

HCD-DX20/RG30

SERVICE MANUAL

Ver 1.1 2002.05



Photo: HCD-DX20

AEP Model

UK Model

HCD-RG30

E Model

HCD-DX20

- HCD-DX20/RG30 is the tuner, deck, CD and amplifier section in MHC-DX20/RG30.

CD Section	Model Name Using Similar Mechanism	HCD-DX30/RG40
	CD Mechanism Type	CDM58B-K6BD38
	Base Unit Name	BU-K6BD38
	Optical Pick-up Name	KSM-213DCP
Tape deck Section	Model Name Using Similar Mechanism	NEW

SPECIFICATIONS

Amplifier section

European models:

HCD-RG30:

DIN power output (rated) 50 + 50 watts (6 ohms at 1 kHz, DIN)

Continuous RMS power output (reference)

60 + 60 watts (6 ohms at 1 kHz, 10% THD)

Music power output (reference)

115 + 115 watts (6 ohms at 1 kHz, 10% THD)

Other models:

HCD-DX20:

The following measured at AC 120, 220, 240 V 50/60 Hz

DIN power output (rated) 50 + 50 watts (6 ohms at 1 kHz, DIN)

Continuous RMS power output (reference)

60 + 60 watts (6 ohms at 1 kHz, 10% THD)

Inputs

MD/VIDEO (AUDIO) IN (phono jacks):

voltage 450/250 mV, impedance 47 kilohms

GAME (AUDIO) IN (phono jacks):

voltage 450 mV, impedance 47 kilohms

MIC (mini jack):

sensitivity 1 mV, impedance 10 kilohms

Outputs

PHONES (stereo mini jack):

accepts headphones of 8 ohms or more

SPEAKER:

accepts impedance of 6 to 16 ohms

CD player section

System

Compact disc and digital audio system

Laser

Semiconductor laser ($\lambda=780$ nm)

Emission duration: continuous

Max. 44.6 μ W*

Laser output

* This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block with 7 mm aperture.

Frequency response

2 Hz – 20 kHz (± 0.5 dB)

Wavelength

780 – 790 nm

Signal-to-noise ratio

More than 90 dB

Dynamic range

More than 90 dB

CD OPTICAL DIGITAL OUT

(Square optical connector jack, rear panel)

Wavelength

660 nm

Output Level

–18 dBm

— Continued on next page —

MINI HIFI COMPONENT SYSTEM

9-873-858-12

2002E0200-1

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Sony Corporation

Home Audio Company

Published by Sony Engineering Corporation

SONY®

HCD-DX20/RG30

Tape deck section

Recording system	4-track 2-channel stereo
Frequency response	40 – 13,000 Hz (±3 dB), using Sony TYPE I cassette

Tuner section

FM stereo, FM/AM superheterodyne tuner

FM tuner section

Tuning range	87.5 – 108.0 MHz
Antenna	FM lead antenna
Antenna terminals	75 ohm unbalanced
Intermediate frequency	10.7 MHz

AM tuner section

Tuning range	
European and Middle Eastern models:	531 – 1,602 kHz (with the interval set at 9 kHz)
Other models:	531 – 1,602 kHz (with the interval set at 9 kHz) 530 – 1,710 kHz (with the interval set at 10 kHz)
Antenna	AM loop antenna
Antenna terminals	External antenna terminal
Intermediate frequency	450 kHz

General

Power requirements	
European models:	230 V AC, 50/60 Hz
Mexican models:	120 V AC, 50/60 Hz
Other models:	120 V, 220 V or 230 – 240 V AC, 50/60 Hz Adjustable with voltage selector

Power consumption	
European models:	110 watts 0.5 watts (at the Power Saving Mode)
Other models:	110 watts

Dimensions (w/h/d)	Approx. 280 x 325 x 421 mm
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Mass	
European models:	Approx. 8.5 kg
Other models:	Approx. 8.5 kg

Supplied accessories:	AM loop antenna (1) Remote Commander (1) Batteries (2) FM lead antenna (1) Front speaker pads (8)
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Design and specifications are subject to change without notice.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body. During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts. The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.



This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

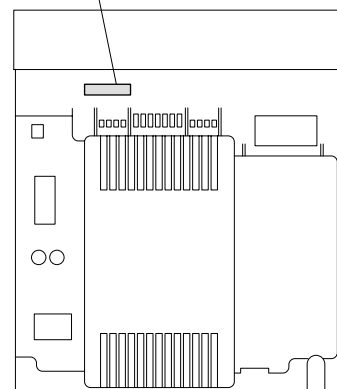
- Keep the temperature of soldering iron around 270°C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

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MODEL IDENTIFICATION

— BACK PANEL — PARTS No.



MODEL	PARTS No.
RG30	4-234-032-2□
DX20: E2, E51, EA, SP, AR models	4-234-091-0□
DX20: KR, MX, TH models	4-234-091-6□

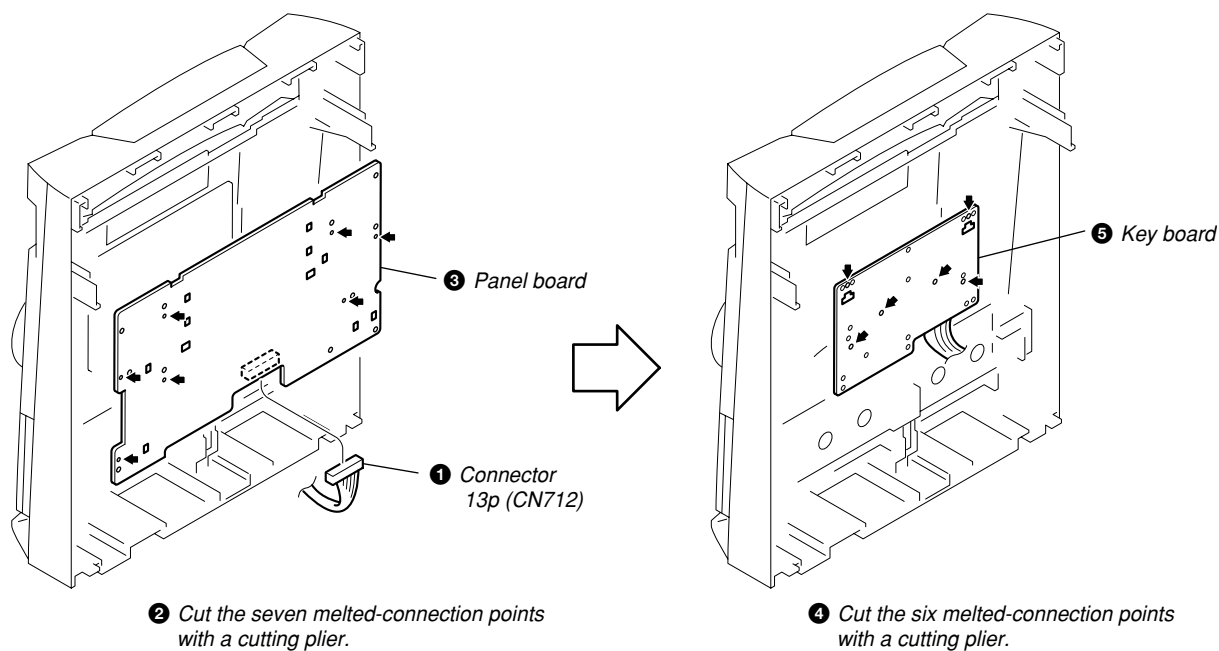
• Abbreviation

EA	: Saudi Arabia model
SP	: Singapore model
TH	: Thai model
KR	: Korea model
MX	: Mexican model
AR	: Argentina model
E51	: Chiri and Peru model
E2	: Central and South America model

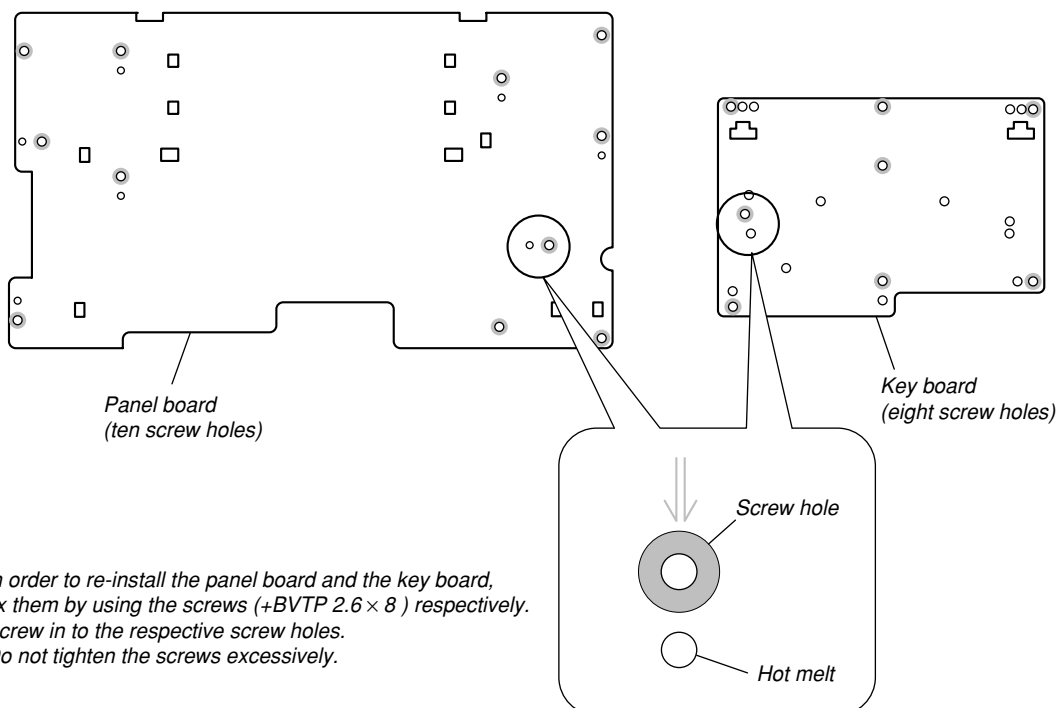
SECTION 1 SERVICE NOTE

REMOVING THE PANEL BOARD AND THE KEY BOARD

* The panel board and the key board only are connected to the front panel by means of hot-melting the plastics.



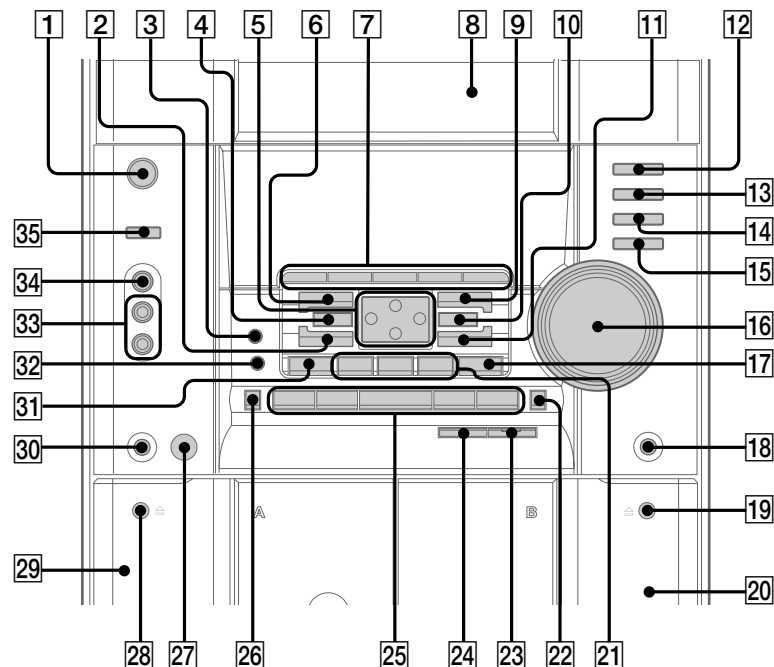
Note for installing the panel board and the key board



SECTION 2 GENERAL

This section is extracted
from instruction manual.

Main unit



AUDIO jacks **33**

CD **12**

CD SYNC **24**

Deck A **29**

Deck B **20**

DIRECTION*¹ **7**

DISC 1 - 3 **21**

DISC SKIP EX-CHANGE **31**

Disc tray **8**

DISPLAY **7**

EDIT **7**

EFFECT ON/OFF **4**

ENTER **10**

GAME **35**

GAME EQ **2**

GROOVE **3**

KARAOKE PON*² **32**

MD (VIDEO) **15**

MIC jack*² **30**

MIC LEVEL control*² **27**

MOVIE EQ **9**

MUSIC EQ **6**

P FILE **11**

PHONES jack **18**

PLAY MODE **7**

PTY/DIRECTION **7**

REC PAUSE/START **23**

REPEAT **7**

SPECTRUM **7**

STEREO/MONO **7**

TAPE A/B **14**

TUNER MEMORY **7**

TUNER/BAND **13**

VIDEO jack **34**

VOLUME control **16**

BUTTON DESCRIPTIONS

▲▼/◀▶ **5**

▲ (deck A) **28**

▲ (deck B) **19**

▶▶ (fast forward) **22**

◀◀ (go back) **25**

▲ OPEN/CLOSE **17**

I/⏻ (power) **1**

■ (stop) **25**

▶▶ (play) **25**

|| (pause) **25**

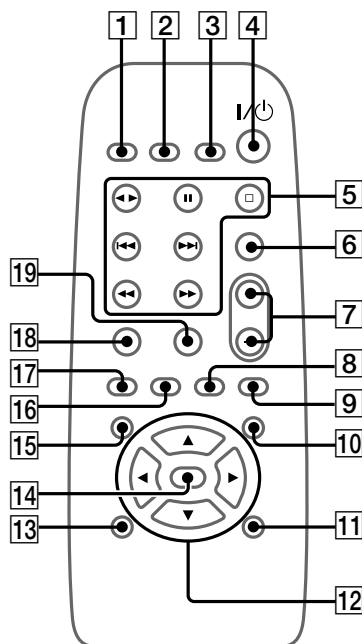
▶▶ (go forward) **25**

◀◀ (rewind) **26**

*¹ PTY/DIRECTION for
European model

*² HCD-DX30 only

Remote Control



CD **17**
 CLEAR **6**
 CLOCK/TIMER SELECT **2**
 CLOCK/TIMER SET **3**
 D.SKIP **19**
 EFFECT ON/OFF **11**
 ENTER **14**
 GAME **18**

MD (VIDEO) **9**
 P FILE **13**
 PRESET EQ **15**
 SLEEP **1**
 SURROUND **10**
 TAPE A/B **8**
 TUNER/BAND **16**
 VOL +/- **7**

BUTTON DESCRIPTIONS

▲/▼/◀/▶ **12**
 ►► (fast forward)/TUNING + **5**
 ◀◀ (go back)/PRESET - **5**
 I/⏻ (power) **4**
 ■ (stop) **5**
 ◀▶ (play) **5**
 || (pause) **5**
 ►► (go forward)/PRESET + **5**
 ◀◀ (rewind)/TUNING - **5**

Setting the time

- 1** Turn on the system.
- 2** Press **CLOCK/TIMER SET** on the remote.
 Proceed to step 5 when "CLOCK" appears in the display.
- 3** Press **▲** or **▼** repeatedly to select "SET CLOCK".
- 4** Press **ENTER**.
- 5** Press **▲** or **▼** repeatedly to set the hour.

6 Press ►.

The minute indication flashes.

7 Press ▲ or ▼ repeatedly to set the minute.

8 Press ENTER.

Tip

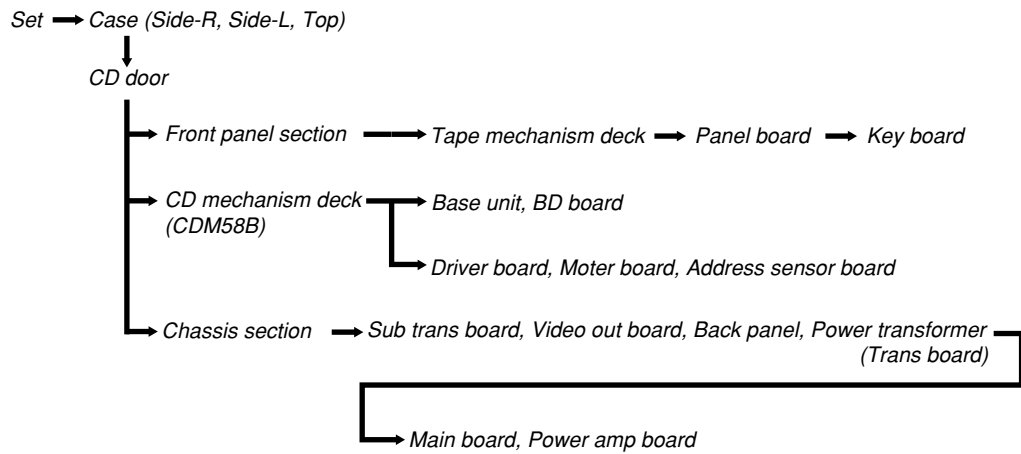
If you made a mistake or want to change the time, start over from step 1.

Note

The clock settings are canceled when you disconnect the power cord or if a power failure occurs.

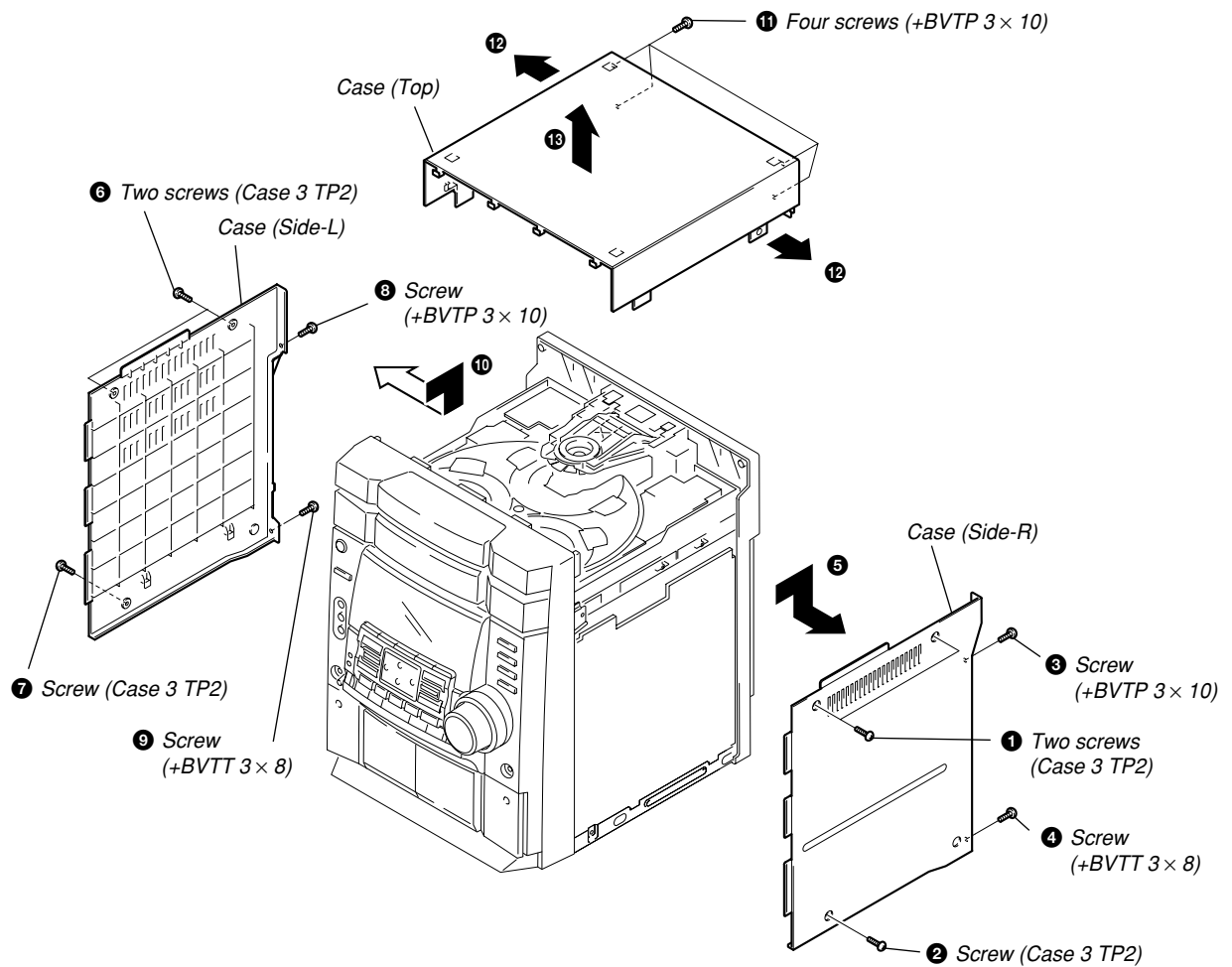
SECTION 3 DISASSEMBLY

Note : Disassemble the unit in the order as shown below.

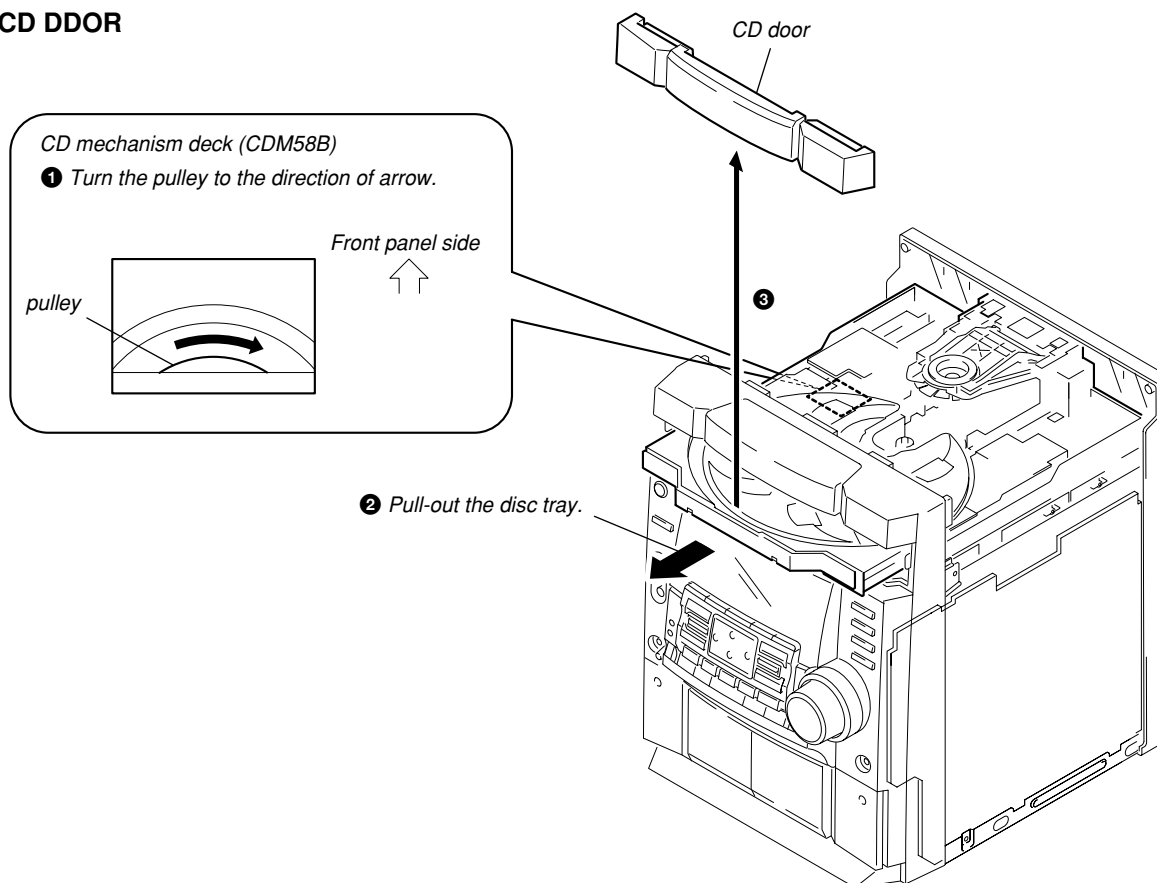


Note : Follow the disassembly procedure in the numerical order given.

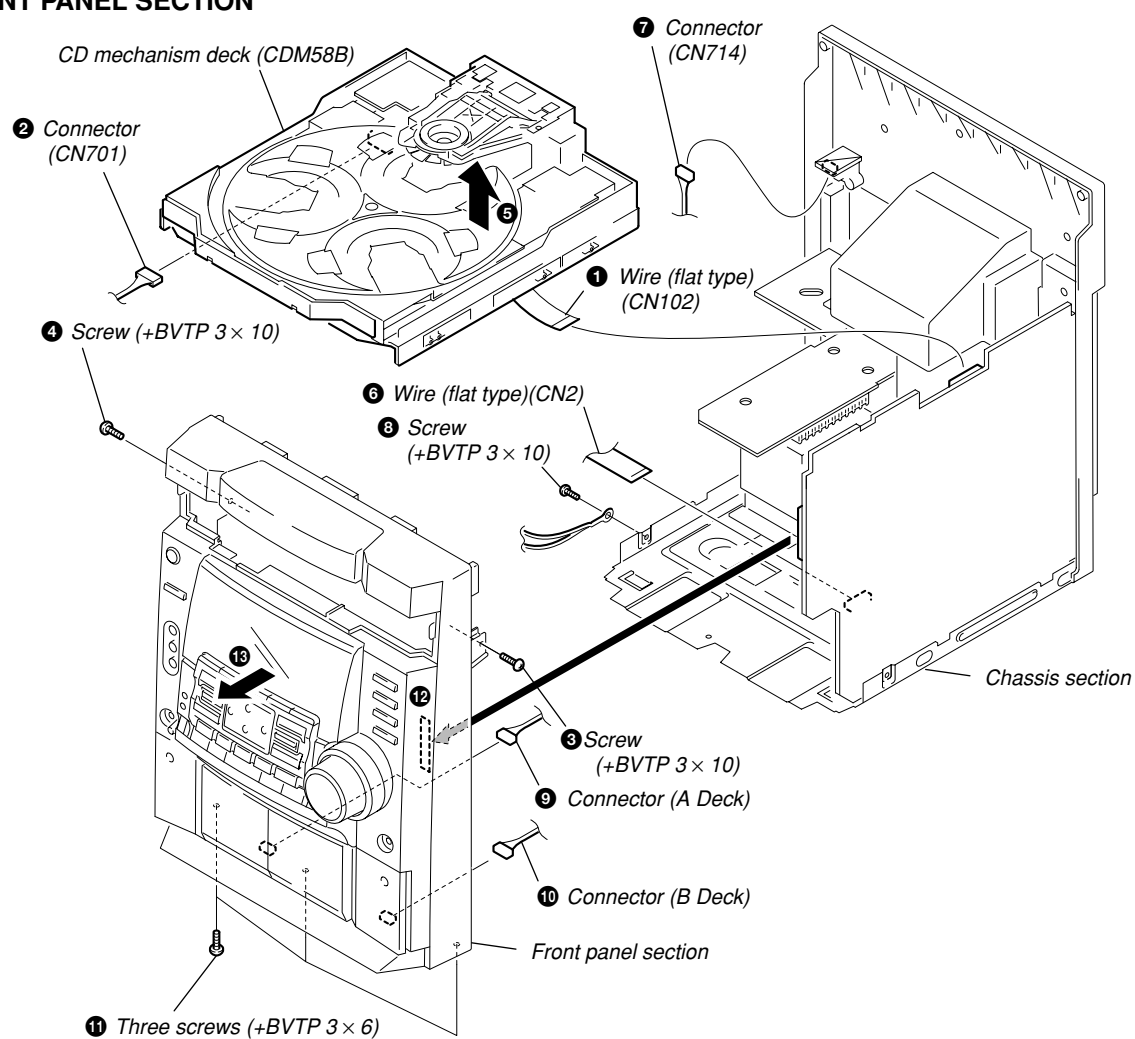
3-1. CASE (SIDE-R, SIDE-L, TOP)



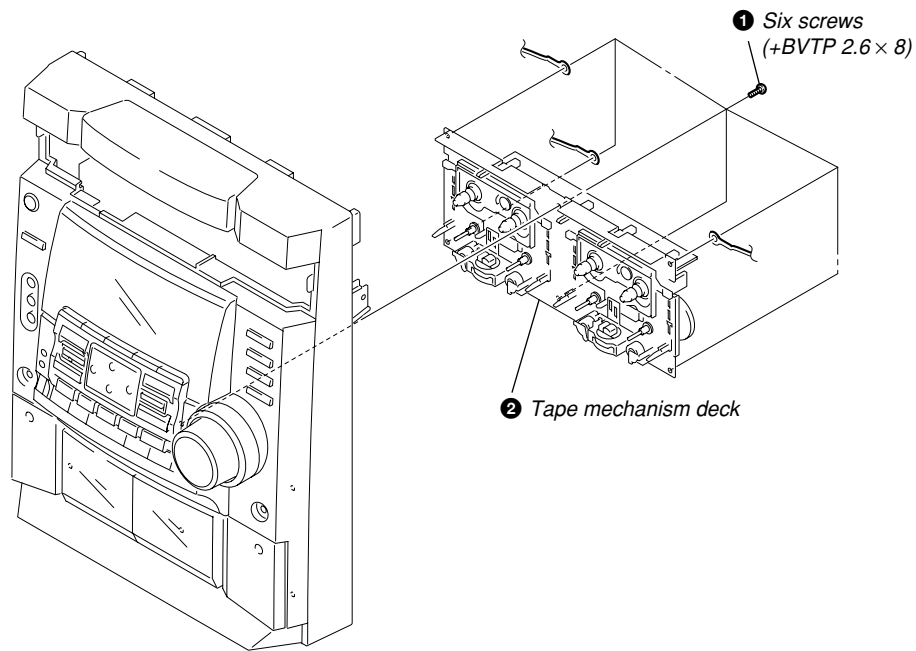
3-2. CD DDOR



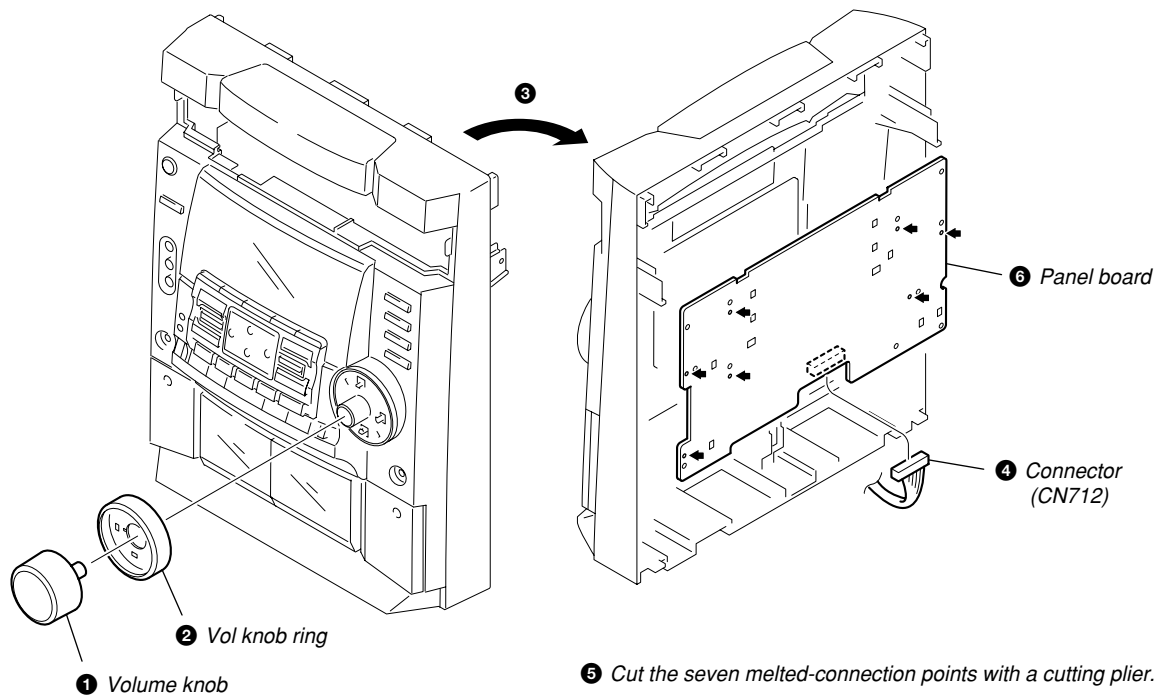
3-3. FRONT PANEL SECTION



3-4. TAPE MECHANISM DECK

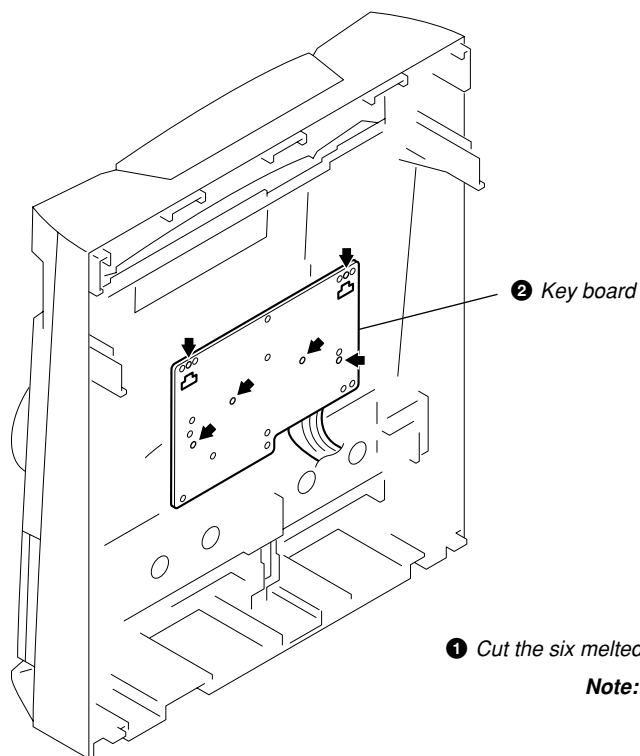


3-5. PANEL BOARD



Note: When attaching the panel board,
refer to "Service Note" on page 4.

