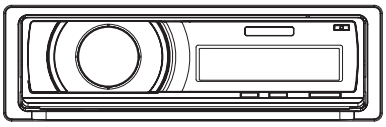
Pioneer sound.vision.soul

Service Manual



DEH-P5050UB/XN/ES

ORDER NO.
CRT4035

CD RECEIVER

DEH-P5050UB/XN/ES
DEH-P5050UB/XN/ES1
DEH-P5090UB/XN/ID

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

Model No.	Order No.	Mech.Module	Remarks
CX-3240	CRT4050	S10.5COMP2-iPod/USB	CD Mech. Module : Circuit Descriptions, Mech. Descriptions, Disassembly

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

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PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936

K-ZZW. OCT. 2007 Printed in Japan

SAFETY INFORMATION

CAUTION

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

● **Safety Precautions for those who Service this Unit.**
When checking or adjusting the emitting power of the laser diode exercise caution in order to get safe, reliable results.

Caution:

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

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.

[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.

CONTENTS

1. SERVICE PRECAUTIONS

1.1 SERVICE PRECAUTIONS

1. You should conform to the regulations governing the product (safety, radio and noise, and other regulations), and should keep the safety during servicing by following the safety instructions described in this manual.
2. Before disassembling the unit, be sure to turn off the power. Unplugging and plugging the connectors during power-on mode may damage the ICs inside the unit.
3. To protect the pickup unit from electrostatic discharge during servicing, take an appropriate treatment (shorting-solder) by referring to "the DISASSEMBLY".
4. After replacing the pickup unit, be sure to check the grating.
5. Be careful in handling ICs. Some ICs such as MOS type are so fragile that they can be damaged by electrostatic induction.
6. Sheet (Mechanism cover), CNM9404 can not be reused if you remove it.

1.2 NOTES ON SOLDERING

- For environmental protection, lead-free solder is used on the printed circuit boards mounted in this unit.
  Be sure to use lead-free solder and a soldering iron that can meet specifications for use with lead-free solders for repairs accompanied by reworking of soldering.

- Compared with conventional eutectic solders, lead-free solders have higher melting points, by approximately 40 ˚C.
  Therefore, for lead-free soldering, the tip temperature of a soldering iron must be set to around 373 ˚C in general, although the temperature depends on the heat capacity of the PC board on which reworking is required and the weight of the tip of the soldering iron.

Compared with eutectic solders, lead-free solders have higher bond strengths but slower wetting times and higher melting temperatures (hard to melt/easy to harden).

The following lead-free solders are available as service parts:
- Parts numbers of lead-free solder:
  GYP1006 1.0 in dia.
  GYP1007 0.6 in dia.
  GYP1008 0.3 in dia.

2. SPECIFICATIONS

2.1 SPECIFICATIONS

● **DEH-P5050UB/XN/ES, /ES1**

General

Rated power source ..... 14.4 V DC (allowable voltage range: 12.0 V to 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 mm × 50 mm × 162 mm
Nose ..... 188 mm × 58 mm × 14 mm
D
Chassis ..... 178 mm × 50 mm × 162 mm
Nose ..... 170 mm × 46 mm × 14 mm
Weight ..... 1.5 kg

Audio

Maximum power output ..... 50 W × 4
50 W × 2/4 Ω + 70 W × 1/2 Ω (for subwoofer)
Continuous power output ... 22 W × 4 (50 Hz to 15 000 Hz, 5% THD, 4 Ω load, both channels driven)
Load impedance ..... 4 Ω to 8 Ω × 4
4 Ω to 8 Ω × 2 + 2 Ω × 1
Preout max output level ..... 4 V
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
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-to-noise ratio ..... 94 dB (1 kHz) (IEC-A network)
Number of channels ..... 2 (stereo)
MP3 decoding format ..... MPEG-1 & 2 Audio Layer 3
WMA decoding format ..... Ver. 7, 7.1, 8, 9, 10, 11 (2ch audio)
(Windows Media Player)
AAC decoding format ..... MPEG-4 AAC (iTunes® encoded only) (.m4a)
(Ver. 7.2 and earlier)
WAV signal format ..... Linear PCM & MS ADPCM (Non-compressed)

USB

Specification ..... USB 2.0 full speed
Supply current ..... 500 mA
Maximum amount of memory ..... 250 GB
File system FAT16, FAT32
MP3 decoding format ..... MPEG-1, 2 & 2.5 Audio Layer 3
WMA decoding format ..... Ver. 7, 7.1, 8, 9, 10, 11 (2ch audio)
(Windows Media Player)
AAC decoding format ..... MPEG-4 AAC (iTunes® encoded only) (.m4a)
(Ver. 7.2 and earlier)
WAV signal format ..... Linear PCM & MS ADPCM (Non-compressed)

FM tuner

Frequency range ..... 87.5 MHz to 108.0 MHz
Usable sensitivity ..... 8 dBf (0.7 μV/75 Ω, mono, S/N: 30 dB)
Signal-to-noise ratio ..... 75 dB (IEC-A network)

AM tuner

Frequency range ..... 531 kHz to 1 602 kHz (9 kHz)
530 kHz to 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 modifications without notice due to improvements. ■

● DEH-P5090UB/XN/ID

General

Rated power source ..... 14.4 V DC (allowable voltage range: 12.0 V to 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 mm × 50 mm × 162 mm
  - Nose ..... 188 mm × 58 mm × 14 mm
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  - Chassis ..... 178 mm × 50 mm × 162 mm
  - Nose ..... 170 mm × 46 mm × 16 mm

Weight ..... 1.5 kg

Audio

Maximum power output ..... 50 W × 4
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Preout max output level ..... 4 V
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
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  - 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

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

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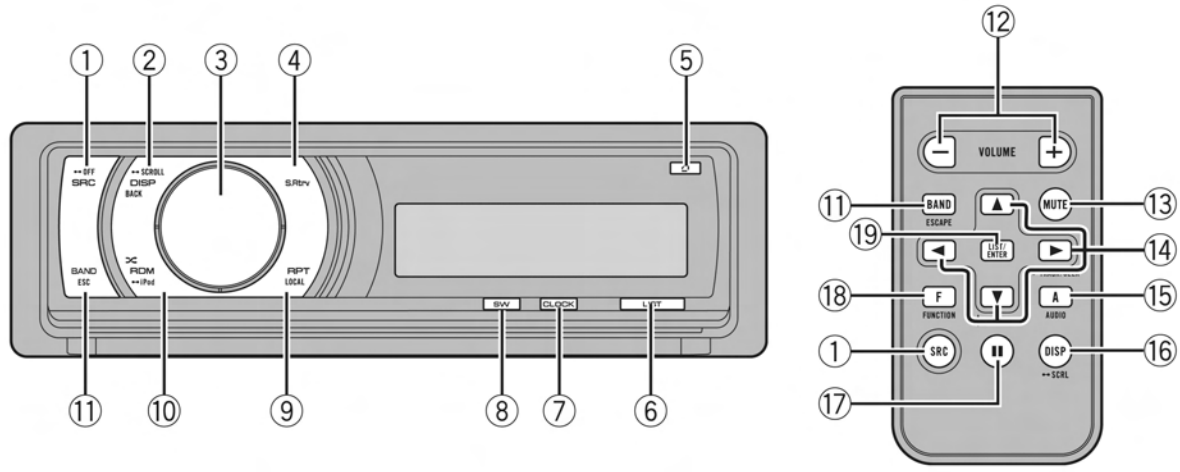
Frequency range ..... 531 kHz to 1 602 kHz (9 kHz) 530 kHz to 1 640 kHz (10 kHz)
Usable sensitivity ..... 18 μV (S/N: 20 dB)
Signal-to-noise ratio ..... 65 dB (IEC-A network)

Note

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

2.2 DISC/CONTENT FORMAT

2.3 PANEL FACILITIES



What's What

Head unit

① **SRC/OFF button**
This unit is turned on by selecting a source.
Press to cycle through all the available sources.

② **DISP/BACK/SCROLL button**
Press to select different displays.
Press and hold to scroll the text information.
Press to return to the previous display when operating the menu.
Press and hold to return to the main menu when operating the menu.

③ **MULTI-CONTROL**
Move to perform manual seek tuning, fast forward, reverse and track search controls.
Also used for controlling functions.
Turn to increase or decrease the volume.

④ **S.Rtrv button**
Press to turn Sound Retriever function on or off.

⑤ **OPEN button**
Press to open the front panel.

⑥ **LIST button**
Press to display the disc title list, track title list, folder list, file list or preset channel list depending on the source.

⑦ **CLOCK button**
Press to change to the clock display.

⑧ **SW/BASS button**
Press to switch to subwoofer setting menu.
When operating subwoofer menu, press to switch setting.
Press and hold to switch to bass boost menu.

⑨ **RPT/LOCAL button**
Press to switch the repeat play range while using CD, USB or iPod.
Press to turn local function on or off while using tuner as the source.

⑩ **RDM/iPod button**
Press to turn random function on or off while using CD or USB.
While using iPod, press this button to shuffle all tracks.
Press and hold to switch the control mode while using an iPod connected USB connector of this unit.
If using the iPod with an interface adapter (CD-IB100Ⅱ), press to switch the shuffle function.

⑪ **BAND/ESC button**
Press to select among three FM bands and one AM band.
Press to return to the ordinary display when operating menu.

Remote control

Operation is the same as when using the buttons on the head unit.

⑫ **VOLUME buttons**
Press to increase or decrease the volume.

⑬ **MUTE button**
Press to turn off the sound. To turn on the sound, press again.

⑭ **▲/▼/◄/► buttons**
Press to perform manual seek tuning, fast forward, reverse and track search controls.
Also used for controlling functions.

⑮ **AUDIO button**
Press to select an audio function.

⑯ **DISP button**
Press to select different displays.
Press and hold to scroll the text information.

⑰ **II (pause) button**
Press to turn pause on or off.

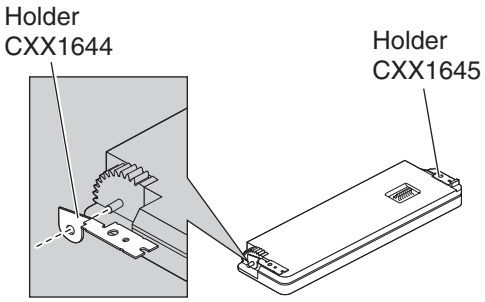
⑱ **FUNCTION button**
Press to select functions.

⑲ **LIST/ENTER button**
Press to display the disc title list, track title list, folder list, file list or preset channel list depending on the source.
While in the operating menu, press to control functions.

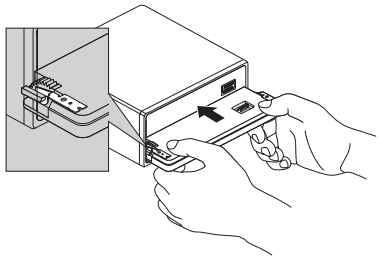
Fixing the front panel

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.

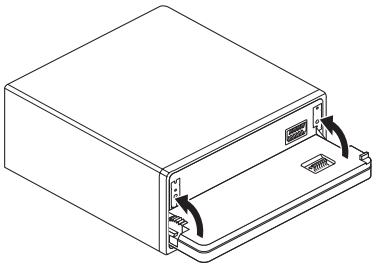
1. Attach the holders to both sides of the front panel.



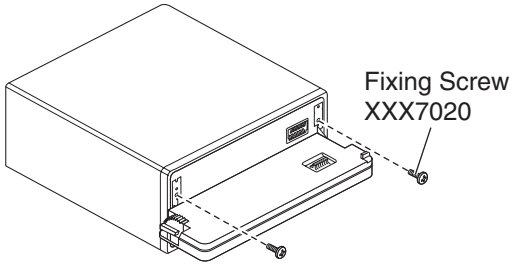
2. Replace the front panel to the unit.



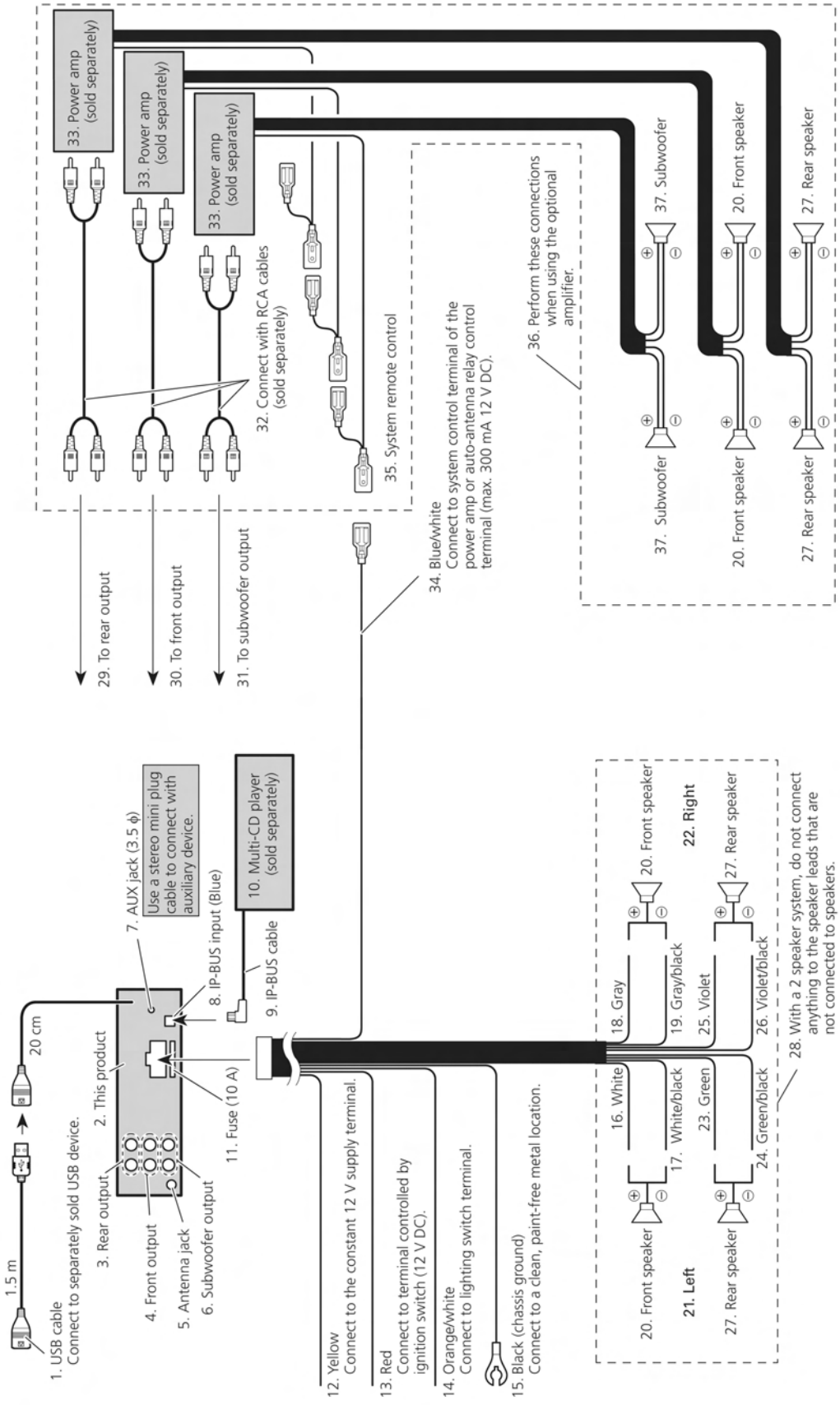
3. Flip the holders into upright positions.



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



2.4 CONNECTION DIAGRAM



3. BASIC ITEMS FOR SERVICE

3.1 CHECK POINTS AFTER SERVICING

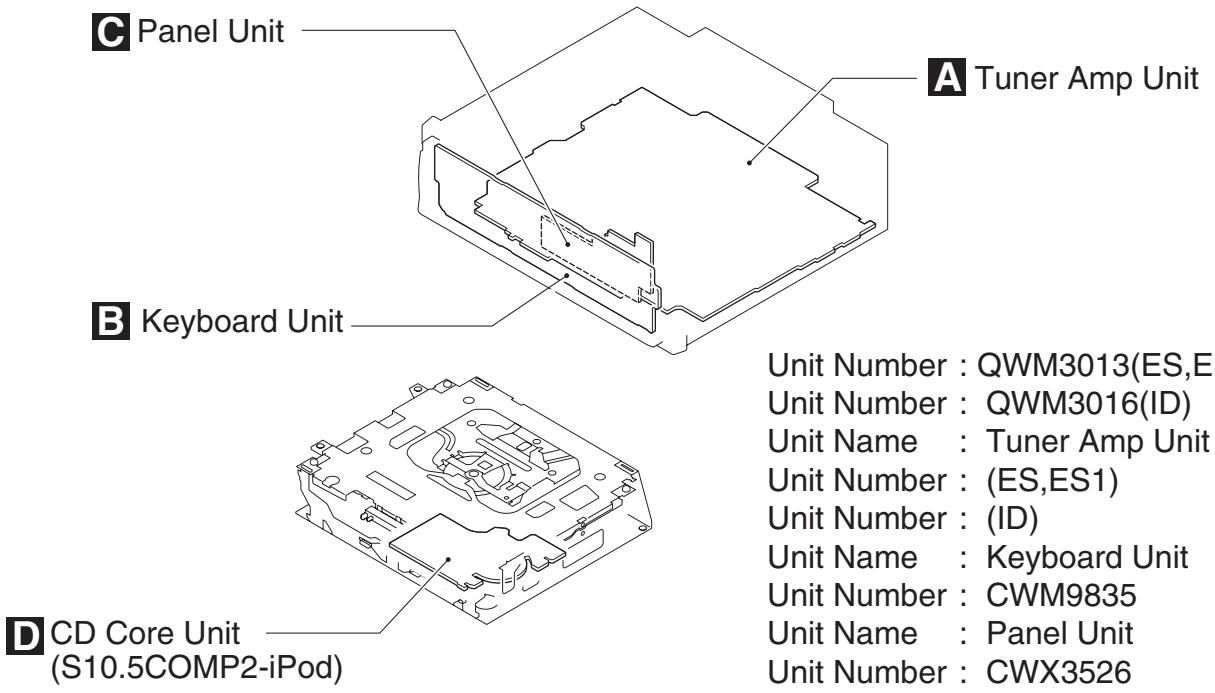
To keep the product quality after servicing, please confirm following check points.

No.		Procedures	Item to be confirmed
1		Confirm whether the customer complain has been solved. If the customer complain occurs with the specific media, use it for the operation check.	The customer complain must not be reappeared. Display, audio and operations must be normal.
2	CD	Play back a CD. (Track search)	No malfunction on display, audio and operation.
3	FM/AM tuner	Check FM/AM tuner action. (Seek, Preset) Switch band to check both FM and AM.	Display, audio and operations must be normal.
4		Check whether no disc is inside the product.	The media used for the operating check must be ejected.
5		Appearance check	No scratches or dirt on its appearance after receiving it for service.

See the table below for the items to be checked regarding audio:

Item to be checked regarding audio
Distortion
Noise
Volume too low
Volume too high
Volume fluctuating
Sound interrupted

3.2 PCB LOCATION



Unit Number : QWM3013(ES,ES1)
Unit Number : QWM3016(ID)
Unit Name : Tuner Amp Unit
Unit Number : (ES,ES1)
Unit Number : (ID)
Unit Name : Keyboard Unit
Unit Number : CWM9835
Unit Name : Panel Unit
Unit Number : CWX3526
Unit Name : CD Core Unit
(S10.5COMP2-iPod)

3.3 JIGS LIST

● Jigs List

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

● Grease List

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

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

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

A

B

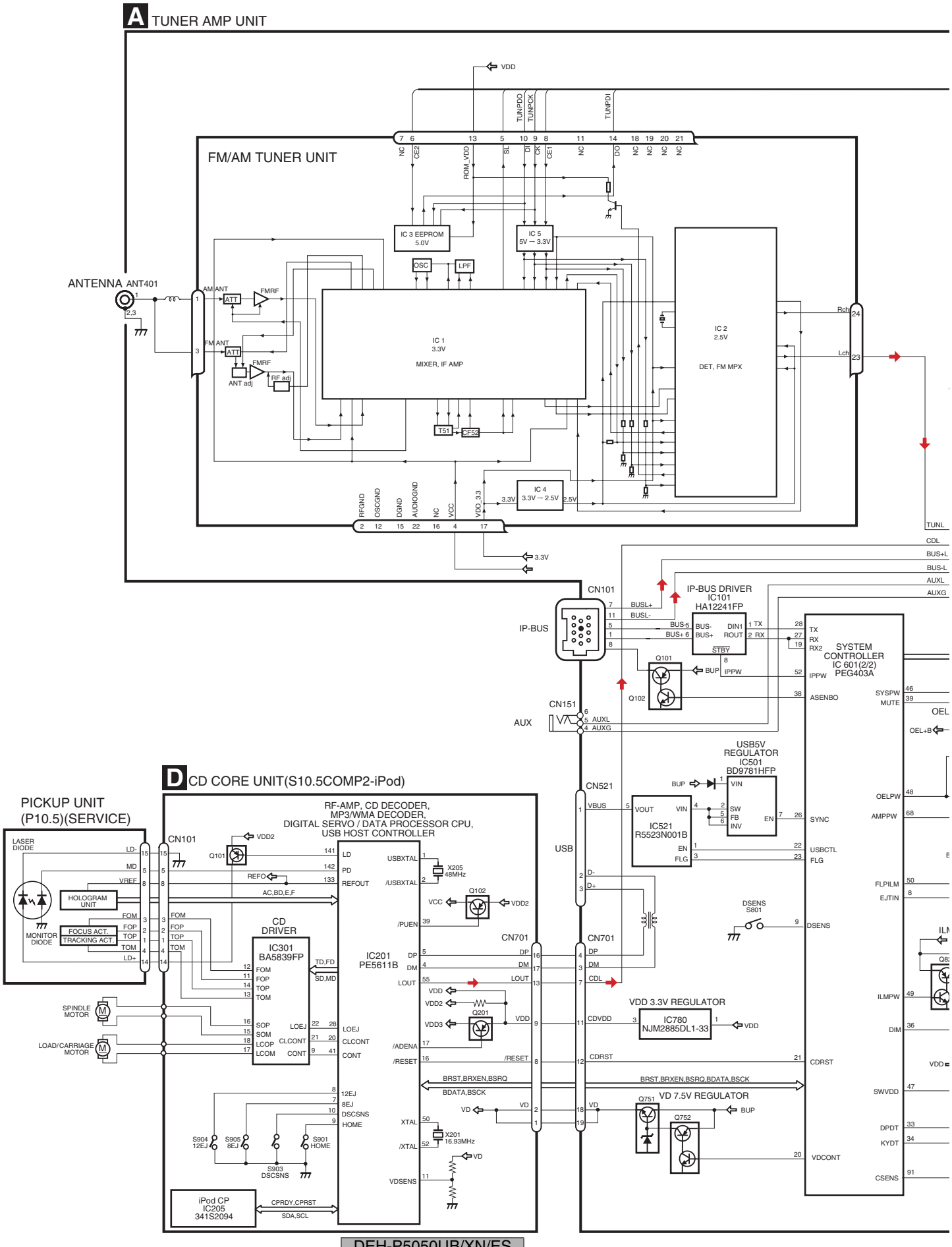
C

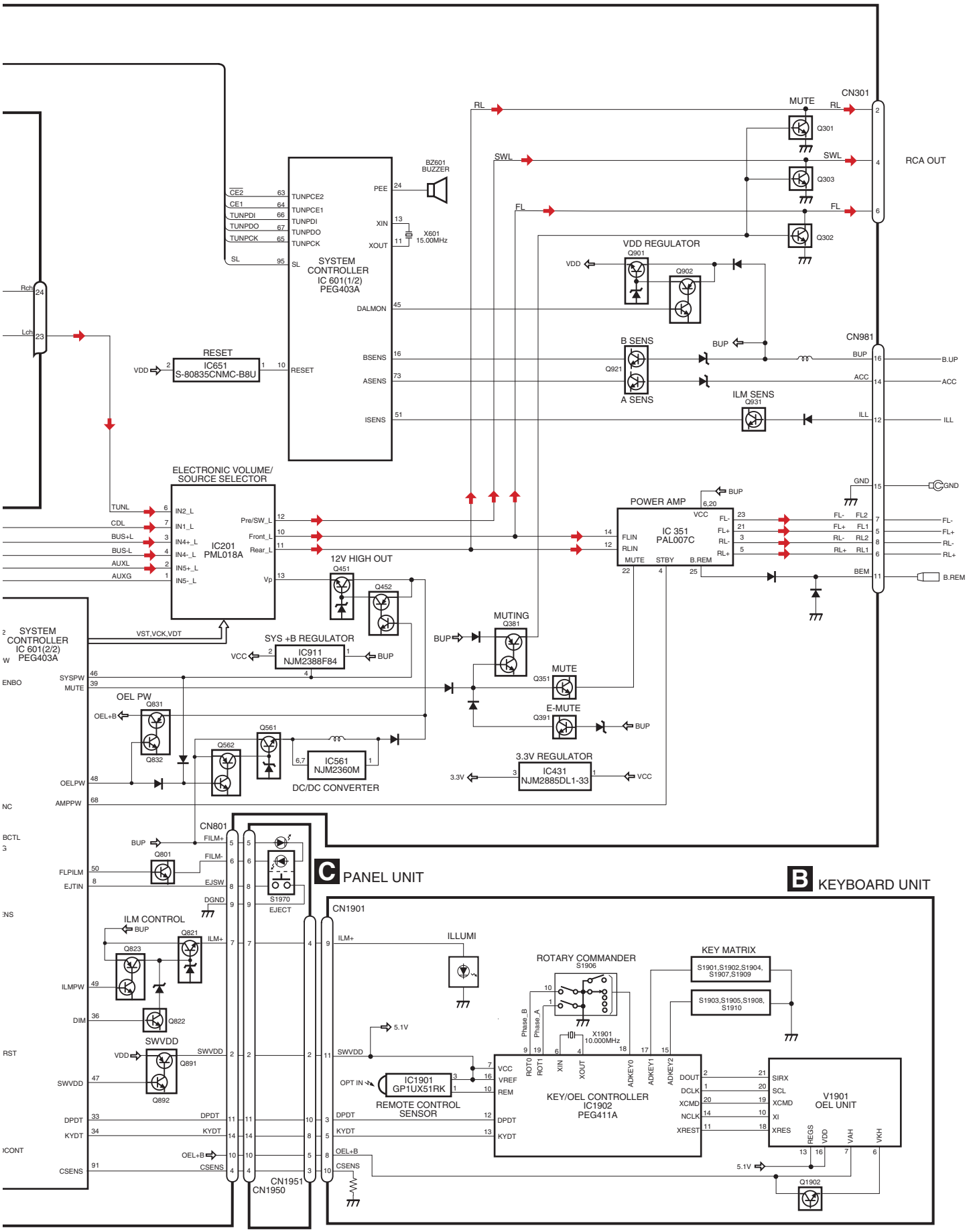
D

E

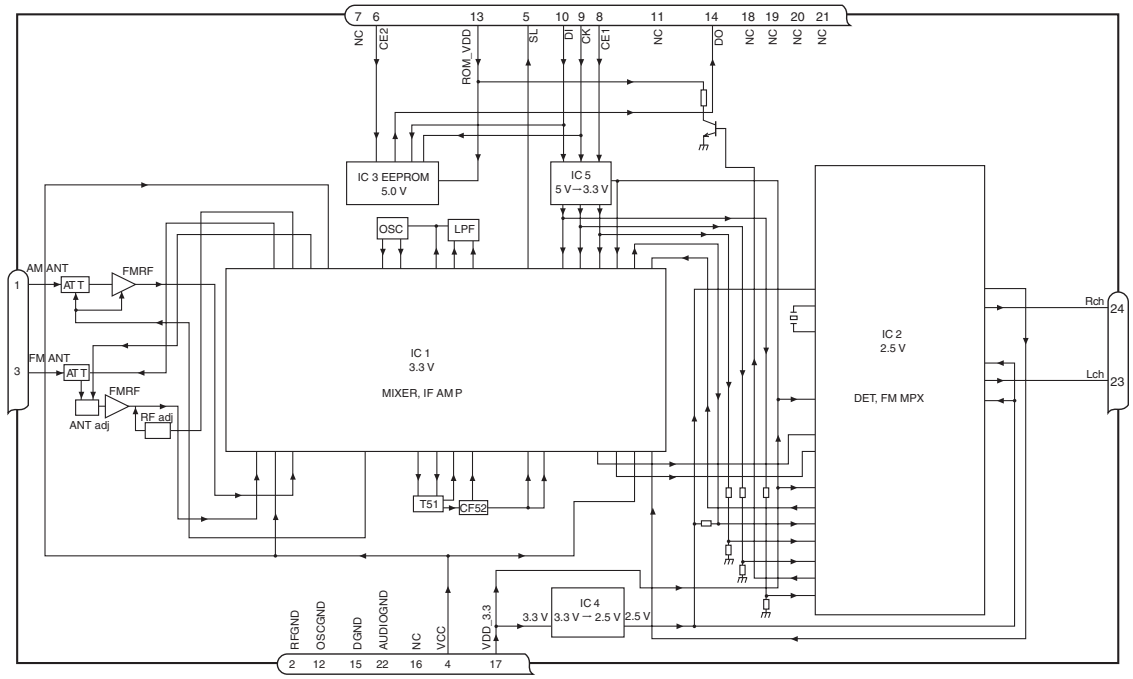
F

4. BLOCK DIAGRAM




SYSTEM CONTROLLER IC 601(1/2) PEG403A
SYSTEM CONTROLLER IC 601(2/2) PEG403A
RESET
IC651 S-80835CNMC-B8U
BZ601 BUZZER
X601 15.00MHz
ELECTRONIC VOLUME/ SOURCE SELECTOR
IC201 PML018A
12V HIGH OUT
SYS +B REGULATOR
IC911 NJM2388F84
VST,VCK,VDT
MUTING
MUTE
E-MUTE
OEL PW
DC/DC CONVERTER
IC561 NJM2360M
3.3V REGULATOR
IC431 NJM2885DL1-33
POWER AMP
IC 351 PAL007C
VDD REGULATOR
B SENS
A SENS
ILM SENS
RCA OUT
CN301
CN981
CN801
CN1901
CN1951
CN1950
S1970 EJECT
C PANEL UNIT
B KEYBOARD UNIT
ILM CONTROL
SWVDD
ILLUMI
ROTARY COMMANDER S1906
KEY MATRIX
S1901,S1902,S1904, S1907,S1909
S1903,S1905,S1908, S1910
X1901 10.000MHz
IC1901 GP1UX51RK
REMOTE CONTROL SENSOR
KEY/OEL CONTROLLER IC1902 PEG411A
V1901 OEL UNIT
Q1902

