HCD-RV660D/RV990D

SERVICE MANUAL

E Model
Australian Model

Ver 1.2 2004. 07

(Photo: HCD-RV990D)

- HCD-RV660D/RV990D is the tuner, deck, DVD and amplifier section in MHC-RV660D/RV990D.

DVD Section	Model Name Using Similar Mechanism	NEW
	DVD Mechanism Type	CDM74S-DVBU23
	Optical Pick-up Name	DBU-1
Tape Deck Section	Model Name Using Similar Machanism	HCD-RG550
	Tape Transport Mechanism Type	CWM43RR-23

SPECIFICATIONS

Amplifier section

The following measured at AC 120, 127, 220, 240 V, 50/60 Hz
Continuous RMS power output (reference)
Front speaker: 100 + 100 watts (6 ohms at 1 kHz, 10% THD)
Center speaker*: 40 watts (8 ohms at 1 kHz, 10% THD)
Surround speaker*: 40 + 40 watts (6 ohms at 1 kHz, 10% THD)
* MHC-RV990D only

Inputs
MD/VIDEO (AUDIO) IN (phono jacks): voltage 450/250 mV, impedance 47 kilohms
GAME (VIDEO) IN (phono jack): 1 Vp-p, 75 ohms
GAME (AUDIO) IN (phono jack): voltage 250 mV, impedance 47 kilohms
MIC (phone jack): sensitivity 1 mV, impedance 10 kilohms

Outputs
MD/VIDEO (AUDIO) OUT (phono jacks): voltage 250 mV, impedance 1 kilohm
VIDEO OUT (phono jack): max. output level 1 Vp-p, unbalanced, Sync negative, load impedance 75 ohms
S-VIDEO OUT (4-pin/mini-DIN jack): Y: 1 Vp-p, unbalanced, Sync negative, C: 0.286 Vp-p, load impedance 75 ohms
COMPONENT VIDEO OUT: Y: 1 Vp-p, 75 ohms
P_B, P_R: 0.7 Vp-p, 75 ohms
PHONES (stereo mini jack): accepts headphones of 8 ohms or more
Front speaker: Use only the supplied speaker SS-RV990
Surround speaker (except for MHC-RV660D): Use only the supplied speaker SS-RS390
Center speaker (except for MHC-RV660D): Use only the supplied speaker SS-CT390
SUB WOOFER OUT: voltage 1 V, impedance 1 kilohm

– Continued on next page –

DVD DECK RECEIVER

9-961-078-03
2004G04-1
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Sony Corporation
Home Audio Company
Published by Sony Engineering Corporation

SONY

Disc player section

System	Compact disc and digital audio and video system
Laser	Semiconductor laser (DVD: λ=650 nm, CD: λ=780 nm) Emission duration: continuous
Frequency response	DVD (PCM 48 kHz): 2 Hz – 22 kHz (±1 dB) CD: 2 Hz – 20 kHz (±1 dB)
Video color system format	NTSC, PAL
OPTICAL DIGITAL OUT (Square optical connector jack, rear panel)	
Wavelength	660 nm

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	
Latin American models:	530 – 1,710 kHz (with the interval set at 10 kHz) 531 – 1,710 kHz (with the interval set at 9 kHz)
Saudi Arabian model:	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	
Australian model:	230 – 240 V AC, 50/60 Hz
Saudi Arabian model:	120 – 127 V, 220 V or 230 – 240 V AC, 50/60 Hz Adjustable with voltage selector
Mexican model:	127 V AC, 60 Hz
Thai model:	220 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	
MHC-RV990D	300 watts
MHC-RV660D	230 watts
Dimensions (w/h/d)	Approx. 280 × 325 × 368 mm
Mass	
HCD-RV990D	Approx. 12.1 kg
HCD-RV660D	Approx. 10.6 kg

Design and specifications are subject to change without notice.

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.

UNLEADED SOLDER

Boards requiring use of unleaded solder are printed with the lead free mark (LF) indicating the solder contains no lead.
(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size)

: LEAD FREE MARK

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40 °C higher than ordinary solder.
  Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.
  Soldering irons using a temperature regulator should be set to about 350 °C.
  Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity
  Unleaded solder is more viscou-s (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder
  It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

CAUTION

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

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

The laser diode in the optical pick-up block may suffer electrostatic breakdown 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.

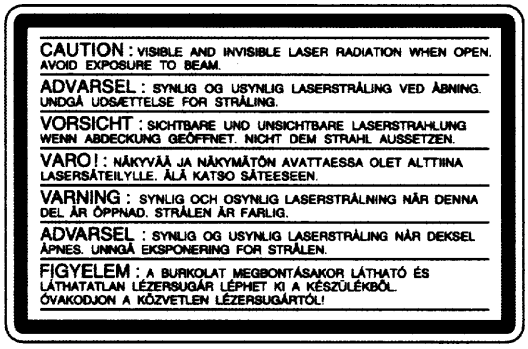
NOTES ON LASER DIODE EMISSION CHECK

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 claassified as a CLASS 1 LASER product. This label is located on the rear exterior.

The following caution label is located inside the apparatus.



SETTING AND RELEASING THE CD DISC TRAY LOCK FUNCTION

This set has a disc tray lock function to prevent discs for demonstration at shops from theft. While this lock function is set, the tray will not be delivered out even when the OPEN/CLOSE button is pressed.

Setting method:

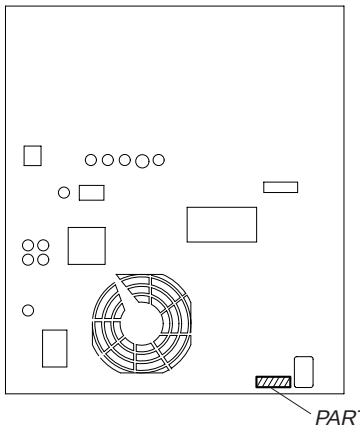
Press the OPEN/CLOSE button while pressing the STOP button.
After a few seconds, the message “LOCKED” will appear on the fluorescent indicator tube with the tray locked.

Releasing method:

Just as the lock is set, press the OPEN/CLOSE button while pressing the STOP button.
After a few seconds, the message “UNLOCKED” will appear with the lock released.

MODEL IDENTIFICATION

– BACK PANEL –



MODEL	PARTS No.
RV990D: SP, MY	4-246-030-01
RV990D: E3, E15	4-246-030-11
RV990D: EA	4-246-030-21
RV990D: AUS	4-246-030-31
RV990D: E51	4-246-030-51
RV990D: MX	4-246-030-61
RV990D: PH	4-246-030-91
RV660D: SP, MY	4-246-139-01
RV660D: E3, E15	4-246-139-11
RV660D: EA	4-246-139-21
RV660D: AUS	4-246-139-31
RV660D: E51	4-246-139-51
RV660D: PH	4-246-139-61
RV660D: TH	4-250-550-41
RV990D: TH	4-250-557-41

- Abbreviation
  E3 : 240 V AC area in E model
  E15 : 220 – 240 V AC area in E model
  E51 : 220 V AC area in E model
  AUS : Australian model
  EA : Saudi Arabia model
  PH : Philippine model
  SP : Singapore model
  TH : Thai model
  MY : Malaysia model
  MX : Mexican model

LASER DIODE AND FOCUS SEARCH OPERATION CHECK

Carry out the “S curve check” in “DVD section adjustment” and check that the S curve waveforms is output three times.

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List of button locations and reference pages

How to use this page

Use this page to find the location of buttons and other parts of the system that are mentioned in the text.

Illustration number
↓
TAPE A/B 32 (42, 44)
↑ Name of button/part
↑ Reference page

Main unit

ALPHABETICAL ORDER

A - O

ALBUM + 17 (16, 19, 21)
ALBUM – 25 (16, 19, 21)
CD SYNC 29 (43)
Deck A 26 (42, 44)
Deck B 16 (42, 43, 44)
DIRECTION 29 (42, 43, 44, 49)
DISC 1 – 3 8 (15, 21)
DISC SKIP/EX-CHANGE 9 (14, 16, 21)
Disc tray 7 (14)
DISPLAY 2 (52, 54)
Display window 4
DVD 34 (11, 13, 14, 21, 31, 40, 43, 44)
DVD MENU 29 (18)
DVD TOP MENU 29 (18)
ECHO LEVEL* 20 (48)
ENTER 12 (13, 15, 18, 20, 21, 24, 29, 31, 39, 47, 50, 51, 53)
FM MODE 29 (41)
GAME 30 (47, 58)
GAME EQ 13 (45, 58)
GAME INPUT AUDIO L/R jacks 24 (58)
GAME INPUT VIDEO jack 23 (58)
GAME MIXING 29 (48)
GROOVE 13 (45)
ILLUMINATION 28 (53)
KARAOKE/MPX 29 (48)
MD (VIDEO) 31 (44, 59)
MIC jack* 22 (48)
MIC LEVEL* 21 (48)
MOVIE EQ 13 (45)
MUSIC EQ 13 (45)

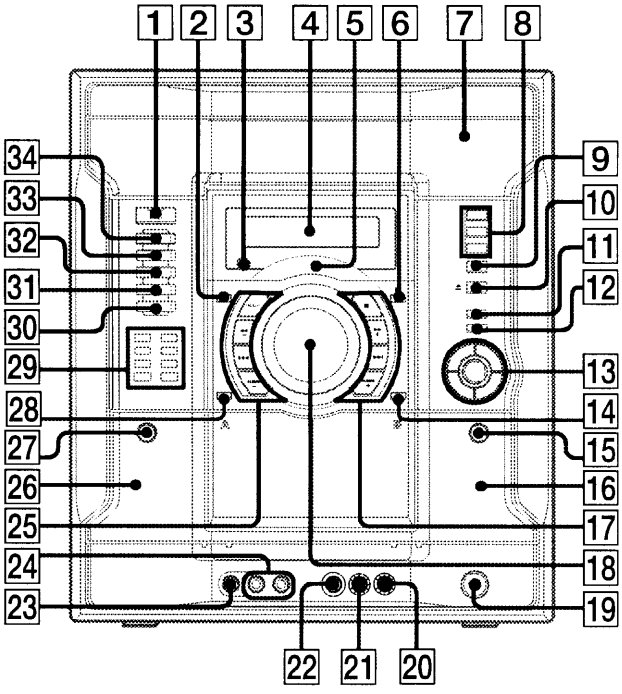
P - Z

P FILE 14 (47)
PHONES jack 19
PLAY MODE 29 (15, 21, 42)
Power illuminator 5 (53)
REC PAUSE/START 29 (43, 44, 48)
Remote sensor 3
REPEAT 29 (20)
SOUND FIELD 11 (46)
TAPE A/B 32 (42, 44)
TUNER/BAND 33 (39, 40, 44)
TUNER MEMORY 29 (39)
VOLUME control 18 (50)

BUTTON DESCRIPTIONS

I/⏻ (power) 1 (10, 13, 40, 50, 52, 59)
⏸ (pause) 6 (10, 16, 42)
⏏ (eject) 10 (14)
↑/↓/←/→ 13 (13, 15, 26, 47, 50)
⏏ PUSH (deck B) (eject) 15 (42)
■ (stop) 17 (16, 42, 43, 49)
⏩+ (fast forward) 17 (16, 20, 39, 42)
⏭ (go forward) 17 (16, 18, 39, 43)
◁▷ (play) 25 (15, 18, 19, 21, 42)
–⏪ (rewind) 25 (16, 39, 42)
⏮ (go back) 25 (16, 18, 21, 39, 43)
⏏ PUSH (deck A) (eject) 27 (42)

* Asian model only



Remote control

ALPHABETICAL ORDER

A - Q

ALBUM +/– 35 (16, 19, 21)
AMP MENU 41 (47, 53)
ANGLE 22 (29)
AUDIO 31 (26)
CLEAR 12 (21, 22, 24)
CLOCK/TIMER SELECT 2 (51, 52)
CLOCK/TIMER SET 3 (13, 50, 51)
D. SKIP 10 (16, 21)
DISPLAY 42 (52, 54)
DVD 46 (11, 13, 14, 21, 31, 40, 43, 44)
DVD DISPLAY 40 (15, 19, 20, 23, 26, 29, 31, 37, 55, 56)
DVD MENU 32 (18, 31)
DVD SETUP 39 (13, 17, 28, 32, 38)
DVD TOP MENU 33 (18)
EFFECT ON/OFF 34 (45, 47)
ENTER 29 (13, 15, 18, 20, 21, 24, 29, 31, 39, 47, 50, 51, 53)
GAME 43 (47, 58)
GAME EQ 28 (45, 58)
GAME MIXING 44 (47)
GROOVE 20 (45)
KEY CONTROL ♯/♭ 25 (48)
MD (VIDEO) 45 (44, 59)
MOVIE EQ 23 (45)
MUSIC EQ 30 (45)
NEXT 37 (16, 18)
Number buttons 9 (17, 18, 24)
P FILE 26 (47)
PLAY MODE 13 (15, 21, 42)
PRESET –/+ 37 (39, 40)
PREV 37 (16, 18)

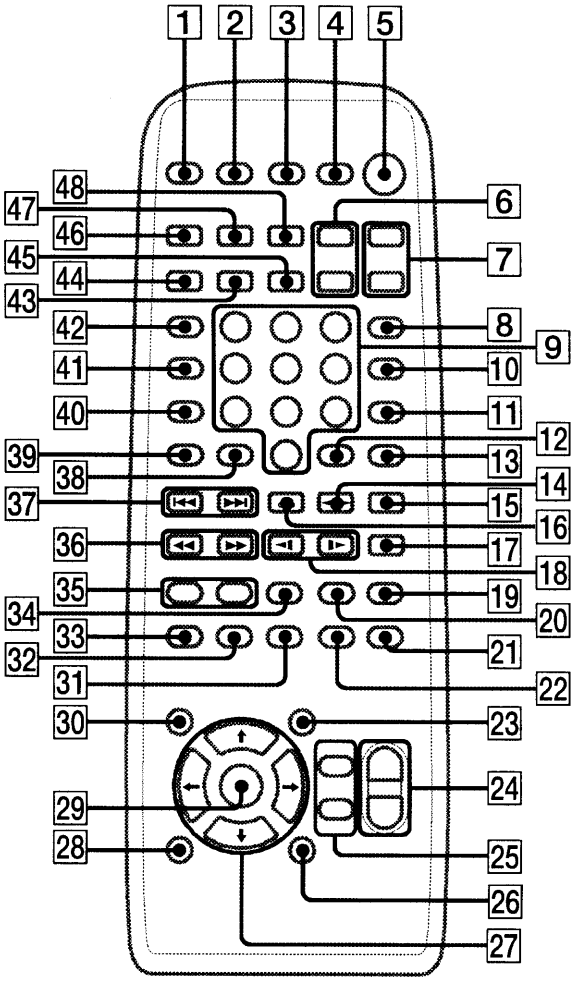
R - Z

REPEAT 11 (20)
SELECT 14 (18)
SLEEP 1 (50)
SLOW ◀I/I▶ 18 (16)
SOUND FIELD 19 (46)
SUBTITLE 21 (27)
TAPE A/B 48 (42, 44)
TUNER/BAND 47 (39, 40, 44)
TUNING –/+ 36 (39, 41)
TV I/⏻ 4 (11)
TV CH +/– 7 (11)
TV/VIDEO 8 (11)
TV VOL +/– 6 (11)
VOL +/– 24 (50)

BUTTON DESCRIPTIONS

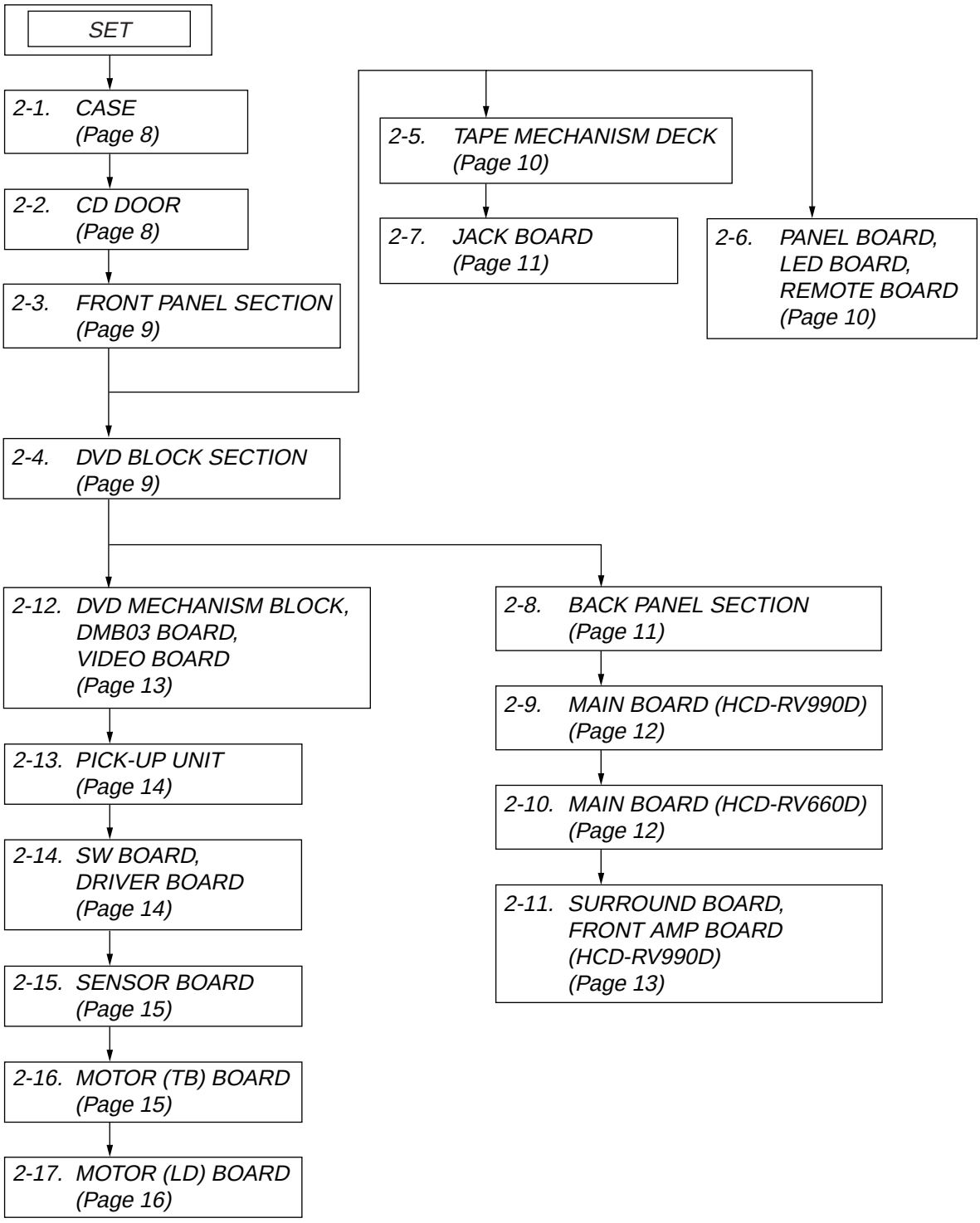
I/⏻ (power) 5 (10, 13, 40, 50, 52, 59)
◀I▶ (play) 14 (15, 18, 19, 21, 42)
II (pause) 15 (16, 42)
RETURN 16 (18, 19, 24, 32)
■ (stop) 17 (16, 42, 43, 49)
↑/↓/←/→ 27 (13, 15, 26, 47, 50)
◀◀ (rewind) 36 (16, 39, 42)
▶▶ (fast forward) 36 (16, 20, 39, 42)
I◀◀ (go back) 37 (16, 18, 21, 39, 43)
▶▶I (go forward) 37 (16, 18, 39, 43)
>10* 38

* This button does not function.



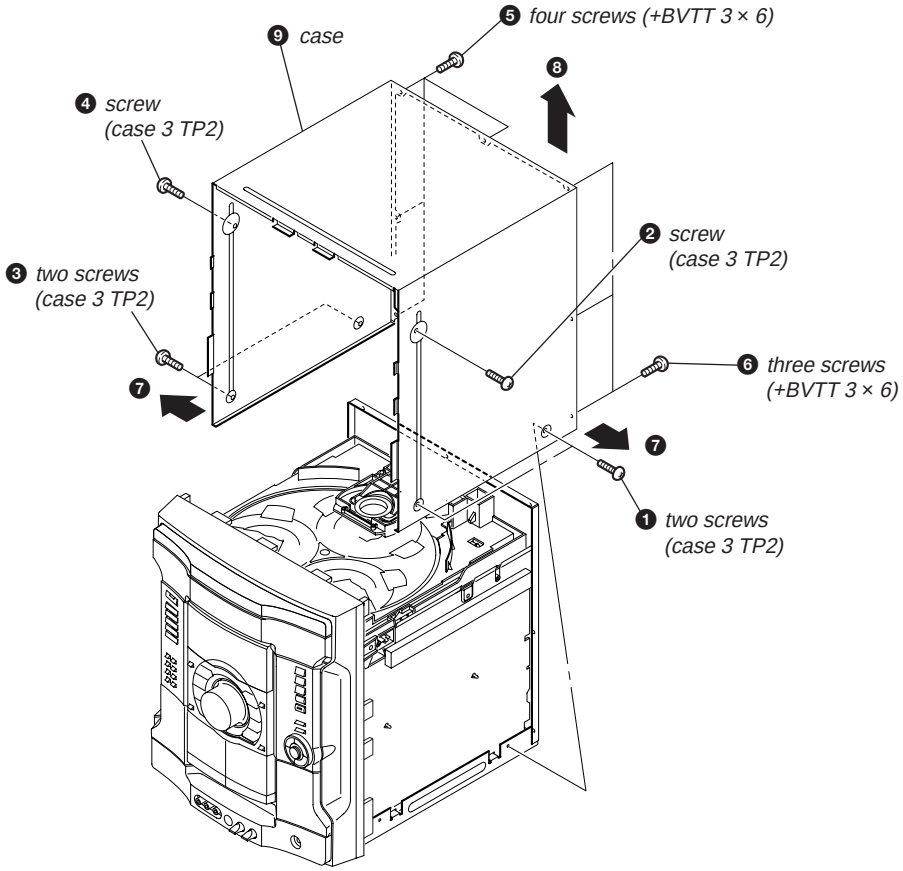
SECTION 2
DISASSEMBLY

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

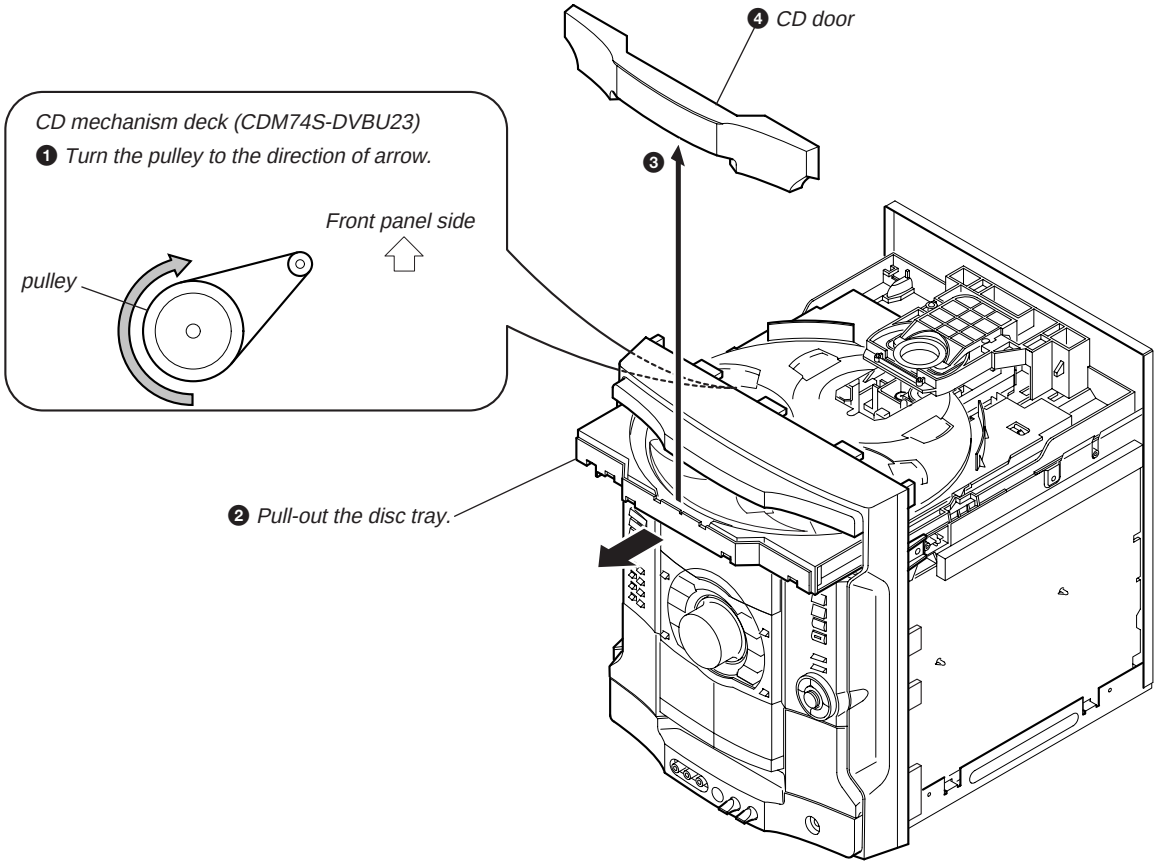


Note : Follow the disassembly procedure in the numerical order given.

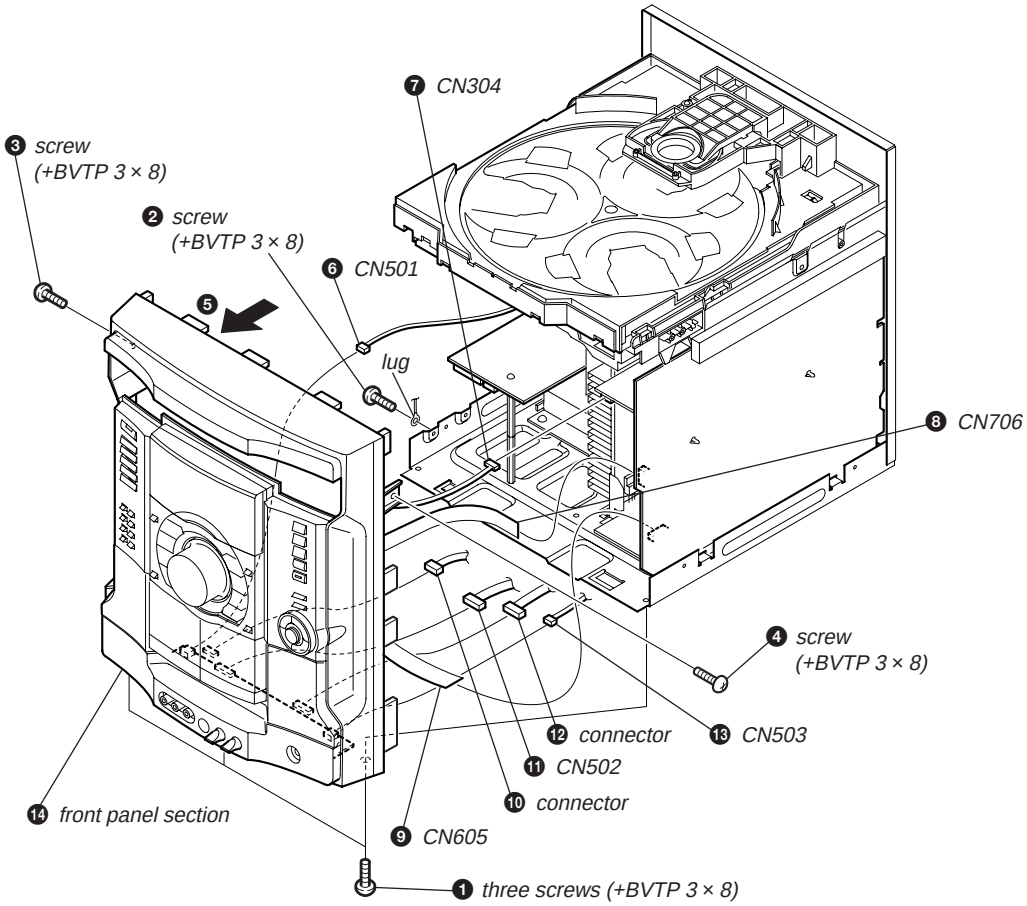
2-1. CASE



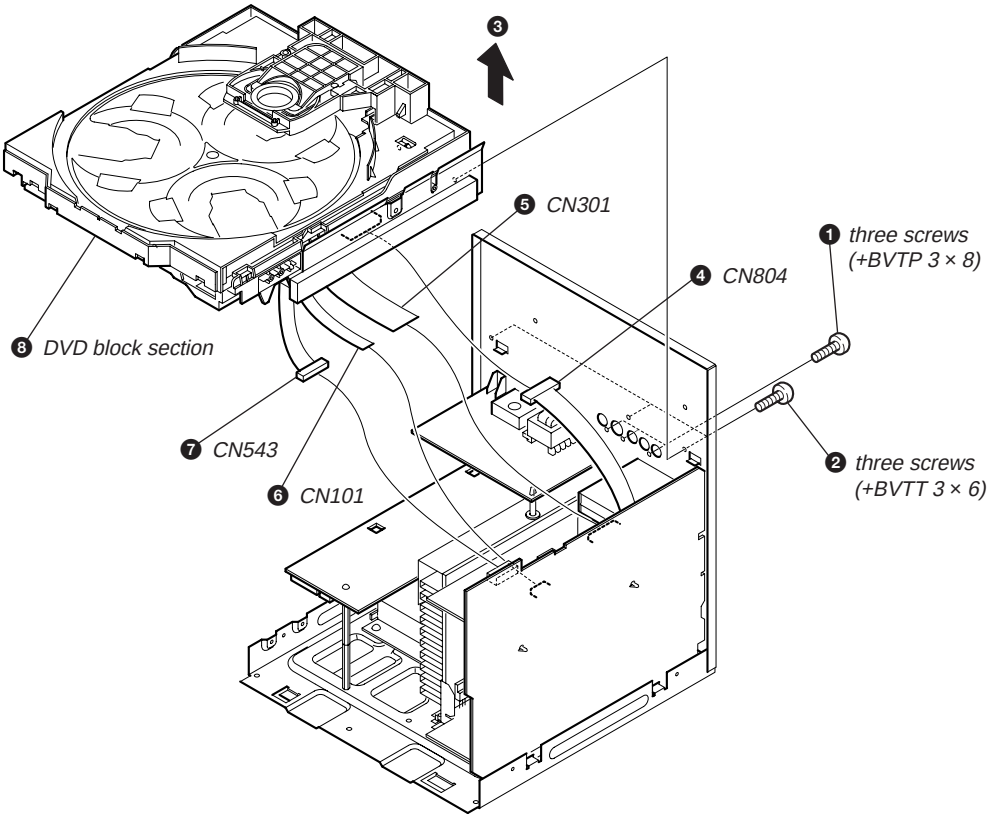
2-2. CD DOOR



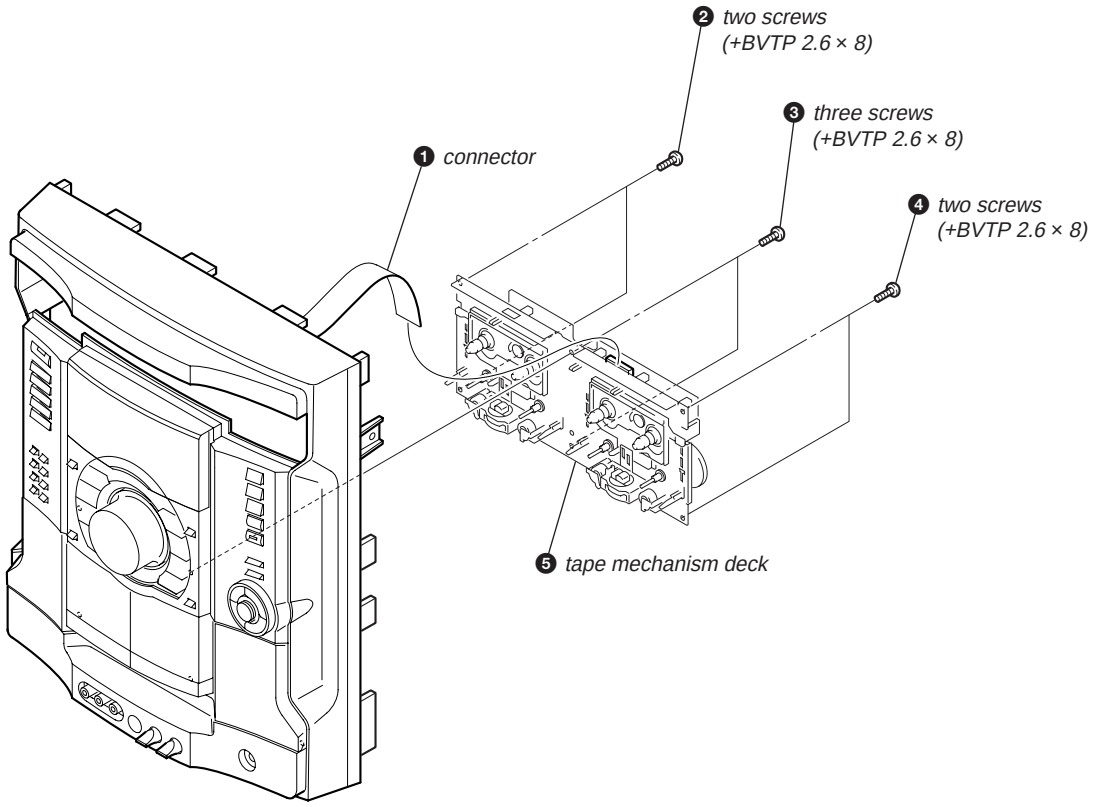
2-3. FRONT PANEL SECTION



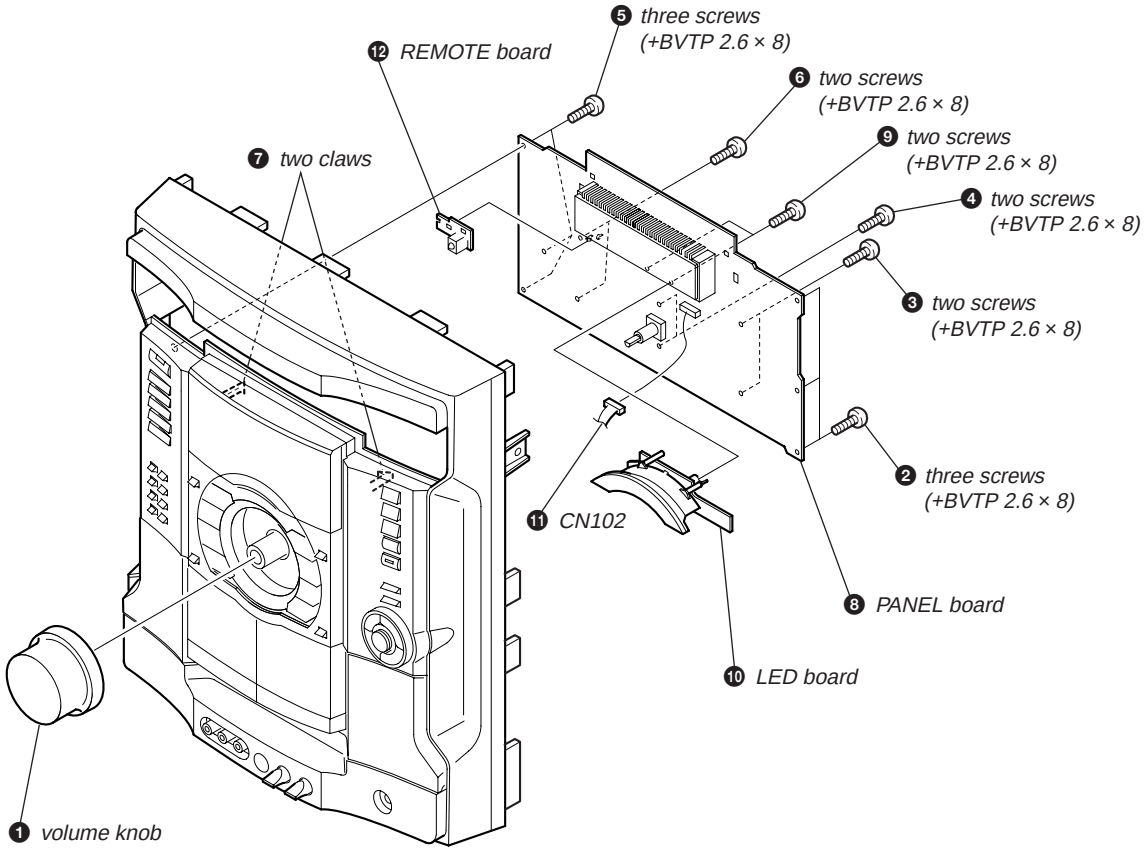
2-4. DVD BLOCK SECTION



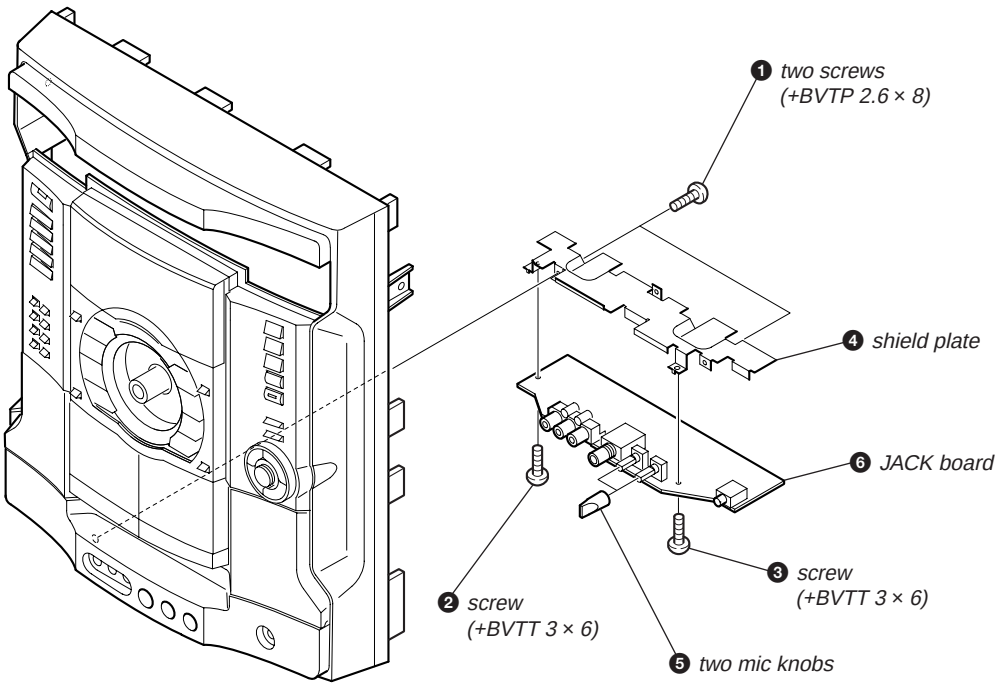
2-5. TAPE MECHANISM DECK



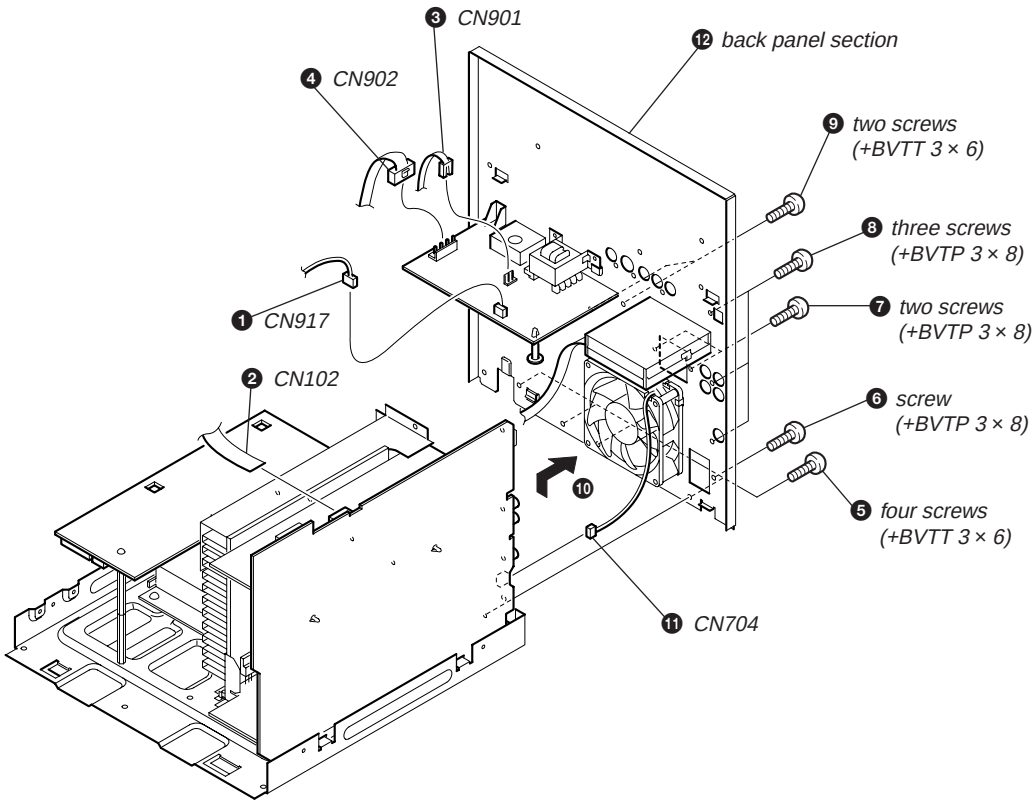
2-6. PANEL BOARD, LED BOARD, REMOTE BOARD



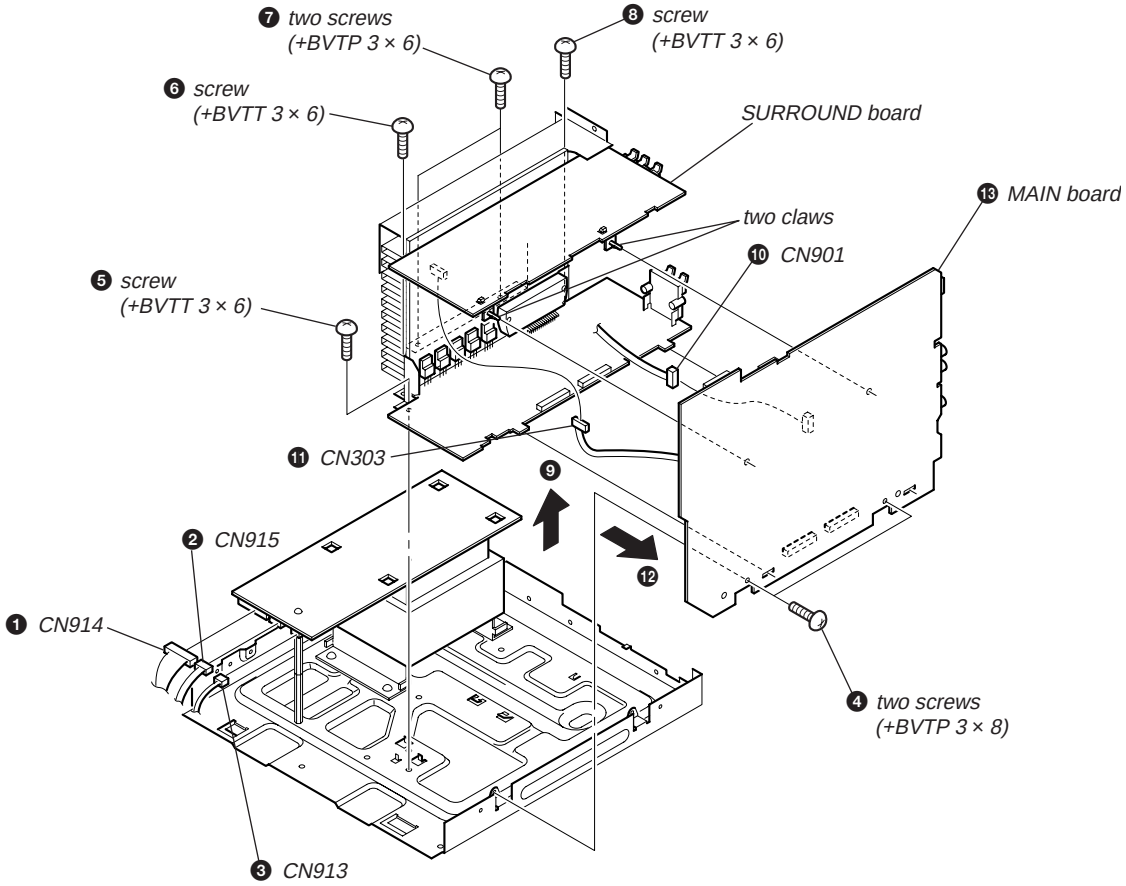
2-7. JACK BOARD



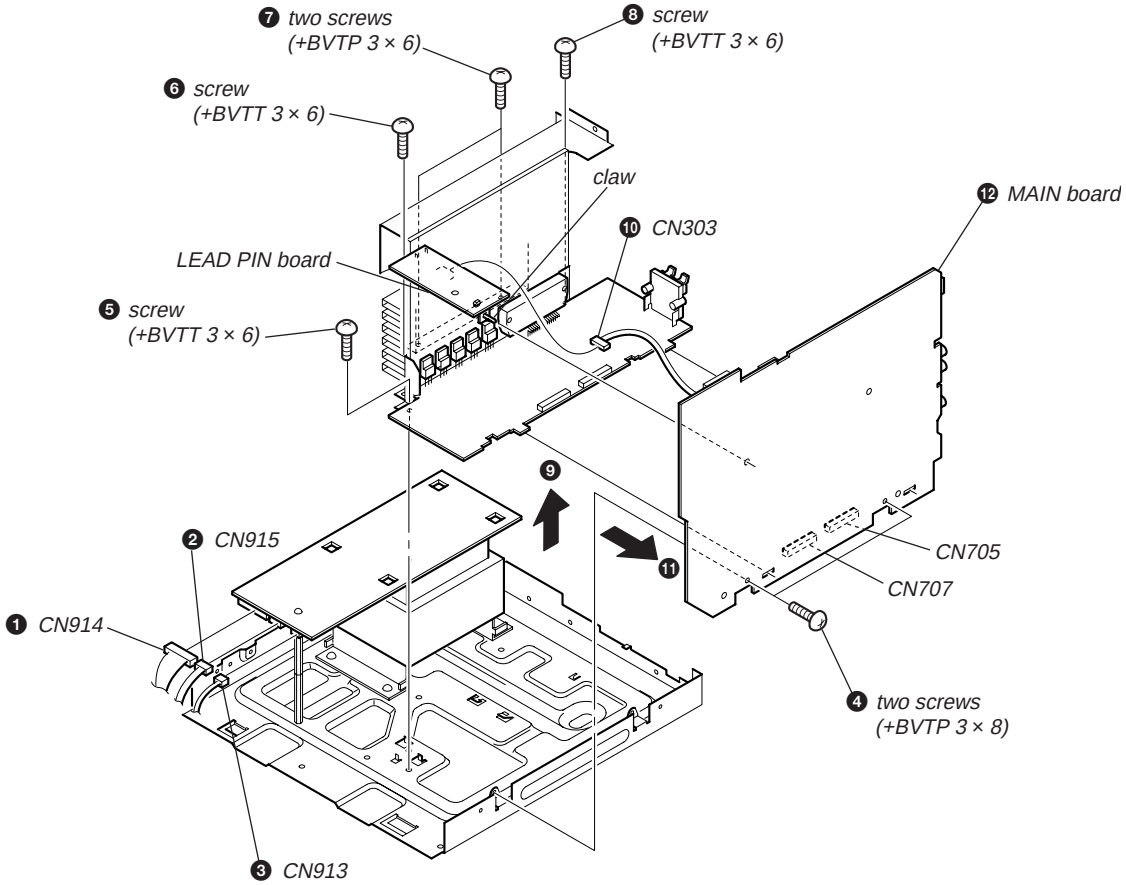
2-8. BACK PANEL SECTION



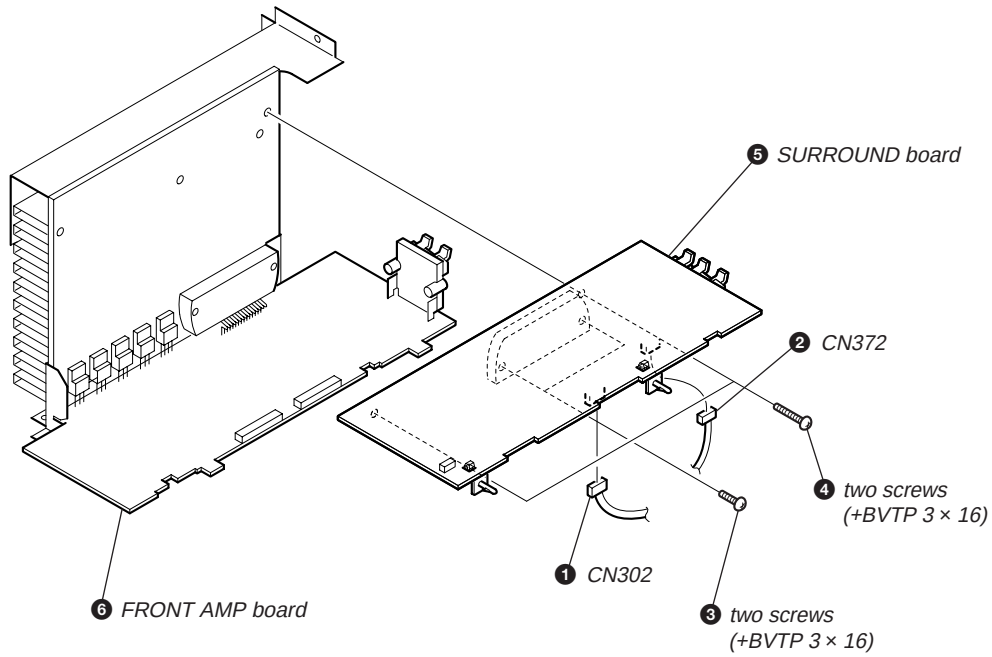
2-9. MAIN BOARD (HCD-RV990D)