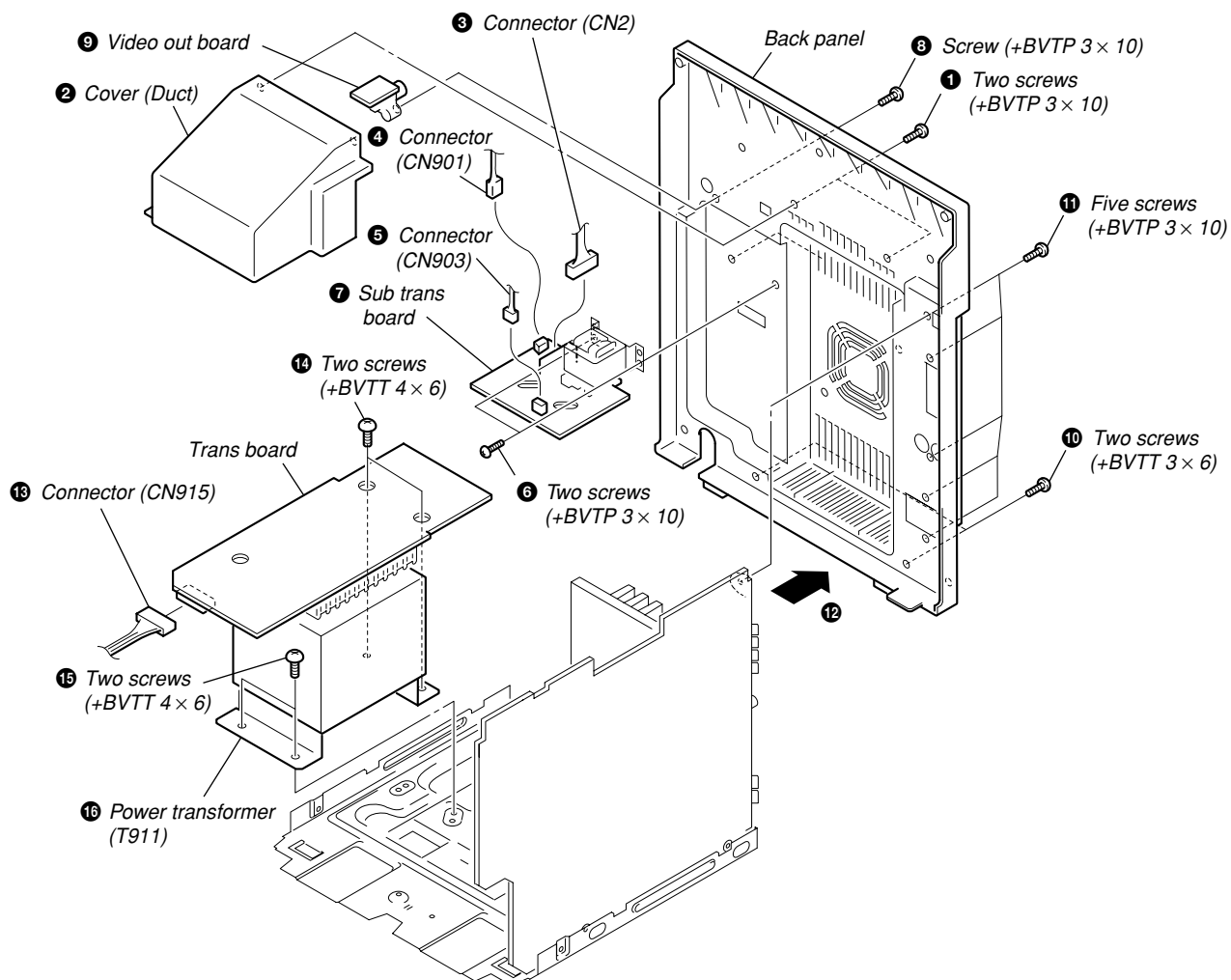
3-6. KEY BOARD



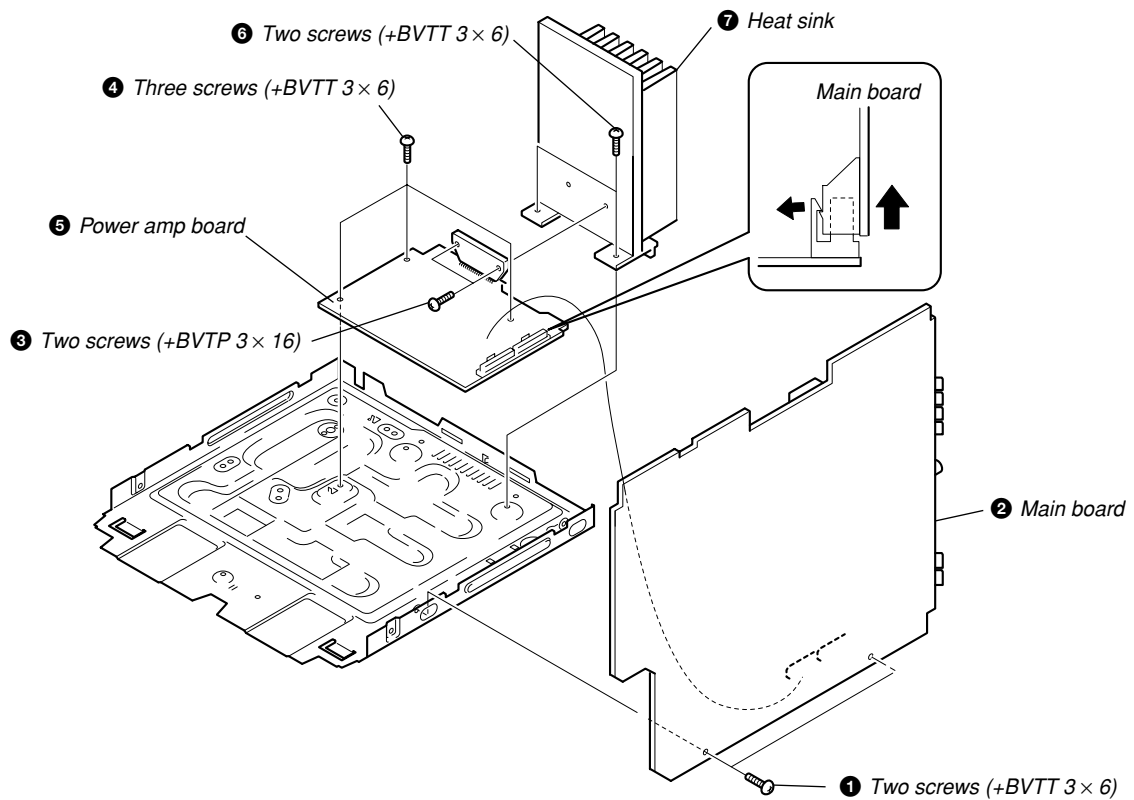
1 Cut the six melted-connection points with a cutting plier.

Note: When attaching the Key board, refer to "Service Note" on page 4.

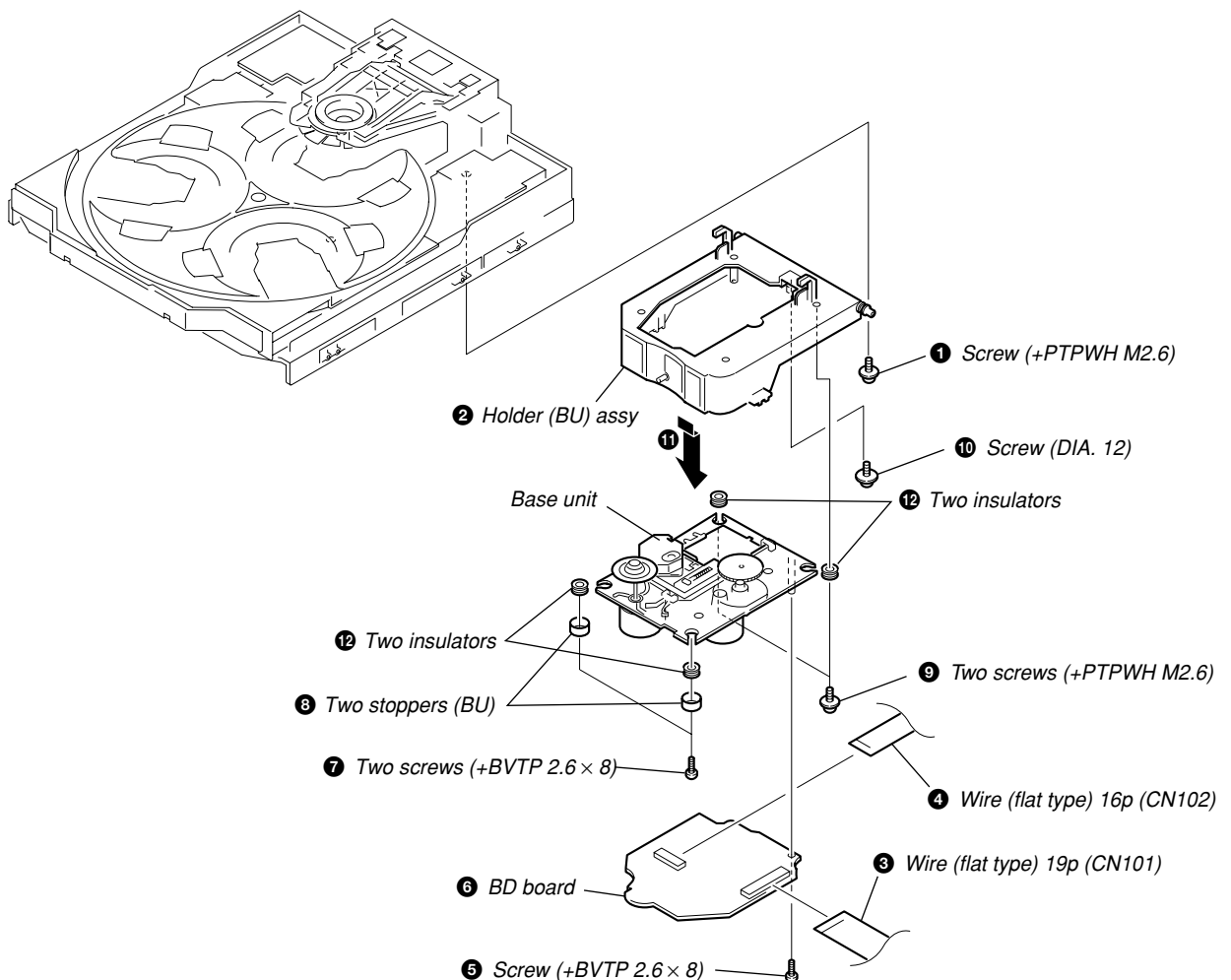
3-7. SUB TRANS BOARD, VIDEO OUT BOARD, BACK PANEL, POWER TRANSFORMER (TRANS BOARD)



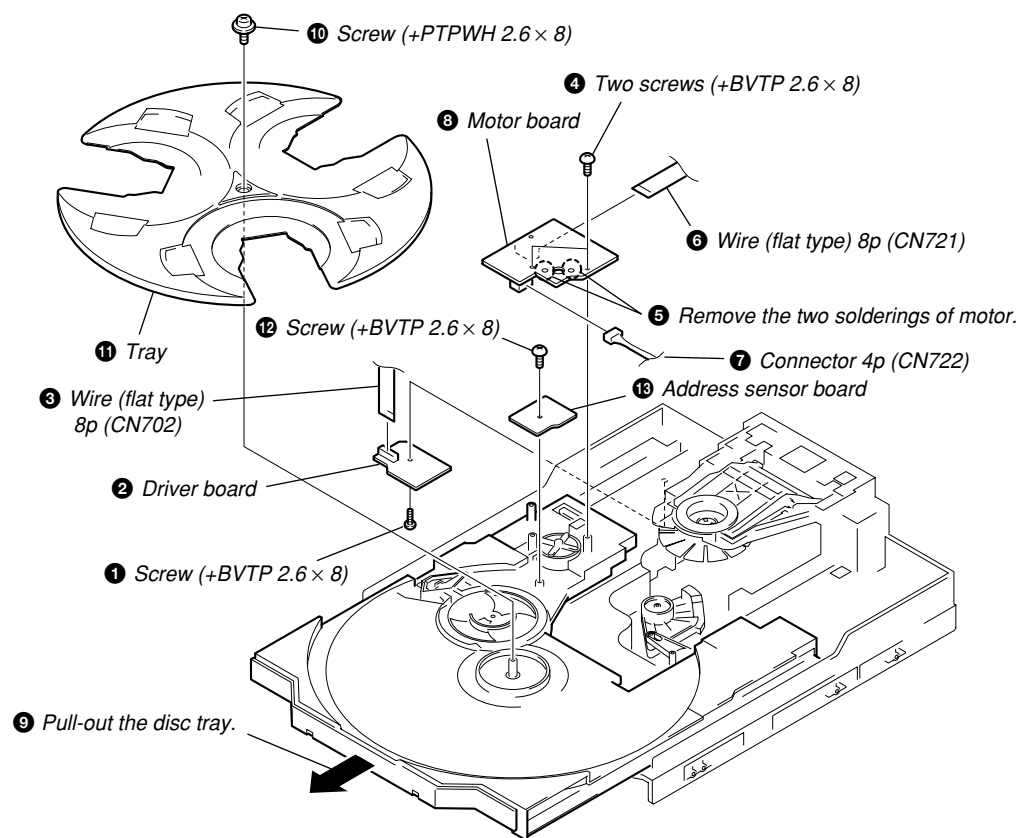
3-8. MAIN BOARD, POWER AMP BOARD



3-9. BASE UNIT, BD BOARD



3-10. DRIVER BOARD, MOTOR BOARD AND ADDRESS SENSOR BOARD





SECTION 4 TEST MODE

[MC Cold Reset]

- The cold reset clears all data including preset data stored in the RAM to initial conditions. Execute this mode when returning the set to the customer.



Procedure:

- Press three buttons , **ENTER**, and  simultaneously.
- The fluorescent indicator tube displays “COLD RESET” and the set is reset.

[CD Ship Mode]

- This mode moves the pickup to the position durable to vibration. Use this mode when returning the set to the customer after repair.


Procedure:

- Press  button to turn the set ON.
- Press **CD** button and  button simultaneously until “STANDBY” appears.
- When you release the buttons, a message “LOCK” is displayed on the fluorescent indicator tube, and the CD ship mode is set.

[MC Hot Reset]

- This mode resets the set with the preset data kept stored in the memory. The hot reset mode functions same as if the power cord is plugged in and out.





Procedure:

- Press three buttons , **ENTER**, and **DISPLAY** simultaneously.
- The fluorescent indicator tube becomes blank instantaneously, and the set is reset.

[CD Service Mode]

- This mode can run the CD sled motor freely. Use this mode, for instance, when cleaning the pickup.

Procedure:




- Press  button to turn the set ON.
- Select the function “CD”.
- Press three buttons , **ENTER**, and **OPEN/CLOSE** simultaneously.
- The CD service mode is selected.
- With the CD in stop status, continue to press  to move the pickup to outside track, continue to press  to inside track.
- To exit from this mode, perform as follows:
 - Move the pickup to the most inside track.
 - Press three buttons in the same manner as step 2.

- Note:**
- Always move the pickup to most inside track when exiting from this mode. Otherwise, a disc will not be unloaded.
 - Do not run the sled motor excessively, otherwise the gear can be chipped.

[Change-over of AM Tuner Step between 9 kHz and 10 kHz]

- A step of AM channels can be changed over between 9 kHz and 10 kHz.


Procedure:

- Press  button to turn the set ON.
- Select the function “TUNER”, and press **TUNER/BAND** button to select the BAND “AM”.
- Press  button to turn the set OFF.
- Press **ENTER** and  buttons simultaneously, and the display of fluorescent indicator tube changes to “AM 9 k STEP” or “AM 10 k STEP”, and thus the channel step is changed over.

[GC Test Mode]

- This mode is used to check the software version, FL tube, LED, keyboard, headphone and volume.

Procedure:

- Press three buttons , **ENTER** and **DISC 2** simultaneously.
- LEDs and fluorescent indicator tube are all turned on.
- When **ENTER** and **DISC 2** are pressed at the same time, the key number check mode starts up. In this mode, the key numbers of each key series are displayed.
- In the key check mode, the fluorescent indicator tube displays “KEY 000”. Each time a button is pressed.
- When **ENTER** and **DISC 2** are pressed at the same time, the key count check mode starts up. In this mode, the message “KEY CNT @@” is displayed on the FL display tube. When each button is pressed, the key row number is incremented first. Then the key value is then incremented. However, one the button is pressed, the key value cannot be counted.
- When **ENTER** and **DISC 2** are pressed at the same time, the headphones check mode starts up. In this mode, the message “H_P ON” is displayed when the headphones are inserted. When the headphones are not inserted, the message “H_P OFF” is displayed.
- When **ENTER** and **DISC 2** are pressed at the same time, the volume check mode starts up. In this mode, the message “VOLUME FLAT” is displayed on the FL display tube. When the volume control knob is rotated in the positive (+) direction, the message “VOLUME UP” is displayed. When the volume control knob is rotated in the negative (-) direction, the message “VOLUME DOWN” is displayed.
- In order to quit the mode, either press **ENTER** and **DISC 2** at the same time or press the three buttons at the same time as in step 1.
- To exit from this mode, press three buttons in the same manner as step 1, or disconnect the power cord.

[MC Test Mode]

- This mode is used to check operations of the respective sections of Amplifier, TUNER, CD and Tape.

Procedure:

1. Press the **I/⏻** button to turn on the set.
2. Press the three buttons of **■**, **ENTER** and **DISC 3** simultaneously.
3. A message "TEST MODE" appears on the FL display tube.
 - The messages VACS1 to VACS5 are displayed when the VACS is changed in this mode.
 - The number of repeats of TAPE and CD is set to the infinite number as the default setting.
4. When **▲ (CURSOR UP)** button is pressed, GEQ increases to its maximum and a message "GEQ MAX" appears.
5. When **▼ (CURSOR DOWN)** button is pressed, GEQ decreases to its minimum and a message "GEQ MIN" appears.
6. When **◀ (CURSOR LEFT)** or **▶ (CURSOR RIGHT)** button is pressed, GEQ is set to flat and a message "GEQ FLAT" appears.
7. In the test mode, the default-preset channel is called even when the TUNER is selected and an attempt is made to call the preset channel that has been stored in memory, by operating the Shuttle knob. (It means that the memory is cleared.)
8. When a tape is inserted in the Deck B and the TAPE B function is selected, and when the **REC PAUSE/START** button is pressed twice, recording starts.
The VIDEO function is selected automatically as the input source.
9. Select the desired loop by pressing the **PLAY MODE** button in the TAPE B function. Insert a test tape AMS-110A or AMS-RO to Deck A.
10. Press the **SPECTRUM** button to enter the AMS test mode.
11. After a tape is rewound first, the FF AMS is checked, and the mechanism is shut off after detecting the AMS signal twice.
12. Then the REW AMS is checked and the mechanism is shut off after detecting the AMS signal twice.
13. When the check is complete, a message of either OK or NG appears.
14. When the two buttons of **SPECTRUM** and **DISC1** are pressed at the same time in any function modes, either the "VACS ON" display to enable the VACS function or the "VACS OFF" display to disable the VACS function can be selected.
15. When you want to exit this mode, press the **I/⏻** button twice.
The cold reset is enforced at the same time.

[Microprocessor version display]

- If the following operation is performed during the POWER OFF in the modes other than the POWER SAVE mode (i.e., while the Demo display shows the watch time),
 1. When three buttons of **STOP**, **ENTER**, **▼ (CURSOR DOWN)** are pressed at the same time, the MC and the GC microprocessor version numbers are displayed as "M1.00 G1.00".
 2. When three buttons of **STOP**, **ENTER**, **▲ (CURSOR UP)** are pressed at the same time, the model name and destination are displayed as "BG1 AS1A3".

[Aging Mode]

This mode can be used for operation check of CD section and tape deck section.

- If an error occurred:
The aging operation stops and display status.
- If no error occurs:
The aging operation continues repeatedly.

1. Operating method of Aging Mode

Turn on the main power and select "CD" of the function.

- 1) Set a disc in DISC1 tray. Select ALL DISC CONTINUE, and REPEAT OFF.
- 2) Load the tapes recording use into the decks A and B respectively.
- 3) Press three buttons **[■]**, **[ENTER]**, and **[DISC SKIP EX-CHANGE]** simultaneously.
- 4) Aging operations of CD and tape are started at the same time.
- 5) To exit the aging mode, perform [MC Cold Reset].

3. Aging Mode in CD section

- 1) Display state
- No error occurs

Display

AGING * * * *

Note:

* * * * : Number of aging operations

Error display

E ** □ ### \$\$ %%

① ② ③ ④ ⑤

① **	The error No. 00 indicates the newest error. As the error No. increases, it means the older error. When you want to retrieve the error history, press the [PLAY MODE] button in the case of mechanism error. Or press the [REPEAT] button in the case of NO DISC error.	
② □	M: Mechanism error	D: No disc error
③ ###	Don't care	01: FOCUS ERROR 02: GFS ERROR 03: SETUP ERROR
④ \$\$	High order digits only D: Stopped during closing due to problems other than mechanism. E: Stopped during opening due to problems other than mechanism. C: Stopped during chucking due to problems other than mechanism. F: Stopped during EX-opening due to problems other than mechanism.	01: NO DISC judgment without chucking retry 02: NO DISC judgment after chucking retry
⑤ %%	Emergency related errors (High order digits only) 1: Stopped during chuck-up 2: Stopped during chuck-down 3: Time out by EX-OPEN 5: Time out by EX-CLOSE	Status at the time of NO DISC judgment (High order digits only) 1: STOP 2: SETUP 3: TOC READ 4: ACCESS 5: PLAY BACK 6: PAUSE 7: MANUAL SEARCH (PLAY) 8: MANUAL SEARCH (PAUSE)

- When the buttons **[■]**, **[ENTER]** and **[DISC 1]** are pressed simultaneously, number of time of the mechanism error and the NO DISC error can be checked.
Display: EMC**EDC** **: Number of times of error (Maximum three times)
EMC: Mechanism error
EDC: NO DISC error

- When aging operation is complete, be sure to perform the MC Cold Reset to reset the error history.

2) Operation during aging mode

In the aging mode, the program is executed in the following sequence.

- (1) The disc tray opens and closes.
- (2) The mechanism accesses DISC 2 and makes an attempt to read TOC. However, since there are no discs, a message “CD2 NO DISC” appears.
- (3) The mechanism accesses DISC 3 and a message “CD3 NO DISC” appears.
- (4) The disc tray turns to select a disc1.
- (5) A disc is chucked.
- (6) TOC of disc is read.
- (7) The pickup accesses to the track 1, and playing 2 seconds.
- (8) The pickup accesses to the last track, and playing 2 seconds.
- (9) Every time when an aging operation of step 1 to step 8 is complete, the display “AGING[*][*][*][*]” value increases as the number of aging operations is counted up.
- (10) Returns to step 1.

3. Aging Mode in Tape Deck section

1) Display state

- No error occurs
Display action now
- Error occurred
Display action last time

NO.	Display action	Action contents	Final timing
1	TAPE A AG-6 TAPE B AG-1	Rewind the TAPE A Rewind the TAPE B	The top of tape
2	TAPE A AG-2	FWD play the TAPE A	2 minutes playing
3	TAPE A AG-3	F.F. the TAPE A	20 second FF or the end of tape
4	TAPE A AG-4	REV play the TAPE A	2 minutes playing
5	TAPE A AG-5	Rewind the TAPE A	The top of tape
6	TAPE B AG-2	FWD play the TAPE B	2 minutes playing
7	TAPE B AG-3	F.F. the TAPE B	20 second FF or the end of tape
8	TAPE B AG-4	REV play the TAPE B	2 minutes playing
9	TAPE B AG-5	Rewind the TAPE B	The top of tape

2) Operation during aging mode

In the aging mode, the program is executed in the following sequence.

- (1) Rewind is executed up to the top of tape A and B.
- (2) A tape on FWD side is played for 2 minutes.
- (3) FF is executed up to either made for 20 second or the end of tape.
- (4) B tape is reversed, and the tape on REV side is played for 2 minutes.
- (5) Rewind is executed up to the top of tape.
- (6) Returns to step 2, and repeat steps from 2 to 5.

[Function Change Mode]

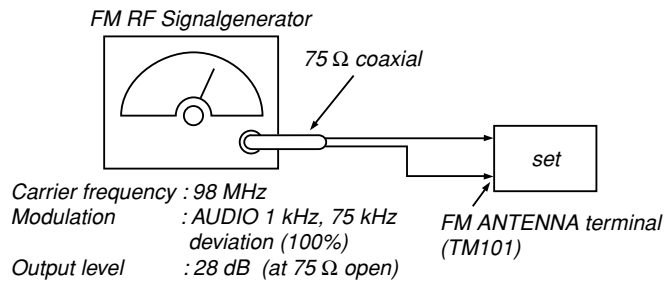
* elect either VIDEO or MD of the external FUNCTION input.

Procedure:

1. Turn on the power.
2. Press the two buttons MD (VIDEO) and I/O at the same time.
The main power is turned on and the other function of the previous function is selected and displayed. “MD” or “VIDEO”.

SECTION 5 ELECTRICAL ADJUSTMENTS

FM Tuned Level Adjustment

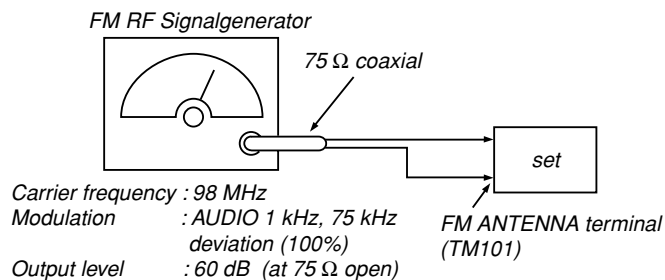


Procedure:

1. Supply a 98 MHz signal at 28 dB from the ANTENNA terminal.
2. Tune the set to 98 MHz.
3. Adjust RV101 to the point (moment) when the TUNED indicator will change from going off to going on.