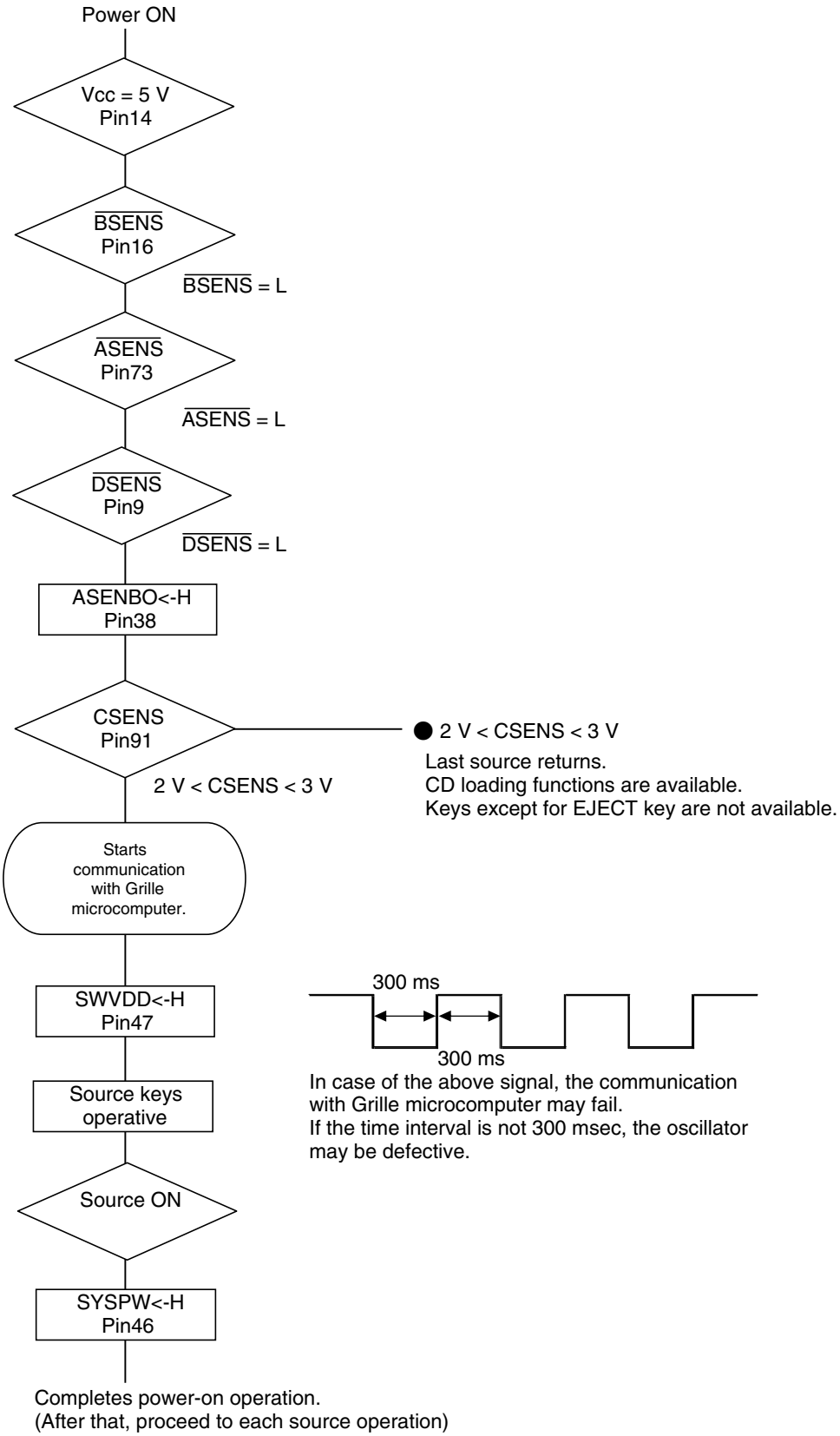
● FM/AM Tuner Unit



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 µH. (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 Surge absorber (DSP-201M-S00B) is necessary.
4	VCC		power supply	The power supply for analog block. D.C 8.4 V ± 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 ± 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

5. DIAGNOSIS

5.1 OPERATIONAL FLOWCHART



5.2 ERROR CODE LIST

● CD 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.

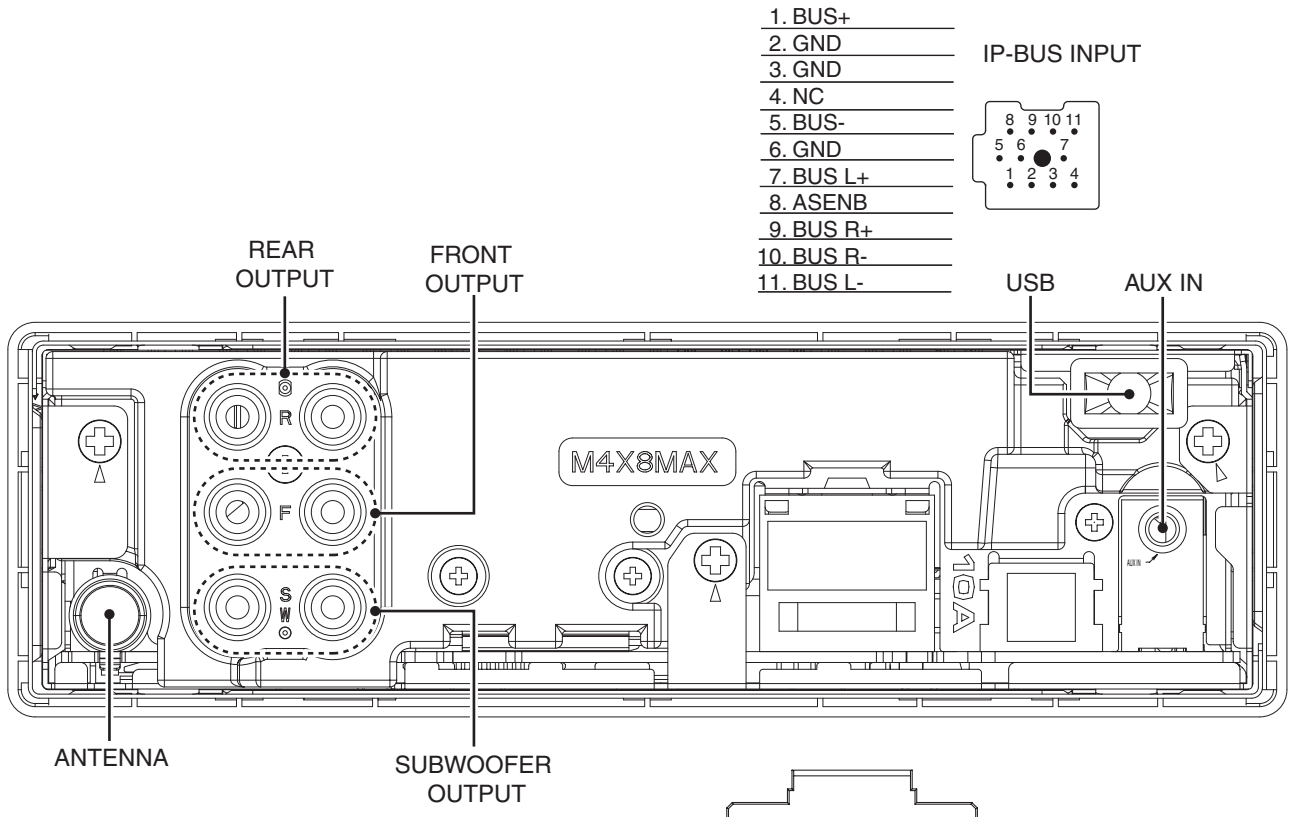
iPod error

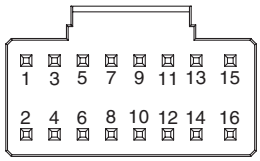
Message	Cause	Action
NO SONGS	No songs in the iPod	Transfer the songs to the iPod.
STOP	No songs in the current list	Select a list that contains the songs.
ERROR-11	Communication failure	Disconnect the cable from the iPod. Once the iPod main menu is displayed, connect the cable again.
		Reset the iPod.
ERROR-21	Old version of the iPod	Update the iPod version.
ERROR-30	iPod failure	Reset the iPod.
ERROR-A0	iPod is not charged but operates correctly.	Check if the connection cable for the iPod shorted out. After checking, switch the ignition key or disconnect the iPod and connect again.

USB error

Message	Cause	Action
NO AUDIO	No songs in the USB device	Transfer the songs to the USB device.
	USB memory with security enabled is connected	Follow the USB memory instructions to disable the security.
TRK SKIPPED	The connected USB device contains WMA files that are protected by DRM	Play an audio file not protected by DRM.
PROTECT	All the files in the USB device are protected by DRM	Transfer the songs not protected by DRM to the USB device.
N/A USB	The connected USB device is not supported by this unit	Connect a USB device that is compliant as a Mass Storage Class.
CHK USB	The USB connector or the USB cable is short-circuited	Confirm the USB connector or the USB cable.
	The connected USB device consumes more than 500 mA (max. allowable current)	Confirm the USB device.
N/A PLAYLIST	Selected m3u playlist cannot be played back	Select another playlist.
	All the files on the selected m3u playlist are protected by DRM	

5.3 CONNECTOR FUNCTION DESCRIPTION





1	FR+	9	MUTE
2	RR+	10	NC
3	FR-	11	B.REM
4	RR-	12	ILM
5	FL+	13	NC
6	RL+	14	ACC
7	FL-	15	GND
8	RL-	16	B.UP

6. SERVICE MODE
6.1 CD TEST MODE

During pressing the "SOURCE" and "RPT" keys simultaneously, perform the reset-start, then turn ON the CD to enter the CDS test mode.

- **How to issue the 1 - 6 keys in the 08 model's slave test:**

The specification of the 08 model does not include the 1 - 6 keys issuance function for H/U and the remote control unit. Therefore, in order to issue commands in a slave test, use the direct FUNCTION keys alternatively to enable the equal key command sending function to the existing models.

Outline) Use the direct FUNCTION keys to display, select, or issue the KEY 1 - 6.

<Direct FUNCTION keys and corresponding functions>

Direct FUNCTION key	Normal mode	Slave test mode
A	S.Rtrv	**Selecting a key command**
B	RDM	**Issuing a key command**
C	RPT	**Switching a screen**

- For convenience, a name of each direct FUNCTION key is shown as "A", "B", and "C".

- **How to issue the 1 - 6 keys for the CDS source:**
  (The ▭ areas below are overwritten and displayed on character strings for the normal mode display.)

① During the slave test mode, the key name "K1" is shown at the left by default.
In this condition, press the A key to toggle K1 - K6, and select a command to be sent to the slave.

C	O	M	P	A	C	T		D	I	S	C				
K	1		!		T	-	!	!				!	!	!	!

FOLDER TRK MINUTE SECOND

- The one-line model shows only the bottom column.

A key

C	O	M	P	A	C	T		D	I	S	C				
K	6		!		T	-	!	!				!	!	!	!

② During the K1 - K6 key names are displayed, press the B key and issue the selected command.

C	O	M	P	A	C	T		D	I	S	C				
K	1		!		T	-	!	!				!	!	!	!

B key

Send a key command selected by pressing the KEY 1.

③ Press the C key to change display/non-display of key names.
When the non-display mode is selected for the K1 - K6 key names, "A key" and "B key" are invalid.

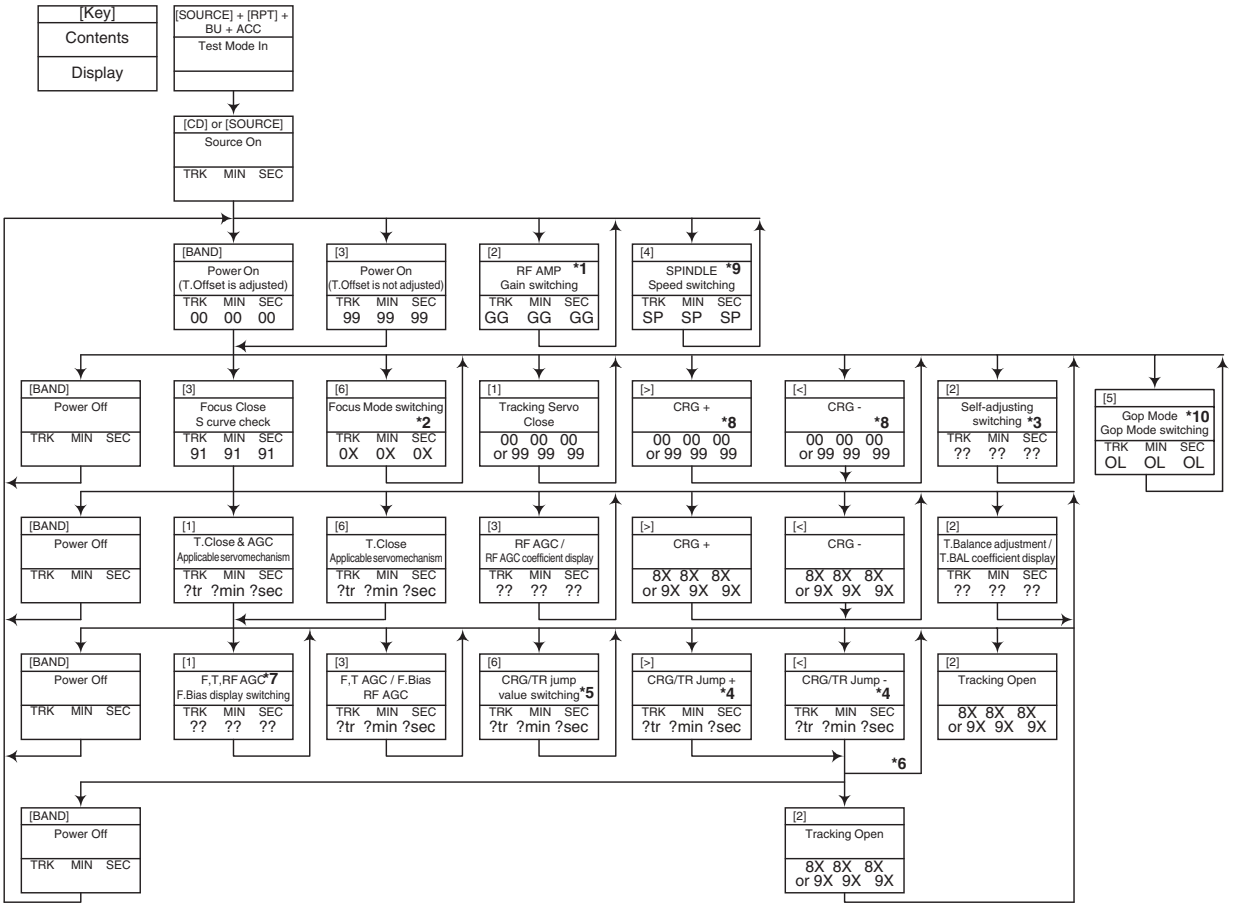
C	O	M	P	A	C	T		D	I	S	C				
K	1		!		T	-	!	!				!	!	!	!

C key

C	O	M	P	A	C	T		D	I	S	C				
F	-	!	!		T	-	!	!				!	!	!	!

- Pressing the A key or B key does not work.

Flow Chart



*1) TYP (TRK MIN SEC) → + 6 dB ($^{TRK}06^{MIN}06^{SEC}06$) → + 12 dB ($^{TRK}12^{MIN}12^{SEC}12$)

*2) Focus Close ($^{TRK}00^{MIN}00^{SEC}00$ ($^{TRK}99^{MIN}99^{SEC}99$)) → S.Curve ($^{TRK}01^{MIN}01^{SEC}01$) → F EQ measurement setting ($^{TRK}02^{MIN}02^{SEC}02$)

*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) (TRK MIN SEC) → 2X ($^{TRK}22^{MIN}22^{SEC}22$) → 1X ($^{TRK}11^{MIN}11^{SEC}11$)

*10) OFF(TYP) (TRK MIN SEC) → FORCUS ($^{TRK}70^{MIN}70^{SEC}70$) → TRACKING ($^{TRK}71^{MIN}71^{SEC}71$)

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

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

7. DISASSEMBLY

***NOTE) While the photograph shown is slightly different from this model in shape, the disassembly procedure is the same.**

● Removing the Keyboard Unit (Fig.1,2,3)

Pull arrow direction
and remove Detach Grille Assy.(Fig.1)

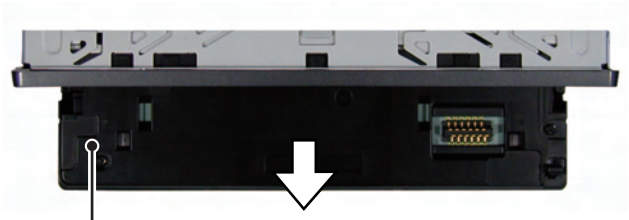


Fig.1

Remove the Knob Unit.(Fig.2)

Fig.2

1 Remove the four screws.(Fig.3)

Remove the Cover
and then remove the Keyboard Unit.

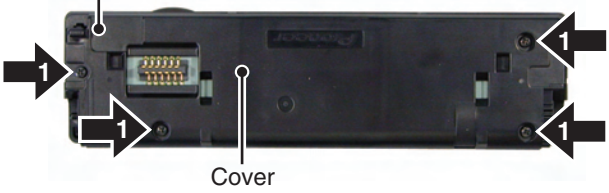


Fig.3

● Removing the Holder (Fig.4)

Take off the pick of left and right
and then a holder slide to the arrow course.

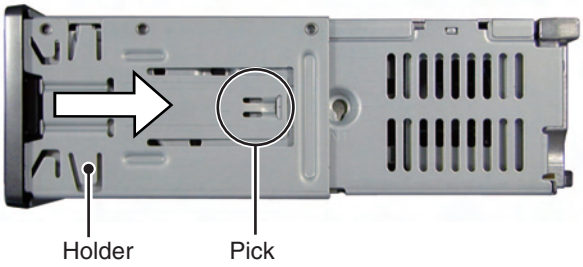


Fig.4

● Removing the Case and Panel (Fig.5)

Remove the Case and Panel.(Fig.5)

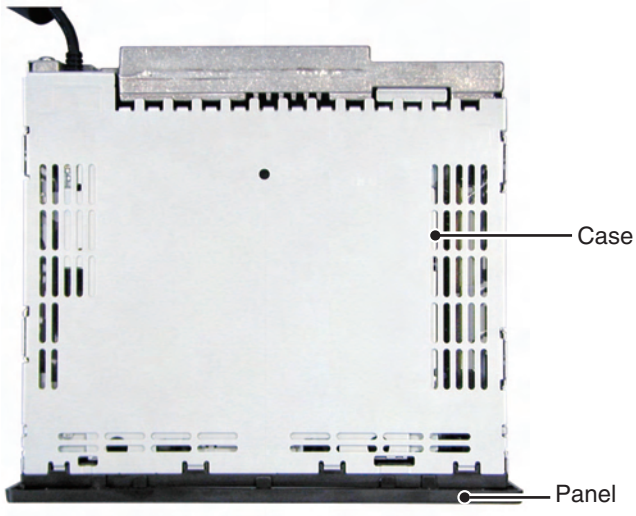


Fig.5

● Removing the CD Mechanism Module (Fig.6)

1 Remove the four screws.

Disconnect the cable
and then remove the CD Mechanism Module.

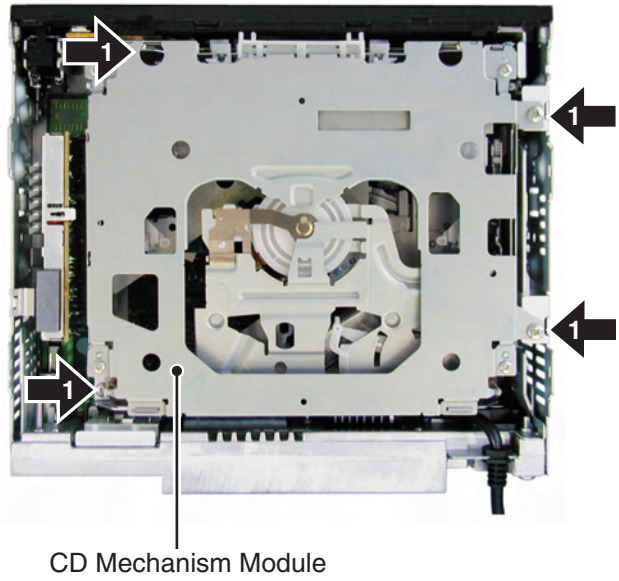


Fig.6

● Removing the Panel AssyFig.7,8)

1 Remove the two screws.(Fig.7)

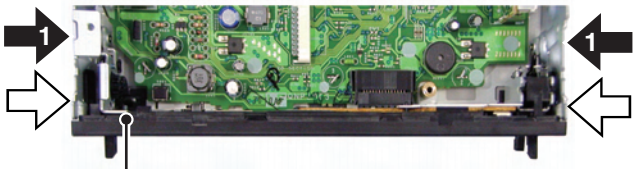


Fig.7

Push the place of the arrows
and then remove Panel Assy.(Fig.7,8)

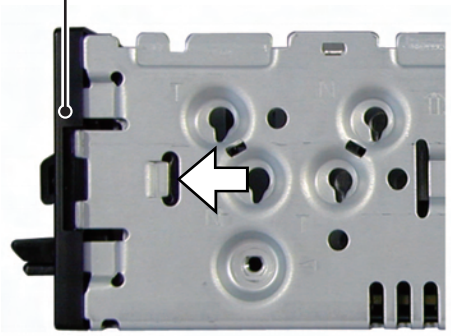


Fig.8

● Removing the Panel Unit(Fig.9,10)

1 Remove the two screws.(Fig.9)

Fig.9

Remove the Holder
and then remove Panel Unit.(Fig.10)

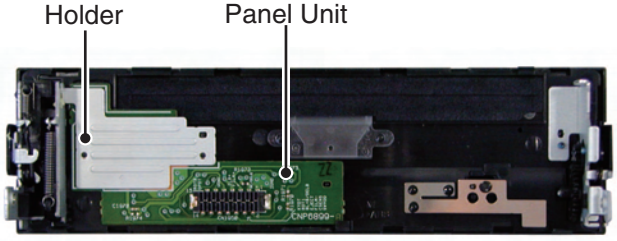


Fig.10

● Removing the Tuner amp Unit(Fig.11,12)

1 Remove the three screws.(Fig.11)

2 Remove the two screws.(Fig.11)

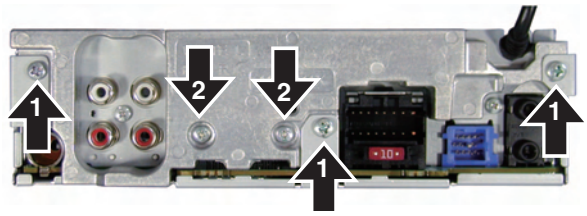


Fig.11

3 Straighten the tabs at four locations indicated.(Fig.12)

4 Remove the screw and then remove the Tuner amp Unit.(Fig.12)

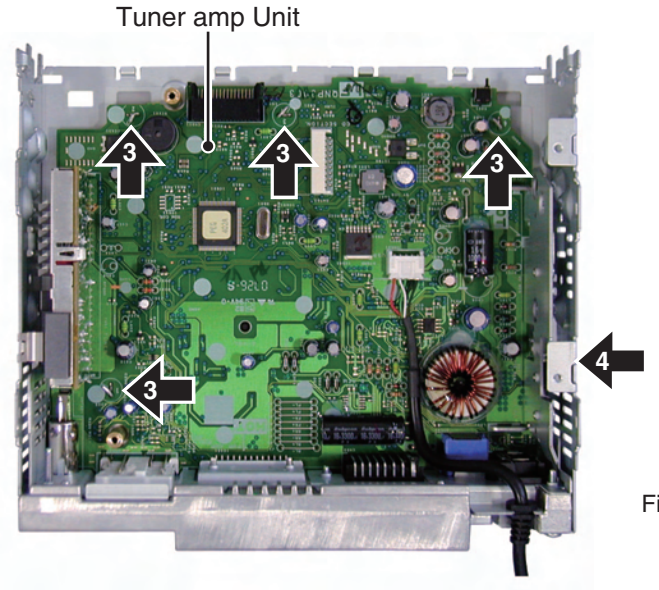
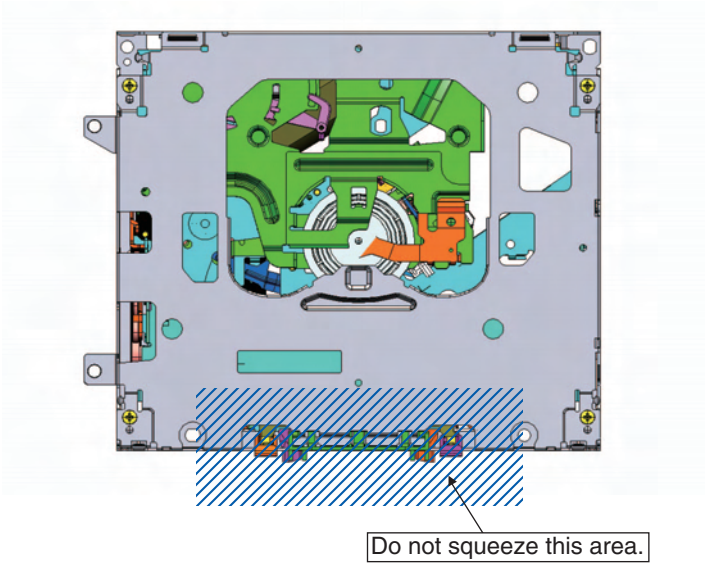


Fig.12

● How to hold the Mechanism Unit

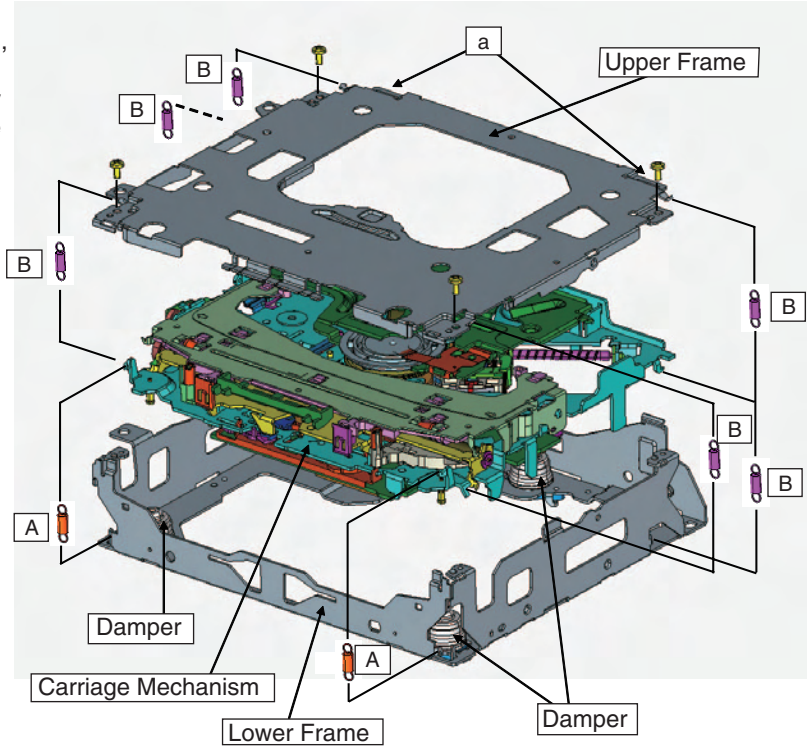
1. Hold the Upper and Lower Frames.
2. Do not hold the front portion of the Upper Frame, because it is not very solid.



