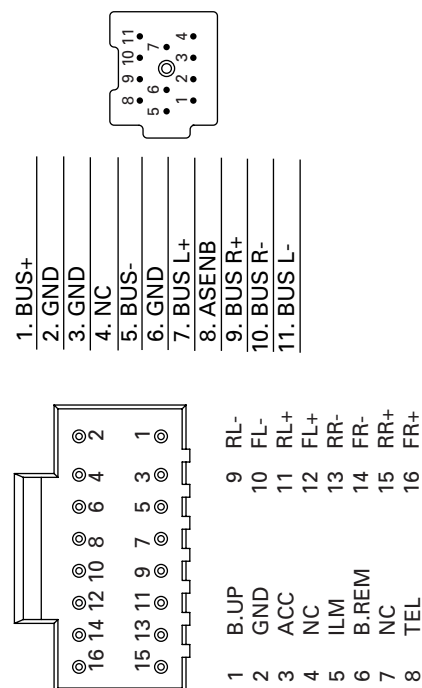
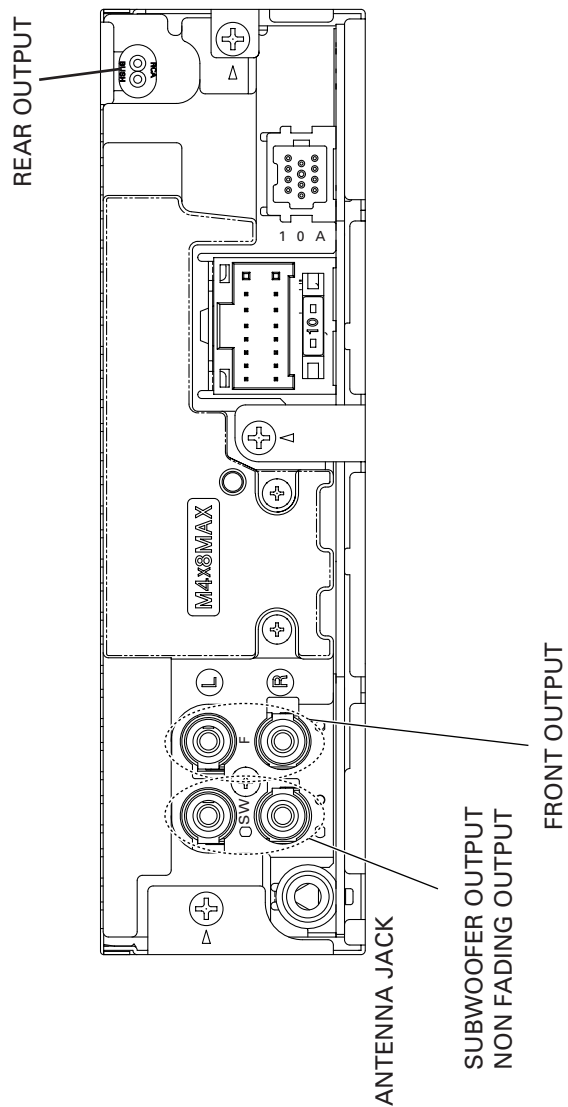
Caution: When assembling, move the Planet Gear to the load/eject position before setting the Feed Screw in the Inner Holder.

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



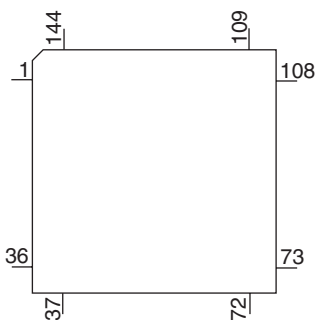
## 7.2 IC

### ● Pin Functions (UPD63763CGJ)

Pin No.	Pin Name	I/O	Function and Operation
1	D.VDD		Power supply for digital circuits
2	D1.GND		Ground for 1.6 V digital circuits
3	RESET	I	Input of reset
4-8	AB12-8	I	Address bus 12-8 from the microcomputer
9-16	AD7-0	I/O	Address/data bus 7-0 to the microcomputer
17	$\overline{CS}$	I	Chip selection
18	ASTB	I	Address strobe
19	READ	I	Control signals(read)
20	WRITE	I	Control signals(write)
21	WAIT	O	Control signals(wait)
22	INTQ	O	Interruption signals to the external microcomputer
23,24	IFMODE0,1	I	Switching the microcomputer I/F 0, 1
25	D1.VDD		Power supply for 1.6 V digital circuits
26	DA.VDD		Power supply for DAC
27	ROUT	O	Output of audio for the right channel
28	DA.GND		Ground for DAC
29	REGC		Connected to the capacitor for band gap
30	DA.GND		Ground for DAC
31	LOUT	O	Output of audio for the left channel
32	DA.VDD		Power supply for DAC
33	X.VDD		Power supply for the crystal oscillator
34	XTAL	I	Connected to the crystal oscillator(16.9344 MHz)
35	$\overline{XTAL}$	O	Connected to the crystal oscillator(16.9344 MHz)
36	X.GND		Ground for the crystal oscillator
37	VDDREG15		Control of 1.6 V regulator
38	PWMSW0	I	Setup 0 for PWM output(SD, MD)
39-41	TEST3-1	I	Connected to Ground
42	PWMSW1	I	Setup 1 for PWM output(FD, TD)
43	TESTEN	I	Connected to Ground
44	D1.GND		Ground for 1.6 V digital circuits
45	DIN	I	Input of audio data
46	DOUT	O	Output of audio data
47	SCKIN	I	Clock input for audio data
48	SCKO	O	Clock output for audio data
49	LRCKIN	I	Input of LRCK for audio data
50	LRCK	O	Output LRCK for audio data
51	XTALEN	I	Permission to oscillate 16.9344 MHz
52	D1.VDD		Power supply for 1.6 V digital circuits
53	RFCK/HOLD	O	Output of RFCK/HOLD signal
54	WFCK/MIRR	O	Output of WFCK/MIRR signal
55	PLCK/RFOK	O	Output of PLCK/Output of RFOK
56	LOCK/RFOK	O	Output of LRCK/Output of RFOK
57	C1D1/C8M/(RA13)	O	Information on error correction/C8M : 8 MHz
58	C1D2/C16M/(RA12)	O	Information on error correction/C16M : 16 MHz
59	C2D1/RMUTE	O	Information on error correction/Mute for Rch
60	C2D2/LMUTE	O	Information on error correction/Mute for Lch
61	C2D3/SHOCK	O	Information on error correction/Detection of vibration
62	D1.GND		Ground for 1.6 V digital circuits
63	C33M	O	Output of 33.8688 MHz(CLK for SDRAM)
64	(RCS)	O	DRAM $\overline{CS}$
65	RA11	O	Output of DRAM address 11
66	(CKE)	O	Output of DRAM CKE
67	$\overline{RAS}$	O	Output of DRAM $\overline{RAS}$
68	$\overline{CAS0}$ (LDQM)	O	Output of DRAM lower $\overline{CAS}$ (LDQM)
69	$\overline{CAS1}$ (UDQM)	O	Output of DRAM upper $\overline{CAS}$ (UDQM)