Adjustment Location: MAIN board

Null Adjustment



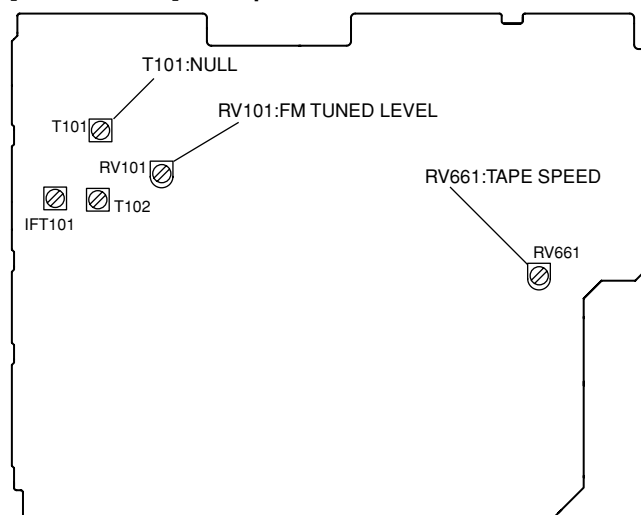
Procedure:

1. Supply a 98 MHz signal at 60 dB from the ANTENNA terminal.
2. Tune the set to 98 MHz.
3. Measure voltage between pin 21 and pin 23 of IC 101. Adjust T101 until the voltage becomes 0 V.

Adjustment Location: MAIN board

Adjustment Location

[MAIN BOARD] Component side

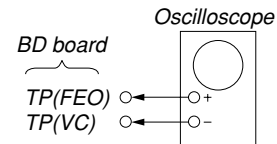


CD SECTION

Note :

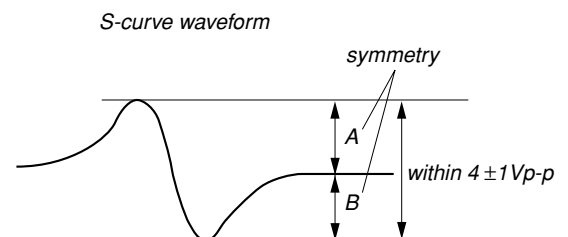
1. CD Block is basically designed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than 10M Ω impedance.
4. Clean the object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

S-Curve Check



Procedure :

1. Connect oscilloscope to TP (FEO).
2. Connect between TP (FEI) and TP (VC) by lead wire.
3. Connect between TP (AGCCON) and TP (D GND) by lead wire.
4. Turn Power switch on.
5. Load a disc (YEDS-18) and actuate the focus search. (In consequence of open and close the disc tray, actuate the focus search)
6. Confirm that the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within 4 ± 1 Vp-p.

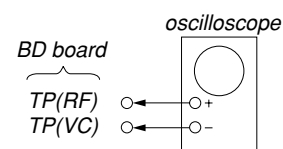


7. After check, remove the lead wire connected in step 2 and 3.

Note :

- Try to measure several times to make sure than the ratio of A : B or B : A is more than 10 : 7.
- Take sweep time as long as possible and light up the brightness to obtain best waveform.

RF Level Check

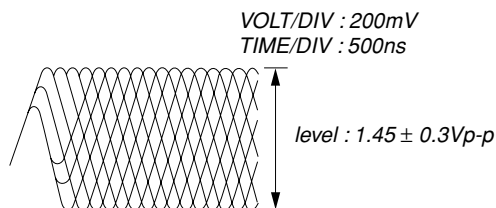


Procedure :

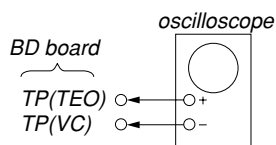
1. Connect oscilloscope to TP (RF).
2. Connect between TP (AGCCON) and TP (D GND) by lead wire.
3. Turned Power switch on.
4. Load a disc (YEDS-18) and playback.
5. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.
6. After check, remove the lead wire connected in step 2.

Note : Clear RF signal waveform means that the shape “◇” can be clearly distinguished at the center of the waveform.

RF signal waveform



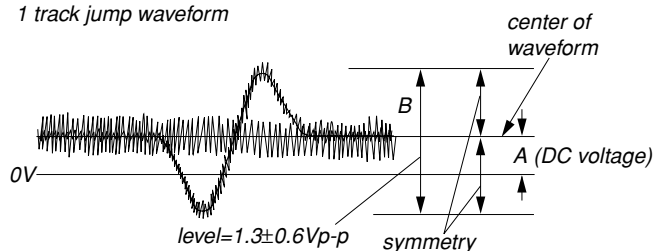
E-F Balance (1 Track jump) Check



Procedure :

1. Connect oscilloscope to TP (TEO) and TP (VC).
2. Turned Power switch on.
3. Load a disc (YEDS-18) and playback the number five track.
4. Press the button. (Becomes the 1 track jump mode.)
5. Confirm that the level B and A (DC voltage) on the oscilloscope waveform.

1 track jump waveform



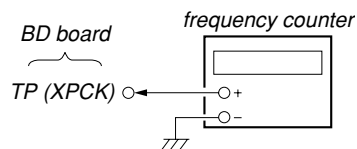
Specified level: $\frac{A}{B} \times 100 = \text{less than } \pm 22\%$

6. After check, remove the lead wire connected in step 1.

RF PLL Free-run Frequency Check

Procedure :

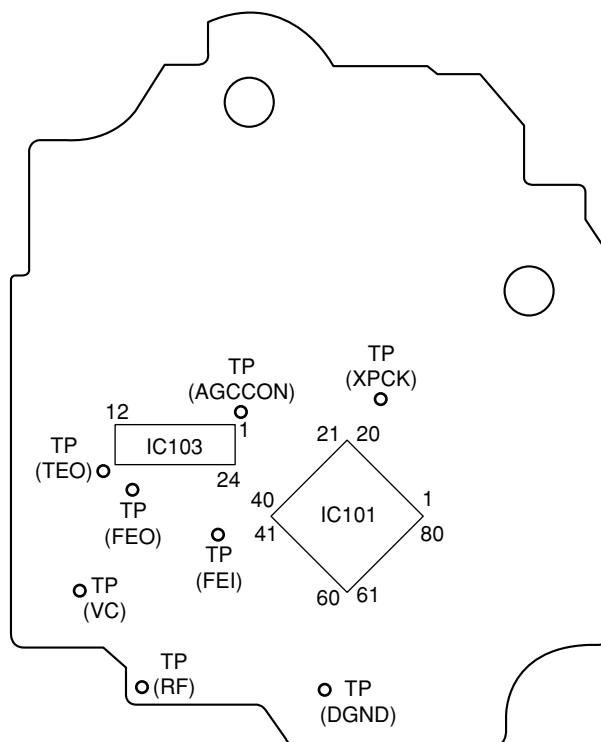
1. Connect frequency counter to test point (XPCK) with lead wire.



2. Turned Power switch on.
3. Put the disc (YEDS-18) in to play the number five track.
Confirm that reading on frequency counter is 4.3218MHz.

Adjustment Location:

[BD BOARD] (Conductor Side)



SECTION 6
DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

Note on Schematic Diagram:

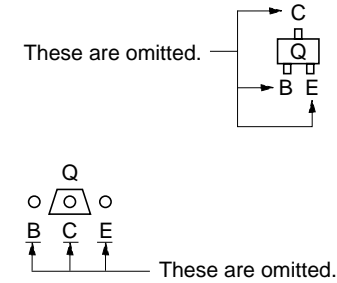
- All capacitors are in μF unless otherwise noted. pF : μF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4} \text{ W}$ or less unless otherwise specified.
- \triangle : internal component.
- \square : panel designation.

Note:
The components identified by mark \triangle or dotted line with mark \triangle are critical for safety.
Replace only with part number specified.

- — : B+ Line.
- - - - : B- Line.
- : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- Voltages are taken with a VOM (Input impedance 10 M Ω). Voltage variations may be noted due to normal production tolerances.
no mark : FM
() : CD
[] : TAPE
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- **Signal path.**
 - ➡ : FM
 - ➡ : AM
 - ➡ : PB (DECK A)
 - ➡ : PB (DECK B)
 - ➡ : REC (DECK B)
 - ➡ : CD
 - ➡ : digital out
- **Abbreviation**
 - SP : Singapore model
 - KR : Korea model
 - MX : Mexican model
 - AR : Argentina model
 - TH : Thai model
 - EA : Saudi Arabia model
 - E51 : Chiri and Peru model
 - E2 : Central and Aouth model

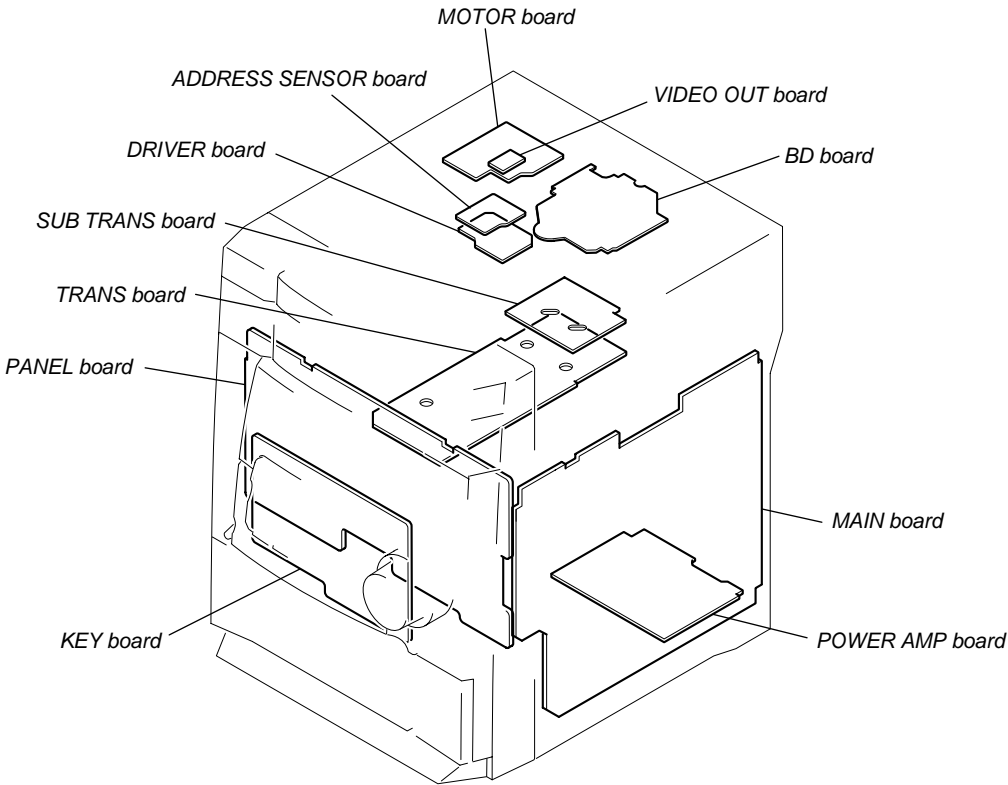
Note on Printed Wiring Boards:

- \circ : parts extracted from the component side.
- \square : Pattern from the side which enables seeing.
- Indication of transistor.



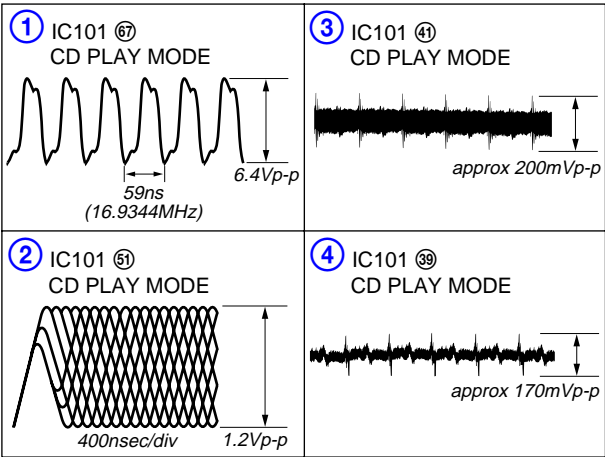
- **Abbreviation**
 - SP : Singapore model
 - KR : Korea model
 - MX : Mexican model
 - AR : Argentina model
 - TH : Thai model
 - EA : Saudi Arabia model
 - E51 : Chiri and Peru model
 - E2 : Central and Aouth model

6-1. CIRCUIT BOARD LOCATION

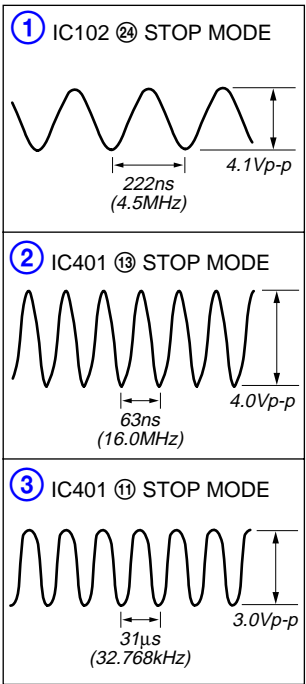


• WAVEFORMS

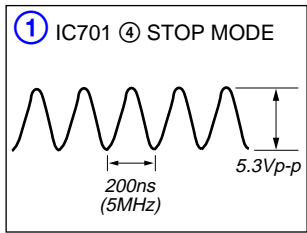
– BD BOARD –



– MAIN BOARD –

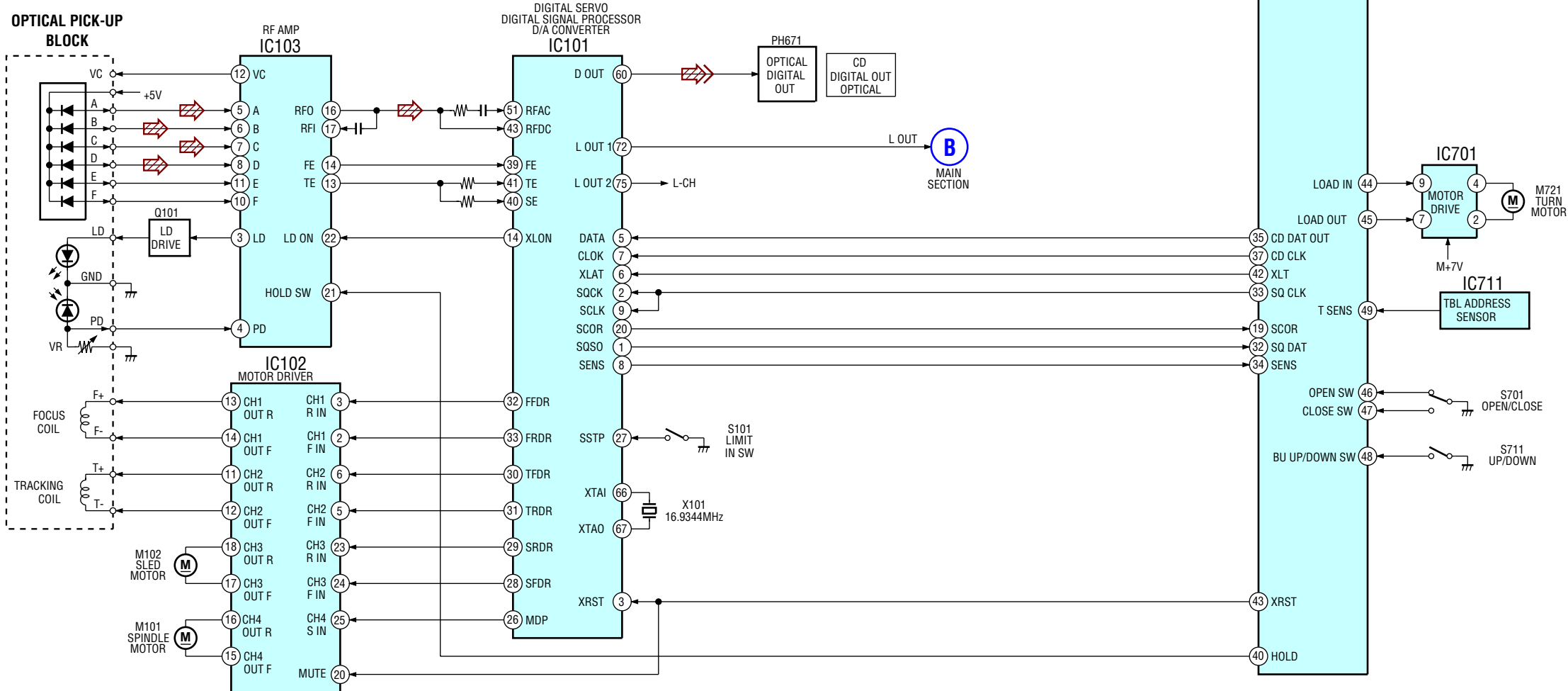
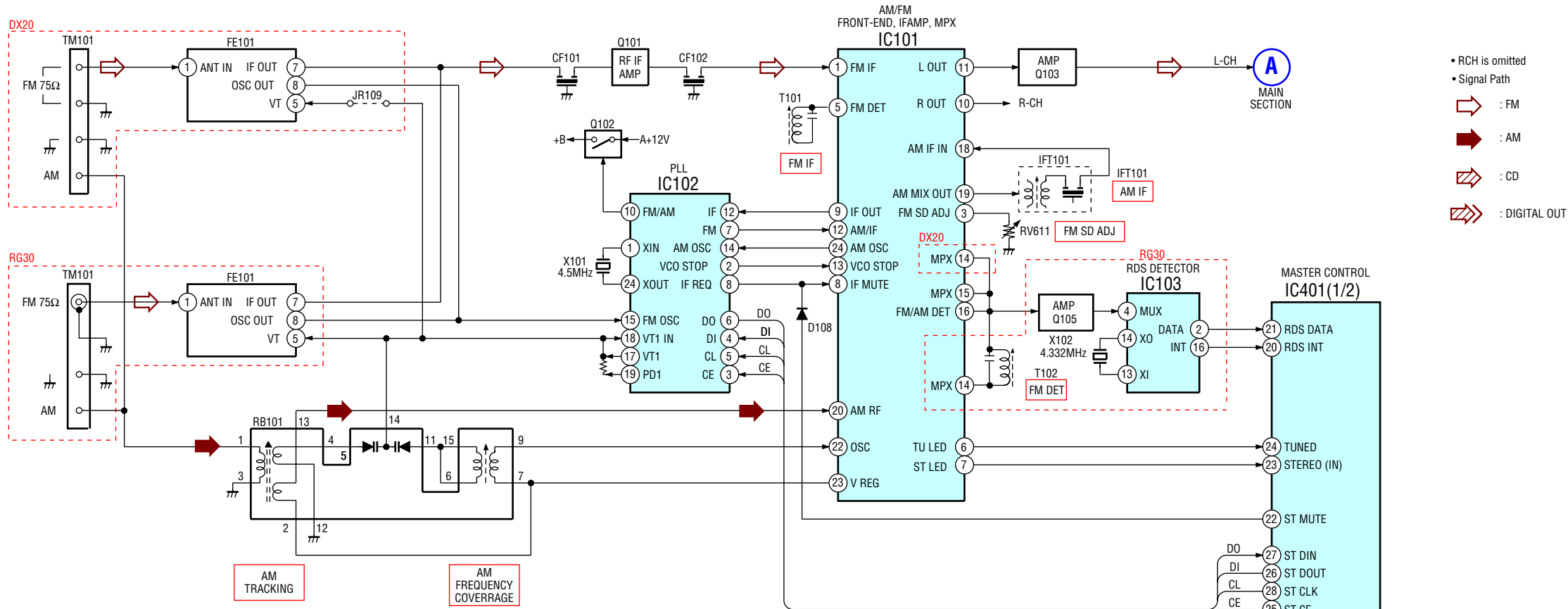


– PANEL BOARD –



HCD-DX20/RG30

6-2. BLOCK DIAGRAMS
TUNER SECTION



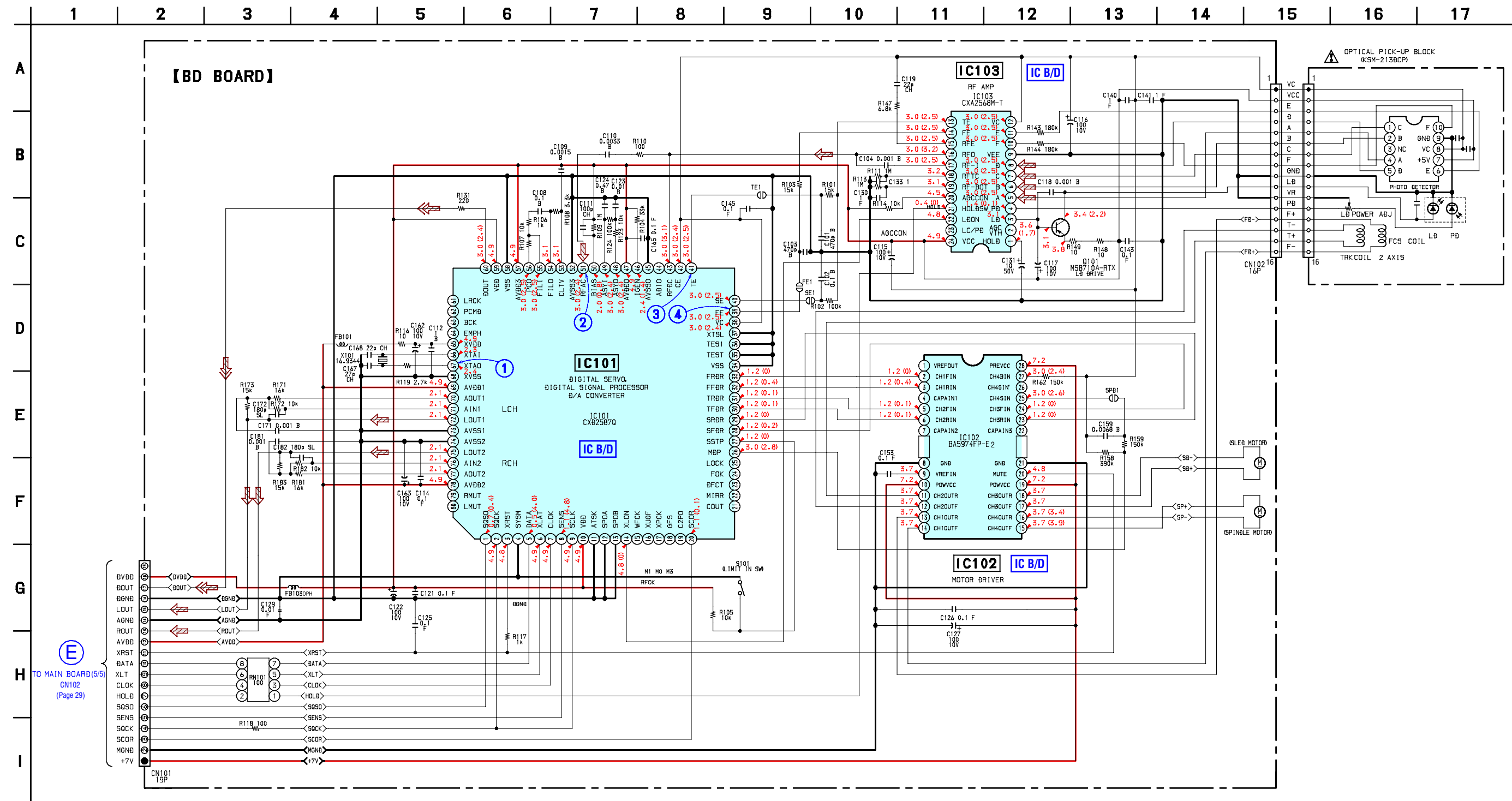


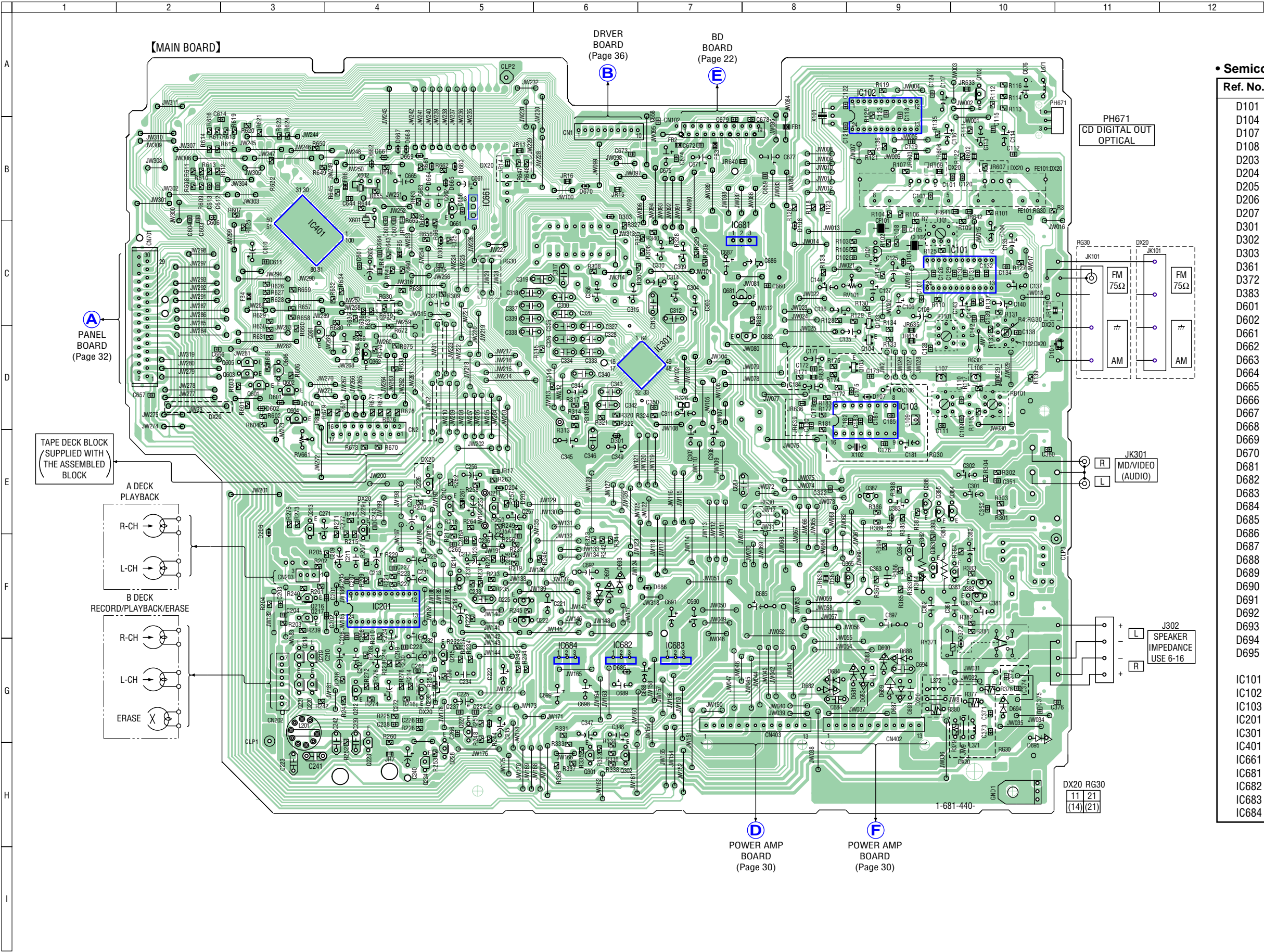
- **Semiconductor Location**

Ref. No.	Location
IC101	B-2
IC102	C-3
IC103	B-2
Q101	A3



- See page 19 for Waveforms.
- See page 40,41 for IC Block Diagrams.