● 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.

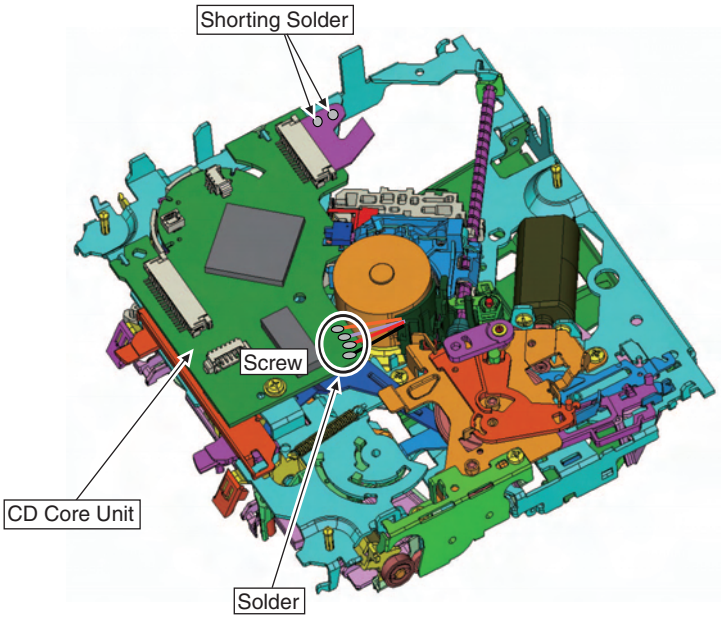
Caution: When assembling, be sure to apply some alcohol to the Dampers and assemble the mechanism in a clamped state.



● 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.

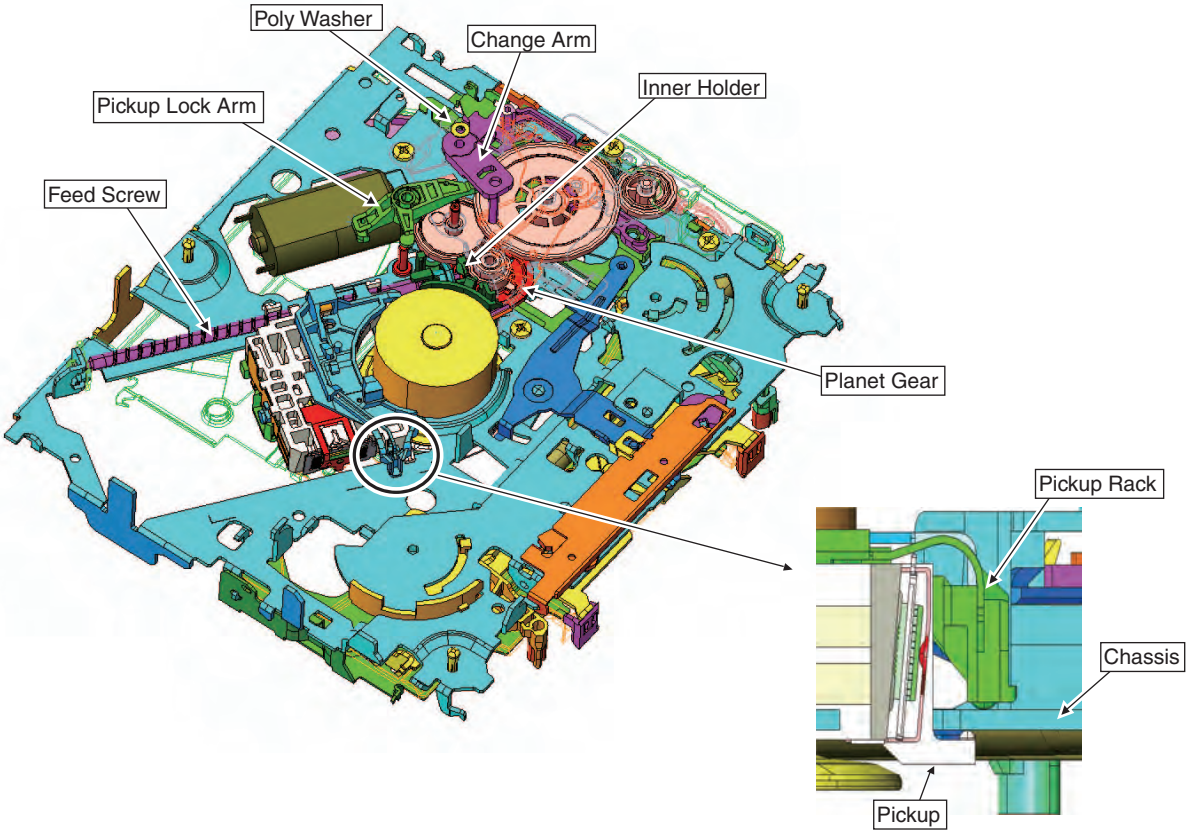


● How to remove the Pickup Unit

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.



8. EACH SETTING AND ADJUSTMENT

8.1 CD ADJUSTMENT

1) Cautions on adjustments

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

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

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

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

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

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

2) Test mode

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

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

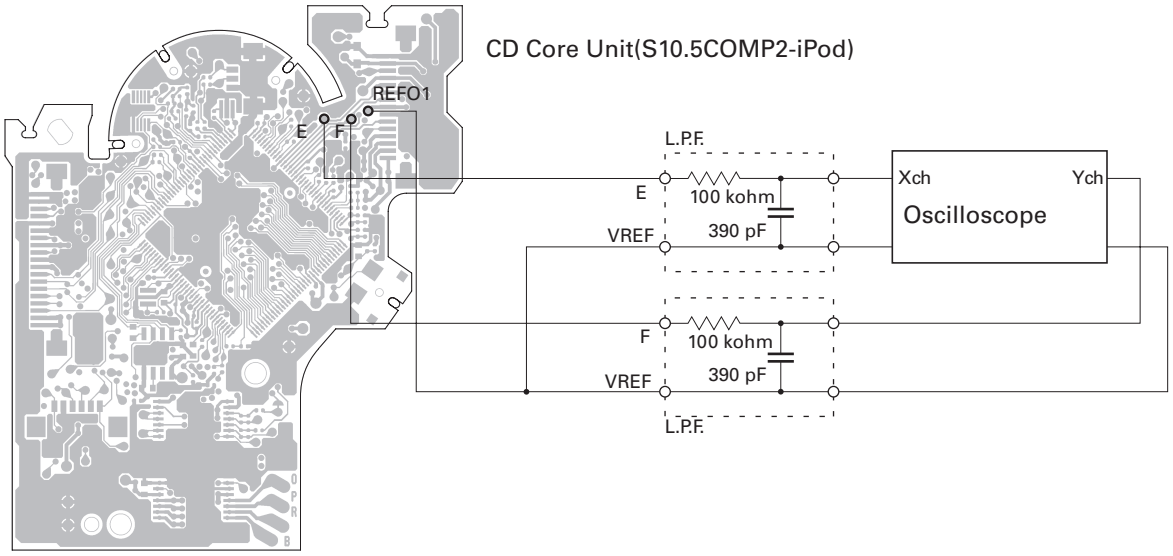
8.2 CHECKING THE GRATING AFTER CHANGING THE PICKUP UNIT

- **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



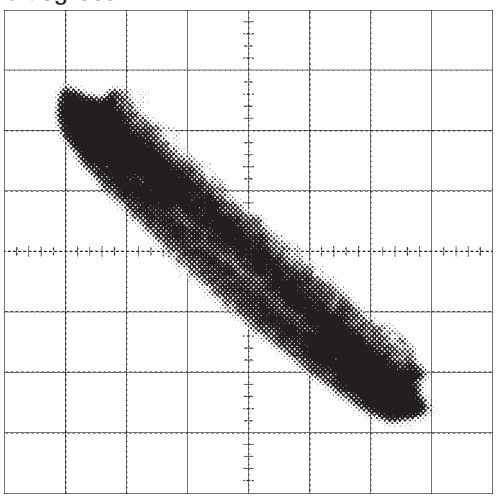
- **Checking Procedure**
1. In test mode, load the disc and switch the 3 V regulator on.
2. Using the → and ← buttons, move the PU unit to the innermost track.
3. Press key 3 to close focus, the display should read "91". Press key 2 to implement the tracking balance adjustment the display should now 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 degrees. Refer to the photographs supplied to determine the phase angle.
5. If the phase difference is determined to be greater than 75 degrees 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 degrees 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".

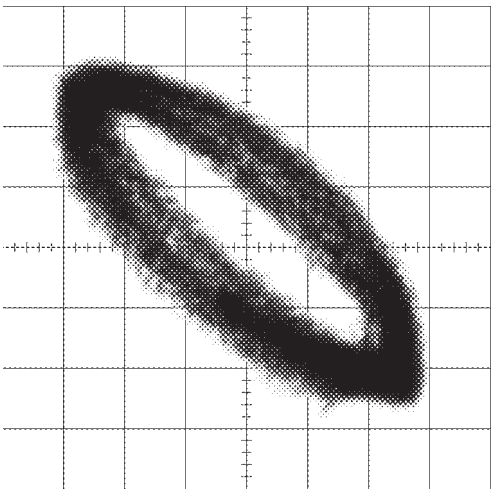
Grating waveform

Ech -> Xch 20 mV/div, AC
Fch -> Ych 20 mV/div, AC

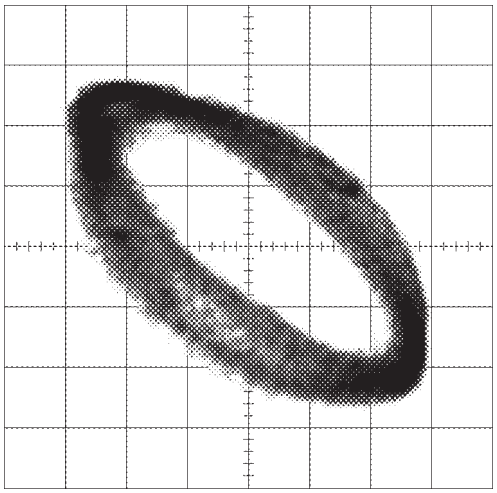
0 degrees



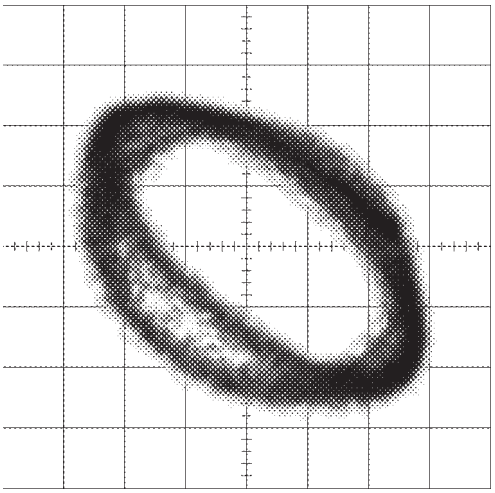
30 degrees



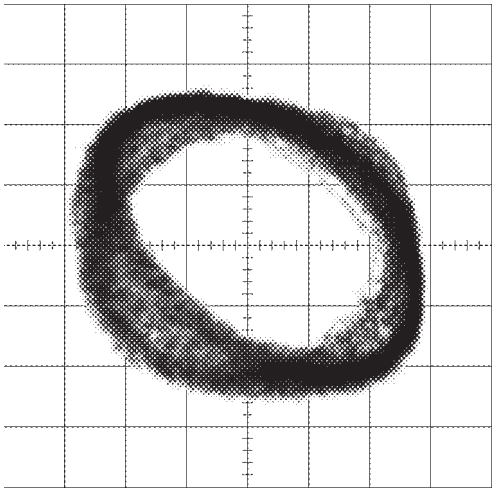
45 degrees



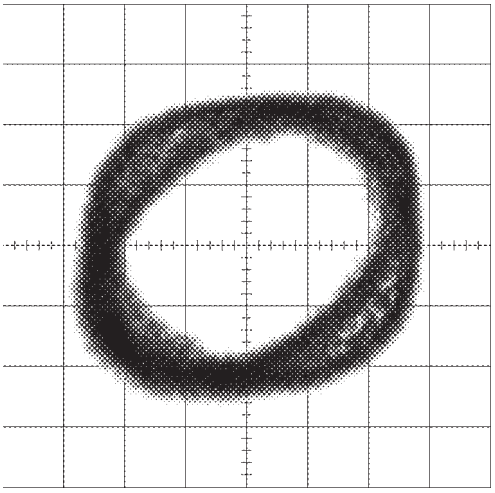
60 degrees



75 degrees



90 degrees



8.3 PCL OUTPUT CONFIRMATION

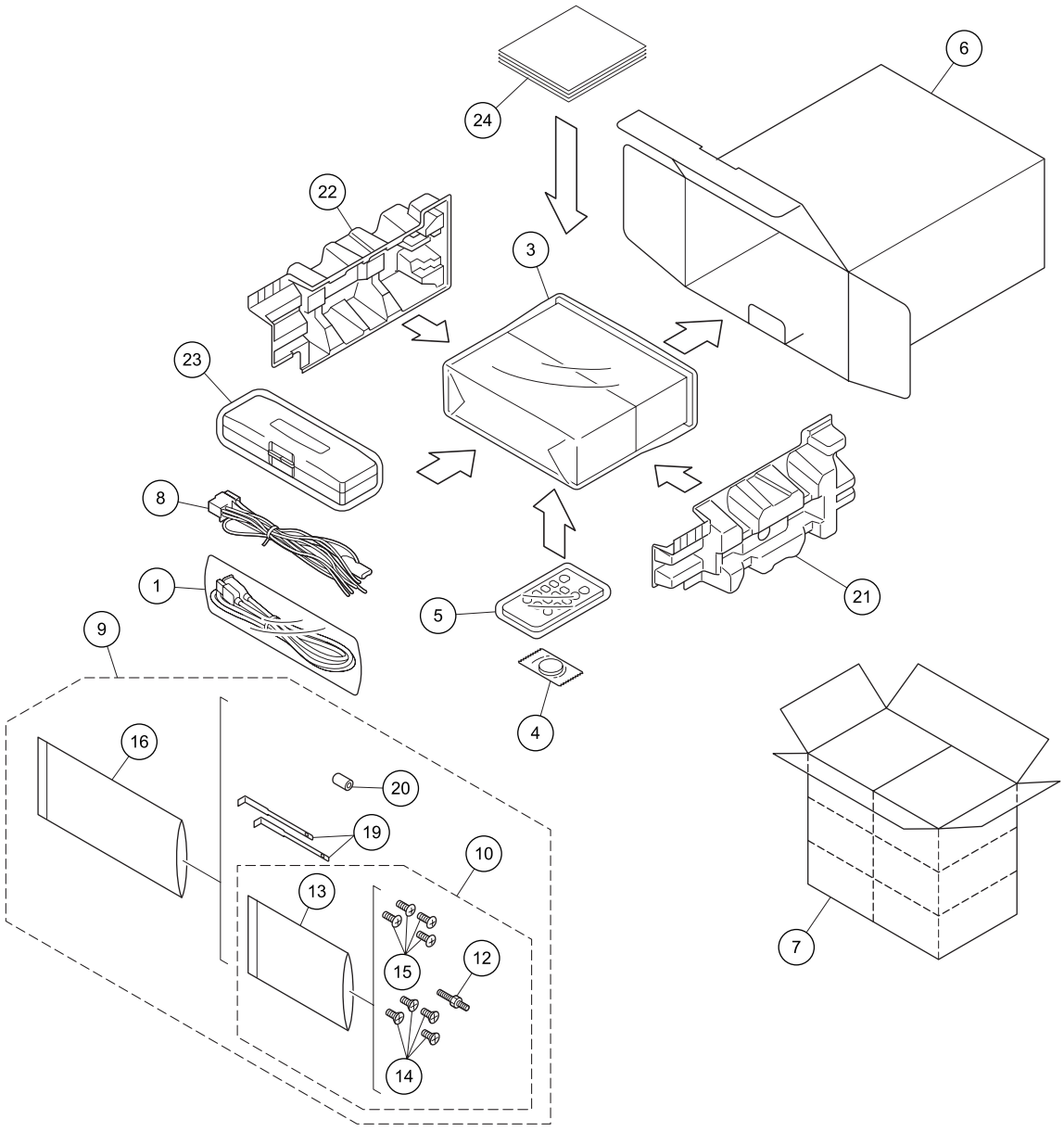
● PCL output

In the normal operation mode (with the detachable panel installed, the ACC switched ON, the standby mode cancelled), shift the TESTIN IC601(Pin 61) terminal to H.
The clock signal is output from the PCL terminal IC601(Pin 37).
The frequency of the clock signal is 468 750 Hz that is one 32th of the fundamental frequency.

9. 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.)*

9.1 PACKING



PACKING SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Cord Assy	CDP1040
	2	•••••	
	3	Polyethylene Bag	CEG1227
*	4	Battery	CEX1065
	5	Remote Control Assy	CXC8885
	6	Unit Box	See Contrast table(2)
	7	Contain Box	See Contrast table(2)
	8	Cord Assy	XDP7001
	9	Accessory Assy	CEA6708
	10	Screw Assy	CEA3849
	11	•••••	
	12	Screw	CBA1650
*	13	Polyethylene Bag	CEG-127
	14	Screw	CRZ50P090FTC
	15	Screw	TRZ50P080FTC
	16	Polyethylene Bag	CEG1160
	17	•••••	
	18	•••••	
	19	Handle	CND3707
	20	Bush	CNV3930
	21	Protector	XHP7016
	22	Protector	XHP7017
	23	Case Assy	QXA3049
	24-1	Caution Card	CRP1310
*	24-2	Caution Card	QRP3002
	24-3	Owner's Manual	See Contrast table(2)
	24-4	Owner's Manual	See Contrast table(2)
	24-5	Installation Manual	See Contrast table(2)
*	24-6	Warranty Card	See Contrast table(2)
*	24-7	Service Network	See Contrast table(2)
	24-8	Owner's Manual	See Contrast table(2)

(2) CONTRAST TABLE

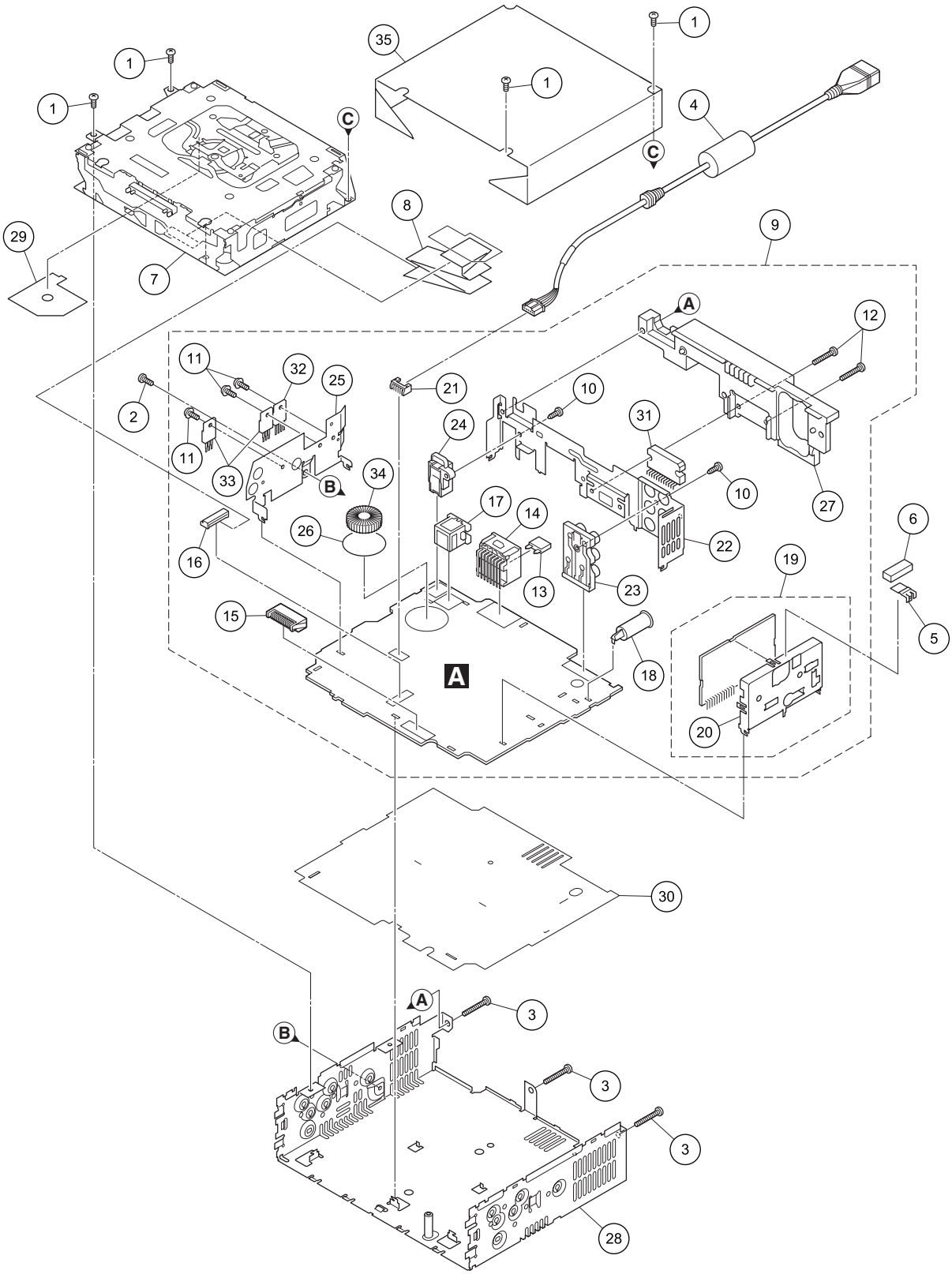
DEH-P5050UB/XN/ES, DEH-P5050UB/XN/ES1 and DEH-P5090UB/XN/ID are constructed the same except for the following:

Mark	No.	Description	DEH-P5050UB/XN/ES	DEH-P5050UB/XN/ES1	DEH-P5090UB/XN/ID
	6	Unit Box	QHG3005	QHG3006	QHG3009
	7	Contain Box	QHL3005	QHL3006	QHL3009
	24-3	Owner's Manual	QRD3010	QRD3010	Not used
	24-4	Owner's Manual	QRD3011	QRD3011	Not used
	24-5	Installation Manual	QRD3012	QRD3012	Not used
*	24-6	Warranty Card	Not used	CRY1250	Not used
*	24-7	Service Network	Not used	CRY1251	Not used
	24-8	Owner's Manual	Not used	Not used	QRB3003

Owner's Manual,Installation Manual

Part No.	Language
QRD3010	English, Spanish, Portuguese(B)
QRD3011	Traditional Chinese, Arabic
QRD3012	English, Spanish, Portuguese(B), Traditional Chinese, Arabic
QRB3003	English

9.2 EXTERIOR(1)



(1) EXTERIOR(1) SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Screw	BSZ26P060FTC
	2	Screw	BSZ30P060FTC
	3	Screw	BSZ30P200FTC
	4	Cord Assy	CDE8351
	5	Earth Plate	CNC8915
	6	Cushion	CNM8890
	7	CD Mechanism Module(S10.5)	CXK5770
	8	Cable	QDE3001
	9	Tuner Amp Unit	See Contrast table(2)
	10	Screw	BPZ26P070FTC
	11	Screw	BSZ26P060FTC
	12	Screw	BSZ26P200FTC
⚠	13	Fuse(10 A)	YEK5001
	14	Plug(CN981)	CKM1376
	15	Plug(CN801)	CKS3537
	16	Connector(CN701)	CKS3833
	17	Connector(CN101)	CKS5271
	18	Antenna Jack(ANT401)	CKX1056
	19	FM/AM Tuner Unit	CWE2098
	20	Holder	CND4324
	21	Plug(CN521)	KM200NA5L
	22	Holder	QNC3001
	23	Pin Jack(CN301)	XKB7001
	24	Jack(CN151)	XKS7006
	25	Holder	XNC7030
	26	Insulator	XNM7031
	27	Heat Sink	YNR5031
	28	Chassis Unit	QXA3013
	29	Insulator	XNM7106
	30	Insulator	CNN2339
	31	IC(IC351)	PAL007C
	32	IC(IC911)	NJM2388F84
	33	Transistor(Q751,Q901)	2SD2396
	34	Choke Coil(L981)	CTH1280
	35	Sheet	See Contrast table(2)

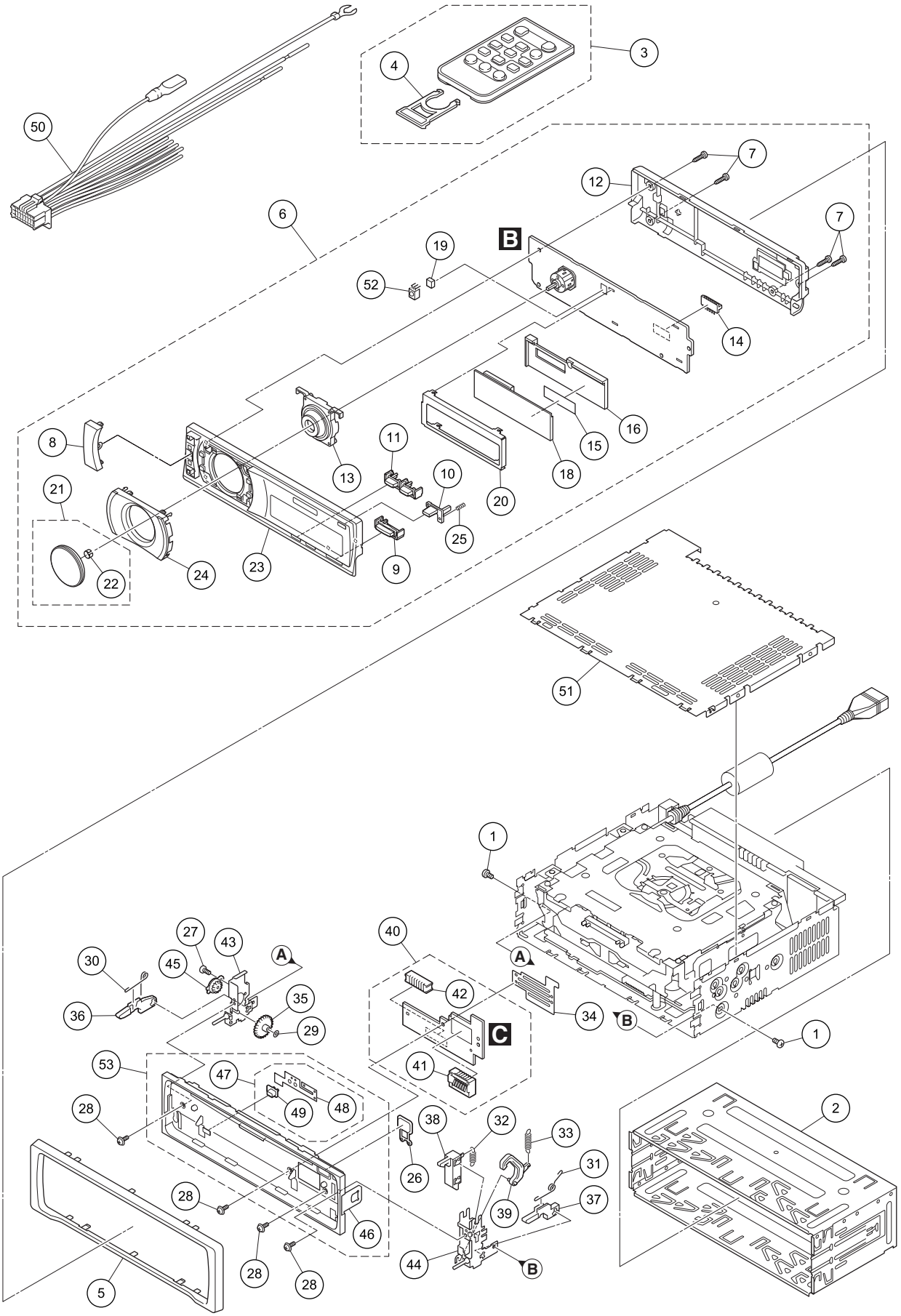
(2) CONTRAST TABLE

DEH-P5050UB/XN/ES, DEH-P5050UB/XN/ES1 and DEH-P5090UB/XN/ID are constructed the same except for the following:

Mark	No.	Description	DEH-P5050UB/XN/ES	DEH-P5050UB/XN/ES1	DEH-P5090UB/XN/ID
	9	Tuner Amp Unit	QWM3013	QWM3013	QWM3016
NOTE	35	Sheet	Not used	Not used	CNM9404

<NOTE> Sheet, #35 has to be replaced if it is removed.