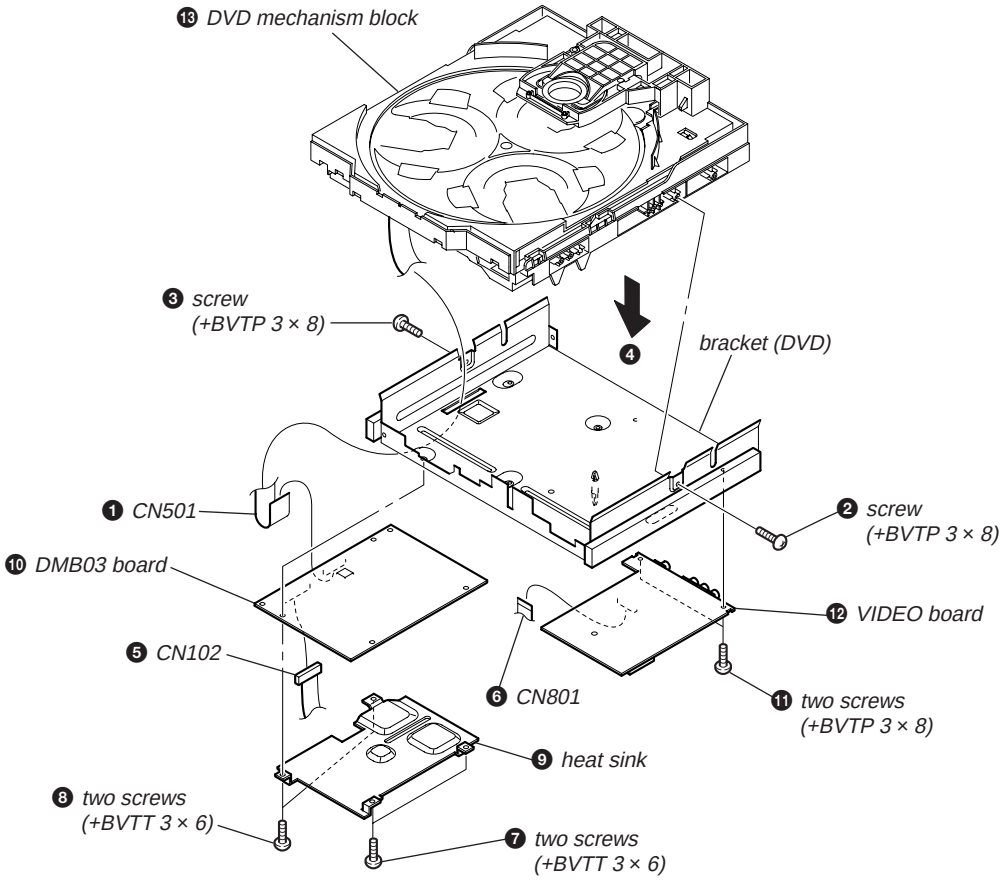
2-10. MAIN BOARD (HCD-RV660D)



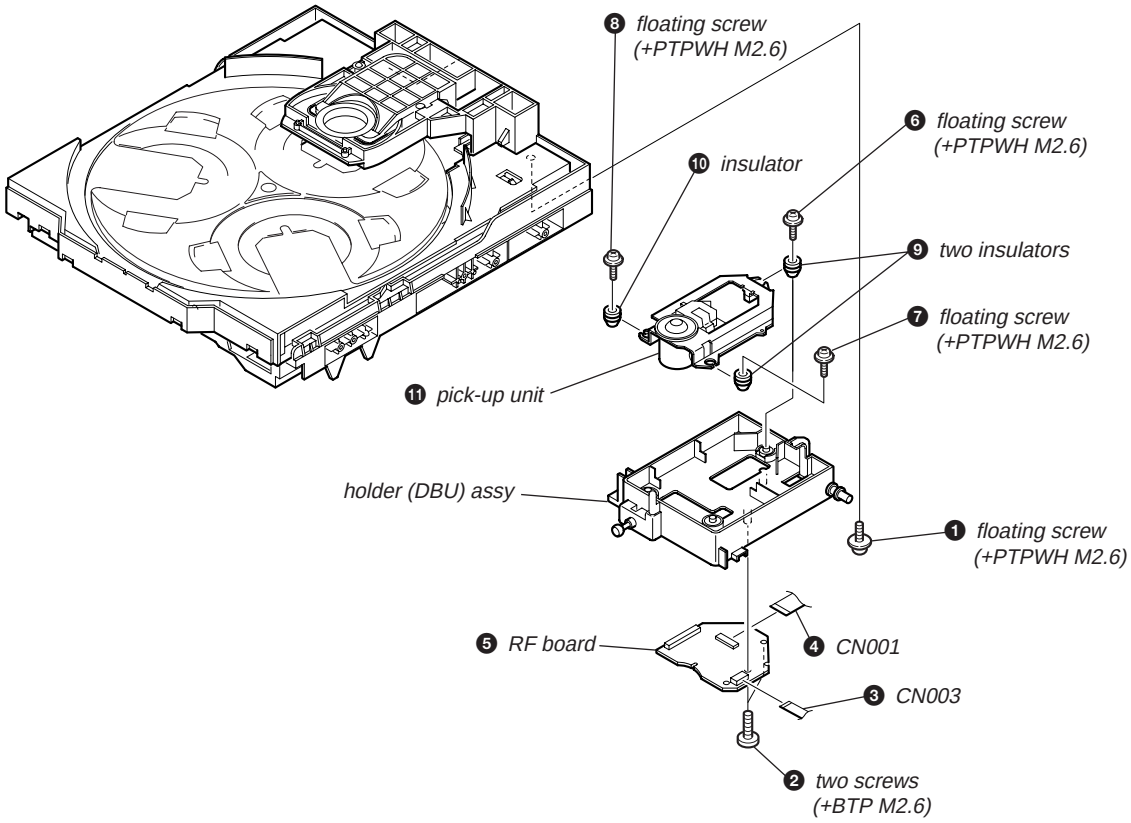
2-11. SURROUND BOARD, FRONT AMP BOARD (HCD-RV990D)



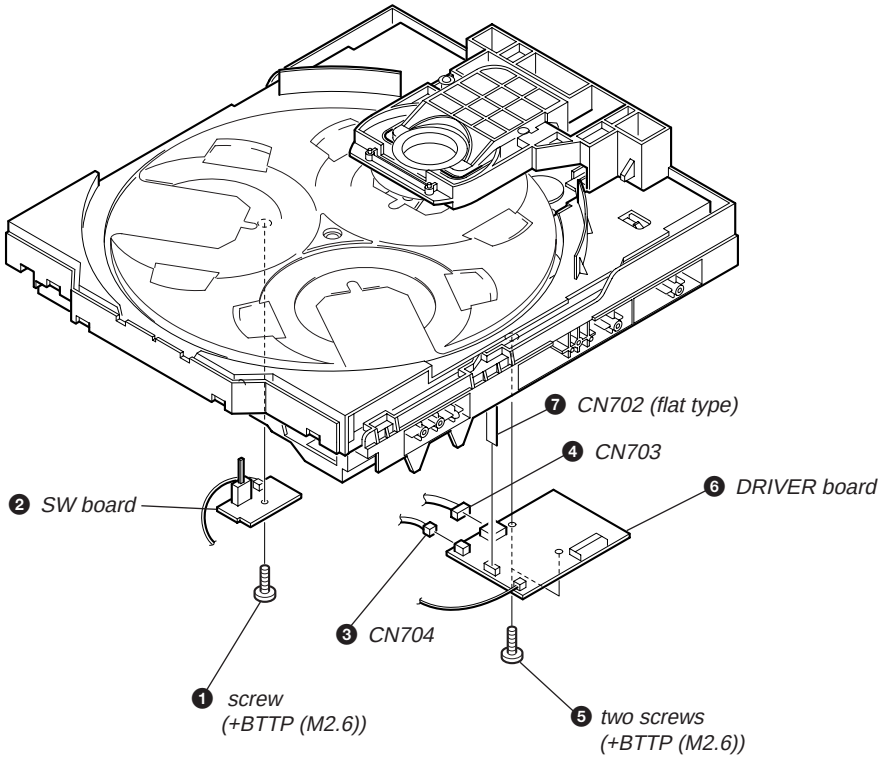
2-12. DVD MECHANISM BLOCK, DMB03 BOARD, VIDEO BOARD



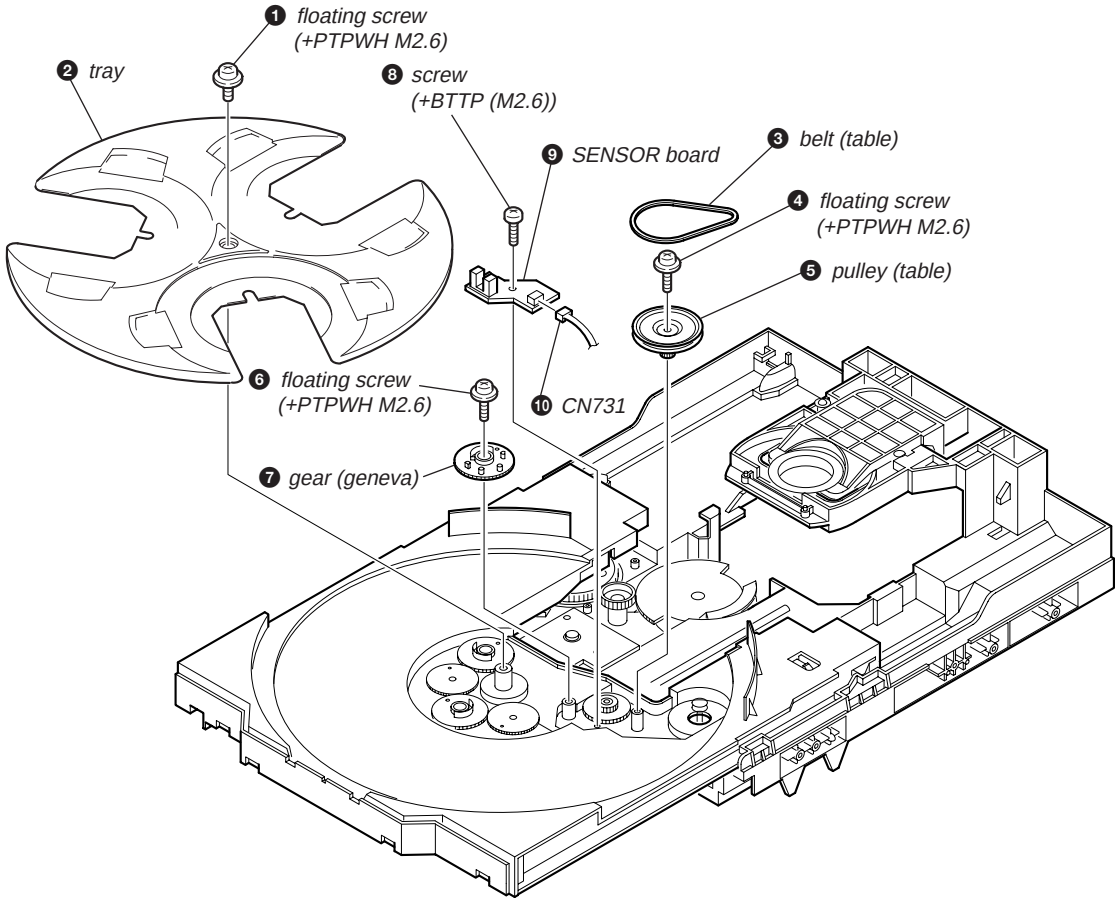
2-13. PICK-UP UNIT



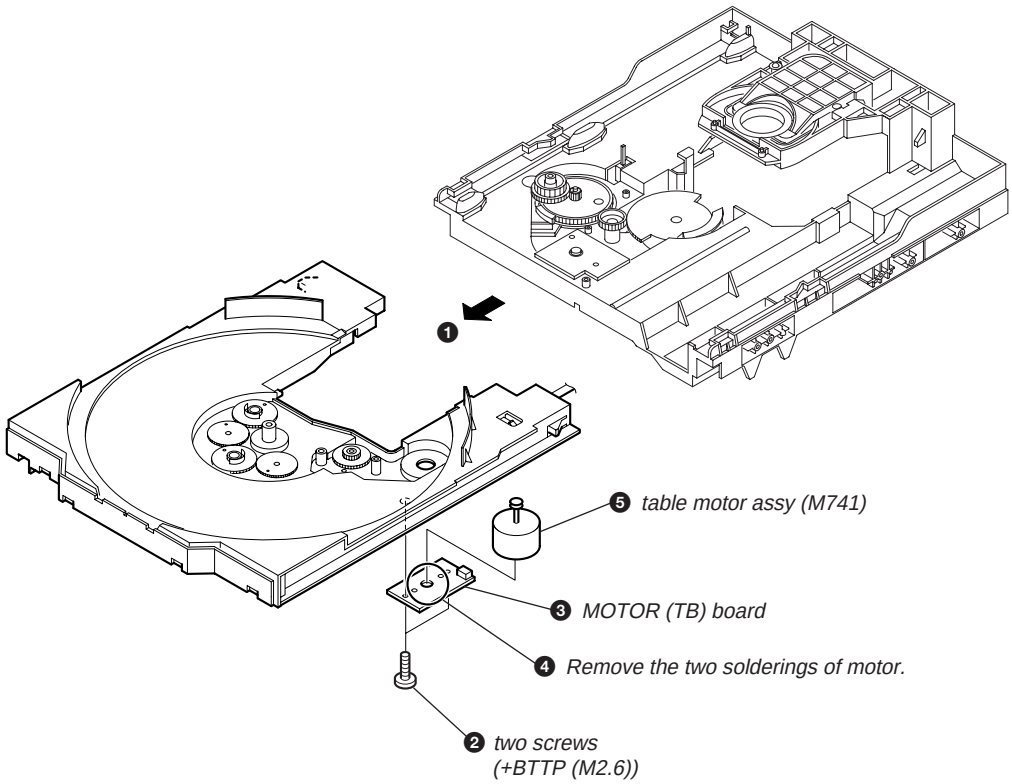
2-14. SW BOARD, DRIVER BOARD



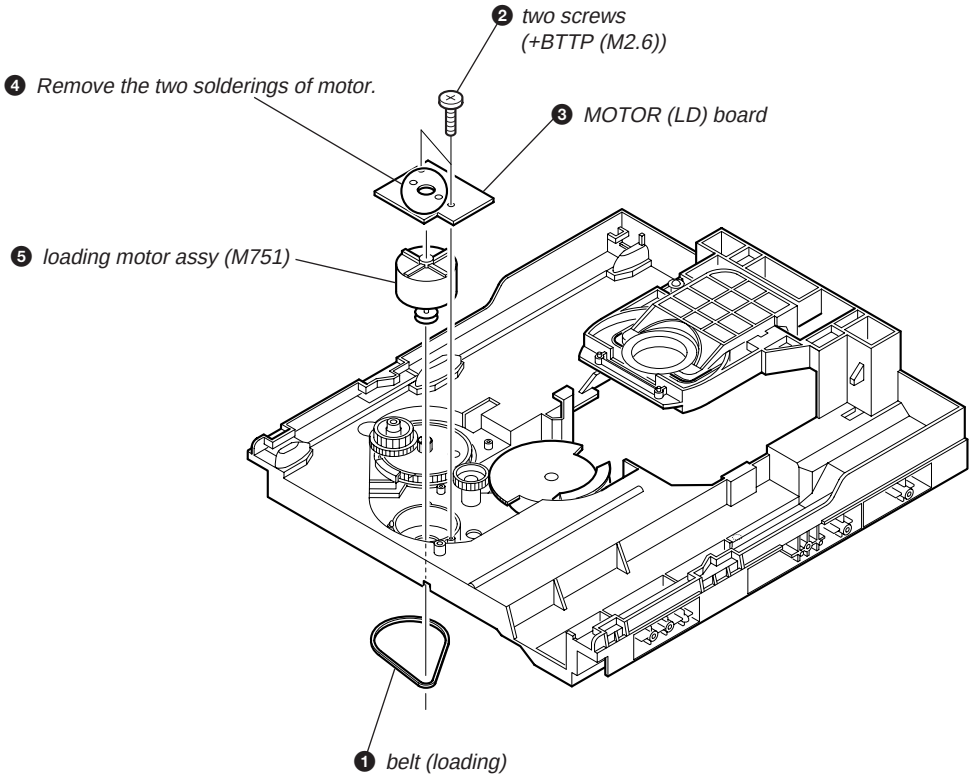
2-15. SENSOR BOARD



2-16. MOTOR (TB) BOARD

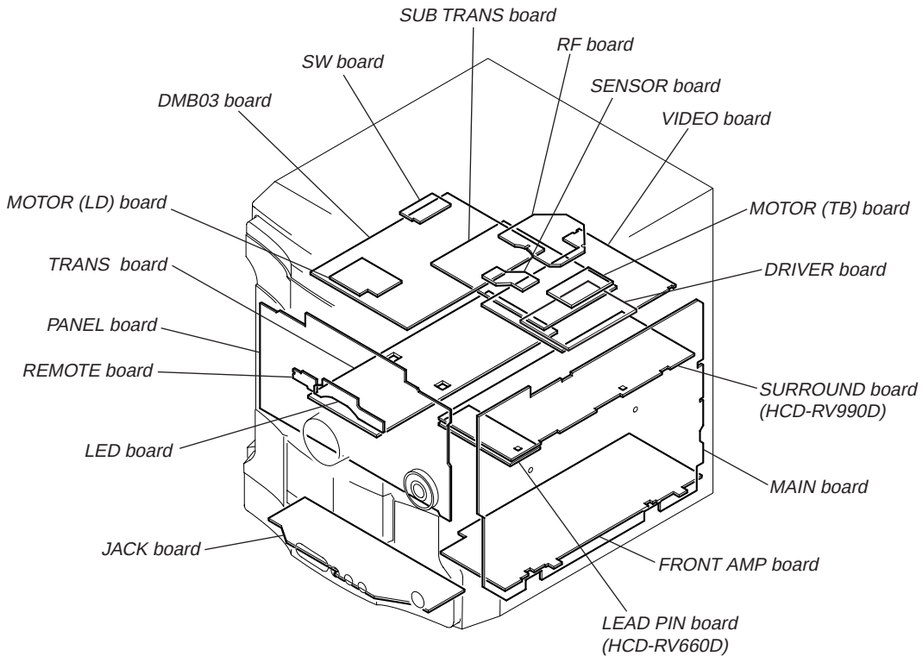


2-17. MOTOR (LD) BOARD



SECTION 3
DIAGRAMS

3-1. CIRCUIT BOARDS LOCATION



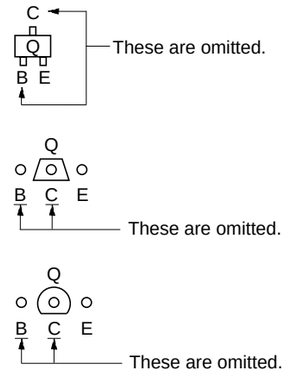
3-2. NOTE FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note on Printed Wiring Board:

- ○——— : parts extracted from the component side.
- ——— : parts extracted from the conductor side.
- ▬ : Pattern from the side which enables seeing.
  (The other layer's patterns are not indicated.)

Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

- Indication of transistor.



UNLEADED SOLDER

Boards requiring use of unleaded solder are printed with the lead free mark (LF) indicating the solder contains no lead.
(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size)

: LEAD FREE MARK

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40 °C higher than ordinary solder.
  Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.
  Soldering irons using a temperature regulator should be set to about 350 °C.
  Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity
  Unleaded solder is more viscou-s (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder
  It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

Note on Schematic Diagram:

- All capacitors are in µF unless otherwise noted. pF: µµF
  50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- : nonflammable resistor.
- : panel designation.

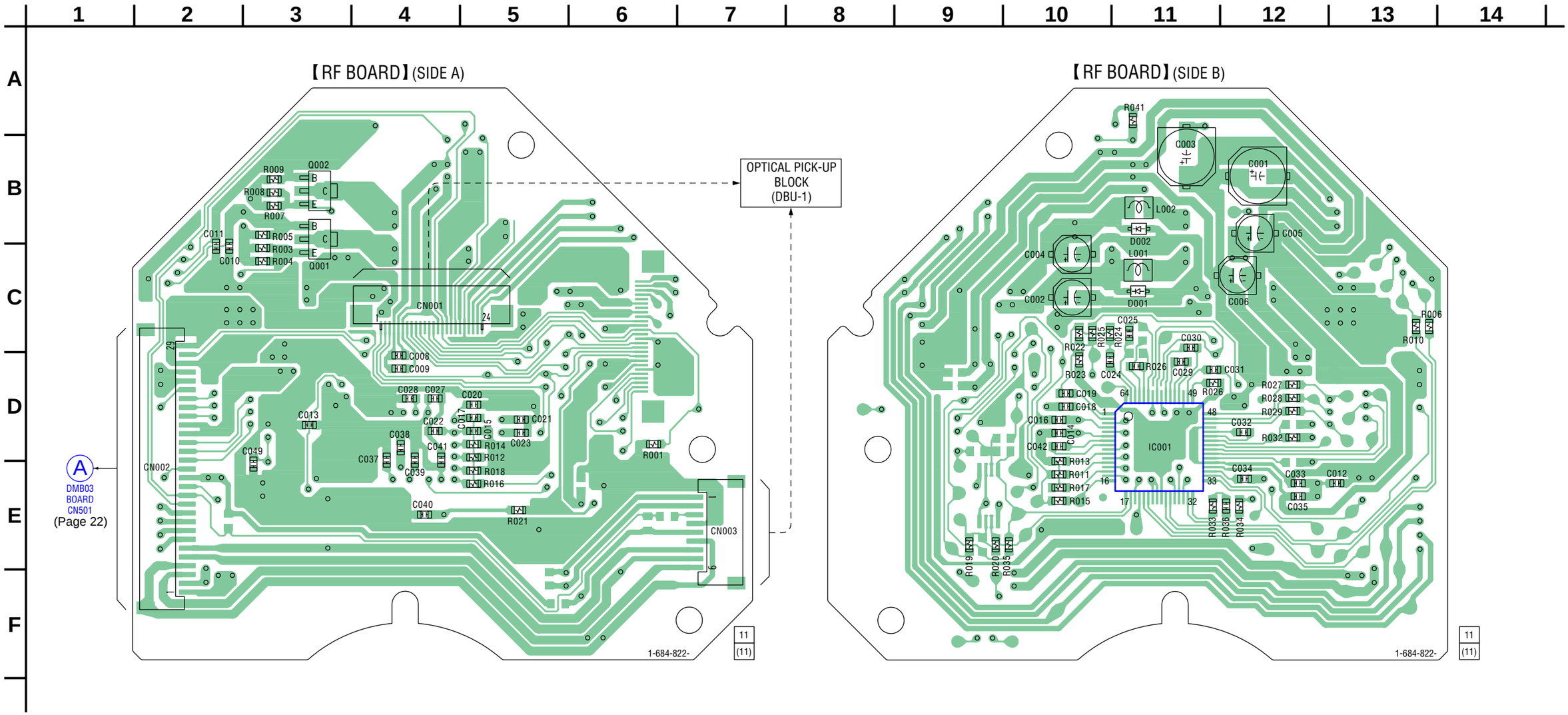
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- ▬ : B+ Line.
- ▬ ▬ ▬ : B– Line.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  - TUNER/AUDIO section
    no mark : no signal
  - TAPE section
    no mark : PLAY
    ( ) : REC
  - DVD section
    no mark : STOP
    ( ) : PLAY
    ✻ : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : TUNER
  ⇨ : VIDEO (COMPONENT)
  ⇨ : VIDEO (COMPOSITE)
  ⇨ : TAPE PLAY
  ⇨ : TAPE REC
  ⇨ : DVD (AUDIO)
  ⇨ : DVD (RF)
  ⇨ : DVD (DIGITAL)
- Abbreviation

E3	: 240 V AC area in E model
E15	: 220 – 240 V AC area in E model
E51	: 220 V AC area in E model
AUS	: Australian model
EA	: Saudi Arabia model
PH	: Philippine model
SP	: Singapore model
TH	: Thai model
MY	: Malaysia model
MX	: Mexican model

• Refer to page 17 for Circuit Boards Location.

3-3. PRINTED WIRING BOARD — DVD MECHANISM SECTION (1/2) — • Refer to page 17 for Common Note on Printed Wiring Boards. : Uses unleaded solder.



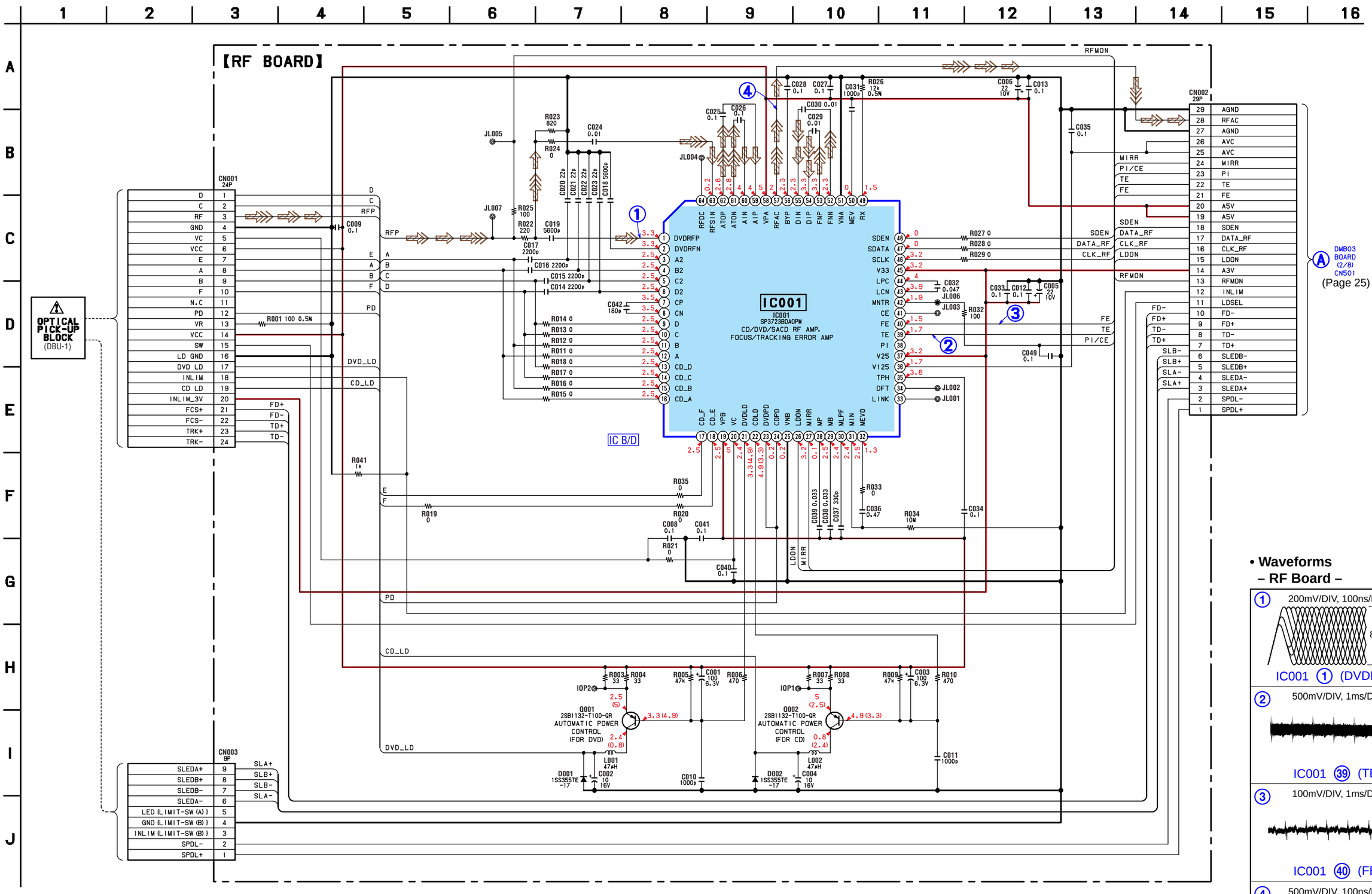
• **Semiconductor Location**

Ref. No.	Location
D001	C-11
D002	B-11
IC001	D-11
Q001	B-3
Q002	B-3

• Refer to page 17 for Common Note on Schematic Diagrams.

3-4. SCHEMATIC DIAGRAM — DVD MECHANISM SECTION (1/2) —

• Refer to page 51 for IC Block Diagrams.



• **Waveforms**
– RF Board –

① 200mV/DIV, 100ns/DIV — 800mVp-p — IC001 ① (DVDRFP)

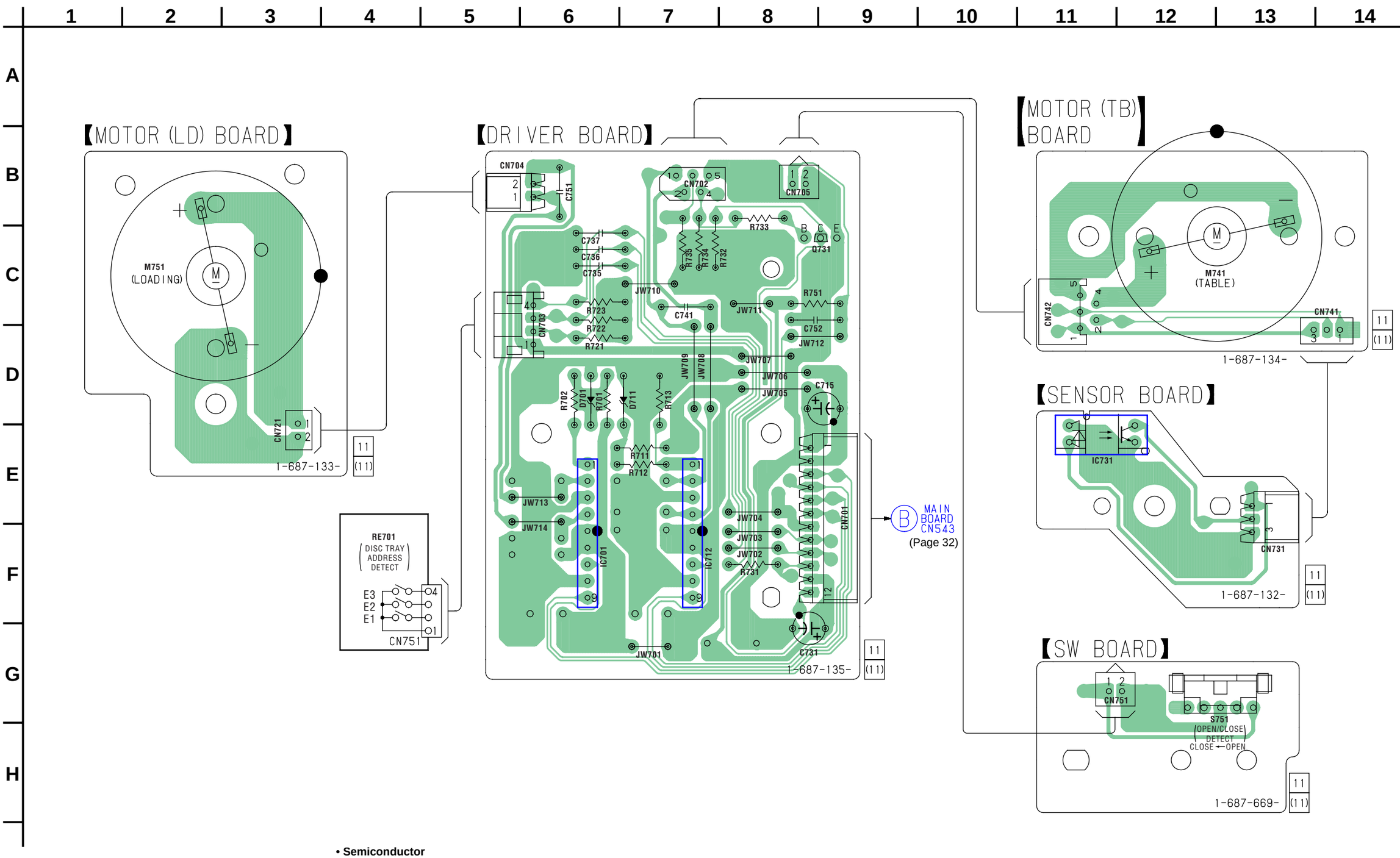
② 500mV/DIV, 1ms/DIV — 0.5Vp-p — IC001 ㊴ (TE)

③ 100mV/DIV, 1ms/DIV — 0.3Vp-p — IC001 ㊵ (FE)

④ 500mV/DIV, 100ns/DIV — 1.3Vp-p — IC001 ㊼ (RFAC)

• Refer to page 17 for Circuit Boards Location.

3-5. PRINTED WIRING BOARDS — DVD MECHANISM SECTION (2/2) — • Refer to page 17 for Common Note on Printed Wiring Boards. : Uses unleaded solder.

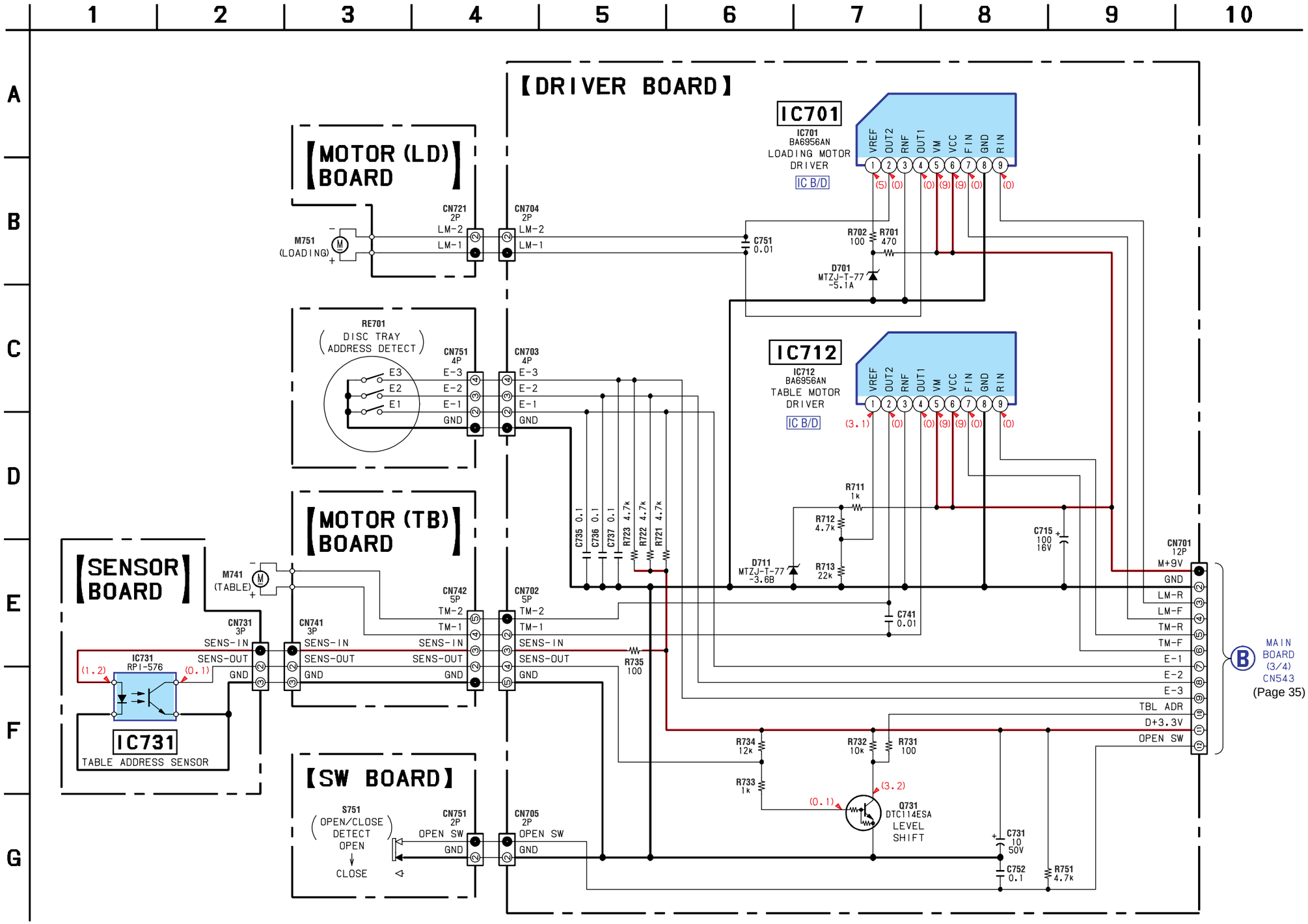


• **Semiconductor Location**

Ref. No.	Location
D701	D-6
D711	D-7
IC701	F-6
IC712	F-7
IC731	D-11
Q731	B-8

• Refer to page 17 for Common Note on Schematic Diagrams.

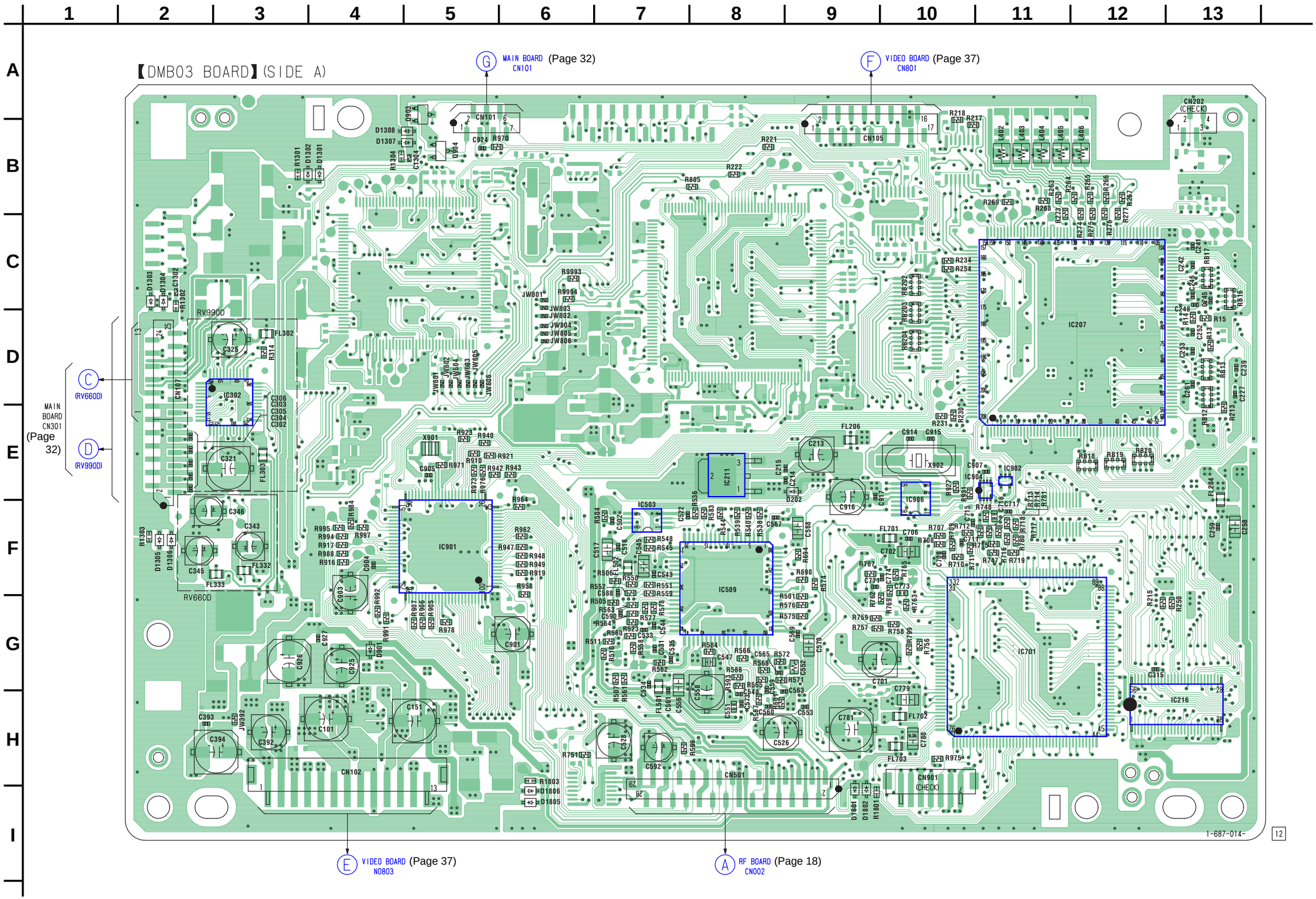
3-6. SCHEMATIC DIAGRAM — DVD MECHANISM SECTION (2/2) — • Refer to page 52 for IC Block Diagrams.



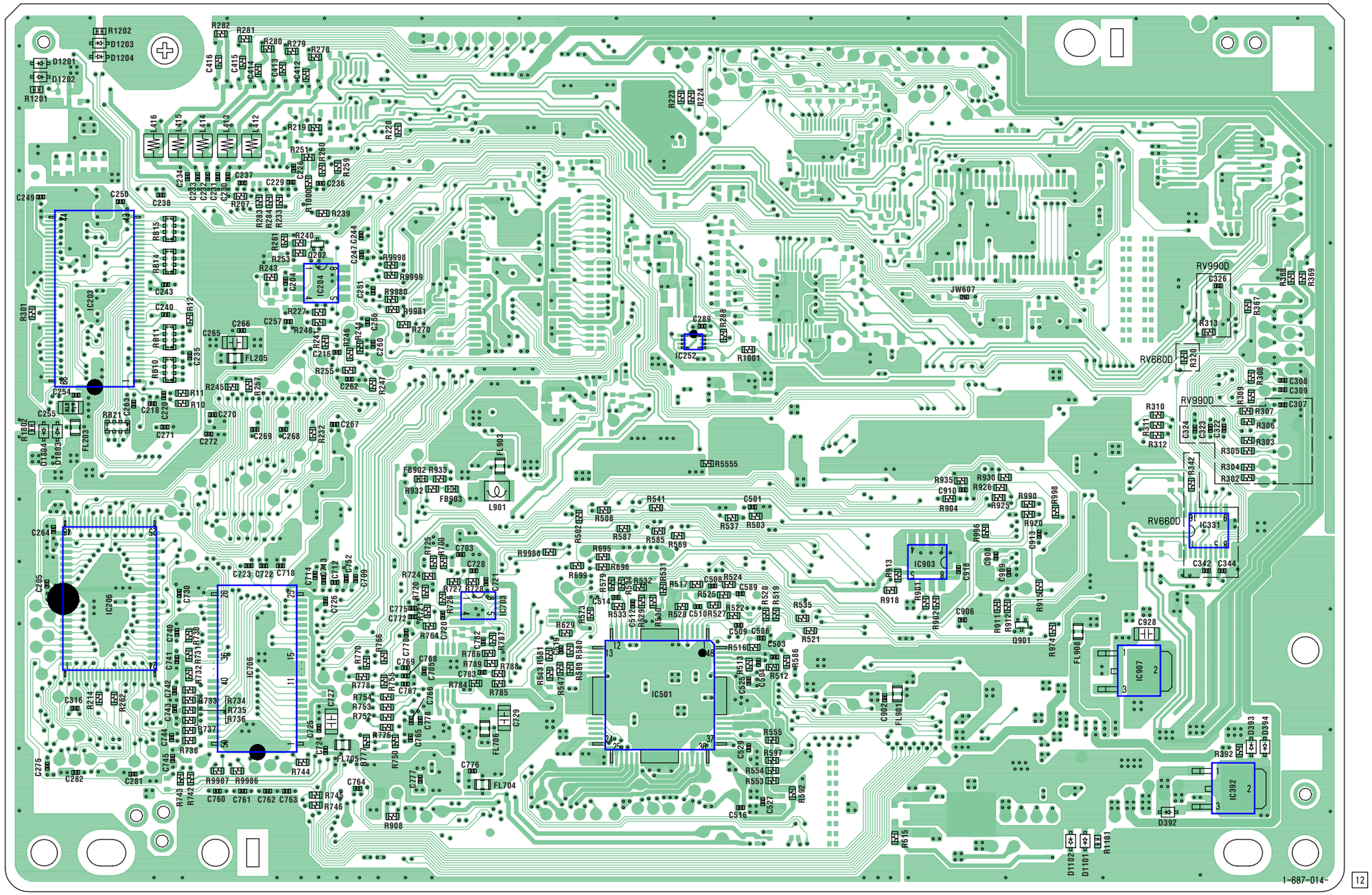
• Refer to page 17 for Circuit Boards Location.

3-7. PRINTED WIRING BOARD — DMB03 SECTION —

• Refer to page 17 for Common Note on Printed Wiring Boards. : Uses unleaded solder.



【DMB03 BOARD】(SIDE B)



• **Semiconductor Location**

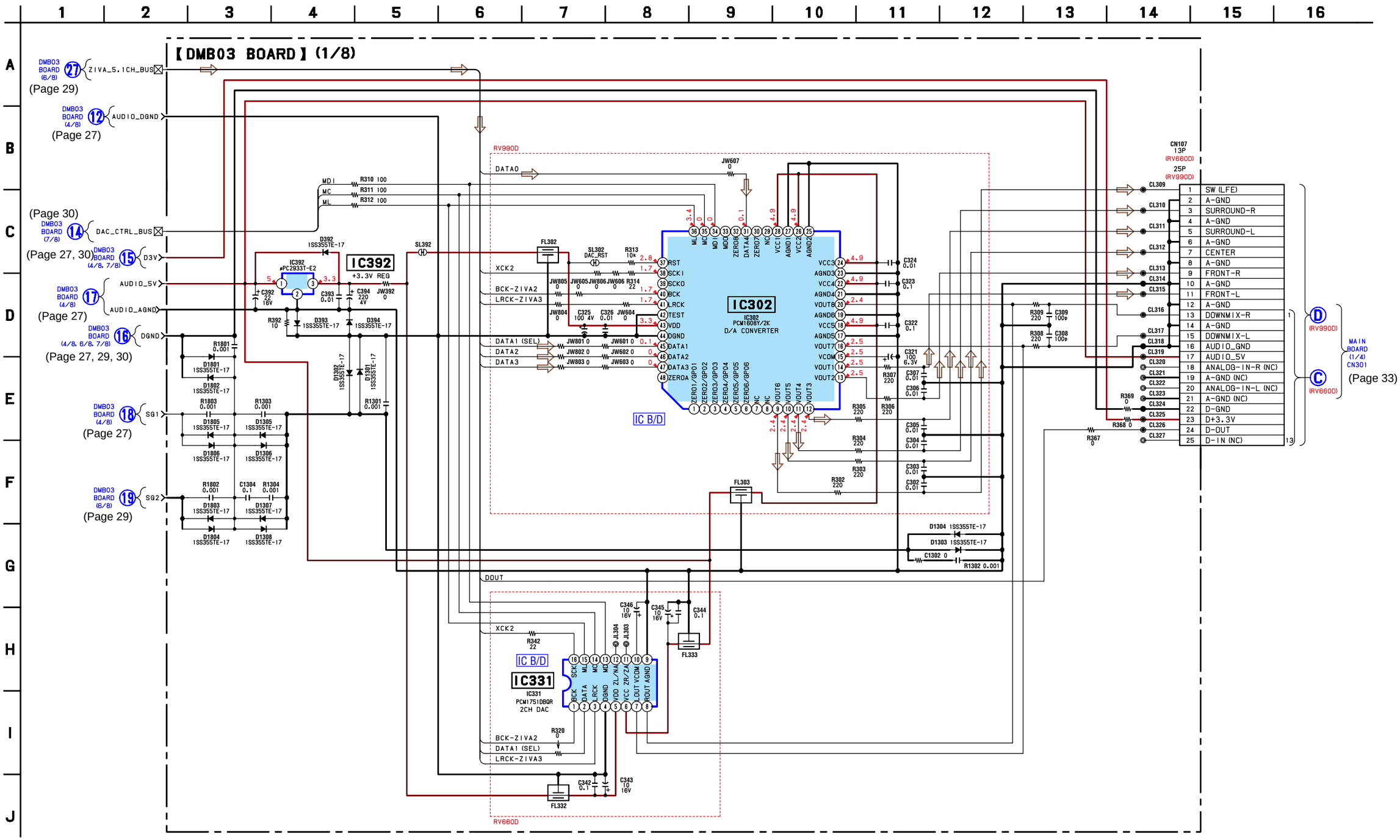
Ref. No.	Location
D202	E-9
(D392)	H-3
(D393)	H-2
(D394)	H-2
D901	G-4
(D1101)	I-4
(D1102)	I-4
(D1201)	B-13
(D1202)	B-13
(D1203)	B-12
(D1204)	B-12
D1301	B-4
D1302	B-4
D1303	C-2
D1304	C-2
D1305	F-2
D1306	F-2
D1307	B-4
D1308	B-4
D1801	I-9
D1802	I-9
(D1803)	E-13
(D1804)	E-13
D1805	I-6
D1806	I-6
(IC203)	D-13
(IC204)	D-11
(IC206)	F-13
IC207	D-12
IC211	E-8
IC216	H-13
(IC252)	D-7
IC302	D-3
(IC331)	F-3
(IC392)	H-3
(IC501)	G-8
IC503	F-7
IC509	F-8
IC701	G-11
(IC703)	F-9
(IC706)	G-11
IC901	F-5
IC902	E-11
(IC903)	F-5
IC904	E-11
IC906	E-10
(IC907)	G-3
(Q202)	C-11
(Q901)	G-4
Q903	A-5
Q904	B-5

( ): SIDE B

• Refer to page 17 for Common Note on Schematic Diagrams.