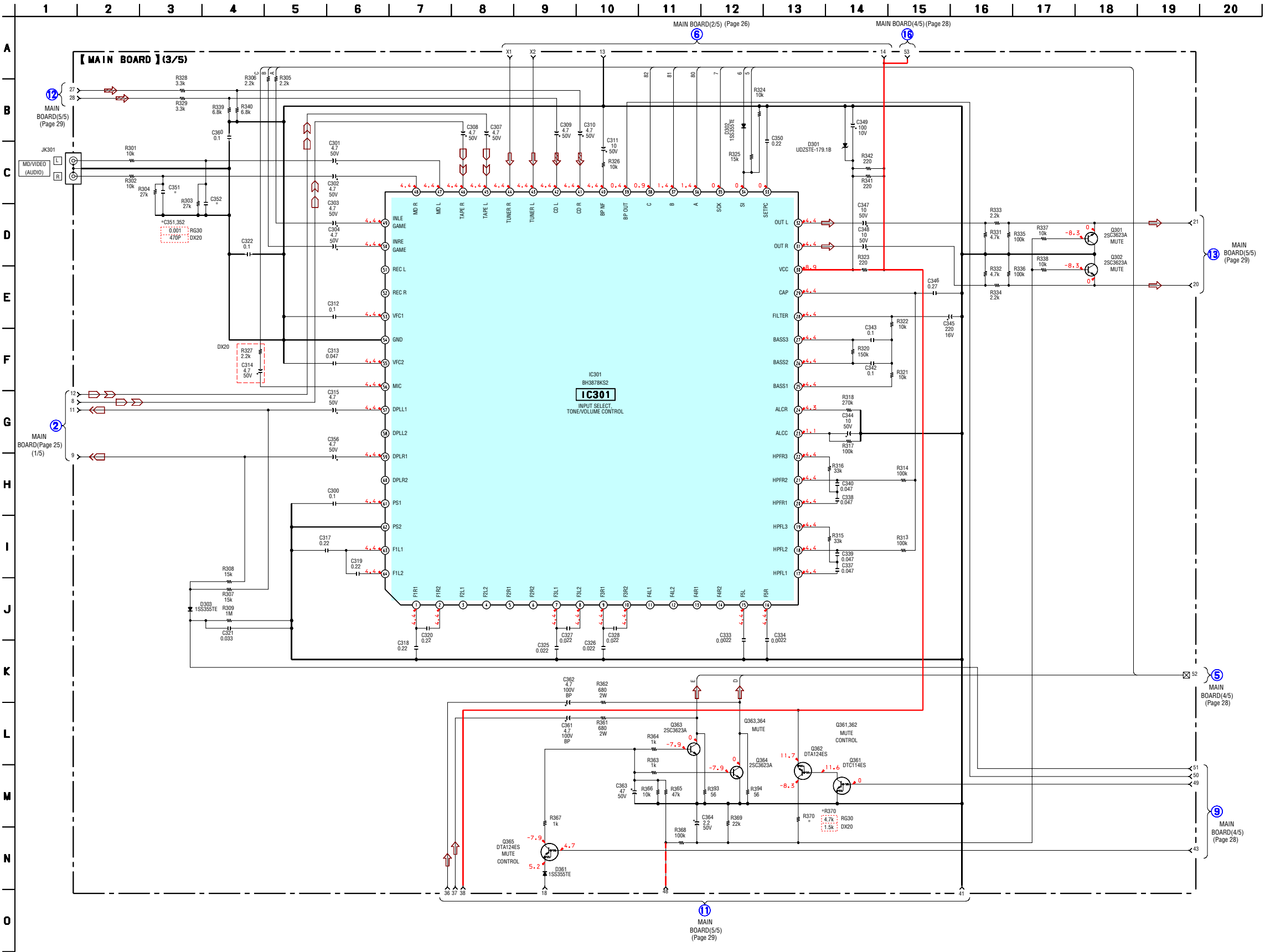
Semiconductor Location			
Ref. No.	Location	Ref. No.	Location
D101	D-11	Q101	C-9
D104	C-9	Q102	A-10
D107	D-9	Q103	C-9
D108	C-8	Q104	D-9
D203	E-5	Q105	D-9
D204	E-5	Q210	E-5
D205	F-5	Q211	E-5
D206	E-3	Q212	G-4
D207	G-5	Q213	E-3
D301	E-6	Q214	F-5
D302	C-5	Q215	G-5
D303	B-6	Q216	F-3
D361	F-8	Q217	F-3
D372	G-10	Q218	G-3
D383	E-9	Q219	G-3
D601	D-3	Q220	G-3
D602	D-3	Q221	G-3
D661	B-4	Q222	F-5
D662	B-4	Q223	H-4
D663	B-5	Q224	H-4
D664	B-5	Q225	F-5
D665	B-5	Q226	E-4
D666	C-4	Q227	G-5
D667	B-4	Q228	H-5
D668	B-4	Q229	E-4
D669	B-4	Q230	G-4
D670	B-6	Q301	H-6
D681	G-9	Q302	H-6
D682	H-8	Q361	D-3
D683	G-9	Q362	D-4
D684	H-8	Q363	F-9
D685	G-6	Q364	F-9
D686	F-7	Q365	F-9
D687	G-9	Q381	F-10
D688	G-9	Q382	F-10
D689	G-9	Q383	F-10
D690	G-9	Q384	E-10
D691	F-6	Q385	E-9
D692	F-6	Q386	E-9
D693	F-6	Q387	E-9
D694	G-10	Q601	D-3
D695	G-10	Q602	D-3
IC101	C-10	Q603	D-3
IC102	A-9	Q604	D-3
IC103	D-9	Q605	D-3
IC201	F-4	Q606	D-3
IC301	D-7	Q661	B-5
IC401	C-3	Q681	C-7
IC661	B-5	Q682	D-8
IC681	C-7		
IC682	G-6		
IC683	G-7		
IC684	G-6		



- See page 19 for Waveforms.
- See page 41,42 for IC Block Diagrams.

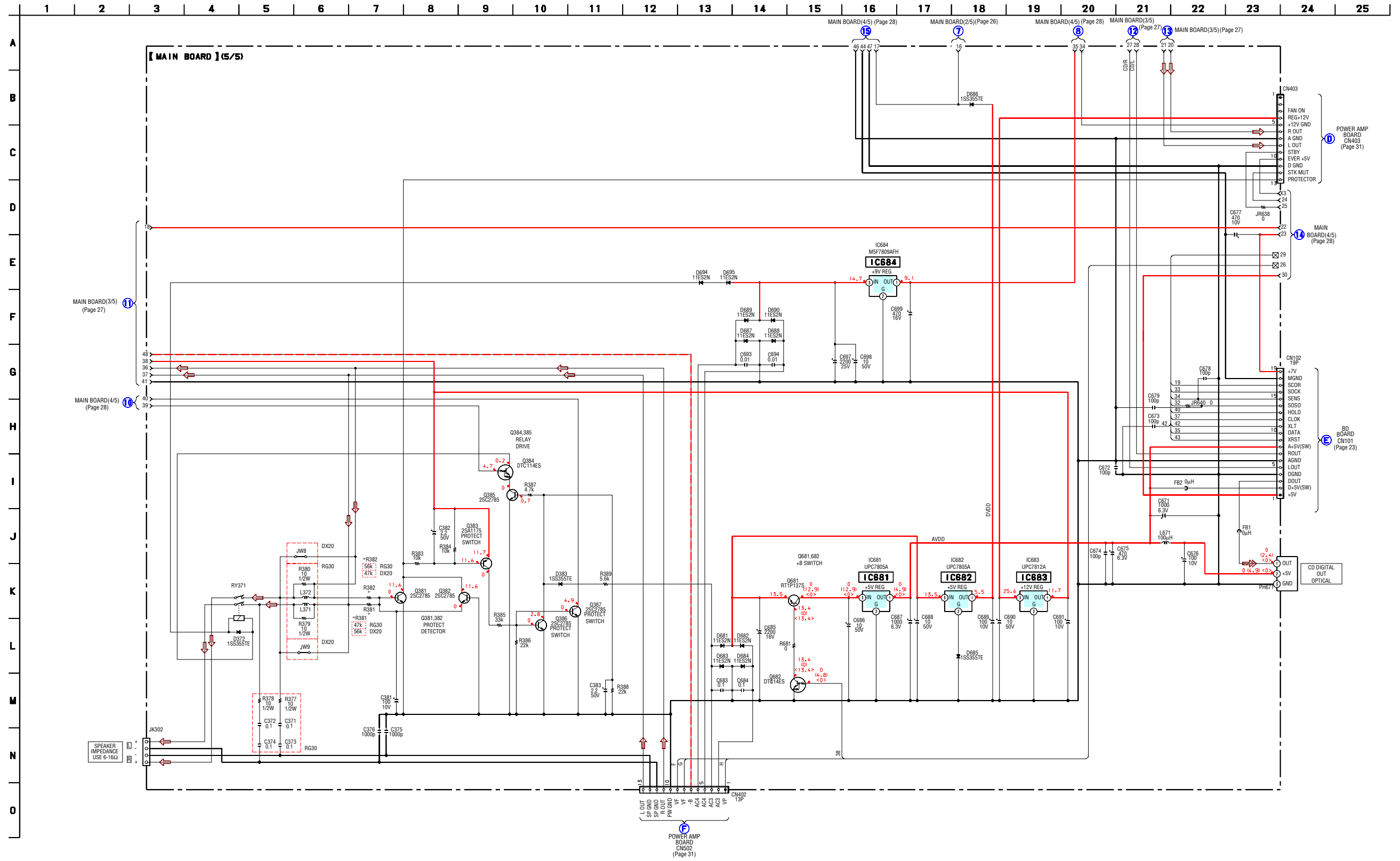


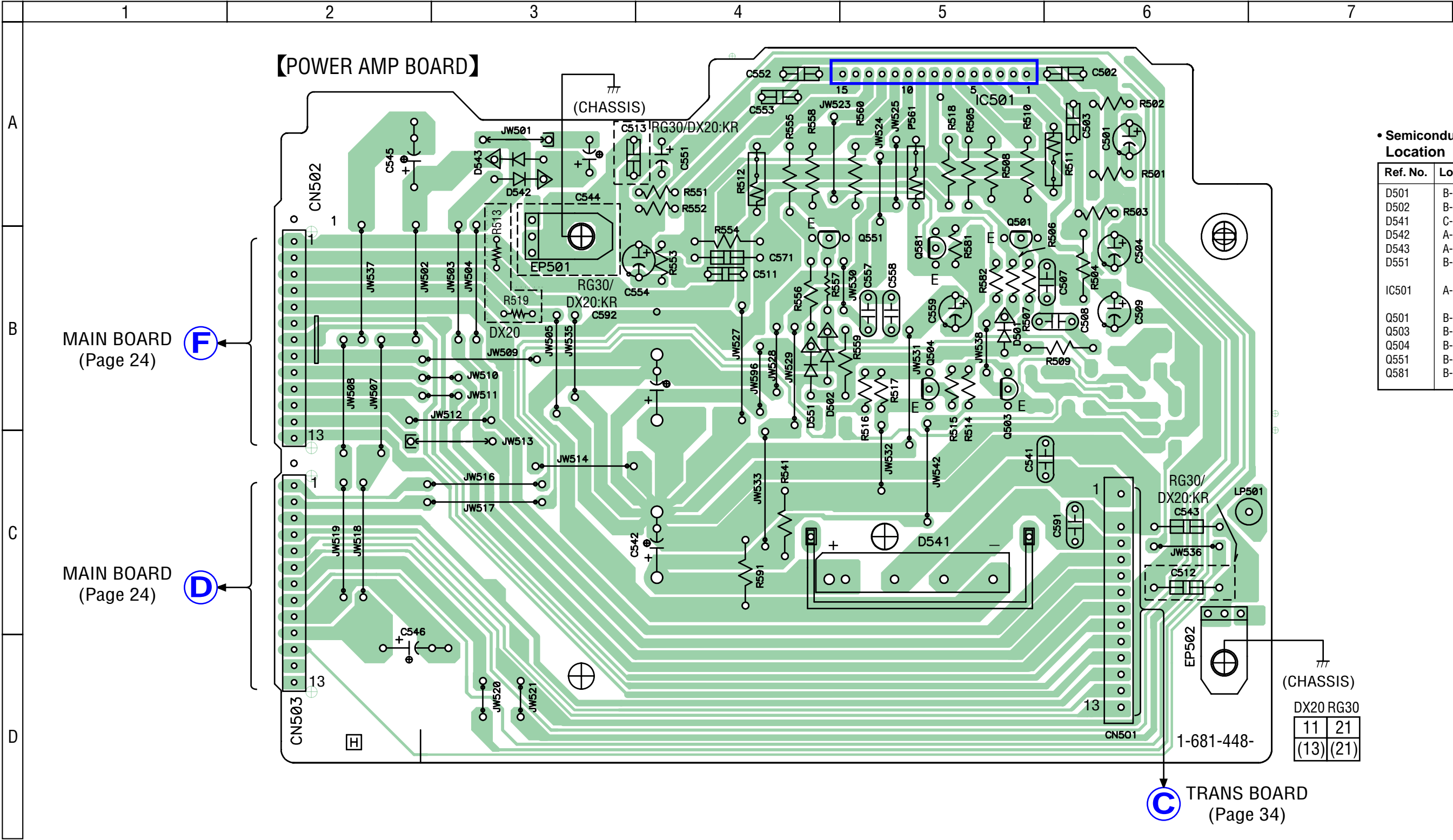
6-8. SCHEMATIC DIAGRAM – MAIN SECTION (3/5) –



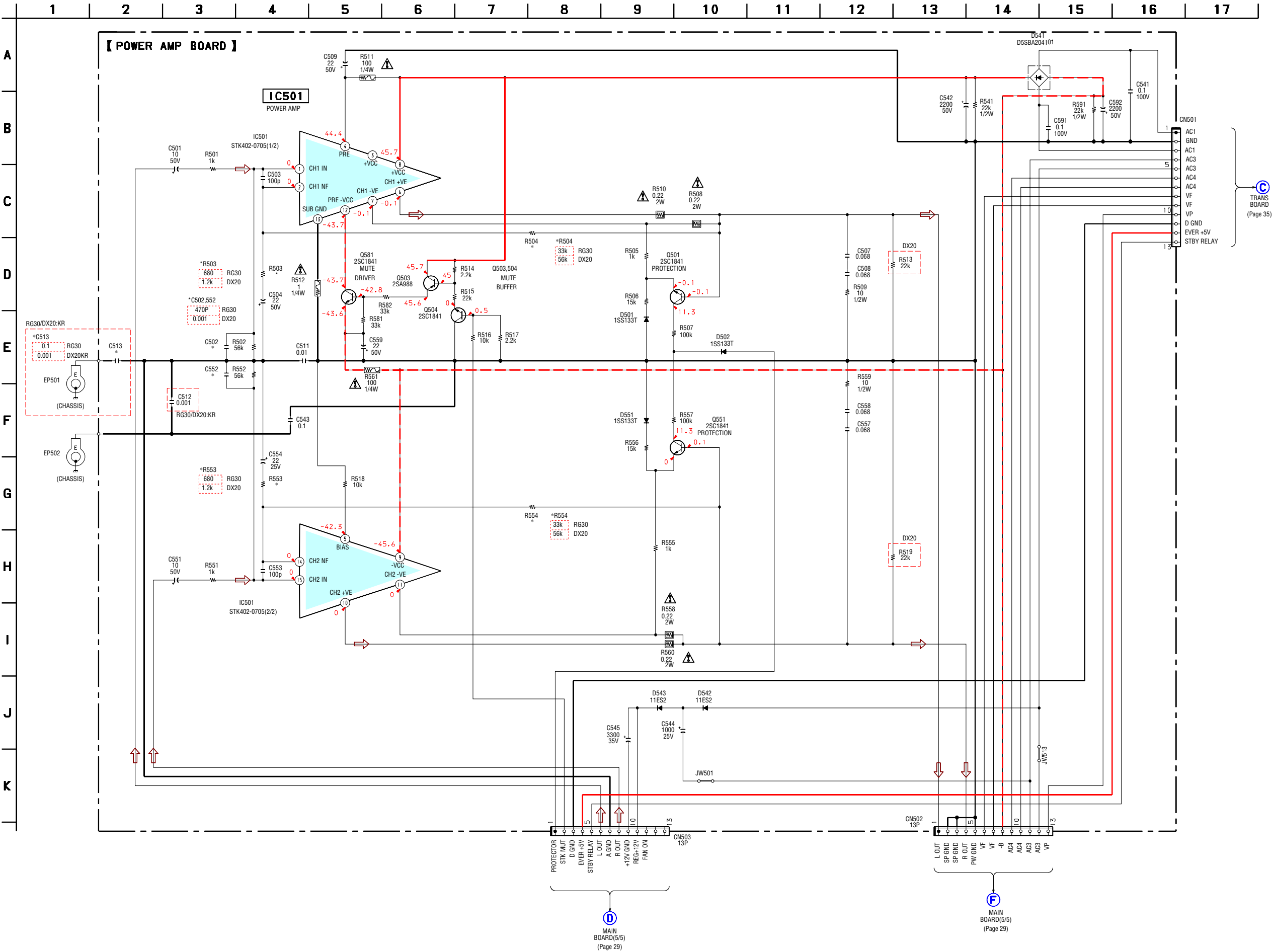
6-9. SCHEMATIC DIAGRAM – MAIN SECTION (4/5) –

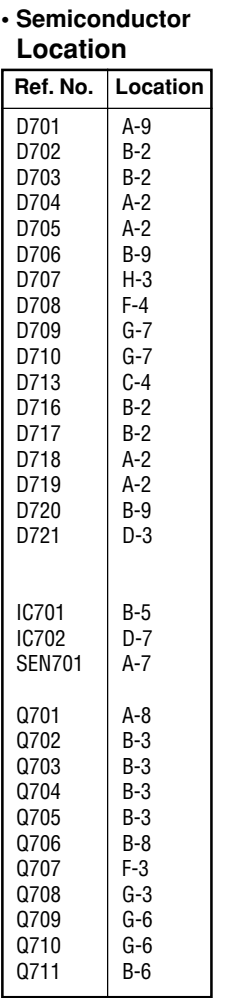
6-10. SCHEMATIC DIAGRAM – MAIN SECTION (5/5) –



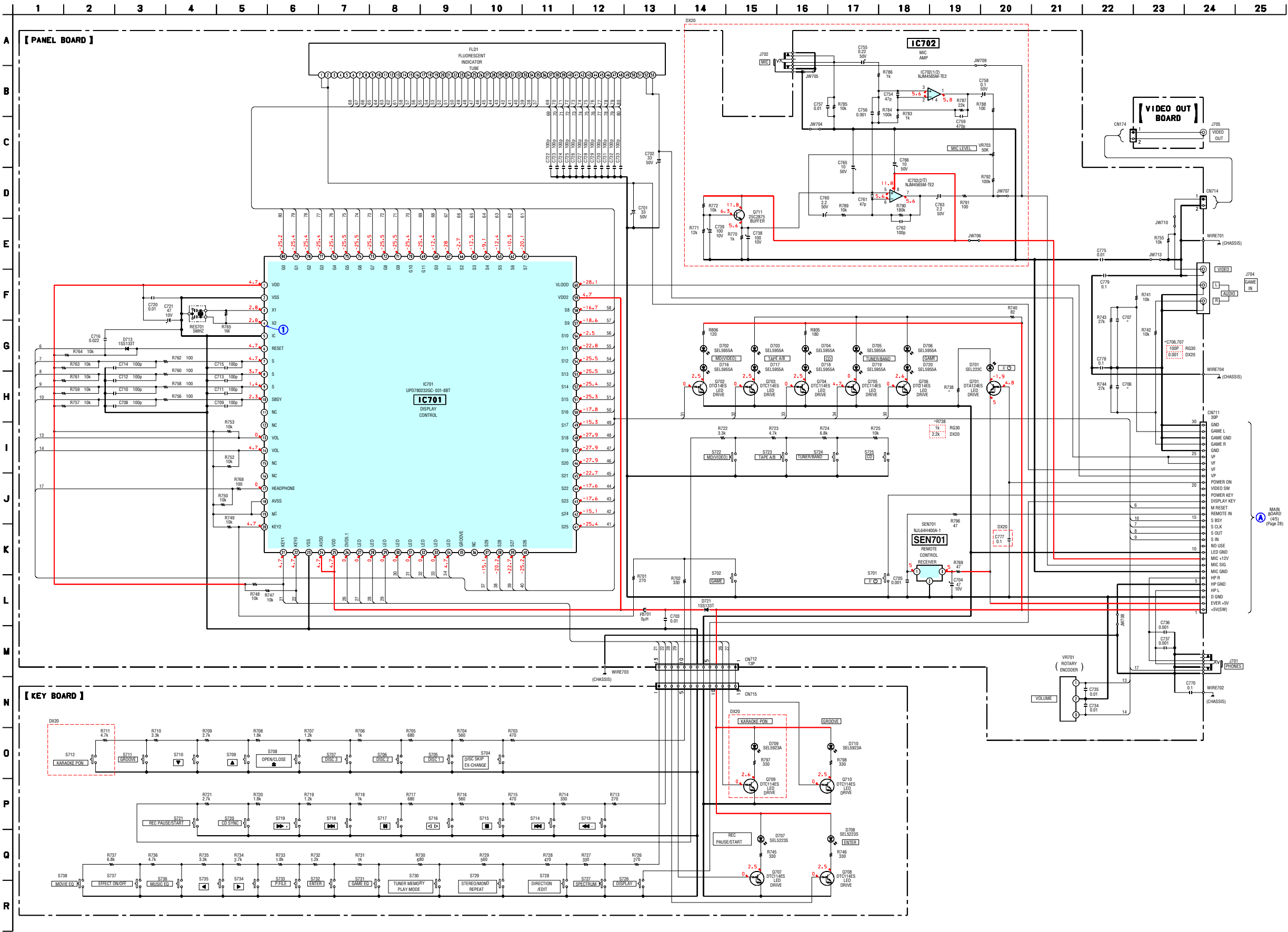


6-12. SCHEMATIC DIAGRAM – POWER AMP SECTION –



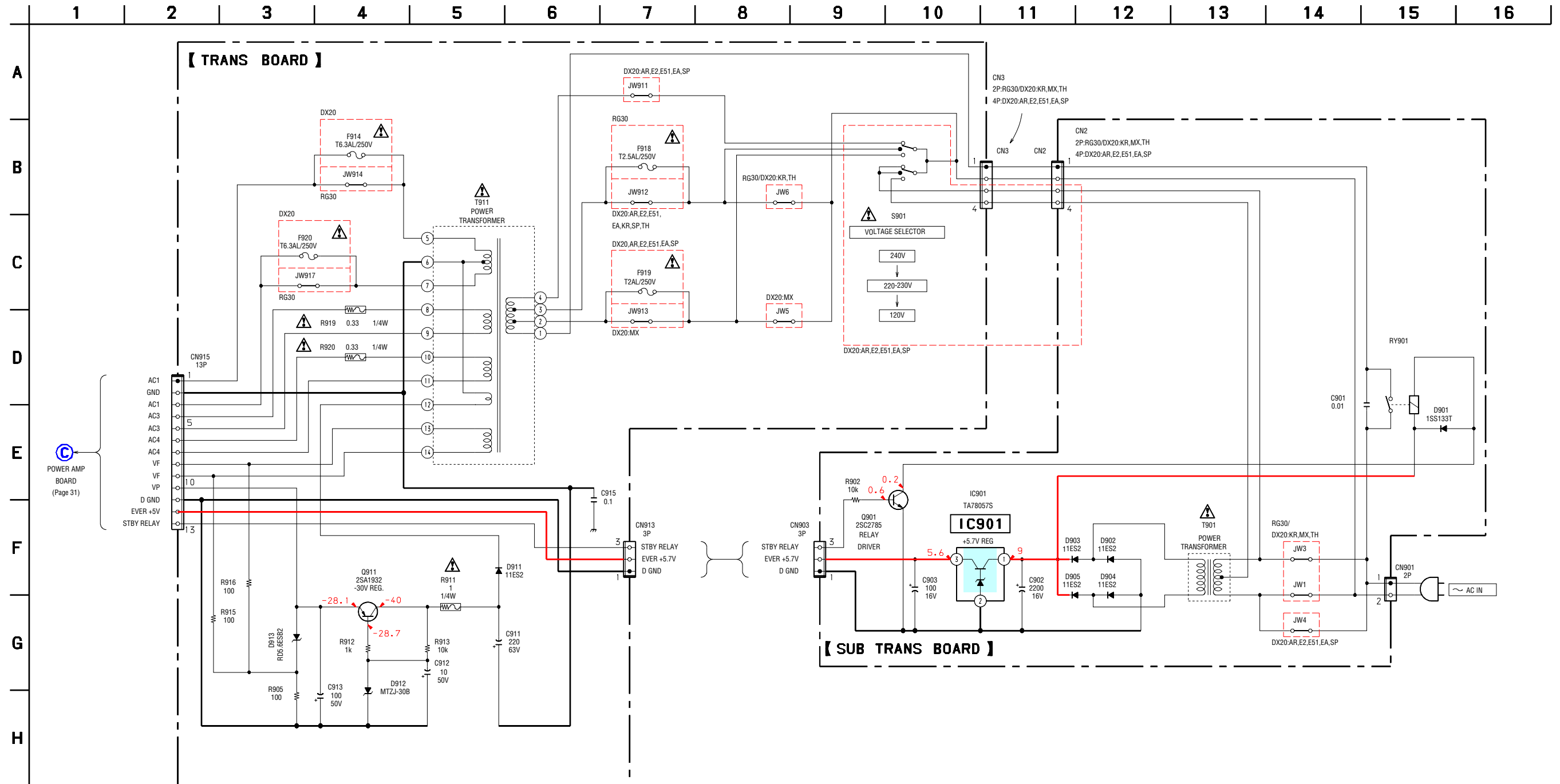


6-14. SCHEMATIC DIAGRAM – PANEL SECTION – • See page 19 for Waveforms.

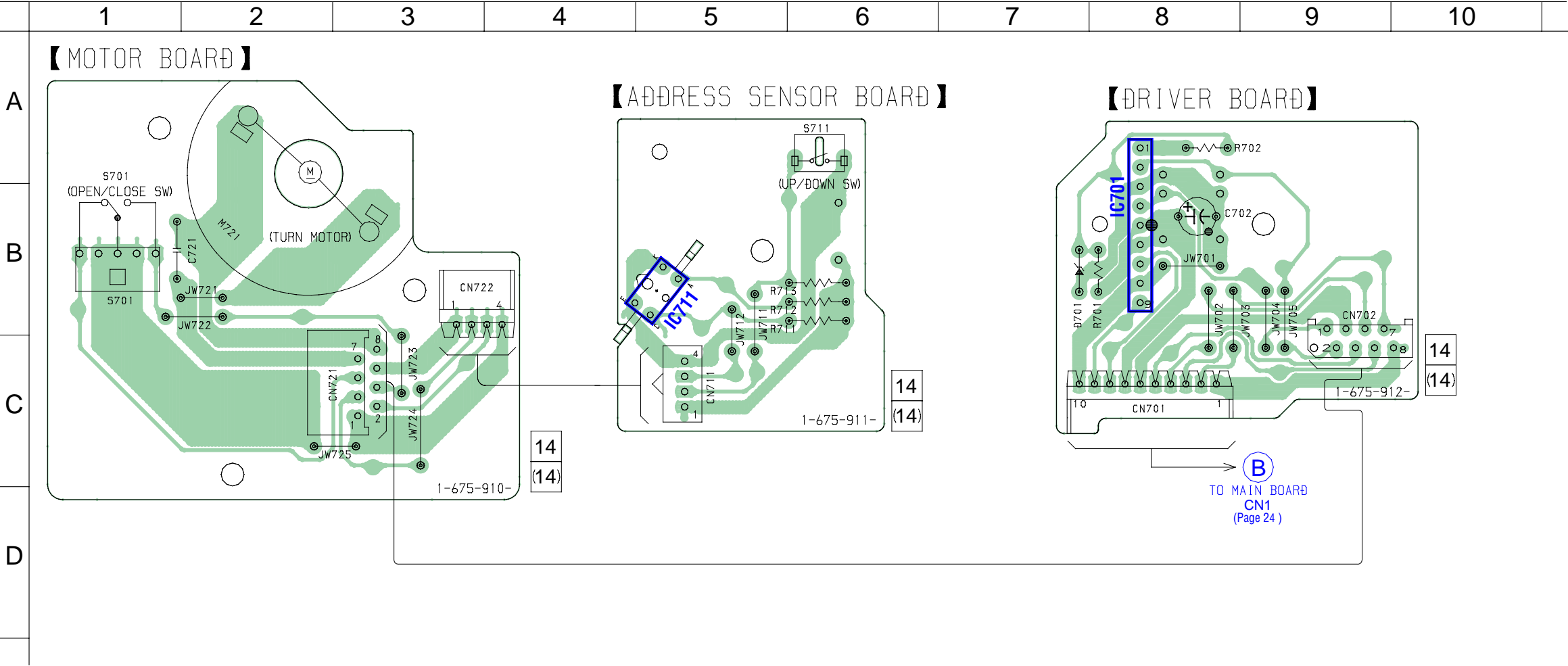




6-16. SCHEMATIC DIAGRAM – TRANS SECTION –



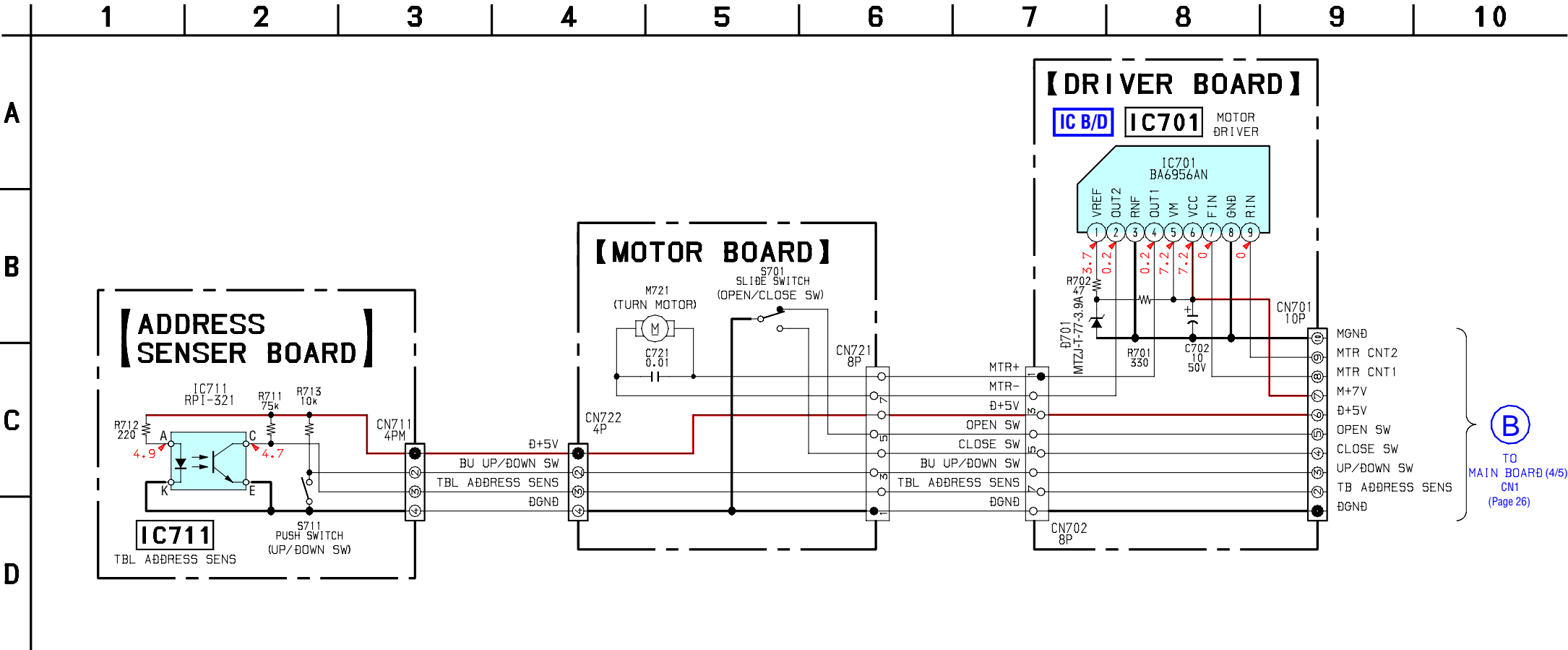
6-17. PRINTED WIRING BOARD – DRIVER SECTION – • See page 19 for Circuit Boards Location.



• Semiconductor Location

Ref. No.	Location
D707	E-1
IC701	B-8
IC711	B-5

6-18. SCHEMATIC DIAGRAM – DRIVER SECTION – • See page 42 for IC Block Diagrams.