Pin No.	Pin Name	I/O	Function and Operation
70	WE	O	Output of DRAM WE
71	$\overline{OE}(\overline{CAS})$	O	Output of DRAM $\overline{OE}(\overline{CAS})$
72	D.GND		Ground for digital circuits
73-88	RDB0-15	I/O	Input/output of DRAM data0-15
89-99	RA0-10	O	Output of DRAM address0-10
100	D.VDD		Power supply for digital circuits
101	FD+	O	Output of focus drive PWM +
102	FD-	O	Output of focus drive PWM -
103	TD+	O	Output of tracking drive PWM +
104	TD-	O	Output of tracking drive PWM -
105	SD+	O	Output of thread drive PWM +
106	SD-	O	Output of thread drive PWM -
107	MD+	O	Output of spindle drive PWM +
108	MD-	O	Output of spindle drive PWM -
109	REFOUTSV	O	REFOUT for servo
110	AD.VDD		Power supply for ADC
111	EFM	O	Output of EFM signals
112	ASY	I	Input of asymmetry
113	ATEST	O	Analog tests
114	RFI	I	Input of RF
115	AD.GND		Ground for the analog system
116	AGCO	O	Output of RF
117	C3T	O	Connection to the capacitor for detecting 3T
118	AGCI	I	Input of AGC
119	RFO	O	Output of RF(AGC)
120,121	EQ2,1	I	Equalizer 2, 1
122	RF2-	I	Reversal input of RF2
123	RF-	I	Reversal input of RF
124	A.GND		Ground for the analog system
125	A	I	Input of A
126	C	I	Input of C
127	B	I	Input of B
128	D	I	Input of D
129	F	I	Input of F
130	E	I	Input of E
131	VREFIN	I	Input of reference voltage
132	A.VDD		Power supply for the analog system
133	REFOUT	O	Output of reference voltage
134	REFC	I	Connected to the capacitor for output of REFOUT
135	FE-	I	Reversal input of FE
136	FEO	O	Output of FE
137	ADIN	I	Input of FE, TE A/D converter
138	TE-	I	Reversal input of TE
139	TEO	O	Output of TE
140	TE2	O	TE2
141	TEC	I	TEC
142	LD	O	Output of LD
143	PD	I	Input of PD
144	D.GND		Ground for digital circuits

\* UPD63763CGJ



IC's marked by \* are MOS type.

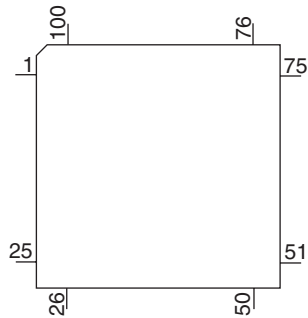
Be careful in handling them because they are very liable to be damaged by electrostatic induction.

# **Pin Functions (PE5505A)**

Pin No.	Pin Name	I/O	Format	Function and Operation
1	AVREF			A power supply / Positive power supply(5V)
2	AVSS			A power supply GND
3	TESTIN	I		Chip check test program starting input
4	CLAMP			Not used
5	EVDD			E power supply / Positive power supply
6	FMODE			For flash rewriting / L : flash rewriting mode
7	FLRQ			For flash rewriting / Reset voltage control
8	IC/FLMOD0			IC : VSS direct connection/FLMOD0 : Pull-down
9	VDD			Positive power supply(5V)
10	REGC			Connected to the capacity stabilizing output of the regulator
11	VSS			GND
12	X1	I		Oscillator connection for mainclock
13	X2			Oscillator connection for mainclock
14	RESET	I		System reset input
15	XT1	I		Connected to the oscillator for subclock(connected to VSS via the resistor)
16	XT2			Connected to the oscillator for subclock(Open)
17	PULLDOWN	I		Connected to EVDD or EVSS via the resistor
18	EJSW			Not used
19	XINT	I	C	CD LSI interruption signal input
20	NC			Not used
21	BRST	I		Bus reset input
22	BSI	I		Bus serial data input
23	BSO	O	C	Bus serial data output
24	BSCK	I/O	/C	Bus serial clock input/output
25	FTxD	O	C	For flash rewriting(transmitted signal)
26	FRxD	I		For flash rewriting(received signal)
27	BRXEN	I/O	/C	Bus RX enable input/output
28	BSRQ	I/O	/C	Bus serial clock input/output
29	DSPOK			Not used
30	DSCSNS	I	C	Disc state sense input
31	8EJ(S905)	I	C	input of detection of 8 cm disc ejection
32	12EJ(S904)	I	C	input of detection of 12 cm disc ejection
33	EVSS			E power supply GND
34	EVDD			E power supply / Positive power supply
35,36	SRAMLEVEL0,1	O		SRAM level meter output
37	EMPH	O	C	Emphasis information output
38	EMPH			Not used
39	CDMUTE			Not used
40	LOEJ			Not used
41	CLCONT	O		Driver input switching output
42	HOME	I		Home SW sense input
43	ADENA	O	C	A/D reference voltage supply control output
44	LRCKOK	O	C	(DOUT mute output)
45	SRAMLEVEL2	O	C	SRAM level meter output
46	CD3VON(MCKRQ)	O	C	CD + 3.3 V power supply control output(Digital output : MCKRQ)
47	CONT	O	C	Servo driver power supply control output
48	XRST	O	C	CD LSI reset control output
49	VDCONT	O	C	VD power supply control output
50	XSI	I		CD LSI serial data input
51	XSO	O	C	CD LSI serial data output
52	XCK	O	C	CD LSI serial clock output
53	XWAIT	I	C	CD LSI wait control signal input
54	XASTB	O	C	CD LSI address strobe output
55	AD0	O	C	Address/data Bus 0
56	INT			Not used