3-8. SCHEMATIC DIAGRAM — DMB03 SECTION (1/8) —

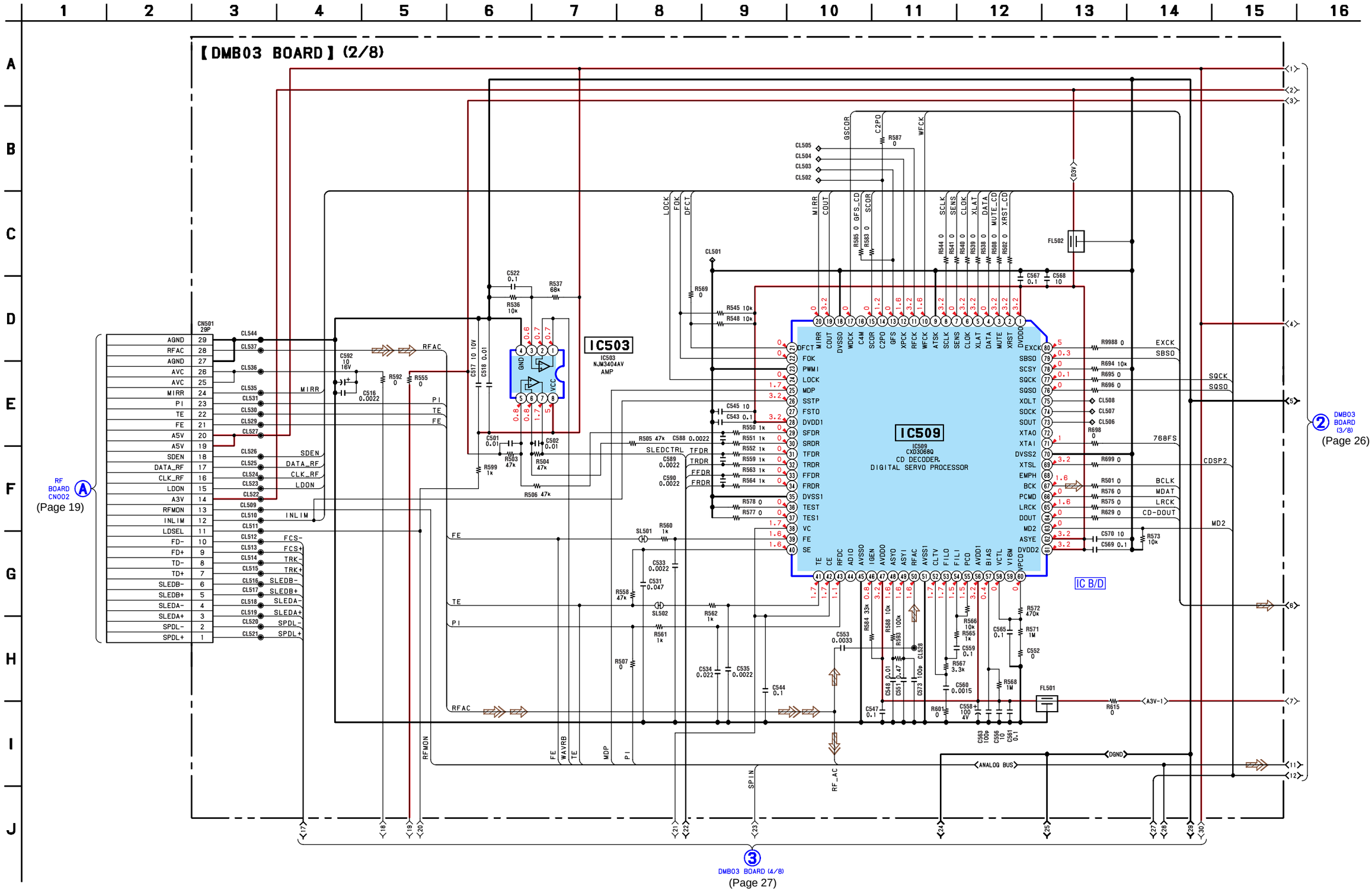
• Refer to page 52 for IC Block Diagrams.



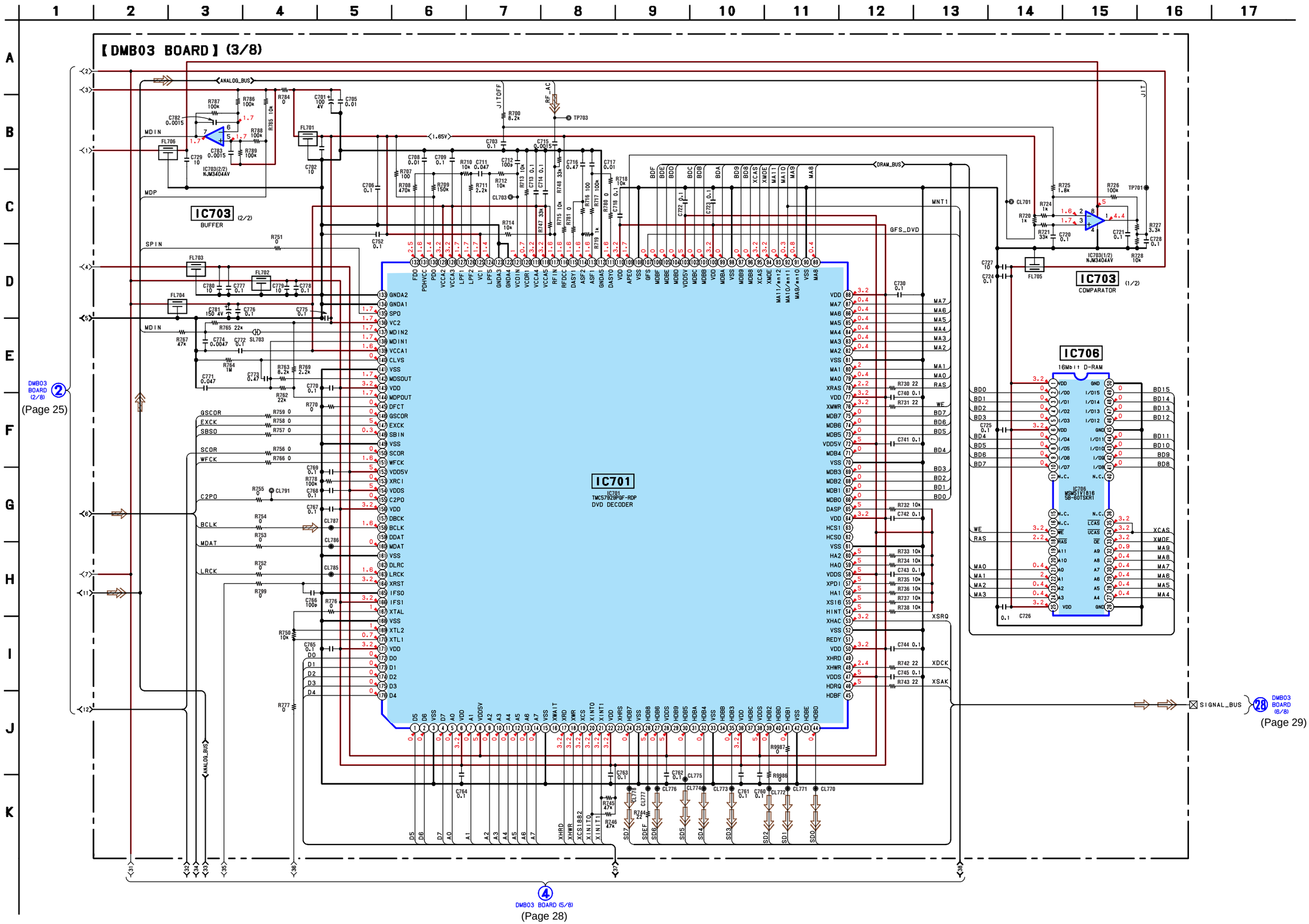
• Refer to page 17 for Common Note on Schematic Diagrams.

3-9. SCHEMATIC DIAGRAM — DMB03 SECTION (2/8) —

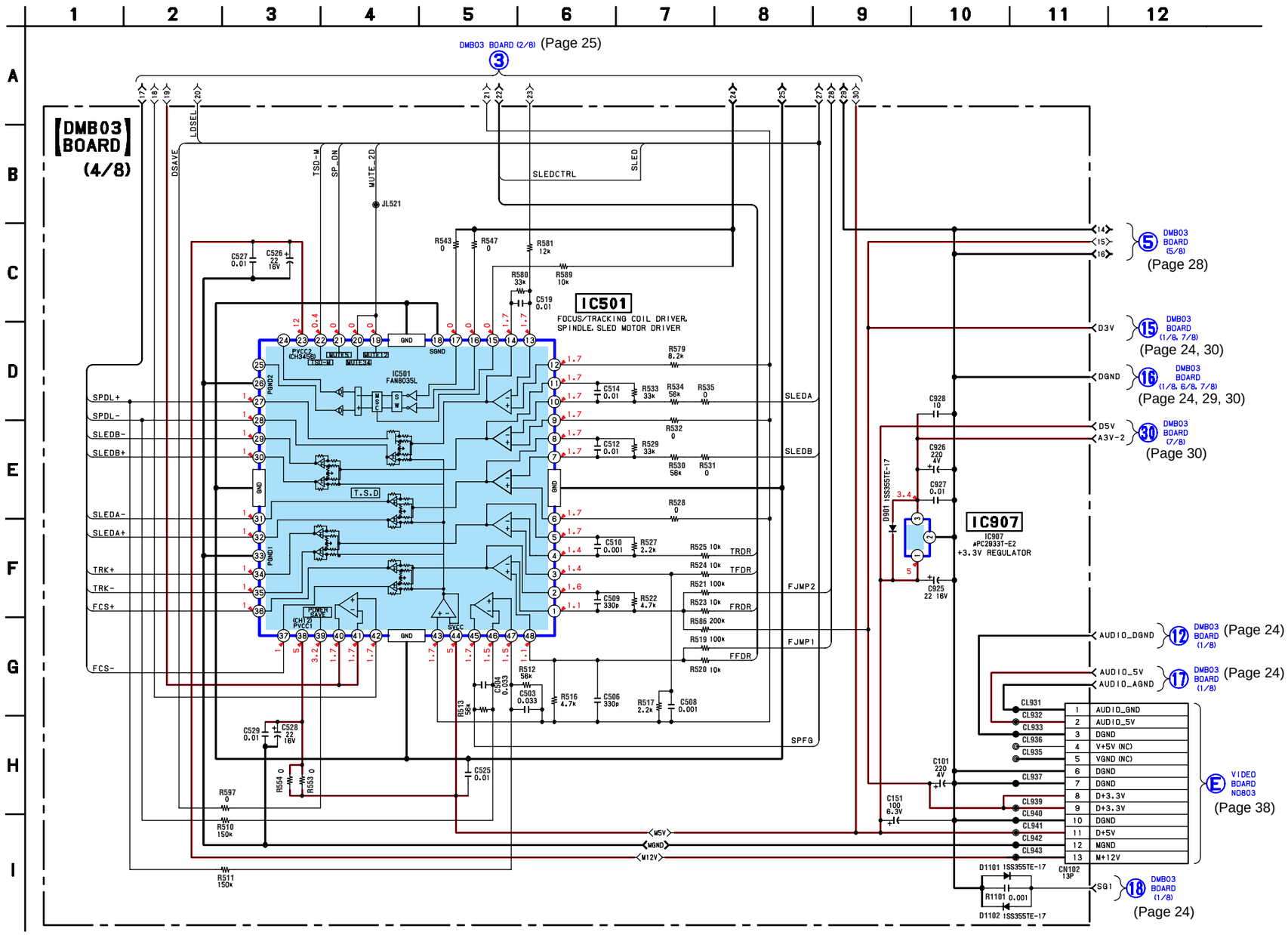
• Refer to page 52 for IC Block Diagrams.



3-10. SCHEMATIC DIAGRAM — DMB03 SECTION (3/8) — • Refer to page 17 for Common Note on Schematic Diagrams.



3-11. SCHEMATIC DIAGRAM — DMB03 SECTION (4/8) — • Refer to page 17 for Common Note on Schematic Diagrams.

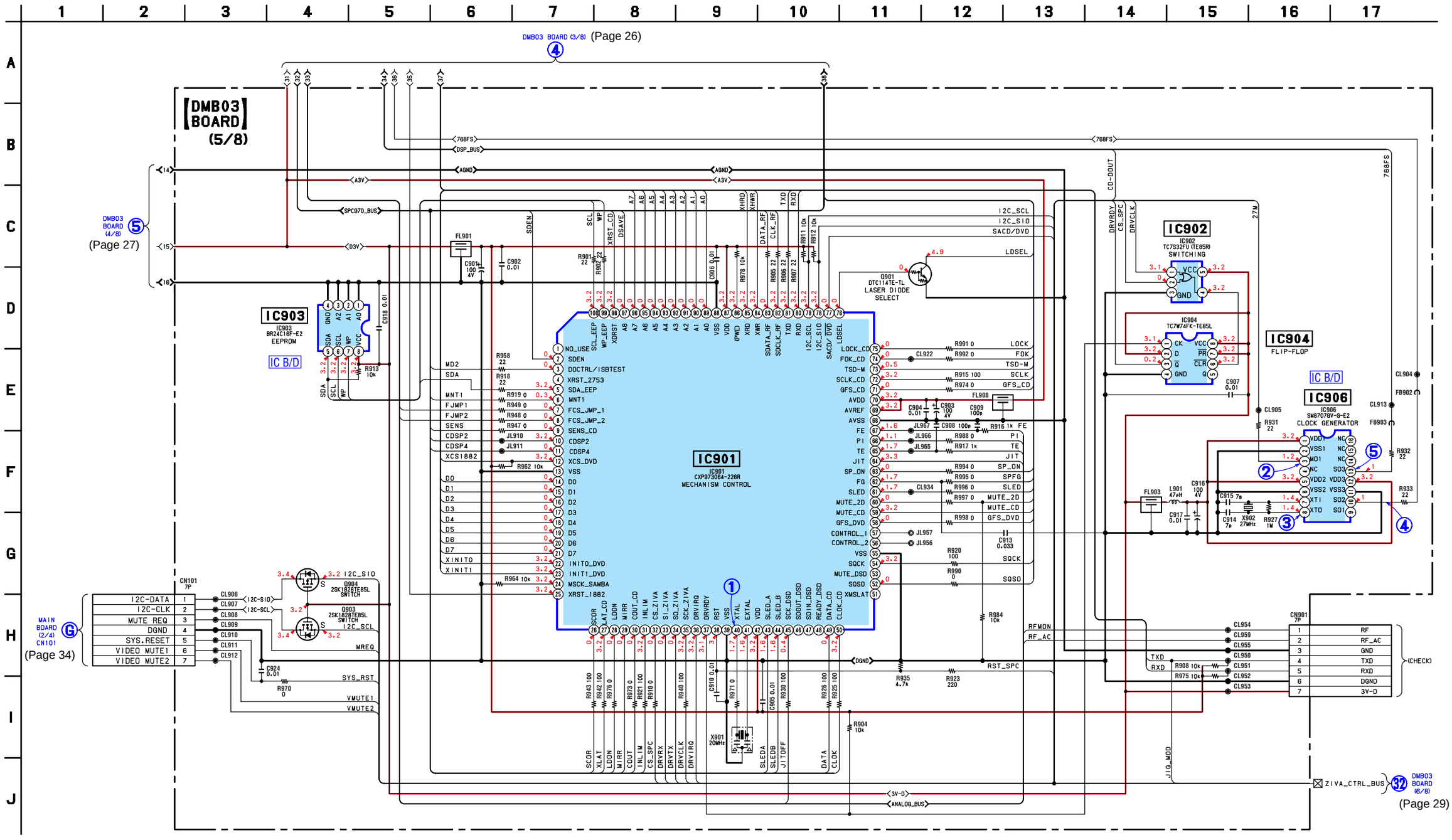


• **Waveforms**
– DM03 Board –

① 1V/DIV, 20ns/DIV, 3.9Vp-p, 50ns — IC901 (40) (XTAL)	⑥ 200mV/DIV, 20µs/DIV, H, 820mVp-p — IC207 (119) (VDAC 4)
② 1V/DIV, 10ns/DIV, 5.6Vp-p, 37ns — IC906 (3) (MO1)	⑦ 200mV/DIV, 20µs/DIV, H, 820mVp-p — IC207 (122) (VDAC 3)
③ 1V/DIV, 10ns/DIV, 4.5Vp-p, 37ns — IC906 (8) (XTO)	⑧ 200mV/DIV, 20µs/DIV, H, 1.2Vp-p — IC207 (125) (VDAC 2)
④ 1V/DIV, 10ns/DIV, 4.5Vp-p, 29.5ns — IC906 (10) (SO2)	⑨ 200mV/DIV, 20µs/DIV, H, 900mVp-p — IC207 (128) (VDAC 1)
⑤ 1V/DIV, 10ns/DIV, 4.6Vp-p, 29.5ns — IC906 (13) (SO3)	⑩ 500mV/DIV, 20µs/DIV, H, 1.3Vp-p — IC207 (131) (VDAC 0)

• Refer to page 27 for Waveforms.
• Refer to page 17 for Common Note on Schematic Diagrams.
• Refer to page 53 for IC Block Diagrams.

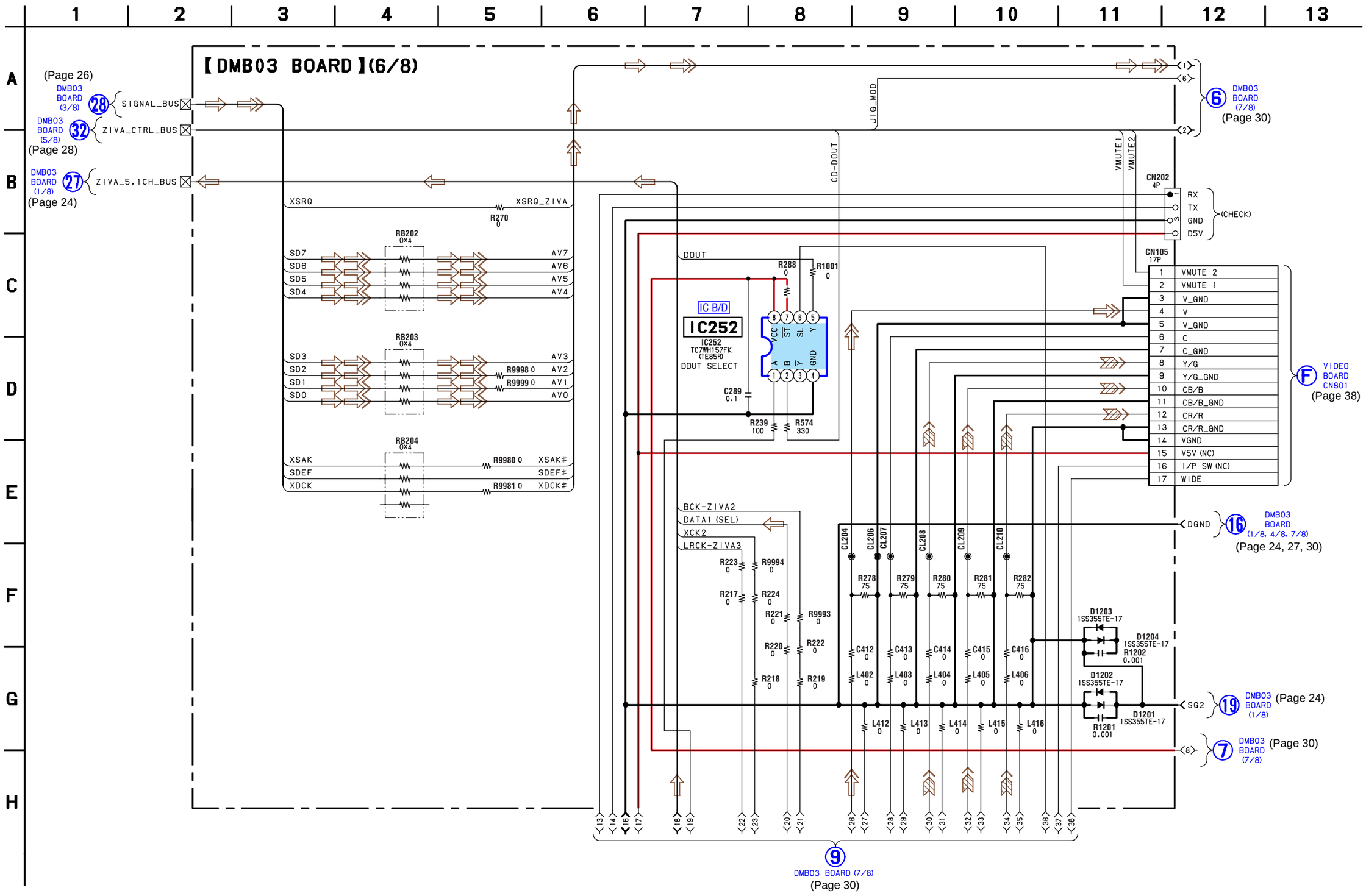
3-12. SCHEMATIC DIAGRAM — DMB03 SECTION (5/8) —



• Refer to page 17 for Common Note on Schematic Diagrams.

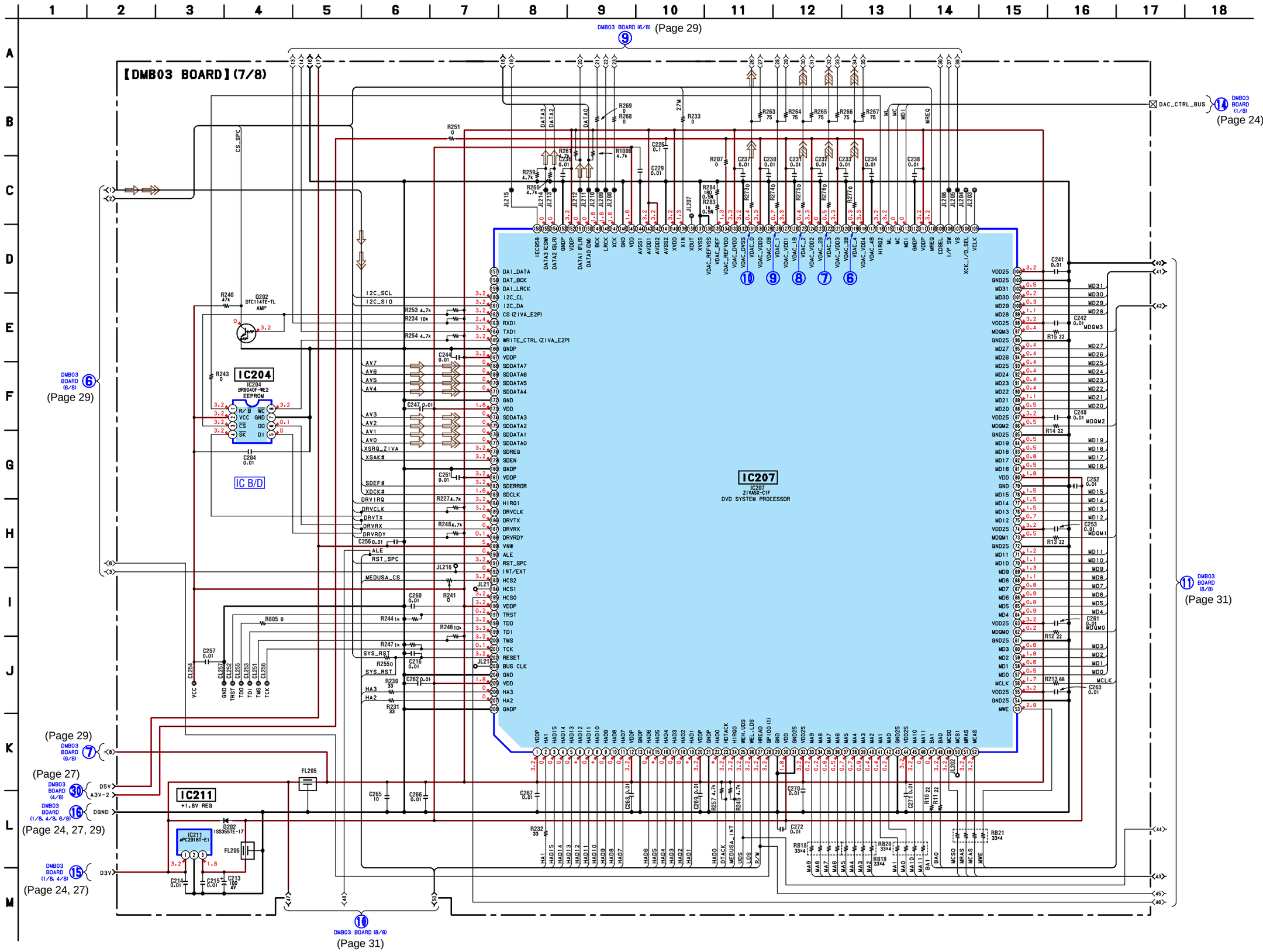
3-13. SCHEMATIC DIAGRAM — DMB03 SECTION (6/8) —

• Refer to page 54 for IC Block Diagrams.

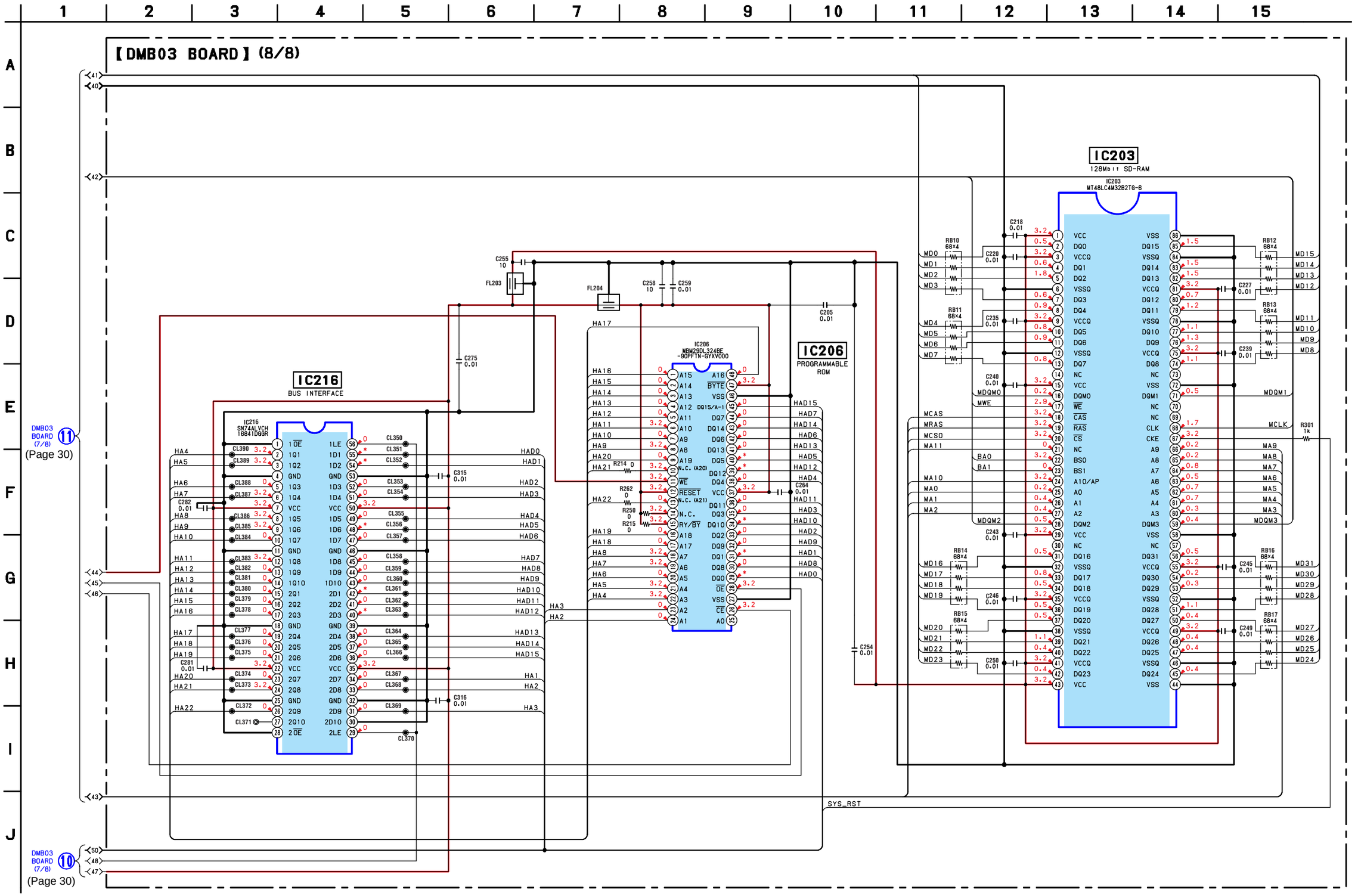


• Refer to page 27 for Waveforms.
• Refer to page 17 for Common Note on Schematic Diagrams.
• Refer to page 54 for IC Block Diagrams.

3-14. SCHEMATIC DIAGRAM — DMB03 SECTION (7/8) —



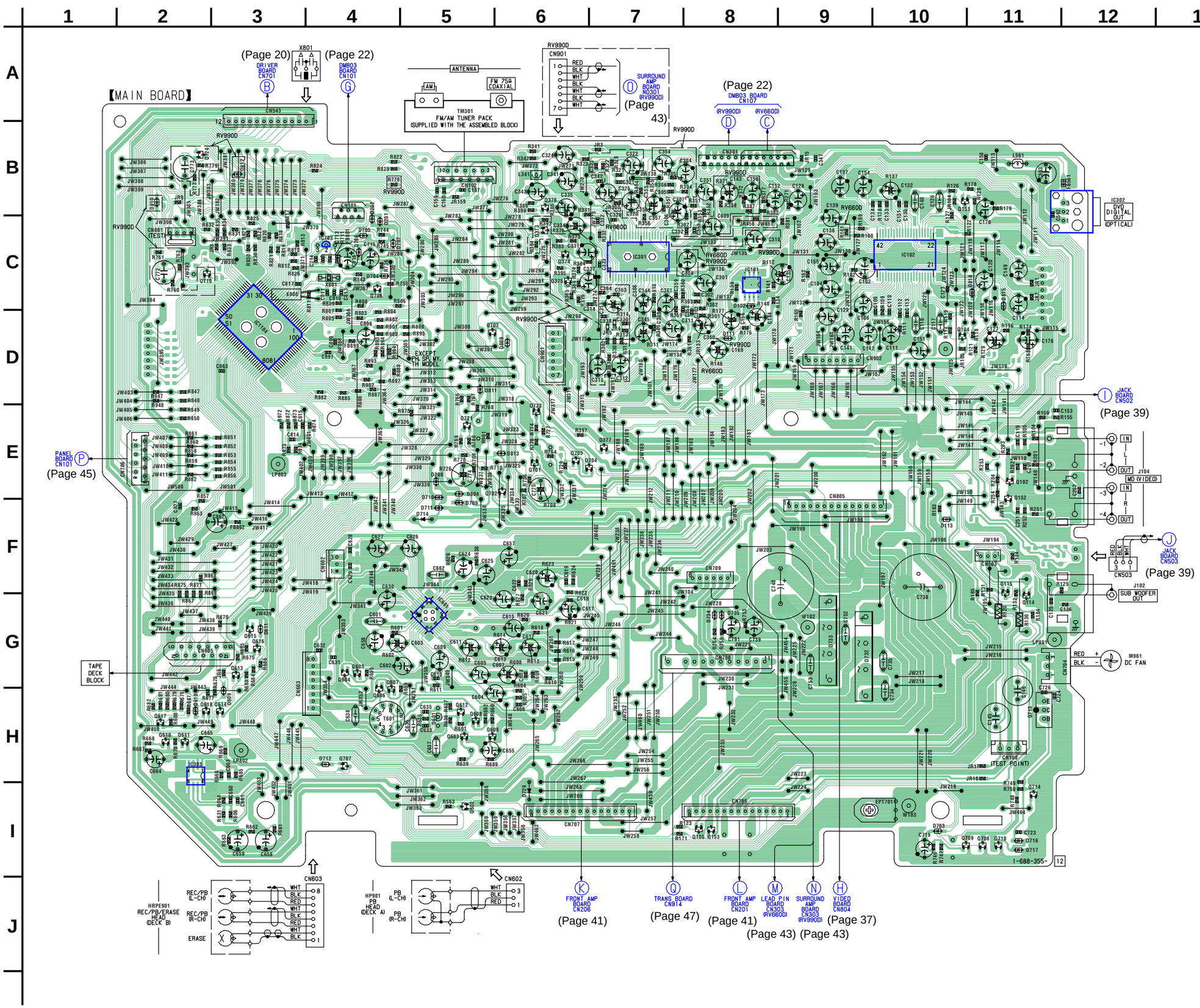
3-15. SCHEMATIC DIAGRAM — DMB03 SECTION (8/8) — • Refer to page 17 for Common Note on Schematic Diagrams.



• Refer to page 17 for Circuit Boards Location.

3-16. PRINTED WIRING BOARD — MAIN SECTION —

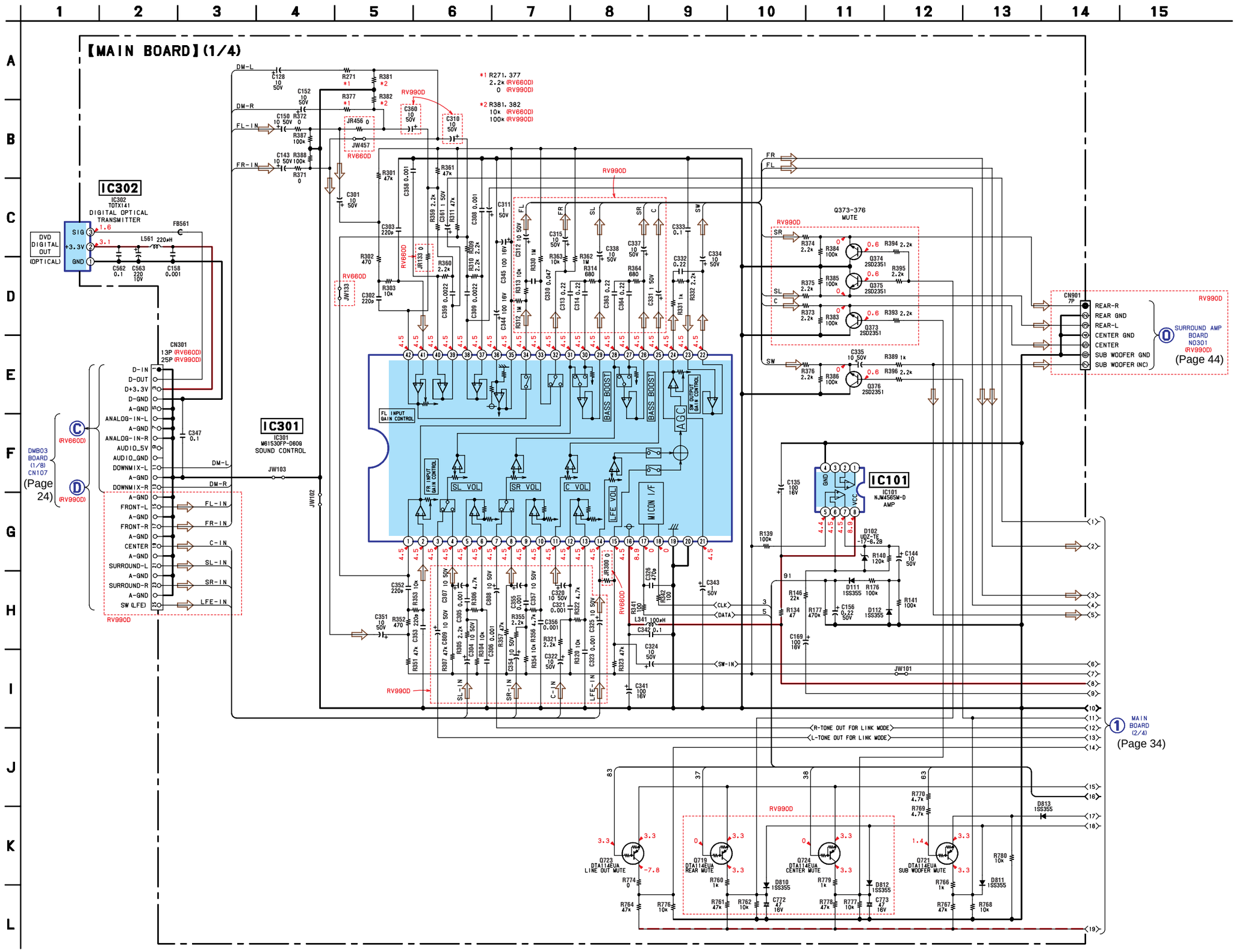
• Refer to page 17 for Common Note on Printed Wiring Boards. : Uses unleaded solder.



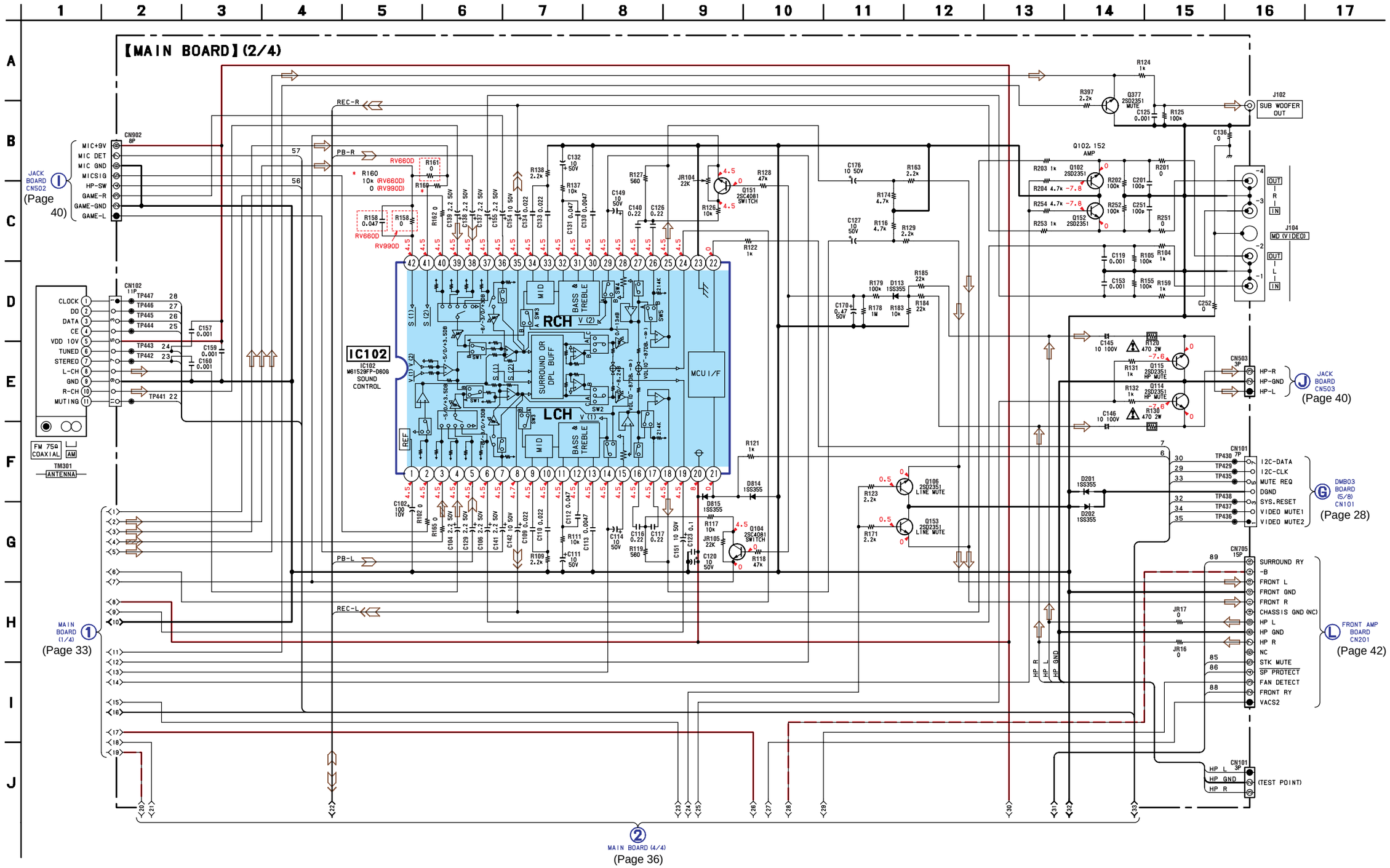
• **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location
D102	C-8	Q104	D-10
D111	D-8	Q106	I-8
D112	C-8	Q114	G-11
D113	F-10	Q115	F-11
D201	C-4	Q151	B-10
D202	B-4	Q152	E-11
D609	H-3	Q153	I-8
D610	H-2	Q373	C-6
D611	G-3	Q374	C-6
D703	I-10	Q375	C-6
D704	C-4	Q376	B-6
D705	C-4	Q377	E-7
D706	C-4	Q601	H-5
D707	C-4	Q602	I-5
D708	E-5	Q603	H-5
D709	F-5	Q604	G-4
D710	E-5	Q605	G-4
D711	F-5	Q606	H-4
D712	H-4	Q607	G-4
D714	F-5	Q608	H-5
D716	I-11	Q609	H-5
D717	I-11	Q610	H-2
D729	I-6	Q611	H-2
D732	G-9	Q612	H-5
D733	G-9	Q613	G-3
D734	G-8	Q614	H-3
D735	G-8	Q615	G-3
D804	E-5	Q616	G-3
D809	D-6	Q617	H-2
D810	B-2	Q618	H-2
D811	D-5	Q701	E-6
D812	B-3	Q702	E-6
D813	E-6	Q703	D-5
D814	C-11	Q704	E-7
D815	C-11	Q705	E-6
		Q706	C-4
IC101	C-8	Q707	H-4
IC102	C-10	Q708	I-11
IC301	C-7	Q709	I-11
IC302	B-12	Q710	I-11
IC303	H-2	Q713	H-11
IC601	G-5	Q714	I-11
IC703	C-4	Q719	C-2
IC1104	D-3	Q721	E-5
		Q723	E-6
Q102	E-11	Q724	B-2

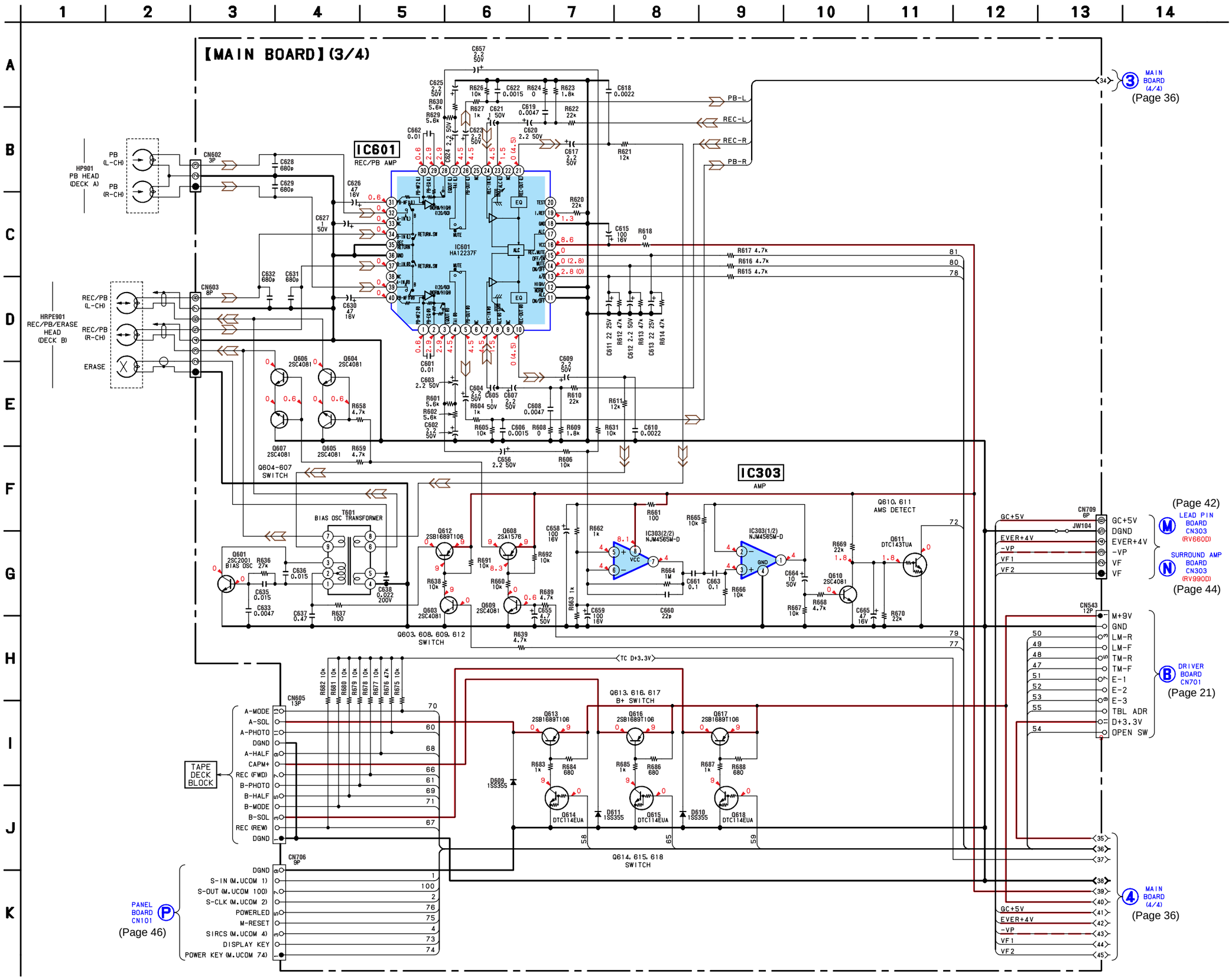
3-17. SCHEMATIC DIAGRAM — MAIN SECTION (1/4) — • Refer to page 17 for Common Note on Schematic Diagrams.