9.3 EXTERIOR(2)



(1) EXTERIOR(2) SECTION PARTS LIST

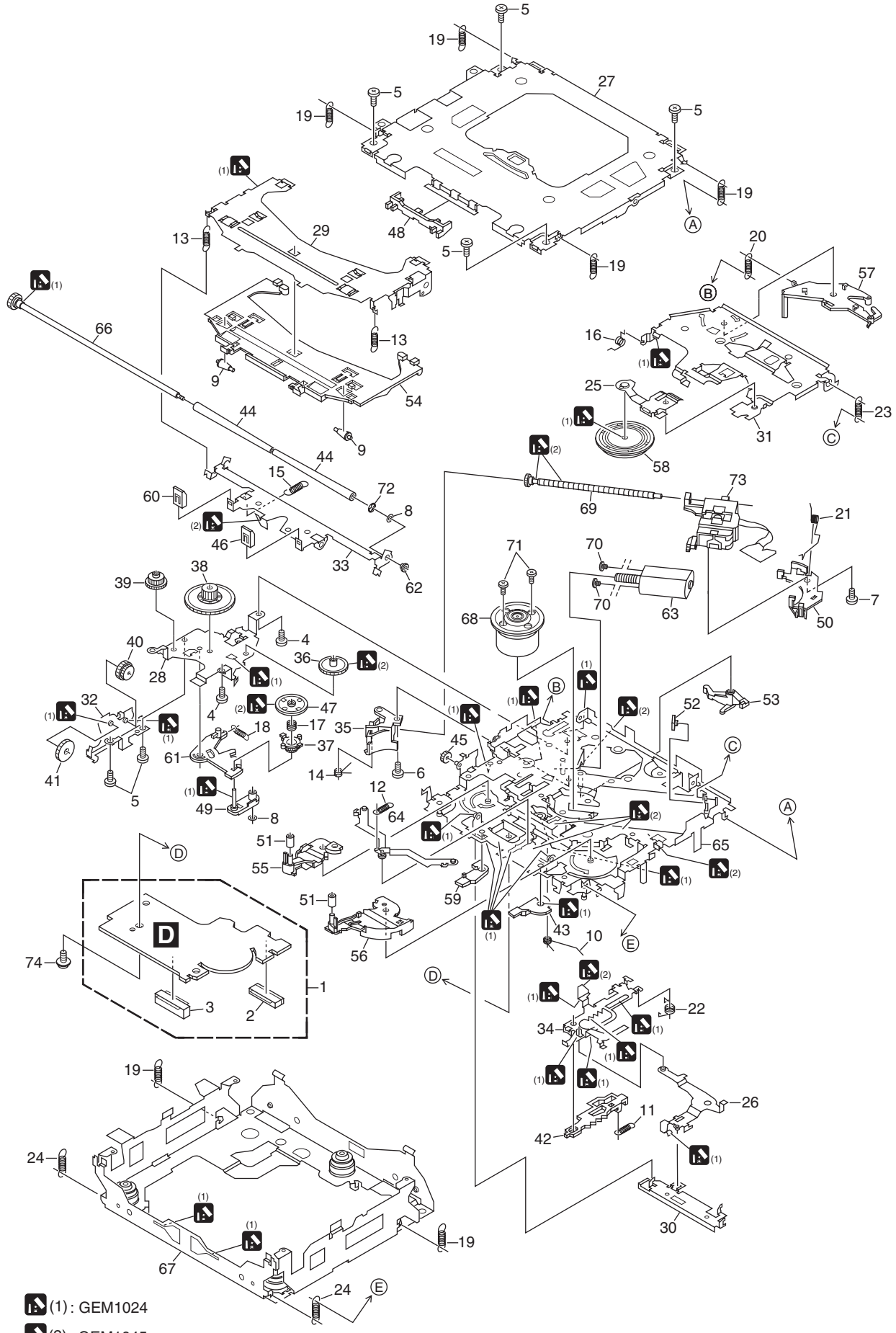
Mark	No.	Description	Part No.
	1	Screw	BMZ30P040FTB
	2	Holder	CND3598
	3	Remote Control Assy	CXC8885
	4	Cover	CNS7068
	5	Panel	QNS3004
	6	Detach Grille Assy	See Contrast table(2)
	7	Screw	BPZ20P080FTB
	8	Button(SRC, BAND)	QAC3004
	9	Button(LIST)	QAC3005
	10	Button(OPEN)	QAC3007
	11	Button(SW, CLOCK)	QAC3014
	12	Cover	QNS3002
	13	Lighting Conductor	QNV3001
	14	Connector(CN1901)	CKS5207
	15	Double Side Tape	CNN1878
	16	Holder	CNV9735
	17	•••••	
	18	OLED	MXS8249
	19	Spacer	QNM3006
	20	Holder	XNC7028
	21	Knob Unit	QXA3006
	22	Spring	XBL7005
	23	Grille Unit	See Contrast table(2)
	24	Button(DISP, RDM, S.Rtrv, RPT)	See Contrast table(2)
	25	Spring	XBH7001
	26	Button(EJECT)	CAC7752
	27	Screw(M2 x 4)	CBA1649
	28	Screw(M2 x 4.5)	CBA1925
	29	Washer	CBF1038
	30	Spring	CBH2650
	31	Spring	CBH2651
	32	Spring	CBH2652
	33	Spring	CBH2653
	34	Holder	CND1254
	35	Gear	CNV5997
	36	Arm	CNV7400
	37	Arm	CNV7401
	38	Arm	CNV7402
	39	Arm	CNV7403
	40	Panel Unit	See Contrast table(2)
	41	Connector(CN1951)	CKS4806
	42	Connector(CN1950)	CKS5192
	43	Holder Unit	CXB9501
	44	Holder Unit	CXB9502
	45	Damper Unit	CXB9503
	46	Panel Unit	QXA3036
	47	Sub Spring Assy	XXA7363
	48	Spring	CBL1512
	49	Pin	CNV6486
	50	Cord Assy	XDP7001
	51	Case	YNB5014
	52	IC(IC1901)	GP1UX51RK
	53	Sub Panel Assy	QXA3025

(2) CONTRAST TABLE

DEH-P5050UB/XN/ES, DEH-P5050UB/XN/ES1 and DEH-P5090UB/XN/ID are constructed the same except for the following:

Mark	No.	Description	DEH-P5050UB/XN/ES	DEH-P5050UB/XN/ES1	DEH-P5090UB/XN/ID
	6	Detach Grille Assy	QXA3004	QXA3004	QXA3022
	23	Grille Unit	QXA3029	QXA3029	QXA3032
	24	Button (DISP, RDM, S.Rtrv,RPT)	QAC3011	QAC3011	QXA3010
	40	Panel Unit	CWM9835	CWM9835	CWM8758

9.4 CD MECHANISM MODULE



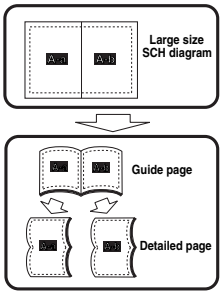
CD MECHANISM MODULE SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	CD Core Unit(S10.5COMP2-iPod)	CWX3526
	2	Connector(CN101)	CKS4182
	3	Connector(CN701)	CKS4186
	4	Screw	BMZ20P025FTC
	5	Screw	BSZ20P040FTC
	6	Screw(M2 x 3)	CBA1511
	7	Screw(M2 x 4)	CBA1835
	8	Washer	CBF1038
	9	Roller	CNV9499
	10	Spring	CBH2609
	11	Spring	CBH2612
	12	Spring	CBH2614
	13	Spring	CBH2616
	14	Spring	CBH2617
	15	Spring	CBH2620
	16	Spring	CBH2855
	17	Spring	CBH2937
	18	Spring	CBH2735
	19	Spring	CBH2854
	20	Spring	CBH2642
	21	Spring	CBH2856
	22	Spring	CBH2857
	23	Spring	CBH2860
	24	Spring	CBH2861
	25	Spring	CBL1686
	26	Arm	CND1909
	27	Frame	CND2582
	28	Bracket	CND2583
	29	Arm	CND3831
	30	Lever	CND2585
	31	Arm	CND2586
	32	Bracket	CND2587
	33	Arm	CND2588
	34	Lever	CND2589
	35	Holder	CNV7201
	36	Gear	CNV7207
	37	Gear	CNV7208
	38	Gear	CNV7209
	39	Gear	CNV7210
	40	Gear	CNV7211
	41	Gear	CNV7212
	42	Rack	CNV7214
	43	Arm	CNV7216
	44	Roller	CNV7218
	45	Gear	CNV7219
	46	Guide	CNV7361
	47	Gear	CNV7595
	48	Guide	CNV7799
	49	Arm	CNV7805
	50	Rack	CNV8342
	51	Roller	CNV8343
	52	Holder	CNV8344
	53	Arm	CNV8345
	54	Guide	CNV9498
	55	Arm	CNV8348
	56	Arm	CNV8349
	57	Arm	CNV8350
	58	Clamper	CNV8365
	59	Arm	CNV8386
	60	Guide	CNV8396
	61	Arm	CNV8413
	62	Collar	CNV8938
	63	Motor Unit(M2)	CXC4026
	64	Arm Unit	CXC4027
	65	Chassis Unit	CXC4028
	66	Gear Unit	CXC4029
	67	Frame Unit	CXC4031
	68	Motor Unit(M1)	CXC7134
	69	Screw Unit	CXC6359
	70	Screw	JFZ20P020FTC
	71	Screw	JGZ17P022FTC
	72	Washer	YE20FTC
	73	Pickup Unit(P10.5)(Service)	CXX1942
	74	Screw	IMS26P030FTC

10. SCHEMATIC DIAGRAM

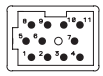
10.1 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)

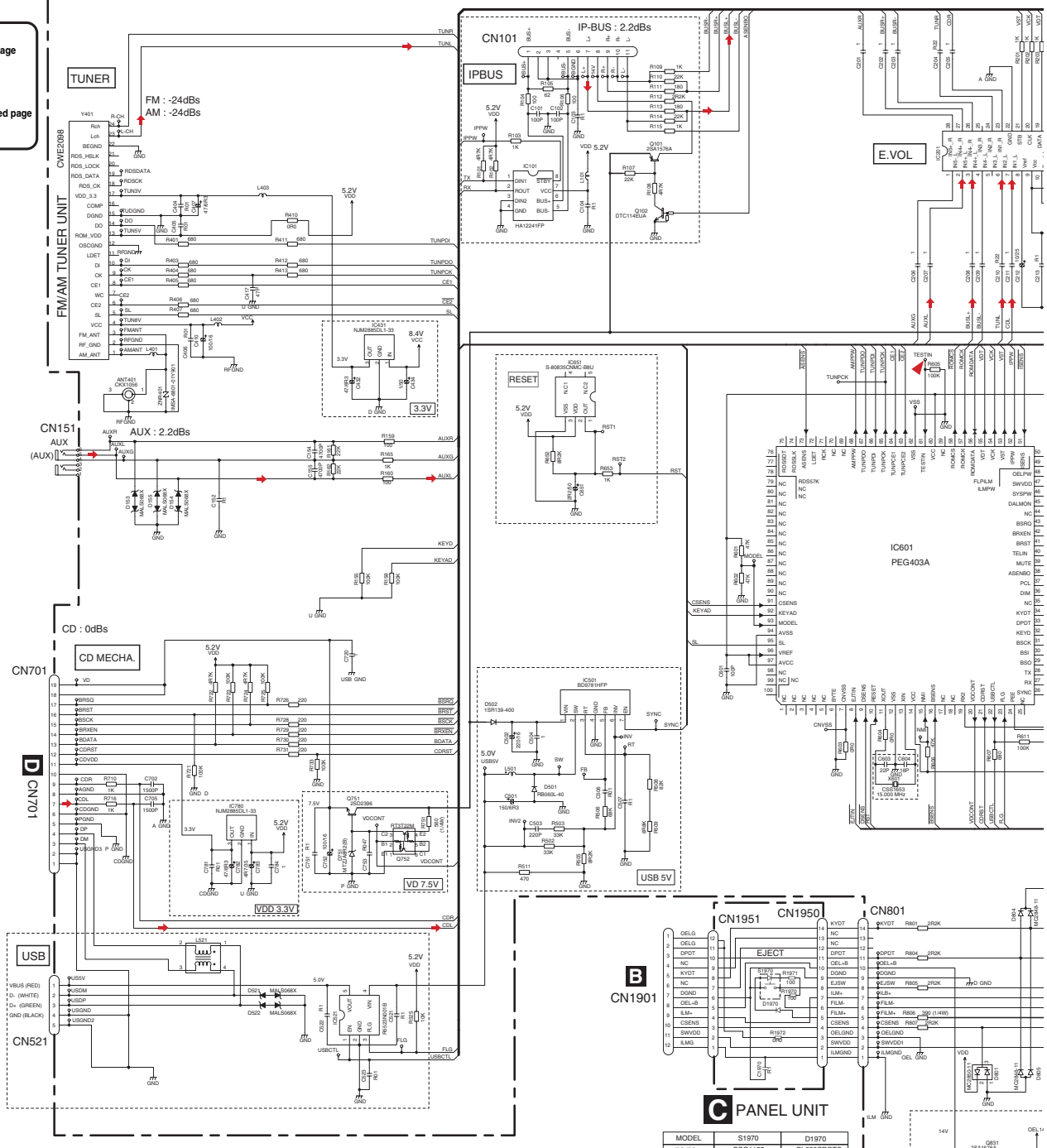
Note: When ordering service parts, be sure to refer to " EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".



A-a

: The power supply is shown with the marked box.





MODEL	S1970	D1970
ES,ES1	CSG1135	CL220SRCTS
ID	CSG1112	CL220PGC

NOTE :

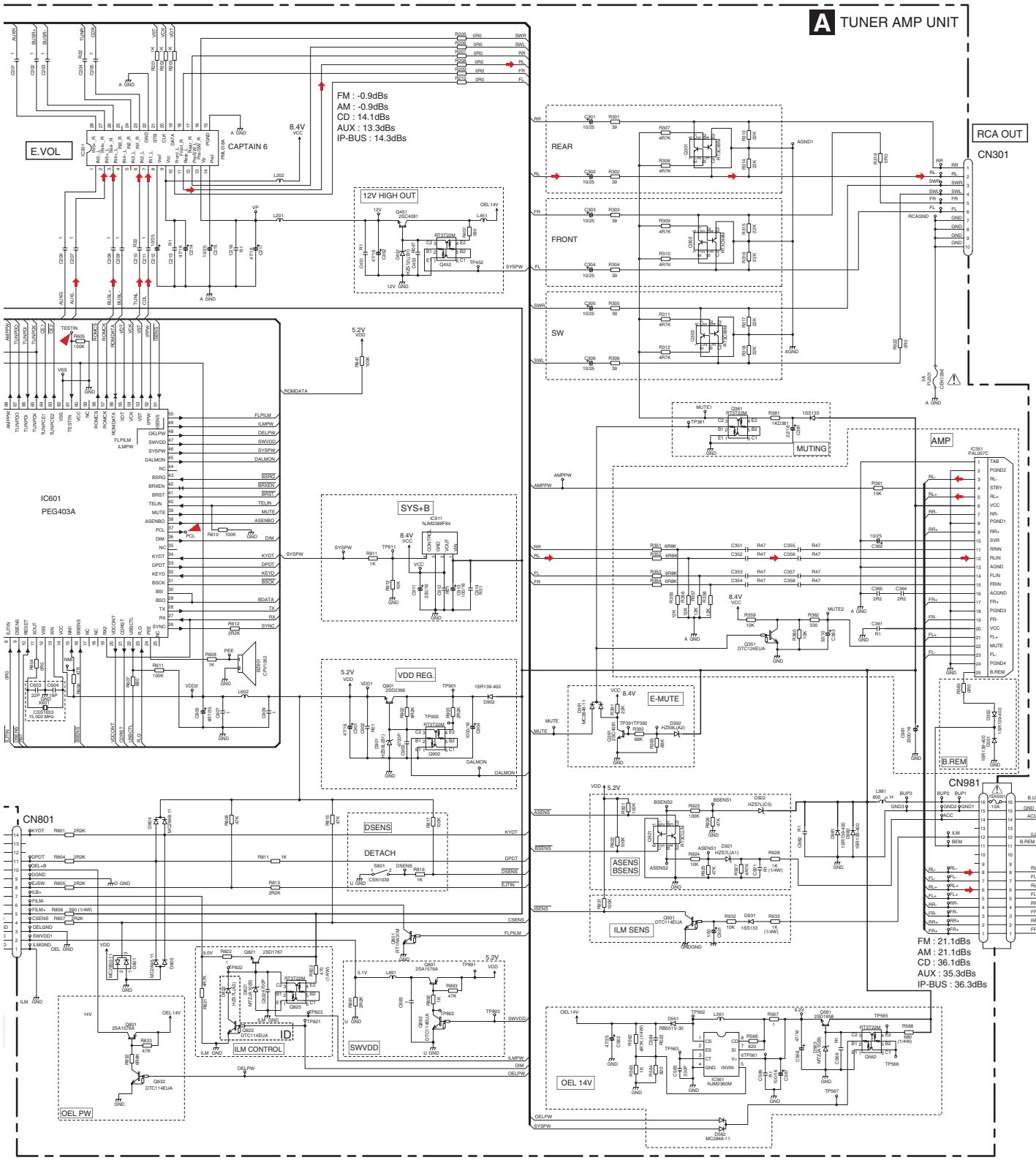
- Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

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

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.

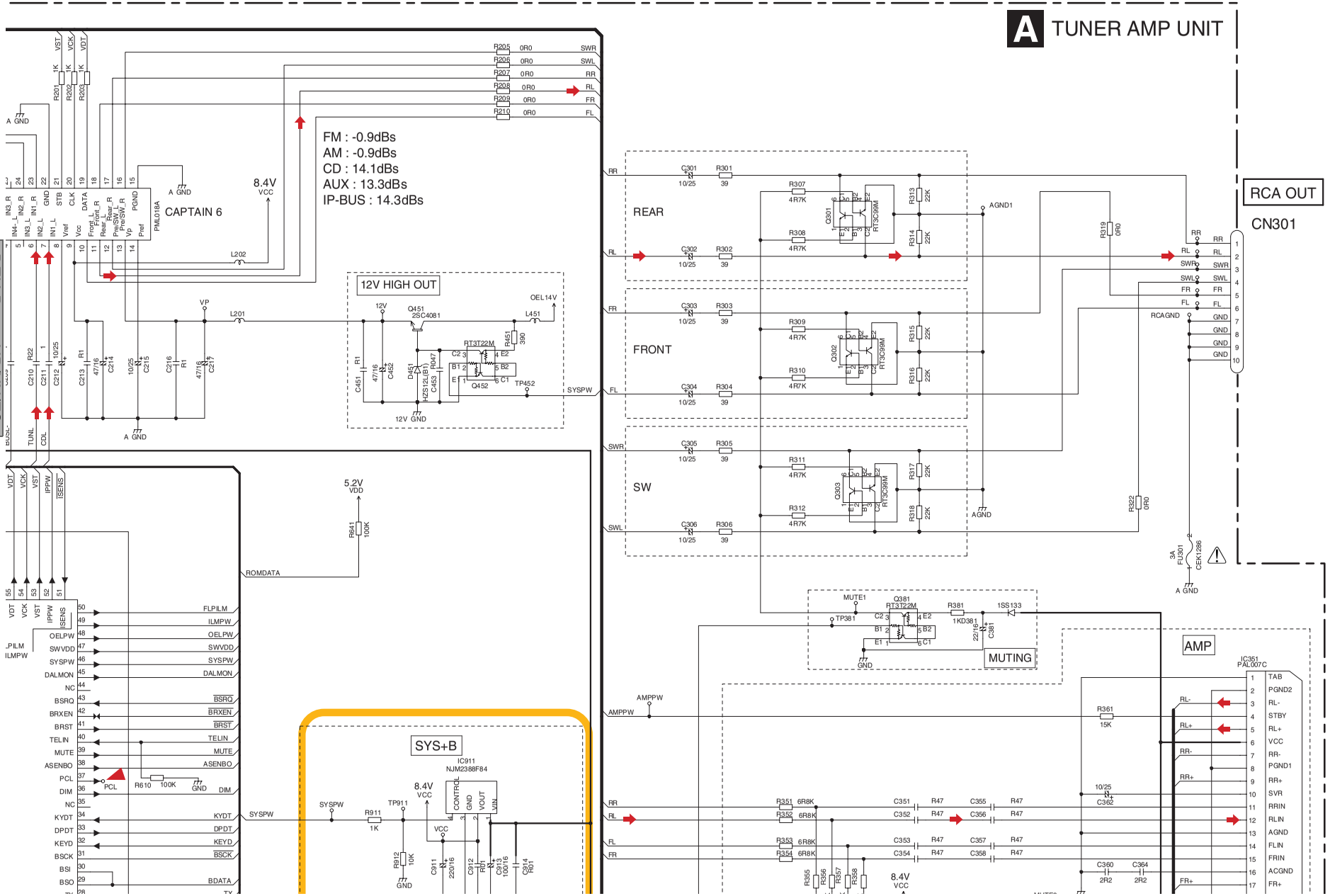
A C

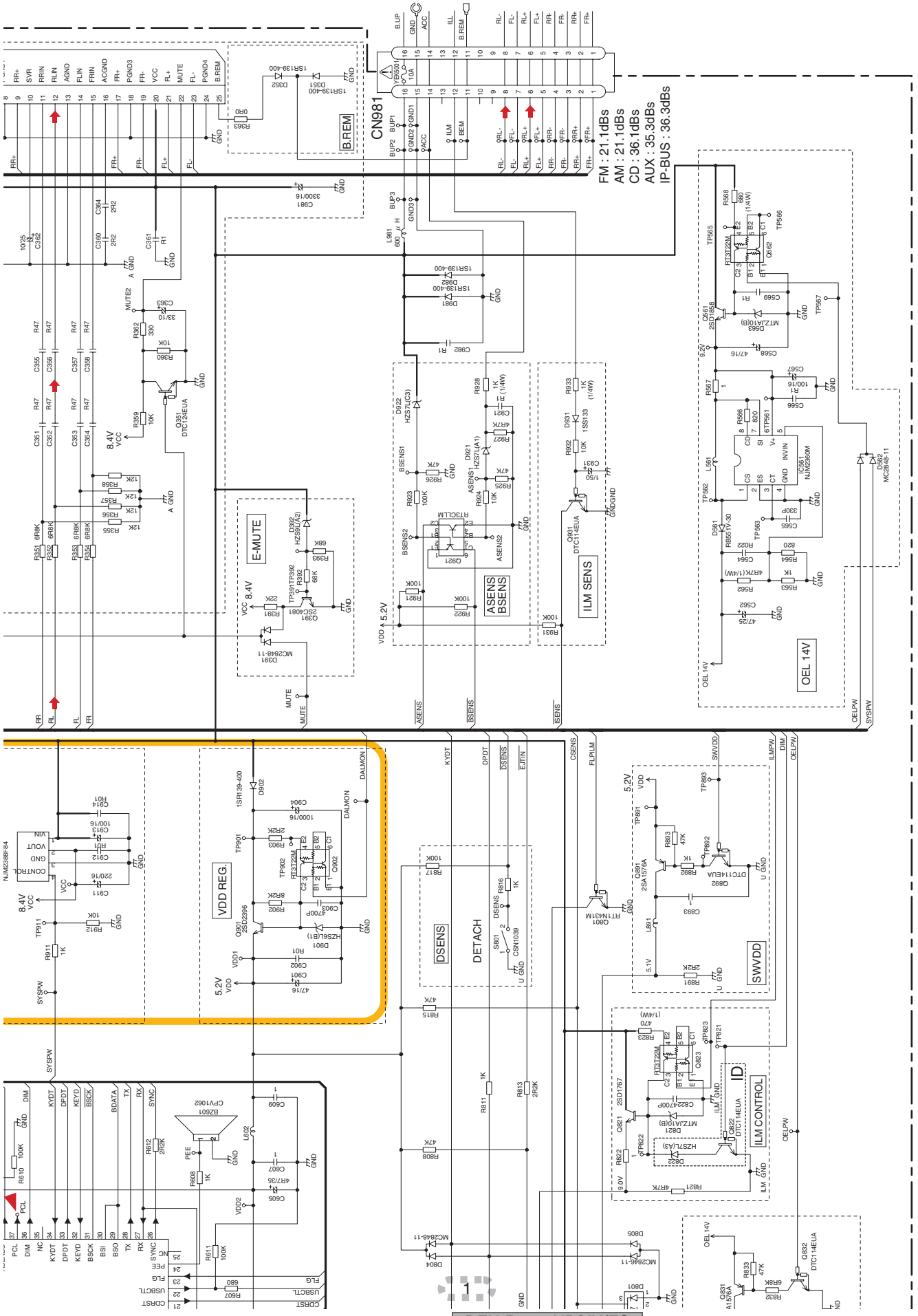
A-b

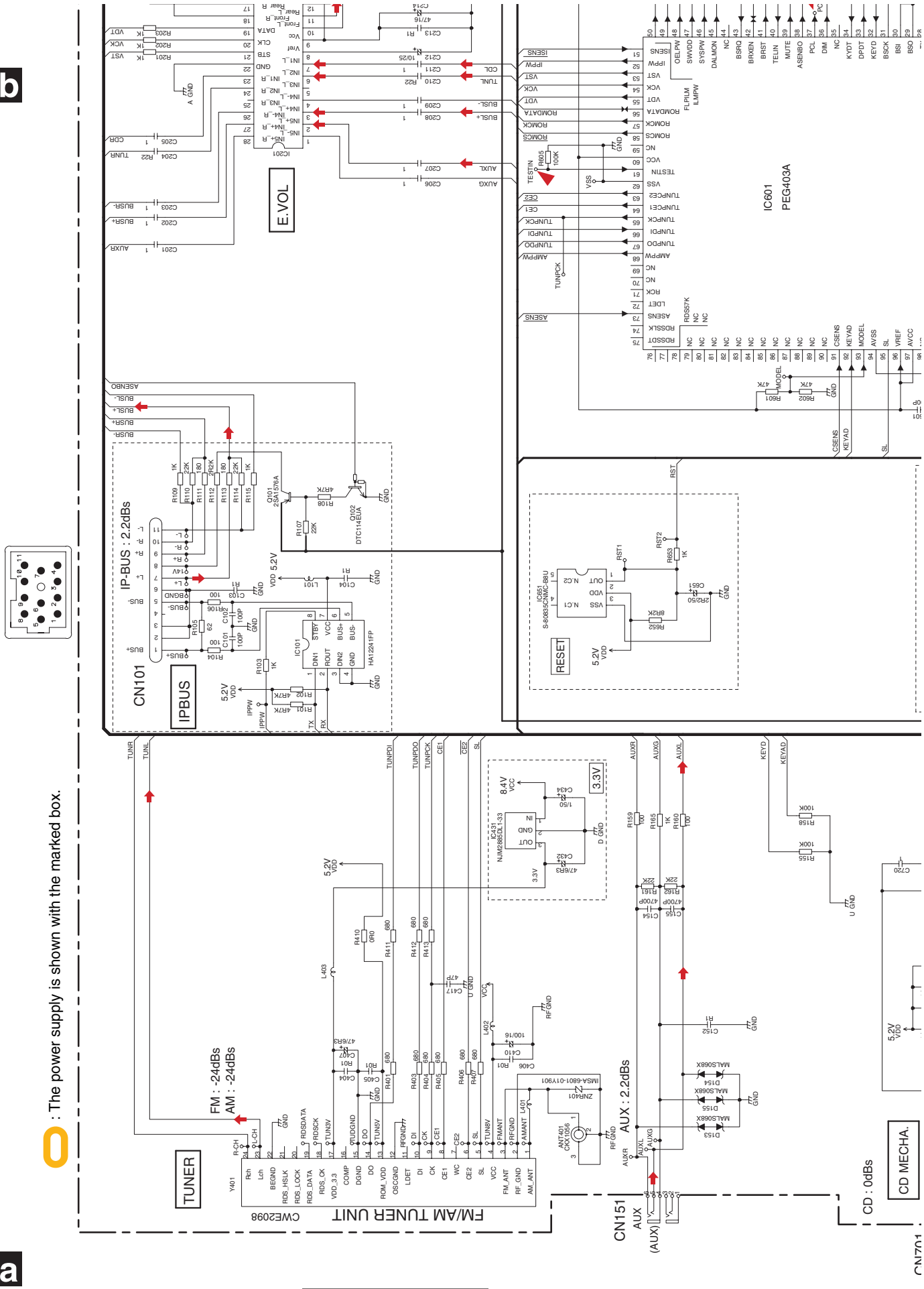

A TUNER AMP UNIT
E.VOL
CAPTAIN 6
IC201
PAL018A
8.4V
VCC
FM : -0.9dBs
AM : -0.9dBs
CD : 14.1dBs
AUX : 13.3dBs
IP-BUS : 14.3dBs
12V HIGH OUT
REAR
FRONT
SW
RCA OUT
CN301
IC601
PEG403A
SYS+B
IC911
NJM2388F84
VDD REG.
MUTING
AMP
IC351
PAL007C
E-MUTE
B.REM
CN981
CN801
DSENS
DETACH
ASENS
BSENS
ILM SENS
ILM CONTROL
ID
SWVDD
OEL PW
OEL 14V
FM : 21.1dBs
AM : 21.1dBs
CD : 36.1dBs
AUX : 35.3dBs
IP-BUS : 36.3dBs