6-19. IC PIN FUNCTION DESCRIPTION

• MAIN BOARD IC401 M30622MCA-B23FP (MASTER CONTROL)

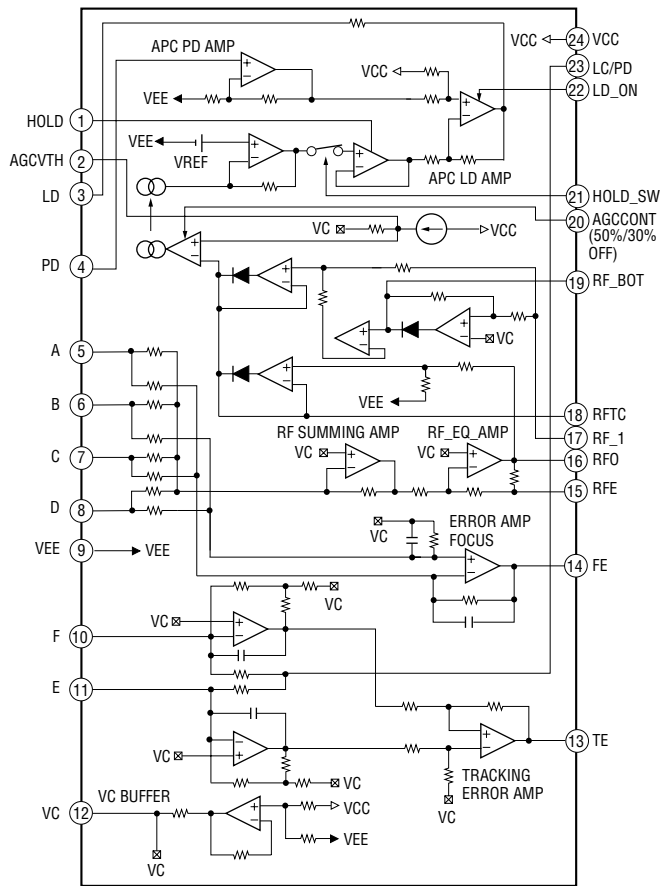
Pin No.	Pin Name	I/O	Description
1	S-OUT	O	Serial data output the display control.
2	S-CLK	O	Serial clock output from main controller.
3	S-BSY	I	Busy signal input from the display control. "L" : busy
4	REMOTE IN	I	Pemoto commander input.
5	3878-DAT	O	Data signal output for IC301(BH3878KS2)
6	3878-LAT	O	Latch signal output for IC301(BH3878KS2)
7	3848-CLK	O	Clock signal output for IC301(BH3878KS2)
8	BYTE	—	Connected to ground.
9	CN VSS	—	Connected to ground.
10	XC IN	I	SUB SYSTEM CLOCK input.(32.768MHz)
11	XC OUT	O	SUB SYSTEM CLOCK output.(32.768MHz)
12	RESET	I	System reset input.
13	X OUT	O	MAIN SYSTEM CLOCK output.(16MHz)
14	VSS	—	Connected to ground.
15	X IN	I	MAIN SYSTEM CLOCK input.(16MHz)
16	VCC	I	Power supply.(+5V)
17	NMI	I	PULL UP.(EVER+5V)
18	AC-CUT	I	AC CUT ON(L)/OF(H) CHECK.
19	RCOR	I	CD Q-data request signal input.
20	RDS-INT	I	RDS interrupt signal input.
21	RDS-DATA	I	RDS data signal input.
22	ST-MUTE	O	Tuner mute signal output.
23	SSSTEREO(IN)	I	STEREO detect signal input.L=ON,H=OFF
24	TUNER	I	TUNER detect signal input.L=ON,H=OFF
25	ST-CE	O	TUNER chip eneble output.
26	ST-DOUT	O	TUNER data output.
27	ST-DIN	I	TUNER data input.
28	ST-CLK	O	TUNER clock signal output.
29	VCD	—	Not used.
30	VCD	—	Not used.
31	NO USE	—	Not used.
32	SQ-DAT IN	I	Subcode Q data input(CD data).
33	SQ-CLK	I	Subcode Q clock input(CD clock).
34	SENS	I	BD condition signal input.
35	CD-DAT OUT	O	CD data output.
36	CAN'T-USE	—	Not used.
37	CD-CLK	O	CD clock output.
38	CD-POWER	O	CD-POWER ON/OFF signal output.H=ON,L=OFF
39	CLOCK-OUT	O	Not used (open).
40	HOLD	O	HOLD signal output.
41	M-RESET	O	Micom reset signal output to the display control. "L" : reset
42	XLT	O	CD latch signal output.
43	XRST	O	CD reset signal output.
44	LOAD-IN	O	Loading motor control signal output (Loading).
45	LOAD-OUT	O	Loading motor control signal output (un Loading).
46	OPEN	I	Tray open detect signal input.
47	CLOSE	I	Tray close detect signal input.
48	UP/DOWN	I	Pick-up up/down detect signal input.
49	T-SENS	I	CD table detect signal input.
50	GAME/DVD	—	Not used.

Pin No.	Pin Name	I/O	Description
51	NO USE	—	Not used.
52	CENT-MUTE	—	Not used.
53	REAR-MUT	—	Not used.
54	494-DAT	—	Not used.
55	494-CLK	—	Not used.
56	494-LT	—	Not used.
57	SUR1	—	Not used.
58	SUR2	—	Not used.
59	SUR3	—	Not used.
60	A-TRG	O	A deck trigger control signal output.H=ON,L=OFF
61	B-TRG	O	B deck trigger control signal output.H=ON,L=OFF
62	VDD	I	Power supply.(+5V)
63	SOFT TEST	I	Not used.
64	VSS	—	Connected to ground.
65	CAMP-CONT	O	Capstan motor REV/FWD/STOP control signal output.H=REV,L=FWD/STOP
66	B-REC FWD	I	Detection input from the deck-B rec forward detect switch. “L” : rec
67	B-REC REW	I	Detection input from the deck-B rec reverse detect switch. “L” : rec
68	A-HAFE	I	A deck hafe detect signal input.
69	B-HAFE	I	B deck hafe detect signal input.
70	A-PLAY	I	A deck play detect signal input.
71	B-PLAY	I	B deck play detect signal input.
72	AMS-IN	I	AMS signal input.L=ON,H=OFF
73	DISPLAY KEY	O	DISPLAY KEY control signal output.
74	POWER-KEY	O	POWER KEY control signal output.
75	BIAS	O	BIAS ON/OFF signal output.H=ON,L=OFF
76	PB-A/B	O	Playback deck A/B select signal output.H=High,L=Normal
77	TC-RELAY	O	Tape deck relay ON/OFF signal output.H=ON,L=OFF
78	PB-MUT	O	PB mute ON/OFF signal output .H=ON,L=OFF
79	REC-MUT	O	REC mute ON/OFF signal output .H=ON,L=OFF
80	SP-LATA	O	Serial data latch pulse output to BH3878KS2 (IC301)
81	SP-LATB	O	Serial data latch pulse output to BH3878KS2 (IC301)
82	SP-LATC	O	Serial data latch pulse output to BH3878KS2 (IC301)
83	LINE-MUT	O	Line mute signsl output.L=ON,H=OFF
84	STK-MUT	O	Power amplifier mute ON/OFF signal output.H=ON,L=OFF
85	PROTECT	I	Speaker protect signal input.L=ON,H=OFF
86	STB-RELAY	O	STANDBY relay control signal output.
87	REAR-RELAY	O	Rear speaker relay control output.
88	FRONT-RELAY	O	Front speaker relay control output.
89	A-SHUT	O	A deck reel pulse detect signal output.
90	B-SHUT	O	B deck reel pulse detect signal output.
91	SP/VACS	I	SP/VACS (tape) select signal input.
92	MODE IN	I	Destination setting terminal.
93	SPEC-IN	I	Version select signal input.
94	VIDEO SW2	—	Not used
95	VACS	I	Tape recording level input.
96	AVSS	—	Connected to ground.
97	POWER-KEY	O	POWER ON/OFF signal output.H=ON,L=OFF
98	AV-REF	—	Analog reference voltage.
99	AVCC	—	Power supply.(+5V)
100	S-IN	I	Serial data input the display control.

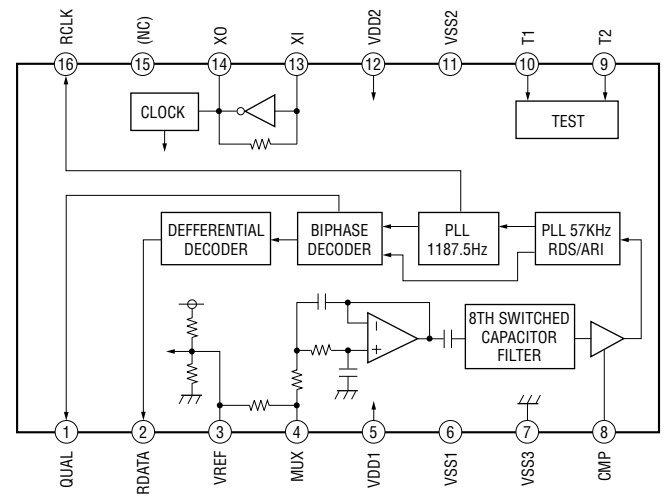
• PANEL BOARD IC701 UPD780232GC-031-8BT (DISPLAY CONTROL)

Pin No.	Pin Name	I/O	Description
1	VDD	I	Power supply.(+5V)
2	VSS	—	Connected to ground.
3	X1	O	System clock output terminal.(5MHz)
4	X2	I	System clock input terminal.(5MHz)
5	IC	—	Connected to ground.
6	RESET	I	Reset signal input from main controller.
7	S-CLK	I	Serial clock input from main controller.
8	S-IN	I	Serial data input from main controller.
9	S-OUT	I	Serial data output from main controller.
10	SBSY	O	Busy signal output.
11	NO USE	—	Not used.
12	NO USE	—	Not used.
13	VOL-A	I	VOLUME A signal input.
14	VOL-B	I	VOLUME B signal input.
15	NO USE	—	Not used.
16	NO USE	—	Not used.
17	HEADPHONE	I	Headphone detect signal input. H=ON,L=OFF
18	AVSS	—	Connected to ground.
19	NO USE	—	Not used.
20 - 22	KEY2-KEY0	I	KEY input.(AD)
23	VSS	—	Connected to ground.
24	AVDD	I	Power supply.(+5V)
25	VDD	I	Power supply.(+5V)
26	DV5.1-LED	O	KARAOKE LED driver output.
27	PRO-LED	O	GROOVE LED driver output.
28	ENTER-LED	O	ENTER LED driver output.
29	REC-LED	O	REC LED driver output.
30	GAME-LED	O	GAME LED driver output.
31	MO/VIDEO-LED	O	MD(VIDEO) LED driver output.
32	TAPE-LED	O	TAPE LED driver output.
33	CD-LED	O	CD LED drover output.
34	TUNER-LED	O	TUNER LED driver output.
35	GROOVE	—	Not used.
36	NO USE	—	Not used.
37 - 58	S29-S8	O	FL segment signal output.
59	VDD2	I	Power supply.(+5V)
60	VLOOD	I	Power supply (-30V) at FL driver.
61 - 67	S7-S0	O	FL segment signal output.
68 - 80	G11-G0	O	FL gride output.

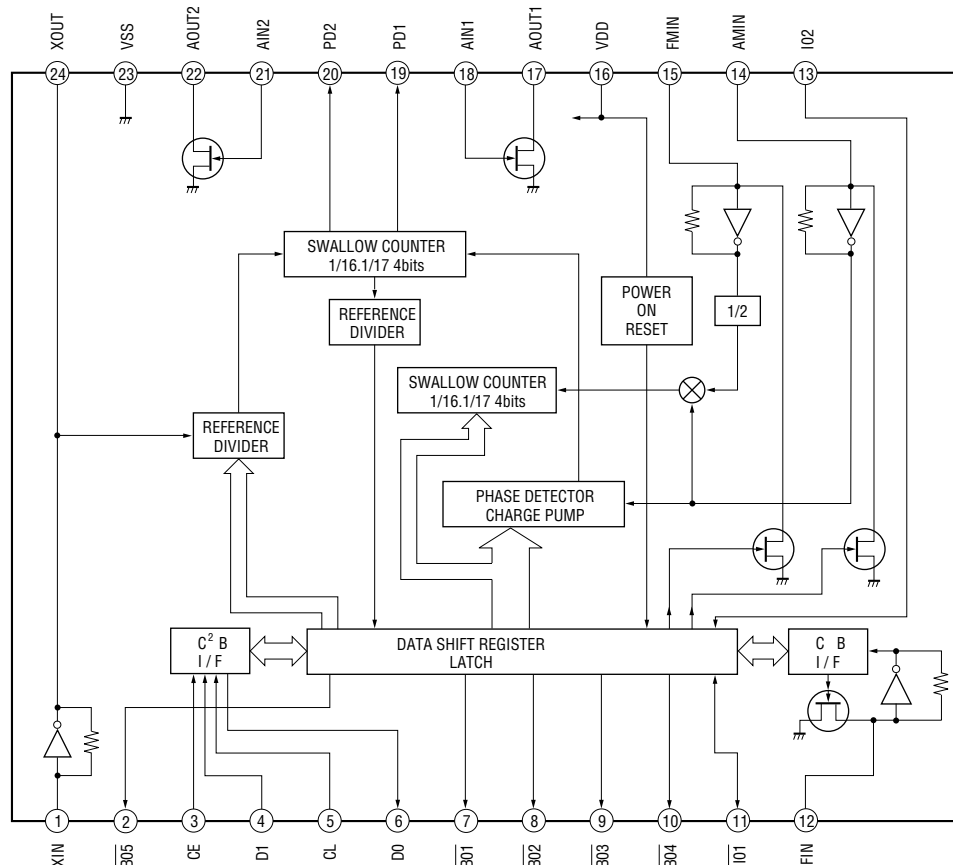
IC103 CXA2568M-T6 (BD BOARD)



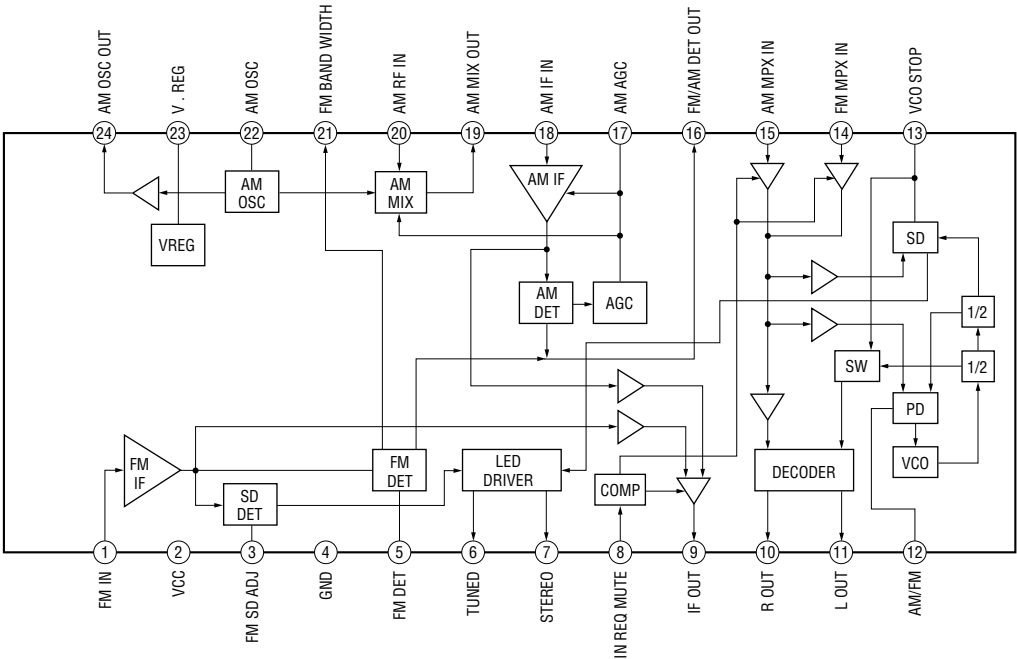
IC103 BU1924 (MAIN BOARD)



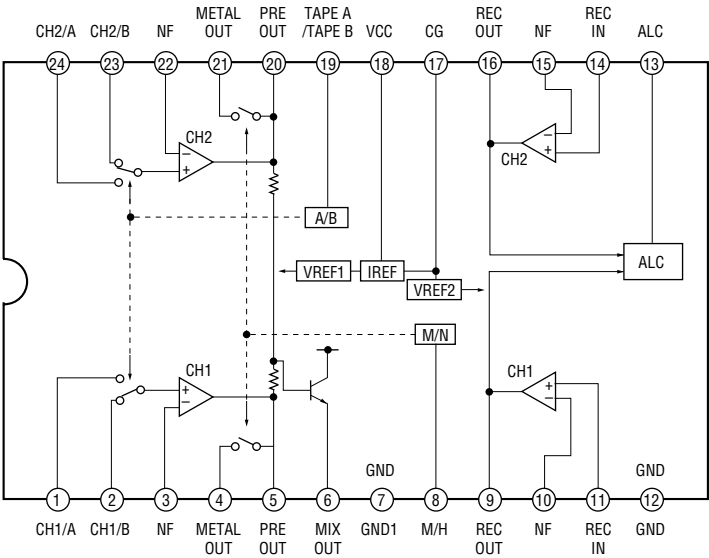
IC102 LC72130 (MAIN BOARD)



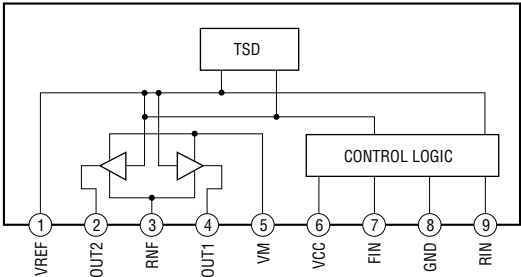
IC101 BA1450 (MAIN BOARD)



IC201 TA8189N (MAIN BOARD)



IC701 BA6956AN (DRIVER BOARD)



SECTION 7 EXPLODED VIEWS

NOTE:

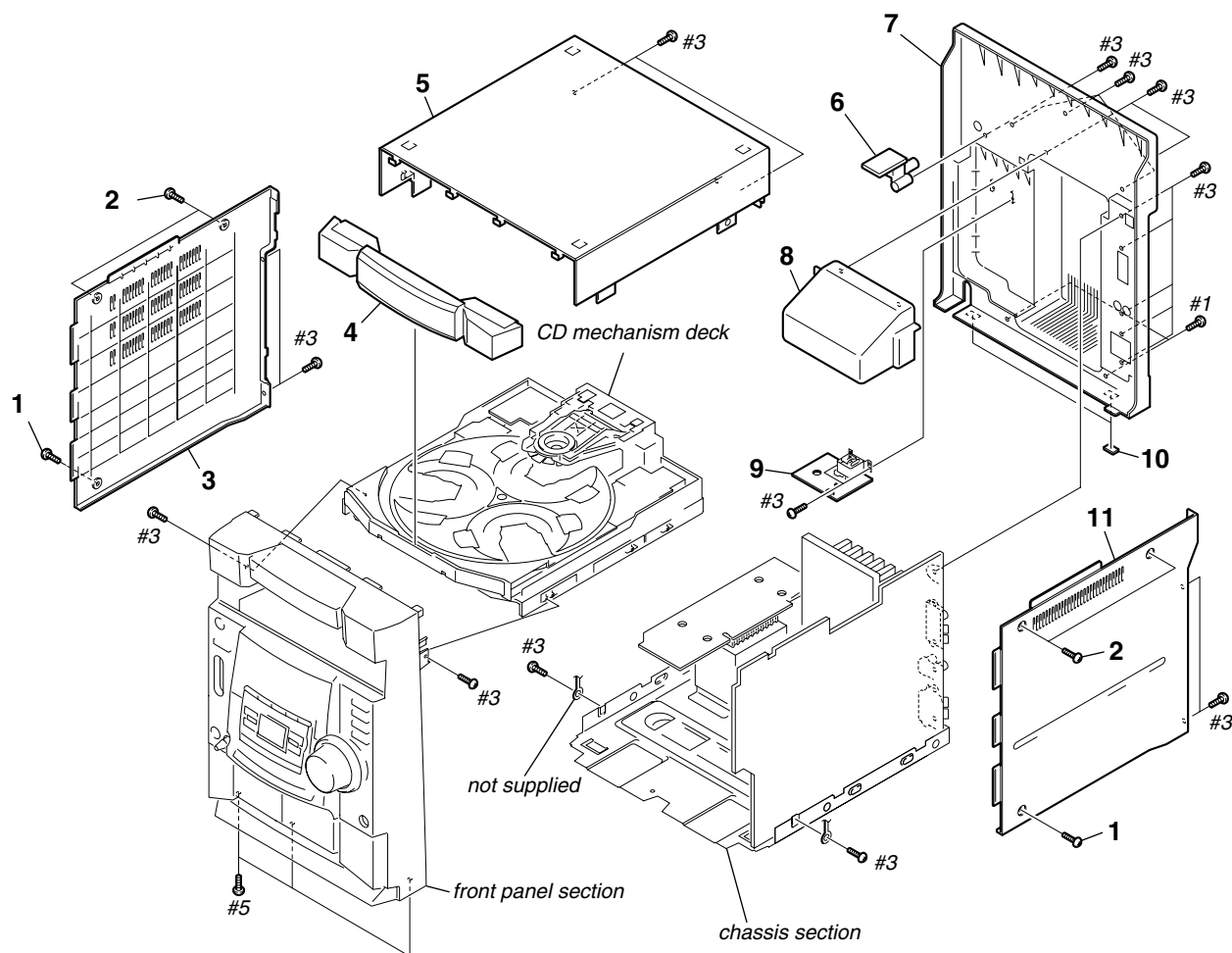
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

• Abbreviation

EA	: Saudi Arabia model
SP	: Singapore model
TH	: Thai model
KR	: Korea model
MX	: Mexican model
AR	: Argentina model
E51	: Chiri and Peru model
E2	: Central and South America model

The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.

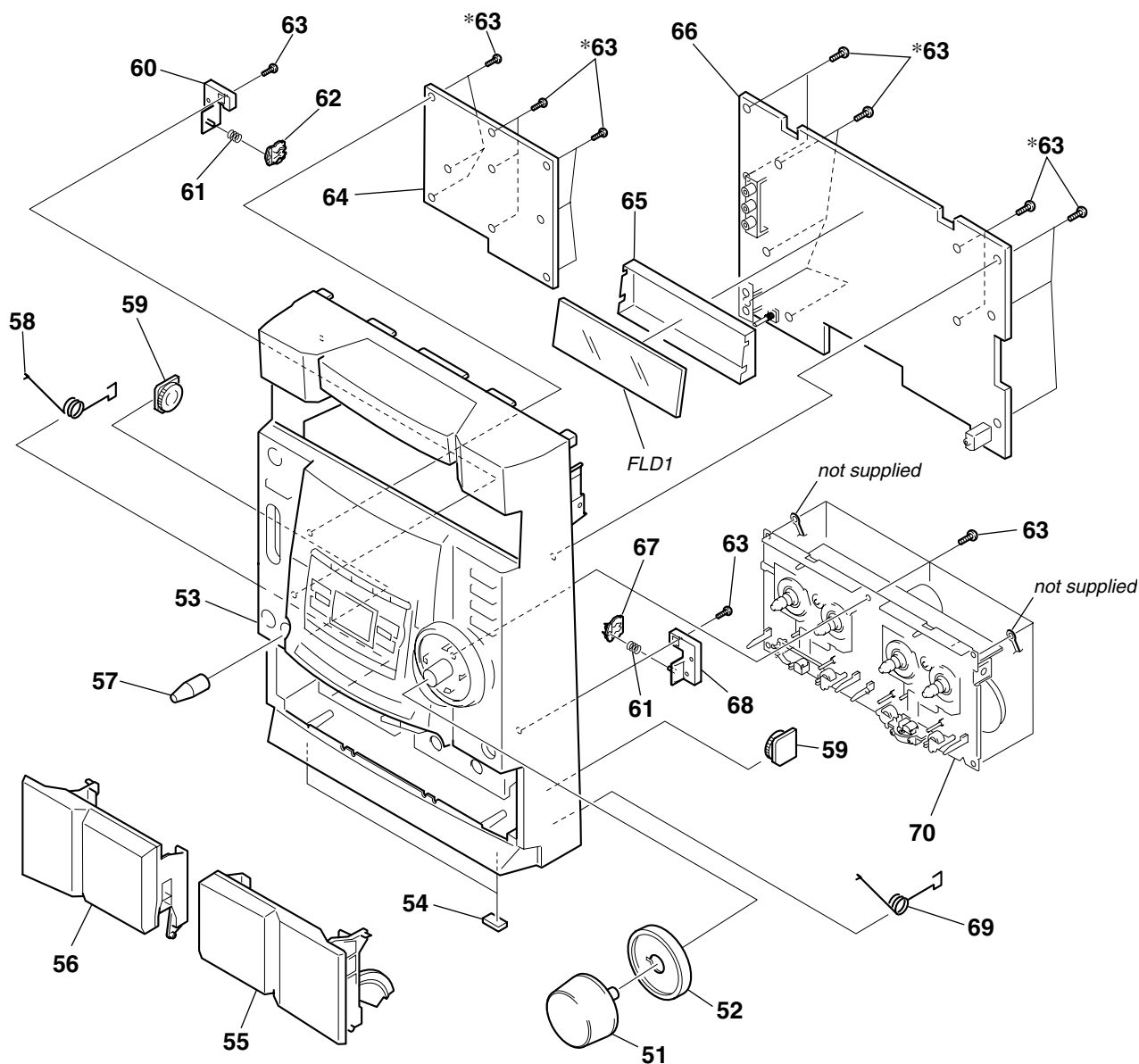
7-1. MAIN SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	3-363-099-01	SCREW (CASE 3 TP2)		7	4-234-032-21	PANEL BACK (RG30)	
2	3-363-099-41	SCREW (CASE 3 TP2)		7	4-234-091-01	PANEL BACK (DX20:E2, E51, EA, SP, AR)	
3	4-224-549-01	CASE (SIDE-L)		7	4-234-091-61	PANEL BACK (DX20:KR, MX, TH)	
4	4-234-009-01	CD DOOR (RG30)		8	4-227-984-11	COVER (DUCT)	
4	4-234-009-11	CD DOOR (DX20)		9	1-681-445-11	SUB TRANS BOARD (DX20)	
5	4-224-550-01	CASE (TOP)		9	1-681-445-21	SUB TRANS BOARD (RG30)	
6	1-681-441-11	VIDEO OUT BOARD (DX20)		10	4-225-252-01	CUSHION (FOOT)	
6	1-681-441-21	VIDEO OUT BOARD (RG30)		11	4-224-548-01	CASE(SIDE-R) (DX20)	
				11	4-224-548-61	CASE(SIDE-R) (RG30)	

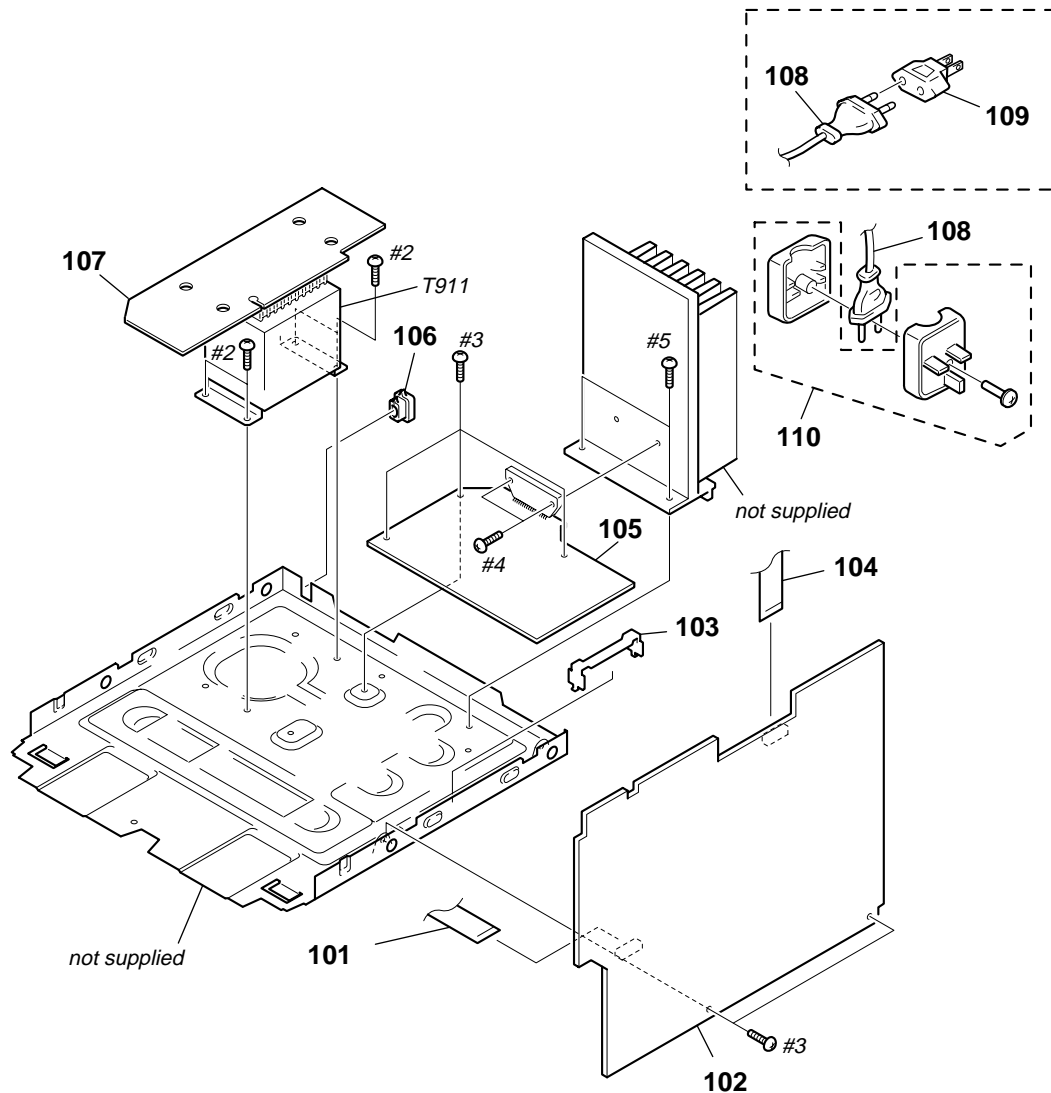
7-2. FRONT PANEL SECTION

* For service only (Be sure to refer to "Service note" on page 4.)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	4-234-019-01	VOLUME KNOB (RG30)		62	4-224-560-01	CAM (L), HEART	
51	4-234-019-11	VOLUME KNOB (DX20)		63	4-951-620-01	SCREW (2.6X8), +BVTP	
52	4-234-015-01	VOL KNOB RING		64	1-681-447-11	KEY BOARD	
53	X-4953-757-1	PANEL FRONT ASSY (DX20)		65	4-234-016-01	FL HOLDER	
53	X-4953-887-1	PANEL FRONT ASSY (RG30)		66	A-4476-797-A	PANEL BOARD, COMPLETE (DX20:E2, E51, EA, SP, AR, MX)	
54	4-225-252-01	CUSHION (FOOT)		66	A-4725-721-A	PANEL BOARD, COMPLETE (DX20:KR)	
55	X-4953-759-1	CASSETTE WINDOW R ASSY (DX20)		66	A-4725-982-A	PANEL BOARD, COMPLETE (DX20:TH)	
55	X-4953-889-1	CASSETTE WINDOW R ASSY (RG30)		66	A-4726-035-A	PANEL BOARD, COMPLETE (RG30)	
56	X-4953-758-1	CASSETTE WINDOW L ASSY (DX20)		67	4-224-559-01	CAM(R), HEART	
56	X-4953-888-1	CASSETTE WINDOW L ASSY (RG30)		68	4-224-561-01	BRACKET (HEART CAM R)	
57	4-231-805-01	KNOB (MIC) (DX20)		69	4-233-982-01	CASSETTE DOOR SPRING R	
58	4-233-981-01	CASSETTE DOOR SPRING L		70	1-796-123-11	DECK, MECH (TC)	
59	4-224-104-11	DAMPER		FLD1	1-518-729-11	INDICATOR TUBE, FLUORESCENT	
60	4-224-562-01	BRACKET (HEART CAM L)					
61	4-224-803-01	SPRING (PUSH), COMPRESSION					