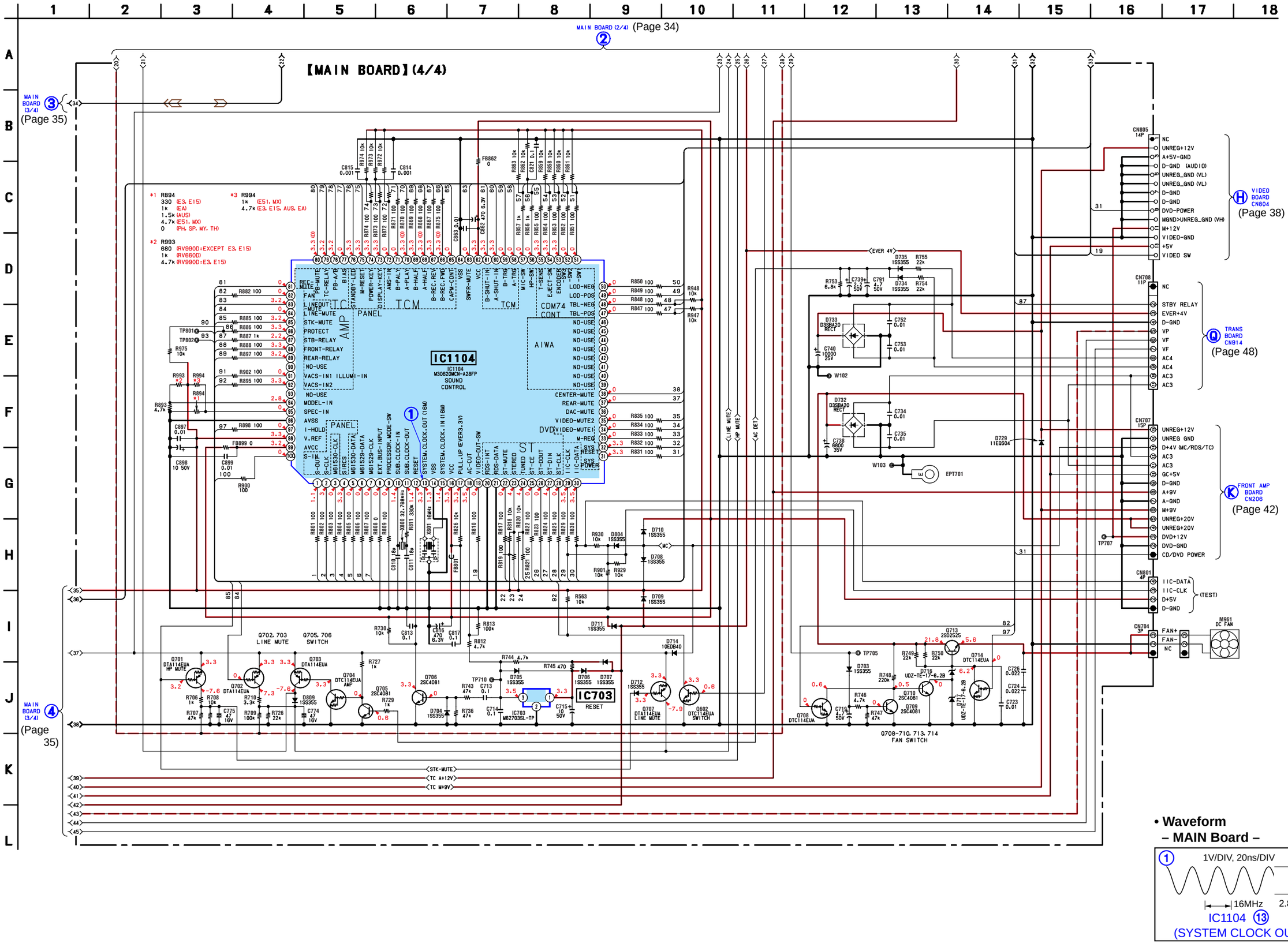
3-18. SCHEMATIC DIAGRAM — MAIN SECTION (2/4) — • Refer to page 17 for Common Note on Schematic Diagrams.



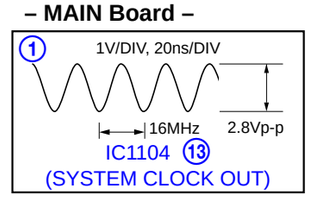
3-19. SCHEMATIC DIAGRAM — MAIN SECTION (3/4) — • Refer to page 17 for Common Note on Schematic Diagrams.



3-20. SCHEMATIC DIAGRAM — MAIN SECTION (4/4) — • Refer to page 17 for Common Note on Schematic Diagrams.



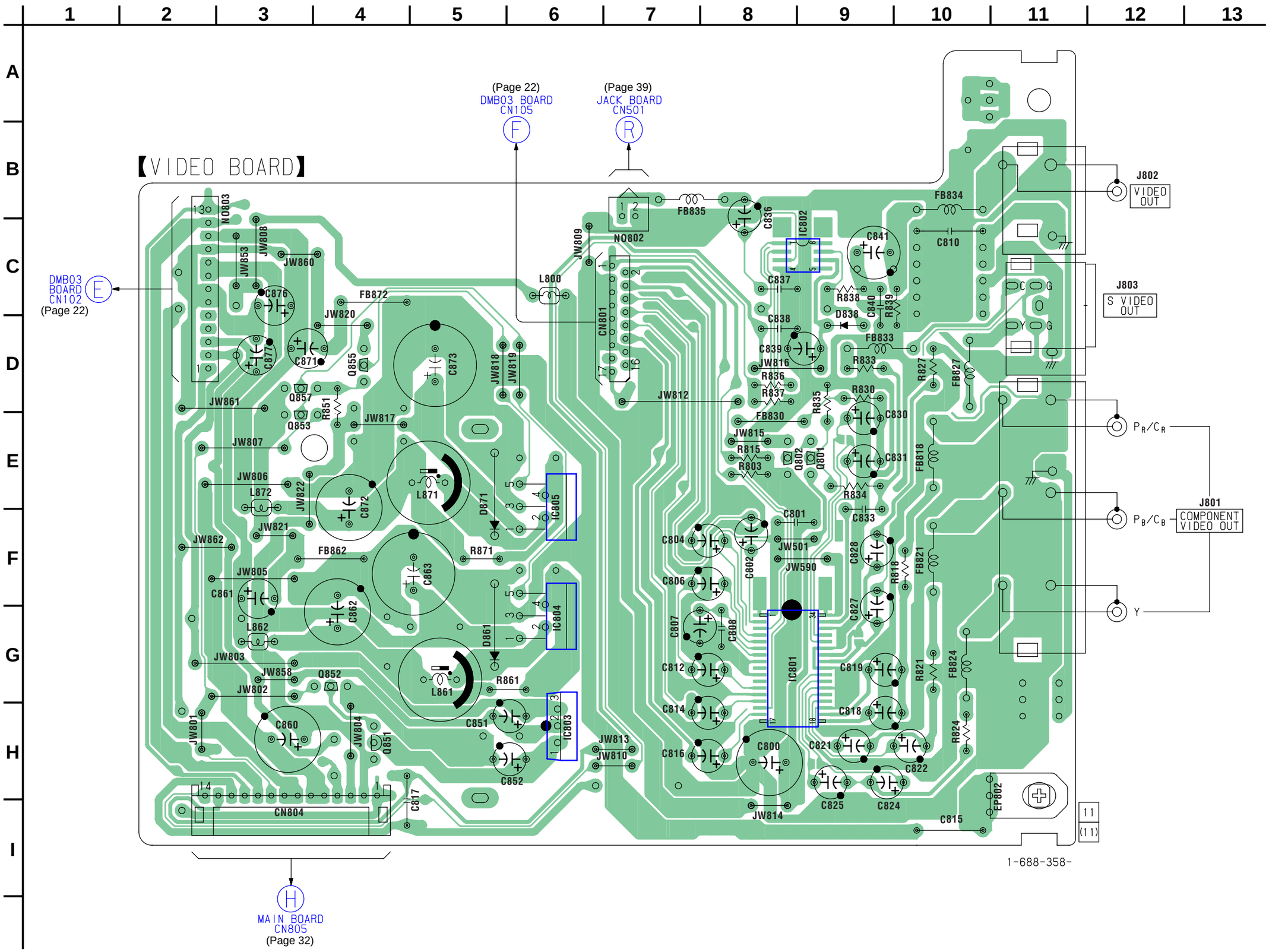
• **Waveform**
– MAIN Board –



• Refer to page 17 for Circuit Boards Location.

3-21. PRINTED WIRING BOARD — VIDEO SECTION —

• Refer to page 17 for Common Note on Printed Wiring Boards. : Uses unleaded solder.



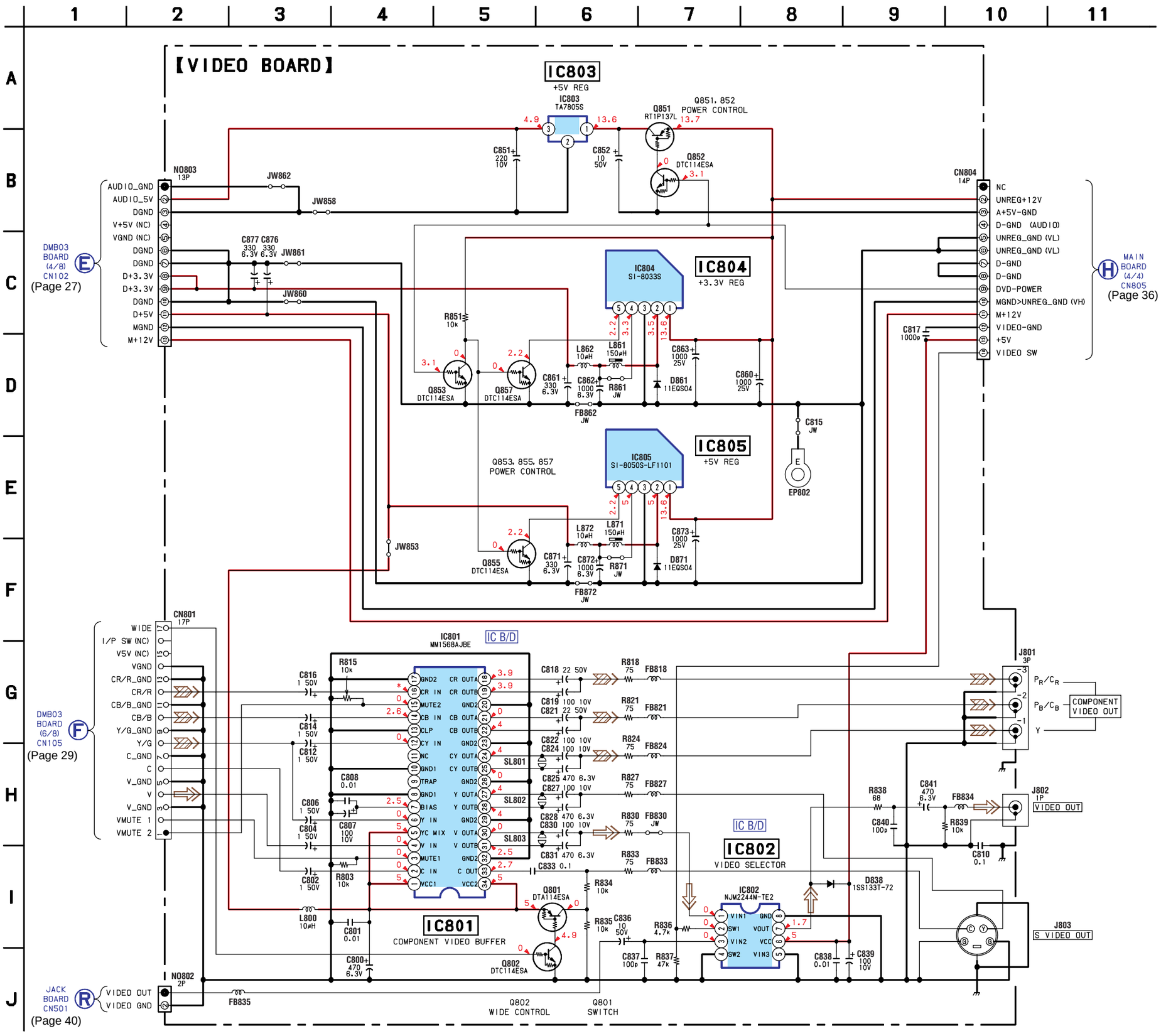
• Semiconductor Location

Ref. No.	Location
D838	D-9
D861	G-5
D871	E-5
IC801	G-8
IC802	C-8
IC803	H-6
IC804	G-6
IC805	E-6
Q801	E-9
Q802	E-8
Q851	H-4
Q852	G-4
Q853	E-3
Q855	D-4
Q857	D-3

• Refer to page 17 for Common Note on Schematic Diagrams.

3-22. SCHEMATIC DIAGRAM — VIDEO SECTION —

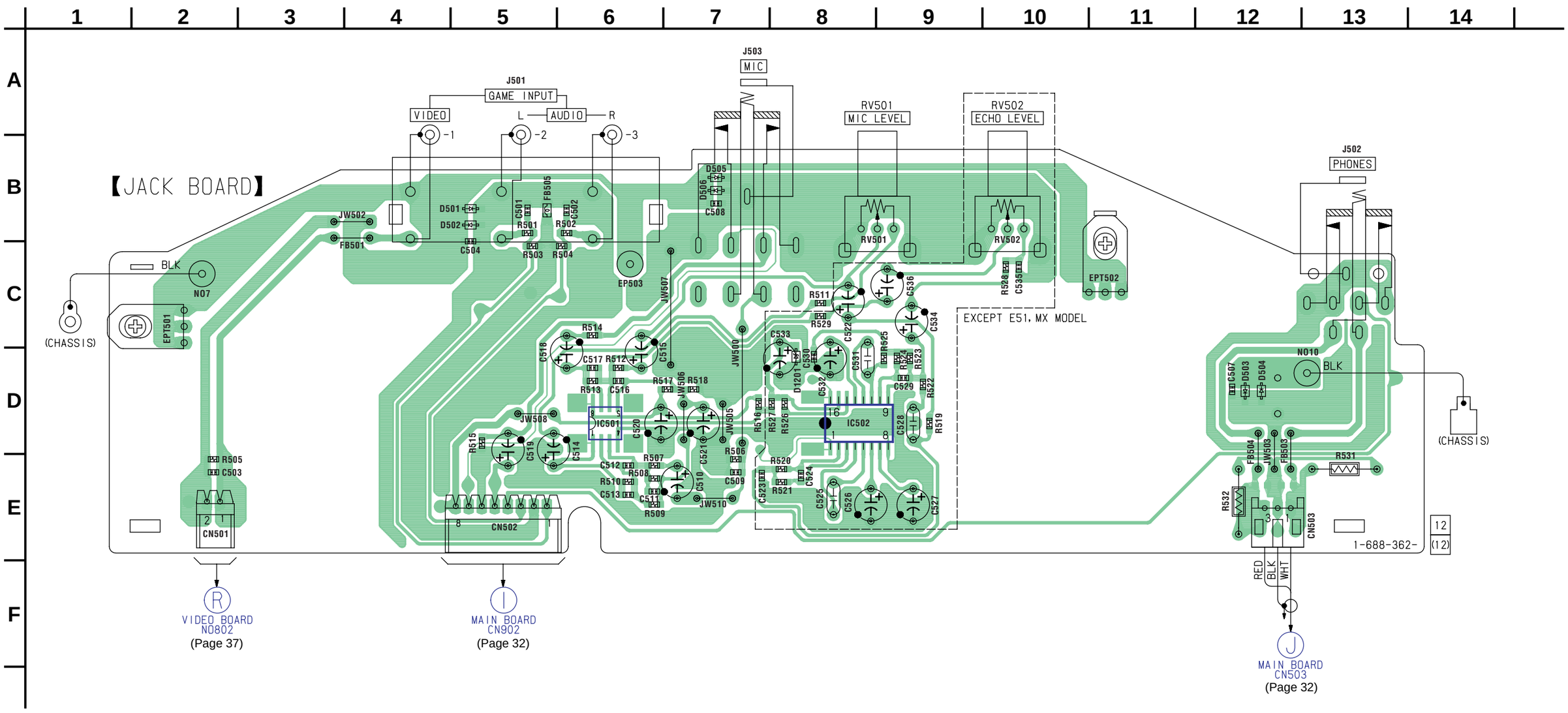
• Refer to page 54 for IC Block Diagrams.



• Refer to page 17 for Circuit Boards Location.

3-23. PRINTED WIRING BOARD — JACK SECTION —

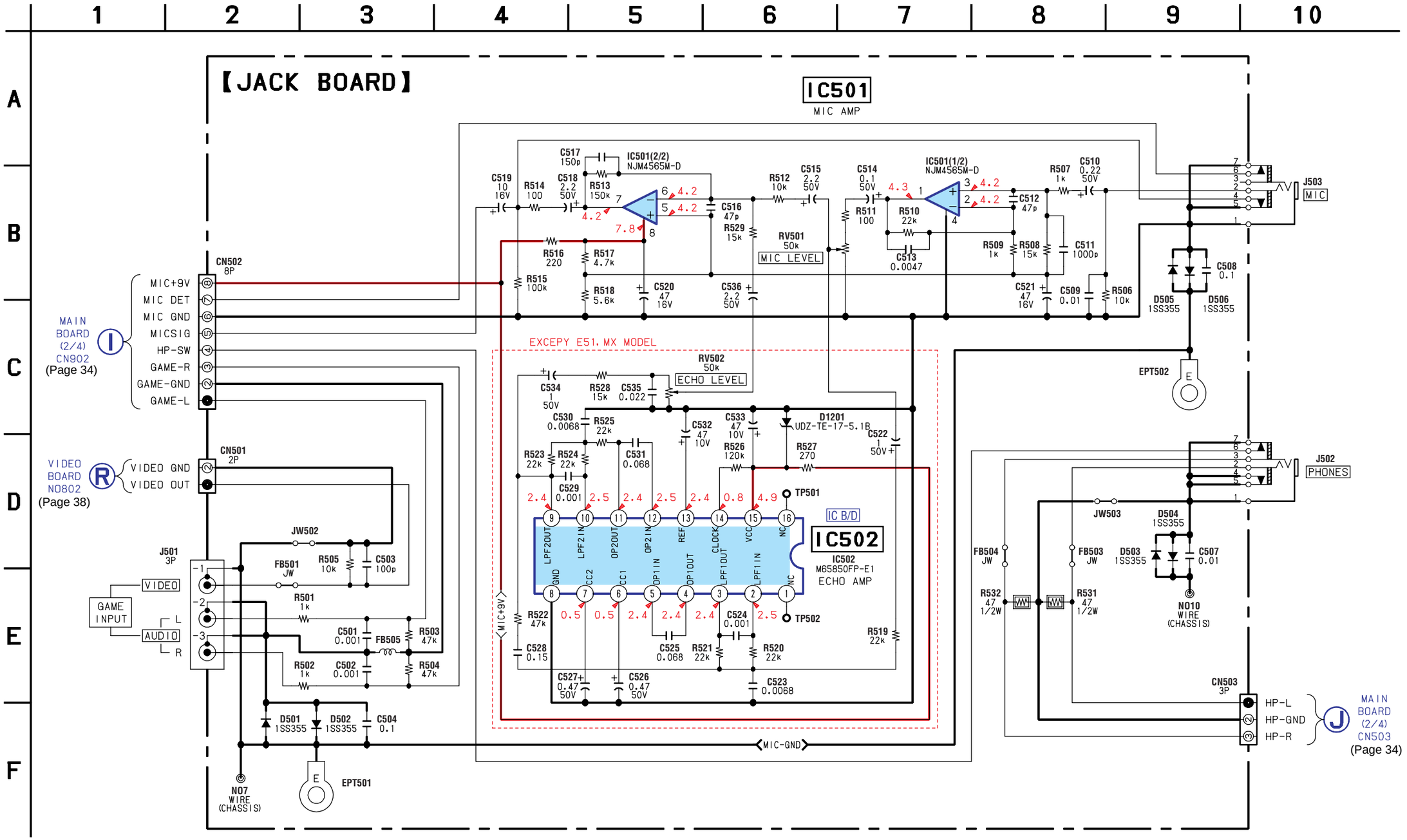
• Refer to page 17 for Common Note on Printed Wiring Boards. : Uses unleaded solder.



• **Semiconductor Location**

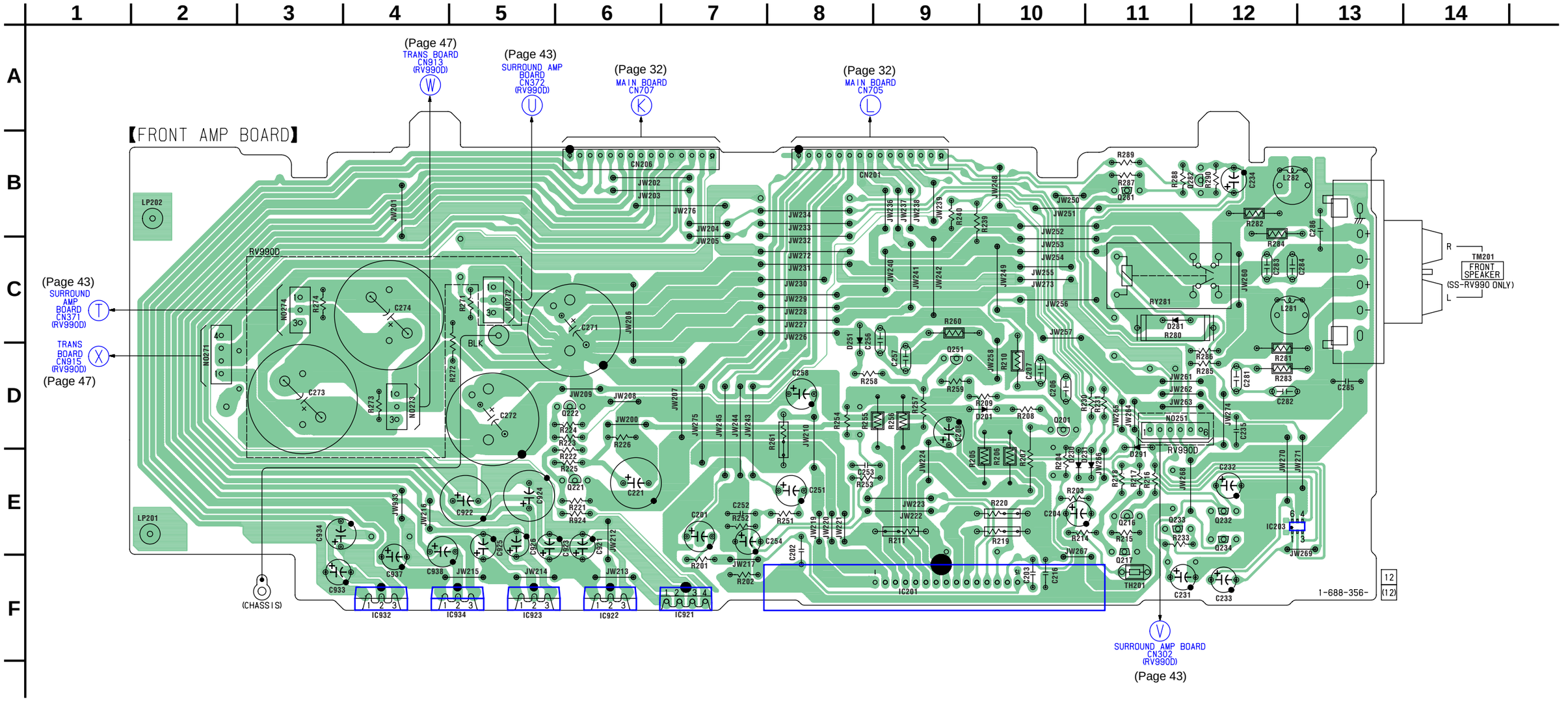
Ref. No.	Location
D501	B-5
D502	B-5
D503	D-12
D504	D-12
D505	B-7
D506	B-7
D1201	D-8
IC501	D-6
IC502	D-8

3-24. SCHEMATIC DIAGRAM — JACK SECTION — • Refer to page 17 for Common Note on Schematic Diagrams.



• Refer to page 17 for Circuit Boards Location.

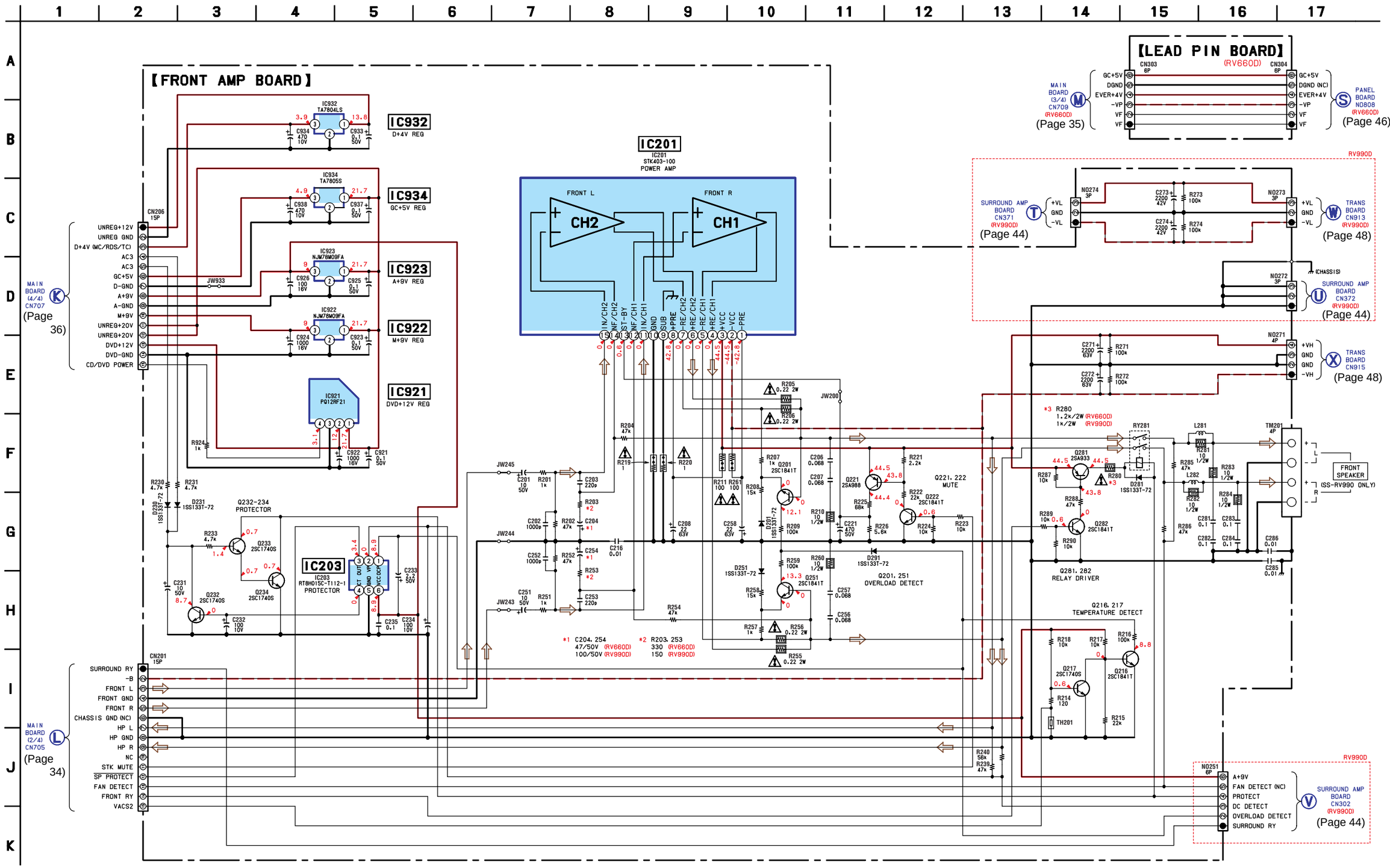
3-25. PRINTED WIRING BOARD — FRONT AMP SECTION — • Refer to page 17 for Common Note on Printed Wiring Boards. : Uses unleaded solder.



• **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location
D201	D-10	IC934	F-5
D230	E-10		
D231	E-10	Q201	D-10
D251	C-8	Q216	E-11
D281	C-11	Q217	F-11
D291	E-11	Q221	E-6
		Q222	D-6
IC201	F-9	Q232	E-12
IC203	E-12	Q233	E-11
IC921	F-7	Q234	E-12
IC922	F-6	Q251	D-9
IC923	F-5	Q281	B-11
IC932	F-4	Q282	B-11

3-26. SCHEMATIC DIAGRAM — FRONT AMP SECTION — • Refer to page 17 for Common Note on Schematic Diagrams.



• Refer to page 17 for Circuit Boards Location.

3-27. PRINTED WIRING BOARDS — SURROUND AMP SECTION —

• Refer to page 17 for Common Note on Printed Wiring Boards. : Uses unleaded solder.

• **Semiconductor Location**

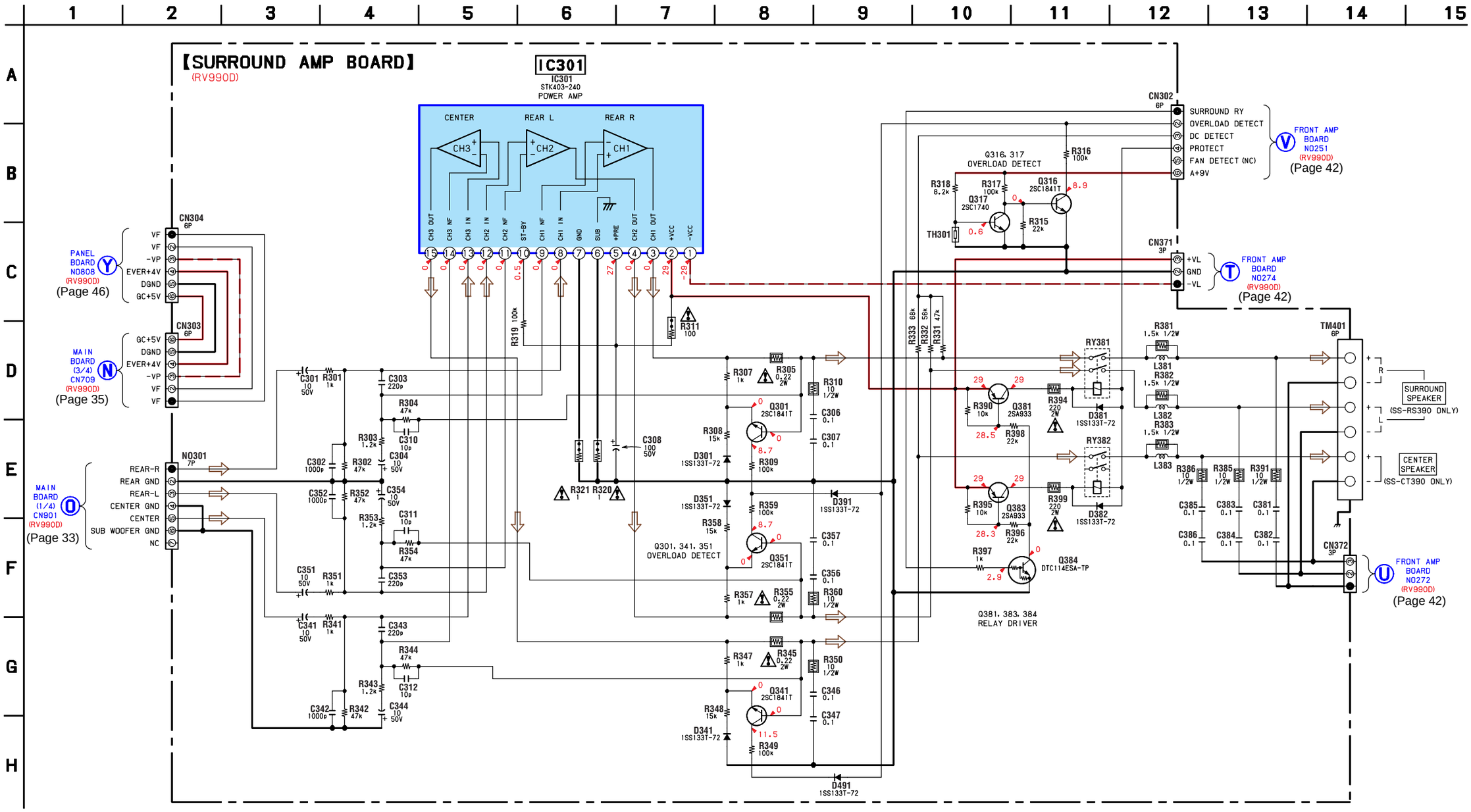
Ref. No.	Location	Ref. No.	Location
D301	F-9	Q301	F-9
D341	F-6	Q316	F-6
D351	F-8	Q317	E-6
D381	F-11	Q341	E-6
D382	F-11	Q351	F-8
D391	F-6	Q381	H-9
D491	F-6	Q383	H-10
		Q384	H-8
IC301	D-9		

【LEAD PIN BOARD】(RV660D)

【SURROUND AMP BOARD】(RV990D)

(Page 32) MAIN BOARD CN709 (RV660D) (M)
(Page 45) PANEL BOARD NO808 (RV660D) (S)
PANEL BOARD NO808 (RV990D) (Y) (Page 45)
MAIN BOARD CN709 (RV990D) (N) (Page 32)
FRONT AMP BOARD NO274 (RV990D) (T) (Page 41)
MAIN BOARD CN901 (RV990D) (O) (Page 32)
FRONT AMP BOARD NO251 (RV990D) (V) (Page 41)
FRONT AMP BOARD NO272 (RV990D) (U) (Page 41)

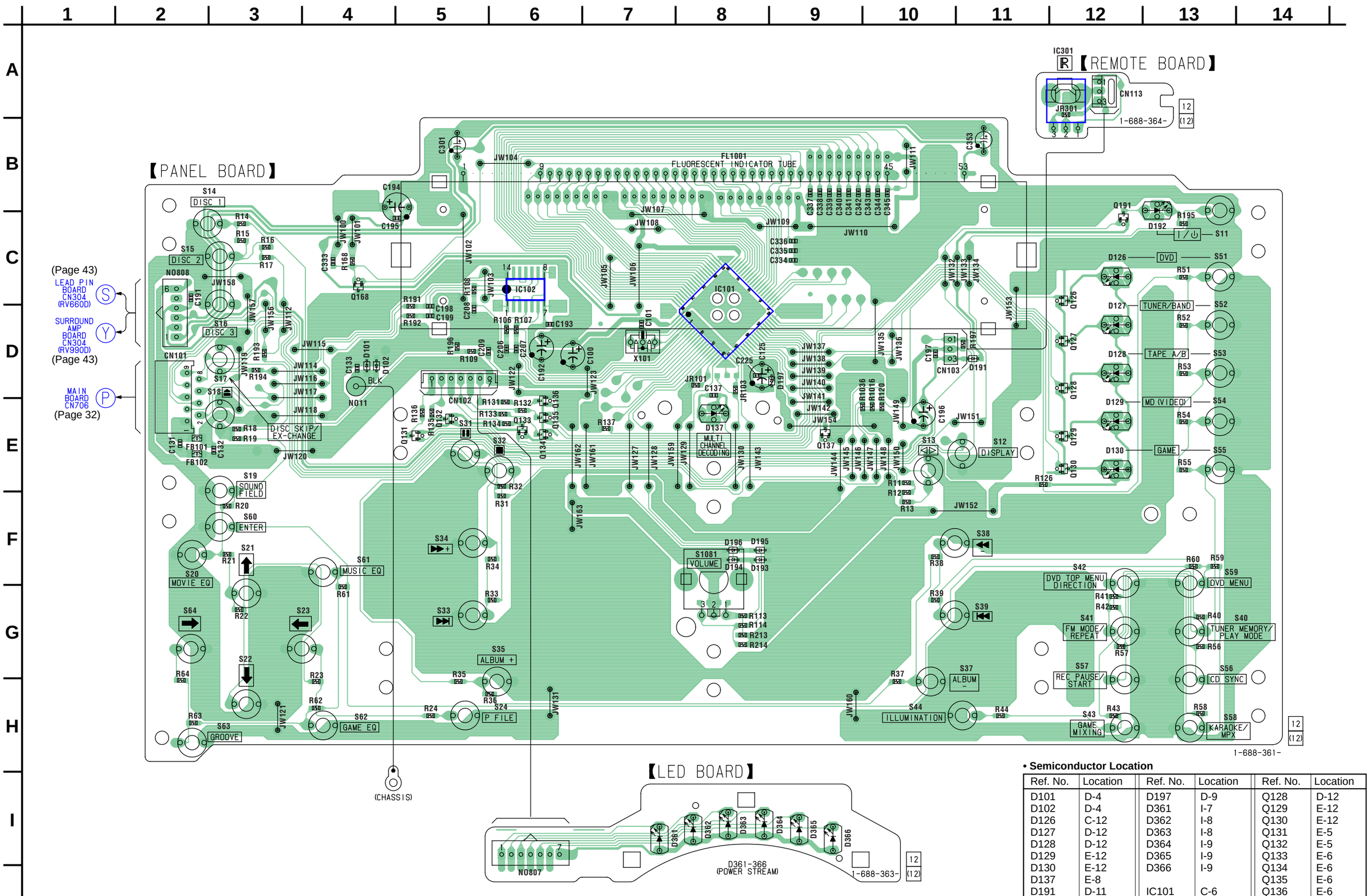
3-28. SCHEMATIC DIAGRAM — SURROUND AMP SECTION — • Refer to page 17 for Common Note on Schematic Diagrams.



• Refer to page 17 for Circuit Boards Location.

3-29. PRINTED WIRING BOARDS — PANEL SECTION —

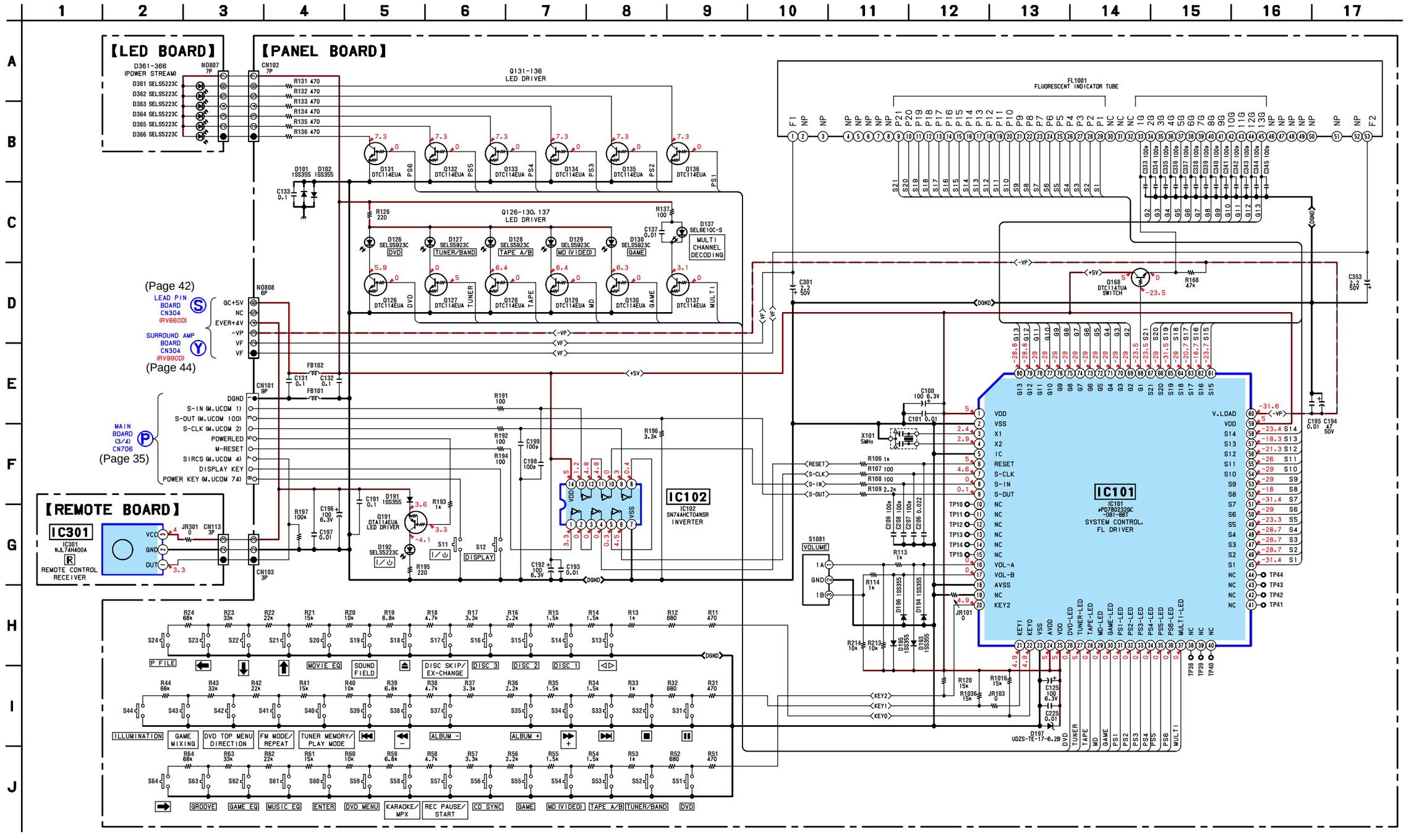
• Refer to page 17 for Common Note on Printed Wiring Boards. : Uses unleaded solder.



• **Semiconductor Location**

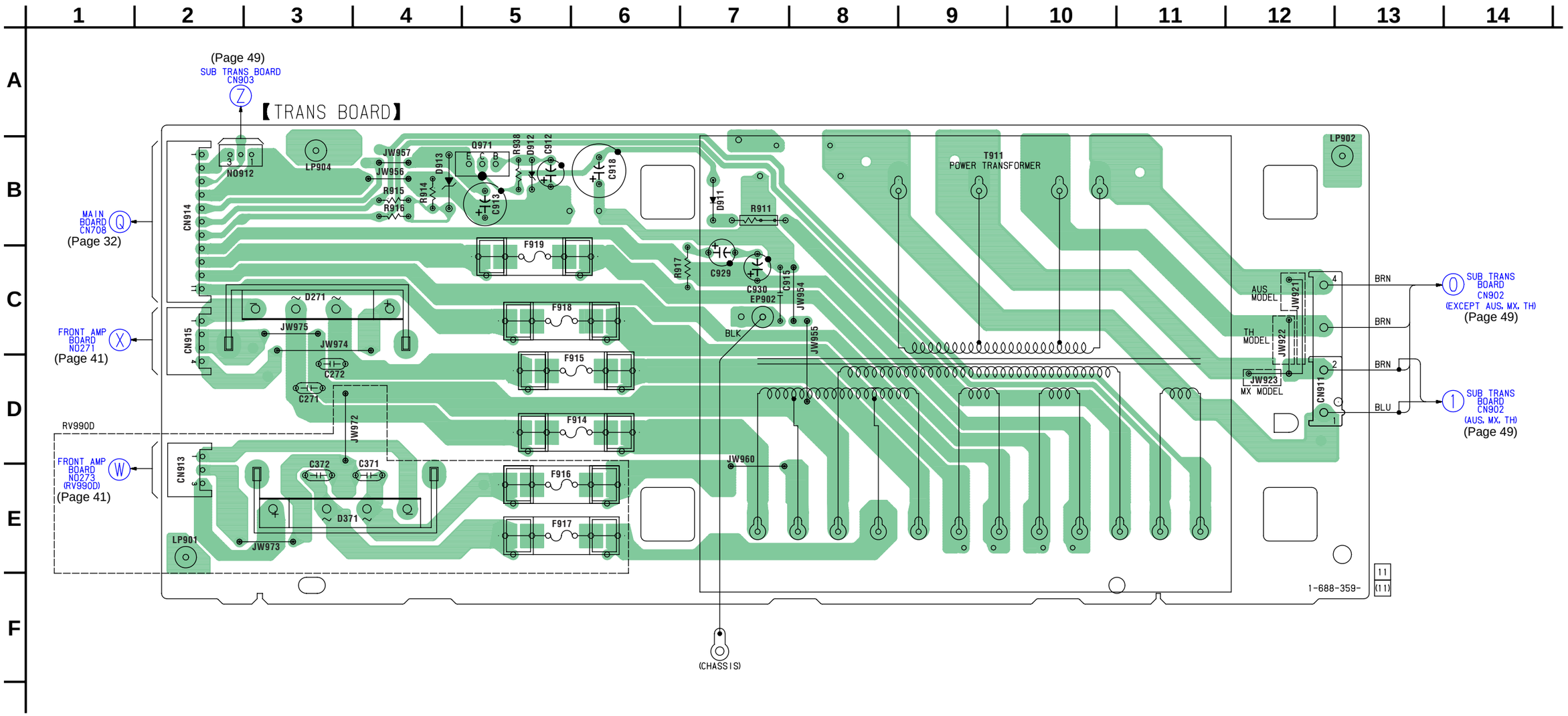
Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D101	D-4	D197	D-9	Q128	D-12
D102	D-4	D361	I-7	Q129	E-12
D126	C-12	D362	I-8	Q130	E-12
D127	D-12	D363	I-8	Q131	E-5
D128	D-12	D364	I-9	Q132	E-5
D129	E-12	D365	I-9	Q133	E-6
D130	E-12	D366	I-9	Q134	E-6
D137	E-8			Q135	E-6
D191	D-11	IC101	C-6	Q136	E-6
D192	C-13	IC102	C-8	Q137	E-9
D193	F-8	IC301	A-12	Q168	C-4
D194	F-8			Q191	B-12
D195	F-8	Q126	C-12		
D196	F-8	Q127	D-12		

3-30. SCHEMATIC DIAGRAM — PANEL SECTION — • Refer to page 17 for Common Note on Schematic Diagrams.



• Refer to page 17 for Circuit Boards Location.

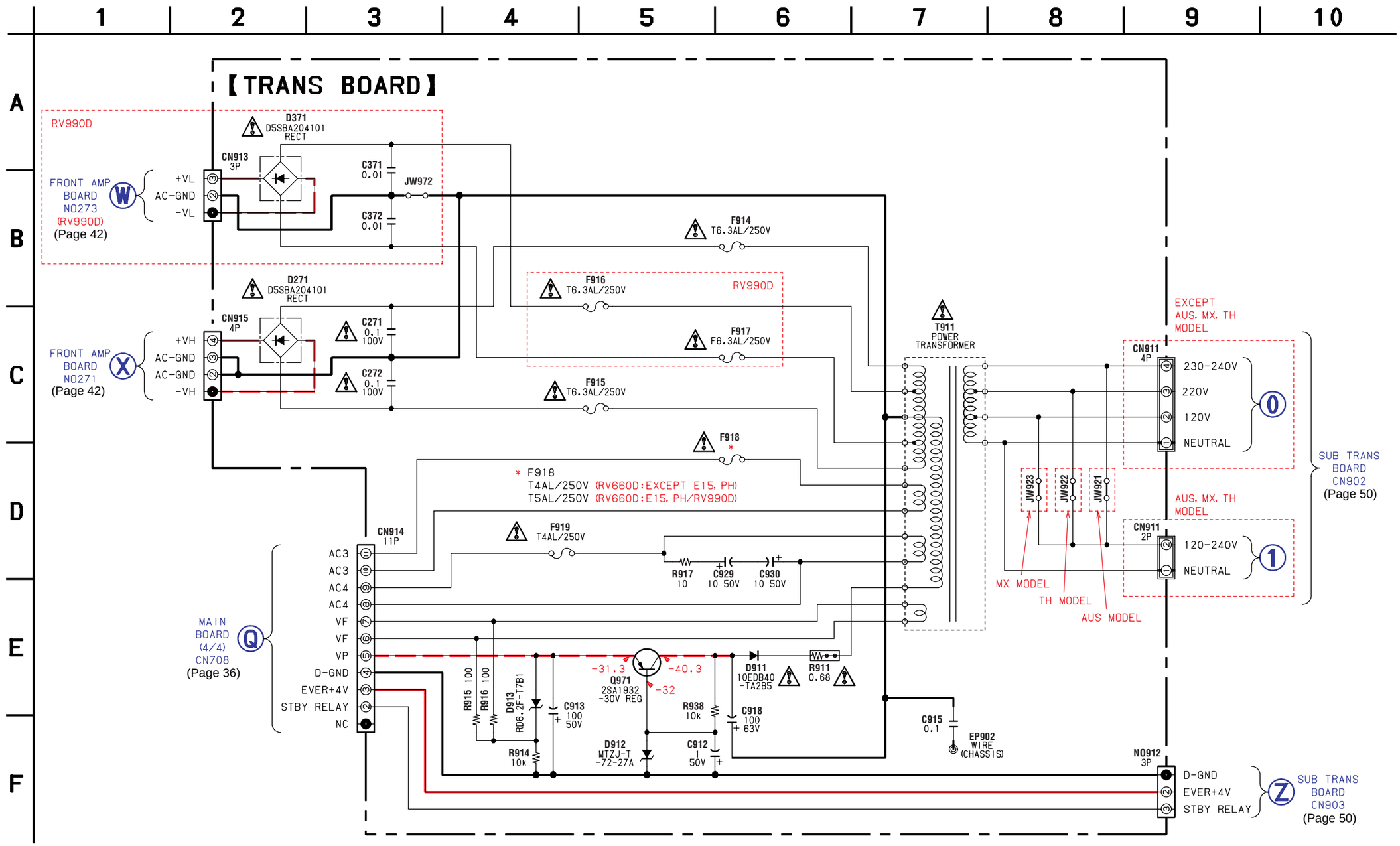
3-31. PRINTED WIRING BOARD — POWER SUPPLY SECTION (1/2) — • Refer to page 17 for Common Note on Printed Wiring Boards. : Uses unleaded solder.