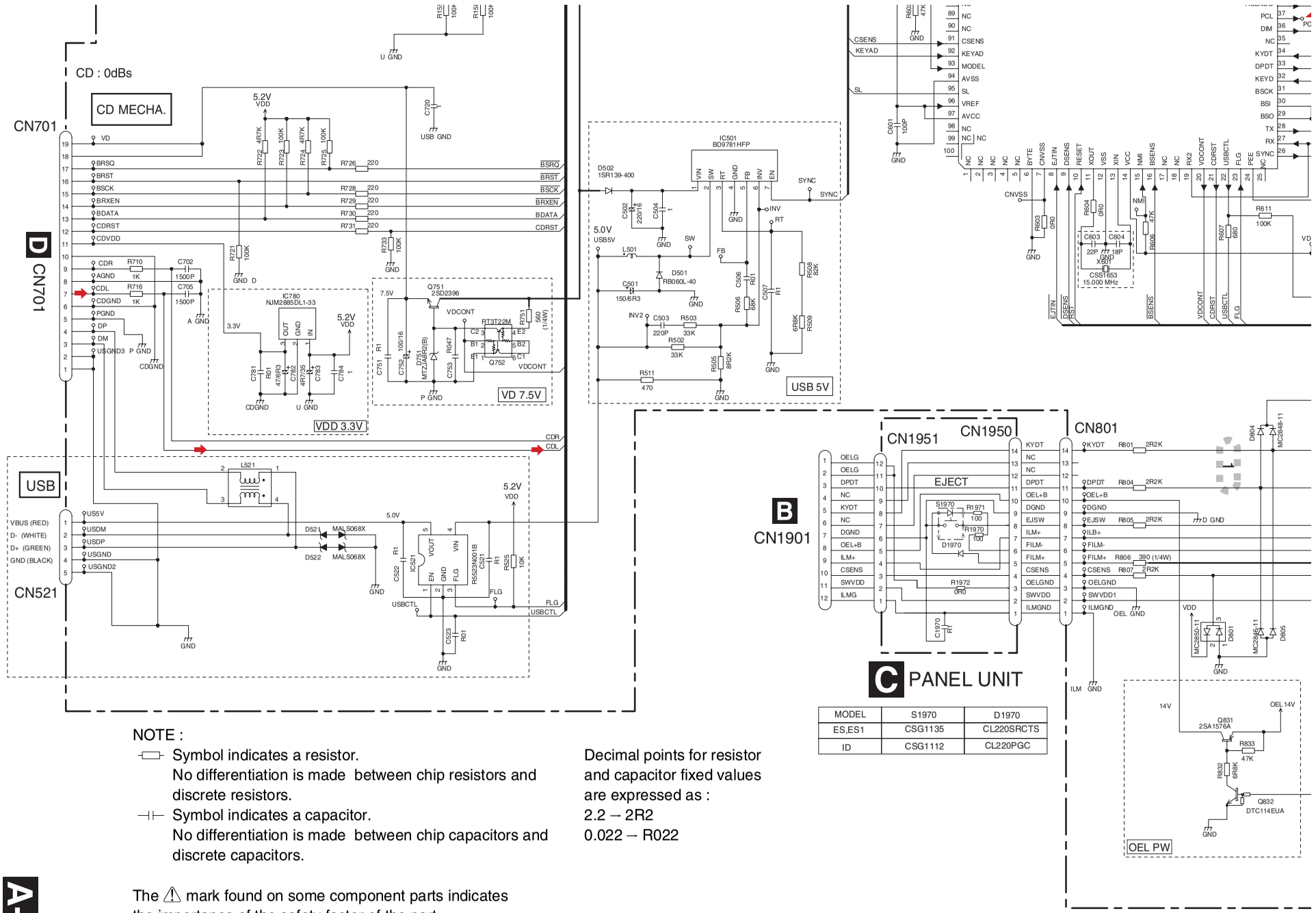
A TUNER AMP UNIT

DEH-P5050UB/XN/ES




CN981
B.REM
FM : 21.1dBs
AM : 21.1dBs
CD : 36.1dBs
AUX : 35.3dBs
IP-BUS : 36.3dBs
E-MUTE
ASENS
BSENS
ILM SENS
OEL 14V
VDD REG.
DETACH
DSENS
SWVDD
ILM CONTROL
ID
A-a
A-b
A-b
DEH-P5050UB/XN/ES
45


A-b
A-a
: The power supply is shown with the marked box.
E.VOL
IC601
PEG403A
IP-BUS : 2.2dBs
CN101
IPBUS
RESET
TUNER
FM/AM TUNER UNIT
CWE2098
FM : -24dBs
AM : -24dBs
AUX : 2.2dBs
CD : 0dBs
CD MECHA.
CN151
AUX
(AUX)
DEH-P5050UB/XN/ES
46



MODEL	S1970	D1970
ES,ES1	CSG1135	CL220SRCTS
ID	CSG1112	CL220PGC

NOTE :

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

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

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

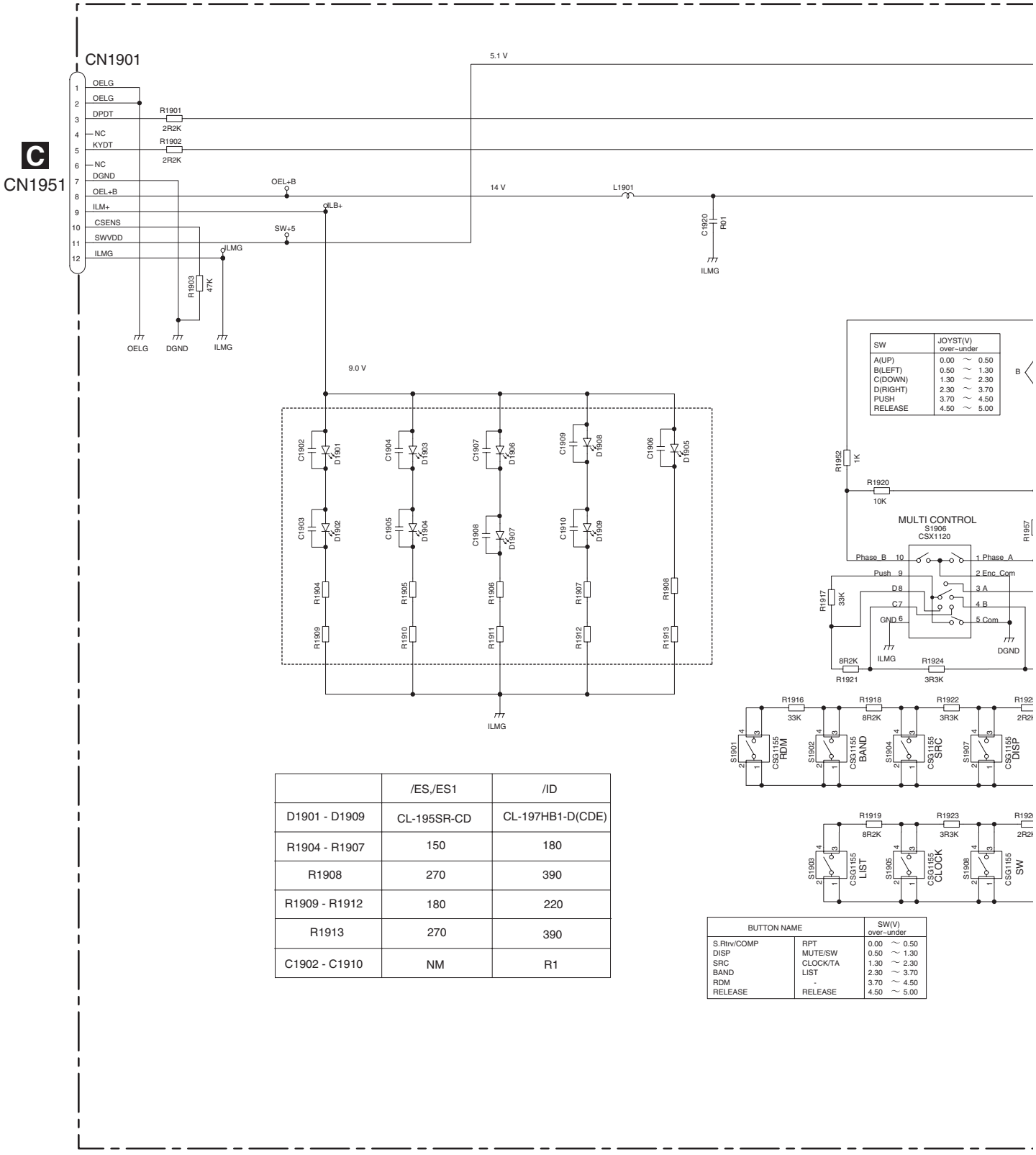
A-a | A-b

A-a C

A-b

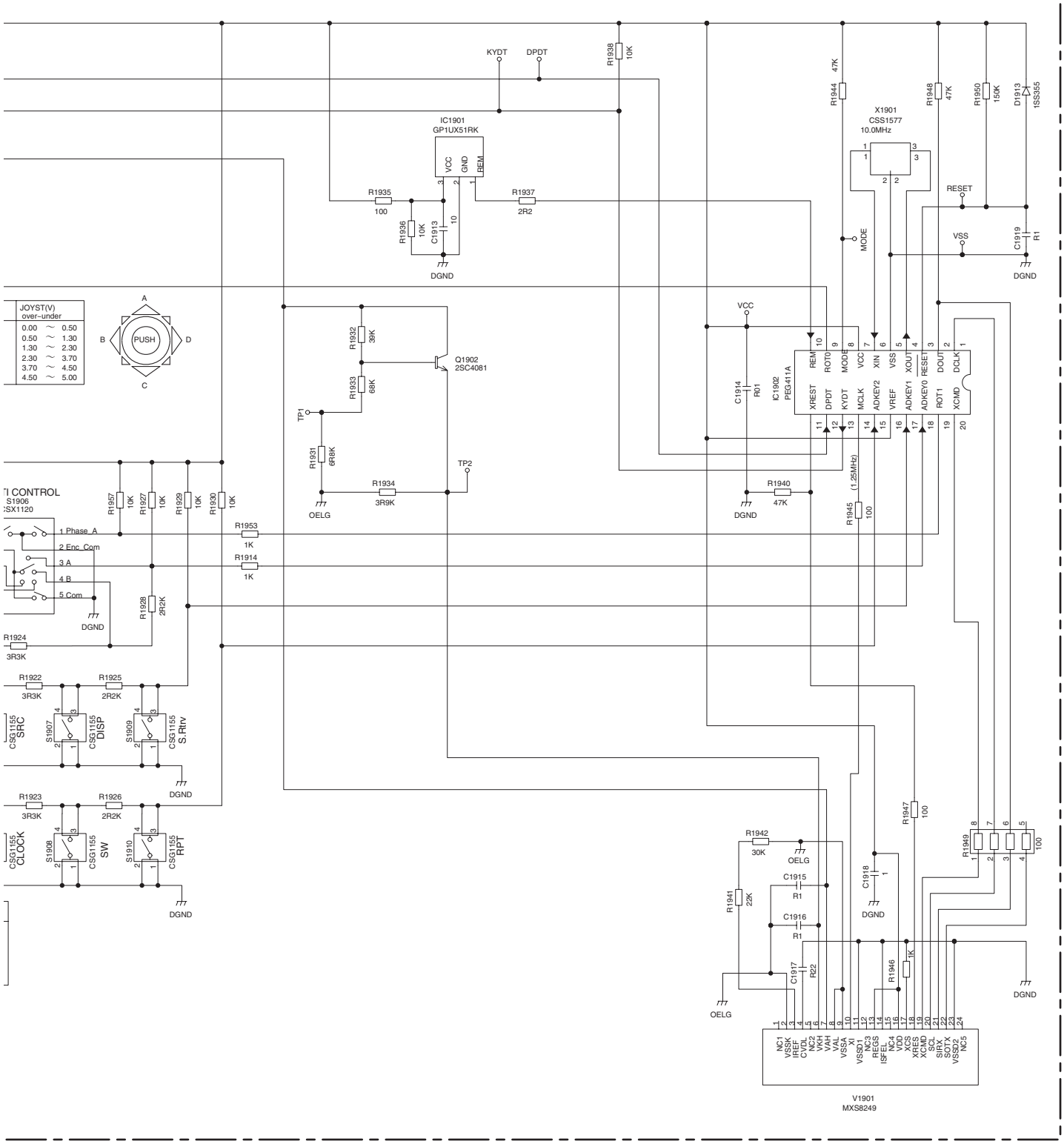
DEH-P5050UB/XN/ES

10.2 KEYBOARD UNIT



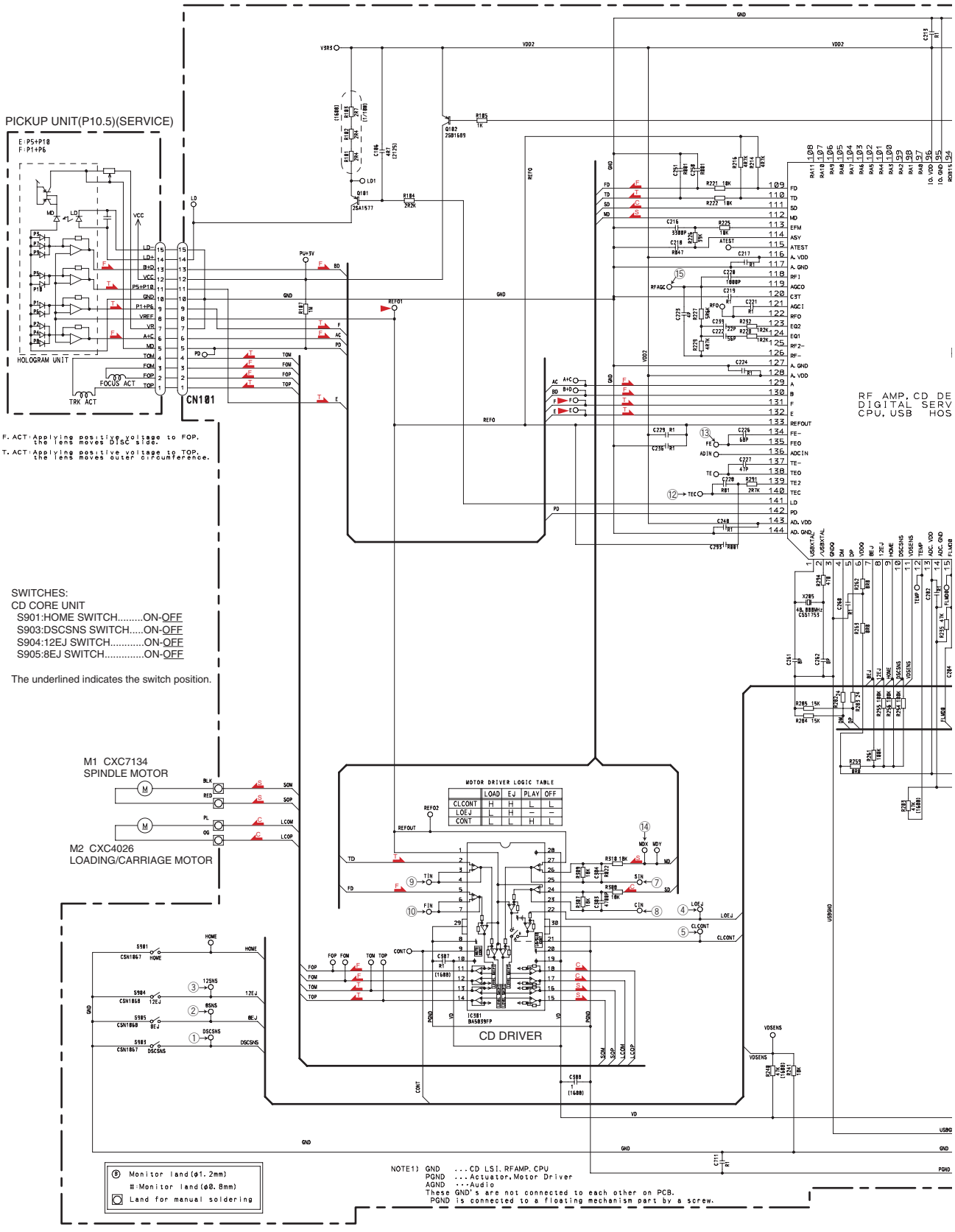
	/ES,/ES1	/ID
D1901 - D1909	CL-195SR-CD	CL-197HB1-D(CDE)
R1904 - R1907	150	180
R1908	270	390
R1909 - R1912	180	220
R1913	270	390
C1902 - C1910	NM	R1

B KEYBOARD UNIT



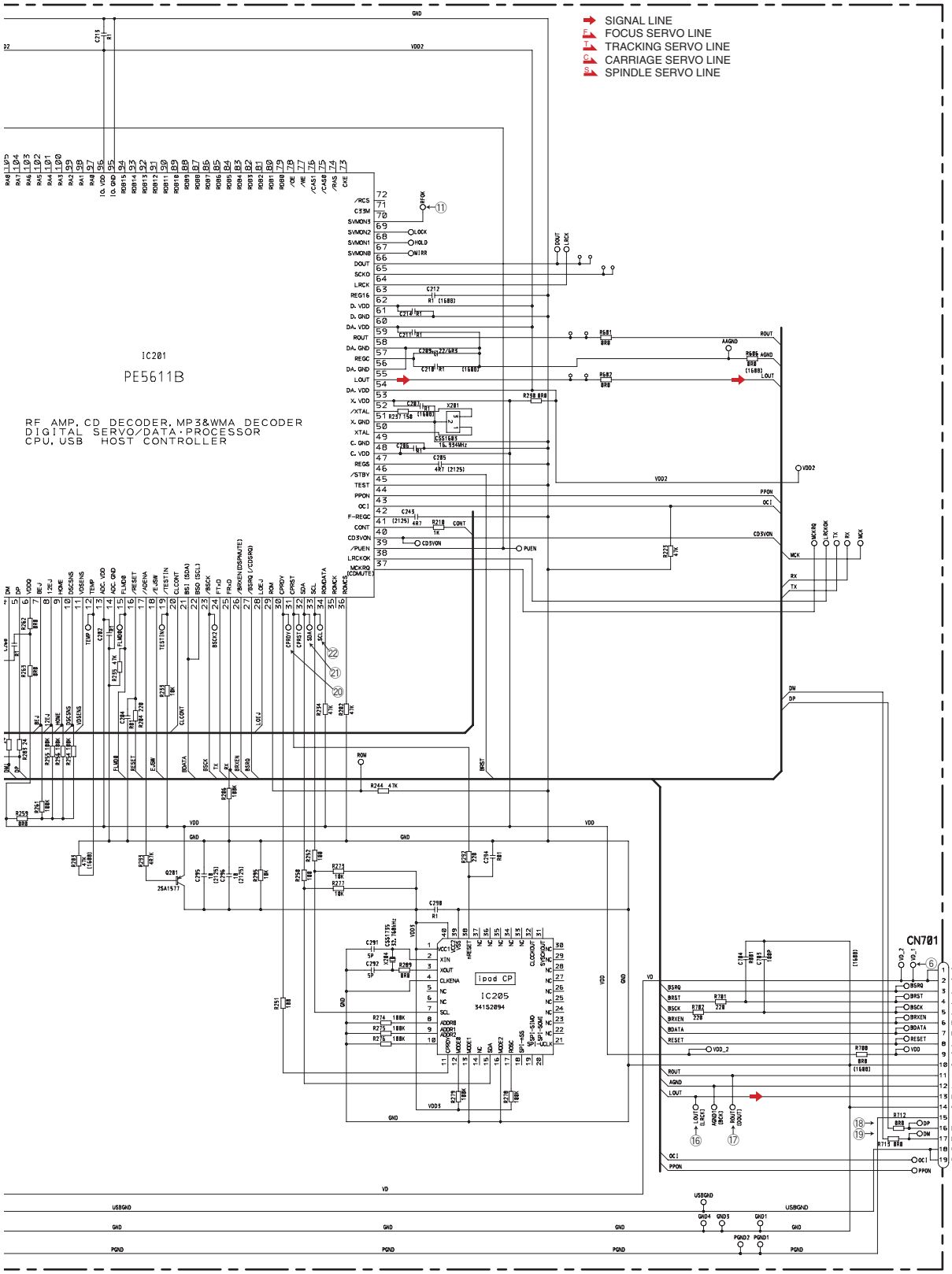
10.3 CD MECHANISM MODULE(GUIDE PAGE)

D-a

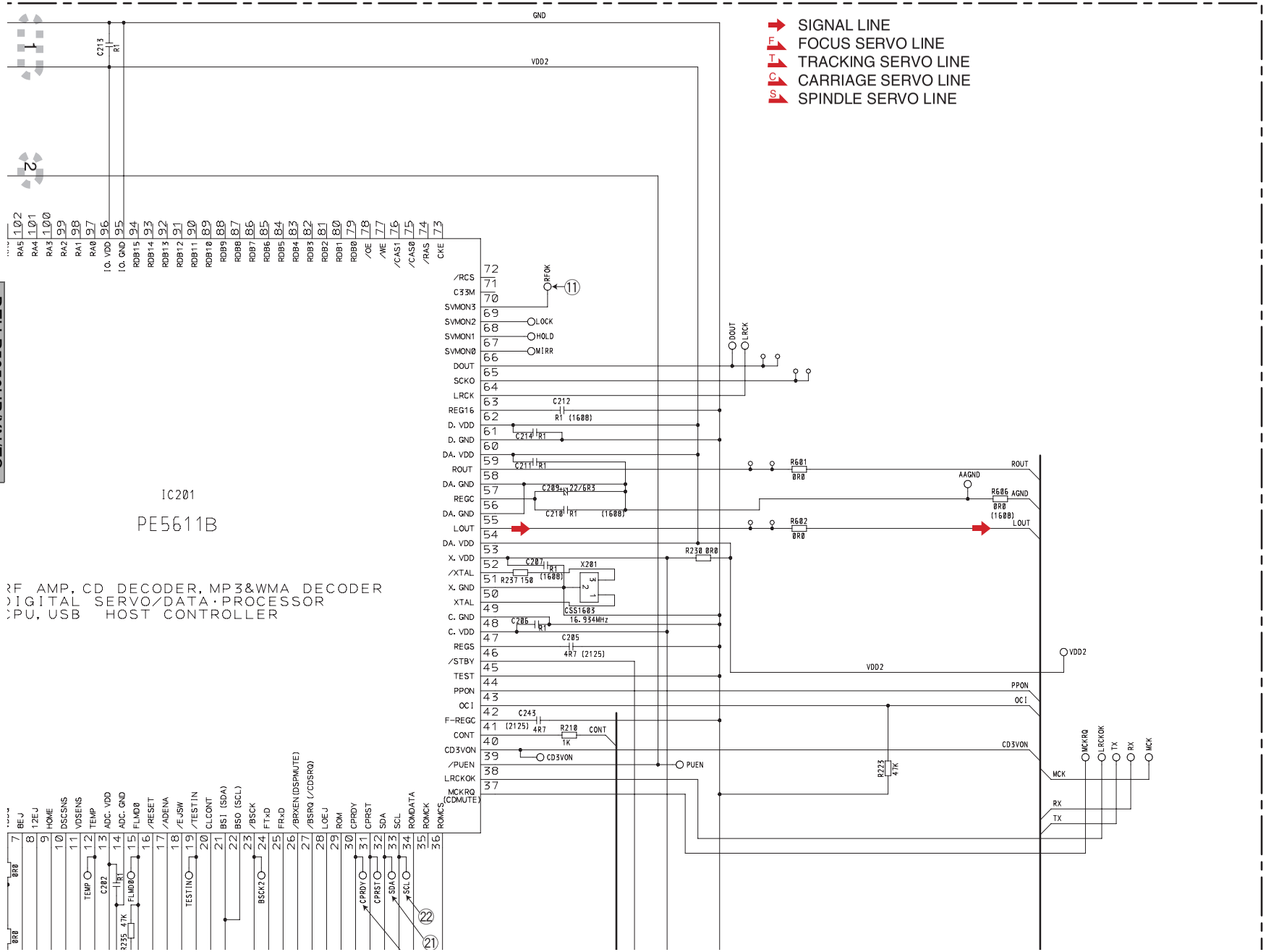


D-b

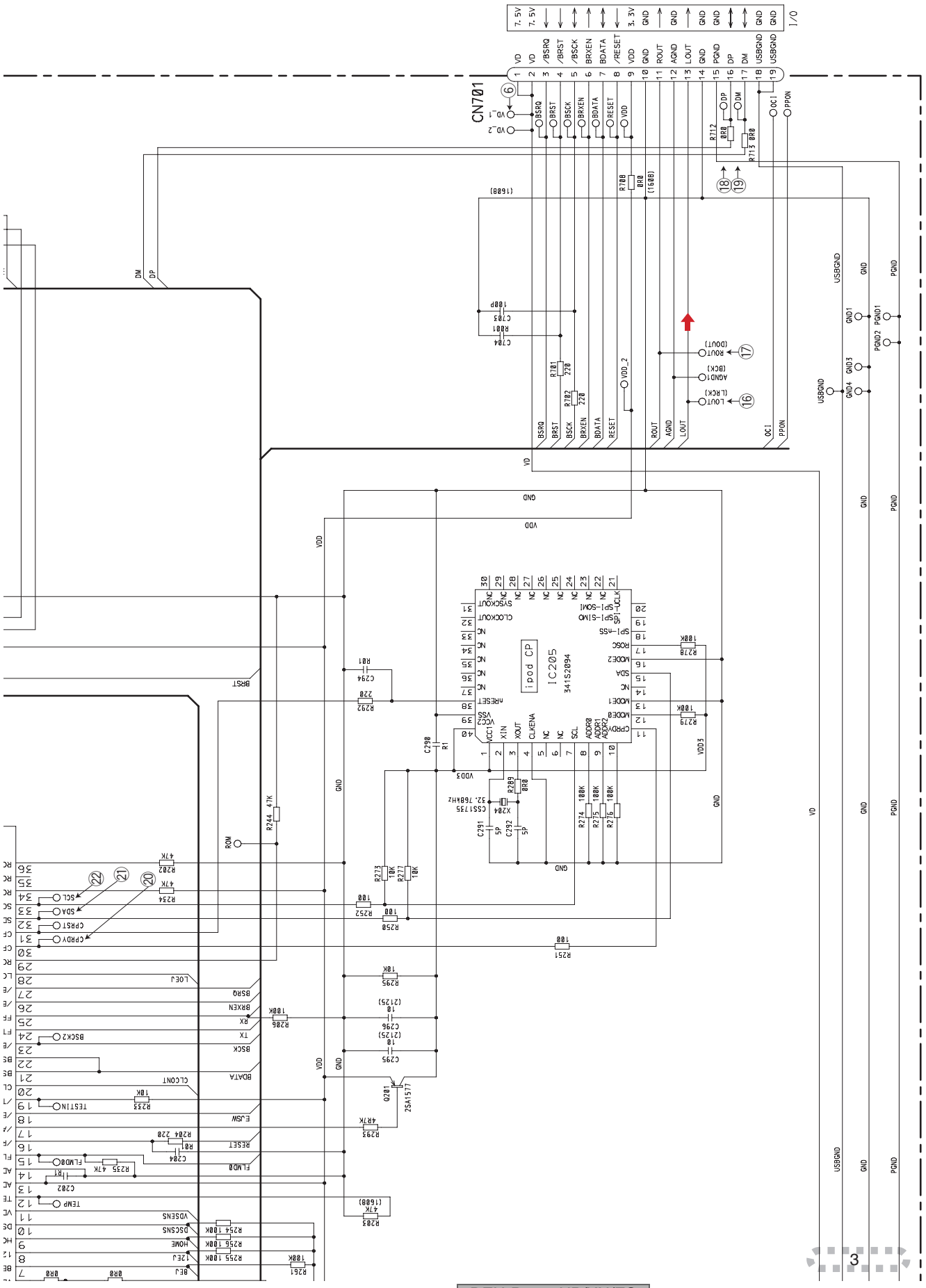
D CD CORE UNIT(S10.5COMP2-iPod)