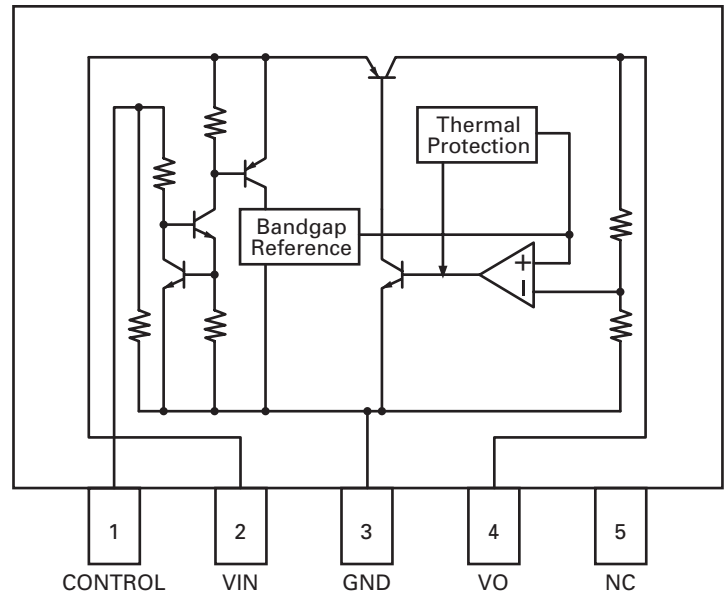
Pin No.	Pin Name	I/O	Format	Function and Operation
57	ROMDATA	I/O		E2PROM data input/output
58	ROMCK	O		E2PROM clock output
59	ROMCS	O	C	E2PROM chip selection output
60,61	NC			Not used
62	CLKOUT			Not used
63	LOCK	I		Spindle lock input
64-68	NC			Not used
69	BVSS			B power supply GND
70	BVDD			B power supply / Positive power supply
71-75	NC			Not used
76	FLMD1	I/O	/C	Address/Data Bus 5
77-90	NC			Not used
91-93	A/D			Not used
94	CSENS			Not used
95	TYPE_A/D			Not used
96,97	NC			Not used
98	TEMP			Not used
99	VDSNS	I		VD power supply short sense input
100	DSCSNS			Not used