• **Semiconductor Location**

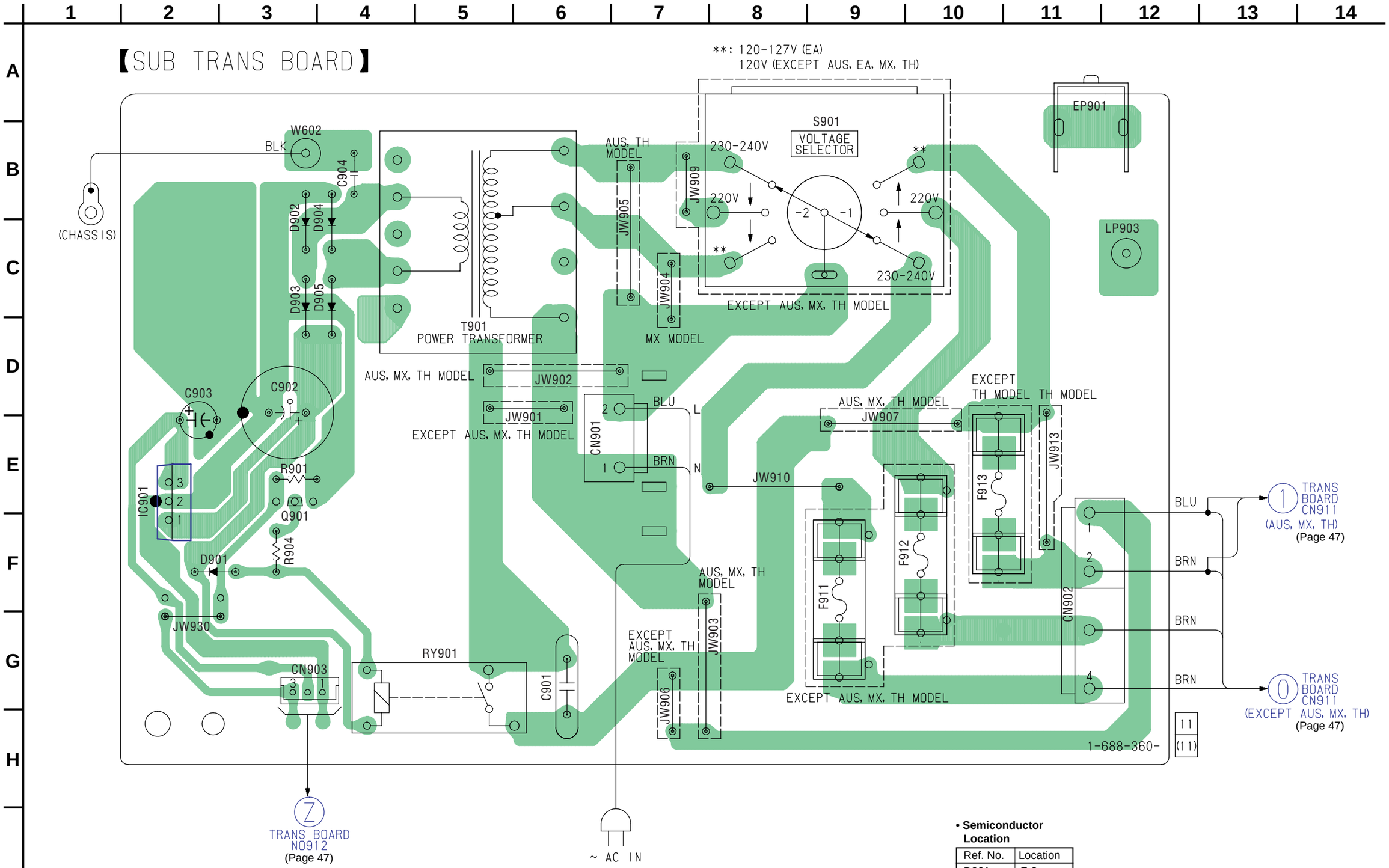
Ref. No.	Location
D271	C-3
D371	E-3
D911	B-7
D912	B-5
D913	B-4
Q971	B-5

3-32. SCHEMATIC DIAGRAM — POWER SUPPLY SECTION (1/2) — • Refer to page 17 for Common Note on Schematic Diagrams.



• Refer to page 17 for Circuit Boards Location.

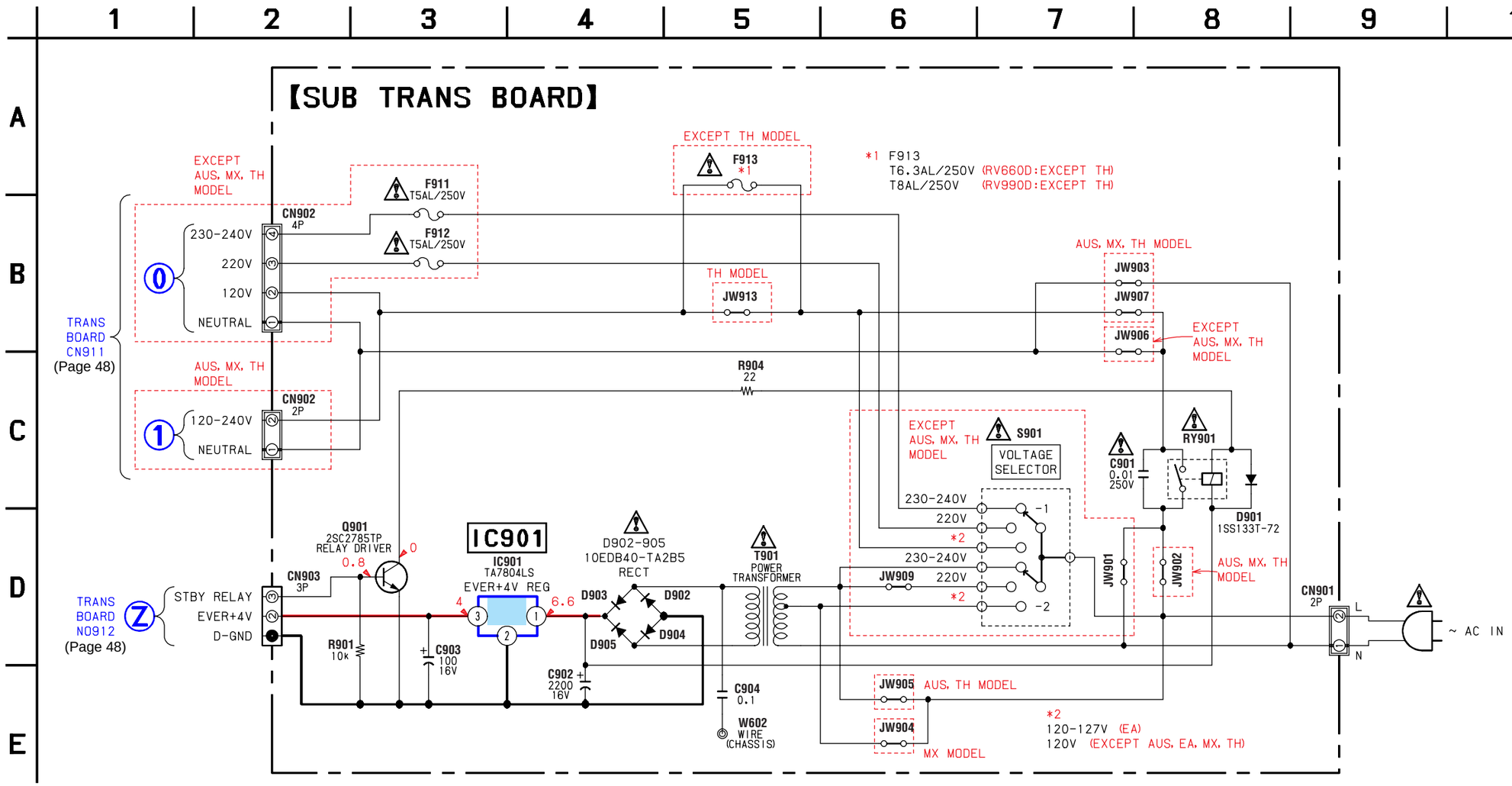
3-33. PRINTED WIRING BOARD — POWER SUPPLY SECTION (2/2) — • Refer to page 17 for Common Note on Printed Wiring Boards. : Uses unleaded solder.



• **Semiconductor Location**

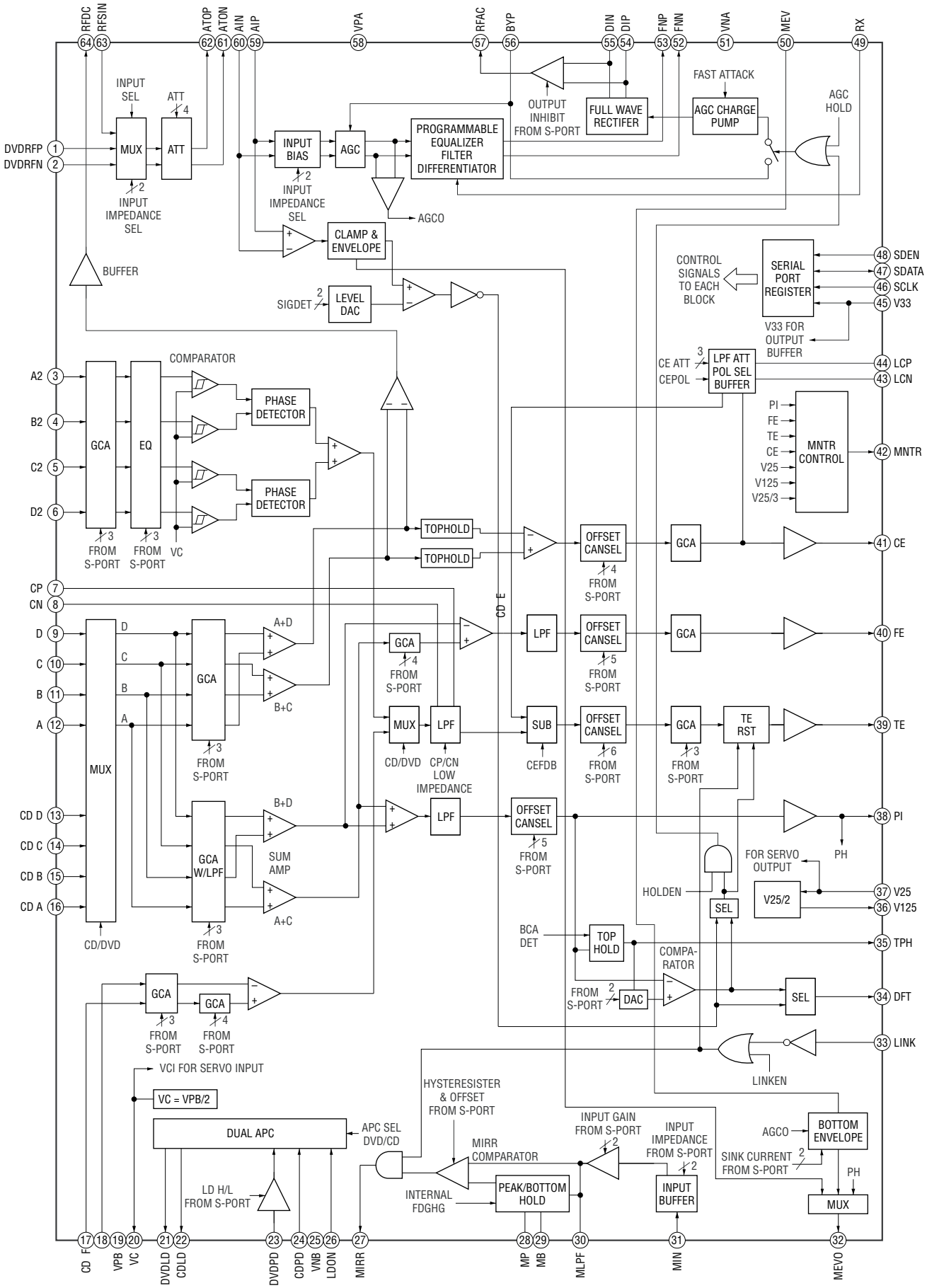
Ref. No.	Location
D901	F-2
D902	B-3
D903	C-3
D904	C-4
D905	C-4
IC901	E-2
Q901	E-3

3-34. SCHEMATIC DIAGRAM — POWER SUPPLY SECTION (2/2) — • Refer to page 17 for Common Note on Schematic Diagrams.

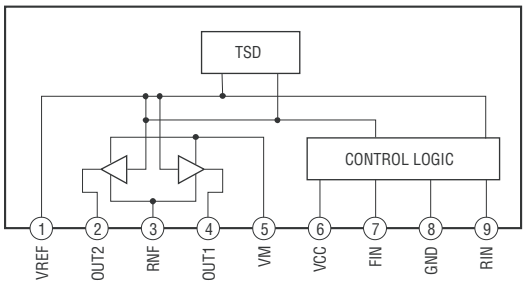


3-35. IC BLOCK DIAGRAMS

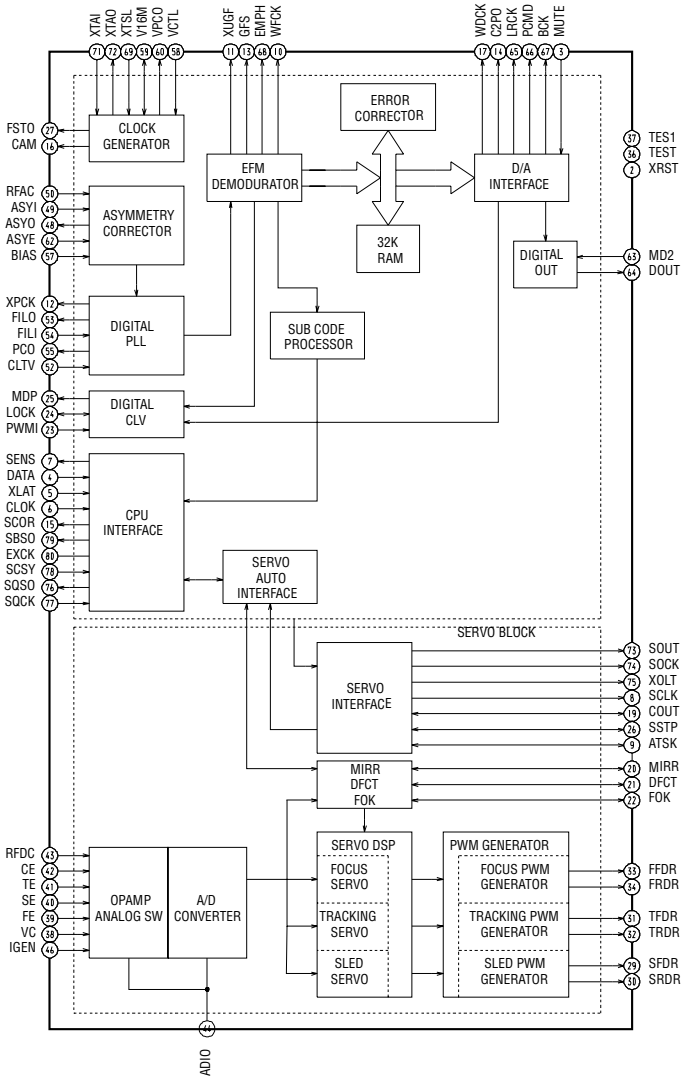
IC001 SP3723BDAOPM (RF Board)



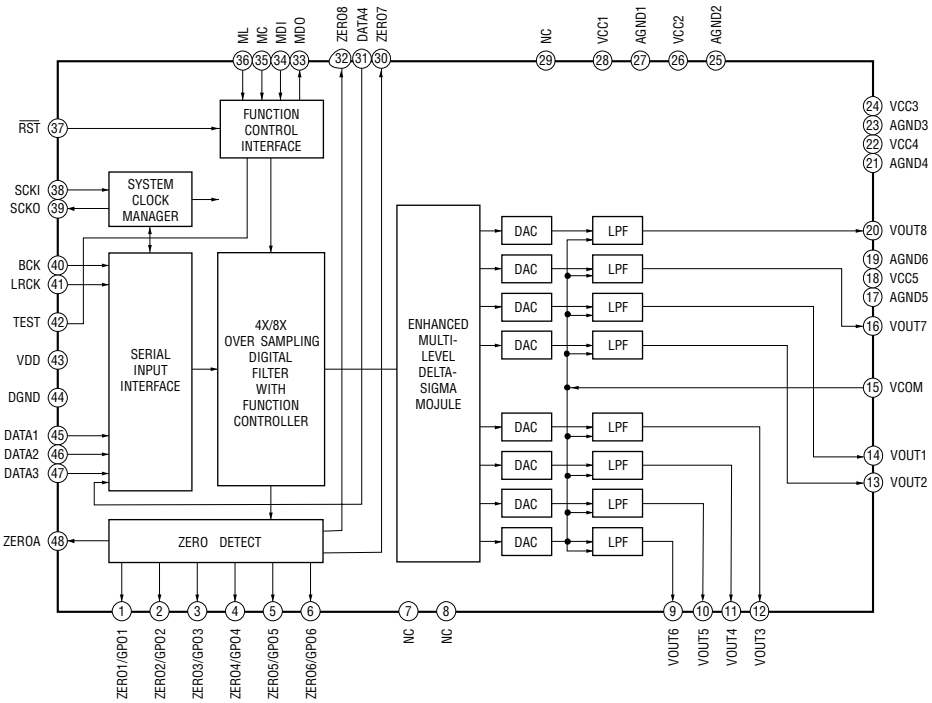
IC701 BA6956AN (DRIVER Board)
IC712 BA6956AN (DRIVER Board)



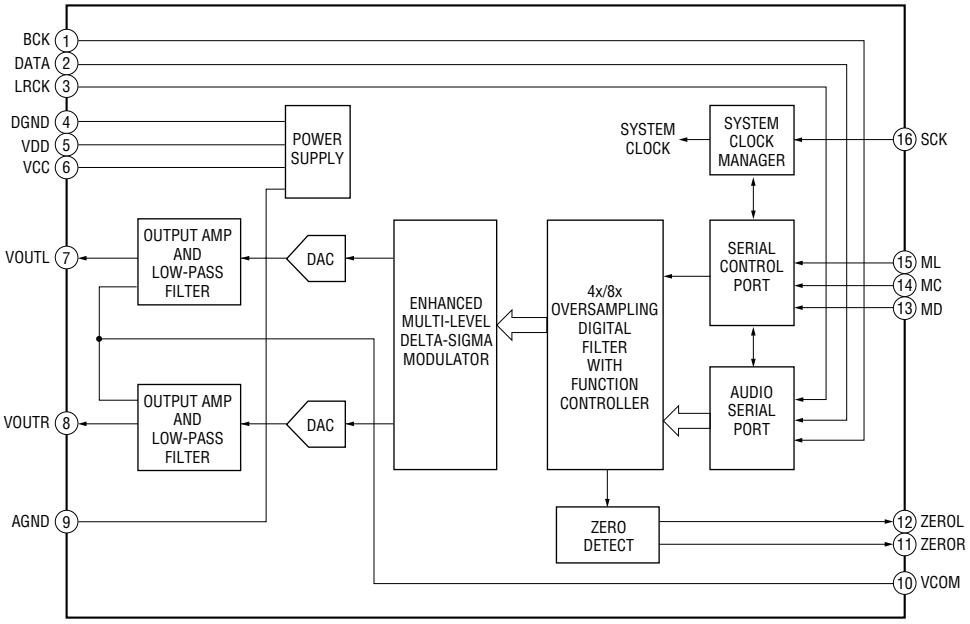
IC509 CXD3068Q (DMB03 Board)



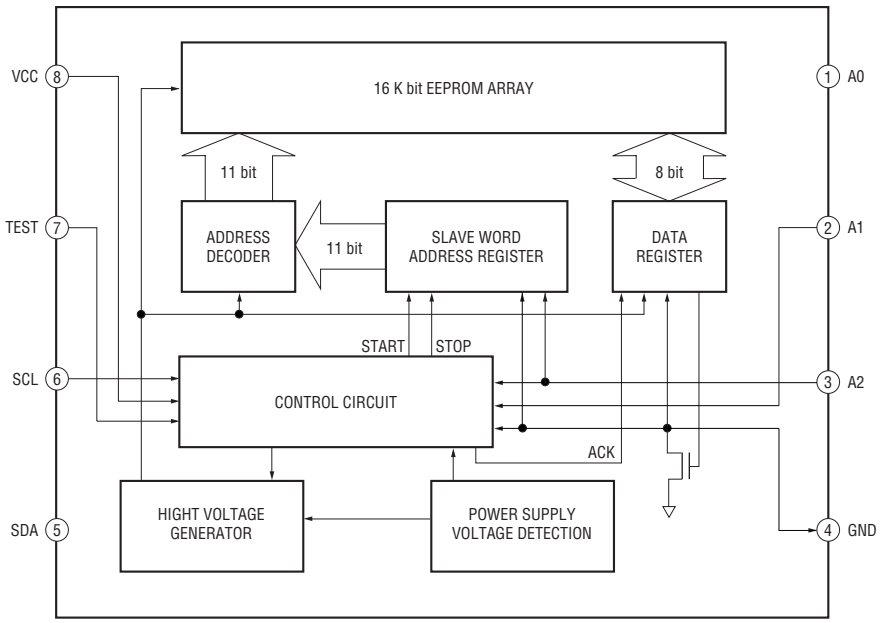
IC302 PCM1608Y/2K (DMB03 Board)



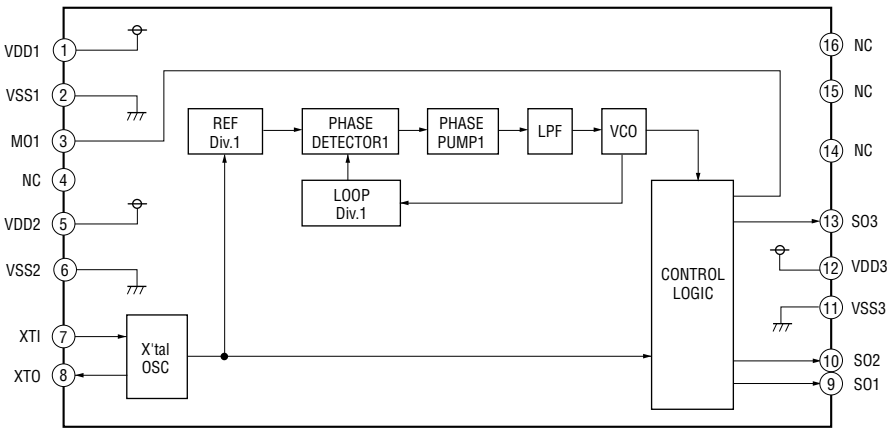
IC331 PCM1751DBQR (DMB03 Board)



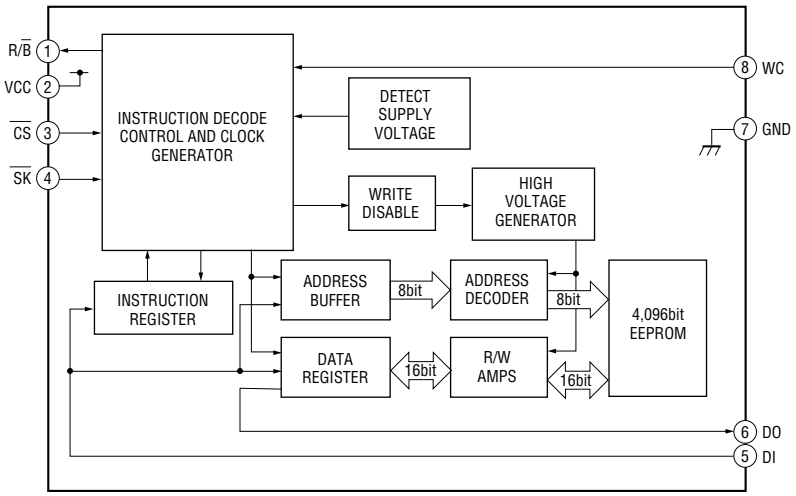
IC903 BR24C16F-E2 (DMB03 Board)



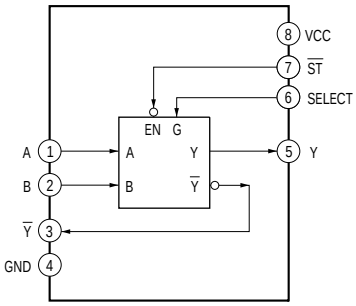
IC906 SM8707GV-G-E2 (DMB03 Board)



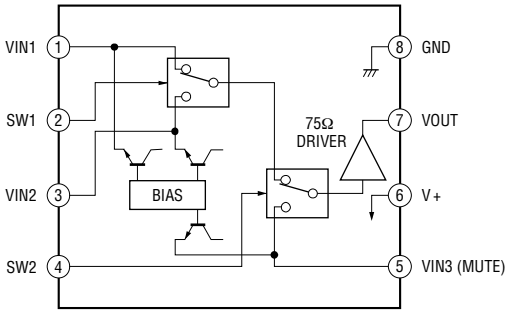
IC204 BR9040F-WE2 (DMB03 Board)



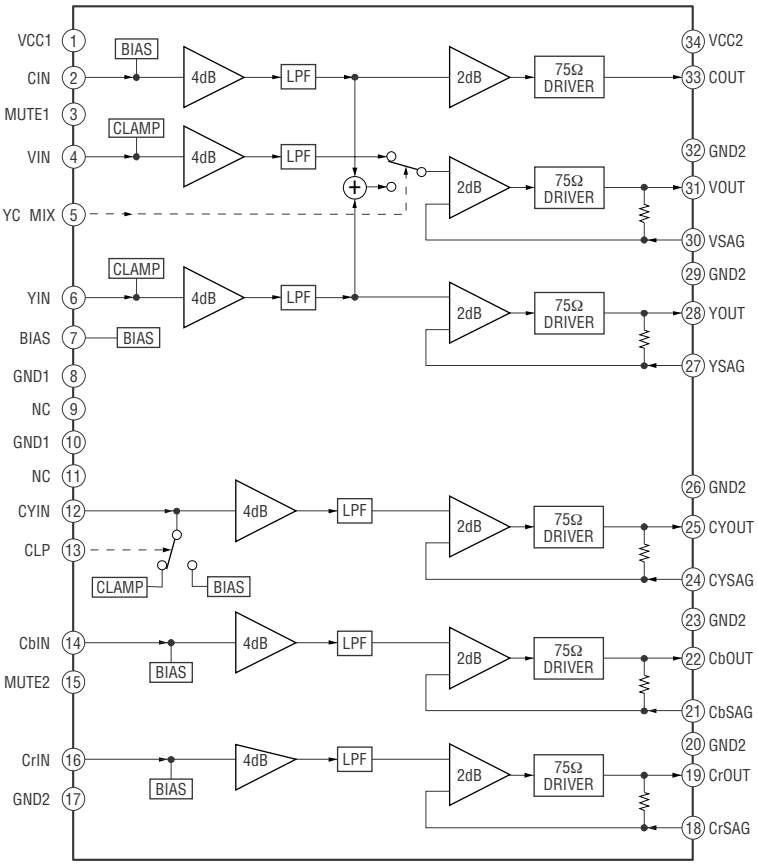
IC252 TC7WH157FK (TE85R) (DMB03 Board)



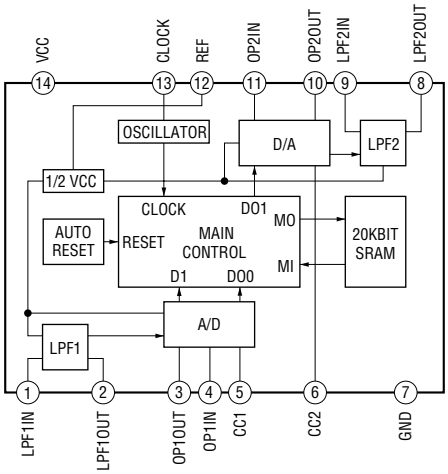
IC802 NJM2244M-TE2 (VIDEO Board)



IC801 MM1568AJBE (VIDEO Board)



IC502 M65850P (JACK Board)



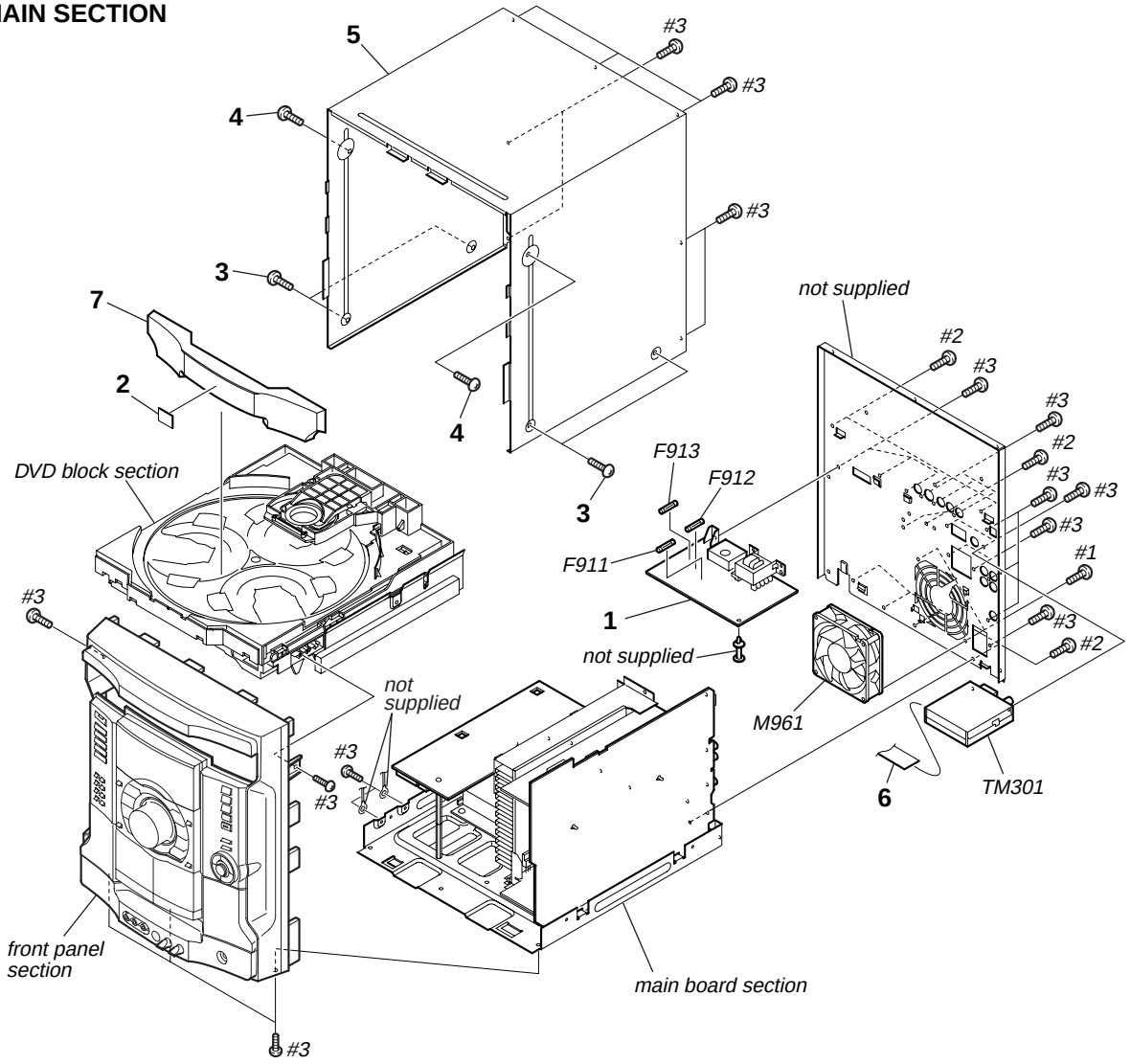
SECTION 4
EXPLODED VIEWS

NOTE:
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Accessories are given in the last of this parts list.

- Abbreviation
  E3 : 240 V AC area in E model
  E15 : 220 – 240 V AC area in E model
  E51 : 220 V AC area in E model
  AUS : Australian model
  EA : Saudi Arabia model
  PH : Philippine model
  SP : Singapore model
  TH : Thai model
  MY : Malaysia model
  MX : Mexican model

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

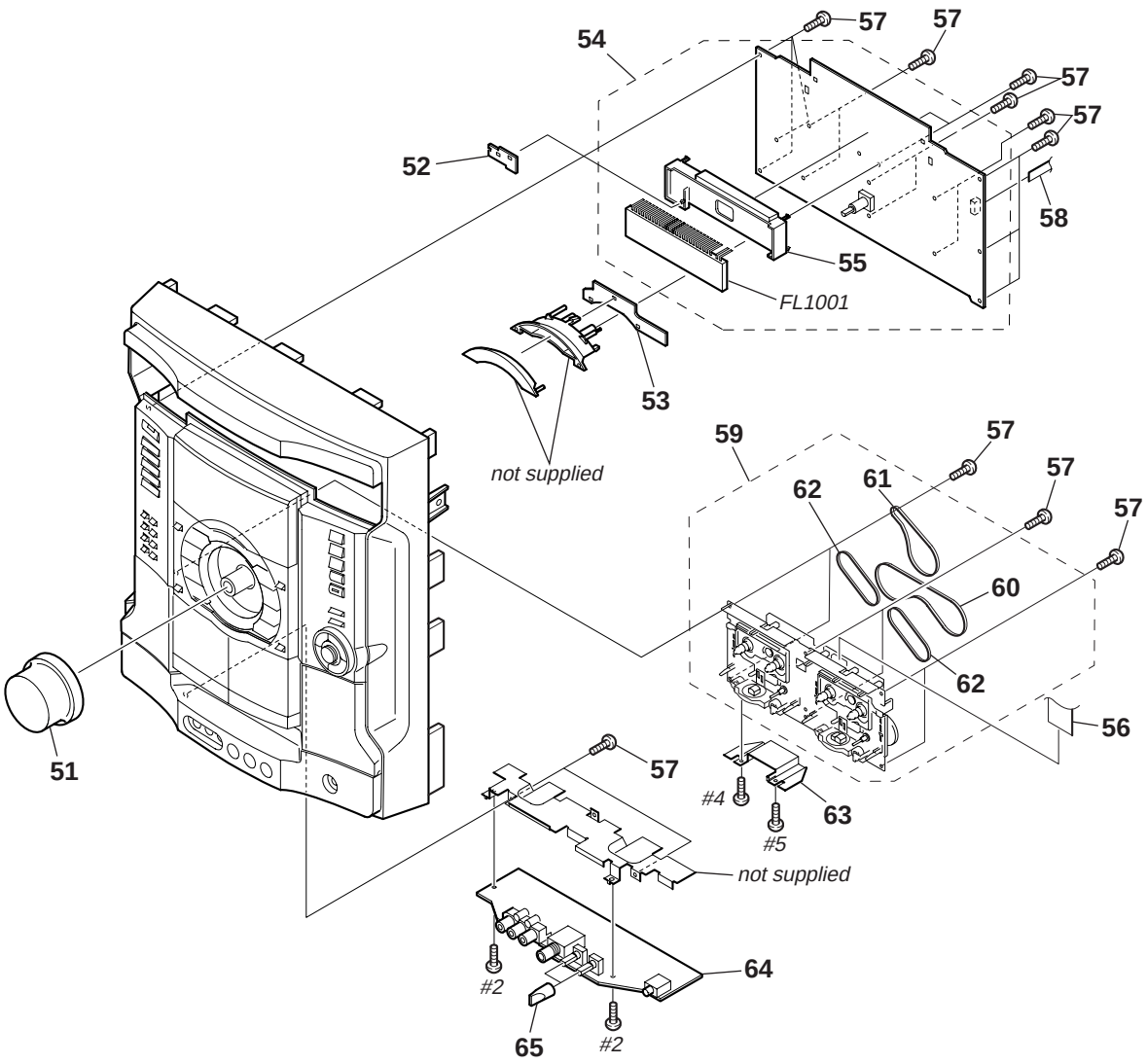
4-1. MAIN SECTION



Ref. No.	Part No.	Description	Remark
1	A-4733-306-A	SUB TRANS BOARD, COMPLETE (RV990D:EXCEPT E51,AUS,MX,TH)	
1	A-4733-309-A	SUB TRANS BOARD, COMPLETE (RV990D:AUS)	
1	A-4733-312-A	SUB TRANS BOARD, COMPLETE (RV990D:E51)	
1	A-4733-315-A	SUB TRANS BOARD, COMPLETE (MX)	
1	A-4748-000-A	SUB TRANS BOARD, COMPLETE (RV990D:TH)	
1	A-4748-006-A	SUB TRANS BOARD, COMPLETE (RV660D:TH)	
1	A-4749-049-A	SUB TRANS BOARD, COMPLETE (RV660D:EXCEPT E51,AUS,TH)	
1	A-4749-063-A	SUB TRANS BOARD, COMPLETE (RV660D:AUS)	
1	A-4749-073-A	SUB TRANS BOARD, COMPLETE (RV660D:E51)	
2	3-067-237-11	EMBLEM (V), DVD	
3	3-363-099-01	SCREW (CASE 3 TP2)	
4	3-363-099-41	SCREW (CASE 3 TP2)	
5	4-240-183-11	CASE (TH)	
5	4-240-183-31	CASE (EXCEPT TH)	

Ref. No.	Part No.	Description	Remark
6	1-769-956-11	WIRE (FLAT TYPE) (11 CORE)	
7	4-246-095-11	CD DOOR (DVD) (RV990D)	
7	4-246-095-21	CD DOOR (DVD) (RV660D)	
⚠F911	1-533-472-11	FUSE, GLASS TUBE (DIA.5) (T5AL/250V)	(EXCEPT AUS,MX,TH)
⚠F912	1-533-472-11	FUSE, GLASS TUBE (DIA.5) (T5AL/250V)	(EXCEPT AUS,MX,TH)
⚠F913	1-533-473-11	FUSE, GLASS TUBE (DIA.5) (T6.3AL/250V)	(RV660D:EXCEPT TH)
⚠F913	1-576-655-11	FUSE, GLASS TUBE (DIA.5) (T8AL/250V)	(RV990D:EXCEPT TH)
M961	1-763-072-11	FAN, DC	
TM301	1-693-615-21	TUNER PACK (FM/AM) (ANTENNA)	
#1	7-685-650-79	SCREW +BVTP 3X16 TYPE2 IT-3	
#2	7-685-871-01	SCREW +BVTT 3X6 (S)	
#3	7-685-646-79	SCREW +BVTP 3X8 TYPE2 TT (B)	

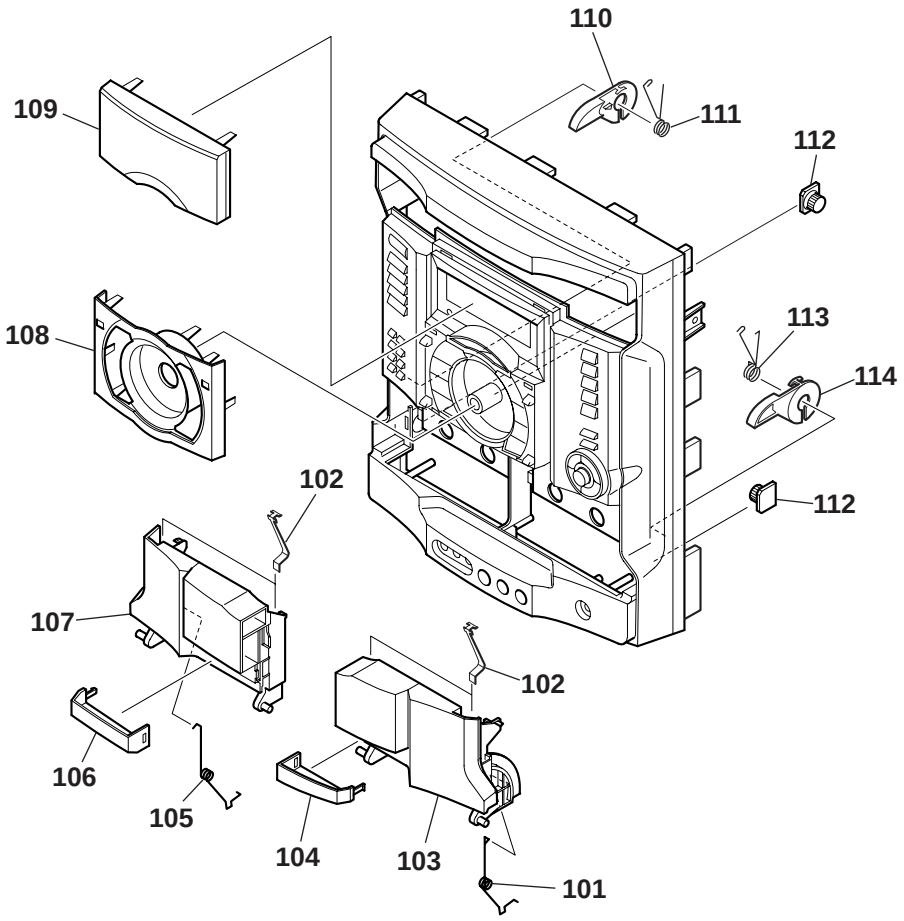
4-2. FRONT PANEL SECTION (1)



Ref. No.	Part No.	Description	Remark
51	4-244-686-01	VOLUME KNOB	
52	1-688-364-12	REMOTE BOARD	
53	1-688-363-12	LED BOARD	
54	A-4733-288-A	PANEL BOARD, COMPLETE (EXCEPT TH)	
54	A-4747-991-A	PANEL BOARD, COMPLETE (TH)	
55	4-248-466-01	HOLDER (FL)	
56	1-696-656-11	WIRE (FLAT TYPE) (13 CORE)	
57	4-951-620-01	SCREW (2.6X8), +BVTP	
58	1-769-912-11	WIRE (FLAT TYPE) (9 CORE)	
59	1-796-487-31	DECK, MECHANICAL	
60	4-243-608-01	BELT (BR)	
61	4-243-609-01	BELT (AF)	

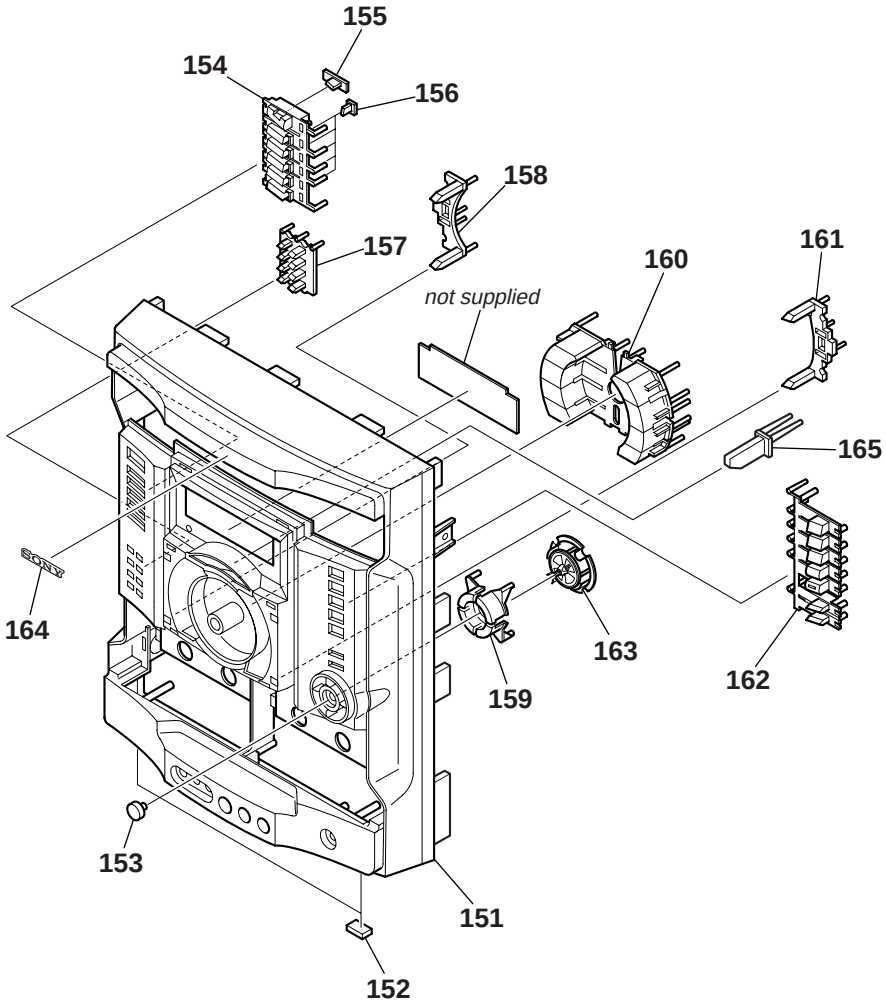
Ref. No.	Part No.	Description	Remark
62	4-243-610-01	BELT (AL)	
63	4-245-758-01	PLATE (HEAD), SHIELD	
64	A-4733-292-A	JACK BOARD, COMPLETE (EXCEPT E51,MX,TH)	
64	A-4733-293-A	JACK BOARD, COMPLETE (E51,MX)	
64	A-4747-994-A	JACK BOARD, COMPLETE (TH)	
65	4-238-628-11	MIC KNOB (TH)	
65	4-238-628-12	MIC KNOB (EXCEPT TH)	
FL1001	1-518-871-21	INDICATOR TUBE, FLUORESCENT	
#2	7-685-871-01	SCREW +BVTT 3X6 (S)	
#4	7-685-853-04	SCREW +BVTT 2X6 (S)	
#5	7-685-862-09	SCREW +BVTT 2.6X6 (S)	

4-3. FRONT PANEL SECTION (2)



Ref. No.	Part No.	Description	Remark
101	4-244-701-01	CASS DOOR SPRING (B)	
102	4-238-631-01	TAPE SPRING	
103	4-244-666-11	CASS DOOR (R)	
104	4-244-668-01	CASS WINDOW (R)	
105	4-244-700-01	CASS DOOR SPRING (A)	
106	4-244-667-01	CASS WINDOW (L)	
107	4-244-663-11	CASS DOOR (L)	
108	4-244-661-21	SUB PANEL	
109	4-244-669-01	DISPLAY WINDOW	
110	4-231-824-01	CAM (A), HEART	
111	4-231-836-01	SPRING (HEART CAM-A)	
112	4-224-104-41	DAMPER	
113	4-231-841-01	SPRING (HEART CAM-B)	
114	4-231-825-01	CAM (B), HEART	

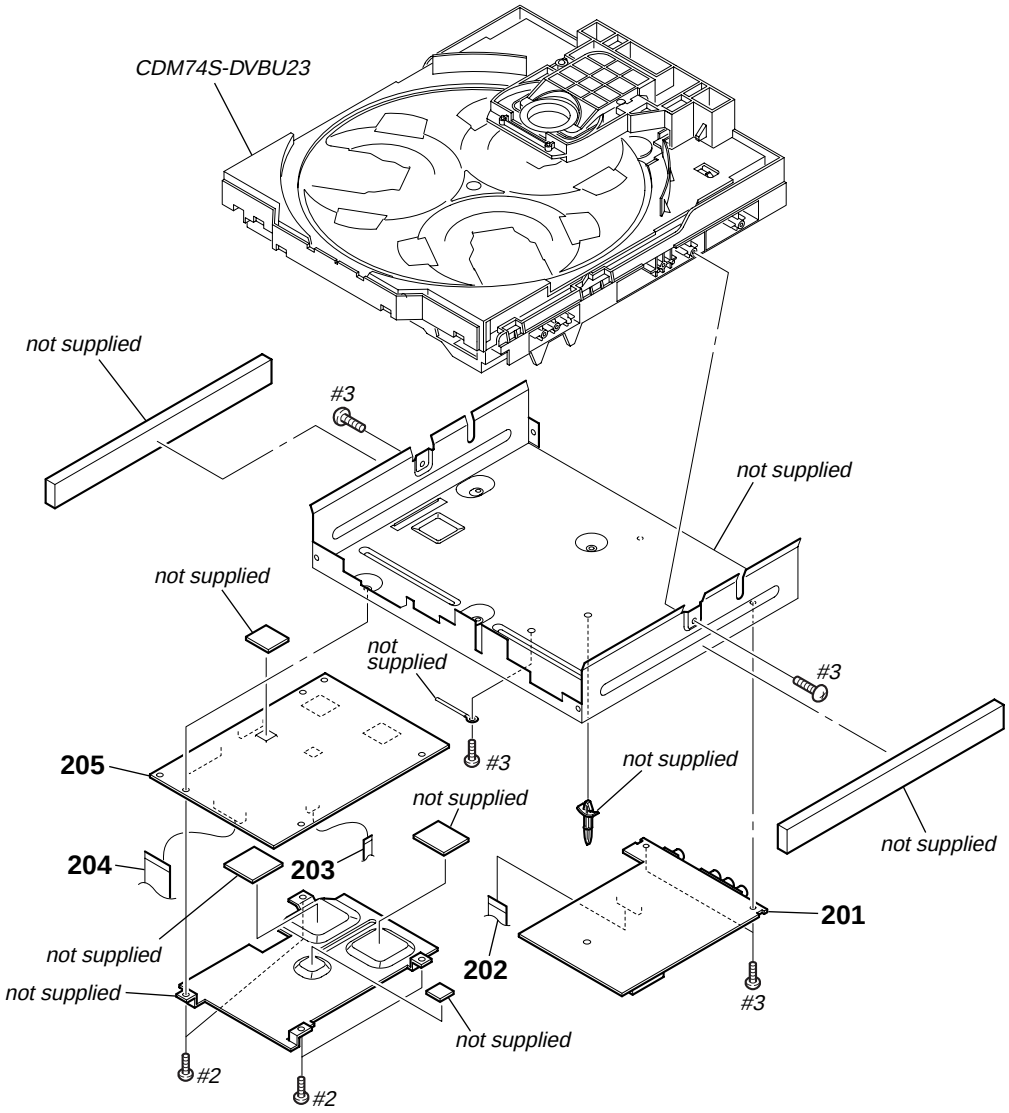
4-4. FRONT PANEL SECTION (3)



Ref. No.	Part No.	Description	Remark
151	4-245-942-11	PANEL, FRONT (RV990D:EXCEPT E51,MX)	
151	4-245-942-21	PANEL, FRONT (RV990D:E51,MX)	
151	4-245-942-31	PANEL, FRONT (RV660D:EXCEPT E51)	
151	4-245-942-41	PANEL, FRONT (RV660D:E51)	
152	4-225-252-01	CUSHION (FOOT)	
153	4-244-900-01	CURSOL BUTTON	
154	4-244-676-21	FUNCTION BUTTON	
155	4-244-677-01	POWER LENS	
156	4-244-678-01	FUNCTION LENS	