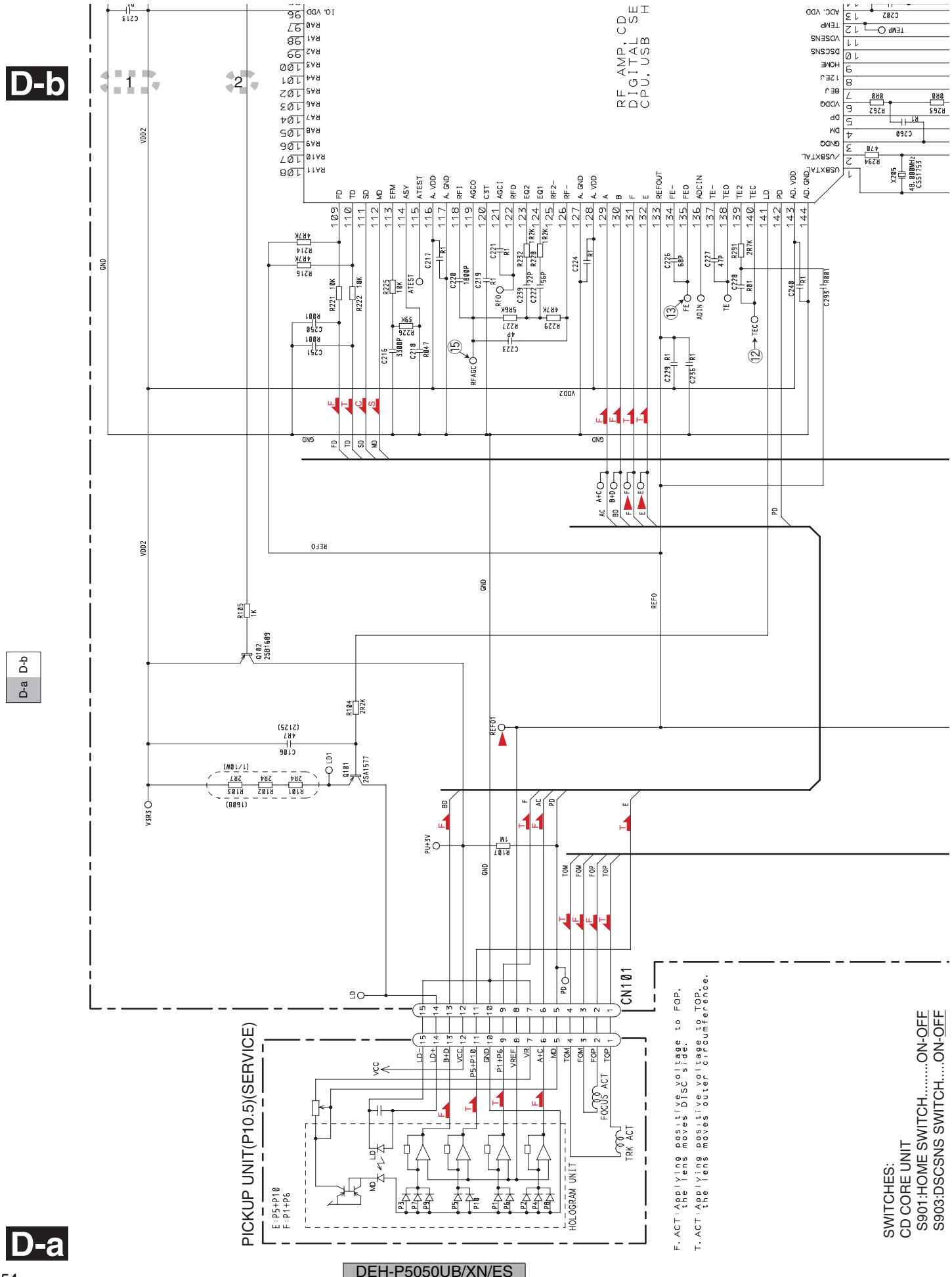


D CD CORE UNIT(S10.5COMP2-iPod)



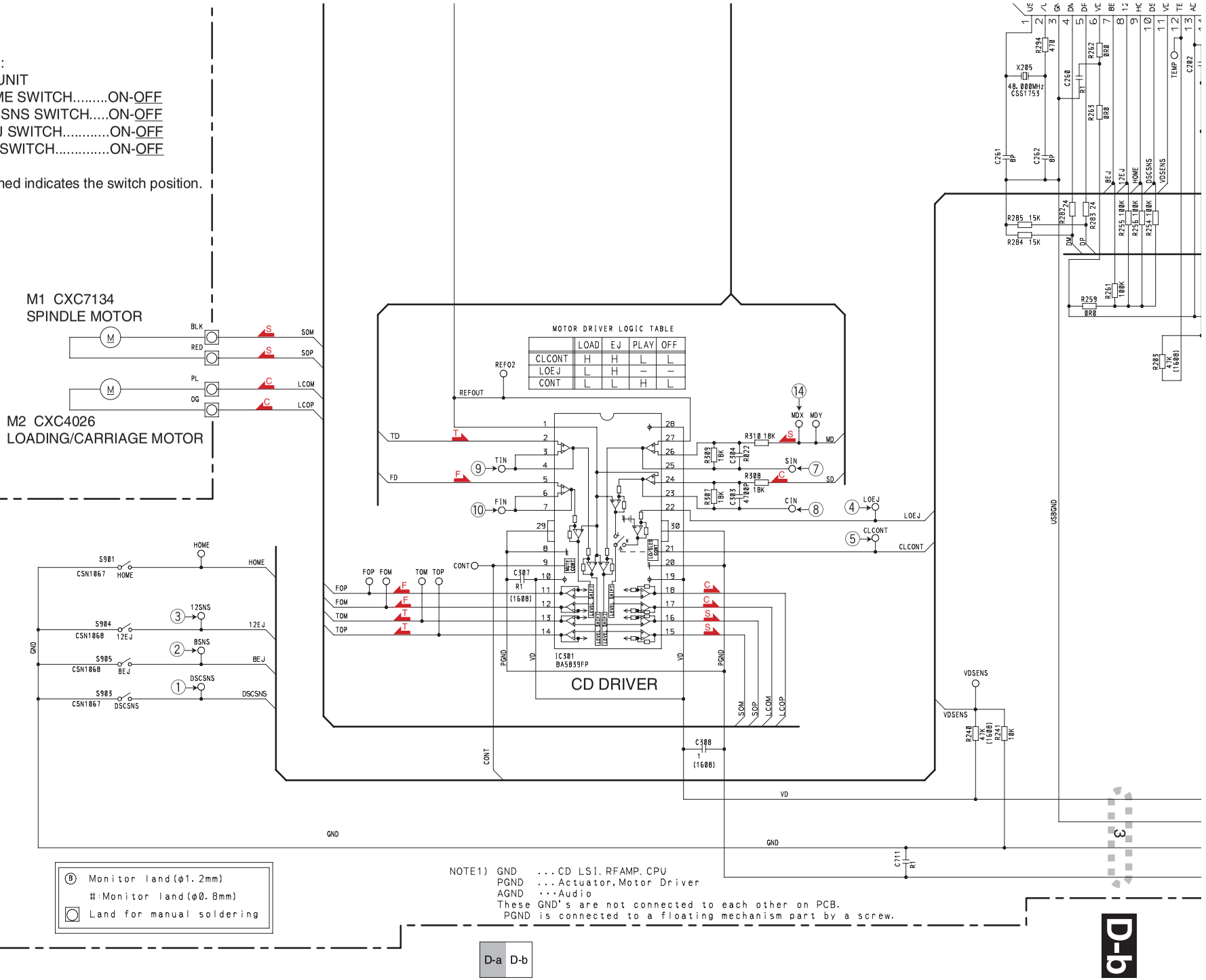
A CN701


CN701
IC205
ipod CP
3415Z094
X204
32.768KHZ
Q201
2SA1577
D-a D-b
D-b
3


D-b
D-a
RF AMP, CD DIGITAL SE CPU, USB H
PICKUP UNIT(P10.5)(SERVICE)
E:P5+P10
F:P1+P6
HOLOGRAM UNIT
CN101
F. ACT : Applying positive voltage to FOP. the lens moves DISC side.
T. ACT : Applying positive voltage to TOP. the lens moves outer circumference.
SWITCHES:
CD CORE UNIT
S901:HOME SWITCH.....ON-OFF
S903:DSCSNS SWITCH.....ON-OFF

SWITCHES:
CD CORE UNIT
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.



D-a D-b

D-a

D-b

10.4 WAVEFORMS

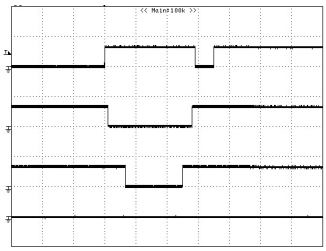
● CD CORE UNIT

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

①DSCSNS	5 V/div	500 ms/div
②8SNS	5 V/div	
③12SNS	5 V/div	
④LOEJ	5 V/div	

12 cm CD Loading operation

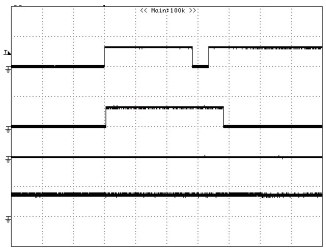
Ref.: GND
Mode: Normal



①DSCSNS	5 V/div	500 ms/div
⑤CLCONT	5 V/div	
④LOEJ	5 V/div	
⑥VD	10 V/div	

12 cm CD Loading operation

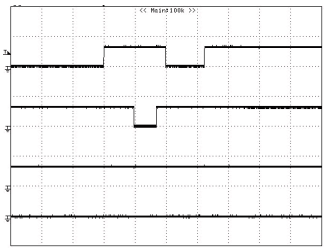
Ref.: GND
Mode: Normal



①DSCSNS	5 V/div	500 ms/div
②8SNS	5 V/div	
③12SNS	5 V/div	
④LOEJ	5 V/div	

8 cm CD Loading operation

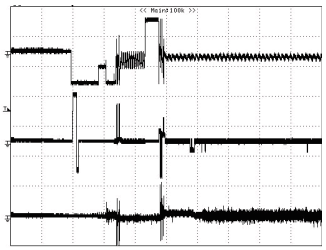
Ref.: GND
Mode: Normal



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

12 cm CD-DA setup operation after loading

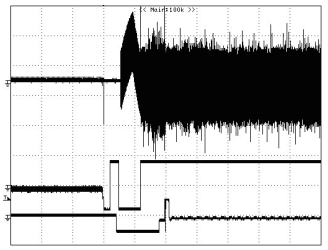
Ref.: REFO
Mode: Normal



⑩FIN	200 mV/div	500 ms/div
⑪RFOK(MONI_3)	2 V/div	
⑦SIN	2 V/div	

12 cm CD-DA Source On setup operation

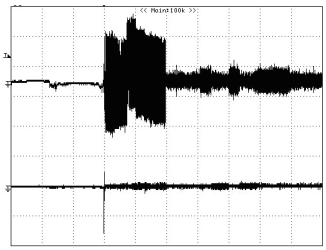
Ref.: REFO
Mode: Normal



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

Source On setup operation

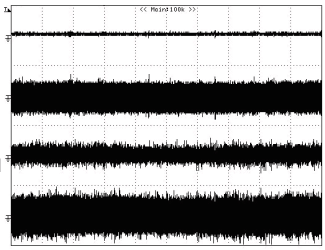
Ref.: REFO
Mode: Normal



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

CD-DA Play operation

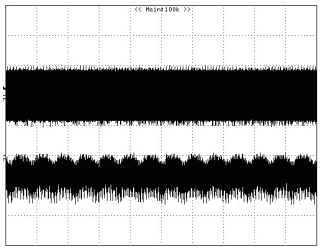
Ref.: REFO
Mode: Normal



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

Spindle waveform during play operation

Ref.: REFO
Mode: Normal



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

Spindle waveform during play operation (Wider)

Ref.: REFO
Mode: Normal

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

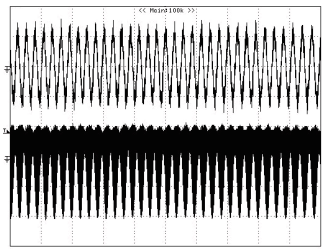
Focus Search waveform

Ref.: REFO
Mode: TEST

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

Track Open waveform

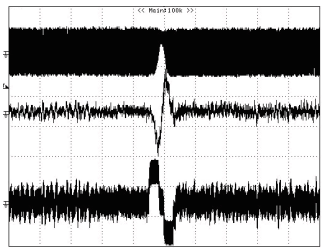
Ref.: REFO
Mode: TEST



⑮RFAGC	1 V/div	500 µs/div
⑫TE	500 mV/div	
⑨TIN	500 mV/div	

1 Track Jump waveform

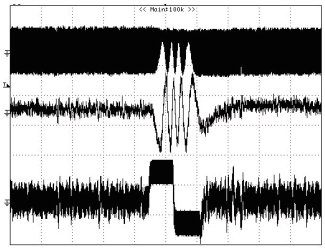
Ref.: REFO
Mode: TEST



⑮RFAGC	1 V/div	500 µs/div
⑫TE	500 mV/div	
⑨TIN	500 mV/div	

4 Tracks Jump waveform

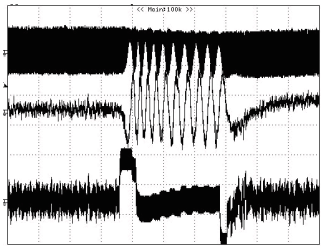
Ref.: REFO
Mode: TEST



⑮RFAGC	1 V/div	500 µs/div
⑫TE	500 mV/div	
⑨TIN	500 mV/div	

10 Tracks Jump waveform

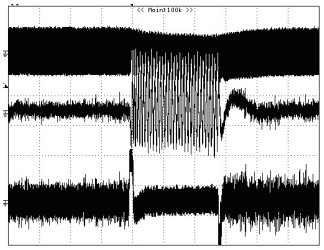
Ref.: REFO
Mode: TEST



⑮RFAGC	1 V/div	2 ms/div
⑫TE	500 mV/div	
⑨TIN	500 mV/div	

32 Tracks Jump waveform

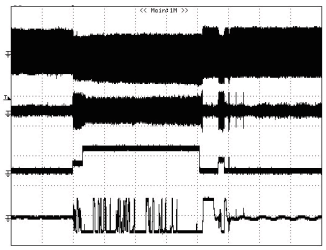
Ref.: REFO
Mode: TEST



⑮RFAGC	1 V/div	200 ms/div
⑫TE	1 V/div	
⑧CIN	1 V/div	
⑦SIN	2 V/div	

Search operation(Outter to Inner)

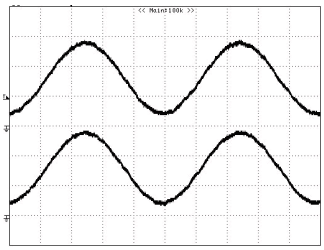
Ref.: REFO
Mode: Normal



⑯LOUT	1 V/div	200 µs/div
⑰ROUT	1 V/div	

Analog audio waveform

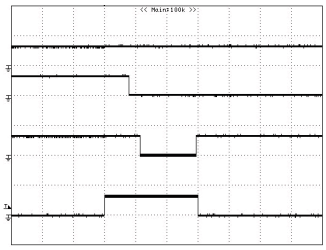
Ref.: AGND
Mode: Normal



①DSCSNS	5 V/div	500 ms/div
②8SNS	5 V/div	
③12SNS	5 V/div	
④LOEJ	5 V/div	

12 cm CD Eject operation

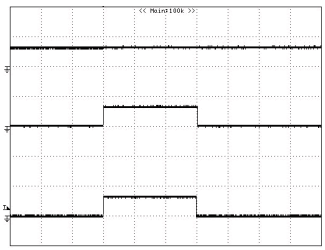
Ref.: GND
Mode: Normal



①DSCSNS	5 V/div	500 ms/div
⑤CLCONT	5 V/div	
④LOEJ	5 V/div	

12 cm CD Eject operation

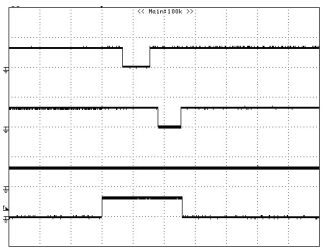
Ref.: GND
Mode: Normal



①DSCSNS	5 V/div	500 ms/div
②8SNS	5 V/div	
③12SNS	5 V/div	
④LOEJ	5 V/div	

8 cm CD Eject operation

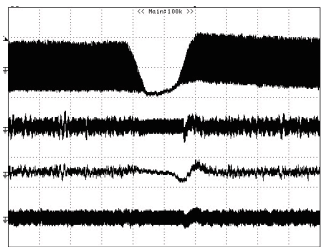
Ref.: GND
Mode: Normal



⑮RFAGC	1 V/div	500 µs/div
⑨TIN	1 V/div	
⑫TE	1 V/div	
⑩FIN	1 V/div	

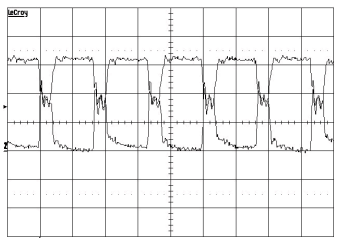
Black dot(800 µm) during play

Ref.: REFO
Mode: Normal



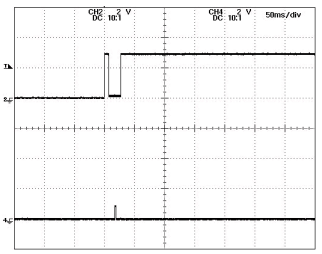
⑱DP	1 V/div	50 ns/div
⑲DM	1 V/div	

USB Play



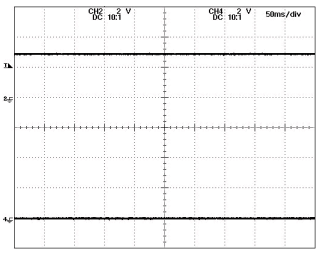
⑱DP	2 V/div	50 ms/div
⑲DM	2 V/div	

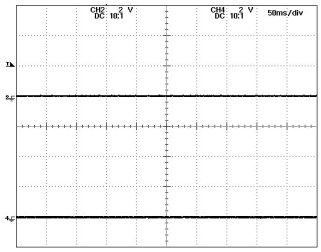
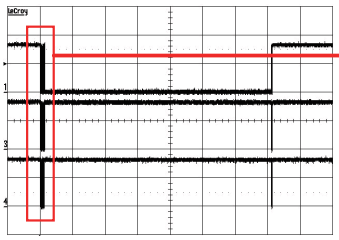
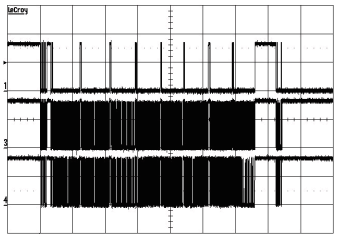
USB device inserting to USB connector.



⑱DP	2 V/div	50 ms/div
⑲DM	2 V/div	

CD Play with USB(iPod) device connecting.



⑱DP 2 V/div 50 ms/div ⑲DM 2 V/div ACC OFF with USB(iPod) device connecting. 	⑳CPRDY 2 V/div 10 s/div ㉑SDA 2 V/div ㉒SCL 2 V/div iPod Authentication Operation 	⑳CPRDY 2 V/div ㉑SDA 2 V/div ㉒SCL 2 V/div iPod Authentication Operation(zoom until 2 s) 

A

B

C

D

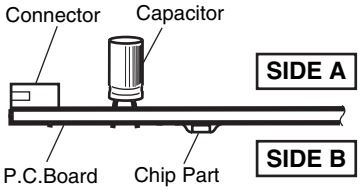
E

F

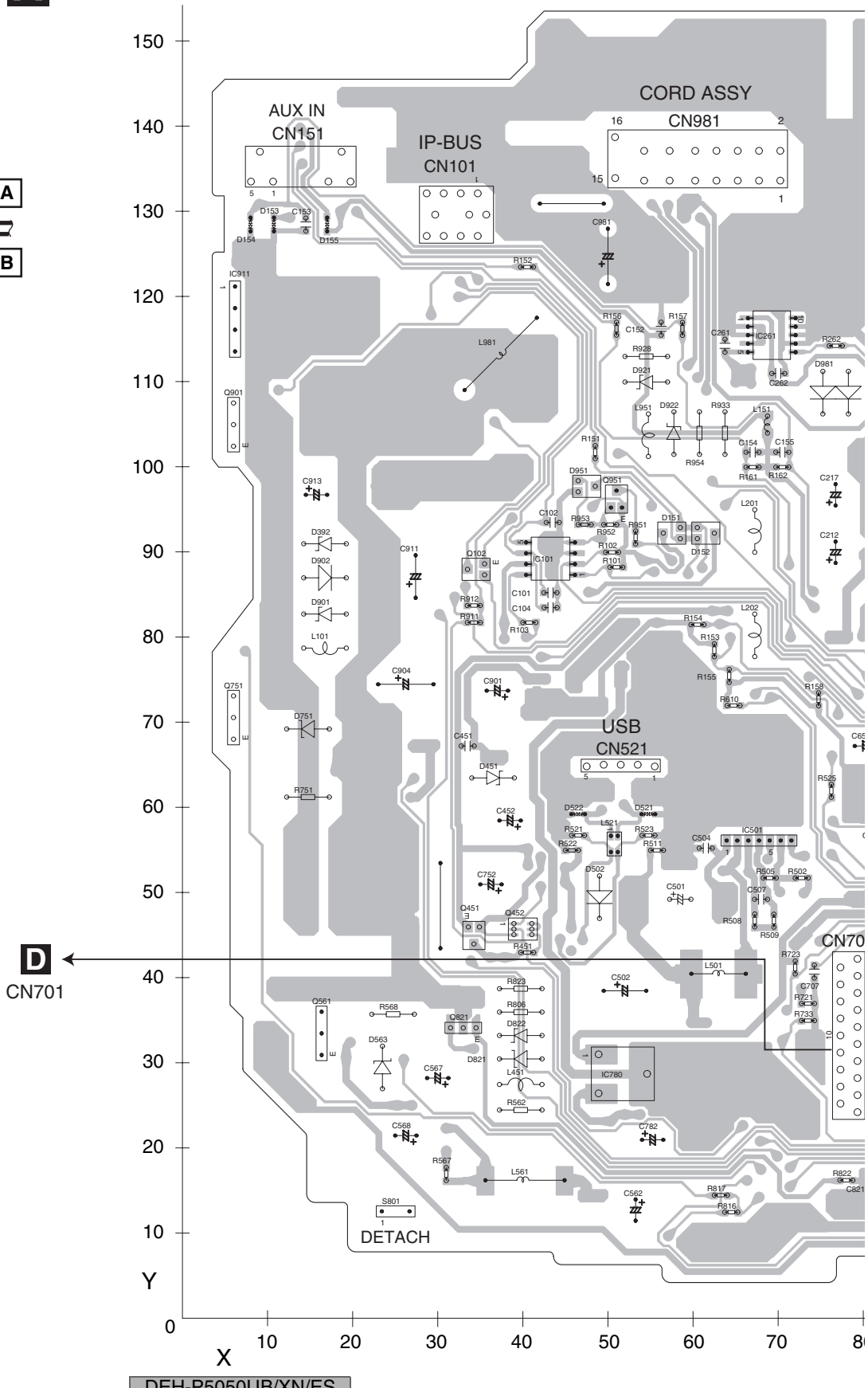
11. PCB CONNECTION DIAGRAM
11.1 TUNER AMP UNIT

NOTE FOR PCB DIAGRAMS

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



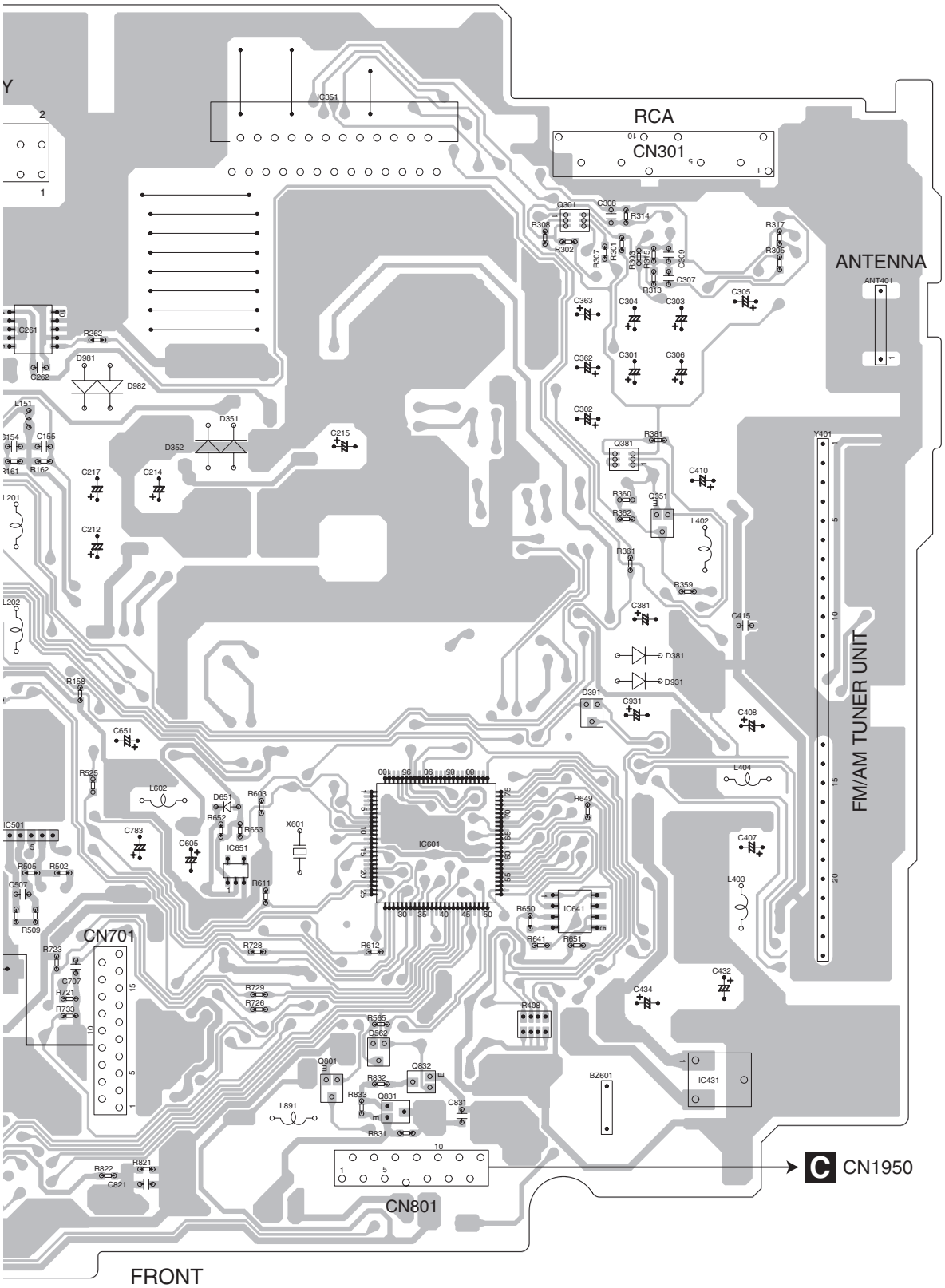
A TUNER AMP UNIT



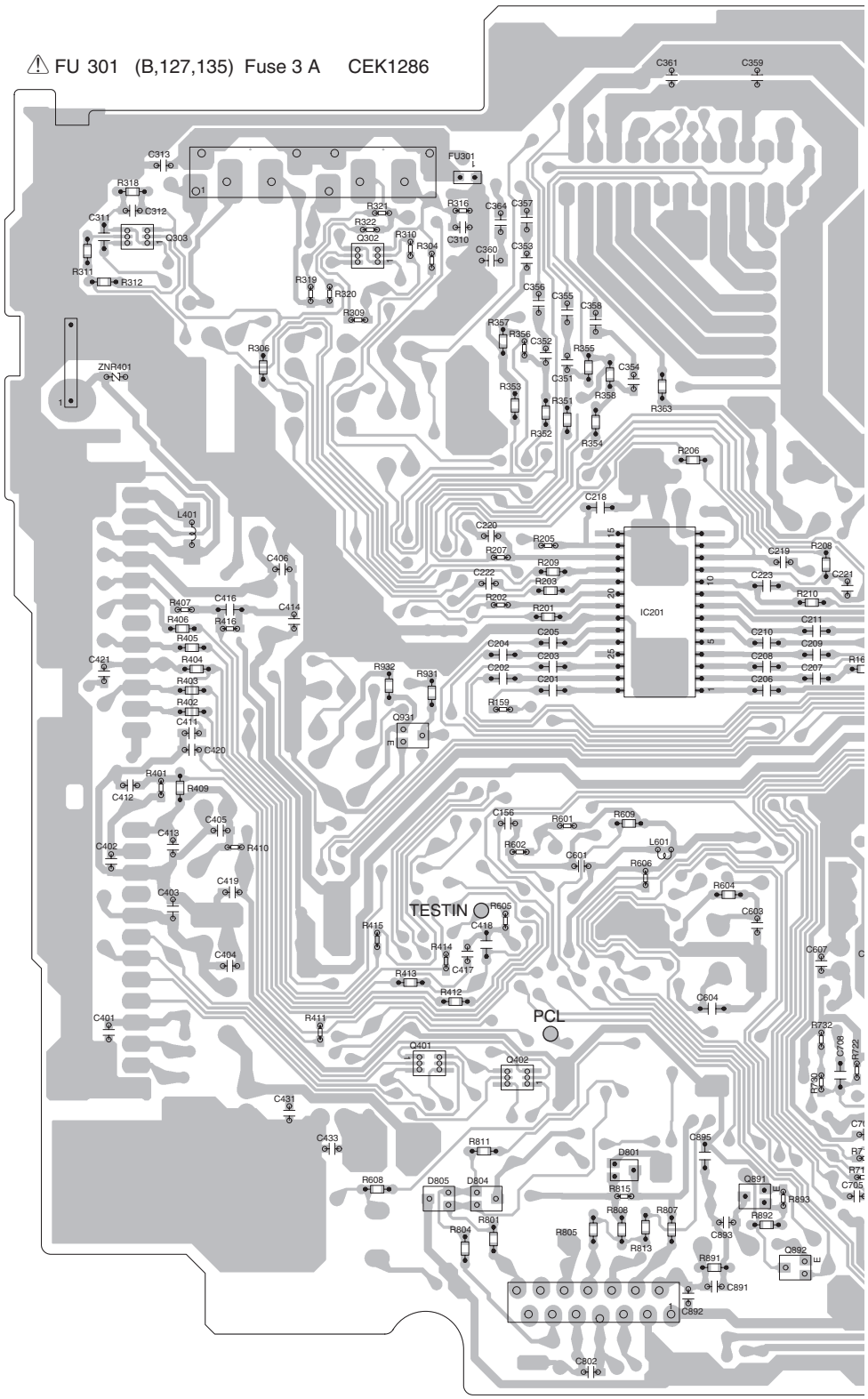
D

A

SIDE A


RCA
CN301
ANTENNA
ANT401
FM/AM TUNER UNIT
CN701
CN801
C CN1950
FRONT
IC351
IC261
IC601
IC651
IC641
IC431
X601
BZ601
70 80 90 100 110 120 130 140 150 160 170