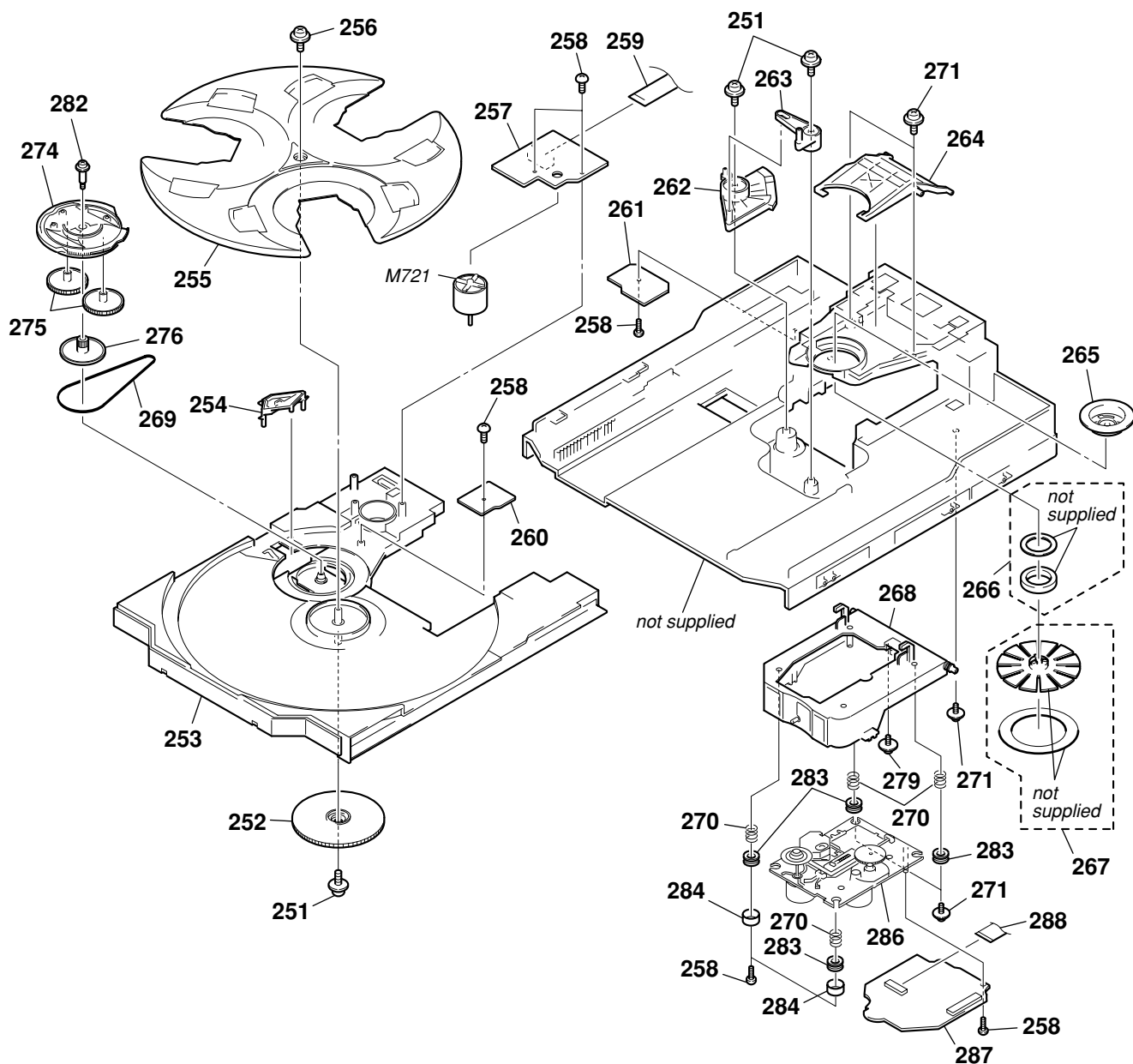
7-3. CHASSIS SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	1-773-049-11	WIRE (FLAT TYPE)(17 CORE)		106	4-966-266-01	BUSHING (S) (FBS002), CORD (DX20:E2, MX)	
102	A-4476-781-A	MAIN BOARD, COMPLETE (DX20:EA)		107	1-681-444-11	TRANS BOARD (DX20)	
102	A-4476-783-A	MAIN BOARD, COMPLETE (DX20:SP)		107	1-681-442-21	TRANS BOARD (RG30)	
102	A-4476-788-A	MAIN BOARD, COMPLETE (DX20:E2, E51, AR, MX)		△ 108	1-769-079-21	CORD, POWER (DX20:KR)	
102	A-4725-723-A	MAIN BOARD, COMPLETE (DX20:KR)		△ 108	1-769-744-81	CORD, POWER (RG30)	
102	A-4725-986-A	MAIN BOARD, COMPLETE (DX20:TH)		△ 108	1-777-071-81	CORD, POWER (DX20:E51, EA, SP)	
102	A-4726-039-A	MAIN BOARD, COMPLETE (RG30)		△ 108	1-783-941-22	CORD, POWER (DX20:AR)	
* 103	4-988-533-01	HOLDER, PWB		△ 108	1-791-901-11	CORD, POWER (DX20:E2, MX, TH)	
104	1-791-897-12	WIRE (FLAT TYPE) (19 CORE)		△ 109	1-569-008-21	ADAPTOR, CONVERSION (DX20:E51, EA, SP)	
105	A-4476-779-A	POWER AMP BOARD, COMPLETE (DX20:EA, SP)		△ 110	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (RG30:UK)	
105	A-4476-786-A	POWER AMP BOARD, COMPLETE (DX20:E2, E51, AR, MX)		△ T911	1-437-224-11	TRANSFORMER, POWER (DX20)	
105	A-4725-719-A	POWER AMP BOARD, COMPLETE (DX20:KR)		△ T911	1-437-225-11	TRANSFORMER, POWER (RG30)	
105	A-4725-979-A	POWER AMP BOARD, COMPLETE (DX20:TH)		#2	7-685-880-09	SCREW +BVTT 4X6 (S)	
105	A-4726-032-A	POWER AMP BOARD, COMPLETE (RG30)		#3	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
106	3-703-244-00	BUSHING (FBS001), CORD (DX20:E51, EA, SP, KR, AR/RG30)		#4	7-685-650-79	SCREW +BVTP 3X16 TYPE2 IT-3	
106	3-703-571-11	BUSHING (S) (4516), CORD (DX20:TH)		#5	7-685-872-09	SCREW +BVTT 3X8 (S)	

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

7-4. CD MECHANISM DECK SECTION



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
251	4-933-134-11	SCREW (+PTPWH M2.6X8)		268	X-4951-889-1	HOLDER (BU) ASSY	
252	4-221-679-01	CAM (RELAY)		269	4-222-095-01	BELT	
253	4-231-452-01	TABLE (NEW)		270	4-227-045-11	SPRING (INSULATOR), COIL	
254	4-221-686-01	LEVER (CHANGE)		271	4-985-672-01	SCREW (+PTPWH M2.6), FLOATING	
255	4-221-676-01	TRAY		274	4-221-678-01	CAM (CONTROL)	
256	4-933-134-51	SCREW (+PTPWH 2.6X8)		275	4-221-683-01	GEAR (U)	
257	1-675-910-14	MOTOR BOARD		276	4-221-685-01	PULLEY (S)	
258	4-951-620-01	SCREW (2.6X8), +BVTP		279	4-227-899-01	SCREW (DIA. 12), FLOATING	
259	1-791-983-11	WIRE (FLAT TYPE) (8 CORE)		282	4-222-097-01	SCREW, STEP	
260	1-675-911-14	ADDRESS SENSOR BOARD		283	4-227-549-11	INSULATOR	
261	1-675-912-14	DRIVER BOARD		284	4-231-151-01	STOPPER (BU)	
262	X-4952-608-1	CAM (U/D) ASSY		△ 286	8-820-116-01	OPTICAL PICK-UP KSM-213DCP/Z-NP	
263	4-221-681-01	LEVER (EX)		287	A-4724-934-A	BD BOARD, COMPLETE	
264	4-221-682-01	LEVER (LIFTER)		288	1-792-024-11	WIRE (FLAT TYPE) (16 CORE)	
265	4-221-688-01	PULLEY (B), CHUCKING		M721	A-4672-826-A	MOTOR ASSY	
266	1-471-035-11	MAGNET ASSY					
267	X-4952-019-1	PULLEY (A) ASSY, CHUCKING					

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

SECTION 8 ELECTRICAL PARTS LIST

ADDRESS SENSOR

BD

Note:

The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
All resistors are in ohms
METAL: Metal-film resistor
METAL OXIDE: Metal Oxide-film resistor
F : nonflammable

- SEMICONDUCTORS
In each case, u: μ , for example:
uA...: μ A..., uPA...: μ PA..., uPB...: μ PB...,
uPC...: μ PC..., uPD...: μ PD...
- CAPACITORS
uF : μ F
- COILS
uH : μ H
- Abbreviation
EA : Saudi Arabia model
SP : Singapore model
TH : Thai model
KR : Korea model
MX : Mexican model
AR : Argentina model
E51 : Chiri and Peru model

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
	1-675-911-14	ADDRESS SENSOR BOARD *****		C133	1-164-346-11	CERAMIC CHIP 1uF	16V
		< IC >		C140	1-164-346-11	CERAMIC CHIP 1uF	16V
IC711	8-749-016-76	IC RPI-321		C141	1-164-346-11	CERAMIC CHIP 1uF	16V
		< RESISTOR >		C143	1-163-038-00	CERAMIC CHIP 0.1uF	25V
R711	1-247-876-11	CARBON 75K 5% 1/4W		C145	1-163-038-00	CERAMIC CHIP 0.1uF	25V
R712	1-249-409-11	CARBON 220 5% 1/4W F					
R713	1-249-429-11	CARBON 10K 5% 1/4W		C153	1-163-038-00	CERAMIC CHIP 0.1uF	25V
		<SWITCH>		C159	1-163-019-00	CERAMIC CHIP 0.0068uF 10%	50V
S711	1-771-821-11	SWITCH, PUSH (1 KEY) (UP DOWN) *****		C162	1-104-665-11	ELECT 100uF 20%	10V
				C163	1-104-665-11	ELECT 100uF 20%	10V
				C165	1-163-038-00	CERAMIC CHIP 0.1uF	25V
A-4724-934-A	BD BOARD, COMPLETE *****						
		< CAPACITOR >		C167	1-163-237-11	CERAMIC CHIP 27PF 5%	50V
C101	1-163-005-11	CERAMIC CHIP 470PF 10% 50V		C168	1-163-235-11	CERAMIC CHIP 22PF 5%	50V
C102	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V		C171	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V
C103	1-163-005-11	CERAMIC CHIP 470PF 10% 50V		C172	1-163-123-00	CERAMIC CHIP 180PF 5%	50V
C104	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V		C181	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V
C108	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V					
C109	1-163-011-11	CERAMIC CHIP 0.0015uF 10% 50V		C182	1-163-123-00	CERAMIC CHIP 180PF 5%	50V
C110	1-164-182-11	CERAMIC CHIP 0.0033uF 10% 50V				< CONNECTOR >	
C111	1-163-251-11	CERAMIC CHIP 100PF 5% 50V		CN101	1-784-741-11	CONNECTOR, FFC 19P	
C112	1-107-682-11	CERAMIC CHIP 1uF 10% 16V		CN102	1-793-907-11	CONNECTOR, FFC/FPC 16P	
C114	1-163-038-00	CERAMIC CHIP 0.1uF 25V				< FERRITE BEAD >	
C115	1-104-665-11	ELECT 100uF 20% 10V		FB101	1-469-731-21	INDUCTOR 0UH	
C116	1-104-665-11	ELECT 100uF 20% 10V		FB103	1-469-731-21	INDUCTOR 0UH	
C117	1-104-665-11	ELECT 100uF 20% 10V				< IC >	
C118	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V		IC101	8-752-386-85	IC CXD2587Q	
C119	1-163-235-11	CERAMIC CHIP 22PF 5% 50V		IC102	8-759-549-28	IC BA5974FP-E2	
C121	1-163-038-00	CERAMIC CHIP 0.1uF 25V		IC103	8-752-085-51	IC CXA2568M-T6	
C122	1-104-665-11	ELECT 100uF 20% 10V				< TRANSISTOR >	
C123	1-163-021-11	CERAMIC CHIP 0.01uF 10% 50V		Q101	8-729-049-31	TRANSISTOR 2SB710A-RTX	
C124	1-107-823-11	CERAMIC CHIP 0.47uF 10% 16V				< RESISTOR >	
C125	1-163-038-00	CERAMIC CHIP 0.1uF 25V		R101	1-216-077-00	RES-CHIP 15K 5%	1/10W
C126	1-163-038-00	CERAMIC CHIP 0.1uF 25V		R102	1-216-097-11	RES-CHIP 100K 5%	1/10W
C127	1-104-665-11	ELECT 100uF 20% 10V		R103	1-216-077-00	RES-CHIP 15K 5%	1/10W
C129	1-163-031-11	CERAMIC CHIP 0.01uF 50V		R104	1-216-085-00	RES-CHIP 33K 5%	1/10W
C130	1-164-346-11	CERAMIC CHIP 1uF 16V		R105	1-216-073-00	RES-CHIP 10K 5%	1/10W
C131	1-126-964-11	ELECT 10uF 20% 50V		R106	1-216-049-11	RES-CHIP 1K 5%	1/10W
				R107	1-216-073-00	RES-CHIP 10K 5%	1/10W
				R108	1-216-061-00	RES-CHIP 3.3K 5%	1/10W
				R109	1-216-121-11	RES-CHIP 1M 5%	1/10W
				R110	1-216-025-11	RES-CHIP 100 5%	1/10W

HCD-DX20/RG30

BD	DRIVER	KEY
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Ref. No.	Part No.	Description	Remarks
R111	1-216-121-11	RES-CHIP 1M 5%	1/10W
R113	1-216-121-11	RES-CHIP 1M 5%	1/10W
R114	1-216-073-00	RES-CHIP 10K 5%	1/10W
R116	1-216-001-00	METAL CHIP 10 5%	1/10W
R117	1-216-049-11	RES-CHIP 1K 5%	1/10W
R118	1-216-025-11	RES-CHIP 100 5%	1/10W
R119	1-216-059-00	METAL CHIP 2.7K 5%	1/10W
R123	1-216-073-00	RES-CHIP 10K 5%	1/10W
R124	1-216-097-11	RES-CHIP 100K 5%	1/10W
R131	1-216-033-00	METAL CHIP 220 5%	1/10W
R143	1-216-103-00	METAL CHIP 180K 5%	1/10W
R144	1-216-103-00	METAL CHIP 180K 5%	1/10W
R147	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
R148	1-216-001-00	METAL CHIP 10 5%	1/10W
R149	1-216-001-00	METAL CHIP 10 5%	1/10W
R158	1-216-111-00	METAL CHIP 390K 5%	1/10W
R159	1-216-101-00	METAL CHIP 150K 5%	1/10W
R162	1-216-101-00	METAL CHIP 150K 5%	1/10W
R171	1-216-078-00	RES-CHIP 16K 5%	1/10W
R172	1-216-073-00	RES-CHIP 10K 5%	1/10W
R173	1-216-077-00	RES-CHIP 15K 5%	1/10W
R181	1-216-078-00	RES-CHIP 16K 5%	1/10W
R182	1-216-073-00	RES-CHIP 10K 5%	1/10W
R183	1-216-077-00	RES-CHIP 15K 5%	1/10W
< NETWORK >			
RN101	1-233-576-11	RES, CHIP NETWORK 100	
< SWITCH >			
S101	1-771-853-11	SWITCH, DETECTION (LIMIT IN)	
< VIBRATOR >			
X101	1-579-280-11	VIBRATOR, CRYSTAL (16.9344MHz)	

	1-675-912-14	DRIVER BOARD	

< CAPACITOR >			
C702	1-126-964-51	ELECT 10uF 20% 50V	
< CONNECTOR >			
CN701	1-785-336-11	PIN, CONNECTOR(LIGHT ANGLE)10P	
CN702	1-785-550-11	CONNECTOR, FFC/FPC 8P	
< DIODE >			
D701	8-719-983-15	DIODE MTZJ-T-77-3.9A	
< IC >			
IC701	8-759-598-69	IC BA6956AN	
< RESISTOR >			
R701	1-249-411-11	CARBON 330 5%	1/4W
R702	1-249-401-11	CARBON 47 5%	1/4W F

	1-681-447-11	KEY BOARD	

Ref. No.	Part No.	Description	Remarks
< DIODE >			
D707	8-719-058-04	DIODE SEL5223S-TP15 (REC PAUSE/START)	
D708	8-719-058-04	DIODE SEL5223S-TP15 (ENTER)	
D709	8-719-057-97	DIODE SEL5923A-TP15 (KARAOKE PON)	(DX20)
D710	8-719-057-97	DIODE SEL5923A-TP15 (GROOVE)	
< TRANSISTOR >			
Q707	8-729-900-80	TRANSISTOR DTC114ES	
Q708	8-729-900-80	TRANSISTOR DTC114ES	
Q709	8-729-900-80	TRANSISTOR DTC114ES (DX20)	
Q710	8-729-900-80	TRANSISTOR DTC114ES	
< RESISTOR >			
R703	1-249-413-11	CARBON 470 5%	1/4W F
R704	1-249-414-11	CARBON 560 5%	1/4W F
R705	1-249-415-11	CARBON 680 5%	1/4W F
R706	1-249-417-11	CARBON 1K 5%	1/4W F
R707	1-249-418-11	CARBON 1.2K 5%	1/4W F
R708	1-249-420-11	CARBON 1.8K 5%	1/4W F
R709	1-249-422-11	CARBON 2.7K 5%	1/4W F
R710	1-247-843-11	CARBON 3.3K 5%	1/4W
R711	1-249-425-11	CARBON 4.7K 5%	1/4W F
			(DX20)
R713	1-249-410-11	CARBON 270 5%	1/4W F
R714	1-249-411-11	CARBON 330 5%	1/4W
R715	1-249-413-11	CARBON 470 5%	1/4W F
R716	1-249-414-11	CARBON 560 5%	1/4W F
R717	1-249-415-11	CARBON 680 5%	1/4W F
R718	1-249-417-11	CARBON 1K 5%	1/4W F
R719	1-249-418-11	CARBON 1.2K 5%	1/4W F
R720	1-249-420-11	CARBON 1.8K 5%	1/4W F
R721	1-249-422-11	CARBON 2.7K 5%	1/4W F
R726	1-249-410-11	CARBON 270 5%	1/4W F
R727	1-249-411-11	CARBON 330 5%	1/4W
R728	1-249-413-11	CARBON 470 5%	1/4W F
R729	1-249-414-11	CARBON 560 5%	1/4W F
R730	1-249-415-11	CARBON 680 5%	1/4W F
R731	1-249-417-11	CARBON 1K 5%	1/4W F
R732	1-249-418-11	CARBON 1.2K 5%	1/4W F
R733	1-249-420-11	CARBON 1.8K 5%	1/4W F
R734	1-249-422-11	CARBON 2.7K 5%	1/4W F
R735	1-247-843-11	CARBON 3.3K 5%	1/4W
R736	1-249-425-11	CARBON 4.7K 5%	1/4W F
R737	1-249-427-11	CARBON 6.8K 5%	1/4W F
R745	1-249-411-11	CARBON 330 5%	1/4W
R746	1-249-411-11	CARBON 330 5%	1/4W
R797	1-249-411-11	CARBON 330 5%	1/4W
			(DX20)
R798	1-249-411-11	CARBON 330 5%	1/4W
< SWITCH >			
S704	1-762-875-21	SWITCH, KEYBOARD (DISC SKIP EX-CHANGE)	
S705	1-762-875-21	SWITCH, KEYBOARD (DISC 1)	
S706	1-762-875-21	SWITCH, KEYBOARD (DISC 2)	
S707	1-762-875-21	SWITCH, KEYBOARD (DISC 3)	
S708	1-762-875-21	SWITCH, KEYBOARD (OPEN/CLOSE ▲)	
S709	1-762-875-21	SWITCH, KEYBOARD (▲)	
S710	1-762-875-21	SWITCH, KEYBOARD (▼)	
S711	1-762-875-21	SWITCH, KEYBOARD (GROOVE)	

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
S712	1-762-875-21	SWITCH, KEYBOARD (KARAOKE PON) (DX20)		C123	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
S713	1-762-875-21	SWITCH, KEYBOARD (◀◀ -)		C124	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
S714	1-762-875-21	SWITCH, KEYBOARD (I◀◀)		C125	1-126-947-11	ELECT 47uF 20%	16V
S715	1-762-875-21	SWITCH, KEYBOARD (■)		C126	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
S716	1-762-875-21	SWITCH, KEYBOARD (<▷)		C127	1-126-960-11	ELECT 1uF 20%	50V
S717	1-762-875-21	SWITCH, KEYBOARD (■)		C128	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
S718	1-762-875-21	SWITCH, KEYBOARD (▶▶)		C129	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
S719	1-762-875-21	SWITCH, KEYBOARD (▶▶ +)		C130	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
S720	1-762-875-21	SWITCH, KEYBOARD (CD SYNC)		C131	1-164-227-11	CERAMIC CHIP 0.022uF 10%	25V
S721	1-762-875-21	SWITCH, KEYBOARD (REC PAUSE/START)					(RG30)
S726	1-762-875-21	SWITCH, KEYBOARD (DISPLAY)		C131	1-164-245-11	CERAMIC CHIP 0.015uF 10%	25V
S727	1-762-875-21	SWITCH, KEYBOARD (SPECTRUM)		C132	1-164-227-11	CERAMIC CHIP 0.022uF 10%	25V
S728	1-762-875-21	SWITCH, KEYBOARD (DIRECTION/EDIT)					(RG30)
S729	1-762-875-21	SWITCH, KEYBOARD (STEREO/MONO REPEAT)		C132	1-164-245-11	CERAMIC CHIP 0.015uF 10%	25V
S730	1-762-875-21	SWITCH, KEYBOARD (TUNER MEMORY/PLAY MODE)					(DX20)
S731	1-762-875-21	SWITCH, KEYBOARD (GAME EQ)		C133	1-126-957-11	ELECT 0.22uF 20%	50V
S732	1-762-875-21	SWITCH, KEYBOARD (ENTER)		C134	1-104-760-11	CERAMIC CHIP 0.047uF 10%	50V
S733	1-762-875-21	SWITCH, KEYBOARD (P.FILE)		C135	1-126-963-11	ELECT 4.7uF 20%	50V
S734	1-762-875-21	SWITCH, KEYBOARD (▶)		C136	1-126-963-11	ELECT 4.7uF 20%	50V
S735	1-762-875-21	SWITCH, KEYBOARD (◀)		C137	1-126-964-11	ELECT 10uF 20%	50V
S736	1-762-875-21	SWITCH, KEYBOARD (MUSIC EQ)		C138	1-164-363-11	CERAMIC CHIP 560PF 5%	50V
S737	1-762-875-21	SWITCH, KEYBOARD (EFFECT ON/OFF)		C139	1-164-471-11	CERAMIC CHIP 680PF 5%	50V
S738	1-762-875-21	SWITCH, KEYBOARD (MOVIE EQ)					(RG30)
*****				C139	1-162-957-11	CERAMIC CHIP 220PF 5%	50V
	A-4726-039-A	MAIN BOARD, COMPLETE (RG30)					(RG30)
	A-4476-781-A	MAIN BOARD, COMPLETE (DX20:EA)		C140	1-126-960-11	ELECT 1uF 20%	50V
	A-4476-783-A	MAIN BOARD, COMPLETE (DX20:SP)		C141	1-104-760-11	CERAMIC CHIP 0.047uF 10%	50V
	A-4725-723-A	MAIN BOARD, COMPLETE (DX20:KR)		C142	1-164-362-11	CERAMIC CHIP 470PF 5%	50V
	A-4725-986-A	MAIN BOARD, COMPLETE (DX20:TH)					(RG30)
	A-4476-788-A	MAIN BOARD, COMPLETE (DX20:AR,E2,E51,MX)		C142	1-162-953-11	CERAMIC CHIP 100PF 5%	50V
		*****					(DX20)
	7-685-872-09	SCREW +BVTT 3X8 (S)		C143	1-126-965-11	ELECT 22uF 20%	50V
		< CAPACITOR >		C144	1-126-947-11	ELECT 47uF 20%	16V
				C171	1-126-947-11	ELECT 47uF 20%	16V
C29	1-162-947-11	CERAMIC CHIP 33PF 5%	50V				(RG30)
			(RG30)	C172	1-164-156-11	CERAMIC CHIP 0.1uF	25V
C101	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V				(RG30)
C102	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C173	1-164-363-11	CERAMIC CHIP 560PF 5%	50V
C103	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V				(RG30)
C104	1-126-947-11	ELECT 47uF 20%	16V	C175	1-164-363-11	CERAMIC CHIP 560PF 5%	50V
							(RG30)
C105	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C175	1-162-959-11	CERAMIC CHIP 330PF 5%	50V
C106	1-126-933-11	ELECT 100uF 20%	16V				(RG30)
C107	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C176	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C108	1-126-964-11	ELECT 10uF 20%	50V				(RG30)
C109	1-162-935-11	CERAMIC CHIP 4PF 0.25PF	50V	C179	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
							(RG30)
C110	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C180	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C111	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V				(RG30)
C112	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C181	1-126-961-11	ELECT 2.2uF 20%	50V
C113	1-126-959-11	ELECT 0.47uF 20%	50V				(RG30)
C114	1-126-947-11	ELECT 47uF 20%	16V	C182	1-162-924-11	CERAMIC CHIP 56PF 5%	50V
							(RG30)
C115	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C183	1-162-924-11	CERAMIC CHIP 56PF 5%	50V
C116	1-126-961-11	ELECT 2.2uF 20%	50V				(RG30)
C117	1-126-947-11	ELECT 47uF 20%	16V	C184	1-126-961-11	ELECT 2.2uF 20%	50V
C118	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V				(RG30)
C119	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C186	1-126-964-11	ELECT 10uF 20%	50V
							(RG30)
C120	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C187	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C121	1-162-919-11	CERAMIC CHIP 22PF 5%	50V				(RG30)
C122	1-162-921-11	CERAMIC CHIP 33PF 5%	50V				(RG30)