Ref. No.	Part No.	Description	Remark
157	4-244-908-01	RECORD BUTTON (B)	
158	4-246-092-01	DISPLAY BUTTON (B)	
159	4-244-684-11	EQ BUTTON	
160	4-244-906-11	CONTROL BUTTON (B)	
161	4-246-093-01	PAUSE BUTTON (B)	
162	4-244-679-11	DISC BUTTON	
163	4-244-901-01	CURSOL HOLDER	
164	3-038-018-01	EMBLEM, SONY	
165	4-246-096-01	LENS (DVD)	

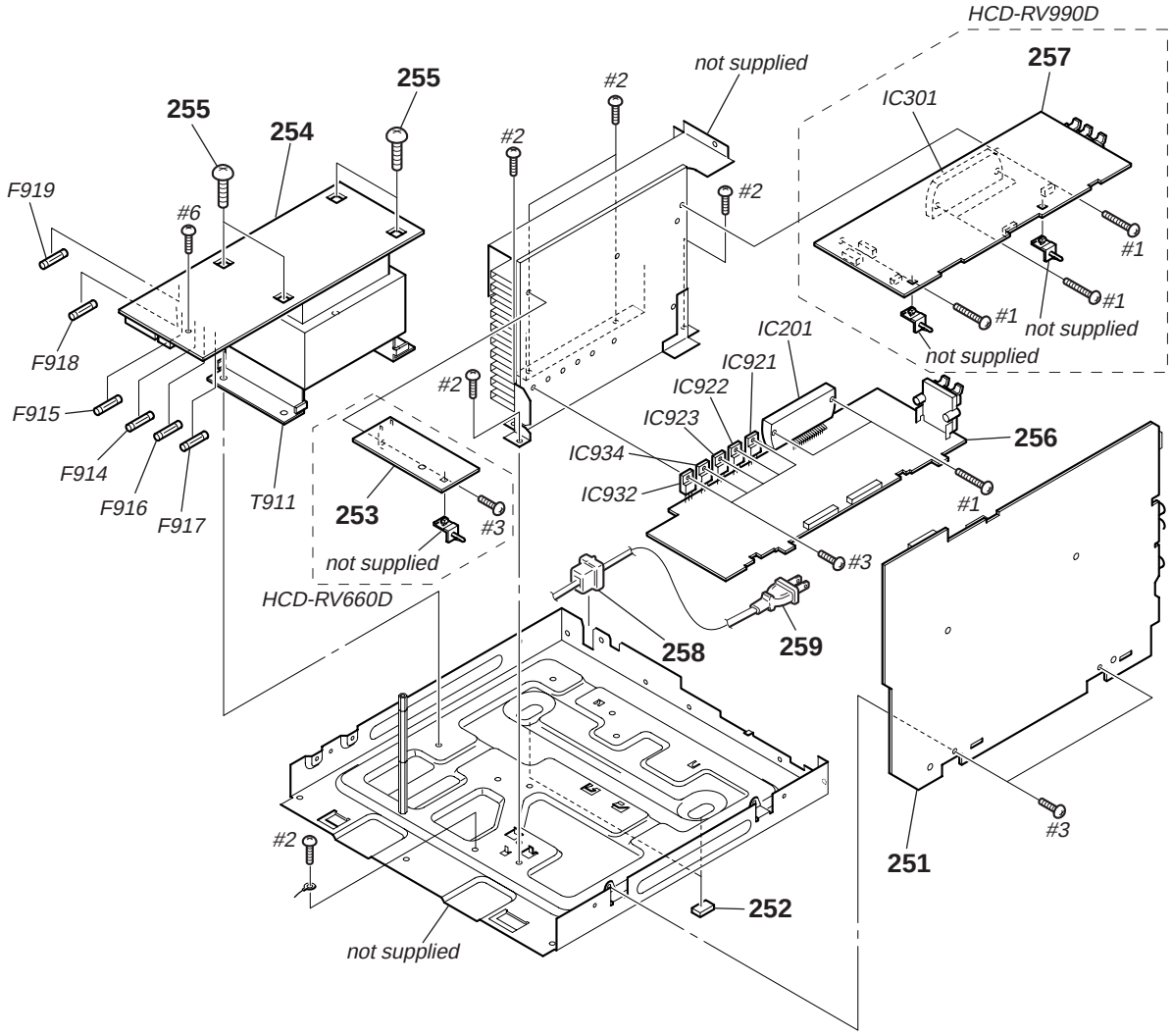
4-5. DVD BLOCK SECTION



Ref. No.	Part No.	Description	Remark
201	A-4733-300-A	VIDEO BOARD, COMPLETE (EXCEPT TH)	
201	A-4747-997-A	VIDEO BOARD, COMPLETE (TH)	
202	1-757-079-11	WIRE (FLAT TYPE) (17 CORE)	
203	1-827-412-11	WIRE (FLAT TYPE) (7 CORE)	
204	1-827-411-11	WIRE (FLAT TYPE) (25 CORE) (RV990D)	
204	1-827-413-11	WIRE (FLAT TYPE) (13 CORE) (RV660D)	

Ref. No.	Part No.	Description	Remark
205	A-4733-092-A	DMB03 BOARD, COMPLETE	(RV990D:EXCEPT TH)
205	A-4733-130-A	DMB03 BOARD, COMPLETE	(RV660D:EXCEPT TH)
205	A-4748-007-A	DMB03 BOARD, COMPLETE (RV990D:TH)	
205	A-4748-069-A	DMB03 BOARD, COMPLETE (RV660D:TH)	
#2	7-685-871-01	SCREW +BVTT 3X6 (S)	
#3	7-685-646-79	SCREW +BVTP 3X8 TYPE2 TT (B)	

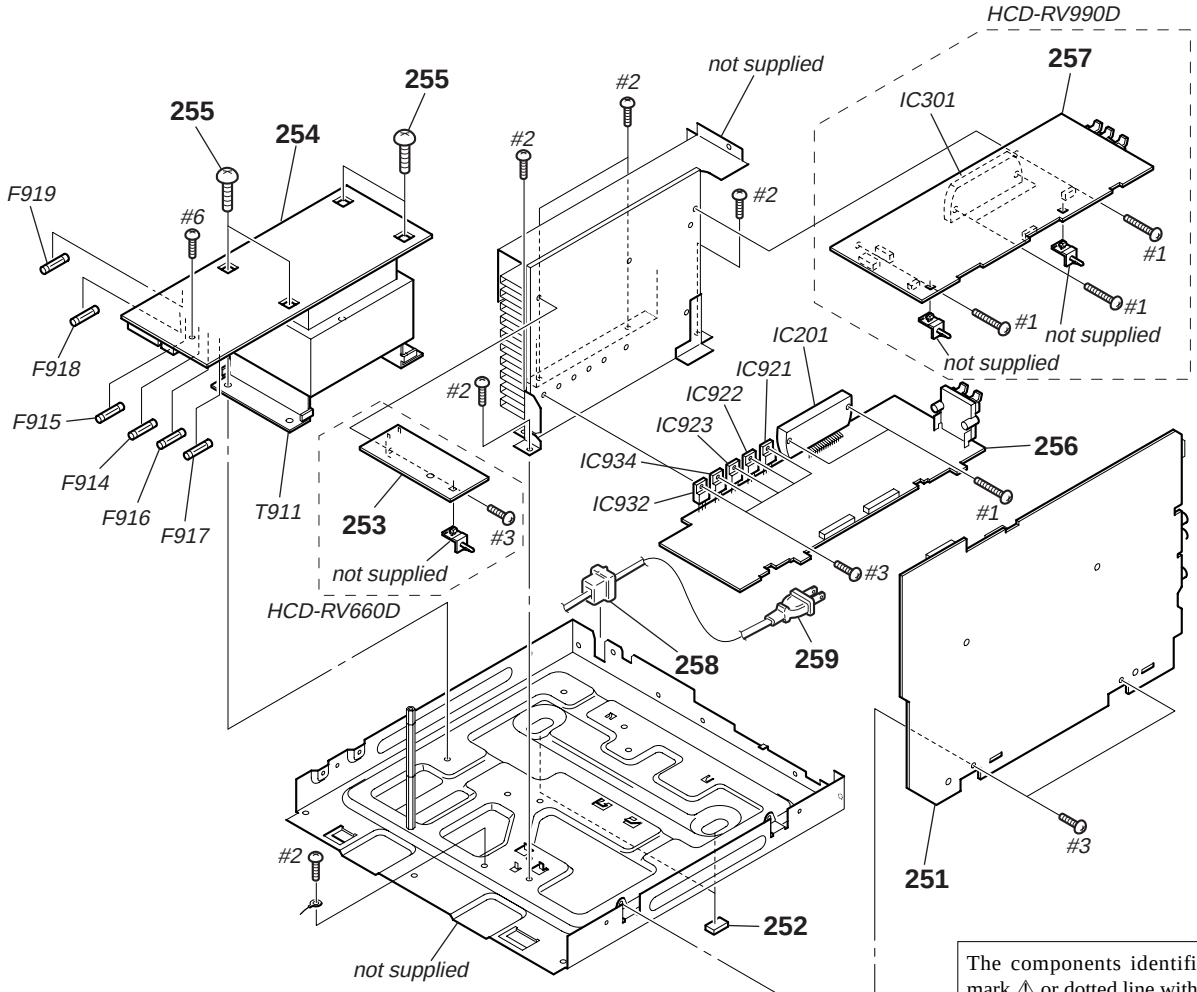
4-6. MAIN BOARD SECTION (1/2)



Ref. No.	Part No.	Description	Remark
251	A-4733-086-A	MAIN BOARD, COMPLETE (RV990D:PH,SP,MY)	
251	A-4733-093-A	MAIN BOARD, COMPLETE (RV990D:E3,E15)	
251	A-4733-094-A	MAIN BOARD, COMPLETE (RV990D:EA)	
251	A-4733-095-A	MAIN BOARD, COMPLETE (RV990D:AUS)	
251	A-4733-097-A	MAIN BOARD, COMPLETE (RV990D:E51,MX)	
251	A-4733-101-A	MAIN BOARD, COMPLETE (RV660D:PH,SP,MY)	
251	A-4733-131-A	MAIN BOARD, COMPLETE (RV660D:E3,E15)	
251	A-4733-132-A	MAIN BOARD, COMPLETE (RV660D:EA)	
251	A-4733-136-A	MAIN BOARD, COMPLETE (RV660D:E51)	
251	A-4747-967-A	MAIN BOARD, COMPLETE (RV990D:TH)	
251	A-4747-972-A	MAIN BOARD, COMPLETE (RV660D:TH)	
251	A-4749-059-A	MAIN BOARD, COMPLETE (RV660D:AUS)	
252	4-225-252-01	CUSHION (FOOT)	
253	1-688-365-12	LEAD PIN BOARD (RV660D)	

Ref. No.	Part No.	Description	Remark
254	A-4733-305-A	TRANS BOARD, COMPLETE (RV990D:EXCEPT E51,AUS,MX,TH)	
254	A-4733-308-A	TRANS BOARD, COMPLETE (RV990D:AUS)	
254	A-4733-311-A	TRANS BOARD, COMPLETE (RV990D:E51)	
254	A-4733-314-A	TRANS BOARD, COMPLETE (MX)	
254	A-4747-999-A	TRANS BOARD, COMPLETE (RV990D:TH)	
254	A-4748-005-A	TRANS BOARD, COMPLETE (RV660D:TH)	
254	A-4749-048-A	TRANS BOARD, COMPLETE (RV660D:EXCEPT E51,AUS,TH)	
254	A-4749-062-A	TRANS BOARD, COMPLETE (RV660D:AUS)	
254	A-4749-072-A	TRANS BOARD, COMPLETE (RV660D:E51)	
255	4-900-386-01	SCREW	

4-7. MAIN BOARD SECTION (2/2)

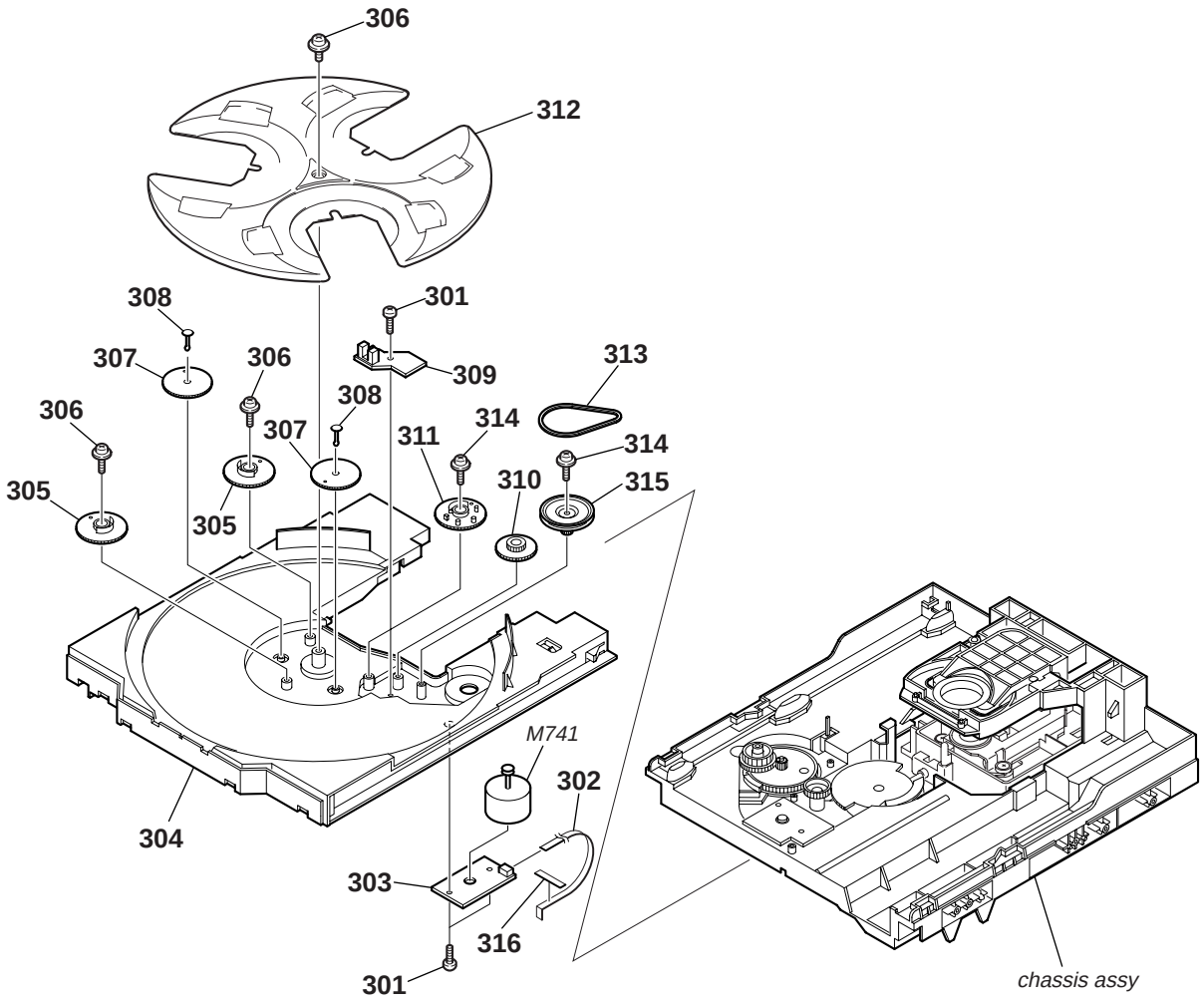


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
256	A-4733-296-A	FRONT AMP BOARD, COMPLETE (RV990D:EXCEPT TH)	
256	A-4733-297-A	FRONT AMP BOARD, COMPLETE (RV660D:EXCEPT TH)	
256	A-4747-995-A	FRONT AMP BOARD, COMPLETE (RV990D:TH)	
256	A-4748-003-A	FRONT AMP BOARD, COMPLETE (RV660D:TH)	
257	A-4733-299-A	SURROUND AMP BOARD, COMPLETE (RV990D:EXCEPT TH)	
257	A-4747-996-A	SURROUND AMP BOARD, COMPLETE (RV990D:TH)	
258	3-703-244-00	BUSHING (2104), CORD (EXCEPT E3,E15,MX)	
* 258	3-703-571-12	BUSHING (S) (4516), CORD (E3,E15,MX)	
⚠259	1-690-608-11	CORD, POWER (AUS)	
⚠259	1-777-071-83	CORD, POWER (E51,EA,PH,SP,MY)	
⚠259	1-824-818-11	CORD, POWER (WITH CONNECTOR) (RV990D:TH)	
⚠259	1-824-828-11	CORD (WITH PLUG) (RV660D:TH)	
⚠259	1-827-226-11	CORD, POWER (E3,E15,MX)	
⚠F914	1-533-473-11	FUSE, GLASS TUBE (DIA.5) (T6.3AL/250V)	
⚠F915	1-533-473-11	FUSE, GLASS TUBE (DIA.5) (T6.3AL/250V)	
⚠F916	1-533-473-11	FUSE, GLASS TUBE (DIA.5) (T6.3AL/250V) (RV990D)	
⚠F917	1-533-473-11	FUSE, GLASS TUBE (DIA.5) (T6.3AL/250V) (RV990D)	

Ref. No.	Part No.	Description	Remark
⚠F918	1-533-471-11	FUSE, GLASS TUBE (DIA.5) (T4AL/250V) (RV660D:EXCEPT E15,PH)	
⚠F918	1-533-472-11	FUSE, GLASS TUBE (DIA.5) (T5AL/250V) (RV660D:E15,PH/RV990D)	
⚠F919	1-533-471-11	FUSE, GLASS TUBE (DIA.5) (T4AL/250V)	
IC201	6-704-107-01	IC STK403-100	
IC301	6-600-173-01	IC STK403-240 (RV990D)	
IC921	8-759-518-68	IC PQ12RF21	
IC922	8-759-701-59	IC NJM78M09FA	
IC923	8-759-701-59	IC NJM78M09FA	
IC932	6-703-546-01	IC TA7804LS	
IC934	8-759-231-53	IC TA7805S	
⚠T911	1-437-790-12	TRANSFORMER, POWER (RV660D:EA)	
⚠T911	1-437-797-12	TRANSFORMER, POWER (RV660D:EXCEPT EA,TH)	
⚠T911	1-443-089-11	TRANSFORMER, POWER (RV660D:TH/RV990D:EXCEPT EA,MX)	
⚠T911	1-443-090-11	TRANSFORMER, POWER (RV990D:EA,MX)	
#1	7-685-650-79	SCREW +BVTP 3X16 TYPE2 IT-3	
#2	7-685-871-01	SCREW +BVTT 3X6 (S)	
#3	7-685-646-79	SCREW +BVTP 3X8 TYPE2 TT (B)	
#6	7-685-647-79	SCREW +BVTP 3X10 TYPE2 TT (B)	

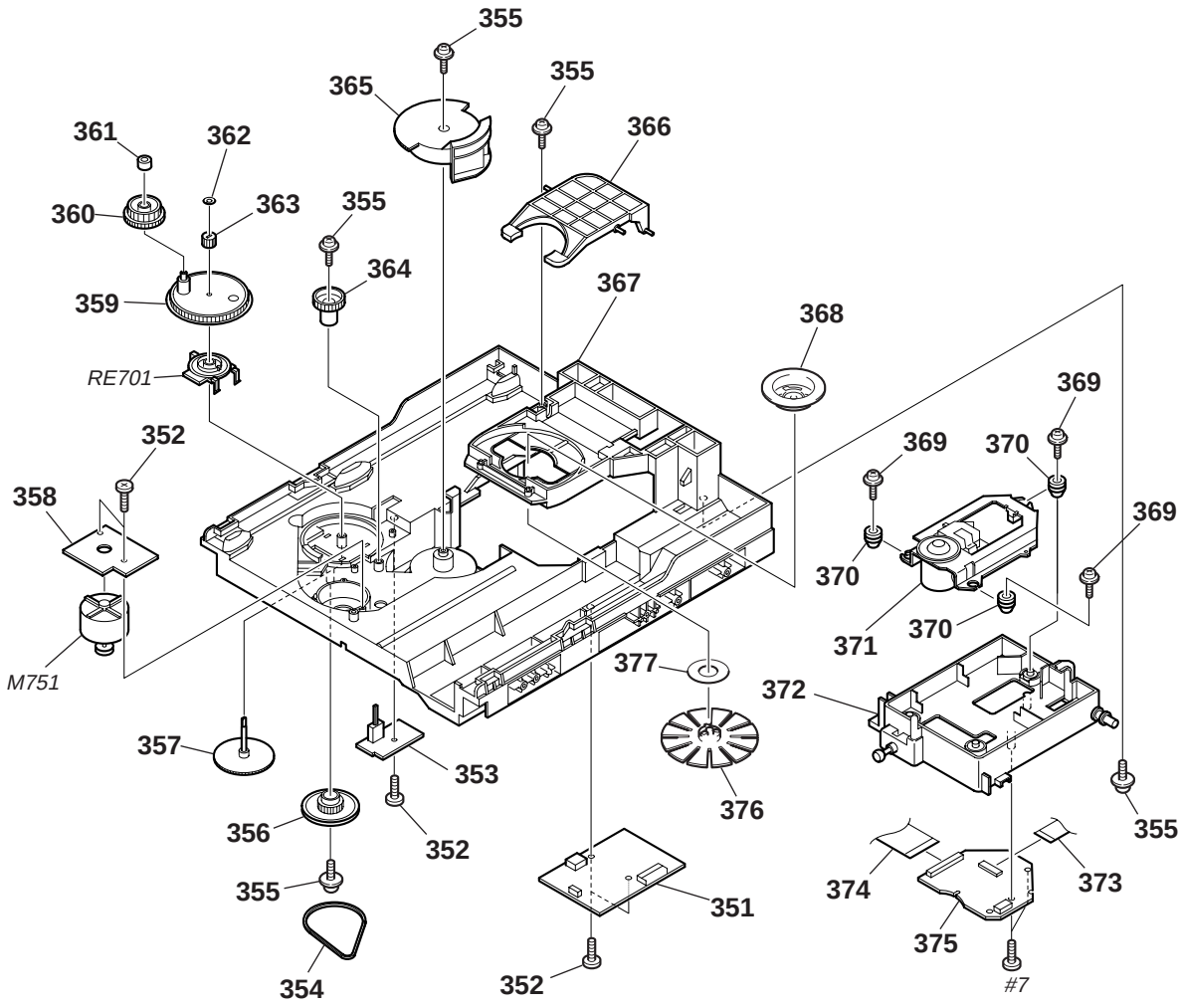
4-8. DVD MECHANISM DECK SECTION (1) (CDM74S-DVBU23)



Ref. No.	Part No.	Description	Remark
301	4-218-253-21	SCREW (M2.6), +BTTP	
302	1-776-182-11	WIRE (FLAT TYPE) (5 CORE)	
303	1-687-134-11	MOTOR (TB) BOARD	
304	4-243-815-01	TABLE (LOADING)	
305	4-245-571-02	GEAR (STOPPER)	
306	4-218-252-61	SCREW (+PTPWH M2.6), FLOATING	
307	4-245-570-01	GEAR (JOINT)	
308	4-245-572-01	BUSHING (GEAR)	
309	1-687-132-11	SENSOR BOARD	

Ref. No.	Part No.	Description	Remark
310	4-243-820-01	GEAR (TABLE)	
311	4-243-819-01	GEAR (GENEVA)	
312	4-243-816-01	TRAY	
313	4-243-823-01	BELT (TABLE)	
314	4-985-672-01	SCREW (+PTPWH M2.6), FLOATING	
315	4-243-821-01	PULLEY (TABLE)	
316	3-231-598-01	SHEET (BA)	
M741	A-4723-963-A	MOTOR ASSY, TABLE (TABLE)	

4-9. DVD MECHANISM DECK SECTION (2) (CDM74S-DVBU23)



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

Ref. No.	Part No.	Description	Remark
351	1-687-135-11	DRIVER BOARD	
352	4-218-253-31	SCREW (M2.6), +BTTP	
353	1-687-669-11	SW BOARD	
354	4-244-034-01	BELT (LOADING)	
355	4-218-252-61	SCREW (+PTPWH M2.6), FLOATING	
356	4-225-844-01	GEAR (LOADING A)	
357	4-224-613-01	GEAR (SHAFT)	
358	1-687-133-11	MOTOR (LD) BOARD	
359	4-244-108-01	GEAR, SWING	
360	4-224-609-01	GEAR (LOADING C)	
361	4-224-608-01	COLLAR, SWING	
362	3-016-533-11	WASHER (FR), STOPPER	
363	4-224-611-01	GEAR (LOADING B)	
364	4-224-606-01	GEAR (RV)	
365	4-243-818-01	GEAR (U/D)	
366	4-243-822-01	LEVER (LIFTER)	

Ref. No.	Part No.	Description	Remark
367	4-243-817-11	CHASSIS	
368	4-233-594-01	PULLEY (B) (DVD), CHUCKING	
369	4-981-923-01	SCREW (M), STEP	
370	3-053-847-31	INSULATOR	
⚠371	1-477-263-11	OPTICAL PICK-UP UNIT	
372	X-4955-538-1	HOLDER (DBU) ASSY	
373	1-824-106-12	CABLE, FLEXIBLE FLAT (24 CORE)	
374	1-827-410-11	WIRE (FLAT TYPE) (29 CORE)	
375	A-4728-690-A	RF BOARD, COMPLETE	
376	X-4954-450-1	PULLEY (240) ASSY	
377	3-053-844-01	YOKE	
M751	A-4736-655-A	MOTOR ASSY, LOADING (LOADING)	
RE701	1-477-680-11	ENCODER, ROTARY (DISC TRAY ADDRESS DETECT)	
#7	7-685-533-19	SCREW +BTP 2.6X6 TYPE2 N-S	

DMB03

SECTION 5
ELECTRICAL PARTS LIST

NOTE:
- 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 and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : µ, for example:
  uA.. : µA.. uPA.. : µPA..
  uPB.. : µPB.. uPC.. : µPC.. uPD.. : µPD..
- CAPACITORS
  uF : µF
- COILS
  uH : µH

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

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

- Abbreviation
  E3 : 240 V AC area in E model
  E15 : 220 – 240 V AC area in E model
  E51 : 220 V AC area in E model
  AUS : Australian model
  EA : Saudi Arabia model
  PH : Philippine model
  SP : Singapore model
  TH : Thai model
  MY : Malaysia model
  MX : Mexican model

Ref. No.	Part No.	Description			Remark
	A-4733-092-A	DMB03 BOARD, COMPLETE (RV990D:EXCEPT TH)			
	A-4733-130-A	DMB03 BOARD, COMPLETE (RV660D:EXCEPT TH)			
	A-4748-007-A	DMB03 BOARD, COMPLETE (RV990D:TH)			
	A-4748-069-A	DMB03 BOARD, COMPLETE (RV660D:TH)			
		**********			
		< CAPACITOR >			
C101	1-126-246-11	ELECT CHIP	220uF	20%	4V
C151	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C204	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C205	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C213	1-126-209-11	ELECT CHIP	100uF	20%	4V
C214	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C215	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C216	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C218	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C220	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C226	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C227	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C229	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C230	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C231	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C232	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C233	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C234	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C235	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C236	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C237	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C238	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C239	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C240	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C241	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C242	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C243	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C244	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C245	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C246	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C247	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C248	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C249	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C250	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C251	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C252	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C253	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C254	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C255	1-117-370-11	CERAMIC CHIP	10uF		10V
C256	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C257	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C258	1-117-370-11	CERAMIC CHIP	10uF		10V
C259	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C260	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C261	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C262	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C263	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C264	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C265	1-117-370-11	CERAMIC CHIP	10uF		10V
C266	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C267	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C268	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C269	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C270	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C271	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C272	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C275	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C281	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C282	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C289	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C302	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V (RV990D)
C303	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V (RV990D)
C304	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V (RV990D)
C305	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V (RV990D)
C306	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V (RV990D)
C307	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V (RV990D)
C308	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C309	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C315	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C316	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C321	1-126-206-11	ELECT CHIP	100uF	20%	6.3V (RV990D)
C322	1-107-820-11	CERAMIC CHIP	0.1uF		16V (RV990D)
C323	1-107-820-11	CERAMIC CHIP	0.1uF		16V (RV990D)

Ref. No.	Part No.	Description			Remark
C324	1-107-820-11	CERAMIC CHIP	0.1uF		16V (RV990D)
C325	1-126-209-11	ELECT CHIP	100uF	20%	4V (RV990D)
C326	1-164-947-11	CERAMIC CHIP	0.01uF		50V (RV990D)
C342	1-107-820-11	CERAMIC CHIP	0.1uF		16V (RV660D)
C343	1-124-779-00	ELECT CHIP	10uF	20%	16V (RV660D)
C344	1-107-820-11	CERAMIC CHIP	0.1uF		16V (RV660D)
C345	1-124-779-00	ELECT CHIP	10uF	20%	16V (RV660D)
C346	1-124-779-00	ELECT CHIP	10uF	20%	16V (RV660D)
C392	1-126-395-11	ELECT CHIP	22uF	20%	16V
C393	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C394	1-126-246-11	ELECT CHIP	220uF	20%	4V
C412	1-216-864-11	METAL CHIP	0	5%	1/10W
C413	1-216-864-11	METAL CHIP	0	5%	1/10W
C414	1-216-864-11	METAL CHIP	0	5%	1/10W
C415	1-216-864-11	METAL CHIP	0	5%	1/10W
C416	1-216-864-11	METAL CHIP	0	5%	1/10W
C501	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C502	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C503	1-127-772-81	CERAMIC CHIP	0.033uF	10%	10V
C504	1-127-772-81	CERAMIC CHIP	0.033uF	10%	10V
C506	1-164-934-11	CERAMIC CHIP	330PF	10%	50V
C508	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C509	1-164-934-11	CERAMIC CHIP	330PF	10%	50V
C510	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C512	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C514	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C516	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	50V
C517	1-117-370-11	CERAMIC CHIP	10uF		10V
C518	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C519	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C522	1-125-777-11	CERAMIC CHIP	0.1uF	10%	6.3V
C525	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C526	1-126-395-11	ELECT CHIP	22uF	20%	16V
C527	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C528	1-126-395-11	ELECT CHIP	22uF	20%	16V
C529	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C531	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C533	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	50V
C534	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C535	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	50V
C543	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C544	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C545	1-117-370-11	CERAMIC CHIP	10uF		10V
C547	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
C548	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C551	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C552	1-216-295-11	SHORT CHIP	0		
C553	1-164-940-11	CERAMIC CHIP	0.0033uF	10%	16V
C556	1-117-370-11	CERAMIC CHIP	10uF		10V
C558	1-126-209-11	ELECT CHIP	100uF	20%	4V
C559	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C560	1-164-938-11	CERAMIC CHIP	0.0015uF	10%	50V
C561	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C563	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C565	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C567	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C568	1-117-370-11	CERAMIC CHIP	10uF		10V
C569	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C570	1-117-370-11	CERAMIC CHIP	10uF		10V
C573	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C588	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	50V
C589	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	50V
C590	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	50V
C592	1-124-779-00	ELECT CHIP	10uF	20%	16V
C701	1-126-209-11	ELECT CHIP	100uF	20%	4V
C702	1-117-370-11	CERAMIC CHIP	10uF		10V
C703	1-125-777-11	CERAMIC CHIP	0.1uF	10%	6.3V
C705	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C706	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C708	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C709	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C711	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C712	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C713	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C714	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C715	1-164-938-11	CERAMIC CHIP	0.0015uF	10%	50V
C716	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C717	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C718	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C720	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C721	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C722	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C723	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C724	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C725	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C726	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C727	1-117-370-11	CERAMIC CHIP	10uF		10V
C728	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C729	1-117-370-11	CERAMIC CHIP	10uF		10V
C730	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C740	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C741	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C742	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C743	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C744	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C745	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C752	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C760	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C761	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C762	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C763	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C764	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C765	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C766	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C767	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C768	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C769	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C770	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C771	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V

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Ref. No.	Part No.	Description			Remark
C772	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C773	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C774	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C775	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C776	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C777	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C778	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C779	1-117-370-11	CERAMIC CHIP	10uF		10V
C780	1-117-370-11	CERAMIC CHIP	10uF		10V
C781	1-165-643-21	ELECT CHIP	150uF	20%	4V
C782	1-164-938-11	CERAMIC CHIP	0.0015uF	10%	50V
C783	1-164-938-11	CERAMIC CHIP	0.0015uF	10%	50V
C901	1-126-209-11	ELECT CHIP	100uF	20%	4V
C902	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C903	1-126-209-11	ELECT CHIP	100uF	20%	4V
C904	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C905	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C906	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C907	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C908	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C909	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C910	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C913	1-127-772-81	CERAMIC CHIP	0.033uF	10%	10V
C914	1-164-847-11	CERAMIC CHIP	7PF	0.5PF	50V
C915	1-164-847-11	CERAMIC CHIP	7PF	0.5PF	50V
C916	1-126-209-11	ELECT CHIP	100uF	20%	4V
C917	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C918	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C924	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C925	1-126-395-11	ELECT CHIP	22uF	20%	16V
C926	1-126-246-11	ELECT CHIP	220uF	20%	4V
C927	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C928	1-117-370-11	CERAMIC CHIP	10uF		10V
C1302	1-218-990-11	SHORT CHIP	0		
C1304	1-218-990-11	SHORT CHIP	0		
		< CONNECTOR >			
CN101	1-784-366-21	CONNECTOR, FFC/FPC 7P			
CN102	1-815-954-21	PIN, CONNECTOR (PC BOARD) 13P			
CN105	1-784-376-11	CONNECTOR, FFC/FPC 17P			
CN107	1-784-382-21	CONNECTOR, FFC/FPC 25P (RV990D)			
CN107	1-793-989-21	CONNECTOR, FFC/FPC 13P (RV660D)			
CN202	1-784-364-21	CONNECTOR, FFC/FPC 4P			
CN501	1-778-957-11	CONNECTOR, FFC/FPC 29P			
CN901	1-764-177-11	PIN, CONNECTOR (SMD) (1.5mm) 7P			
		< DIODE >			
D202	8-719-988-61	DIODE 1SS355TE-17			
D392	8-719-988-61	DIODE 1SS355TE-17			
D393	8-719-988-61	DIODE 1SS355TE-17			
D394	8-719-988-61	DIODE 1SS355TE-17			
D901	8-719-988-61	DIODE 1SS355TE-17			
D1101	8-719-988-61	DIODE 1SS355TE-17			
D1102	8-719-988-61	DIODE 1SS355TE-17			
D1201	8-719-988-61	DIODE 1SS355TE-17			
D1202	8-719-988-61	DIODE 1SS355TE-17			
D1203	8-719-988-61	DIODE 1SS355TE-17			
D1204	8-719-988-61	DIODE 1SS355TE-17			

Ref. No.	Part No.	Description	Remark
D1301	8-719-988-61	DIODE 1SS355TE-17	
D1302	8-719-988-61	DIODE 1SS355TE-17	
D1303	8-719-988-61	DIODE 1SS355TE-17	
D1304	8-719-988-61	DIODE 1SS355TE-17	
D1305	8-719-988-61	DIODE 1SS355TE-17	
D1306	8-719-988-61	DIODE 1SS355TE-17	
D1307	8-719-988-61	DIODE 1SS355TE-17	
D1308	8-719-988-61	DIODE 1SS355TE-17	
D1801	8-719-988-61	DIODE 1SS355TE-17	
D1802	8-719-988-61	DIODE 1SS355TE-17	
D1803	8-719-988-61	DIODE 1SS355TE-17	
D1804	8-719-988-61	DIODE 1SS355TE-17	
D1805	8-719-988-61	DIODE 1SS355TE-17	
D1806	8-719-988-61	DIODE 1SS355TE-17	
		< FERRITE BEAD >	
FB902	1-500-284-21	INDUCTOR, FERRITE BEAD	
FB903	1-500-284-21	INDUCTOR, FERRITE BEAD	
		< FILTER >	
FL203	1-234-177-21	FILTER, CHIP EMI	
FL204	1-234-177-21	FILTER, CHIP EMI	
FL205	1-234-177-21	FILTER, CHIP EMI	
FL206	1-234-177-21	FILTER, CHIP EMI	
FL302	1-234-177-21	FILTER, CHIP EMI (RV990D)	
FL303	1-234-177-21	FILTER, CHIP EMI (RV990D)	
FL332	1-234-177-21	FILTER, CHIP EMI (RV660D)	
FL333	1-234-177-21	FILTER, CHIP EMI (RV660D)	
FL501	1-234-177-21	FILTER, CHIP EMI	
FL502	1-234-177-21	FILTER, CHIP EMI	
FL701	1-234-177-21	FILTER, CHIP EMI	
FL702	1-234-177-21	FILTER, CHIP EMI	
FL703	1-234-177-21	FILTER, CHIP EMI	
FL704	1-234-177-21	FILTER, CHIP EMI	
FL705	1-234-177-21	FILTER, CHIP EMI	
FL706	1-234-177-21	FILTER, CHIP EMI	
FL901	1-234-177-21	FILTER, CHIP EMI	
FL903	1-234-177-21	FILTER, CHIP EMI	
FL908	1-234-177-21	FILTER, CHIP EMI	
		< IC >	
IC203	6-704-069-01	IC MT48LC4M32B2TG-6	
* IC204	6-703-671-01	IC BR9040F-WE2	
IC206	6-803-190-01	IC MBM29DL324BE-90PFTN-GYXV000	
IC207	6-703-540-01	IC ZIVA5X-C1F	
IC211	6-700-398-01	IC uPC2918T-E1	
IC216	6-700-437-01	IC SN74ALVCH16841DGGR	
IC252	8-759-680-48	IC TC7WH157FK(TE85R)	
IC302	6-702-007-01	IC PCM1608Y/2K (RV990D)	
IC331	6-703-788-01	IC PCM1751DBQR (RV660D)	
IC392	8-759-583-47	IC uPC2933T-E2	
IC501	6-702-157-01	IC FAN8035L	
IC503	8-759-058-43	IC NJM3404AV	
IC509	8-752-408-73	IC CXD3068Q	
IC701	6-703-552-01	IC TMC57929PGF-RDP	
IC703	8-759-058-43	IC NJM3404AV	
IC706	8-759-564-30	IC MSM51V18165B-60TSKR1	
IC901	8-752-937-30	IC CXP973064-226R	

Ref. No.	Part No.	Description			Remark
IC902	8-759-058-64	IC TC7S32FU(TE85R)			
IC903	8-759-641-86	IC BR24C16F-E2			
IC904	6-702-563-01	IC TC7W74FK-TE85L			
IC906	6-700-407-01	IC SM8707GV-G-E2			
IC907	8-759-583-47	IC uPC2933T-E2			
		< JUMPER RESISTOR >			
JW392	1-216-864-11	METAL CHIP	0	5%	1/10W
JW601	1-218-990-11	SHORT CHIP	0		
JW602	1-218-990-11	SHORT CHIP	0		
JW603	1-218-990-11	SHORT CHIP	0		
JW604	1-218-990-11	SHORT CHIP	0		
JW605	1-218-990-11	SHORT CHIP	0		
JW606	1-218-990-11	SHORT CHIP	0		
JW607	1-218-990-11	SHORT CHIP	0		
JW801	1-218-990-11	SHORT CHIP	0		
JW802	1-218-990-11	SHORT CHIP	0		
JW803	1-218-990-11	SHORT CHIP	0		
JW804	1-218-990-11	SHORT CHIP	0		
JW805	1-218-990-11	SHORT CHIP	0		
JW806	1-218-990-11	SHORT CHIP	0		
L402	1-216-296-11	SHORT CHIP	0		
L403	1-216-296-11	SHORT CHIP	0		
L404	1-216-296-11	SHORT CHIP	0		
L405	1-216-296-11	SHORT CHIP	0		
L406	1-216-296-11	SHORT CHIP	0		
L412	1-216-296-11	SHORT CHIP	0		
L413	1-216-296-11	SHORT CHIP	0		
L414	1-216-296-11	SHORT CHIP	0		
L415	1-216-296-11	SHORT CHIP	0		
L416	1-216-296-11	SHORT CHIP	0		
		< COIL >			
L901	1-412-031-11	INDUCTOR	47uH		
		< TRANSISTOR >			
Q202	8-729-929-26	TRANSISTOR DTC114TE			
Q901	8-729-929-26	TRANSISTOR DTC114TE			
Q903	8-729-025-28	FET 2SK1828			
Q904	8-729-025-28	FET 2SK1828			
		< RESISTOR >			
R10	1-216-801-11	METAL CHIP	22	5%	1/10W
R11	1-216-801-11	METAL CHIP	22	5%	1/10W
R12	1-216-801-11	METAL CHIP	22	5%	1/10W
R13	1-216-801-11	METAL CHIP	22	5%	1/10W
R14	1-216-801-11	METAL CHIP	22	5%	1/10W
R15	1-216-801-11	METAL CHIP	22	5%	1/10W
R207	1-216-864-11	METAL CHIP	0	5%	1/10W
R213	1-216-807-11	METAL CHIP	68	5%	1/10W
R214	1-216-864-11	METAL CHIP	0	5%	1/10W
R215	1-216-864-11	METAL CHIP	0	5%	1/10W
R217	1-216-864-11	METAL CHIP	0	5%	1/10W
R218	1-216-864-11	METAL CHIP	0	5%	1/10W
R219	1-216-864-11	METAL CHIP	0	5%	1/10W
R220	1-216-864-11	METAL CHIP	0	5%	1/10W
R221	1-216-864-11	METAL CHIP	0	5%	1/10W
R222	1-216-864-11	METAL CHIP	0	5%	1/10W

Ref. No.	Part No.	Description			Remark
R223	1-216-864-11	METAL CHIP	0	5%	1/10W
R224	1-216-864-11	METAL CHIP	0	5%	1/10W
R227	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R230	1-216-803-11	METAL CHIP	33	5%	1/10W
R231	1-216-803-11	METAL CHIP	33	5%	1/10W
R232	1-216-803-11	METAL CHIP	33	5%	1/10W
R233	1-216-864-11	METAL CHIP	0	5%	1/10W
R234	1-216-833-11	METAL CHIP	10K	5%	1/10W
R239	1-216-809-11	METAL CHIP	100	5%	1/10W
R240	1-216-841-11	METAL CHIP	47K	5%	1/10W
R241	1-216-864-11	METAL CHIP	0	5%	1/10W
R243	1-216-864-11	METAL CHIP	0	5%	1/10W
R244	1-216-821-11	METAL CHIP	1K	5%	1/10W
R245	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R246	1-216-833-11	METAL CHIP	10K	5%	1/10W
R247	1-216-821-11	METAL CHIP	1K	5%	1/10W
R248	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R250	1-216-864-11	METAL CHIP	0	5%	1/10W
R251	1-216-864-11	METAL CHIP	0	5%	1/10W
R253	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R254	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R255	1-216-864-11	METAL CHIP	0	5%	1/10W
R257	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R259	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R260	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R261	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R262	1-216-864-11	METAL CHIP	0	5%	1/10W
R263	1-218-285-11	METAL CHIP	75	5%	1/10W
R264	1-218-285-11	METAL CHIP	75	5%	1/10W
R265	1-218-285-11	METAL CHIP	75	5%	1/10W
R266	1-218-285-11	METAL CHIP	75	5%	1/10W
R267	1-218-285-11	METAL CHIP	75	5%	1/10W
R268	1-216-864-11	METAL CHIP	0	5%	1/10W
R269	1-216-864-11	METAL CHIP	0	5%	1/10W
R270	1-216-864-11	METAL CHIP	0	5%	1/10W
R273	1-216-864-11	METAL CHIP	0	5%	1/10W
R274	1-216-864-11	METAL CHIP	0	5%	1/10W
R275	1-216-864-11	METAL CHIP	0	5%	1/10W
R276	1-216-864-11	METAL CHIP	0	5%	1/10W
R277	1-216-864-11	METAL CHIP	0	5%	1/10W
R278	1-218-285-11	METAL CHIP	75	5%	1/10W
R279	1-218-285-11	METAL CHIP	75	5%	1/10W
R280	1-218-285-11	METAL CHIP	75	5%	1/10W
R281	1-218-285-11	METAL CHIP	75	5%	1/10W
R282	1-218-285-11	METAL CHIP	75	5%	1/10W
R283	1-218-847-11	METAL CHIP	1K	0.5%	1/10W
R284	1-218-829-11	METAL CHIP	180	0.5%	1/10W
R288	1-216-864-11	METAL CHIP	0	5%	1/10W
R301	1-216-821-11	METAL CHIP	1K	5%	1/10W
R302	1-216-813-11	METAL CHIP	220	5%	1/10W (RV990D)
R303	1-216-813-11	METAL CHIP	220	5%	1/10W (RV990D)
R304	1-216-813-11	METAL CHIP	220	5%	1/10W (RV990D)
R305	1-216-813-11	METAL CHIP	220	5%	1/10W (RV990D)
R306	1-216-813-11	METAL CHIP	220	5%	1/10W (RV990D)