A TUNER AMP UNIT



A

B

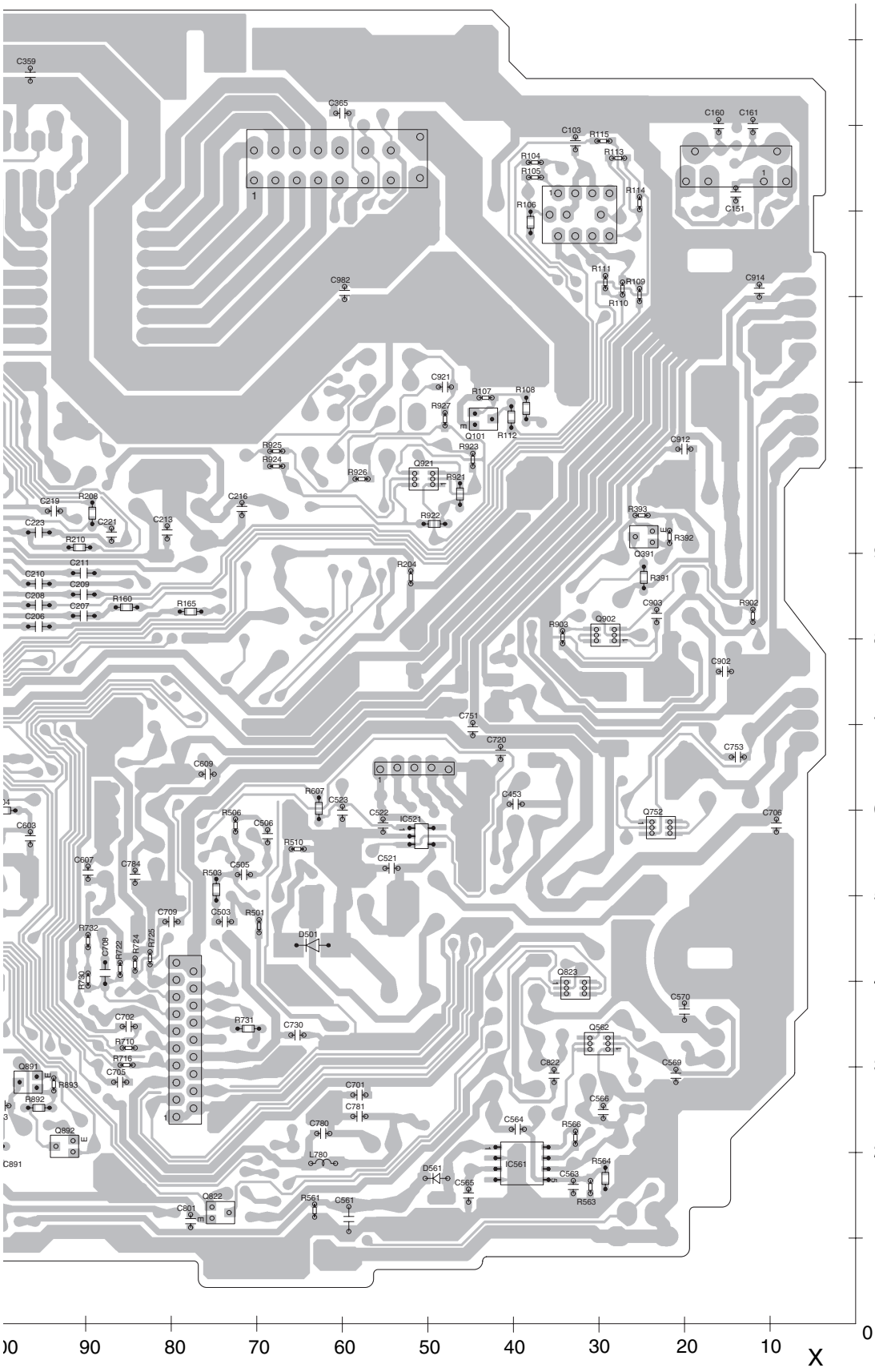
C

D

E

F

SIDE B

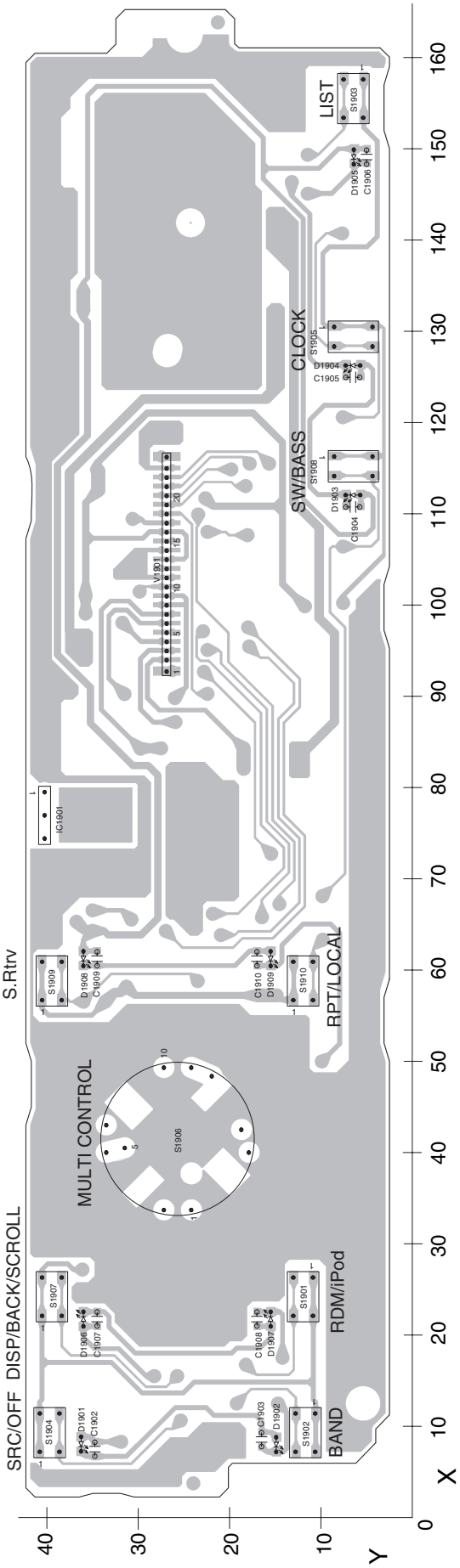


DEH-P5050UB/XN/ES

11.2 KEYBOARD UNIT

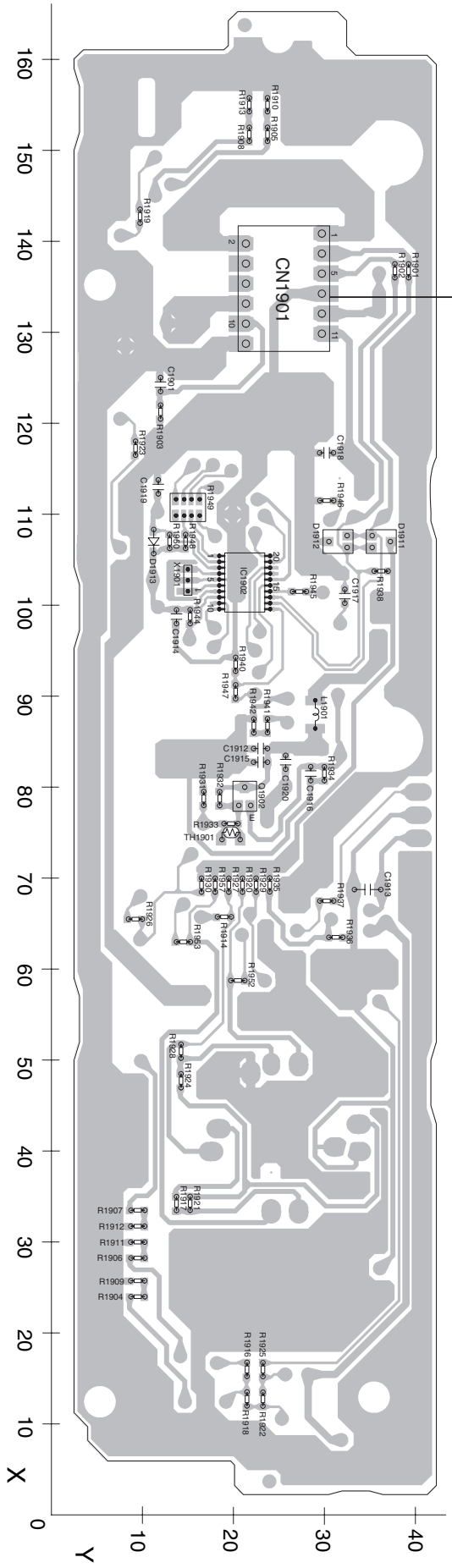
B KEYBOARD UNIT

SIDE A



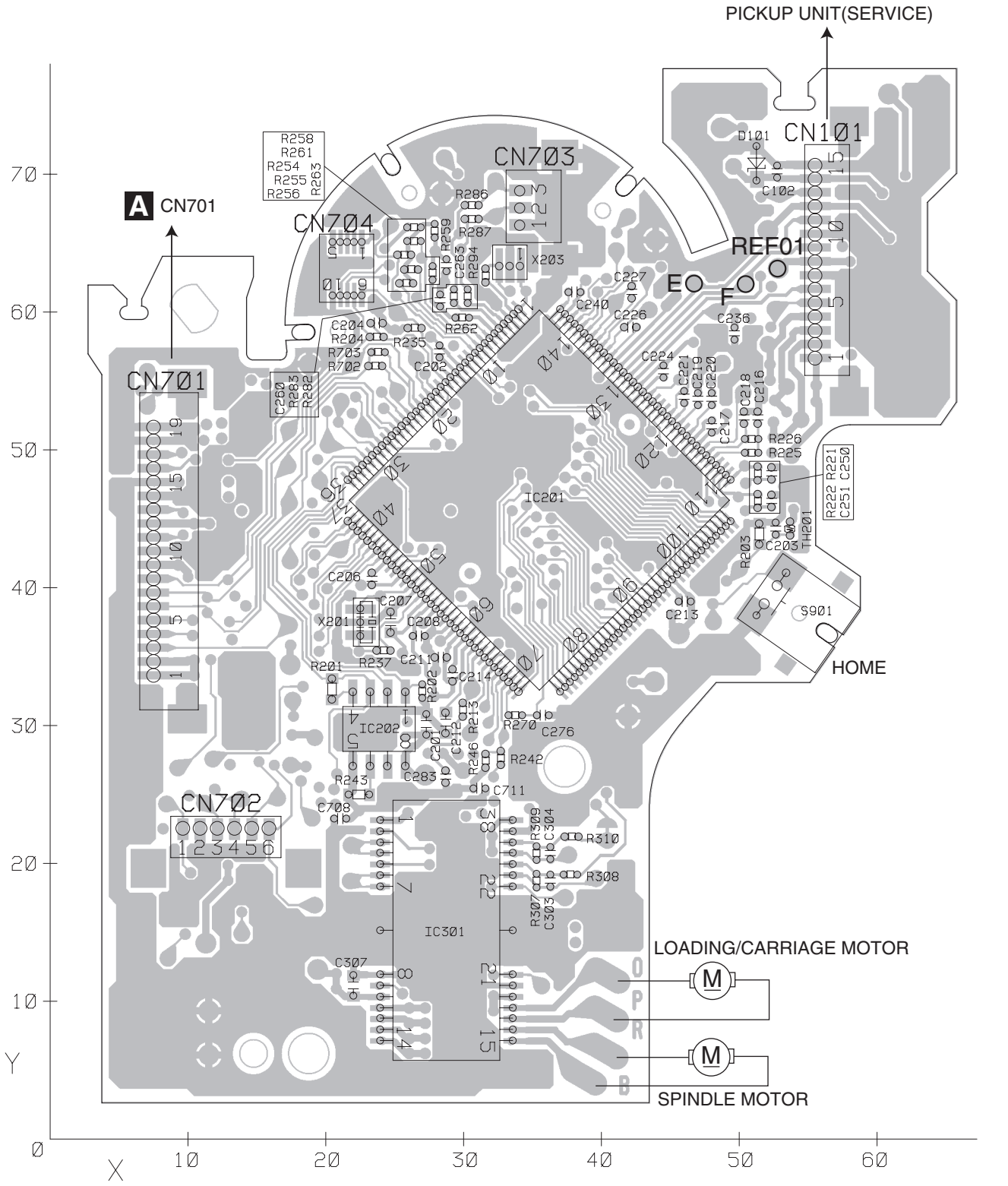
B KEYBOARD UNIT

SIDE B



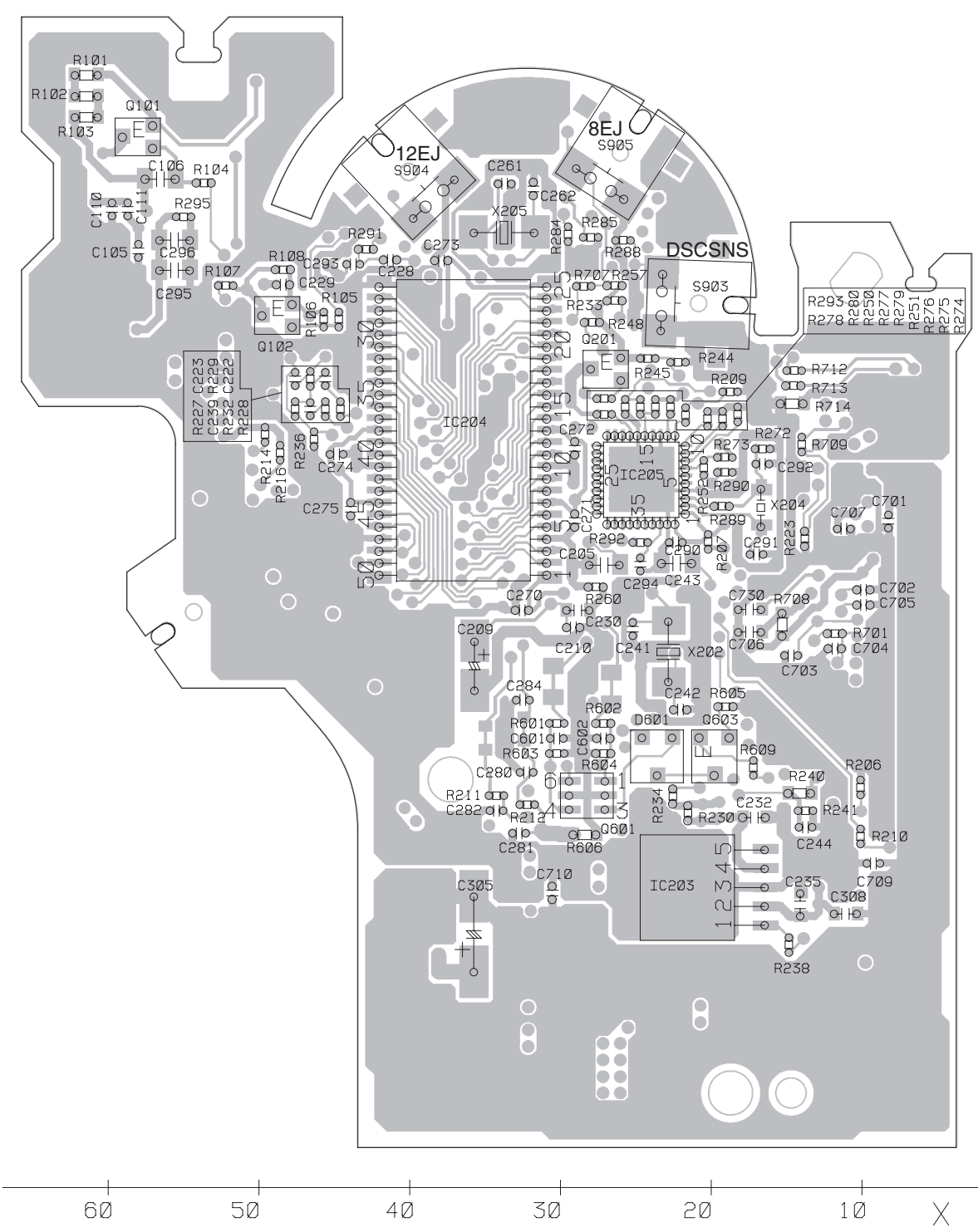
11.3 CD CORE UNIT(S10.5COMP2-iPod)

D CD CORE UNIT(S10.5COMP2-iPod) **SIDE A**



D CD CORE UNIT(10.5COMP2-iPod)

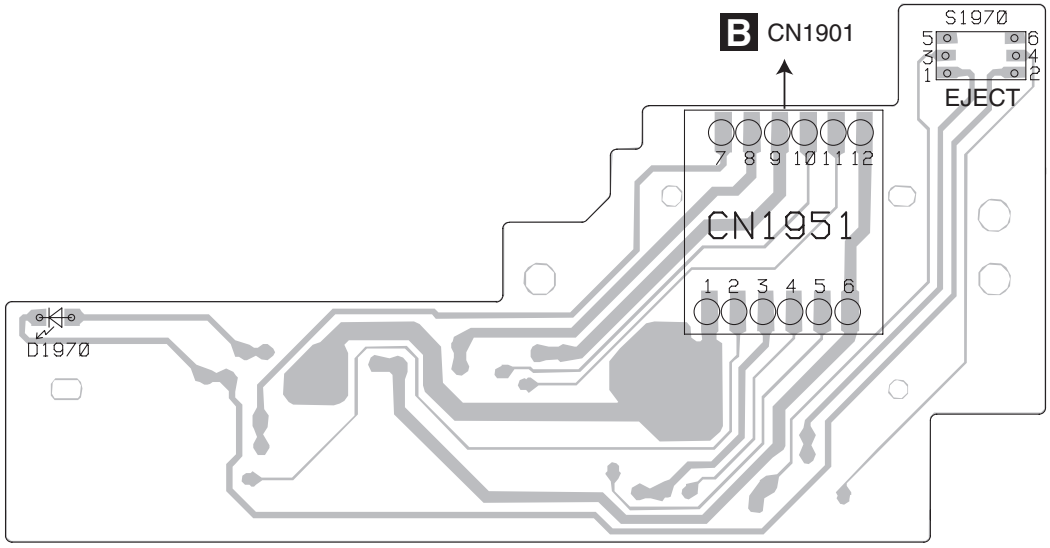
SIDE B



11.4 PANEL UNIT

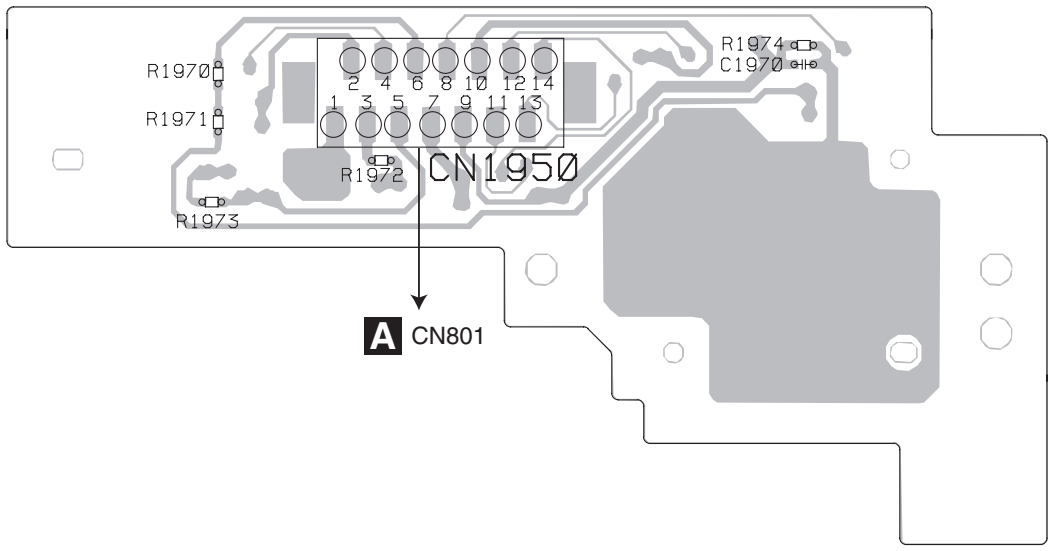
C PANEL UNIT

SIDE A



C PANEL UNIT

SIDE B



C

12. 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 ⚠ 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.**

Unit Number : QWM3013(ES,ES1)
Unit Number : QWM3016(ID)
Unit Name : Tuner Amp Unit
Unit Number : (ES,ES1)
Unit Number : (ID)
Unit Name : Keyboard Unit
Unit Number : CWM9835
Unit Name : Panel Unit
Unit Number : CWX3526
Unit Name : CD Core Unit(S10.5COMP2-iPod)

A

Unit Number : QWM3013(ES,ES1)
Unit Number : QWM3016(ID)
Unit Name : Tuner Amp Unit

MISCELLANEOUS

IC 101	(A,43,89) IC	HA12241FP
IC 201	(B,107,90) IC	PML018A
IC 351	(A,105,140) IC	PAL007C
IC 431	(A,152,27) IC	NJM2885DL1-33
IC 501	(A,68,61) Regulator IC	BD9781HFP
IC 521	(B,51,57) IC	R5523N001B
IC 561	(B,39,19) IC	NJM2360M
IC 601	(A,117,55) IC	PEG403A
IC 651	(A,93,52) IC	S-80835CNMC-B8U
IC 780	(A,54,29) IC	NJM2885DL1-33
IC 911	(A,6,121) IC	NJM2388F84
Q 101	(B,44,106) Transistor	2SA1576A
Q 102	(A,35,88) Chip Transistor	DTC114EUA
Q 301	(A,133,128) Transistor	RT3C99M
Q 302	(B,138,127) Transistor	RT3C99M
Q 303	(B,162,129) Transistor	RT3C99M
Q 351	(A,143,93) Chip Transistor	DTC124EUA
Q 381	(A,139,100) Transistor	RT3T22M
Q 391	(B,25,92) Transistor	2SC4081
Q 451	(A,34,45) Transistor	2SC4081
Q 452	(A,40,46) Transistor	RT3T22M
Q 561	(A,16,33) Transistor	2SD1858
Q 562	(B,30,33) Transistor	RT3T22M
Q 751	(A,7,71) Transistor	2SD2396
Q 752	(B,23,58) Transistor	RT3T22M
Q 801	(A,104,26) Transistor	RT1N431M
Q 821	(A,33,36) Transistor	2SD1767
Q 822	(B,74,13) Chip Transistor(ID)	DTC114EUA
Q 823	(B,33,39) Transistor	RT3T22M
Q 831	(A,112,24) Transistor	2SA1576A
Q 832	(A,115,27) Chip Transistor	DTC114EUA
Q 891	(B,97,28) Transistor	2SA1576A
Q 892	(B,93,21) Chip Transistor	DTC114EUA
Q 901	(A,7,105) Transistor	2SD2396
Q 902	(B,29,80) Transistor	RT3T22M
Q 921	(B,51,99) Transistor	RT3CLLM
Q 931	(B,133,77) Chip Transistor	DTC114EUA
D 153	(A,11,128) Diode	MALS068X
D 154	(A,8,128) Diode	MALS068X
D 155	(A,17,128) Diode	MALS068X
D 351	(A,93,102) Diode	1SR139-400
D 352	(A,90,102) Diode	1SR139-400
D 381	(A,140,77) Diode	1SS133
D 391	(A,135,70) Diode	MC2848-11
D 392	(A,17,91) Diode	HZS9L(A2)
D 451	(A,37,63) Diode	HZS12L(B1)
D 501	(B,64,44) Diode	RB060L-40
D 502	(A,49,49) Diode	1SR139-400
D 521	(A,55,59) Diode	MALS068X
D 522	(A,47,59) Diode	MALS068X
D 561	(B,49,17) Diode	RB551V-30
D 562	(A,110,31) Diode	MC2848-11
D 563	(A,24,29) Diode	MTZJA10(B)
D 751	(A,15,69) Diode	MTZJA8R2(B)
D 801	(B,111,31) Diode	MC2850-11
D 804	(B,125,28) Diode	MC2848-11
D 805	(B,130,28) Diode	MC2846-11
D 821	(A,40,30) Diode	MTZJA10(B)

Circuit Symbol and No.		Part No.
D 822	(A,40,33) Diode(ID)	HZS7L(A3)
D 901	(A,17,83) Diode	HZS6L(B1)
D 902	(A,17,87) Diode	1SR139-400
D 921	(A,55,110) Diode	HZS7L(A1)
D 922	(A,58,104) Diode	HZS7L(C3)
D 931	(A,140,74) Diode	1SS133
D 981	(A,75,109) Diode	1SR139-400
D 982	(A,78,109) Diode	1SR139-400
ZNR401	(B,164,114) Surge Protector	IMSA-6801-01Y901
L 101	(A,17,79) Inductor	LAU2R2K
L 201	(A,67,92) Ferri-Inductor	LAU100K
L 202	(A,67,80) Ferri-Inductor	LAU100K
L 401	(B,156,98) Chip Coil	LCTAW4R7J2520
L 402	(A,148,90) Inductor	LAU1R0K
L 403	(A,152,48) Inductor	LAU1R0K
L 451	(A,40,27) Ferri-Inductor	LAU100K
L 501	(A,63,40) Inductor	CTH1385
L 521	(A,51,56) Inductor	CTF1713
L 561	(A,40,16) Inductor	CTF1660
L 602	(A,85,60) Ferri-Inductor	LAU100K
L 891	(A,100,23) Ferri-Inductor	LAU100K
L 981	(A,32,108) Choke Coil 600 µH	CTH1280
X 601	(A,101,54) Crystal Resonator 15.000 MHz	CSS1653
S 801	(A,25,10) Switch(DETACH)	CSN1039
⚠FU301	(B,127,135) Fuse 3 A	CEK1286
BZ601	(A,137,24) Buzzer	CPV1062
ANT401	(A,169,127) Antenna Jack	CKX1056
⚠	Fuse 10 A	YEK5001