\* PE5505A



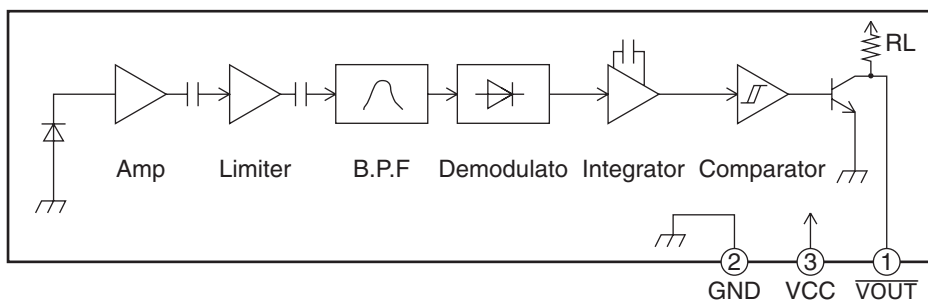
Format	meaning
C	C MOS

NJM2886DL3-33

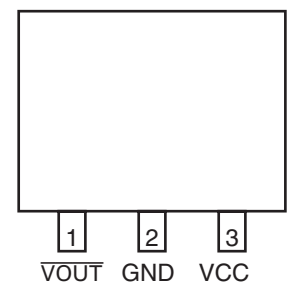


GP1UX30RK

### ● Block Diagram



### ● Pin Layout



# **Pin Functions (PEG203A)**

A

B

C

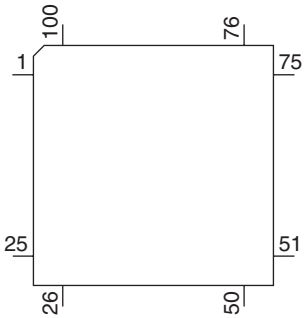
D

E

F

Pin No.	Pin Name	I/O	Format	Function and Operation
1	NC			Not used
2	ROMDT	I/O		Not used
3	ROMCK	O		Not used
4	ROMCS	O		Not used
5	REM	I		Remote control reception
6	BYTE	I		External data bus width change input
7	CNVSS	I		Processor mode change input
8,9	NC			Not used
10	RESET	I		Reset
11	XOUT	O		Radiator(10 MHz)
12	VSS1			GND
13	XIN	I		Radiator(10 MHz)
14	VDD1			Power supply
15	NMI	I		NMI input
16-19	KD1-4	I	C	Key data input 1-4
20	CKC	O	C	Cathode driver pulse
21	NC			Not used
22	CKA	O	C	Anode driver pulse
23	NC			Not used
24	LS	O	C	Line synchronous signal
25	NC			Not used
26	CKD	O	C	Data transfer and driver clock
27	DPDT	I	N	Display data communication
28	KYDT	O	N	Display data communication
29	DA2	O	C	Display data MSB
30	NC			Not used
31	CLK1	I	C	UART1 clock input
32	ILMD	O	C	Dual illumination
33	DA1	O	C	Display data LSB
34	NCB			Not used
35	CLK0	I	C	UART0 clock input
36	NC			Not used
37	RDY	I	C	Ready
38	NC			Not used
39	HOLD	I	C	Hold input
40	NC			Not used
41	CS3R			Not used
42	RD	O	C	Read strobe
43-44	NC			Not used
45	CS3			Not used
46,47	CS2,1	O	C	Bank address
48	CS0	O	C	External ROM chip select
49	A19	O	C	Address bus 19 bit
50	NC			Not used
51-59	A17-9	O	C	Address bus 17-9 bit
60	VDD2			Power supply
61	A8	O	C	Address bus 8 bit
62	VSS2			GND
63-69	A7-1	O	C	Address bus 7-1 bit
70	NC			Not used
71-86	D15-0	I/O	C	Data bus 15-0 bit
87	NC			Not used
88-92	KS2-6	O	C	key strobe 2-6
93	NC			Not used
94	AVSS			A/D converter GND input
95	NC			Not used
96	VREF	I		A/D converter reference voltage
97	AVCC			A/D converter power supply input
98	FLBUSY			Not used
99	NC			Not used
100	FWRST	I		Restart signal for IC rewriting