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Ref. No.	Part No.	Description			Remark
R307	1-216-813-11	METAL CHIP	220	5%	1/10W (RV990D)
R308	1-216-813-11	METAL CHIP	220	5%	1/10W
R309	1-216-813-11	METAL CHIP	220	5%	1/10W
R310	1-216-809-11	METAL CHIP	100	5%	1/10W
R311	1-216-809-11	METAL CHIP	100	5%	1/10W
R312	1-216-809-11	METAL CHIP	100	5%	1/10W
R313	1-216-833-11	METAL CHIP	10K	5%	1/10W (RV990D)
R314	1-216-801-11	METAL CHIP	22	5%	1/10W (RV990D)
R320	1-216-864-11	METAL CHIP	0	5%	1/10W (RV660D)
R342	1-216-801-11	METAL CHIP	22	5%	1/10W (RV660D)
R367	1-216-864-11	METAL CHIP	0	5%	1/10W
R368	1-216-864-11	METAL CHIP	0	5%	1/10W
R369	1-216-864-11	METAL CHIP	0	5%	1/10W
R392	1-216-797-11	METAL CHIP	10	5%	1/10W
R501	1-216-864-11	METAL CHIP	0	5%	1/10W
R502	1-216-864-11	METAL CHIP	0	5%	1/10W
R503	1-216-841-11	METAL CHIP	47K	5%	1/10W
R504	1-216-841-11	METAL CHIP	47K	5%	1/10W
R505	1-216-841-11	METAL CHIP	47K	5%	1/10W
R506	1-216-841-11	METAL CHIP	47K	5%	1/10W
R507	1-216-864-11	METAL CHIP	0	5%	1/10W
R508	1-216-864-11	METAL CHIP	0	5%	1/10W
R510	1-216-847-11	METAL CHIP	150K	5%	1/10W
R511	1-216-847-11	METAL CHIP	150K	5%	1/10W
R512	1-216-842-11	METAL CHIP	56K	5%	1/10W
R513	1-216-842-11	METAL CHIP	56K	5%	1/10W
R516	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R517	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R519	1-216-845-11	METAL CHIP	100K	5%	1/10W
R520	1-216-833-11	METAL CHIP	10K	5%	1/10W
R521	1-216-845-11	METAL CHIP	100K	5%	1/10W
R522	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R523	1-216-833-11	METAL CHIP	10K	5%	1/10W
R524	1-216-833-11	METAL CHIP	10K	5%	1/10W
R525	1-216-833-11	METAL CHIP	10K	5%	1/10W
R527	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R528	1-216-864-11	METAL CHIP	0	5%	1/10W
R529	1-216-839-11	METAL CHIP	33K	5%	1/10W
R530	1-216-842-11	METAL CHIP	56K	5%	1/10W
R531	1-216-864-11	METAL CHIP	0	5%	1/10W
R532	1-216-864-11	METAL CHIP	0	5%	1/10W
R533	1-216-839-11	METAL CHIP	33K	5%	1/10W
R534	1-216-842-11	METAL CHIP	56K	5%	1/10W
R535	1-216-864-11	METAL CHIP	0	5%	1/10W
R536	1-216-833-11	METAL CHIP	10K	5%	1/10W
R537	1-216-843-11	METAL CHIP	68K	5%	1/10W
R538	1-216-864-11	METAL CHIP	0	5%	1/10W
R539	1-216-864-11	METAL CHIP	0	5%	1/10W
R540	1-216-864-11	METAL CHIP	0	5%	1/10W
R541	1-216-864-11	METAL CHIP	0	5%	1/10W
R543	1-216-864-11	METAL CHIP	0	5%	1/10W
R544	1-216-864-11	METAL CHIP	0	5%	1/10W
R545	1-216-833-11	METAL CHIP	10K	5%	1/10W
R547	1-216-864-11	METAL CHIP	0	5%	1/10W
R548	1-216-833-11	METAL CHIP	10K	5%	1/10W
R550	1-216-821-11	METAL CHIP	1K	5%	1/10W
R551	1-216-821-11	METAL CHIP	1K	5%	1/10W
R552	1-216-821-11	METAL CHIP	1K	5%	1/10W
R553	1-216-864-11	METAL CHIP	0	5%	1/10W
R554	1-216-864-11	METAL CHIP	0	5%	1/10W
R555	1-216-864-11	METAL CHIP	0	5%	1/10W
R558	1-216-841-11	METAL CHIP	47K	5%	1/10W
R559	1-216-821-11	METAL CHIP	1K	5%	1/10W
R560	1-216-821-11	METAL CHIP	1K	5%	1/10W
R561	1-216-821-11	METAL CHIP	1K	5%	1/10W
R562	1-216-821-11	METAL CHIP	1K	5%	1/10W
R563	1-216-821-11	METAL CHIP	1K	5%	1/10W
R564	1-216-821-11	METAL CHIP	1K	5%	1/10W
R565	1-216-821-11	METAL CHIP	1K	5%	1/10W
R566	1-216-833-11	METAL CHIP	10K	5%	1/10W
R567	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R568	1-216-857-11	METAL CHIP	1M	5%	1/10W
R569	1-216-864-11	METAL CHIP	0	5%	1/10W
R571	1-216-857-11	METAL CHIP	1M	5%	1/10W
R572	1-216-853-11	METAL CHIP	470K	5%	1/10W
R573	1-216-833-11	METAL CHIP	10K	5%	1/10W
R574	1-216-815-11	METAL CHIP	330	5%	1/10W
R575	1-216-864-11	METAL CHIP	0	5%	1/10W
R576	1-216-864-11	METAL CHIP	0	5%	1/10W
R577	1-216-864-11	METAL CHIP	0	5%	1/10W
R578	1-216-864-11	METAL CHIP	0	5%	1/10W
R579	1-216-832-11	METAL CHIP	8.2K	5%	1/10W
R580	1-216-839-11	METAL CHIP	33K	5%	1/10W
R581	1-216-834-11	METAL CHIP	12K	5%	1/10W
R583	1-216-864-11	METAL CHIP	0	5%	1/10W
R584	1-216-839-11	METAL CHIP	33K	5%	1/10W
R585	1-216-864-11	METAL CHIP	0	5%	1/10W
R586	1-218-747-11	METAL CHIP	200K	5%	1/10W
R587	1-216-864-11	METAL CHIP	0	5%	1/10W
R588	1-216-833-11	METAL CHIP	10K	5%	1/10W
R589	1-216-833-11	METAL CHIP	10K	5%	1/10W
R592	1-216-864-11	METAL CHIP	0	5%	1/10W
R593	1-216-845-11	METAL CHIP	100K	5%	1/10W
R597	1-216-864-11	METAL CHIP	0	5%	1/10W
R599	1-216-821-11	METAL CHIP	1K	5%	1/10W
R601	1-216-864-11	METAL CHIP	0	5%	1/10W
R615	1-216-864-11	METAL CHIP	0	5%	1/10W
R629	1-216-864-11	METAL CHIP	0	5%	1/10W
R694	1-216-833-11	METAL CHIP	10K	5%	1/10W
R695	1-216-864-11	METAL CHIP	0	5%	1/10W
R696	1-216-864-11	METAL CHIP	0	5%	1/10W
R698	1-216-864-11	METAL CHIP	0	5%	1/10W
R699	1-216-864-11	METAL CHIP	0	5%	1/10W
R700	1-216-832-11	METAL CHIP	8.2K	5%	1/10W
R707	1-216-809-11	METAL CHIP	100	5%	1/10W
R708	1-216-853-11	METAL CHIP	470K	5%	1/10W
R709	1-216-847-11	METAL CHIP	150K	5%	1/10W
R710	1-216-833-11	METAL CHIP	10K	5%	1/10W
R711	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R712	1-216-833-11	METAL CHIP	10K	5%	1/10W
R713	1-216-833-11	METAL CHIP	10K	5%	1/10W
R714	1-216-833-11	METAL CHIP	10K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R715	1-216-833-11	METAL CHIP	10K	5%	1/10W
R716	1-216-809-11	METAL CHIP	100	5%	1/10W
R717	1-216-845-11	METAL CHIP	100K	5%	1/10W
R718	1-216-833-11	METAL CHIP	10K	5%	1/10W
R719	1-216-821-11	METAL CHIP	1K	5%	1/10W
R720	1-216-821-11	METAL CHIP	1K	5%	1/10W
R721	1-216-839-11	METAL CHIP	33K	5%	1/10W
R724	1-216-821-11	METAL CHIP	1K	5%	1/10W
R725	1-216-824-11	METAL CHIP	1.8K	5%	1/10W
R726	1-216-845-11	METAL CHIP	100K	5%	1/10W
R727	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R728	1-216-833-11	METAL CHIP	10K	5%	1/10W
R730	1-216-801-11	METAL CHIP	22	5%	1/10W
R731	1-216-801-11	METAL CHIP	22	5%	1/10W
R732	1-216-833-11	METAL CHIP	10K	5%	1/10W
R733	1-216-833-11	METAL CHIP	10K	5%	1/10W
R734	1-216-833-11	METAL CHIP	10K	5%	1/10W
R735	1-216-833-11	METAL CHIP	10K	5%	1/10W
R736	1-216-833-11	METAL CHIP	10K	5%	1/10W
R737	1-216-833-11	METAL CHIP	10K	5%	1/10W
R738	1-216-833-11	METAL CHIP	10K	5%	1/10W
R742	1-216-801-11	METAL CHIP	22	5%	1/10W
R743	1-216-801-11	METAL CHIP	22	5%	1/10W
R744	1-216-801-11	METAL CHIP	22	5%	1/10W
R745	1-216-841-11	METAL CHIP	47K	5%	1/10W
R746	1-216-841-11	METAL CHIP	47K	5%	1/10W
R747	1-216-839-11	METAL CHIP	33K	5%	1/10W
R748	1-216-839-11	METAL CHIP	33K	5%	1/10W
R750	1-216-833-11	METAL CHIP	10K	5%	1/10W
R751	1-216-864-11	METAL CHIP	0	5%	1/10W
R752	1-216-864-11	METAL CHIP	0	5%	1/10W
R753	1-216-864-11	METAL CHIP	0	5%	1/10W
R754	1-216-864-11	METAL CHIP	0	5%	1/10W
R755	1-216-864-11	METAL CHIP	0	5%	1/10W
R756	1-216-864-11	METAL CHIP	0	5%	1/10W
R757	1-216-864-11	METAL CHIP	0	5%	1/10W
R758	1-216-864-11	METAL CHIP	0	5%	1/10W
R759	1-216-864-11	METAL CHIP	0	5%	1/10W
R762	1-216-837-11	METAL CHIP	22K	5%	1/10W
R763	1-216-832-11	METAL CHIP	8.2K	5%	1/10W
R764	1-216-857-11	METAL CHIP	1M	5%	1/10W
R765	1-216-837-11	METAL CHIP	22K	5%	1/10W
R766	1-216-864-11	METAL CHIP	0	5%	1/10W
R767	1-216-841-11	METAL CHIP	47K	5%	1/10W
R769	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R770	1-216-864-11	METAL CHIP	0	5%	1/10W
R776	1-216-864-11	METAL CHIP	0	5%	1/10W
R777	1-216-864-11	METAL CHIP	0	5%	1/10W
R778	1-216-845-11	METAL CHIP	100K	5%	1/10W
R780	1-216-864-11	METAL CHIP	0	5%	1/10W
R781	1-216-864-11	METAL CHIP	0	5%	1/10W
R784	1-216-864-11	METAL CHIP	0	5%	1/10W
R785	1-216-833-11	METAL CHIP	10K	5%	1/10W
R786	1-216-845-11	METAL CHIP	100K	5%	1/10W
R787	1-216-845-11	METAL CHIP	100K	5%	1/10W
R788	1-216-845-11	METAL CHIP	100K	5%	1/10W
R789	1-216-845-11	METAL CHIP	100K	5%	1/10W
R799	1-216-864-11	METAL CHIP	0	5%	1/10W
R805	1-216-864-11	METAL CHIP	0	5%	1/10W
R901	1-216-801-11	METAL CHIP	22	5%	1/10W
R902	1-216-801-11	METAL CHIP	22	5%	1/10W
R904	1-216-833-11	METAL CHIP	10K	5%	1/10W
R905	1-216-801-11	METAL CHIP	22	5%	1/10W
R906	1-216-801-11	METAL CHIP	22	5%	1/10W
R907	1-216-801-11	METAL CHIP	22	5%	1/10W
R908	1-216-833-11	METAL CHIP	10K	5%	1/10W
R910	1-216-864-11	METAL CHIP	0	5%	1/10W
R911	1-216-833-11	METAL CHIP	10K	5%	1/10W
R912	1-216-833-11	METAL CHIP	10K	5%	1/10W
R913	1-216-833-11	METAL CHIP	10K	5%	1/10W
R915	1-216-809-11	METAL CHIP	100	5%	1/10W
R916	1-216-821-11	METAL CHIP	1K	5%	1/10W
R917	1-216-821-11	METAL CHIP	1K	5%	1/10W
R918	1-216-801-11	METAL CHIP	22	5%	1/10W
R919	1-216-864-11	METAL CHIP	0	5%	1/10W
R920	1-216-809-11	METAL CHIP	100	5%	1/10W
R921	1-216-809-11	METAL CHIP	100	5%	1/10W
R923	1-216-813-11	METAL CHIP	220	5%	1/10W
R925	1-216-809-11	METAL CHIP	100	5%	1/10W
R926	1-216-809-11	METAL CHIP	100	5%	1/10W
R927	1-216-857-11	METAL CHIP	1M	5%	1/10W
R930	1-216-809-11	METAL CHIP	100	5%	1/10W
R931	1-216-801-11	METAL CHIP	22	5%	1/10W
R932	1-216-801-11	METAL CHIP	22	5%	1/10W
R933	1-216-801-11	METAL CHIP	22	5%	1/10W
R935	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R940	1-216-809-11	METAL CHIP	100	5%	1/10W
R942	1-216-809-11	METAL CHIP	100	5%	1/10W
R943	1-216-809-11	METAL CHIP	100	5%	1/10W
R947	1-216-864-11	METAL CHIP	0	5%	1/10W
R948	1-216-864-11	METAL CHIP	0	5%	1/10W
R949	1-216-864-11	METAL CHIP	0	5%	1/10W
R958	1-216-801-11	METAL CHIP	22	5%	1/10W
R962	1-216-833-11	METAL CHIP	10K	5%	1/10W
R964	1-216-833-11	METAL CHIP	10K	5%	1/10W
R970	1-216-864-11	METAL CHIP	0	5%	1/10W
R971	1-216-864-11	METAL CHIP	0	5%	1/10W
R973	1-216-864-11	METAL CHIP	0	5%	1/10W
R974	1-216-864-11	METAL CHIP	0	5%	1/10W
R975	1-216-833-11	METAL CHIP	10K	5%	1/10W
R976	1-216-864-11	METAL CHIP	0	5%	1/10W
R978	1-216-833-11	METAL CHIP	10K	5%	1/10W
R984	1-216-833-11	METAL CHIP	10K	5%	1/10W
R988	1-216-864-11	METAL CHIP	0	5%	1/10W
R990	1-216-864-11	METAL CHIP	0	5%	1/10W
R991	1-216-864-11	METAL CHIP	0	5%	1/10W
R992	1-216-864-11	METAL CHIP	0	5%	1/10W
R994	1-216-864-11	METAL CHIP	0	5%	1/10W
R995	1-216-864-11	METAL CHIP	0	5%	1/10W
R996	1-216-864-11	METAL CHIP	0	5%	1/10W
R997	1-216-864-11	METAL CHIP	0	5%	1/10W
R998	1-216-864-11	METAL CHIP	0	5%	1/10W
R1000	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R1001	1-216-864-11	METAL CHIP	0	5%	1/10W
R5555	1-216-864-11	METAL CHIP	0	5%	1/10W
R9980	1-216-864-11	METAL CHIP	0	5%	1/10W

DMB03 DRIVER FRONT AMP

Ref. No.	Part No.	Description			Remark
R9981	1-216-864-11	METAL CHIP	0	5%	1/10W
R9986	1-216-864-11	METAL CHIP	0	5%	1/10W
R9987	1-216-864-11	METAL CHIP	0	5%	1/10W
R9988	1-216-864-11	METAL CHIP	0	5%	1/10W
R9993	1-216-864-11	METAL CHIP	0	5%	1/10W
R9994	1-216-864-11	METAL CHIP	0	5%	1/10W
R9998	1-216-864-11	METAL CHIP	0	5%	1/10W
R9999	1-216-864-11	METAL CHIP	0	5%	1/10W
		< CAPACITOR >			
R1101	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
R1201	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
R1202	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
R1301	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
R1302	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
R1303	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
R1304	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
R1801	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
R1802	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
R1803	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
		< NETWORK RESISTOR >			
RB10	1-233-388-11	RES, CHIP NETWORK 68X4 (3216)			
RB11	1-233-388-11	RES, CHIP NETWORK 68X4 (3216)			
RB12	1-233-388-11	RES, CHIP NETWORK 68X4 (3216)			
RB13	1-233-388-11	RES, CHIP NETWORK 68X4 (3216)			
RB14	1-233-388-11	RES, CHIP NETWORK 68X4 (3216)			
RB15	1-233-388-11	RES, CHIP NETWORK 68X4 (3216)			
RB16	1-233-388-11	RES, CHIP NETWORK 68X4 (3216)			
RB17	1-233-388-11	RES, CHIP NETWORK 68X4 (3216)			
RB18	1-234-524-21	RES, CHIP NETWORK 33X4			
RB19	1-234-524-21	RES, CHIP NETWORK 33X4			
RB20	1-234-524-21	RES, CHIP NETWORK 33X4			
RB21	1-234-524-21	RES, CHIP NETWORK 33X4			
RB202	1-234-523-21	RES, CHIP NETWORK 0X4 (3216)			
RB203	1-234-523-21	RES, CHIP NETWORK 0X4 (3216)			
RB204	1-234-523-21	RES, CHIP NETWORK 0X4 (3216)			
		< VIBRATOR >			
X901	1-781-945-21	VIBRATOR, CERAMIC (20MHz)			
X902	1-795-630-11	VIBRATOR, CRYSTAL (27MHz)			
**********					
	1-687-135-11	DRIVER BOARD			
		**********			
		< CAPACITOR >			
C715	1-126-933-11	ELECT	100uF	20%	16V
C731	1-126-964-11	ELECT	10uF	20%	50V
C735	1-164-159-21	CERAMIC	0.1uF		50V
C736	1-164-159-21	CERAMIC	0.1uF		50V
C737	1-164-159-21	CERAMIC	0.1uF		50V
C741	1-162-306-11	CERAMIC	0.01uF	30%	16V
C751	1-162-306-11	CERAMIC	0.01uF	30%	16V
C752	1-164-159-21	CERAMIC	0.1uF		50V
		< CONNECTOR >			
CN701	1-785-338-11	PIN, CONNECTOR (LIGHT ANGLE) 12P			
CN702	1-784-766-11	CONNECTOR, FFC 5P			

Ref. No.	Part No.	Description			Remark
* CN703	1-564-720-11	PIN, CONNECTOR (SMALL TYPE) 4P			
CN704	1-785-328-11	PIN, CONNECTOR (LIGHT ANGLE) 2P			
		< DIODE >			
D701	8-719-921-42	DIODE MTZJ-5.1A			
D711	8-719-109-69	DIODE RD3.6ES-B2			
		< IC >			
IC701	8-759-598-69	IC BA6956AN			
IC712	8-759-598-69	IC BA6956AN			
		< TRANSISTOR >			
Q731	8-729-029-66	TRANSISTOR DTC114ESA			
		< RESISTOR >			
R701	1-249-413-11	CARBON	470	5%	1/4W
R702	1-247-807-31	CARBON	100	5%	1/4W
R711	1-249-417-11	CARBON	1K	5%	1/4W
R712	1-249-425-11	CARBON	4.7K	5%	1/4W
R713	1-249-433-11	CARBON	22K	5%	1/4W
R721	1-249-425-11	CARBON	4.7K	5%	1/4W
R722	1-249-425-11	CARBON	4.7K	5%	1/4W
R723	1-249-425-11	CARBON	4.7K	5%	1/4W
R731	1-247-807-31	CARBON	100	5%	1/4W
R732	1-249-429-11	CARBON	10K	5%	1/4W
R733	1-249-417-11	CARBON	1K	5%	1/4W
R734	1-249-430-11	CARBON	12K	5%	1/4W
R735	1-247-807-31	CARBON	100	5%	1/4W
R751	1-249-425-11	CARBON	4.7K	5%	1/4W
**********					
	A-4733-296-A	FRONT AMP BOARD, COMPLETE (RV990D:EXCEPT TH)			
	A-4733-297-A	FRONT AMP BOARD, COMPLETE (RV660D:EXCEPT TH)			
	A-4747-995-A	FRONT AMP BOARD, COMPLETE (RV990D:TH)			
	A-4748-003-A	FRONT AMP BOARD, COMPLETE (RV660D:TH)			
		**********			
		< CAPACITOR >			
C201	1-126-964-11	ELECT	10uF	20%	50V
C202	1-162-294-31	CERAMIC	0.001uF	10%	50V
C203	1-162-286-21	CERAMIC	220PF	10%	50V
C204	1-126-967-11	ELECT	47uF	20%	50V (RV660D)
C204	1-126-968-11	ELECT	100uF	20%	50V (RV990D)
C206	1-136-495-11	FILM	0.068uF	5%	50V
C207	1-136-495-11	FILM	0.068uF	5%	50V
C208	1-128-551-11	ELECT	22uF	20%	63V
C216	1-162-306-11	CERAMIC	0.01uF	30%	16V
C221	1-126-971-11	ELECT	470uF	20%	50V
C231	1-126-964-11	ELECT	10uF	20%	50V
C232	1-104-665-11	ELECT	100uF	20%	10V
C233	1-126-961-11	ELECT	2.2uF	20%	50V
C234	1-104-665-11	ELECT	100uF	20%	10V
C235	1-164-159-11	CERAMIC	0.1uF		50V
C251	1-126-964-11	ELECT	10uF	20%	50V
C252	1-162-294-31	CERAMIC	0.001uF	10%	50V

FRONT AMP

Ref. No.	Part No.	Description			Remark
C253	1-162-286-21	CERAMIC	220PF	10%	50V
C254	1-126-967-11	ELECT	47uF	20%	50V (RV660D)
C254	1-126-968-11	ELECT	100uF	20%	50V (RV990D)
C256	1-136-495-11	FILM	0.068uF	5%	50V
C257	1-136-495-11	FILM	0.068uF	5%	50V
C258	1-128-551-11	ELECT	22uF	20%	63V
C271	1-135-928-21	ELECT	2200uF	20%	63V
C272	1-135-928-21	ELECT	2200uF	20%	63V
C273	1-137-844-21	ELECT	2200uF	20%	42V (RV990D)
C274	1-137-844-21	ELECT	2200uF	20%	42V (RV990D)
C281	1-136-165-00	FILM	0.1uF	5%	50V
C282	1-136-165-00	FILM	0.1uF	5%	50V
C283	1-136-165-00	FILM	0.1uF	5%	50V
C284	1-136-165-00	FILM	0.1uF	5%	50V
C285	1-162-306-11	CERAMIC	0.01uF	30%	16V
C286	1-162-306-11	CERAMIC	0.01uF	30%	16V
C921	1-126-956-11	ELECT	0.1uF	20%	50V
C922	1-126-767-11	ELECT	1000uF	20%	16V
C923	1-126-956-11	ELECT	0.1uF	20%	50V
C924	1-126-767-11	ELECT	1000uF	20%	16V
C925	1-126-956-11	ELECT	0.1uF	20%	50V
C926	1-126-933-11	ELECT	100uF	20%	16V
C933	1-126-956-11	ELECT	0.1uF	20%	50V
C934	1-126-935-11	ELECT	470uF	20%	10V
C937	1-126-956-11	ELECT	0.1uF	20%	50V
C938	1-126-935-11	ELECT	470uF	20%	10V
		< CONNECTOR >			
CN201	1-573-829-11	CONNECTOR, BOARD TO BOARD 15P			
CN206	1-573-829-11	CONNECTOR, BOARD TO BOARD 15P			
		< DIODE >			
D201	8-719-991-33	DIODE 1SS133T-77			
D230	8-719-991-33	DIODE 1SS133T-77			
D231	8-719-991-33	DIODE 1SS133T-77			
D251	8-719-991-33	DIODE 1SS133T-77			
D281	8-719-991-33	DIODE 1SS133T-77			
D291	8-719-991-33	DIODE 1SS133T-77			
		< IC >			
IC201	6-704-107-01	IC STK403-100			
IC203	6-703-610-01	IC RT8H015C-T112-1			
		< COIL >			
L281	1-422-009-13	COIL, AIR-CORE			
L282	1-422-009-13	COIL, AIR-CORE			
		< TRANSISTOR >			
Q201	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA			
Q216	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA			
Q217	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q221	8-729-140-82	TRANSISTOR 2SA988-PAFAEA			
Q222	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA			

Ref. No.	Part No.	Description			Remark
Q232	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q233	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q234	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q251	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA			
Q281	8-729-026-39	TRANSISTOR 2SA933AS-QT			
Q282	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA			
		< RESISTOR >			
R201	1-249-417-11	CARBON	1K	5%	1/4W
R202	1-249-437-11	CARBON	47K	5%	1/4W
R203	1-249-407-11	CARBON	150	5%	1/4W (RV990D)
R203	1-249-411-11	CARBON	330	5%	1/4W (RV660D)
R204	1-249-437-11	CARBON	47K	5%	1/4W
⚠R205	1-245-235-21	METAL	0.22	10%	2W F
⚠R206	1-245-235-21	METAL	0.22	10%	2W F
R207	1-249-417-11	CARBON	1K	5%	1/4W
R208	1-249-431-11	CARBON	15K	5%	1/4W
R209	1-249-441-11	CARBON	100K	5%	1/4W
R210	1-260-076-11	CARBON	10	5%	1/2W F
⚠R211	1-212-881-11	FUSIBLE	100	5%	1/4W F
R214	1-249-406-11	CARBON	120	5%	1/4W
R215	1-249-433-11	CARBON	22K	5%	1/4W
R216	1-249-441-11	CARBON	100K	5%	1/4W
R217	1-249-429-11	CARBON	10K	5%	1/4W
R218	1-249-429-11	CARBON	10K	5%	1/4W
⚠R219	1-202-972-61	FUSIBLE	1	5%	1/4W F
⚠R220	1-202-972-61	FUSIBLE	1	5%	1/4W F
R221	1-249-421-11	CARBON	2.2K	5%	1/4W
R222	1-249-433-11	CARBON	22K	5%	1/4W
R223	1-249-429-11	CARBON	10K	5%	1/4W
R224	1-249-429-11	CARBON	10K	5%	1/4W
R225	1-249-439-11	CARBON	68K	5%	1/4W
R226	1-249-426-11	CARBON	5.6K	5%	1/4W
R230	1-249-425-11	CARBON	4.7K	5%	1/4W
R231	1-249-425-11	CARBON	4.7K	5%	1/4W
R233	1-249-425-11	CARBON	4.7K	5%	1/4W
R239	1-249-437-11	CARBON	47K	5%	1/4W
R240	1-249-438-11	CARBON	56K	5%	1/4W
R251	1-249-417-11	CARBON	1K	5%	1/4W
R252	1-249-437-11	CARBON	47K	5%	1/4W
R253	1-249-407-11	CARBON	150	5%	1/4W (RV990D)
R253	1-249-411-11	CARBON	330	5%	1/4W (RV660D)
R254	1-249-437-11	CARBON	47K	5%	1/4W
⚠R255	1-245-235-21	METAL	0.22	10%	2W F
⚠R256	1-245-235-21	METAL	0.22	10%	2W F
R257	1-249-417-11	CARBON	1K	5%	1/4W
R258	1-249-431-11	CARBON	15K	5%	1/4W
R259	1-249-441-11	CARBON	100K	5%	1/4W
R260	1-260-076-11	CARBON	10	5%	1/2W F
⚠R261	1-212-881-11	FUSIBLE	100	5%	1/4W F
R271	1-249-441-11	CARBON	100K	5%	1/4W
R272	1-249-441-11	CARBON	100K	5%	1/4W
R273	1-249-441-11	CARBON	100K	5%	1/4W (RV990D)

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

FRONT AMP | JACK

Ref. No.	Part No.	Description			Remark
R274	1-249-441-11	CARBON	100K	5%	1/4W (RV990D)
⚠R280	1-215-892-11	METAL OXIDE	1K	5%	2W F (RV990D)
⚠R280	1-216-457-00	METAL OXIDE	1.2K	5%	2W F (RV660D)
R281	1-260-076-11	CARBON	10	5%	1/2W F
R282	1-260-076-11	CARBON	10	5%	1/2W F
R283	1-260-076-11	CARBON	10	5%	1/2W F
R284	1-260-076-11	CARBON	10	5%	1/2W F
R285	1-249-437-11	CARBON	47K	5%	1/4W
R286	1-249-437-11	CARBON	47K	5%	1/4W
R287	1-249-429-11	CARBON	10K	5%	1/4W
R288	1-249-437-11	CARBON	47K	5%	1/4W
R289	1-249-429-11	CARBON	10K	5%	1/4W
R290	1-249-429-11	CARBON	10K	5%	1/4W
R924	1-249-417-11	CARBON	1K	5%	1/4W
		< RELAY >			
RY281	1-515-920-11	RELAY (24V)			
		< THERMISTOR >			
TH201	1-807-796-11	THERMISTOR			
		< TERMINAL BOARD >			
TM201	1-694-677-12	TERMINAL BOARD (4P) (FRONT SPEAKER)			
**********					
	A-4733-292-A	JACK BOARD, COMPLETE (EXCEPT E51,MX,TH)			
	A-4733-293-A	JACK BOARD, COMPLETE (E51,MX)			
	A-4747-994-A	JACK BOARD, COMPLETE (TH)			
		**********			
		< CAPACITOR >			
C501	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C502	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C503	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C504	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C507	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C508	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C509	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C510	1-115-868-11	ELECT	0.22uF	20%	50V
C511	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C512	1-162-949-11	CERAMIC CHIP	47PF	5%	50V
C513	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C514	1-115-867-11	ELECT	0.1uF	20%	50V
C515	1-115-872-11	ELECT	2.2uF	20%	50V
C516	1-162-949-11	CERAMIC CHIP	47PF	5%	50V
C517	1-162-955-11	CERAMIC CHIP	150PF	5%	50V
C518	1-115-872-11	ELECT	2.2uF	20%	50V
C519	1-126-791-11	ELECT	10uF	20%	16V
C520	1-126-786-11	ELECT	47uF	20%	16V
C521	1-126-786-11	ELECT	47uF	20%	16V
C522	1-115-871-11	ELECT	1uF	20%	50V (EXCEPT E51,MX)
C523	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V (EXCEPT E51,MX)
C524	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V (EXCEPT E51,MX)

Ref. No.	Part No.	Description			Remark
C525	1-136-495-11	FILM	0.068uF	5%	50V (EXCEPT E51,MX)
C526	1-115-870-11	ELECT	0.47uF	20%	50V (EXCEPT E51,MX)
C527	1-115-870-11	ELECT	0.47uF	20%	50V (EXCEPT E51,MX)
C528	1-136-167-00	FILM	0.15uF	5%	50V (EXCEPT E51,MX)
C529	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V (EXCEPT E51,MX)
C530	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V (EXCEPT E51,MX)
C531	1-136-495-11	FILM	0.068uF	5%	50V (EXCEPT E51,MX)
C532	1-126-785-11	ELECT	47uF	20%	10V (EXCEPT E51,MX)
C533	1-126-785-11	ELECT	47uF	20%	10V (EXCEPT E51,MX)
C534	1-115-871-11	ELECT	1uF	20%	50V (EXCEPT E51,MX)
C535	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V (EXCEPT E51,MX)
C536	1-115-872-11	ELECT	2.2uF	20%	50V (EXCEPT E51,MX)
		< CONNECTOR >			
CN501	1-785-328-11	PIN, CONNECTOR (LIGHT ANGLE) 2P			
CN502	1-785-334-11	PIN, CONNECTOR (LIGHT ANGLE) 8P			
* CN503	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P			
		< DIODE >			
D501	8-719-988-61	DIODE 1SS355TE-17			
D502	8-719-988-61	DIODE 1SS355TE-17			
D503	8-719-988-61	DIODE 1SS355TE-17			
D504	8-719-988-61	DIODE 1SS355TE-17			
D505	8-719-988-61	DIODE 1SS355TE-17			
D506	8-719-988-61	DIODE 1SS355TE-17			
D1201	8-719-069-54	DIODE UDZS-TE17-5.1B (EXCEPT E51,MX)			
		< GROUND TERMINAL BOARD >			
EPT501	1-537-771-21	TERMINAL BOARD, GROUND			
EPT502	1-537-771-21	TERMINAL BOARD, GROUND			
		< FERRITE BEAD >			
FB505	1-469-869-21	INDUCTOR (EMI FERRITE)			
		< IC >			
IC501	8-759-710-97	IC NJM4565M-D			
IC502	8-759-496-41	IC M65850FP-E1 (EXCEPT E51,MX)			
		< JACK >			
J501	1-764-592-11	JACK 3P (GAME INPUT VIDEO,AUDIO L/R)			
J502	1-794-702-11	JACK, HEADPHONE (PHONES)			
J503	1-770-226-11	JACK (LARGE TYPE) (MIC)			
		< RESISTOR >			
R501	1-216-821-11	METAL CHIP	1K	5%	1/10W
R502	1-216-821-11	METAL CHIP	1K	5%	1/10W
R503	1-216-841-11	METAL CHIP	47K	5%	1/10W

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

Ref. No.	Part No.	Description			Remark
R504	1-216-841-11	METAL CHIP	47K	5%	1/10W
R505	1-216-833-11	METAL CHIP	10K	5%	1/10W
R506	1-216-833-11	METAL CHIP	10K	5%	1/10W
R507	1-216-821-11	METAL CHIP	1K	5%	1/10W
R508	1-216-835-11	METAL CHIP	15K	5%	1/10W
R509	1-216-821-11	METAL CHIP	1K	5%	1/10W
R510	1-216-837-11	METAL CHIP	22K	5%	1/10W
R511	1-216-809-11	METAL CHIP	100	5%	1/10W
R512	1-216-833-11	METAL CHIP	10K	5%	1/10W
R513	1-216-847-11	METAL CHIP	150K	5%	1/10W
R514	1-216-809-11	METAL CHIP	100	5%	1/10W
R515	1-216-845-11	METAL CHIP	100K	5%	1/10W
R516	1-216-813-11	METAL CHIP	220	5%	1/10W
R517	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R518	1-216-830-11	METAL CHIP	5.6K	5%	1/10W
R519	1-216-837-11	METAL CHIP	22K	5%	1/10W (EXCEPT E51,MX)
R520	1-216-837-11	METAL CHIP	22K	5%	1/10W (EXCEPT E51,MX)
R521	1-216-837-11	METAL CHIP	22K	5%	1/10W (EXCEPT E51,MX)
R522	1-216-841-11	METAL CHIP	47K	5%	1/10W (EXCEPT E51,MX)
R523	1-216-837-11	METAL CHIP	22K	5%	1/10W (EXCEPT E51,MX)
R524	1-216-837-11	METAL CHIP	22K	5%	1/10W (EXCEPT E51,MX)
R525	1-216-837-11	METAL CHIP	22K	5%	1/10W (EXCEPT E51,MX)
R526	1-216-846-11	METAL CHIP	120K	5%	1/10W (EXCEPT E51,MX)
R527	1-216-814-11	METAL CHIP	270	5%	1/10W (EXCEPT E51,MX)
R528	1-216-835-11	METAL CHIP	15K	5%	1/10W (EXCEPT E51,MX)
R529	1-216-835-11	METAL CHIP	15K	5%	1/10W (EXCEPT E51,MX)
R531	1-260-083-11	CARBON	47	5%	1/2W F
R532	1-260-083-11	CARBON	47	5%	1/2W F
		< VARIABLE RESISTOR >			
RV501	1-223-983-11	RES, VAR, CARBON 50K (MIC LEVEL)			
RV502	1-223-983-11	RES, VAR, CARBON 50K (ECHO LEVEL)			(EXCEPT E51,MX)
**********					
	1-688-365-12	LEAD PIN BOARD (RV660D)			
		**********			
		< CONNECTOR >			
CN303	1-785-318-11	PIN, CONNECTOR (STRAIGHT) 6P (RV660D)			
CN304	1-785-332-11	PIN, CONNECTOR (LIGHT ANGLE) 6P (RV660D)			
**********					
	1-688-363-12	LED BOARD			
		**********			
		< DIODE >			
D361	8-719-071-44	LED SELS5223C-TP15 (POWER STREAM)			
D362	8-719-071-44	LED SELS5223C-TP15 (POWER STREAM)			
D363	8-719-071-44	LED SELS5223C-TP15 (POWER STREAM)			
D364	8-719-071-44	LED SELS5223C-TP15 (POWER STREAM)			
D365	8-719-071-44	LED SELS5223C-TP15 (POWER STREAM)			
D366	8-719-071-44	LED SELS5223C-TP15 (POWER STREAM)			
**********					
	A-4733-086-A	MAIN BOARD, COMPLETE (RV990D:PH,SP,MY)			
	A-4733-093-A	MAIN BOARD, COMPLETE (RV990D:E3,E15)			
	A-4733-094-A	MAIN BOARD, COMPLETE (RV990D:EA)			
	A-4733-095-A	MAIN BOARD, COMPLETE (RV990D:AUS)			
	A-4733-097-A	MAIN BOARD, COMPLETE (RV990D:E51,MX)			
	A-4733-101-A	MAIN BOARD, COMPLETE (RV660D:PH,SP,MY)			
	A-4733-131-A	MAIN BOARD, COMPLETE (RV660D:E3,E15)			
	A-4733-132-A	MAIN BOARD, COMPLETE (RV660D:EA)			
	A-4733-136-A	MAIN BOARD, COMPLETE (RV660D:E51)			
	A-4747-967-A	MAIN BOARD, COMPLETE (RV990D:TH)			
	A-4747-972-A	MAIN BOARD, COMPLETE (RV660D:TH)			
	A-4749-059-A	MAIN BOARD, COMPLETE (RV660D:AUS)			
		**********			
		< CAPACITOR >			
C102	1-126-382-11	ELECT	100uF	20%	10V
C104	1-126-961-11	ELECT	2.2uF	20%	50V
C106	1-115-872-11	ELECT	2.2uF	20%	50V
C109	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C110	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C111	1-126-795-11	ELECT	10uF	20%	50V
C112	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C113	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C114	1-126-795-11	ELECT	10uF	20%	50V
C116	1-136-169-00	FILM	0.22uF	5%	50V
C117	1-136-169-00	FILM	0.22uF	5%	50V
C119	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C120	1-126-795-11	ELECT	10uF	20%	50V
C123	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C125	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C126	1-136-169-00	FILM	0.22uF	5%	50V
C127	1-126-795-11	ELECT	10uF	20%	50V
C128	1-126-964-11	ELECT	10uF	20%	50V
C129	1-126-961-11	ELECT	2.2uF	20%	50V
C130	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C131	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C132	1-126-964-11	ELECT	10uF	20%	50V
C133	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C134	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C135	1-126-933-11	ELECT	100uF	20%	16V
C136	1-216-864-11	METAL CHIP	0	5%	1/10W
C137	1-126-961-11	ELECT	2.2uF	20%	50V
C138	1-126-961-11	ELECT	2.2uF	20%	50V
C139	1-126-961-11	ELECT	2.2uF	20%	50V
C140	1-136-169-00	FILM	0.22uF	5%	50V
C141	1-115-872-11	ELECT	2.2uF	20%	50V
C142	1-126-795-11	ELECT	10uF	20%	50V
C143	1-126-964-11	ELECT	10uF	20%	50V (RV990D)
C144	1-126-964-11	ELECT	10uF	20%	50V
C145	1-110-518-11	ELECT	10uF	20%	100V
C146	1-110-518-11	ELECT	10uF	20%	100V
C149	1-126-795-11	ELECT	10uF	20%	50V

MAIN

Ref. No.	Part No.	Description			Remark
C150	1-126-964-11	ELECT	10uF	20%	50V (RV990D)
C151	1-126-795-11	ELECT	10uF	20%	50V
C152	1-126-964-11	ELECT	10uF	20%	50V
C153	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C154	1-126-964-11	ELECT	10uF	20%	50V
C155	1-126-961-11	ELECT	2.2uF	20%	50V
C156	1-126-957-11	ELECT	0.22uF	20%	50V
C157	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C158	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C159	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C160	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C169	1-126-933-11	ELECT	100uF	20%	16V
C170	1-126-959-11	ELECT	0.47uF	20%	50V
C176	1-126-795-11	ELECT	10uF	20%	50V
C201	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C251	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C252	1-216-864-11	METAL CHIP	0	5%	1/10W
C301	1-126-964-11	ELECT	10uF	20%	50V
C302	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C303	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C304	1-126-964-11	ELECT	10uF	20%	50V (RV990D)
C305	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V (RV990D)
C306	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V (RV990D)
C307	1-126-964-11	ELECT	10uF	20%	50V (RV990D)
C308	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C309	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C310	1-126-964-11	ELECT	10uF	20%	50V (RV990D)
C311	1-126-960-11	ELECT	1uF	20%	50V
C312	1-126-964-11	ELECT	10uF	20%	50V (RV990D)
C313	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V (RV990D)
C314	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V (RV990D)
C315	1-126-964-11	ELECT	10uF	20%	50V (RV990D)
C320	1-126-964-11	ELECT	10uF	20%	50V (RV990D)
C321	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V (RV990D)
C322	1-126-964-11	ELECT	10uF	20%	50V (RV990D)
C323	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V (RV990D)
C324	1-126-964-11	ELECT	10uF	20%	50V
C325	1-126-964-11	ELECT	10uF	20%	50V (RV990D)
C326	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C330	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V (RV990D)
C331	1-126-960-11	ELECT	1uF	20%	50V (RV990D)
C332	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C333	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C334	1-126-964-11	ELECT	10uF	20%	50V
C335	1-126-964-11	ELECT	10uF	20%	50V
C337	1-126-964-11	ELECT	10uF	20%	50V (RV990D)
C338	1-126-964-11	ELECT	10uF	20%	50V (RV990D)
C341	1-126-933-11	ELECT	100uF	20%	16V
C342	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C343	1-126-960-11	ELECT	1uF	20%	50V
C344	1-126-933-11	ELECT	100uF	20%	16V
C345	1-126-933-11	ELECT	100uF	20%	16V
C347	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C351	1-126-964-11	ELECT	10uF	20%	50V
C352	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C353	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C354	1-126-964-11	ELECT	10uF	20%	50V (RV990D)
C355	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V (RV990D)
C356	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V (RV990D)
C357	1-126-964-11	ELECT	10uF	20%	50V (RV990D)
C358	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C359	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C360	1-126-964-11	ELECT	10uF	20%	50V (RV990D)
C361	1-126-960-11	ELECT	1uF	20%	50V
C363	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V (RV990D)
C364	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V (RV990D)
C562	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C563	1-126-934-11	ELECT	220uF	20%	10V
C601	1-136-153-00	FILM	0.01uF	5%	50V
C602	1-126-961-11	ELECT	2.2uF	20%	50V
C603	1-126-961-11	ELECT	2.2uF	20%	50V
C604	1-126-961-11	ELECT	2.2uF	20%	50V
C605	1-126-960-11	ELECT	1uF	20%	50V
C606	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C607	1-126-961-11	ELECT	2.2uF	20%	50V
C608	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C609	1-126-961-11	ELECT	2.2uF	20%	50V
C610	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C611	1-128-551-11	ELECT	22uF	20%	25V
C612	1-126-961-11	ELECT	2.2uF	20%	50V
C613	1-128-551-11	ELECT	22uF	20%	25V
C615	1-126-933-11	ELECT	100uF	20%	16V
C617	1-126-961-11	ELECT	2.2uF	20%	50V
C618	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C619	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C620	1-126-961-11	ELECT	2.2uF	20%	50V
C621	1-126-960-11	ELECT	1uF	20%	50V
C622	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C623	1-126-961-11	ELECT	2.2uF	20%	50V
C624	1-126-961-11	ELECT	2.2uF	20%	50V
C625	1-126-961-11	ELECT	2.2uF	20%	50V
C626	1-126-947-11	ELECT	47uF	20%	16V
C627	1-126-960-11	ELECT	1uF	20%	50V
C628	1-162-963-11	CERAMIC CHIP	680PF	10%	50V

Ref. No.	Part No.	Description			Remark
C629	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C630	1-126-947-11	ELECT	47uF	20%	16V
C631	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C632	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C633	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C635	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C636	1-136-155-00	FILM	0.015uF	5%	50V
C637	1-137-194-81	FILM	0.47uF	5%	50V
C638	1-106-375-12	MYLAR	0.022uF	5%	200V
C655	1-126-963-11	ELECT	4.7uF	20%	50V
C656	1-126-961-11	ELECT	2.2uF	20%	50V
C657	1-126-961-11	ELECT	2.2uF	20%	50V
C658	1-126-933-11	ELECT	100uF	20%	16V
C659	1-126-933-11	ELECT	100uF	20%	16V
C660	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C661	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C662	1-136-153-00	FILM	0.01uF	5%	50V
C663	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C664	1-126-964-11	ELECT	10uF	20%	50V
C665	1-126-947-11	ELECT	47uF	20%	16V
C713	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C714	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C715	1-126-964-11	ELECT	10uF	20%	50V
C719	1-126-963-11	ELECT	4.7uF	20%	50V
C723	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C724	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C726	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C734	1-136-153-00	FILM	0.01uF	5%	50V
C735	1-136-153-00	FILM	0.01uF	5%	50V
C738	1-119-939-51	ELECT	6800uF	20%	35V
C739	1-126-961-11	ELECT	2.2uF	20%	50V
C740	1-111-235-61	ELECT	10000uF	20%	25V
C752	1-136-153-00	FILM	0.01uF	5%	50V
C753	1-136-153-00	FILM	0.01uF	5%	50V
C772	1-107-701-11	ELECT	47uF	20%	16V (RV990D)
C773	1-107-701-11	ELECT	47uF	20%	16V (RV990D)
C774	1-107-701-11	ELECT	47uF	20%	16V
C775	1-107-701-11	ELECT	47uF	20%	16V
C791	1-126-963-11	ELECT	4.7uF	20%	50V
C808	1-126-964-11	ELECT	10uF	20%	50V (RV990D)
C809	1-126-964-11	ELECT	10uF	20%	50V (RV990D)
C810	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C811	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C813	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C814	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C815	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C816	1-126-935-11	ELECT	470uF	20%	6.3V
C817	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C821	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C862	1-126-935-11	ELECT	470uF	20%	6.3V
C863	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C897	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C898	1-126-964-11	ELECT	10uF	20%	50V
C899	1-162-974-11	CERAMIC CHIP	0.01uF		50V

Ref. No.	Part No.	Description	Remark
		< CONNECTOR >	
CN101	1-779-275-11	CONNECTOR, FFC (LIF(NON-ZIF)) 7P	
CN102	1-568-830-11	CONNECTOR, FFC 11P	
CN301	1-779-281-11	CONNECTOR, FFC (LIF(NON-ZIF)) 13P	(RV660D)
CN301	1-779-293-11	CONNECTOR, FFC (LIF(NON-ZIF)) 25P	(RV990D)
CN543	1-785-324-11	PIN, CONNECTOR (STRAIGHT) 12P	
* CN602	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P	
* CN603	1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P	
CN605	1-784-774-11	CONNECTOR, FFC 13P	
* CN704	1-564-518-11	PLUG, CONNECTOR 3P	
CN705	1-573-847-11	CONNECTOR, BOARD TO BOARD 15P	
CN706	1-568-828-11	CONNECTOR, FFC 9P	
CN707	1-573-847-11	CONNECTOR, BOARD TO BOARD 15P	
* CN801	1-568-450-11	HOUSING, CONNECTOR (PC BOARD) 4P	
* CN901	1-564-709-11	PIN, CONNECTOR (SMALL TYPE) 7P (RV990D)	
		< DIODE >	
D102	8-719-069-56	DIODE UDZS-TE17-6.2B	
D111	8-719-988-61	DIODE 1SS355TE-17	
D112	8-719-988-61	DIODE 1SS355TE-17	
D113	8-719-988-61	DIODE 1SS355TE-17	
D201	8-719-988-61	DIODE 1SS355TE-17	
D202	8-719-988-61	DIODE 1SS355TE-17	
D609	8-719-988-61	DIODE 1SS355TE-17	
D610	8-719-988-61	DIODE 1SS355TE-17	
D611	8-719-988-61	DIODE 1SS355TE-17	
D703	8-719-988-61	DIODE 1SS355TE-17	
D704	8-719-988-61	DIODE 1SS355TE-17	
D705	8-719-988-61	DIODE 1SS355TE-17	
D706	8-719-988-61	DIODE 1SS355TE-17	
D707	8-719-988-61	DIODE 1SS355TE-17	
D708	8-719-988-61	DIODE 1SS355TE-17	
D709	8-719-988-61	DIODE 1SS355TE-17	
D710	8-719-988-61	DIODE 1SS355TE-17	
D711	8-719-988-61	DIODE 1SS355TE-17	
D712	8-719-988-61	DIODE 1SS355TE-17	
D714	6-500-522-21	DIODE 10EDB40-TB3	
D716	8-719-069-56	DIODE UDZS-TE17-6.2B	
D717	8-719-069-56	DIODE UDZS-TE17-6.2B	
D729	8-719-085-36	DIODE 11EQS04-TB5	
D732	8-719-028-23	DIODE D3SBA20-4101	
D733	8-719-028-23	DIODE D3SBA20-4101	
D734	8-719-988-61	DIODE 1SS355TE-17	
D735	8-719-988-61	DIODE 1SS355TE-17	
D804	8-719-988-61	DIODE 1SS355TE-17	
D809	8-719-988-61	DIODE 1SS355TE-17	
D810	8-719-988-61	DIODE 1SS355TE-17 (RV990D)	
D811	8-719-988-61	DIODE 1SS355TE-17	
D812	8-719-988-61	DIODE 1SS355TE-17 (RV990D)	
D813	8-719-988-61	DIODE 1SS355TE-17	
D814	8-719-988-61	DIODE 1SS355TE-17	
D815	8-719-988-61	DIODE 1SS355TE-17	
		< GROUND TERMINAL BOARD >	
EPT701	1-537-771-21	TERMINAL BOARD, GROUND	