RESISTORS

R 101	(A,51,88)	RS1/16S472J
R 102	(A,51,90)	RS1/16S472J
R 103	(A,41,82)	RS1/16S102J
R 104	(B,38,136)	RS1/16S101J
R 105	(B,38,134)	RS1/16S620J
R 106	(B,38,129)	RS1/16S101J
R 107	(B,43,108)	RS1/16S223J
R 108	(B,39,107)	RS1/16S472J
R 109	(B,25,120)	RS1/16S102J
R 110	(B,27,121)	RS1/16S223J
R 111	(B,29,122)	RS1/16S181J
R 112	(B,40,106)	RS1/16S222J
R 113	(B,28,136)	RS1/16S181J
R 114	(B,25,131)	RS1/16S223J
R 115	(B,30,138)	RS1/16S102J
R 155	(A,64,75)	RS1/16S104J
R 158	(A,75,73)	RS1/16S104J
R 159	(B,123,79)	RS1/16S101J
R 160	(B,85,84)	RS1/16S101J
R 161	(A,67,100)	RS1/16S223J
R 162	(A,71,100)	RS1/16S223J
R 165	(B,78,83)	RS1/16S102J
R 201	(B,119,89)	RS1/16S102J
R 202	(B,124,90)	RS1/16S102J
R 203	(B,118,92)	RS1/16S102J
R 205	(B,119,97)	RS1/16S0R0J
R 206	(B,103,106)	RS1/16S0R0J
R 207	(B,124,95)	RS1/16S0R0J
R 208	(B,89,95)	RS1/16S0R0J
R 209	(B,118,94)	RS1/16S0R0J

Circuit Symbol and No.		Part No.
R 210	(B,91,91)	RS1/16S0R0J
R 301	(A,138,125)	RS1/16S390J
R 302	(A,132,126)	RS1/16S390J
R 303	(A,140,124)	RS1/16S390J
R 304	(B,131,127)	RS1/16S390J
R 305	(A,157,123)	RS1/16S390J
R 306	(B,149,115)	RS1/16S390J
R 307	(A,136,124)	RS1/16S472J
R 308	(A,129,126)	RS1/16S472J
R 309	(B,139,120)	RS1/16S472J
R 310	(B,133,128)	RS1/16S472J
R 311	(B,167,128)	RS1/16S472J
R 312	(B,165,124)	RS1/16S472J
R 313	(A,142,121)	RS1/16S223J
R 314	(A,139,129)	RS1/16S223J
R 315	(A,142,124)	RS1/16S223J
R 316	(B,128,132)	RS1/16S223J
R 317	(A,157,126)	RS1/16S223J
R 318	(B,162,134)	RS1/16S223J
R 319	(B,144,123)	RS1/16S0R0J
R 322	(B,137,130)	RS1/16S0R0J
R 351	(B,117,110)	RS1/16S682J
R 352	(B,119,111)	RS1/16S682J
R 353	(B,122,111)	RS1/16S682J
R 354	(B,114,110)	RS1/16S682J
R 355	(B,114,115)	RS1/16S123J
R 356	(B,121,117)	RS1/16S123J
R 357	(B,123,118)	RS1/16S123J
R 358	(B,112,115)	RS1/16S123J
R 359	(A,146,85)	RS1/16S103J
R 360	(A,139,95)	RS1/16S103J
R 361	(A,139,88)	RS1/16S153J
R 362	(A,139,93)	RS1/16S331J
R 363	(B,107,113)	RS1/16S0R0J
R 381	(A,143,102)	RS1/16S102J
R 391	(B,25,87)	RS1/16S223J
R 392	(B,22,92)	RS1/16S683J
R 393	(B,25,94)	RS1/16S683J
R 401	(B,159,71)	RS1/16S681J
R 403	(B,156,81)	RS1/16S681J
R 404	(B,156,84)	RS1/16S681J
R 405	(B,156,86)	RS1/16S681J
R 406	(B,157,88)	RS1/16S681J
R 407	(B,157,90)	RS1/16S681J
R 410	(B,152,65)	RS1/16S0R0J
R 411	(B,143,45)	RS1/16S681J
R 412	(B,128,49)	RS1/16S681J
R 413	(B,133,51)	RS1/16S681J
R 451	(A,41,43)	RS1/16S391J
R 502	(A,73,52)	RS1/16S3302F
R 503	(B,75,51)	RS1/16S333J
R 505	(A,69,52)	RS1/16S8201F
R 506	(B,73,58)	RS1/16S683J
R 508	(A,67,47)	RS1/16S8202D
R 509	(A,70,47)	RS1/16S6801F
R 511	(A,56,55)	RS1/10SR471J
R 525	(A,76,62)	RS1/16S103J
R 562	(A,40,24)	RD1/4PU472J
R 563	(B,31,16)	RS1/16S102J
R 564	(B,29,17)	RS1/16S821J

Circuit Symbol and No.		Part No.
R 566	(B,33,22)	RS1/10SR821J
R 567	(A,31,17)	RS1/16S1R0J
R 568	(A,25,36)	RD1/4PU681J
R 601	(B,117,67)	RS1/16S473J
R 602	(B,122,64)	RS1/16S473J
R 603	(A,96,59)	RS1/16S0R0J
R 604	(B,100,60)	RS1/16S0R0J
R 605	(B,123,57)	RS1/16S104J
R 606	(B,108,62)	RS1/16S473J
R 607	(B,63,60)	RS1/16S681J
R 608	(B,137,29)	RS1/16S102J
R 610	(A,65,72)	RS1/16S104J
R 611	(A,97,49)	RS1/16S104J
R 612	(A,109,42)	RS1/16S222J
R 641	(A,129,43)	RS1/16S104J
R 652	(A,91,57)	RS1/16S822J
R 653	(A,94,57)	RS1/16S102J
R 710	(B,85,32)	RS1/16S102J
R 716	(B,85,30)	RS1/16S102J
R 721	(A,74,37)	RS1/16S104J
R 722	(B,86,41)	RS1/16S472J
R 723	(A,72,41)	RS1/16S104J
R 724	(B,84,42)	RS1/16S472J
R 725	(B,83,43)	RS1/16S104J
R 726	(A,96,36)	RS1/16S221J
R 728	(A,96,42)	RS1/16S221J
R 729	(A,96,37)	RS1/16S221J
R 730	(B,90,40)	RS1/16S221J
R 731	(B,71,34)	RS1/16S221J
R 733	(A,74,35)	RS1/16S104J
R 751	(A,15,61)	RD1/4PU561J
R 801	(B,124,24)	RS1/16S222J
R 804	(B,127,23)	RS1/16S222J
R 805	(B,114,25)	RS1/16S222J
R 806	(A,40,36)	RD1/4PU391J
R 807	(B,106,25)	RS1/16S222J
R 808	(B,111,25)	RS1/16S473J
R 811	(B,125,33)	RS1/16S102J
R 813	(B,108,25)	RS1/16S222J
R 815	(B,111,28)	RS1/16S473J
R 816	(A,65,12)	RS1/16S102J
R 817	(A,63,14)	RS1/16S104J
R 821	(A,83,17)	RS1/16S472J
R 822	(A,78,16)	RS1/16S1R0J
R 823	(A,40,39)	RD1/4PU471J
R 832	(A,110,27)	RS1/16S682J
R 833	(A,108,24)	RS1/16S473J
R 891	(B,101,21)	RS1/16S222J
R 892	(B,96,25)	RS1/16S102J
R 893	(B,94,28)	RS1/16S473J
R 902	(B,12,83)	RS1/16S822J
R 903	(B,34,80)	RS1/16S222J
R 911	(A,34,82)	RS1/16S102J
R 912	(A,34,84)	RS1/16S103J
R 921	(B,46,97)	RS1/16S104J
R 922	(B,49,93)	RS1/16S104J
R 923	(B,45,101)	RS1/16S104J
R 924	(B,68,100)	RS1/16S103J
R 925	(B,68,102)	RS1/16S473J
R 926	(B,58,99)	RS1/16S473J
R 927	(B,48,106)	RS1/16S472J
R 928	(A,55,113)	RD1/4PU102J
R 931	(B,131,81)	RS1/16S104J
R 932	(B,135,82)	RS1/16S103J
R 933	(A,64,104)	RD1/4PU102J

CAPACITORS

C 101	(A,43,85)	CCSRCH101J50
C 102	(A,44,93)	CCSRCH101J50
C 103	(B,33,138)	CKSRYB104K16
C 104	(A,43,83)	CKSRYB104K16
C 152	(A,56,116)	CKSRYB104K16
C 154	(A,67,102)	CKSRYB472K50
C 155	(A,71,102)	CKSRYB472K50
C 201	(B,118,81)	CKSRYB105K10
C 202	(B,123,83)	CKSRYB105K10
C 203	(B,118,84)	CKSRYB105K10
C 204	(B,123,85)	CKSRYB224K16
C 205	(B,118,86)	CKSRYB105K10
C 206	(B,96,81)	CKSRYB105K10
C 207	(B,90,83)	CKSRYB105K10
C 208	(B,96,84)	CKSRYB105K10
C 209	(B,90,85)	CKSRYB105K10
C 210	(B,96,86)	CKSRYB224K16
C 211	(B,90,88)	CKSRYB105K10
C 212	(A,77,90)	CEJQ100M25
C 213	(B,81,92)	CKSRYB104K16
C 214	(A,84,97)	CEJQ470M16
C 215	(A,106,102)	CEJQ100M25
C 216	(B,72,95)	CKSRYB104K16
C 217	(A,77,97)	CEJQ470M16
C 301	(A,140,110)	CEJQ100M25
C 302	(A,134,105)	CEJQ100M25
C 303	(A,145,117)	CEJQ100M25
C 304	(A,140,117)	CEJQ100M25
C 305	(A,153,119)	CEJQ100M25
C 306	(A,145,110)	CEJQ100M25
C 351	(B,117,116)	CKSRYB474K10
C 352	(B,119,117)	CKSRYB474K10
C 353	(B,121,127)	CKSRYB474K10
C 354	(B,110,114)	CKSRYB474K10
C 355	(B,117,121)	CKSQYB474K25
C 356	(B,120,122)	CKSQYB474K25
C 357	(B,121,131)	CKSQYB474K25
C 358	(B,114,120)	CKSQYB474K25
C 360	(B,125,127)	CKSQYB225K10
C 361	(B,106,146)	CKSRYB104K16
C 362	(A,134,111)	CEJQ100M25
C 363	(A,134,117)	CEJQ330M10
C 364	(B,124,131)	CKSQYB225K10
C 381	(A,141,81)	CEJQ220M16
C 404	(B,152,52)	CKSRYB103K50
C 405	(B,153,67)	CKSRYB103K50
C 406	(B,147,94)	CKSRYB103K50
C 407	(A,154,55)	CEJQ470M6R3
C 410	(A,148,98)	CEJQ101M16
C 417	(B,127,54)	CCSRCH470J50
C 432	(A,150,38)	CEJQ470M6R3
C 434	(A,141,36)	CEJQ1R0M50

Circuit Symbol and No.			Part No.
C 451	(A,34,67)		CKSRYB104K16
C 452	(A,39,58)		CEJQ470M16
C 453	(B,40,61)		CKSRYB473K50
C 501	(A,59,49)	150 µF/6.3 V	CCH1781
C 502	(A,52,38)		CEJQ221M16
C 503	(B,74,47)		CCSRCH221J50
C 504	(A,62,55)		CKSRYB105K16
C 506	(B,69,57)		CKSRYB103K50
C 507	(A,68,49)		CKSRYB104K16
C 521	(B,54,53)		CKSRYB104K16
C 522	(B,55,58)		CKSRYB104K16
C 523	(B,60,60)		CKSRYB103K50
C 562	(A,53,13)		CEJQ470M25
C 564	(B,40,23)		CKSRYB223K50
C 565	(B,45,15)		CCSRCH331J50
C 566	(B,30,25)		CKSRYB104K16
C 567	(A,30,28)		CEJQ101M16
C 568	(A,26,21)		CEJQ470M16
C 569	(B,21,29)		CKSRYB104K16
C 601	(B,115,63)		CCSRCH101J50
C 603	(B,97,57)		CCSRCH220J50
C 604	(B,101,48)		CCSRCH180J50
C 605	(A,88,53)		CEJQ4R7M35
C 607	(B,90,53)		CKSRYB105K10
C 609	(B,76,64)		CKSRYB105K10
C 651	(A,80,67)		CEJQ2R2M50
C 702	(B,85,35)		CKSRYB152K50
C 705	(B,86,28)		CKSRYB152K50
C 720	(B,42,67)		CKSRYB105K16
C 751	(B,45,69)		CKSRYB104K16
C 752	(A,36,51)		CEJQ101M16
C 753	(B,14,66)		CKSRYB473K50
C 781	(B,58,24)		CKSRYB103K50
C 782	(A,55,21)		CEJQ470M6R3
C 783	(A,82,55)		CEJQ4R7M35
C 784	(B,84,52)		CKSRYB105K10
C 822	(B,35,29)		CKSRYB472K50
C 893	(B,100,25)		CKSRYB105K10
C 901	(A,37,74)		CEJQ470M16
C 902	(B,15,76)		CKSRYB103K50
C 903	(B,23,83)		CKSRYB472K50
C 904	(A,26,74)		CEAT102M16
C 911	(A,27,87)		CEJQ221M16
C 912	(B,20,102)		CKSRYB103K50
C 913	(A,16,97)		CEJQ101M16
C 914	(B,11,121)		CKSRYB103K50
C 921	(B,48,109)		CKSRYB104K16
C 931	(A,140,70)		CEJQ1R0M50
C 981	(A,50,125)	3 300 µF/16 V	CCH1486
C 982	(B,60,120)		CKSRYB104K16

B

Unit Number : (ES,ES1)
Unit Number : (ID)
Unit Name : Keyboard Unit

MISCELLANEOUS

IC 1901	(A,77,35)	Remote IC	GP1UX51RK
IC 1902	(B,103,22)	IC	PEG411A
Q 1902	(B,79,22)	Transistor	2SC4081
D 1901	(A,8,37)	LED(ES,ES1)	CL-195SR-CD
	(A,8,37)	LED(ID)	CL-197HB1-D(CDE)
D 1902	(A,8,15)	LED(ES,ES1)	CL-195SR-CD
	(A,8,15)	LED(ID)	CL-197HB1-D(CDE)
D 1903	(A,112,7)	LED(ES,ES1)	CL-195SR-CD
	(A,112,7)	LED(ID)	CL-197HB1-D(CDE)
D 1904	(A,126,7)	LED(ES,ES1)	CL-195SR-CD
	(A,126,7)	LED(ID)	CL-197HB1-D(CDE)
D 1905	(A,149,7)	LED(ES,ES1)	CL-195SR-CD
	(A,149,7)	LED(ID)	CL-197HB1-D(CDE)
D 1906	(A,22,36)	LED(ES,ES1)	CL-195SR-CD
	(A,22,36)	LED(ID)	CL-197HB1-D(CDE)
D 1907	(A,22,16)	LED(ES,ES1)	CL-195SR-CD
	(A,22,16)	LED(ID)	CL-197HB1-D(CDE)
D 1908	(A,61,36)	LED(ES,ES1)	CL-195SR-CD
	(A,61,36)	LED(ID)	CL-197HB1-D(CDE)
D 1909	(A,61,16)	LED(ES,ES1)	CL-195SR-CD
	(A,61,16)	LED(ID)	CL-197HB1-D(CDE)
D 1913	(B,107,12)	Diode	1SS355
L 1901	(B,88,29)	Inductor	CTF1617
X 1901	(B,103,15)	Radiator 10.0 MHz	CSS1577
S 1901	(A,24,12)	Push Switch	CSG1155
S 1902	(A,9,12)	Push Switch	CSG1155
S 1903	(A,156,7)	Push Switch	CSG1155
S 1904	(A,9,40)	Push Switch	CSG1155
S 1905	(A,129,7)	Push Switch	CSG1155
S 1906	(A,40,25)	Switch(MULTI-CONTROL)	CSX1120
S 1907	(A,24,40)	Push Switch	CSG1155
S 1908	(A,115,7)	Push Switch	CSG1155
S 1909	(A,59,40)	Push Switch	CSG1155
S 1910	(A,59,12)	Push Switch	CSG1155

RESISTORS

R 1901	(B,137,40)		RS1/16S222J
R 1902	(B,137,38)		RS1/16S222J
R 1903	(B,121,12)		RS1/16S473J
R 1904	(B,24,10)	(ES,ES1)	RS1/16S151J
	(B,24,10)	(ID)	RS1/16S181J
R 1905	(B,152,24)	(ES,ES1)	RS1/16S151J
	(B,152,24)	(ID)	RS1/16S181J
R 1906	(B,28,10)	(ES,ES1)	RS1/16S151J
	(B,28,10)	(ID)	RS1/16S181J
R 1907	(B,34,10)	(ES,ES1)	RS1/16S151J
	(B,34,10)	(ID)	RS1/16S181J
R 1908	(B,152,22)	(ES,ES1)	RS1/16S271J
	(B,152,22)	(ID)	RS1/16S391J
R 1909	(B,26,10)	(ES,ES1)	RS1/16S181J
	(B,26,10)	(ID)	RS1/16S221J
R 1910	(B,155,24)	(ES,ES1)	RS1/16S181J
	(B,155,24)	(ID)	RS1/16S221J
R 1911	(B,30,10)	(ES,ES1)	RS1/16S181J
	(B,30,10)	(ID)	RS1/16S221J
R 1912	(B,32,10)	(ES,ES1)	RS1/16S181J
	(B,32,10)	(ID)	RS1/16S221J
R 1913	(B,155,22)	(ES,ES1)	RS1/16S271J
	(B,155,22)	(ID)	RS1/16S391J
R 1914	(B,66,19)		RS1/16S102J
R 1916	(B,16,22)		RS1/16S333J

Circuit Symbol and No.		Part No.
R 1917	(B,34,14)	RS1/16S333J
R 1918	(B,13,22)	RS1/16S822J
R 1919	(B,143,10)	RS1/16S822J
R 1920	(B,69,21)	RS1/16S103J
R 1921	(B,34,16)	RS1/16S822J
R 1922	(B,13,24)	RS1/16S332J
R 1923	(B,117,10)	RS1/16S332J
R 1924	(B,48,15)	RS1/16S332J
R 1925	(B,16,24)	RS1/16S222J
R 1926	(B,66,10)	RS1/16S222J
R 1927	(B,69,20)	RS1/16S103J
R 1928	(B,51,15)	RS1/16S222J
R 1929	(B,69,23)	RS1/16S103J
R 1930	(B,69,17)	RS1/16S103J
R 1931	(B,79,17)	RS1/16S682J
R 1932	(B,79,19)	RS1/16S3902F
R 1933	(B,76,20)	RS1/16S6802F
R 1934	(B,82,30)	RS1/16S392J
R 1935	(B,69,24)	RS1/16S101J
R 1936	(B,64,32)	RS1/16S103J
R 1937	(B,68,31)	RS1/16S2R2J
R 1938	(B,104,37)	RS1/16S103J
R 1940	(B,94,21)	RS1/16S473J
R 1941	(B,87,24)	RS1/16S2202D
R 1942	(B,87,23)	RS1/16S3002D
R 1944	(B,99,16)	RS1/16S473J
R 1945	(B,102,28)	RS1/16S101J
R 1946	(B,112,31)	RS1/16S102J
R 1947	(B,91,21)	RS1/16S101J
R 1948	(B,107,15)	RS1/16S473J
R 1949	(B,111,15)	RAB4C101J
R 1950	(B,107,13)	RS1/16S154J
R 1952	(B,59,21)	RS1/16S102J
R 1953	(B,63,15)	RS1/16S102J
R 1957	(B,69,18)	RS1/16S103J

CAPACITORS

C 1902	(A,8,35) (ID)	CKSRYB104K16
C 1903	(A,9,17) (ID)	CKSRYB104K16
C 1904	(A,111,7) (ID)	CKSRYB104K16
C 1905	(A,125,7) (ID)	CKSRYB104K16
C 1906	(A,149,5) (ID)	CKSRYB104K16
C 1907	(A,22,35) (ID)	CKSRYB104K16
C 1908	(A,22,17) (ID)	CKSRYB104K16
C 1909	(A,61,35) (ID)	CKSRYB104K16
C 1910	(A,61,17) (ID)	CKSRYB104K16
C 1913	(B,69,35)	CKSYF106Z10
C 1914	(B,99,14)	CKSRYB103K50
C 1915	(B,83,23)	CKSRYB104K16
C 1916	(B,82,29)	CKSRYB104K16
C 1917	(B,101,33)	CKSRYB224K16
C 1918	(B,117,31)	CKSRYB105K10
C 1919	(B,113,12)	CKSRYB104K16
C 1920	(B,83,26)	CKSRYB103K50

C

Unit Number : CWM9835
Unit Name : Panel Unit

Circuit Symbol and No.		Part No.
MISCELLANEOUS		
D 1970	LED(ES,ES1)	CL220SRCTS
	LED(ID)	CL220PGC
S 1970	Push Switch(ES,ES1)(EJECT)	CSG1135
	Push Switch(ID)(EJECT)	CSG1112
RESISTORS		
R 1970		RS1/16S101J
R 1971		RS1/16S101J
R 1972		RS1/16S0R0J
CAPACITORS		
C 1970		CKSRYB104K16

D

Unit Number : CWX3526
Unit Name : CD Core Unit(S10.5COMP2-iPod)

MISCELLANEOUS

IC 201	(A,36,46)	IC	PE5611B
IC 205	(B,25,47)	IC	341S2094
IC 301	(A,29,15)	IC	BA5839FP
Q 101	(B,58,70)	Transistor	2SA1577
Q 102	(B,49,58)	Chip Transistor	2SB1689
Q 201	(B,27,54)	Transistor	2SA1577
X 201	(A,23,38)	Ceramic Resonator 16.934 MHz	CSS1603
X 204	(B,17,45)	Oscillator 32.768 kHz	CSS1735
X 205	(B,34,63)	Oscillator 48.000 MHz	CSS1753
S 901	(A,55,37)	Switch(HOME)	CSN1067
S 903	(B,20,59)	Switch(DSCSNS)	CSN1067
S 904	(B,41,68)	Switch(12EJ)	CSN1068
S 905	(B,25,70)	Switch(8EJ)	CSN1068

RESISTORS

R 101	(B,61,74)	RS1/10SR2R4J
R 102	(B,61,72)	RS1/10SR2R4J
R 103	(B,61,71)	RS1/10SR2R7J
R 104	(B,54,67)	RS1/16SS222J
R 105	(B,45,58)	RS1/16SS102J
R 107	(B,52,60)	RS1/16SS105J
R 202	(A,27,33)	RS1/16SS473J
R 203	(A,51,44)	RS1/16S473J
R 204	(A,24,58)	RS1/16SS221J
R 206	(B,10,27)	RS1/16SS104J
R 210	(B,10,23)	RS1/16SS102J
R 214	(B,50,50)	RS1/16SS472J
R 216	(B,49,49)	RS1/16SS472J
R 221	(A,51,48)	RS1/16SS103J
R 222	(A,51,46)	RS1/16SS103J
R 223	(B,14,43)	RS1/16SS473J
R 225	(A,51,50)	RS1/16SS103J
R 226	(A,51,51)	RS1/16SS393J
R 227	(B,48,52)	RS1/16SS562J
R 228	(B,45,52)	RS1/16SS122J
R 229	(B,47,54)	RS1/16SS472J
R 230	(B,22,25)	RS1/16SS0R0J
R 232	(B,46,52)	RS1/16SS122J
R 233	(B,26,59)	RS1/16SS103J

Circuit Symbol and No.		Part No.
R 234	(B,23,26)	RS1/16SS473J
R 235	(A,26,59)	RS1/16SS473J
R 237	(A,24,35)	RS1/16SS151J
R 240	(B,14,26)	RS1/16S473J
R 241	(B,14,25)	RS1/16SS103J
R 244	(B,22,55)	RS1/16SS473J
R 250	(B,25,52)	RS1/16SS101J
R 251	(B,22,51)	RS1/16SS101J
R 252	(B,21,48)	RS1/16SS101J
R 254	(A,26,64)	RS1/16SS104J
R 255	(A,26,63)	RS1/16SS104J
R 256	(A,26,62)	RS1/16SS104J
R 259	(A,28,66)	RS1/16SS0R0J
R 261	(A,26,65)	RS1/16SS104J
R 262	(A,30,60)	RS1/16SS0R0J
R 263	(A,28,63)	RS1/16SS0R0J
R 273	(B,19,48)	RS1/16SS103J
R 274	(B,18,51)	RS1/16SS104J
R 275	(B,19,51)	RS1/16SS104J
R 276	(B,20,51)	RS1/16SS104J
R 277	(B,24,52)	RS1/16SS103J
R 278	(B,27,51)	RS1/16SS1003D
R 279	(B,23,52)	RS1/16SS104J
R 282	(A,30,61)	RS1/16SS240J
R 283	(A,29,61)	RS1/16SS240J
R 284	(B,30,63)	RS1/16SS153J
R 285	(B,28,63)	RS1/16SS153J
R 289	(B,19,45)	RS1/16SS0R0J
R 291	(B,43,62)	RS1/16SS272J
R 292	(B,25,43)	RS1/16SS221J
R 293	(B,27,52)	RS1/16SS472J
R 294	(A,32,63)	RS1/16SS471J
R 295	(B,55,64)	RS1/16SS103J
R 307	(A,35,19)	RS1/16SS183J
R 308	(A,38,19)	RS1/16SS183J
R 309	(A,35,21)	RS1/16SS183J
R 310	(A,38,22)	RS1/16SS183J
R 601	(B,30,31)	RS1/16SS0R0J
R 602	(B,27,31)	RS1/16SS0R0J
R 606	(B,28,23)	RS1/16S0R0J
R 701	(B,12,37)	RS1/16SS221J
R 702	(A,24,56)	RS1/16SS221J
R 708	(B,15,37)	RS1/16S0R0J
R 712	(B,15,54)	RS1/16SS0R0J
R 713	(B,15,53)	RS1/16SS0R0J

CAPACITORS

Circuit Symbol and No.		Part No.
C 106	(B,57,67)	CKSQYB475K6R3
C 202	(A,28,57)	CKSSYB104K10
C 204	(A,24,59)	CKSSYB103K16
C 205	(B,27,41)	CKSQYB475K6R3
C 206	(A,23,41)	CKSSYB104K10
C 207	(A,25,38)	CKSRYB104K16
C 209	(B,36,35)	CEVW220M6R3
C 210	(B,29,37)	CKSSYB104K10
C 211	(A,28,35)	CKSSYB104K10
C 212	(A,29,30)	CKSRYB104K16
C 213	(A,46,39)	CKSSYB104K10
C 214	(A,29,34)	CKSSYB104K10
C 216	(A,51,52)	CKSSYB332K50
C 217	(A,48,52)	CKSSYB104K10
C 218	(A,50,52)	CKSSYB473K10
C 219	(A,47,54)	CKSSYB104K10
C 220	(A,48,54)	CKSSYB182K50
C 221	(A,46,54)	CKSSYB104K10
C 222	(B,46,54)	CCSSCH560J50
C 223	(B,48,54)	CCSSCH4R0C50
C 224	(A,45,56)	CKSSYB104K10
C 226	(A,42,59)	CCSSCH680J50
C 227	(A,42,61)	CCSSCH470J50
C 228	(B,41,62)	CKSSYB103K16
C 229	(B,48,60)	CKSSYB104K10
C 236	(A,50,58)	CKSSYB104K10
C 239	(B,47,52)	CCSSCH220J50
C 240	(A,38,61)	CKSSYB104K10
C 243	(B,22,41)	CKSQYB475K6R3
C 250	(A,52,48)	CKSSYB102K50
C 251	(A,52,46)	CKSSYB102K50
C 260	(A,28,61)	CKSSYB104K10
C 261	(B,34,67)	CCSSCH8R0D50
C 262	(B,32,66)	CCSSCH8R0D50
C 290	(B,22,43)	CKSSYB104K10
C 291	(B,17,42)	CCSSCH5R0C50
C 292	(B,17,48)	CCSSCH5R0C50
C 293	(B,44,61)	CKSSYB102K50
C 294	(B,25,41)	CKSSYB103K16
C 295	(B,56,61)	CKSQYB106K6R3
C 296	(B,56,63)	CKSQYB106K6R3
C 303	(A,36,19)	CKSSYB472K25
C 304	(A,36,21)	CKSSYB223K16
C 307	(A,22,11)	CKSRYB104K16
C 308	(B,11,18)	CKSRYB105K10
C 703	(B,15,35)	CCSSCH101J50
C 704	(B,12,36)	CKSSYB102K50
C 711	(A,31,25)	CKSSYB104K10

Miscellaneous Parts List

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