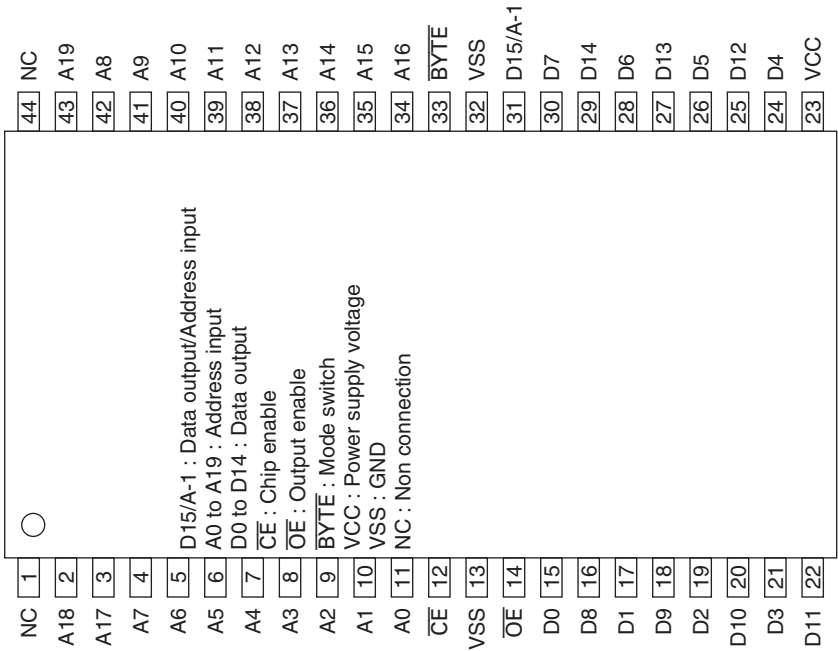
\* PEG203A



Format	meaning
C	C MOS
N	Nch open drain

A

\* PD8156A

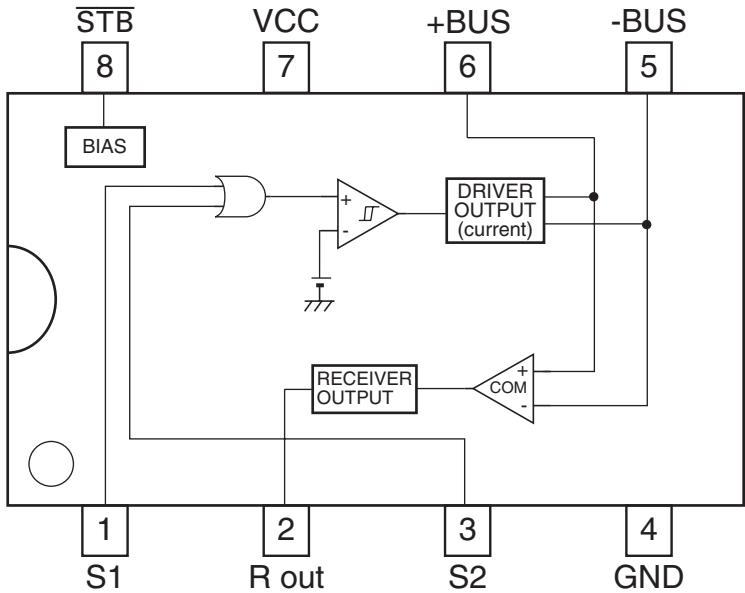


B

C

D

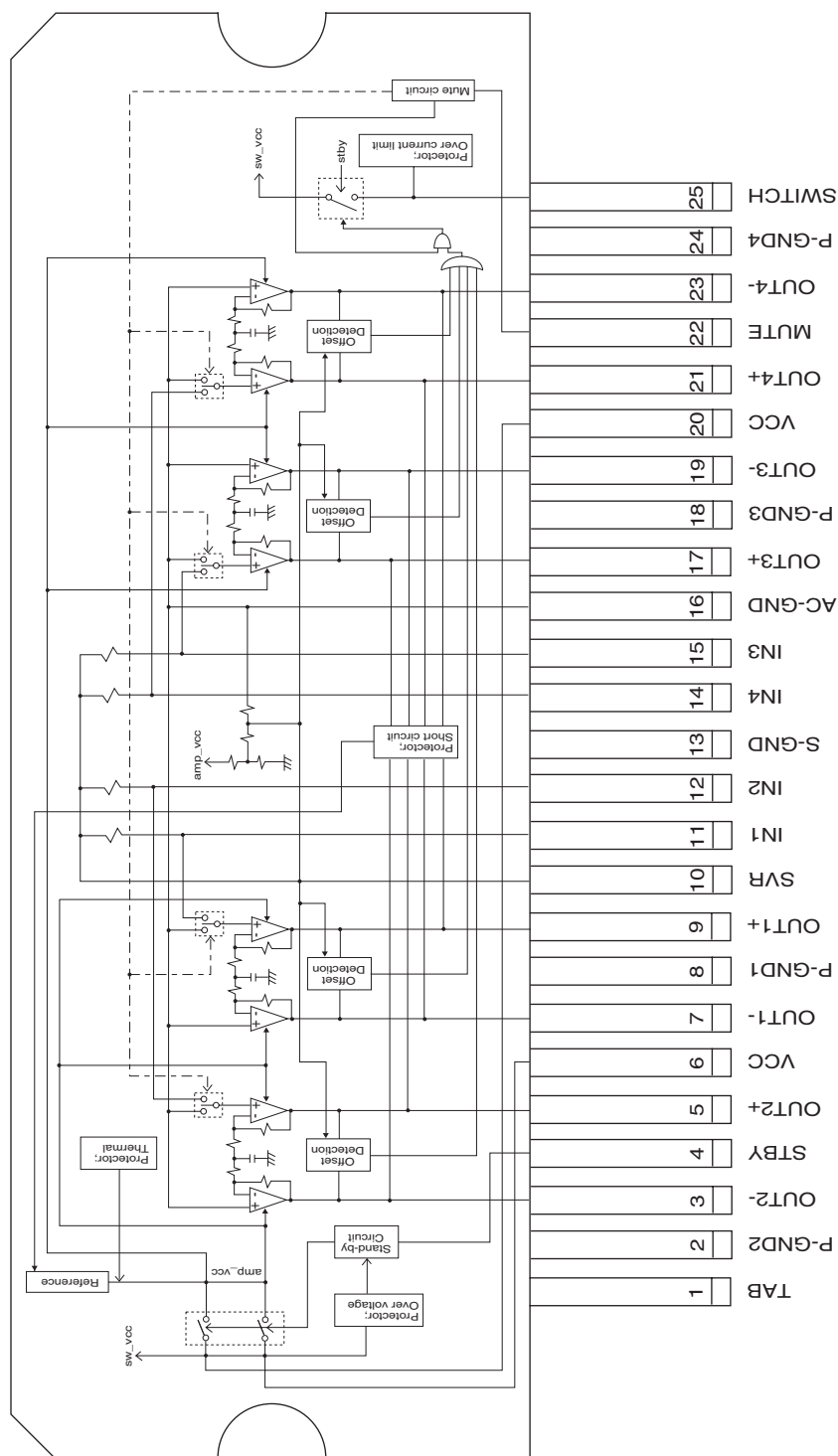
HA12241FP



E

F

A  
B  
C  
D  
E  
F



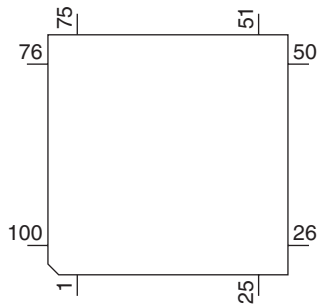


# **● Pin Functions (PEG146A)**

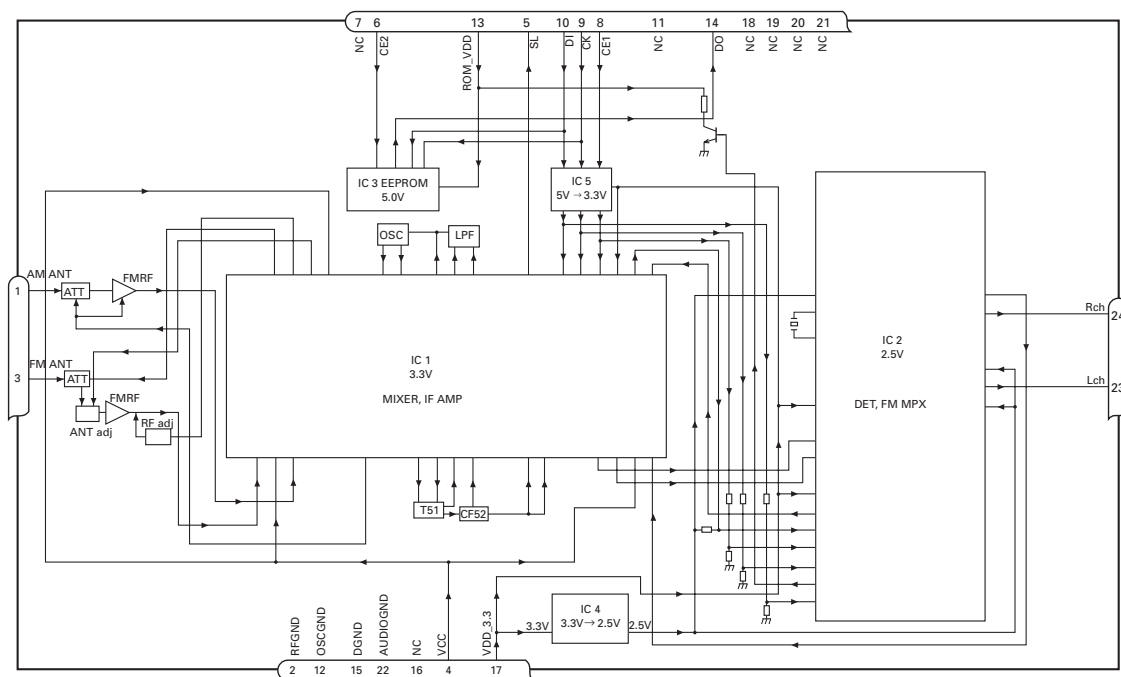
Pin No.	Pin Name	I/O	Function and Operation
1	SYSPW	O	System power control output
2	KEYD	I	Wired remote control : Key data input
3	NC		Not used
4	RST2	O	Reset output for CD mechanism
5	NC		Not used
6	BYTE	I	External data bus width change input
7	CNVSS	I	Processor mode change input
8	TELIN	I	TEL : Cellular mute input
9	NC		Not used
10	RESET	I	Reset input
11	XOUT	O	Clock output
12	VSS	I	GND
13	XIN	I	Clock input
14	VCC	I	Power supply input
15	NMI	I	Not used
16	RCK		Not used
17	LDET		Not used
18,19	NC		Not used
20	OELPW	O	OEL power supply output
21	NC		Not used
22	BRXEN	I/O	P-BUS : RX enable input/output
23	BRST	O	P-BUS : Reset output
24	PEE	O	PEE sound output
25	RX2	I	IP-BUS : Input 2
26	BSRQ	I	P-BUS : Slave service request input
27	RX	I	IP-BUS : Data input
28	TX	O	IP-BUS : Data output
29	BSO	O	P-BUS : Serial output data
30	BSI	I	P-BUS : Serial input data
31	BSCK	O	P-BUS : Serial clock output
32	NC		Not used
33	DPDT	O	GRILLE : Data output
34	KYDT	I	GRILLE : Data input
35,36	ROT1,0	I	Rotary encoder pulse input1,0
37	PCL	O	Output for clock adjustment
38	SWVDD	O	GRILLE : Chip enable output
39	DSNS	I	VD power supply short sense input