HCD-DX20/RG30

MAIN

Ref. No.	Part No.	Description	Remarks			Ref. No.	Part No.	Description	Remarks		
C201	1-162-963-11	CERAMIC CHIP	680PF	10%	50V	C241	1-130-479-00	MYLAR	0.0047uF	5%	50V
C202	1-162-963-11	CERAMIC CHIP	680PF	10%	50V	C242	1-130-471-00	MYLAR	0.001uF	5%	50V
C203	1-162-963-11	CERAMIC CHIP	680PF	10%	50V	C243	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C204	1-162-963-11	CERAMIC CHIP	680PF	10%	50V	C244	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C205	1-162-960-11	CERAMIC CHIP	220PF	10%	50V	C245	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C206	1-162-960-11	CERAMIC CHIP	220PF	10%	50V						(DX20)
C207	1-162-960-11	CERAMIC CHIP	220PF	10%	50V	C246	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C208	1-162-960-11	CERAMIC CHIP	220PF	10%	50V						(DX20)
C209	1-126-947-11	ELECT	47uF	20%	16V	C256	1-126-960-11	ELECT	1uF	20%	50V
C210	1-126-947-11	ELECT	47uF	20%	16V	C257	1-126-956-11	ELECT	0.1uF	20%	50V
C211	1-130-486-00	MYLAR	0.018uF	10%	50V	C265	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C212	1-130-486-00	MYLAR	0.018uF	10%	50V	C266	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C213	1-126-960-11	ELECT	1uF	20%	50V	C270	1-126-933-11	ELECT	100uF	20%	16V
C214	1-126-960-11	ELECT	1uF	20%	50V	C271	1-126-960-11	ELECT	1uF	20%	50V
C215	1-126-961-11	ELECT	2.2uF	20%	50V	C272	1-126-960-11	ELECT	1uF	20%	50V
C217	1-126-947-11	ELECT	47uF	20%	16V	C300	1-136-165-00	FILM	0.1uF	5%	50V
C218	1-126-947-11	ELECT	47uF	20%	16V	C301	1-126-963-11	ELECT	4.7uF	20%	50V
C219	1-126-962-11	ELECT	3.3uF	20%	50V	C302	1-126-963-11	ELECT	4.7uF	20%	50V
C219	1-126-961-11	ELECT	2.2uF	20%	50V	C303	1-126-963-11	ELECT	4.7uF	20%	50V
					(DX20)	C304	1-126-963-11	ELECT	4.7uF	20%	50V
C221	1-126-963-11	ELECT	4.7uF	20%	50V	C307	1-126-963-11	ELECT	4.7uF	20%	50V
C222	1-126-962-11	ELECT	3.3uF	20%	50V	C308	1-126-963-11	ELECT	4.7uF	20%	50V
					(RG30)	C309	1-126-963-11	ELECT	4.7uF	20%	50V
C222	1-126-963-11	ELECT	4.7uF	20%	50V	C310	1-126-963-11	ELECT	4.7uF	20%	50V
					(DX20)	C311	1-126-964-11	ELECT	10uF	20%	50V
C223	1-130-487-00	MYLAR	0.022uF	5%	50V	C312	1-136-165-00	FILM	0.1uF	5%	50V
C224	1-162-962-11	CERAMIC CHIP	470PF	10%	50V	C313	1-130-491-00	MYLAR	0.047uF	5%	50V
C225	1-126-962-11	ELECT	3.3uF	20%	50V	C314	1-126-963-11	ELECT	4.7uF	20%	50V
					(RG30)						(DX20)
C225	1-126-963-11	ELECT	4.7uF	20%	50V	C315	1-126-963-11	ELECT	4.7uF	20%	50V
					(DX20)	C317	1-136-169-00	FILM	0.22uF	5%	50V
C226	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V	C318	1-136-169-00	FILM	0.22uF	5%	50V
					(RG30)	C319	1-136-169-00	FILM	0.22uF	5%	50V
C226	1-162-977-11	CERAMIC CHIP	0.0018uF	10%	50V	C320	1-136-169-00	FILM	0.22uF	5%	50V
					(DX20)	C321	1-136-171-00	FILM	0.33uF	5%	50V
C227	1-162-949-11	CERAMIC CHIP	47PF	5%	50V	C322	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C228	1-162-949-11	CERAMIC CHIP	47PF	5%	50V	C325	1-130-487-00	MYLAR	0.022uF	5%	50V
C229	1-104-665-11	ELECT	100uF	20%	10V	C326	1-130-487-00	MYLAR	0.022uF	5%	50V
C230	1-104-665-11	ELECT	100uF	20%	10V	C327	1-130-487-00	MYLAR	0.022uF	5%	50V
C231	1-124-252-00	ELECT	0.33uF	20%	50V	C328	1-130-487-00	MYLAR	0.022uF	5%	50V
					(RG30)	C333	1-130-475-00	MYLAR	0.0022uF	5%	50V
C231	1-126-959-11	ELECT	0.47uF	20%	50V	C334	1-130-475-00	MYLAR	0.0022uF	5%	50V
					(DX20)	C337	1-130-491-00	MYLAR	0.047uF	5%	50V
C232	1-124-252-00	ELECT	0.33uF	20%	50V	C338	1-130-491-00	MYLAR	0.047uF	5%	50V
					(RG30)	C339	1-130-491-00	MYLAR	0.047uF	5%	50V
C232	1-126-959-11	ELECT	0.47uF	20%	50V	C340	1-130-491-00	MYLAR	0.047uF	5%	50V
					(DX20)	C342	1-136-165-00	FILM	0.1uF	5%	50V
C233	1-130-491-00	MYLAR	0.047uF	5%	50V	C343	1-136-165-00	FILM	0.1uF	5%	50V
C234	1-130-491-00	MYLAR	0.047uF	5%	50V	C344	1-126-964-11	ELECT	10uF	20%	50V
C235	1-126-960-11	ELECT	1uF	20%	50V	C345	1-126-934-11	ELECT	220uF	20%	16V
C235A	1-162-949-11	CERAMIC CHIP	47PF	5%	50V	C346	1-136-170-00	FILM	0.27uF	5%	50V
C236	1-126-933-11	ELECT	100uF	20%	16V	C347	1-126-964-11	ELECT	10uF	20%	50V
C236A	1-162-949-11	CERAMIC CHIP	47PF	5%	50V	C348	1-126-964-11	ELECT	10uF	20%	50V
C237	1-162-962-11	CERAMIC CHIP	470PF	10%	50V	C349	1-104-665-11	ELECT	100uF	20%	10V
C238	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V	C350	1-165-128-11	CERAMIC CHIP	0.22uF		16V
					(RG30)	C351	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C238	1-162-977-11	CERAMIC CHIP	0.0018uF	10%	50V						(RG30)
					(DX20)	C351	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C239	1-130-485-00	MYLAR	0.015uF	5%	50V						(DX20)
C240	1-126-947-11	ELECT	47uF	20%	16V	C352	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
											(RG30)

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
C352	1-162-962-11	CERAMIC CHIP	470PF 10% 50V (DX20)	C685	1-126-768-11	ELECT	2200uF 20% 16V
C356	1-126-963-11	ELECT	4.7uF 20% 50V	C686	1-126-964-11	ELECT	10uF 20% 50V
C360	1-164-156-11	CERAMIC CHIP	0.1uF 25V	C687	1-126-916-11	ELECT	1000uF 20% 6.3V
C361	1-107-721-11	ELECT	4.7uF 20% 100V	C688	1-126-964-11	ELECT	10uF 20% 50V
C362	1-107-721-11	ELECT	4.7uF 20% 100V	C689	1-104-665-11	ELECT	100uF 20% 10V
C363	1-107-717-11	ELECT	47uF 20% 50V	C690	1-126-964-11	ELECT	10uF 20% 50V
C364	1-109-953-11	ELECT	2.2uF 20% 50V	C691	1-126-933-11	ELECT	100uF 20% 16V
C371	1-164-156-11	CERAMIC CHIP	0.1uF 25V (RG30)	C692	1-126-935-11	ELECT	470uF 20% 16V
C372	1-164-156-11	CERAMIC CHIP	0.1uF 25V (RG30)	C693	1-130-483-00	MYLAR	0.01uF 5% 50V
C373	1-164-156-11	CERAMIC CHIP	0.1uF 25V (RG30)	C694	1-130-483-00	MYLAR	0.01uF 5% 50V
C374	1-164-156-11	CERAMIC CHIP	0.1uF 25V (RG30)	C697	1-126-943-11	ELECT	2200uF 20% 25V
C375	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V	C698	1-126-964-11	ELECT	10uF 20% 50V
C376	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V	C699	1-126-935-11	ELECT	470uF 20% 16V
C381	1-104-665-11	ELECT	100uF 20% 10V	< FILTER >			
C382	1-126-961-11	ELECT	2.2uF 20% 50V	CF101	1-579-185-21	FILTER, CERAMIC (RG30)	
C383	1-126-961-11	ELECT	2.2uF 20% 50V	CF101	1-760-023-11	FILTER, CERAMIC (DX20)	
C601	1-164-156-11	CERAMIC CHIP	0.1uF 25V	CF102	1-579-185-21	FILTER, CERAMIC (RG30)	
C602	1-126-964-11	ELECT	10uF 20% 50V	CF102	1-760-023-11	FILTER, CERAMIC (DX20)	
C603	1-162-960-11	CERAMIC CHIP	220PF 10% 50V	< CONNECTOR >			
C604	1-162-960-11	CERAMIC CHIP	220PF 10% 50V	CN2	1-784-778-11	CONNECTOR, FFC 17P	
C605	1-162-960-11	CERAMIC CHIP	220PF 10% 50V	CN102	1-784-741-11	CONNECTOR, FFC 19P	
C606	1-162-960-11	CERAMIC CHIP	220PF 10% 50V	* CN203	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P	
C607	1-162-918-11	CERAMIC CHIP	18PF 5% 50V	CN402	1-778-982-21	CONNECTOR, BOARD TO BOARD 13P	
C608	1-162-917-11	CERAMIC CHIP	15PF 5% 50V	CN403	1-778-982-21	CONNECTOR, BOARD TO BOARD 13P	
C610	1-126-964-11	ELECT	10uF 20% 50V	CN701	1-793-766-11	CONNECTOR, BOARD TO BOARD 30P	
C611	1-162-974-11	CERAMIC CHIP	0.01uF 50V	< DIODE >			
C612	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V	D101	8-719-914-42	DIODE DA204K	
C613	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V	D104	8-719-978-33	DIODE DTZ-TT11-6.8B	
C614	1-164-156-11	CERAMIC CHIP	0.1uF 25V	D107	8-719-988-61	DIODE 1SS355TE-17 (RG30)	
C644	1-164-156-11	CERAMIC CHIP	0.1uF 25V	D108	8-719-988-61	DIODE 1SS355TE-17	
C656	1-164-156-11	CERAMIC CHIP	0.1uF 25V	D203	8-719-988-61	DIODE 1SS355TE-17	
C657	1-164-156-11	CERAMIC CHIP	0.1uF 25V	D204	8-719-988-61	DIODE 1SS355TE-17	
C658	1-164-156-11	CERAMIC CHIP	0.1uF 25V	D205	8-719-988-61	DIODE 1SS355TE-17	
C659	1-164-156-11	CERAMIC CHIP	0.1uF 25V	D206	8-719-988-61	DIODE 1SS355TE-17	
C660	1-164-156-11	CERAMIC CHIP	0.1uF 25V	D207	8-719-988-61	DIODE 1SS355TE-17	
C661	1-128-551-11	ELECT	22uF 20% 25V (RG30)	D301	8-719-069-60	DIODE UDJSTE-179.1B	
C661	1-126-965-11	ELECT	22uF 20% 50V (DX20)	D302	8-719-988-61	DIODE 1SS355TE-17	
C662	1-136-165-00	FILM	0.1uF 5% 50V	D303	8-719-988-61	DIODE 1SS355TE-17	
C663	1-136-165-00	FILM	0.1uF 5% 50V	D361	8-719-988-61	DIODE 1SS355TE-17	
C664	1-162-974-11	CERAMIC CHIP	0.01uF 50V	D372	8-719-988-61	DIODE 1SS355TE-17	
C665	1-126-916-11	ELECT	1000uF 20% 6.3V	D383	8-719-988-61	DIODE 1SS355TE-17	
C666	1-164-156-11	CERAMIC CHIP	0.1uF 25V	D601	8-719-988-61	DIODE 1SS355TE-17	
C671	1-126-916-11	ELECT	1000uF 20% 6.3V	D602	8-719-988-61	DIODE 1SS355TE-17	
C672	1-162-953-11	CERAMIC CHIP	100PF 5% 50V	D661	8-719-988-61	DIODE 1SS355TE-17	
C673	1-162-953-11	CERAMIC CHIP	100PF 5% 50V	D662	8-719-988-61	DIODE 1SS355TE-17	
C674	1-162-953-11	CERAMIC CHIP	100PF 5% 50V	D663	8-719-988-61	DIODE 1SS355TE-17	
C675	1-126-935-11	ELECT	470uF 20% 10V	D664	8-719-988-61	DIODE 1SS355TE-17	
C676	1-104-665-11	ELECT	100uF 20% 10V	D665	8-719-988-61	DIODE 1SS355TE-17	
C677	1-126-935-11	ELECT	470uF 20% 10V	D666	8-719-988-61	DIODE 1SS355TE-17	
C678	1-162-953-11	CERAMIC CHIP	100PF 5% 50V	D667	8-719-988-61	DIODE 1SS355TE-17	
C679	1-162-953-11	CERAMIC CHIP	100PF 5% 50V	D668	8-719-988-61	DIODE 1SS355TE-17	
C681	1-136-165-00	FILM	0.1uF 5% 50V	D669	8-719-988-61	DIODE 1SS355TE-17	
C683	1-136-165-00	FILM	0.1uF 5% 50V	D670	8-719-988-61	DIODE 1SS355TE-17	
C684	1-136-165-00	FILM	0.1uF 5% 50V	D681	8-719-083-89	DIODE 11ES2N-TB5	
				D682	8-719-083-89	DIODE 11ES2N-TB5	
				D683	8-719-083-89	DIODE 11ES2N-TB5	

HCD-DX20/RG30

MAIN

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
D684	8-719-083-89	DIODE 11ES2N-TB5		JR14	1-216-864-11	METAL CHIP 0 5%	1/16W (DX20)
D685	8-719-988-61	DIODE 1SS355TE-17		JR15	1-216-864-11	METAL CHIP 0 5%	1/16W
D686	8-719-988-61	DIODE 1SS355TE-17		JR16	1-216-864-11	METAL CHIP 0 5%	1/16W
D687	8-719-083-89	DIODE 11ES2N-TB5		JR17	1-216-864-11	METAL CHIP 0 5%	1/16W
D688	8-719-083-89	DIODE 11ES2N-TB5					
D689	8-719-083-89	DIODE 11ES2N-TB5		JR109	1-216-864-11	METAL CHIP 0 5%	1/16W (DX20)
D690	8-719-083-89	DIODE 11ES2N-TB5		JR110	1-216-864-11	METAL CHIP 0 5%	1/16W (RG30)
D691	8-719-083-89	DIODE 11ES2N-TB5		JR602	1-216-864-11	METAL CHIP 0 5%	1/16W
D692	8-719-083-89	DIODE 11ES2N-TB5		JR603	1-216-864-11	METAL CHIP 0 5%	1/16W
D693	8-719-083-89	DIODE 11ES2N-TB5		JR606	1-216-864-11	METAL CHIP 0 5%	1/16W
D694	8-719-083-89	DIODE 11ES2N-TB5		JR607	1-216-864-11	METAL CHIP 0 5%	1/16W (DX20)
D695	8-719-083-89	DIODE 11ES2N-TB5		JR633	1-216-864-11	METAL CHIP 0 5%	1/16W
D696	8-719-988-61	DIODE 1SS355TE-17 (RG30)		JR634	1-216-864-11	METAL CHIP 0 5%	1/16W
		< TERMINAL >		JR635	1-216-864-11	METAL CHIP 0 5%	1/16W
* EP1	1-537-738-21	TERMINAL, EARTH		JR636	1-216-864-11	METAL CHIP 0 5%	1/16W (RG30)
		< FERRITE BEAD >					
FB1	1-550-907-21	FERRITE 0UH		JR637	1-216-864-11	METAL CHIP 0 5%	1/16W (RG30)
FB2	1-550-907-21	FERRITE 0UH		JR638	1-216-864-11	METAL CHIP 0 5%	1/16W
FB3	1-550-907-21	FERRITE 0UH		JR639	1-216-864-11	METAL CHIP 0 5%	1/16W (RG30)
FB4	1-216-864-11	METAL CHIP 0 5%	1/16W	JR640	1-216-864-11	METAL CHIP 0 5%	1/16W
FB5	1-216-864-11	METAL CHIP 0 5%	1/16W	JR641	1-216-864-11	METAL CHIP 0 5%	1/16W
FB6	1-216-864-11	METAL CHIP 0 5%	1/16W	JR642	1-216-864-11	METAL CHIP 0 5%	1/16W
		< FRONT END >					
FE101	1-693-496-11	FRONT END (4 GANG) (RG30)				< COIL >	
FE101	1-693-477-12	FRONT END (3 GANGS) (DX20)		L107	1-410-387-11	INDUCTOR CHIP 33uH (RG30)	
		< IC >		L107	1-216-864-11	METAL CHIP 0 5%	1/16W (DX20)
IC101	8-759-652-00	IC BA1450		L108	1-410-369-11	INDUCTOR CHIP 1uH (RG30)	
IC102	8-759-288-54	IC LC72130		L109	1-410-393-11	INDUCTOR CHIP 100uH (RG30)	
IC103	8-759-541-48	IC BU1924 (RG30)		L201	1-437-220-11	TRANSFORMER, BIAS OSCILLATION	
IC201	8-759-242-58	IC TA8189N					
IC301	8-759-832-80	IC BH3878KS2		L371	1-420-872-00	COIL, AIR-CORE (RG30)	
				L372	1-420-872-00	COIL, AIR-CORE (RG30)	
IC401	6-800-194-01	IC M30622MCA-B23FP		L671	1-414-189-31	INDUCTOR 100uH	
IC661	8-759-635-63	IC M51943BSL-TP				< PHOTO INTERRUPTER >	
IC681	8-759-039-69	IC uPC7805AHF		PH671	8-749-923-04	IC TOTX178A	
IC682	8-759-039-69	IC uPC7805AHF				< TRANSISTOR >	
IC683	8-759-088-08	IC uPC7812AHF					
IC684	8-759-701-59	IC M5F7809L					
		< IFT >		Q101	8-729-922-66	TRANSISTOR 2SC2410SN	
IFT101	1-435-295-12	TRANSFORMER, IF		Q102	8-729-422-57	TRANSISTOR UN4111	
		< JACK >		Q103	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
				Q104	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
				Q105	8-729-120-28	TRANSISTOR 2SC2412K-T-146-QR (RG30)	
J301	1-793-987-11	JACK, PIN 2P (AUDIO IN)		Q210	8-729-119-78	TRANSISTOR 2SC2785-HFE	
JK101	1-694-555-12	TERMINAL BOARD (4P) (DX20)		Q211	8-729-119-78	TRANSISTOR 2SC2785-HFE	
JK101	1-694-556-21	TERMINAL BOARD (ANT.PAL) (RG30)		Q212	8-729-119-78	TRANSISTOR 2SC2785-HFE	
JK302	1-694-635-12	TERMINAL BOARD (4P) (SPEAKER)		Q213	8-729-119-78	TRANSISTOR 2SC2785-HFE	
		< JUMPER RESISTOR >		Q214	8-729-141-30	TRANSISTOR 2SC3623A-LK	
JR1	1-216-864-11	METAL CHIP 0 5%	1/16W	Q215	8-729-141-30	TRANSISTOR 2SC3623A-LK	
JR4	1-216-864-11	METAL CHIP 0 5%	1/16W	Q216	8-729-141-30	TRANSISTOR 2SC3623A-LK	
JR7	1-216-864-11	METAL CHIP 0 5%	1/16W	Q217	8-729-141-30	TRANSISTOR 2SC3623A-LK	
JR8	1-216-864-11	METAL CHIP 0 5%	1/16W	Q218	8-729-119-78	TRANSISTOR 2SC2785-HFE	
JR10	1-216-864-11	METAL CHIP 0 5%	1/16W	Q219	8-729-119-78	TRANSISTOR 2SC2785-HFE	
				Q220	8-729-119-78	TRANSISTOR 2SC2785-HFE	
JR11	1-216-864-11	METAL CHIP 0 5%	1/16W	Q221	8-729-119-78	TRANSISTOR 2SC2785-HFE	

MAIN

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
Q222	8-729-119-78	TRANSISTOR 2SC2785-HFE		R119	1-216-833-11	METAL CHIP 10K 5%	1/16W
Q223	8-729-142-46	TRANSISTOR 2SC2001-LK		R120	1-216-833-11	METAL CHIP 10K 5%	1/16W
Q224	8-729-119-78	TRANSISTOR 2SC2785-HFE		R121	1-216-821-11	METAL CHIP 1K 5%	1/16W
Q225	8-729-140-04	TRANSISTOR 2SB1116A-L		R122	1-216-833-11	METAL CHIP 10K 5%	1/16W
Q226	8-729-900-63	TRANSISTOR DTA124ES (DX20)		R123	1-216-833-11	METAL CHIP 10K 5%	1/16W
Q227	8-729-140-04	TRANSISTOR 2SB1116A-L		R124	1-216-813-11	METAL CHIP 220 5%	1/16W
Q228	8-729-140-04	TRANSISTOR 2SB1116A-L		R125	1-216-829-11	METAL CHIP 4.7K 5%	1/16W
Q229	8-729-141-30	TRANSISTOR 2SC3623A-LK (DX20)		R126	1-216-829-11	METAL CHIP 4.7K 5%	1/16W
Q230	8-729-141-30	TRANSISTOR 2SC3623A-LK (DX20)		R127	1-216-825-11	METAL CHIP 2.2K 5%	1/16W
Q301	8-729-141-30	TRANSISTOR 2SC3623A-LK		R128	1-216-818-11	METAL CHIP 560 5%	1/16W
Q302	8-729-141-30	TRANSISTOR 2SC3623A-LK		R129	1-216-818-11	METAL CHIP 560 5%	1/16W
Q361	8-729-900-80	TRANSISTOR DTC114ES		R130	1-216-833-11	METAL CHIP 10K 5%	1/16W
Q362	8-729-900-63	TRANSISTOR DTA124ES		R131	1-216-834-11	METAL CHIP 12K 5%	1/16W
Q363	8-729-141-30	TRANSISTOR 2SC3623A-LK		R132	1-216-825-11	METAL CHIP 2.2K 5%	1/16W
Q364	8-729-141-30	TRANSISTOR 2SC3623A-LK		R133	1-216-814-11	METAL CHIP 270 5%	1/16W (RG30)
Q365	8-729-900-63	TRANSISTOR DTA124ES		R133	1-216-817-11	METAL CHIP 470 5%	1/16W (DX20)
Q381	8-729-119-78	TRANSISTOR 2SC2785-HFE		R134	1-216-814-11	METAL CHIP 270 5%	1/16W (RG30)
Q382	8-729-119-78	TRANSISTOR 2SC2785-HFE		R134	1-216-817-11	METAL CHIP 470 5%	1/16W (DX20)
Q383	8-729-119-76	TRANSISTOR 2SA1175-HFE		R135	1-216-829-11	METAL CHIP 4.7K 5%	1/16W
Q384	8-729-900-80	TRANSISTOR DTC114ES		R136	1-216-827-11	METAL CHIP 3.3K 5%	1/16W
Q385	8-729-119-78	TRANSISTOR 2SC2785-HFE		R137	1-216-809-11	METAL CHIP 100 5%	1/16W
Q386	8-729-119-78	TRANSISTOR 2SC2785-HFE		R138	1-216-809-11	METAL CHIP 100 5%	1/16W
Q387	8-729-119-78	TRANSISTOR 2SC2785-HFE		R139	1-216-864-11	METAL CHIP 0 5%	1/16W
Q601	8-729-900-80	TRANSISTOR DTC114ES		R171	1-216-809-11	METAL CHIP 100 5%	1/16W (RG30)
Q602	8-729-140-04	TRANSISTOR 2SB1116A-L		R172	1-216-845-11	METAL CHIP 100K 5%	1/16W (RG30)
Q603	8-729-900-80	TRANSISTOR DTC114ES		R174	1-216-821-11	METAL CHIP 1K 5%	1/16W (RG30)
Q604	8-729-140-04	TRANSISTOR 2SB1116A-L		R175	1-216-817-11	METAL CHIP 470 5%	1/16W (RG30)
Q605	8-729-900-80	TRANSISTOR DTC114ES		R177	1-216-809-11	METAL CHIP 100 5%	1/16W (RG30)
Q606	8-729-116-57	TRANSISTOR 2SB1068-K		R181	1-216-829-11	METAL CHIP 4.7K 5%	1/16W (RG30)
Q661	8-729-119-78	TRANSISTOR 2SC2785-HFE		R183	1-216-829-11	METAL CHIP 4.7K 5%	1/16W (RG30)
Q681	8-729-049-79	TRANSISTOR RT1P137S-TP		R201	1-216-797-11	METAL CHIP 10 5%	1/16W
Q682	8-729-900-80	TRANSISTOR DTC114ES		R202	1-216-797-11	METAL CHIP 10 5%	1/16W
< RESISTOR >				R203	1-216-797-11	METAL CHIP 10 5%	1/16W
R3	1-216-864-11	METAL CHIP 0 5%	1/16W (DX20)	R204	1-216-797-11	METAL CHIP 10 5%	1/16W
R4	1-216-864-11	METAL CHIP 0 5%	1/16W (DX20)	R205	1-216-805-11	METAL CHIP 47 5%	1/16W
R7	1-216-864-11	METAL CHIP 0 5%	1/16W	R206	1-216-805-11	METAL CHIP 47 5%	1/16W
R101	1-216-805-11	METAL CHIP 47 5%	1/16W	R207	1-216-832-11	METAL CHIP 8.2K 5%	1/16W
R102	1-216-819-11	METAL CHIP 680 5%	1/16W	R208	1-216-832-11	METAL CHIP 8.2K 5%	1/16W
R103	1-216-819-11	METAL CHIP 680 5%	1/16W	R209	1-216-850-11	METAL CHIP 270K 5%	1/16W
R104	1-216-811-11	METAL CHIP 150 5%	1/16W	R210	1-216-850-11	METAL CHIP 270K 5%	1/16W
R105	1-216-823-11	METAL CHIP 1.5K 5%	1/16W	R214	1-216-829-11	METAL CHIP 4.7K 5%	1/16W
R106	1-216-819-11	METAL CHIP 680 5%	1/16W (RG30)	R215	1-216-829-11	METAL CHIP 4.7K 5%	1/16W
R106	1-216-815-11	METAL CHIP 330 5%	1/16W (DX20)	R216	1-216-845-11	METAL CHIP 100K 5%	1/16W
R107	1-216-864-11	METAL CHIP 0 5%	1/16W	R217	1-216-833-11	METAL CHIP 10K 5%	1/16W
R108	1-216-815-11	METAL CHIP 330 5%	1/16W	R218	1-216-848-11	METAL CHIP 180K 5%	1/16W
R109	1-216-805-11	METAL CHIP 47 5%	1/16W	R219	1-216-841-11	METAL CHIP 47K 5%	1/16W (RG30)
R110	1-216-833-11	METAL CHIP 10K 5%	1/16W	R219	1-216-833-11	METAL CHIP 10K 5%	1/16W (DX20)
R111	1-216-809-11	METAL CHIP 100 5%	1/16W	R220	1-216-837-11	METAL CHIP 22K 5%	1/16W
R112	1-216-829-11	METAL CHIP 4.7K 5%	1/16W				
R113	1-216-829-11	METAL CHIP 4.7K 5%	1/16W				
R114	1-216-829-11	METAL CHIP 4.7K 5%	1/16W				
R115	1-216-833-11	METAL CHIP 10K 5%	1/16W				
R116	1-216-809-11	METAL CHIP 100 5%	1/16W				
R117	1-216-845-11	METAL CHIP 100K 5%	1/16W				
R118	1-216-809-11	METAL CHIP 100 5%	1/16W				