40	FLPILM	O	Flap illumination output
41	ILMPW	O	Illumination output
42	EJTIN	I	Eject key input
43	CDMUTE	I	CD mute
44	RDS57K	I	Not used
45	RDSLK	I	Not used
46	RDT	I	Not used
47-56	NC		Not used
57	EMUTE	O	EVOL mute
58,59	NC		Not used
60	VCC	I	Power supply input
61	NC		Not used
62	VSS	I	GND
63-66	NC		Not used
67	DALMON	O	Output for dark current reduction circuit
68	NC		Not used
69	TUNPCE2	O	TUNER : Chip enable output(EEPROM)
70	TUNPCE1	O	TUNER : Chip enable output(PLL)

Pin No.	Pin Name	I/O	Function and Operation
71	ROMCS	O	ROM correction : Chip select output
72	ASENS	I	ACC sense input
73	BSENS	I	Back up sense input
74	ROMCK	O	ROM correction : Clock output
75	ROMDATA	I/O	ROM correction : Data input/output
76	VST	O	EVOL : Strobe output
77	VDT	O	EVOL : Data output
78	VCK	O	EVOL : Clock output
79	IPPW	O	IP-BUS : Driver power supply control output
80	ASENBO	O	IP-BUS : Slave ACC sense output
81	ISENS	I	Illumination sense input
82,83	MODEL1,0	I	Model select input 1,0
84	NC		Not used
85	MUTE	O	System mute output
86	TESTIN	I	Test program input
87,88	NC		Not used
89	KEYAD	I	Wired remote control : A/D input
90	LVLINR	I	Level indicator Rch input
91	CSENS	I	Flap opening-and-closing sense input
92	LVLINL	I	Level indicator Lch input
93	NC	I	Not used
94	AVSS	I	A/D converter GND input
95	SL	I	TUNER : Signal level input
96	VREF	I	A/D converter reference voltage
97	AVCC	I	A/D converter power supply input
98	TUNPDI	I	TUNER : Data input(PLL)
99	TUNPDO	O	TUNER : Data output(PLL)
100	TUNPCK	O	TUNER : Clock output(PLL)

\* PEG146A

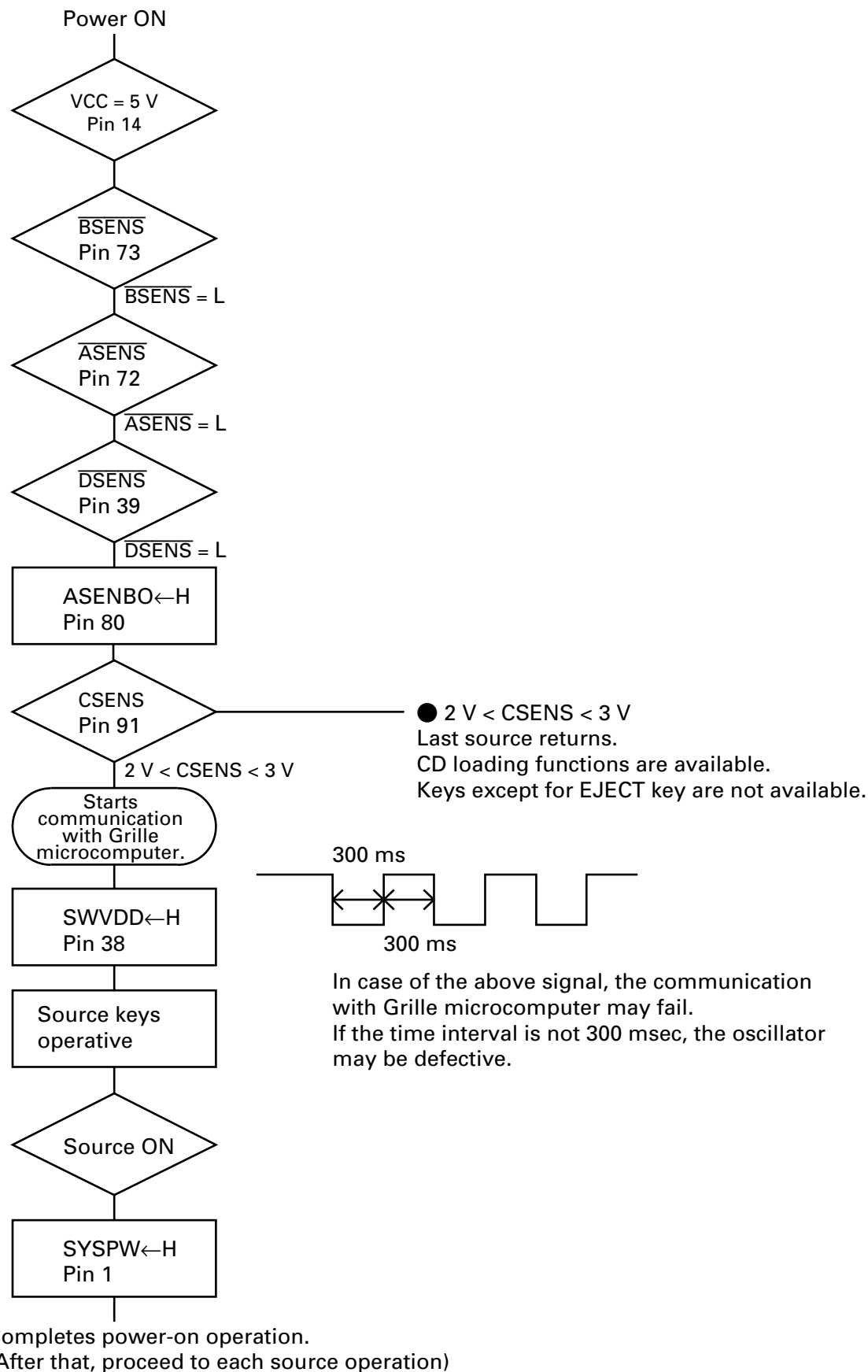


# ● FM/AM Tuner Unit

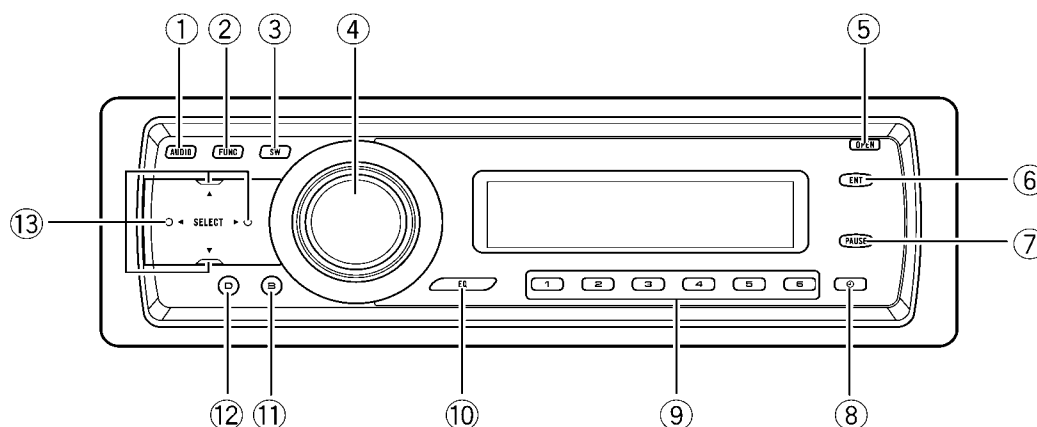


No.	Symbol	I/O	Explain	
1	AMANT	I	AM antenna input	AM antenna input high impedance AMANT pin is connected with an all antenna by way of 4.7μH. (LAU type inductor) A series circuit including an inductor and a resistor is connected with RF ground for the countermeasure against the hum of power transmission line.
2	RFGND		RF ground	Ground of antenna block
3	FMANT	I	FM antenna input	Input of FM antenna 75Ω Surge absorber(DSP-201M-S00B) is necessary.
4	VCC		power supply	The power supply for analog block. D.C 8.4V ± 0.3V
5	SL	O	signal level	Output of FM/AM signals level
6	CE2	I	chip enable-2	Chip enable for EEPROM "Low" active
7	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. 3.3V ± 0.2V
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



## 8. OPERATIONS



### Head unit

#### ① **AUDIO button**

Press to select various sound quality controls.

#### ② **FUNCTION button**

Press to select functions.

#### ③ **SW button**

Press to directly select subwoofer setting menu. Press and hold to select EQ-EX setting menu.

#### ④ **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.

#### ⑤ **OPEN button**

Press to open the front panel.

#### ⑥ **ENTERTAINMENT button**

Press to change to the entertainment display.

#### ⑦ **PAUSE button**

Press to turn pause on or off.

#### ⑧ **CLOCK button**

Press to change to the clock display.

#### ⑨ **1-6 buttons**

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

#### ⑩ **EQ button**

Press to select various equalizer curves.

#### ⑪ **BAND button**

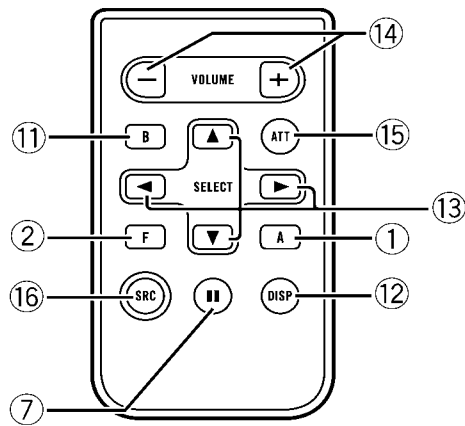
Press to select among three FM bands and one AM band and to cancel the control mode of functions.

#### ⑫ **DISPLAY button**

Press to select different displays.