HCD-DX20/RG30

MAIN

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
R221	1-216-833-11	METAL CHIP	10K 5% 1/16W	R304	1-216-838-11	METAL CHIP	27K 5% 1/16W
R222	1-216-813-11	METAL CHIP	220 5% 1/16W	R305	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
R223	1-216-848-11	METAL CHIP	180K 5% 1/16W	R306	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
R224	1-216-848-11	METAL CHIP	180K 5% 1/16W	R307	1-216-835-11	METAL CHIP	15K 5% 1/16W
R225	1-216-837-11	METAL CHIP	22K 5% 1/16W	R308	1-216-835-11	METAL CHIP	15K 5% 1/16W
R226	1-216-837-11	METAL CHIP	22K 5% 1/16W	R309	1-216-857-11	METAL CHIP	1M 5% 1/16W
R227	1-216-846-11	METAL CHIP	120K 5% 1/16W	R313	1-216-845-11	METAL CHIP	100K 5% 1/16W
R228	1-216-846-11	METAL CHIP	120K 5% 1/16W	R314	1-216-845-11	METAL CHIP	100K 5% 1/16W
R229	1-216-824-11	METAL CHIP	1.8K 5% 1/16W	R315	1-216-839-11	METAL CHIP	33K 5% 1/16W
R230	1-216-824-11	METAL CHIP	1.8K 5% 1/16W	R316	1-216-839-11	METAL CHIP	33K 5% 1/16W
R231	1-216-825-11	METAL CHIP	2.2K 5% 1/16W	R317	1-216-845-11	METAL CHIP	100K 5% 1/16W
R231A	1-216-821-11	METAL CHIP	1K 5% 1/16W	R318	1-216-850-11	METAL CHIP	270K 5% 1/16W
R232	1-216-825-11	METAL CHIP	2.2K 5% 1/16W	R320	1-216-847-11	METAL CHIP	150K 5% 1/16W
R232A	1-216-821-11	METAL CHIP	1K 5% 1/16W	R321	1-216-833-11	METAL CHIP	10K 5% 1/16W
R233	1-216-843-11	METAL CHIP	68K 5% 1/16W	R322	1-216-833-11	METAL CHIP	10K 5% 1/16W
R234	1-216-843-11	METAL CHIP	68K 5% 1/16W	R323	1-216-813-11	METAL CHIP	220 5% 1/16W
R235	1-216-829-11	METAL CHIP	4.7K 5% 1/16W	R324	1-216-833-11	METAL CHIP	10K 5% 1/16W
R236	1-216-829-11	METAL CHIP	4.7K 5% 1/16W	R325	1-216-835-11	METAL CHIP	15K 5% 1/16W
R237	1-216-833-11	METAL CHIP	10K 5% 1/16W	R326	1-216-833-11	METAL CHIP	10K 5% 1/16W
R238	1-216-855-11	METAL CHIP	680K 5% 1/16W	R327	1-216-825-11	METAL CHIP	2.2K 5% 1/16W (DX20)
R239	1-216-833-11	METAL CHIP	10K 5% 1/16W	R328	1-216-827-11	METAL CHIP	3.3K 5% 1/16W
R240	1-216-833-11	METAL CHIP	10K 5% 1/16W	R329	1-216-827-11	METAL CHIP	3.3K 5% 1/16W
R241	1-216-829-11	METAL CHIP	4.7K 5% 1/16W	R331	1-216-829-11	METAL CHIP	4.7K 5% 1/16W
R242	1-216-829-11	METAL CHIP	4.7K 5% 1/16W	R332	1-216-829-11	METAL CHIP	4.7K 5% 1/16W
R243	1-216-825-11	METAL CHIP	2.2K 5% 1/16W	R333	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
R244	1-216-838-11	METAL CHIP	27K 5% 1/16W	R334	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
R245	1-216-833-11	METAL CHIP	10K 5% 1/16W	R335	1-216-845-11	METAL CHIP	100K 5% 1/16W
R246	1-216-829-11	METAL CHIP	4.7K 5% 1/16W	R336	1-216-845-11	METAL CHIP	100K 5% 1/16W
R247	1-216-845-11	METAL CHIP	100K 5% 1/16W	R337	1-216-833-11	METAL CHIP	10K 5% 1/16W
R248	1-216-834-11	METAL CHIP	12K 5% 1/16W	R338	1-216-833-11	METAL CHIP	10K 5% 1/16W
R249	1-216-855-11	METAL CHIP	680K 5% 1/16W	R339	1-216-831-11	METAL CHIP	6.8K 5% 1/16W
R250	1-216-848-11	METAL CHIP	180K 5% 1/16W	R340	1-216-831-11	METAL CHIP	6.8K 5% 1/16W
R251	1-216-825-11	METAL CHIP	2.2K 5% 1/16W	R341	1-216-813-11	METAL CHIP	220 5% 1/16W
R252	1-216-838-11	METAL CHIP	27K 5% 1/16W	R342	1-216-813-11	METAL CHIP	220 5% 1/16W
R253	1-216-833-11	METAL CHIP	10K 5% 1/16W	R343	1-216-833-11	METAL CHIP	10K 5% 1/16W (DX20)
R254	1-216-829-11	METAL CHIP	4.7K 5% 1/16W	R344	1-216-833-11	METAL CHIP	10K 5% 1/16W (DX20)
R255	1-216-821-11	METAL CHIP	1K 5% 1/16W (DX20)	R361	1-215-891-11	METAL OXIDE	680 5% 2W
R256	1-216-833-11	METAL CHIP	10K 5% 1/16W	R362	1-215-891-11	METAL OXIDE	680 5% 2W
R257	1-216-816-11	METAL CHIP	390 5% 1/16W	R363	1-216-821-11	METAL CHIP	1K 5% 1/16W
R258	1-216-813-11	METAL CHIP	220 5% 1/16W	R364	1-216-821-11	METAL CHIP	1K 5% 1/16W
R259	1-216-821-11	METAL CHIP	1K 5% 1/16W (DX20)	R365	1-216-841-11	METAL CHIP	47K 5% 1/16W
R260	1-216-816-11	METAL CHIP	390 5% 1/16W	R366	1-216-833-11	METAL CHIP	10K 5% 1/16W
R261	1-216-816-11	METAL CHIP	390 5% 1/16W	R367	1-216-821-11	METAL CHIP	1K 5% 1/16W
R262	1-216-845-11	METAL CHIP	100K 5% 1/16W	R368	1-216-845-11	METAL CHIP	100K 5% 1/16W
R263	1-216-833-11	METAL CHIP	10K 5% 1/16W	R369	1-216-837-11	METAL CHIP	22K 5% 1/16W
R264	1-216-833-11	METAL CHIP	10K 5% 1/16W	R370	1-216-829-11	METAL CHIP	4.7K 5% 1/16W (RG30)
R270	1-216-813-11	METAL CHIP	220 5% 1/16W	R370	1-216-823-11	METAL CHIP	1.5K 5% 1/16W (DX20)
R271	1-216-857-11	METAL CHIP	1M 5% 1/16W	R377	1-260-304-51	CARBON	10 5% 1/2W (RG30)
R272	1-216-857-11	METAL CHIP	1M 5% 1/16W	R378	1-260-304-51	CARBON	10 5% 1/2W (RG30)
R273	1-216-823-11	METAL CHIP	1.5K 5% 1/16W	R379	1-260-304-51	CARBON	10 5% 1/2W (RG30)
R274	1-216-823-11	METAL CHIP	1.5K 5% 1/16W	R380	1-260-304-51	CARBON	10 5% 1/2W (RG30)
R275	1-216-829-11	METAL CHIP	4.7K 5% 1/16W	R381	1-216-841-11	METAL CHIP	47K 5% 1/16W (RG30)
R276	1-216-829-11	METAL CHIP	4.7K 5% 1/16W				
R277	1-216-845-11	METAL CHIP	100K 5% 1/16W				
R278	1-216-845-11	METAL CHIP	100K 5% 1/16W				
R301	1-216-833-11	METAL CHIP	10K 5% 1/16W				
R302	1-216-833-11	METAL CHIP	10K 5% 1/16W				
R303	1-216-838-11	METAL CHIP	27K 5% 1/16W				

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
R381	1-216-842-11	METAL CHIP	56K 5% 1/16W (DX20)	R641	1-216-823-11	METAL CHIP	1.5K 5% 1/16W (DX20:KR,SP,TH)
R382	1-216-842-11	METAL CHIP	56K 5% 1/16W (RG30)	R641	1-216-837-11	METAL CHIP	22K 5% 1/16W (DX20:AR,E2,E51,MX)
R382	1-216-841-11	METAL CHIP	47K 5% 1/16W (DX20)	R643	1-216-821-11	METAL CHIP	1K 5% 1/16W
R383	1-216-833-11	METAL CHIP	10K 5% 1/16W	R644	1-216-851-11	METAL CHIP	330K 5% 1/16W
R384	1-216-833-11	METAL CHIP	10K 5% 1/16W	R645	1-216-833-11	METAL CHIP	10K 5% 1/16W
R385	1-216-839-11	METAL CHIP	33K 5% 1/16W	R646	1-216-833-11	METAL CHIP	10K 5% 1/16W
R386	1-216-837-11	METAL CHIP	22K 5% 1/16W	R647	1-216-864-11	METAL CHIP	0 5% 1/16W (DX20)
R387	1-216-829-11	METAL CHIP	4.7K 5% 1/16W	R648	1-216-864-11	METAL CHIP	0 5% 1/16W (DX20)
R388	1-216-837-11	METAL CHIP	22K 5% 1/16W	R649	1-216-833-11	METAL CHIP	10K 5% 1/16W
R389	1-216-830-11	METAL CHIP	5.6K 5% 1/16W	R650	1-216-833-11	METAL CHIP	10K 5% 1/16W
R393	1-216-806-11	RES-CHIP	56 5% 1/16W	R655	1-216-864-11	METAL CHIP	0 5% 1/16W
R394	1-216-806-11	RES-CHIP	56 5% 1/16W	R656	1-216-809-11	METAL CHIP	100 5% 1/16W
R601	1-216-821-11	METAL CHIP	1K 5% 1/16W	R657	1-216-833-11	METAL CHIP	10K 5% 1/16W
R602	1-216-819-11	METAL CHIP	680 5% 1/16W	R658	1-216-809-11	METAL CHIP	100 5% 1/16W
R603	1-216-821-11	METAL CHIP	1K 5% 1/16W	R659	1-216-833-11	METAL CHIP	10K 5% 1/16W
R604	1-216-819-11	METAL CHIP	680 5% 1/16W	R660	1-216-809-11	METAL CHIP	100 5% 1/16W
R605	1-216-821-11	METAL CHIP	1K 5% 1/16W	R661	1-216-829-11	METAL CHIP	4.7K 5% 1/16W
R606	1-216-819-11	METAL CHIP	680 5% 1/16W	R662	1-216-821-11	METAL CHIP	1K 5% 1/16W
R607	1-216-809-11	METAL CHIP	100 5% 1/16W	R663	1-216-841-11	METAL CHIP	47K 5% 1/16W
R608	1-216-809-11	METAL CHIP	100 5% 1/16W	R664	1-216-841-11	METAL CHIP	47K 5% 1/16W
R609	1-216-833-11	METAL CHIP	10K 5% 1/16W	R665	1-216-833-11	METAL CHIP	10K 5% 1/16W
R610	1-216-809-11	METAL CHIP	100 5% 1/16W	R670	1-216-827-11	METAL CHIP	3.3K 5% 1/16W
R611	1-216-833-11	METAL CHIP	10K 5% 1/16W	R671	1-216-841-11	METAL CHIP	47K 5% 1/16W
R612	1-216-809-11	METAL CHIP	100 5% 1/16W	R672	1-216-841-11	METAL CHIP	47K 5% 1/16W
R613	1-216-833-11	METAL CHIP	10K 5% 1/16W	R673	1-216-833-11	METAL CHIP	10K 5% 1/16W
R614	1-216-809-11	METAL CHIP	100 5% 1/16W	R674	1-216-841-11	METAL CHIP	47K 5% 1/16W
R615	1-216-809-11	METAL CHIP	100 5% 1/16W	R675	1-216-841-11	METAL CHIP	47K 5% 1/16W
R616	1-216-809-11	METAL CHIP	100 5% 1/16W	R676	1-216-841-11	METAL CHIP	47K 5% 1/16W
R617	1-216-809-11	METAL CHIP	100 5% 1/16W	R677	1-216-841-11	METAL CHIP	47K 5% 1/16W
R618	1-216-833-11	METAL CHIP	10K 5% 1/16W	R678	1-216-841-11	METAL CHIP	47K 5% 1/16W
R619	1-216-809-11	METAL CHIP	100 5% 1/16W	R679	1-216-841-11	METAL CHIP	47K 5% 1/16W
R620	1-216-813-11	METAL CHIP	220 5% 1/16W	R680	1-216-833-11	METAL CHIP	10K 5% 1/16W
R621	1-216-813-11	METAL CHIP	220 5% 1/16W	R681	1-216-864-11	METAL CHIP	0 5% 1/16W
R622	1-216-809-11	METAL CHIP	100 5% 1/16W	< COMPOSITION CIRCUIT BLOCK >			
R623	1-216-809-11	METAL CHIP	100 5% 1/16W	RB101	1-234-457-11	ENCAPSULATED COMPONENT	
R624	1-216-809-11	METAL CHIP	100 5% 1/16W	< VARIABLE RESISTOR >			
R625	1-216-833-11	METAL CHIP	10K 5% 1/16W	RV101	1-241-765-11	RES, ADJ, CARBON 22K	
R626	1-216-809-11	METAL CHIP	100 5% 1/16W	RV661	1-241-762-11	RES, ADJ, CARBON 2.2K (TAPE SPEED)	
R627	1-216-809-11	METAL CHIP	100 5% 1/16W	< RELAY >			
R628	1-216-809-11	METAL CHIP	100 5% 1/16W	RY371	1-755-373-11	RELAY	
R629	1-216-809-11	METAL CHIP	100 5% 1/16W	< TRANSFORMER >			
R630	1-216-809-11	METAL CHIP	100 5% 1/16W	T101	1-435-195-31	TRANSFORMER, DISCRIMINATOR	
R631	1-216-809-11	METAL CHIP	100 5% 1/16W	T102	1-234-477-11	ENCAPSULATED COMPONENT (RG30)	
R632	1-216-833-11	METAL CHIP	10K 5% 1/16W	< VIBRATOR >			
R633	1-216-809-11	METAL CHIP	100 5% 1/16W	X101	1-760-549-31	VIBRATOR, CRYSTAL (4.5MHz)	
R634	1-216-833-11	METAL CHIP	10K 5% 1/16W	X102	1-579-900-21	VIBRATOR, CRYSTAL (4.332MHz) (RG30)	
R635	1-216-809-11	METAL CHIP	100 5% 1/16W	X601	1-567-098-41	VIBRATOR, CRYSTAL (32.768kHz)	
R636	1-216-809-11	METAL CHIP	100 5% 1/16W	X602	1-781-107-21	VIBRATOR, SERAMIC (16MHz)	
R637	1-216-809-11	METAL CHIP	100 5% 1/16W	*****			
R638	1-216-864-11	METAL CHIP	0 5% 1/16W				
R640	1-216-839-11	METAL CHIP	33K 5% 1/16W (RG30)				
R640	1-216-841-11	METAL CHIP	47K 5% 1/16W (DX20)				
R641	1-216-841-11	METAL CHIP	47K 5% 1/16W (RG30)				
R641	1-216-833-11	METAL CHIP	10K 5% 1/16W (DX20:EA)				

HCD-DX20/RG30

MOTOR

PANEL

Ref. No.	Part No.	Description	Remarks
	1-675-910-14	MOTOR BOARD *****	
		< CAPACITOR >	
C721	1-162-306-11	CERAMIC 0.01uF 30%	16V
		< CONNECTOR >	
CN721	1-770-516-31	CONNECTOR, FFC 8P	
CN722	1-785-330-11	PIN, CONNECTOR (LIGHT ANGLE)4P	
		< SWITCH >	
S701	1-771-822-11	SWITCH, LEVER (SLIDE) (OPEN/CLOSE)	

	A-4726-035-A	PANEL BOARD, COMPLETE (RG30)	
	A-4476-797-A	PANEL BOARD, COMPLETE (DX20:AR,E2,E51,EA,MX,SP)	
	A-4725-721-A	PANEL BOARD, COMPLETE (DX20:KR)	
	A-4725-982-A	PANEL BOARD, COMPLETE (DX20:TH)	

	4-234-016-01	FL HOLDER	
	7-685-872-09	SCREW +BVTT 3X8 (S)	
		< CAPACITOR >	
C701	1-126-966-11	ELECT 33uF 20%	50V
C702	1-126-966-11	ELECT 33uF 20%	50V
C703	1-162-306-11	CERAMIC 0.01uF 30%	16V
C704	1-124-589-11	ELECT 47uF 20%	16V
C705	1-162-294-31	CERAMIC 0.001uF 10%	50V
C706	1-162-282-31	CERAMIC 100PF 10%	50V (RG30)
C706	1-162-294-31	CERAMIC 0.001uF 10%	50V (DX20)
C707	1-162-282-31	CERAMIC 100PF 10%	50V (RG30)
C707	1-162-294-31	CERAMIC 0.001uF 10%	50V (DX20)
C708	1-162-282-31	CERAMIC 100PF 10%	50V
C709	1-162-282-31	CERAMIC 100PF 10%	50V
C710	1-162-282-31	CERAMIC 100PF 10%	50V
C711	1-162-282-31	CERAMIC 100PF 10%	50V
C712	1-162-282-31	CERAMIC 100PF 10%	50V
C713	1-162-282-31	CERAMIC 100PF 10%	50V
C714	1-162-282-31	CERAMIC 100PF 10%	50V
C715	1-162-282-31	CERAMIC 100PF 10%	50V
C716	1-161-494-00	CERAMIC 0.022uF	25V
C720	1-162-306-11	CERAMIC 0.01uF 30%	16V
C721	1-124-589-11	ELECT 47uF 20%	16V
C722	1-162-282-31	CERAMIC 100PF 10%	50V
C723	1-162-282-31	CERAMIC 100PF 10%	50V
C724	1-162-282-31	CERAMIC 100PF 10%	50V
C725	1-162-282-31	CERAMIC 100PF 10%	50V
C726	1-162-282-31	CERAMIC 100PF 10%	50V
C727	1-162-282-31	CERAMIC 100PF 10%	50V
C728	1-162-282-31	CERAMIC 100PF 10%	50V
C729	1-162-282-31	CERAMIC 100PF 10%	50V
C730	1-162-282-31	CERAMIC 100PF 10%	50V
C731	1-162-282-31	CERAMIC 100PF 10%	50V
C732	1-162-282-31	CERAMIC 100PF 10%	50V
C733	1-162-282-31	CERAMIC 100PF 10%	50V

Ref. No.	Part No.	Description	Remarks
C734	1-162-306-11	CERAMIC 0.01uF 30%	16V
C735	1-162-306-11	CERAMIC 0.01uF 30%	16V
C736	1-162-294-31	CERAMIC 0.001uF 10%	50V
C737	1-162-294-31	CERAMIC 0.001uF 10%	50V
C738	1-104-665-11	ELECT 100uF 20%	10V (DX20)
C739	1-104-665-11	ELECT 100uF 20%	10V (DX20)
C754	1-162-215-31	CERAMIC 47PF 5%	50V (DX20)
C755	1-126-957-11	ELECT 0.22uF 20%	50V (DX20)
C756	1-162-294-31	CERAMIC 0.001uF 10%	50V (DX20)
C757	1-162-306-11	CERAMIC 0.01uF 30%	16V (DX20)
C758	1-126-956-91	ELECT 0.1uF 20%	50V (DX20)
C759	1-162-290-31	CERAMIC 470PF 10%	50V (DX20)
C760	1-126-961-11	ELECT 2.2uF 20%	50V (DX20)
C761	1-162-215-31	CERAMIC 47PF 5%	50V (DX20)
C762	1-162-282-31	CERAMIC 100PF 10%	50V (DX20)
C763	1-126-961-11	ELECT 2.2uF 20%	50V (DX20)
C765	1-126-964-11	ELECT 10uF 20%	50V (DX20)
C766	1-126-964-11	ELECT 10uF 20%	50V (DX20)
C770	1-164-159-21	CERAMIC 0.1uF	50V
C775	1-162-306-11	CERAMIC 0.01uF 30%	16V
C777	1-164-159-21	CERAMIC 0.1uF	50V (DX20)
C778	1-164-159-21	CERAMIC 0.1uF	50V
C779	1-164-159-21	CERAMIC 0.1uF	50V
C780	1-164-159-21	CERAMIC 0.1uF	50V (DX20)
		< CONNECTOR >	
CN711	1-793-767-11	CONNECTOR, BOARD TO BOARD 30P	
* CN712	1-564-729-11	PIN, CONNECTOR (SMALL TYPE)13P	(RG30)
CN712	1-785-339-11	PIN, CONNECTOR(LIGHT ANGLE)13P	(DX20)
		< DIODE >	
D701	8-719-071-44	DIODE SELS5223C-TP15 (1/Ⓢ)	
D702	8-719-084-40	DIODE SEL5955A-TP15 (MD(VIDEO))	
D703	8-719-084-40	DIODE SEL5955A-TP15 (TAPE A/B)	
D704	8-719-084-40	DIODE SEL5955A-TP15 (CD)	
D705	8-719-084-40	DIODE SEL5955A-TP15 (TUNER/BAND)	
D706	8-719-084-40	DIODE SEL5955A-TP15 (GAME)	
D713	8-719-991-33	DIODE 1SS133T-77	
D716	8-719-084-40	DIODE SEL5955A-TP15 (MD(VIDEO))	
D717	8-719-084-40	DIODE SEL5955A-TP15 (TAPE A/B)	
D718	8-719-084-40	DIODE SEL5955A-TP15 (CD)	
D719	8-719-084-40	DIODE SEL5955A-TP15 (TUNER/BAND)	
D720	8-719-084-40	DIODE SEL5955A-TP15 (GAME)	
D721	8-719-991-33	DIODE 1SS133T-77	

PANEL POWER AMP

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HCD-DX20/RG30

POWER AMP

SUB TRANS

Ref. No.	Part No.	Description	Remarks
C507	1-130-493-00	MYLAR 0.068uF 5%	50V
C508	1-130-493-00	MYLAR 0.068uF 5%	50V
C509	1-126-965-11	ELECT 22uF 20%	50V
C511	1-162-306-11	CERAMIC 0.01uF 30%	16V
C512	1-162-294-31	CERAMIC 0.001uF 10%	50V (DX20:KR/RG30)
C513	1-164-159-21	CERAMIC 0.1uF	50V (RG30)
C513	1-162-294-31	CERAMIC 0.001uF 10%	50V (DX20:KR)
C541	1-130-777-00	MYLAR 0.1uF 10%	100V
C542	1-135-832-21	ELECT 2200uF 20%	50V
C543	1-164-159-21	CERAMIC 0.1uF	50V
C544	1-126-942-61	ELECT 1000uF 20%	25V
C545	1-128-549-11	ELECT 3300uF 20%	35V
C551	1-126-964-11	ELECT 10uF 20%	50V
C552	1-162-290-31	CERAMIC 470PF 10%	50V (RG30)
C552	1-162-294-31	CERAMIC 0.001uF 10%	50V (DX20)
C553	1-162-282-31	CERAMIC 100PF 10%	50V
C554	1-128-551-11	ELECT 22uF 20%	25V
C557	1-130-493-00	MYLAR 0.068uF 5%	50V
C558	1-130-493-00	MYLAR 0.068uF 5%	50V
C559	1-126-965-11	ELECT 22uF 20%	50V
C591	1-130-777-00	MYLAR 0.1uF 10%	100V
C592	1-135-832-21	ELECT 2200uF 20%	50V
< CONNECTOR >			
CN502	1-778-981-21	CONNECTOR, BOARD TO BOARD 13P	
CN503	1-778-981-21	CONNECTOR, BOARD TO BOARD 13P	
< DIODE >			
D501	8-719-991-33	DIODE 1SS133T-77	
D502	8-719-991-33	DIODE 1SS133T-77	
D541	8-719-510-68	DIODE D5SBA204101	
D542	8-719-200-82	DIODE 11ES2	
D543	8-719-200-82	DIODE 11ES2	
D551	8-719-991-33	DIODE 1SS133T-77	
< TERMINAL >			
* EP501	1-537-738-21	TERMINAL, EARTH (DX20:KR/RG30)	
* EP502	1-537-738-21	TERMINAL, EARTH	
< IC >			
IC501	8-749-016-93	IC STK402-070S	
< TRANSISTOR >			
Q501	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA	
Q503	8-729-140-82	TRANSISTOR 2SA988-PAFAEA	
Q504	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA	
Q551	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA	
Q581	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA	
< RESISTOR >			
R501	1-249-417-11	CARBON 1K 5%	1/4W F
R502	1-249-438-11	CARBON 56K 5%	1/4W
R503	1-249-415-11	CARBON 680 5%	1/4W F (RG30)
R503	1-249-418-11	CARBON 1.2K 5%	1/4W F

Ref. No.	Part No.	Description	Remarks
R504	1-249-435-11	CARBON 33K 5%	(DX20) 1/4W (RG30)
R504	1-249-438-11	CARBON 56K 5%	1/4W (DX20)
R505	1-249-417-11	CARBON 1K 5%	1/4W F
R506	1-249-431-11	CARBON 15K 5%	1/4W
R507	1-249-441-11	CARBON 100K 5%	1/4W
△ R508	1-217-151-00	METAL 0.22 10%	2W
R509	1-260-076-11	CARBON 10 5%	1/2W
△ R510	1-217-151-00	METAL 0.22 10%	2W
△ R511	1-212-881-11	FUSIBLE 100 5%	1/4W
△ R512	1-202-972-61	FUSIBLE 1 5%	1/4W
R513	1-249-433-11	CARBON 22K 5%	1/4W (DX20)
R514	1-249-421-11	CARBON 2.2K 5%	1/4W F
R515	1-249-433-11	CARBON 22K 5%	1/4W
R516	1-249-429-11	CARBON 10K 5%	1/4W
R517	1-249-421-11	CARBON 2.2K 5%	1/4W F
R518	1-249-429-11	CARBON 10K 5%	1/4W
R519	1-249-433-11	CARBON 22K 5%	1/4W (DX20)
R541	1-260-115-11	CARBON 22K 5%	1/2W
R551	1-249-417-11	CARBON 1K 5%	1/4W F
R552	1-249-438-11	CARBON 56K 5%	1/4W
R553	1-249-415-11	CARBON 680 5%	1/4W F (RG30)
R553	1-249-418-11	CARBON 1.2K 5%	1/4W F (DX20)
R554	1-249-435-11	CARBON 33K 5%	1/4W (RG30)
R554	1-249-438-11	CARBON 56K 5%	1/4W (DX20)
R555	1-249-417-11	CARBON 1K 5%	1/4W F
R556	1-249-431-11	CARBON 15K 5%	1/4W
R557	1-249-441-11	CARBON 100K 5%	1/4W
△ R558	1-217-151-00	METAL 0.22 10%	2W
R559	1-260-076-11	CARBON 10 5%	1/2W
△ R560	1-217-151-00	METAL 0.22 10%	2W
△ R561	1-212-881-11	FUSIBLE 100 5%	1/4W
R581	1-249-435-11	CARBON 33K 5%	1/4W
R582	1-249-435-11	CARBON 33K 5%	1/4W
R591	1-260-115-11	CARBON 22K 5%	1/2W

	1-681-445-11	SUB TRANS BOARD (DX20)	
	1-681-445-21	SUB TRANS BOARD (RG30)	

< CAPACITOR >			
C901	1-113-925-11	CERAMIC 0.01uF 20%	250V
C902	1-126-768-11	ELECT 2200uF 20%	16V
C903	1-126-933-11	ELECT 100uF 20%	16V
< CONNECTOR >			
* CN2	1-564-321-21	PIN, CONNECTOR 2P (DX20:KR,MX,TH/RG30)	
CN2	1-568-106-11	PIN, CONNECTOR 4P (DX20:AR,E2,E51,EA,SP)	
CN901	1-564-321-00	PIN, CONNECTOR 2P	
* CN903	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P (RG30)	
CN903	1-785-315-11	PIN, CONNECTOR (STRAIGHT) 3P (DX20)	

SUB TRANS

TRANS

VIDEO OUT

Ref. No.	Part No.	Description	Remarks
		< DIODE >	
D901	8-719-991-33	DIODE 1SS133T-77	
D902	8-719-200-82	DIODE 11ES2	
D903	8-719-200-82	DIODE 11ES2	
D904	8-719-200-82	DIODE 11ES2	
D905	8-719-200-82	DIODE 11ES2	
		< IC >	
IC901	8-759-158-62	IC TA78057S	
		< TRANSISTOR >	
Q901	8-729-119-78	TRANSISTOR 2SC2785-HFE	
		< RESISTOR >	
R902	1-249-429-11	CARBON 10K 5% 1/4W	
		< RELAY >	
RY901	1-755-276-11	RELAY, POWER	
		< TRANSFORMER >	
△ T901	1-435-824-21	TRANSFORMER, POWER (RG30)	
△ T901	1-435-828-11	TRANSFORMER, POWER (DX20)	

	1-681-444-11	TRANS BOARD (DX20)	
	1-681-444-21	TRANS BOARD (RG30)	

	1-533-217-31	HOLDER, FUSE	
		< CAPACITOR >	
C911	1-128-553-11	ELECT 220uF 20% 63V	
C912	1-126-964-11	ELECT 10uF 20% 50V	
C913	1-126-968-11	ELECT 100uF 20% 50V	
C915	1-164-159-21	CERAMIC 0.1uF 50V	
		< CONNECTOR >	
CN915	1-564-528-11	PLUG, CONNECTOR 13P	
		< DIODE >	
D911	8-719-200-82	DIODE 11ES2	
D912	8-719-982-20	DIODE MTZJ-30B	
D913	8-719-109-89	DIODE RD5.6ESB2	
		< FUSE >	
△ F914	1-533-473-11	FUSE, GLASS TUBE (DIA.5) T6.3AL/250V	
△ F919	1-533-471-11	FUSE, GLASS TUBE (DIA.5) T4AL/250V	
		(DX20:AR,E2,E51,EA,SP)	
△ F920	1-533-473-11	FUSE, GLASS TUBE (DIA.5) T6.3AL/250V	
		< TRANSISTOR >	
Q911	8-729-048-52	TRANSISTOR 2SA1932(TP)	
		< SESISTOR >	
R905	1-249-429-11	CARBON 10K 5% 1/4W	
△ R911	1-217-637-00	FUSIBLE 1 5% 1/4W	
R912	1-249-417-11	CARBON 1K 5% 1/4W	F
R913	1-249-429-11	CARBON 10K 5% 1/4W	
R915	1-247-807-31	CARBON 100 5% 1/4W	

Ref. No.	Part No.	Description	Remarks
R916	1-247-807-31	CARBON 100 5% 1/4W	
△ R919	1-219-122-91	FUSIBLE 0.33 5% 1/4W	
△ R920	1-219-122-91	FUSIBLE 0.33 5% 1/4W	
		< SWITCH >	
△ S901	1-786-055-21	SELECTOR, VOLTAGE (DX20:AR,E2,E51,EA,SP)	
		< TRANSFORMER >	
△ T911	1-437-224-11	TRANSFORMER, POWER (DX20)	
△ T911	1-437-225-11	TRANSFORMER, POWER (RG30)	

	1-681-441-11	VIDEO OUT BOARD (DX20)	
	1-681-441-21	VIDEO OUT BOARD (RG30)	

		< CONNECTOR >	
CN714	1-564-505-11	PLUG, CONNECTOR 2P	
		< JACK >	
J705	1-774-227-11	JACK, PIN 1P (VIDEO OUT)	

		MISCELLANEOUS	

70	1-796-123-11	DECK, MECH	
101	1-773-049-11	WIRE (FLAT TYPE)(17 CORE)	
104	1-791-897-12	WIRE (FLAT TYPE)(19 CORE)	
△ 108	1-769-079-21	CORD, POWER (DX20:KR)	
△ 108	1-769-744-81	CORD, POWER (RG30)	
△ 108	1-777-071-81	CORD, POWER (DX20:E51, EA, SP)	
△ 108	1-783-941-22	CORD, POWER (DX20:EA)	
△ 108	1-791-901-11	CORD, POWER (DX20:E2, MX, TH)	
△ 109	1-569-008-21	ADAPTOR, CONVERSION (DX20:E51, EA, SP)	
110	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (RG30:UK)	
259	1-791-983-11	WIRE (FLAT TYPE)(8 CORE)	
△ 286	8-820-116-01	OPTICAL PICK-UP KSM-213DCP/Z-NP	
288	1-792-024-11	WIRE (FLAT TYPE)(16 CORE)	
M721	A-4672-826-A	MOTOR ASSY	
FLD1	1-518-729-11	INDICATOR TUBE, FLUORESCENT	
△ T911	1-437-224-11	TRANSFORMER, POWER (DX20)	
△ T911	1-437-225-11	TRANSFORMER, POWER (RG30)	

		HARDWARE LIST	

#1	7-685-871-01	SCREW +BVTT 3X6 (S)	
#2	7-685-880-09	SCREW +BVTT 4X6 (S)	
#3	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
#4	7-685-650-79	SCREW +BVTP 3X16 TYPE2 IT-S	
#5	7-685-872-09	SCREW +BVTT 3X8 (S)	

REVISION HISTORY

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Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

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