#### ⑬ **▲/▼/◀/▶ buttons**

Press to perform manual seek tuning, fast forward, reverse and track search controls. Also used for controlling 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**, which is explained below.


### ⑭ **VOLUME buttons**

Press to increase or decrease the volume.

### ⑮ **ATT button**

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

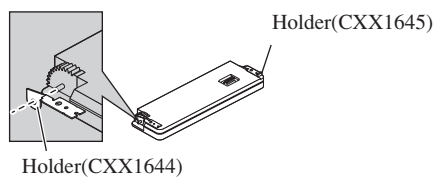
### ⑯ **SOURCE button**

This unit is turned on by selecting a source. Press to cycle through all the available sources. 

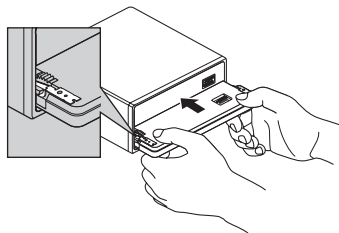
## Fixing the Front Panel

If you do not operate the removing and attaching the front panel function, use the supplied fixing screws and holders to fix the front panel to this unit.

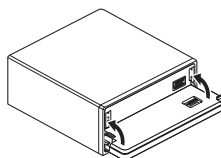
### 1. Attach the holders to both sides of the front panel.



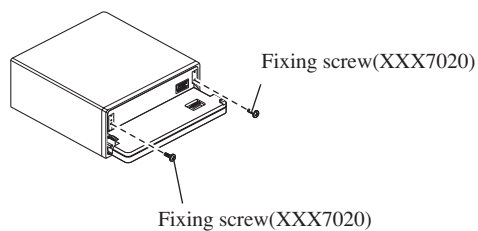
### 2. Replace the front panel to the unit.



### 3. Flip the holders into upright positions.

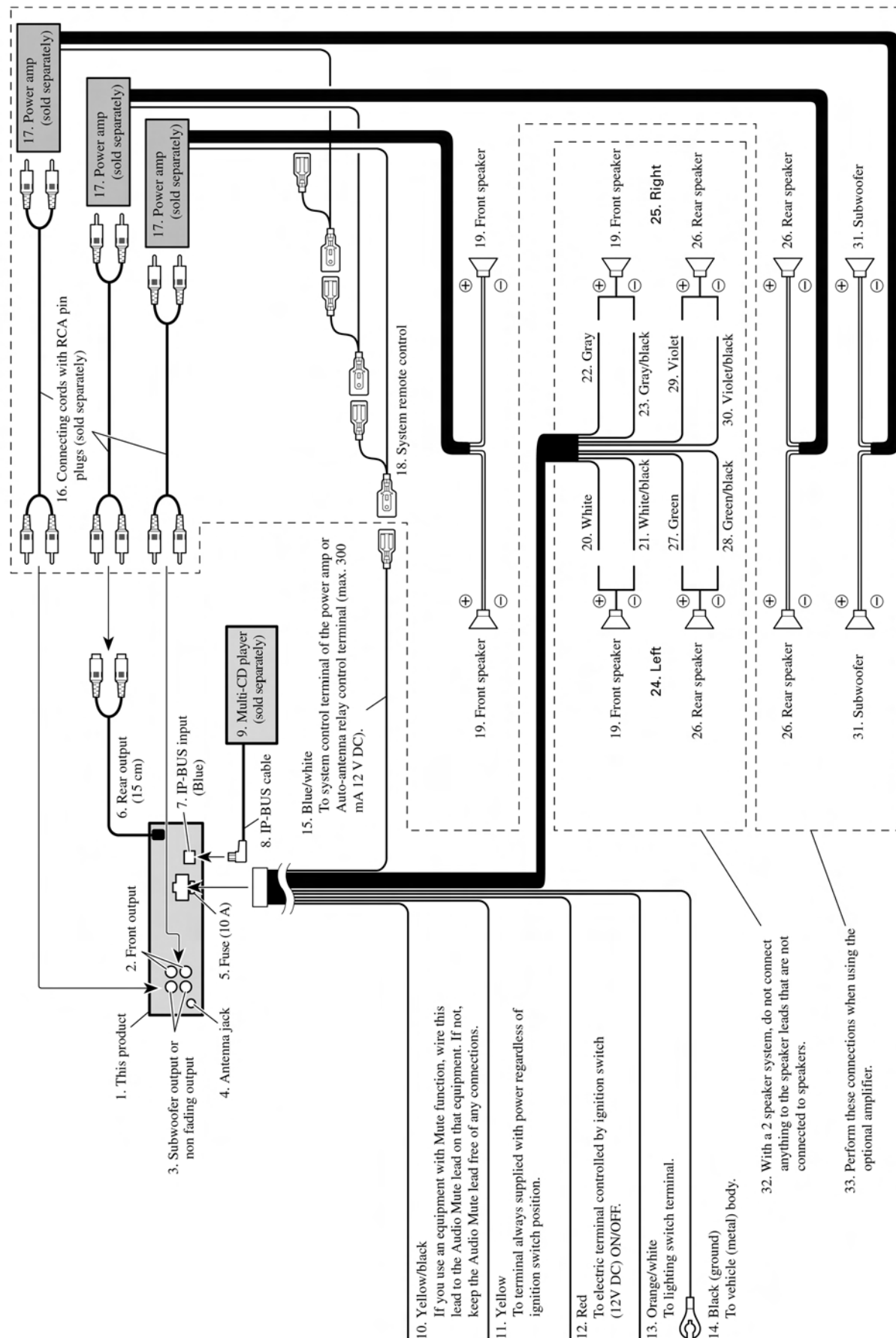


### 4. Fix the front panel to the unit using fixing screws.



# **CONNECTION DIAGRAM**

A  
B  
C  
D  
E  
F





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A

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B

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C

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D

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E

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F

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5

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6

DEH-P5850MP/XN/ES

■

7

■

8

■

● 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