MAIN

Ref. No.	Part No.	Description			Remark
		< FERRITE BEAD >			
FB561	1-500-445-21	FERRITE, EMI (SMD)			
FB801	1-500-445-21	FERRITE, EMI (SMD)			
		< JUMPER RESISTOR >			
FB862	1-216-864-11	METAL CHIP	0	5%	1/10W
FB899	1-216-864-11	METAL CHIP	0	5%	1/10W
		< IC >			
IC101	8-759-710-97	IC NJM4565M-D			
IC102	6-703-650-11	IC M61529FP-D60G			
IC301	6-703-651-11	IC M61530FP-D60G			
IC302	8-749-019-25	IC TOTX141 (DVD DIGITAL OUT (OPTICAL))			
IC303	8-759-710-97	IC NJM4565M-D			
IC601	6-702-130-01	IC HA12237F			
IC703	8-759-532-64	IC M62703SL-TP			
IC1104	6-802-957-01	IC M30620MCN-A28FP			
		< JACK >			
J102	1-774-785-11	JACK, PIN 1P (SUB WOOFER OUT)			
J104	1-816-918-11	JACK, PIN 4P (MD(VIDEO) IN/OUT)			
		< JUMPER RESISTOR >			
JR1	1-216-864-11	METAL CHIP	0	5%	1/10W
JR2	1-216-864-11	METAL CHIP	0	5%	1/10W
JR3	1-216-864-11	METAL CHIP	0	5%	1/10W
JR4	1-216-864-11	METAL CHIP	0	5%	1/10W (RV990D)
JR5	1-216-864-11	METAL CHIP	0	5%	1/10W (RV990D)
JR6	1-216-864-11	METAL CHIP	0	5%	1/10W
JR8	1-216-864-11	METAL CHIP	0	5%	1/10W
JR9	1-216-864-11	METAL CHIP	0	5%	1/10W
JR15	1-216-864-11	METAL CHIP	0	5%	1/10W
JR16	1-216-864-11	METAL CHIP	0	5%	1/10W
JR17	1-216-864-11	METAL CHIP	0	5%	1/10W
JR104	1-216-837-11	METAL CHIP	22K	5%	1/10W
JR105	1-216-837-11	METAL CHIP	22K	5%	1/10W
JR133	1-216-864-11	METAL CHIP	0	5%	1/10W (RV660D)
JR159	1-216-864-11	METAL CHIP	0	5%	1/10W
JR300	1-216-864-11	METAL CHIP	0	5%	1/10W (RV660D)
JR456	1-216-864-11	METAL CHIP	0	5%	1/10W (RV660D)
		< COIL >			
L341	1-412-064-11	INDUCTOR	100uH		
L561	1-408-619-31	INDUCTOR	220uH		
		< TRANSISTOR >			
Q102	8-729-021-15	TRANSISTOR	2SD2351T106W		
Q104	8-729-905-35	TRANSISTOR	2SC4081-R		
Q106	8-729-021-15	TRANSISTOR	2SD2351T106W		
Q114	8-729-021-15	TRANSISTOR	2SD2351T106W		
Q115	8-729-021-15	TRANSISTOR	2SD2351T106W		
Q151	8-729-905-35	TRANSISTOR	2SC4081-R		
Q152	8-729-021-15	TRANSISTOR	2SD2351T106W		
Q153	8-729-021-15	TRANSISTOR	2SD2351T106W		
Q373	8-729-021-15	TRANSISTOR	2SD2351T106W (RV990D)		
Q374	8-729-021-15	TRANSISTOR	2SD2351T106W (RV990D)		
Q375	8-729-021-15	TRANSISTOR	2SD2351T106W (RV990D)		
Q376	8-729-021-15	TRANSISTOR	2SD2351T106W		
Q377	8-729-021-15	TRANSISTOR	2SD2351T106W		
Q601	8-729-142-46	TRANSISTOR	2SC2001-LK		
Q602	8-729-907-00	TRANSISTOR	DTC114EU		
Q603	8-729-905-35	TRANSISTOR	2SC4081-R		
Q604	8-729-905-35	TRANSISTOR	2SC4081-R		
Q605	8-729-905-35	TRANSISTOR	2SC4081-R		
Q606	8-729-905-35	TRANSISTOR	2SC4081-R		
Q607	8-729-905-35	TRANSISTOR	2SC4081-R		
Q608	8-729-026-53	TRANSISTOR	2SA1576A-T106-QR		
Q609	8-729-905-35	TRANSISTOR	2SC4081-R		
Q610	8-729-905-35	TRANSISTOR	2SC4081-R		
Q611	8-729-029-10	TRANSISTOR	DTC143TUA-T106		
Q612	6-550-044-01	TRANSISTOR	2SB1689-T106		
Q613	6-550-044-01	TRANSISTOR	2SB1689-T106		
Q614	8-729-907-00	TRANSISTOR	DTC114EU		
Q615	8-729-907-00	TRANSISTOR	DTC114EU		
Q616	6-550-044-01	TRANSISTOR	2SB1689-T106		
Q617	6-550-044-01	TRANSISTOR	2SB1689-T106		
Q618	8-729-907-00	TRANSISTOR	DTC114EU		
Q701	8-729-028-73	TRANSISTOR	DTA114EUA-T106		
Q702	8-729-028-73	TRANSISTOR	DTA114EUA-T106		
Q703	8-729-028-73	TRANSISTOR	DTA114EUA-T106		
Q704	8-729-907-00	TRANSISTOR	DTC114EU		
Q705	8-729-905-35	TRANSISTOR	2SC4081-R		
Q706	8-729-905-35	TRANSISTOR	2SC4081-R		
Q707	8-729-028-73	TRANSISTOR	DTA114EUA-T106		
Q708	8-729-907-00	TRANSISTOR	DTC114EU		
Q709	8-729-905-35	TRANSISTOR	2SC4081-R		
Q710	8-729-905-35	TRANSISTOR	2SC4081-R		
Q713	8-729-026-68	TRANSISTOR	2SD2525(TP)		
Q714	8-729-907-00	TRANSISTOR	DTC114EU		
Q719	8-729-028-73	TRANSISTOR	DTA114EUA-T106 (RV990D)		
Q721	8-729-028-73	TRANSISTOR	DTA114EUA-T106		
Q723	8-729-028-73	TRANSISTOR	DTA114EUA-T106		
Q724	8-729-028-73	TRANSISTOR	DTA114EUA-T106 (RV990D)		
		< RESISTOR >			
R102	1-216-864-11	METAL CHIP	0	5%	1/10W
R104	1-216-821-11	METAL CHIP	1K	5%	1/10W
R105	1-216-845-11	METAL CHIP	100K	5%	1/10W
R109	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R111	1-216-833-11	METAL CHIP	10K	5%	1/10W
R116	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R117	1-216-833-11	METAL CHIP	10K	5%	1/10W
R118	1-216-841-11	METAL CHIP	47K	5%	1/10W
R119	1-216-818-11	METAL CHIP	560	5%	1/10W
⚠R120	1-215-890-11	METAL OXIDE	470	5%	2W F
R121	1-216-821-11	METAL CHIP	1K	5%	1/10W
R122	1-216-821-11	METAL CHIP	1K	5%	1/10W
R123	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R124	1-216-821-11	METAL CHIP	1K	5%	1/10W
R125	1-216-845-11	METAL CHIP	100K	5%	1/10W

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

Ref. No.	Part No.	Description			Remark
R126	1-216-833-11	METAL CHIP	10K	5%	1/10W
R127	1-216-818-11	METAL CHIP	560	5%	1/10W
R128	1-216-841-11	METAL CHIP	47K	5%	1/10W
R129	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
⚠R130	1-215-890-11	METAL OXIDE	470	5%	2W F
R131	1-216-821-11	METAL CHIP	1K	5%	1/10W
R132	1-216-821-11	METAL CHIP	1K	5%	1/10W
R134	1-216-805-11	METAL CHIP	47	5%	1/10W
R137	1-216-833-11	METAL CHIP	10K	5%	1/10W
R138	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R139	1-216-845-11	METAL CHIP	100K	5%	1/10W
R140	1-216-846-11	METAL CHIP	120K	5%	1/10W
R141	1-216-845-11	METAL CHIP	100K	5%	1/10W
R146	1-216-837-11	METAL CHIP	22K	5%	1/10W
R155	1-216-845-11	METAL CHIP	100K	5%	1/10W
R158	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V (RV660D)
R158	1-216-864-11	METAL CHIP	0	5%	1/10W (RV990D)
R159	1-216-821-11	METAL CHIP	1K	5%	1/10W
R160	1-216-833-11	METAL CHIP	10K	5%	1/10W (RV660D)
R160	1-216-864-11	METAL CHIP	0	5%	1/10W (RV990D)
R161	1-216-864-11	METAL CHIP	0	5%	1/10W (RV660D)
R162	1-216-864-11	METAL CHIP	0	5%	1/10W
R163	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R165	1-216-864-11	METAL CHIP	0	5%	1/10W
R171	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R174	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R176	1-216-845-11	METAL CHIP	100K	5%	1/10W
R177	1-216-853-11	METAL CHIP	470K	5%	1/10W
R178	1-216-857-11	METAL CHIP	1M	5%	1/10W
R179	1-216-845-11	METAL CHIP	100K	5%	1/10W
R183	1-216-833-11	METAL CHIP	10K	5%	1/10W
R184	1-216-837-11	METAL CHIP	22K	5%	1/10W
R185	1-216-837-11	METAL CHIP	22K	5%	1/10W
R201	1-216-864-11	METAL CHIP	0	5%	1/10W
R202	1-216-845-11	METAL CHIP	100K	5%	1/10W
R203	1-216-821-11	METAL CHIP	1K	5%	1/10W
R204	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R251	1-216-864-11	METAL CHIP	0	5%	1/10W
R252	1-216-845-11	METAL CHIP	100K	5%	1/10W
R253	1-216-821-11	METAL CHIP	1K	5%	1/10W
R254	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R271	1-216-825-11	METAL CHIP	2.2K	5%	1/10W (RV660D)
R271	1-216-864-11	METAL CHIP	0	5%	1/10W (RV990D)
R301	1-216-841-11	METAL CHIP	47K	5%	1/10W
R302	1-216-817-11	METAL CHIP	470	5%	1/10W
R303	1-216-833-11	METAL CHIP	10K	5%	1/10W
R304	1-216-833-11	METAL CHIP	10K	5%	1/10W (RV990D)
R305	1-216-825-11	METAL CHIP	2.2K	5%	1/10W (RV990D)
R306	1-216-829-11	METAL CHIP	4.7K	5%	1/10W (RV990D)
R307	1-216-841-11	METAL CHIP	47K	5%	1/10W (RV990D)
R309	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R310	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R311	1-216-841-11	METAL CHIP	47K	5%	1/10W
R312	1-216-857-11	METAL CHIP	1M	5%	1/10W (RV990D)
R313	1-216-833-11	METAL CHIP	10K	5%	1/10W (RV990D)
R314	1-216-819-11	METAL CHIP	680	5%	1/10W (RV990D)
R320	1-216-833-11	METAL CHIP	10K	5%	1/10W (RV990D)
R321	1-216-825-11	METAL CHIP	2.2K	5%	1/10W (RV990D)
R322	1-216-829-11	METAL CHIP	4.7K	5%	1/10W (RV990D)
R323	1-216-841-11	METAL CHIP	47K	5%	1/10W
R330	1-216-857-11	METAL CHIP	1M	5%	1/10W (RV990D)
R331	1-216-821-11	METAL CHIP	1K	5%	1/10W
R332	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R341	1-216-809-11	METAL CHIP	100	5%	1/10W
R342	1-216-809-11	METAL CHIP	100	5%	1/10W
R351	1-216-841-11	METAL CHIP	47K	5%	1/10W
R352	1-216-817-11	METAL CHIP	470	5%	1/10W
R353	1-216-833-11	METAL CHIP	10K	5%	1/10W
R354	1-216-833-11	METAL CHIP	10K	5%	1/10W (RV990D)
R355	1-216-825-11	METAL CHIP	2.2K	5%	1/10W (RV990D)
R356	1-216-829-11	METAL CHIP	4.7K	5%	1/10W (RV990D)
R357	1-216-841-11	METAL CHIP	47K	5%	1/10W (RV990D)
R359	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R360	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R361	1-216-841-11	METAL CHIP	47K	5%	1/10W
R362	1-216-857-11	METAL CHIP	1M	5%	1/10W (RV990D)
R363	1-216-833-11	METAL CHIP	10K	5%	1/10W (RV990D)
R364	1-216-819-11	METAL CHIP	680	5%	1/10W (RV990D)
R371	1-216-864-11	METAL CHIP	0	5%	1/10W (RV990D)
R372	1-216-864-11	METAL CHIP	0	5%	1/10W (RV990D)
R373	1-216-825-11	METAL CHIP	2.2K	5%	1/10W (RV990D)
R374	1-216-825-11	METAL CHIP	2.2K	5%	1/10W (RV990D)
R375	1-216-825-11	METAL CHIP	2.2K	5%	1/10W (RV990D)
R376	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R377	1-216-825-11	METAL CHIP	2.2K	5%	1/10W (RV660D)
R377	1-216-864-11	METAL CHIP	0	5%	1/10W (RV990D)
R381	1-216-833-11	METAL CHIP	10K	5%	1/10W (RV660D)

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

MAIN

Ref. No.	Part No.	Description			Remark
R381	1-216-845-11	METAL CHIP	100K	5%	1/10W (RV990D)
R382	1-216-833-11	METAL CHIP	10K	5%	1/10W (RV660D)
R382	1-216-845-11	METAL CHIP	100K	5%	1/10W (RV990D)
R383	1-216-845-11	METAL CHIP	100K	5%	1/10W (RV990D)
R384	1-216-845-11	METAL CHIP	100K	5%	1/10W (RV990D)
R385	1-216-845-11	METAL CHIP	100K	5%	1/10W (RV990D)
R386	1-216-845-11	METAL CHIP	100K	5%	1/10W
R387	1-216-845-11	METAL CHIP	100K	5%	1/10W (RV990D)
R388	1-216-845-11	METAL CHIP	100K	5%	1/10W (RV990D)
R389	1-216-821-11	METAL CHIP	1K	5%	1/10W
R393	1-216-825-11	METAL CHIP	2.2K	5%	1/10W (RV990D)
R394	1-216-825-11	METAL CHIP	2.2K	5%	1/10W (RV990D)
R395	1-216-825-11	METAL CHIP	2.2K	5%	1/10W (RV990D)
R396	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R397	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R563	1-216-833-11	METAL CHIP	10K	5%	1/10W
R601	1-216-830-11	METAL CHIP	5.6K	5%	1/10W
R602	1-216-830-11	METAL CHIP	5.6K	5%	1/10W
R604	1-216-821-11	METAL CHIP	1K	5%	1/10W
R605	1-216-833-11	METAL CHIP	10K	5%	1/10W
R606	1-216-833-11	METAL CHIP	10K	5%	1/10W
R608	1-216-864-11	METAL CHIP	0	5%	1/10W
R609	1-216-824-11	METAL CHIP	1.8K	5%	1/10W
R610	1-216-837-11	METAL CHIP	22K	5%	1/10W
R611	1-216-834-11	METAL CHIP	12K	5%	1/10W
R612	1-216-841-11	METAL CHIP	47K	5%	1/10W
R613	1-216-841-11	METAL CHIP	47K	5%	1/10W
R614	1-216-841-11	METAL CHIP	47K	5%	1/10W
R615	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R616	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R617	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R618	1-216-864-11	METAL CHIP	0	5%	1/10W
R620	1-216-837-11	METAL CHIP	22K	5%	1/10W
R621	1-216-834-11	METAL CHIP	12K	5%	1/10W
R622	1-216-837-11	METAL CHIP	22K	5%	1/10W
R623	1-216-824-11	METAL CHIP	1.8K	5%	1/10W
R624	1-216-864-11	METAL CHIP	0	5%	1/10W
R626	1-216-833-11	METAL CHIP	10K	5%	1/10W
R627	1-216-821-11	METAL CHIP	1K	5%	1/10W
R629	1-216-830-11	METAL CHIP	5.6K	5%	1/10W
R630	1-216-830-11	METAL CHIP	5.6K	5%	1/10W
R631	1-216-833-11	METAL CHIP	10K	5%	1/10W
R636	1-216-838-11	METAL CHIP	27K	5%	1/10W
R637	1-216-809-11	METAL CHIP	100	5%	1/10W
R638	1-216-833-11	METAL CHIP	10K	5%	1/10W
R639	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R658	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R659	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R660	1-216-833-11	METAL CHIP	10K	5%	1/10W
R661	1-216-809-11	METAL CHIP	100	5%	1/10W
R662	1-216-821-11	METAL CHIP	1K	5%	1/10W
R663	1-216-821-11	METAL CHIP	1K	5%	1/10W
R664	1-216-857-11	METAL CHIP	1M	5%	1/10W
R665	1-216-833-11	METAL CHIP	10K	5%	1/10W
R666	1-216-833-11	METAL CHIP	10K	5%	1/10W
R667	1-216-833-11	METAL CHIP	10K	5%	1/10W
R668	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R669	1-216-837-11	METAL CHIP	22K	5%	1/10W
R670	1-216-837-11	METAL CHIP	22K	5%	1/10W
R675	1-216-833-11	METAL CHIP	10K	5%	1/10W
R676	1-216-841-11	METAL CHIP	47K	5%	1/10W
R677	1-216-833-11	METAL CHIP	10K	5%	1/10W
R678	1-216-833-11	METAL CHIP	10K	5%	1/10W
R679	1-216-833-11	METAL CHIP	10K	5%	1/10W
R680	1-216-833-11	METAL CHIP	10K	5%	1/10W
R681	1-216-833-11	METAL CHIP	10K	5%	1/10W
R682	1-216-833-11	METAL CHIP	10K	5%	1/10W
R683	1-216-821-11	METAL CHIP	1K	5%	1/10W
R684	1-216-819-11	METAL CHIP	680	5%	1/10W
R685	1-216-821-11	METAL CHIP	1K	5%	1/10W
R686	1-216-819-11	METAL CHIP	680	5%	1/10W
R687	1-216-821-11	METAL CHIP	1K	5%	1/10W
R688	1-216-819-11	METAL CHIP	680	5%	1/10W
R689	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R691	1-216-833-11	METAL CHIP	10K	5%	1/10W
R692	1-216-833-11	METAL CHIP	10K	5%	1/10W
R706	1-216-821-11	METAL CHIP	1K	5%	1/10W
R707	1-216-841-11	METAL CHIP	47K	5%	1/10W
R708	1-216-833-11	METAL CHIP	10K	5%	1/10W
R709	1-216-845-11	METAL CHIP	100K	5%	1/10W
R710	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R726	1-216-837-11	METAL CHIP	22K	5%	1/10W
R727	1-216-821-11	METAL CHIP	1K	5%	1/10W
R729	1-216-821-11	METAL CHIP	1K	5%	1/10W
R730	1-216-833-11	METAL CHIP	10K	5%	1/10W
R736	1-216-841-11	METAL CHIP	47K	5%	1/10W
R743	1-216-841-11	METAL CHIP	47K	5%	1/10W
R744	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R745	1-216-817-11	METAL CHIP	470	5%	1/10W
R746	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R747	1-216-841-11	METAL CHIP	47K	5%	1/10W
R748	1-216-849-11	METAL CHIP	220K	5%	1/10W
R749	1-216-837-11	METAL CHIP	22K	5%	1/10W
R750	1-216-837-11	METAL CHIP	22K	5%	1/10W
R753	1-218-867-11	METAL CHIP	6.8K	5%	1/10W
R754	1-216-837-11	METAL CHIP	22K	5%	1/10W
R755	1-216-837-11	METAL CHIP	22K	5%	1/10W
R760	1-216-821-11	METAL CHIP	1K	5%	1/10W (RV990D)
R761	1-216-841-11	METAL CHIP	47K	5%	1/10W (RV990D)
R762	1-216-833-11	METAL CHIP	10K	5%	1/10W (RV990D)
R764	1-216-841-11	METAL CHIP	47K	5%	1/10W
R766	1-216-821-11	METAL CHIP	1K	5%	1/10W
R767	1-216-841-11	METAL CHIP	47K	5%	1/10W
R768	1-216-833-11	METAL CHIP	10K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R769	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R770	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R774	1-216-864-11	METAL CHIP	0	5%	1/10W
R776	1-216-833-11	METAL CHIP	10K	5%	1/10W
R777	1-216-833-11	METAL CHIP	10K	5%	1/10W (RV990D)
R778	1-216-841-11	METAL CHIP	47K	5%	1/10W (RV990D)
R779	1-216-821-11	METAL CHIP	1K	5%	1/10W (RV990D)
R780	1-216-833-11	METAL CHIP	10K	5%	1/10W
R801	1-216-809-11	METAL CHIP	100	5%	1/10W
R802	1-216-809-11	METAL CHIP	100	5%	1/10W
R803	1-216-809-11	METAL CHIP	100	5%	1/10W
R804	1-216-809-11	METAL CHIP	100	5%	1/10W
R805	1-216-809-11	METAL CHIP	100	5%	1/10W
R806	1-216-809-11	METAL CHIP	100	5%	1/10W
R807	1-216-809-11	METAL CHIP	100	5%	1/10W
R808	1-216-864-11	METAL CHIP	0	5%	1/10W
R809	1-216-809-11	METAL CHIP	100	5%	1/10W
R810	1-216-809-11	METAL CHIP	100	5%	1/10W
R811	1-216-851-11	METAL CHIP	330K	5%	1/10W
R812	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R813	1-216-845-11	METAL CHIP	100K	5%	1/10W
R817	1-216-809-11	METAL CHIP	100	5%	1/10W
R818	1-216-833-11	METAL CHIP	10K	5%	1/10W
R819	1-216-809-11	METAL CHIP	100	5%	1/10W
R820	1-216-833-11	METAL CHIP	10K	5%	1/10W
R821	1-216-809-11	METAL CHIP	100	5%	1/10W
R822	1-216-809-11	METAL CHIP	100	5%	1/10W
R823	1-216-809-11	METAL CHIP	100	5%	1/10W
R824	1-216-809-11	METAL CHIP	100	5%	1/10W
R825	1-216-809-11	METAL CHIP	100	5%	1/10W
R826	1-216-833-11	METAL CHIP	10K	5%	1/10W
R829	1-216-809-11	METAL CHIP	100	5%	1/10W
R830	1-216-809-11	METAL CHIP	100	5%	1/10W
R831	1-216-809-11	METAL CHIP	100	5%	1/10W
R832	1-216-809-11	METAL CHIP	100	5%	1/10W
R833	1-216-809-11	METAL CHIP	100	5%	1/10W
R834	1-216-809-11	METAL CHIP	100	5%	1/10W
R835	1-216-809-11	METAL CHIP	100	5%	1/10W
R847	1-216-809-11	METAL CHIP	100	5%	1/10W
R848	1-216-809-11	METAL CHIP	100	5%	1/10W
R849	1-216-809-11	METAL CHIP	100	5%	1/10W
R850	1-216-809-11	METAL CHIP	100	5%	1/10W
R851	1-216-809-11	METAL CHIP	100	5%	1/10W
R852	1-216-809-11	METAL CHIP	100	5%	1/10W
R853	1-216-809-11	METAL CHIP	100	5%	1/10W
R854	1-216-809-11	METAL CHIP	100	5%	1/10W
R855	1-216-809-11	METAL CHIP	100	5%	1/10W
R856	1-216-821-11	METAL CHIP	1K	5%	1/10W
R857	1-216-821-11	METAL CHIP	1K	5%	1/10W
R858	1-216-833-11	METAL CHIP	10K	5%	1/10W
R859	1-216-833-11	METAL CHIP	10K	5%	1/10W
R860	1-216-833-11	METAL CHIP	10K	5%	1/10W
R861	1-216-833-11	METAL CHIP	10K	5%	1/10W
R862	1-216-833-11	METAL CHIP	10K	5%	1/10W
R863	1-216-833-11	METAL CHIP	10K	5%	1/10W
R867	1-216-809-11	METAL CHIP	100	5%	1/10W
R868	1-216-809-11	METAL CHIP	100	5%	1/10W
R869	1-216-809-11	METAL CHIP	100	5%	1/10W
R870	1-216-809-11	METAL CHIP	100	5%	1/10W
R871	1-216-809-11	METAL CHIP	100	5%	1/10W
R872	1-216-809-11	METAL CHIP	100	5%	1/10W
R873	1-216-809-11	METAL CHIP	100	5%	1/10W
R874	1-216-809-11	METAL CHIP	100	5%	1/10W
R875	1-216-809-11	METAL CHIP	100	5%	1/10W
R882	1-216-809-11	METAL CHIP	100	5%	1/10W
R885	1-216-809-11	METAL CHIP	100	5%	1/10W
R886	1-216-809-11	METAL CHIP	100	5%	1/10W
R887	1-216-821-11	METAL CHIP	1K	5%	1/10W
R888	1-216-809-11	METAL CHIP	100	5%	1/10W
R893	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R894	1-216-815-11	METAL CHIP	330	5%	1/10W (E3,E15)
R894	1-216-821-11	METAL CHIP	1K	5%	1/10W (EA)
R894	1-216-823-11	METAL CHIP	1.5K	5%	1/10W (AUS)
R894	1-216-829-11	METAL CHIP	4.7K	5%	1/10W (E51,MX)
R894	1-216-864-11	METAL CHIP	0	5%	1/10W (PH,SP,MY,TH)
R895	1-216-809-11	METAL CHIP	100	5%	1/10W
R897	1-216-809-11	METAL CHIP	100	5%	1/10W
R898	1-216-809-11	METAL CHIP	100	5%	1/10W
R900	1-216-809-11	METAL CHIP	100	5%	1/10W
R901	1-216-833-11	METAL CHIP	10K	5%	1/10W
R902	1-216-809-11	METAL CHIP	100	5%	1/10W
R929	1-216-833-11	METAL CHIP	10K	5%	1/10W
R930	1-216-833-11	METAL CHIP	10K	5%	1/10W
R947	1-216-833-11	METAL CHIP	10K	5%	1/10W
R948	1-216-833-11	METAL CHIP	10K	5%	1/10W
R972	1-216-833-11	METAL CHIP	10K	5%	1/10W
R973	1-216-833-11	METAL CHIP	10K	5%	1/10W
R974	1-216-833-11	METAL CHIP	10K	5%	1/10W
R975	1-216-833-11	METAL CHIP	10K	5%	1/10W
R993	1-216-819-11	METAL CHIP	680	5%	1/10W (RV990D:EXCEPT E3,E15)
R993	1-216-821-11	METAL CHIP	1K	5%	1/10W (RV660D)
R993	1-216-829-11	METAL CHIP	4.7K	5%	1/10W (RV990D:E3,E15)
R994	1-216-821-11	METAL CHIP	1K	5%	1/10W (E51,MX)
R994	1-216-829-11	METAL CHIP	4.7K	5%	1/10W (E3,E15,AUS,EA)
		< TRANSFORMER >			
T601	1-437-220-11	TRANSFORMER, BIAS OSCILLATION			
		< VIBRATOR >			
X800	1-567-098-41	VIBRATOR, CRYSTAL (32.768kHz)			
X801	1-781-107-21	VIBRATOR, CERAMIC (16MHz)			

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MOTOR (LD) MOTOR (TB) PANEL

Ref. No.	Part No.	Description			Remark
	1-687-133-11	MOTOR (LD) BOARD			
		**********			
**********					
	1-687-134-11	MOTOR (TB) BOARD			
		**********			
		< CONNECTOR >			
CN742	1-784-727-11	CONNECTOR, FFC 5P			
**********					
	A-4733-288-A	PANEL BOARD, COMPLETE (EXCEPT TH)			
	A-4747-991-A	PANEL BOARD, COMPLETE (TH)			
		**********			
	4-248-466-01	HOLDER (FL)			
		< CAPACITOR >			
C100	1-126-382-11	ELECT	100uF	20%	6.3V
C101	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C125	1-126-382-11	ELECT	100uF	20%	6.3V
C131	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C132	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C133	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C137	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C191	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C192	1-126-382-11	ELECT	100uF	20%	6.3V
C193	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C194	1-119-943-11	ELECT	47uF	20%	50V
C195	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C196	1-126-382-11	ELECT	100uF	20%	6.3V
C197	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C198	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C199	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C206	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C207	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C208	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C209	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C225	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C301	1-115-872-11	ELECT	2.2uF	20%	50V
C333	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C334	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C335	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C336	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C337	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C338	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C339	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C340	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C341	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C342	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C343	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C344	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C345	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C353	1-115-872-11	ELECT	2.2uF	20%	50V
		< CONNECTOR >			
CN101	1-784-731-11	CONNECTOR, FFC 9P			
CN102	1-785-319-11	PIN, CONNECTOR (STRAIGHT) 7P			
CN103	1-816-422-11	PIN, CONNECTOR 3P			

Ref. No.	Part No.	Description			Remark
		< DIODE >			
D101	8-719-988-61	DIODE 1SS355TE-17			
D102	8-719-988-61	DIODE 1SS355TE-17			
D126	8-719-071-41	LED SELS5923C-TP15 (DVD)			
D127	8-719-071-41	LED SELS5923C-TP15 (TUNER/BAND)			
D128	8-719-071-41	LED SELS5923C-TP15 (TAPE A/B)			
D129	8-719-071-41	LED SELS5923C-TP15 (MD(VIDEO))			
D130	8-719-071-41	LED SELS5923C-TP15 (GAME)			
D137	6-500-416-01	LED SEL6E10C-S (MULTI CHANNEL DECODING)			
D191	8-719-988-61	DIODE 1SS355TE-17			
D192	8-719-071-44	LED SELS5223C-TP15 (I/⏻)			
D193	8-719-988-61	DIODE 1SS355TE-17			
D194	8-719-988-61	DIODE 1SS355TE-17			
D195	8-719-988-61	DIODE 1SS355TE-17			
D196	8-719-988-61	DIODE 1SS355TE-17			
D197	8-719-069-56	DIODE UDZS-TE17-6.2B			
		< FERRITE BEAD >			
FB101	1-469-869-21	INDUCTOR (EMI FERRITE)			
FB102	1-469-869-21	INDUCTOR (EMI FERRITE)			
		< FLUORESCENT INDICATOR >			
FL1001	1-518-871-21	INDICATOR TUBE, FLUORESCENT			
		< IC >			
IC101	6-802-958-01	IC uPD780232GC-081-8BT			
IC102	8-759-584-98	IC SN74AHCT04NSR			
		< JUMPER RESISTOR >			
JR101	1-216-864-11	METAL CHIP	0	5%	1/10W
JR103	1-216-864-11	METAL CHIP	0	5%	1/10W
		< TRANSISTOR >			
Q126	8-729-907-00	TRANSISTOR DTC114EU			
Q127	8-729-907-00	TRANSISTOR DTC114EU			
Q128	8-729-907-00	TRANSISTOR DTC114EU			
Q129	8-729-907-00	TRANSISTOR DTC114EU			
Q130	8-729-907-00	TRANSISTOR DTC114EU			
Q131	8-729-907-00	TRANSISTOR DTC114EU			
Q132	8-729-907-00	TRANSISTOR DTC114EU			
Q133	8-729-907-00	TRANSISTOR DTC114EU			
Q134	8-729-907-00	TRANSISTOR DTC114EU			
Q135	8-729-907-00	TRANSISTOR DTC114EU			
Q136	8-729-907-00	TRANSISTOR DTC114EU			
Q137	8-729-907-00	TRANSISTOR DTC114EU			
Q168	8-729-028-97	TRANSISTOR DTC114TUA-T106			
Q191	8-729-028-73	TRANSISTOR DTA114EUA-T106			
		< RESISTOR >			
R11	1-216-817-11	METAL CHIP	470	5%	1/10W
R12	1-216-819-11	METAL CHIP	680	5%	1/10W
R13	1-216-821-11	METAL CHIP	1K	5%	1/10W
R14	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R15	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R16	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R17	1-216-827-11	METAL CHIP	3.3K	5%	1/10W

PANEL

Ref. No.	Part No.	Description			Remark
R18	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R19	1-218-867-11	METAL CHIP	6.8K	5%	1/10W
R20	1-216-833-11	METAL CHIP	10K	5%	1/10W
R21	1-216-835-11	METAL CHIP	15K	5%	1/10W
R22	1-216-837-11	METAL CHIP	22K	5%	1/10W
R23	1-216-839-11	METAL CHIP	33K	5%	1/10W
R24	1-216-843-11	METAL CHIP	68K	5%	1/10W
R31	1-216-817-11	METAL CHIP	470	5%	1/10W
R32	1-216-819-11	METAL CHIP	680	5%	1/10W
R33	1-216-821-11	METAL CHIP	1K	5%	1/10W
R34	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R35	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R36	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R37	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R38	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R39	1-218-867-11	METAL CHIP	6.8K	5%	1/10W
R40	1-216-833-11	METAL CHIP	10K	5%	1/10W
R41	1-216-835-11	METAL CHIP	15K	5%	1/10W
R42	1-216-837-11	METAL CHIP	22K	5%	1/10W
R43	1-216-839-11	METAL CHIP	33K	5%	1/10W
R44	1-216-843-11	METAL CHIP	68K	5%	1/10W
R51	1-216-817-11	METAL CHIP	470	5%	1/10W
R52	1-216-819-11	METAL CHIP	680	5%	1/10W
R53	1-216-821-11	METAL CHIP	1K	5%	1/10W
R54	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R55	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R56	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R57	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R58	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R59	1-218-867-11	METAL CHIP	6.8K	5%	1/10W
R60	1-216-833-11	METAL CHIP	10K	5%	1/10W
R61	1-216-835-11	METAL CHIP	15K	5%	1/10W
R62	1-216-837-11	METAL CHIP	22K	5%	1/10W
R63	1-216-839-11	METAL CHIP	33K	5%	1/10W
R64	1-216-843-11	METAL CHIP	68K	5%	1/10W
R106	1-216-821-11	METAL CHIP	1K	5%	1/10W
R107	1-216-809-11	METAL CHIP	100	5%	1/10W
R108	1-216-809-11	METAL CHIP	100	5%	1/10W
R109	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R113	1-216-821-11	METAL CHIP	1K	5%	1/10W
R114	1-216-821-11	METAL CHIP	1K	5%	1/10W
R120	1-216-835-11	METAL CHIP	15K	5%	1/10W
R126	1-216-813-11	METAL CHIP	220	5%	1/10W
R131	1-216-817-11	METAL CHIP	470	5%	1/10W
R132	1-216-817-11	METAL CHIP	470	5%	1/10W
R133	1-216-817-11	METAL CHIP	470	5%	1/10W
R134	1-216-817-11	METAL CHIP	470	5%	1/10W
R135	1-216-817-11	METAL CHIP	470	5%	1/10W
R136	1-216-817-11	METAL CHIP	470	5%	1/10W
R137	1-216-809-11	METAL CHIP	100	5%	1/10W
R168	1-216-841-11	METAL CHIP	47K	5%	1/10W
R191	1-216-809-11	METAL CHIP	100	5%	1/10W
R192	1-216-809-11	METAL CHIP	100	5%	1/10W
R193	1-216-821-11	METAL CHIP	1K	5%	1/10W
R194	1-216-809-11	METAL CHIP	100	5%	1/10W
R195	1-216-813-11	METAL CHIP	220	5%	1/10W
R196	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R197	1-216-845-11	METAL CHIP	100K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R213	1-216-833-11	METAL CHIP	10K	5%	1/10W
R214	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1016	1-216-835-11	METAL CHIP	15K	5%	1/10W
R1036	1-216-835-11	METAL CHIP	15K	5%	1/10W
		< SWITCH >			
S11	1-762-875-21	SWITCH, KEYBOARD (I/⏻)			
S12	1-762-875-21	SWITCH, KEYBOARD (DISPLAY)			
S13	1-762-875-21	SWITCH, KEYBOARD (◁▷)			
S14	1-762-875-21	SWITCH, KEYBOARD (DISC 1)			
S15	1-762-875-21	SWITCH, KEYBOARD (DISC 2)			
S16	1-762-875-21	SWITCH, KEYBOARD (DISC 3)			
S17	1-762-875-21	SWITCH, KEYBOARD (DISC SKIP/EX-CHANGE)			
S18	1-762-875-21	SWITCH, KEYBOARD (⏏)			
S19	1-762-875-21	SWITCH, KEYBOARD (SOUND FIELD)			
S20	1-762-875-21	SWITCH, KEYBOARD (MOVIE EQ)			
S21	1-762-875-21	SWITCH, KEYBOARD (↑)			
S22	1-762-875-21	SWITCH, KEYBOARD (↓)			
S23	1-762-875-21	SWITCH, KEYBOARD (←)			
S24	1-762-875-21	SWITCH, KEYBOARD (P FILE)			
S31	1-762-875-21	SWITCH, KEYBOARD (❚❚)			
S32	1-762-875-21	SWITCH, KEYBOARD (■)			
S33	1-762-875-21	SWITCH, KEYBOARD (▶▶❙)			
S34	1-762-875-21	SWITCH, KEYBOARD (▶▶ +)			
S35	1-762-875-21	SWITCH, KEYBOARD (ALBUM +)			
S37	1-762-875-21	SWITCH, KEYBOARD (ALBUM –)			
S38	1-762-875-21	SWITCH, KEYBOARD (◀◀ –)			
S39	1-762-875-21	SWITCH, KEYBOARD (❙◀◀)			
S40	1-762-875-21	SWITCH, KEYBOARD (TUNER MEMORY/PLAY MODE)			
S41	1-762-875-21	SWITCH, KEYBOARD (FM MODE/REPEAT)			
S42	1-762-875-21	SWITCH, KEYBOARD (DVD TOP MENU DIRECTION)			
S43	1-762-875-21	SWITCH, KEYBOARD (GAME MIXING)			
S44	1-762-875-21	SWITCH, KEYBOARD (ILLUMINATION)			
S51	1-762-875-21	SWITCH, KEYBOARD (DVD)			
S52	1-762-875-21	SWITCH, KEYBOARD (TUNER/BAND)			
S53	1-762-875-21	SWITCH, KEYBOARD (TAPE A/B)			
S54	1-762-875-21	SWITCH, KEYBOARD (MD(VIDEO))			
S55	1-762-875-21	SWITCH, KEYBOARD (GAME)			
S56	1-762-875-21	SWITCH, KEYBOARD (CD SYNC)			
S57	1-762-875-21	SWITCH, KEYBOARD (REC PAUSE/START)			
S58	1-762-875-21	SWITCH, KEYBOARD (KARAOKE/MPX)			
S59	1-762-875-21	SWITCH, KEYBOARD (DVD MENU)			
S60	1-762-875-21	SWITCH, KEYBOARD (ENTER)			
S61	1-762-875-21	SWITCH, KEYBOARD (MUSIC EQ)			
S62	1-762-875-21	SWITCH, KEYBOARD (GAME EQ)			
S63	1-762-875-21	SWITCH, KEYBOARD (GROOVE)			
S64	1-762-875-21	SWITCH, KEYBOARD (→)			
S1081	1-418-725-41	ENCODER, ROTARY (VOLUME)			
		< VIBRATOR >			
X101	1-579-233-11	VIBRATOR, CERAMIC (5MHz)			

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REMOTE RF

Ref. No.	Part No.	Description			Remark
	1-688-364-12	REMOTE BOARD			
		**********			
		< CONNECTOR >			
CN113	1-816-423-11	SOCKET, CONNECTOR 3P			
		< IC >			
IC301	8-759-826-34	IC NJL74H400A (IR)			
		< JUMPER RESISTOR >			
JR301	1-216-864-11	METAL CHIP	0	5%	1/10W
**********					
	A-4728-690-A	RF BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C001	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C002	1-124-779-00	ELECT CHIP	10uF	20%	16V
C003	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C004	1-124-779-00	ELECT CHIP	10uF	20%	16V
C005	1-128-993-21	ELECT CHIP	22uF	20%	10V
C006	1-128-993-21	ELECT CHIP	22uF	20%	10V
C008	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C009	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C010	1-115-416-11	CERAMIC CHIP	0.001uF	5%	25V
C011	1-115-416-11	CERAMIC CHIP	0.001uF	5%	25V
C012	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C013	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C014	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C015	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C016	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C017	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C018	1-164-172-11	CERAMIC CHIP	0.0056uF	10%	25V
C019	1-164-172-11	CERAMIC CHIP	0.0056uF	10%	25V
C020	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C021	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C022	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C023	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C024	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C025	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C026	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C027	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C028	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C029	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C030	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C031	1-115-416-11	CERAMIC CHIP	0.001uF	5%	25V
C032	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C033	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C034	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C035	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C036	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C037	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C038	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C039	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C040	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C041	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C042	1-164-218-11	CERAMIC CHIP	180PF	0.25PF	50V
C049	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
		< CONNECTOR >			
CN001	1-815-031-11	CONNECTOR, FFC/FPC (ZIF) 24P			
CN002	1-784-836-21	CONNECTOR, FFC (LIF(NON-ZIF)) 29P			
CN003	1-784-861-21	CONNECTOR, FFC (LIF(NON-ZIF)) 9P			
		< DIODE >			
D001	8-719-988-61	DIODE 1SS355TE-17			
D002	8-719-988-61	DIODE 1SS355TE-17			
		< IC >			
IC001	6-703-551-01	IC SP3723BDAOPM			
		< COIL >			
L001	1-412-031-11	INDUCTOR	47uH		
L002	1-412-031-11	INDUCTOR	47uH		
		< TRANSISTOR >			
Q001	8-729-903-46	TRANSISTOR 2SB1132-P			
Q002	8-729-903-46	TRANSISTOR 2SB1132-P			
		< RESISTOR >			
R001	1-218-668-11	METAL CHIP	100	0.5%	1/10W
R003	1-216-803-11	METAL CHIP	33	5%	1/10W
R004	1-216-803-11	METAL CHIP	33	5%	1/10W
R005	1-216-841-11	METAL CHIP	47K	5%	1/10W
R006	1-216-817-11	METAL CHIP	470	5%	1/10W
R007	1-216-803-11	METAL CHIP	33	5%	1/10W
R008	1-216-803-11	METAL CHIP	33	5%	1/10W
R009	1-216-841-11	METAL CHIP	47K	5%	1/10W
R010	1-216-817-11	METAL CHIP	470	5%	1/10W
R011	1-216-864-11	METAL CHIP	0	5%	1/10W
R012	1-216-864-11	METAL CHIP	0	5%	1/10W
R013	1-216-864-11	METAL CHIP	0	5%	1/10W
R014	1-216-864-11	METAL CHIP	0	5%	1/10W
R015	1-216-864-11	METAL CHIP	0	5%	1/10W
R016	1-216-864-11	METAL CHIP	0	5%	1/10W
R017	1-216-864-11	METAL CHIP	0	5%	1/10W
R018	1-216-864-11	METAL CHIP	0	5%	1/10W
R019	1-216-864-11	METAL CHIP	0	5%	1/10W
R020	1-216-864-11	METAL CHIP	0	5%	1/10W
R021	1-216-864-11	METAL CHIP	0	5%	1/10W
R022	1-216-813-11	METAL CHIP	220	5%	1/10W
R023	1-216-820-11	METAL CHIP	820	5%	1/10W
R024	1-216-864-11	METAL CHIP	0	5%	1/10W
R025	1-216-809-11	METAL CHIP	100	5%	1/10W
R026	1-218-718-11	METAL CHIP	12K	0.5%	1/10W
R027	1-216-864-11	METAL CHIP	0	5%	1/10W
R028	1-216-864-11	METAL CHIP	0	5%	1/10W
R029	1-216-864-11	METAL CHIP	0	5%	1/10W
R032	1-216-809-11	METAL CHIP	100	5%	1/10W
R033	1-216-864-11	METAL CHIP	0	5%	1/10W
R034	1-219-570-11	METAL CHIP	10M	5%	1/10W
R035	1-216-864-11	METAL CHIP	0	5%	1/10W

RF **SENSOR** **SUB TRANS** **SURROUND AMP**

Ref. No.	Part No.	Description			Remark
R041	1-216-821-11	METAL CHIP	1K	5%	1/10W
**********					
	1-687-132-11	SENSOR BOARD			
		**********			
		< CONNECTOR >			
CN731	1-785-329-21	PIN, CONNECTOR (LIGHT ANGLE) 3P			
		< IC >			
IC731	6-600-022-01	IC RPI-576			
**********					
	A-4733-306-A	SUB TRANS BOARD, COMPLETE (RV990D:EXCEPT E51,AUS,MX,TH)			
	A-4733-309-A	SUB TRANS BOARD, COMPLETE (RV990D:AUS)			
	A-4733-312-A	SUB TRANS BOARD, COMPLETE (RV990D:E51)			
	A-4733-315-A	SUB TRANS BOARD, COMPLETE (MX)			
	A-4748-000-A	SUB TRANS BOARD, COMPLETE (RV990D:TH)			
	A-4748-006-A	SUB TRANS BOARD, COMPLETE (RV660D:TH)			
	A-4749-049-A	SUB TRANS BOARD, COMPLETE (RV660D:EXCEPT E51,AUS,TH)			
	A-4749-063-A	SUB TRANS BOARD, COMPLETE (RV660D:AUS)			
	A-4749-073-A	SUB TRANS BOARD, COMPLETE (RV660D:E51)			
		**********			
	1-533-217-31	HOLDER, FUSE (EXCEPT TH)			
		< 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
C904	1-164-159-11	CERAMIC	0.1uF		50V
		< CONNECTOR >			
CN901	1-564-321-00	PIN, CONNECTOR (3.96mm PITCH) 2P			
* CN902	1-564-321-21	PIN, CONNECTOR (3.96mm PITCH) 2P (AUS,MX,TH)			
CN902	1-568-106-11	PIN, CONNECTOR (3.96mm PITCH) 4P (EXCEPT AUS,MX,TH)			
CN903	1-506-468-11	PIN, CONNECTOR 3P			
		< DIODE >			
D901	8-719-991-33	DIODE 1SS133T-77			
⚠ D902	6-500-522-11	DIODE 10EDB40-TA2B5			
⚠ D903	6-500-522-11	DIODE 10EDB40-TA2B5			
⚠ D904	6-500-522-11	DIODE 10EDB40-TA2B5			
⚠ D905	6-500-522-11	DIODE 10EDB40-TA2B5			
		< IC >			
IC901	6-703-546-01	IC TA7804LS			
		< TRANSISTOR >			
Q901	8-729-119-78	TRANSISTOR 2SC2785-HFE			
		< RESISTOR >			
R901	1-249-429-11	CARBON	10K	5%	1/4W
R904	1-249-397-11	CARBON	22	5%	1/4W

Ref. No.	Part No.	Description			Remark
		< RELAY >			
⚠ RY901	1-755-467-11	RELAY (POWER)			
		< SWITCH >			
⚠ S901	1-786-055-21	SELECTOR, VOLTAGE (VOLTAGE SELECTOR) (EXCEPT AUS,MX,TH)			
		< TRANSFORMER >			
⚠ T901	1-437-677-11	TRANSFORMER, POWER			
**********					
	A-4733-299-A	SURROUND AMP BOARD, COMPLETE (RV990D:EXCEPT TH)			
	A-4747-996-A	SURROUND AMP BOARD, COMPLETE (RV990D:TH)			
		**********			
		< CAPACITOR >			
C301	1-126-964-11	ELECT	10uF	20%	50V (RV990D)
C302	1-162-294-31	CERAMIC	0.001uF	10%	50V (RV990D)
C303	1-162-286-31	CERAMIC	220PF	10%	50V (RV990D)
C304	1-126-964-11	ELECT	10uF	20%	50V (RV990D)
C306	1-136-165-00	FILM	0.1uF	5%	50V (RV990D)
C307	1-136-165-00	FILM	0.1uF	5%	50V (RV990D)
C308	1-126-968-11	ELECT	100uF	20%	50V (RV990D)
C310	1-162-199-31	CERAMIC	10PF	5%	50V (RV990D)
C311	1-162-199-31	CERAMIC	10PF	5%	50V (RV990D)
C312	1-162-199-31	CERAMIC	10PF	5%	50V (RV990D)
C341	1-126-964-11	ELECT	10uF	20%	50V (RV990D)
C342	1-162-294-31	CERAMIC	0.001uF	10%	50V (RV990D)
C343	1-162-286-31	CERAMIC	220PF	10%	50V (RV990D)
C344	1-126-964-11	ELECT	10uF	20%	50V (RV990D)
C346	1-136-165-00	FILM	0.1uF	5%	50V (RV990D)
C347	1-136-165-00	FILM	0.1uF	5%	50V (RV990D)
C351	1-126-964-11	ELECT	10uF	20%	50V (RV990D)
C352	1-162-294-31	CERAMIC	0.001uF	10%	50V (RV990D)
C353	1-162-286-31	CERAMIC	220PF	10%	50V (RV990D)
C354	1-126-964-11	ELECT	10uF	20%	50V (RV990D)
C356	1-136-165-00	FILM	0.1uF	5%	50V (RV990D)
C357	1-136-165-00	FILM	0.1uF	5%	50V (RV990D)

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

SURROUND AMP

Ref. No.	Part No.	Description			Remark
C381	1-136-165-00	FILM	0.1uF	5%	50V (RV990D)
C382	1-136-165-00	FILM	0.1uF	5%	50V (RV990D)
C383	1-136-165-00	FILM	0.1uF	5%	50V (RV990D)
C384	1-136-165-00	FILM	0.1uF	5%	50V (RV990D)
C385	1-136-165-00	FILM	0.1uF	5%	50V (RV990D)
C386	1-136-165-00	FILM	0.1uF	5%	50V (RV990D)
		< CONNECTOR >			
CN302	1-785-318-11	PIN, CONNECTOR (STRAIGHT) 6P (RV990D)			
CN303	1-785-318-11	PIN, CONNECTOR (STRAIGHT) 6P (RV990D)			
CN304	1-785-332-11	PIN, CONNECTOR (LIGHT ANGLE) 6P (RV990D)			
CN371	1-564-506-11	PLUG, CONNECTOR 3P (RV990D)			
CN372	1-564-506-11	PLUG, CONNECTOR 3P (RV990D)			
		< DIODE >			
D301	8-719-991-33	DIODE 1SS133T-77 (RV990D)			
D341	8-719-991-33	DIODE 1SS133T-77 (RV990D)			
D351	8-719-991-33	DIODE 1SS133T-77 (RV990D)			
D381	8-719-991-33	DIODE 1SS133T-77 (RV990D)			
D382	8-719-991-33	DIODE 1SS133T-77 (RV990D)			
D391	8-719-991-33	DIODE 1SS133T-77 (RV990D)			
D491	8-719-991-33	DIODE 1SS133T-77 (RV990D)			
		< IC >			
IC301	6-600-173-01	IC STK403-240 (RV990D)			
		< COIL >			
L381	1-422-009-13	COIL, AIR-CORE (RV990D)			
L382	1-422-009-13	COIL, AIR-CORE (RV990D)			
L383	1-422-009-13	COIL, AIR-CORE (RV990D)			
		< TRANSISTOR >			
Q301	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA (RV990D)			
Q316	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA (RV990D)			
Q317	8-729-119-78	TRANSISTOR 2SC2785-HFE (RV990D)			
Q341	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA (RV990D)			
Q351	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA (RV990D)			
Q381	8-729-026-39	TRANSISTOR 2SA933AS-QT (RV990D)			
Q383	8-729-026-39	TRANSISTOR 2SA933AS-QT (RV990D)			
Q384	8-729-029-66	TRANSISTOR DTC114ESA (RV990D)			
		< RESISTOR >			
R301	1-249-417-11	CARBON	1K	5%	1/4W (RV990D)
R302	1-249-437-11	CARBON	47K	5%	1/4W (RV990D)
R303	1-249-418-11	CARBON	1.2K	5%	1/4W (RV990D)
R304	1-249-437-11	CARBON	47K	5%	1/4W (RV990D)
⚠R305	1-245-235-21	METAL	0.22	10%	2W F (RV990D)

Ref. No.	Part No.	Description			Remark
R307	1-249-417-11	CARBON	1K	5%	1/4W (RV990D)
R308	1-249-431-11	CARBON	15K	5%	1/4W (RV990D)
R309	1-249-441-11	CARBON	100K	5%	1/4W (RV990D)
R310	1-260-076-11	CARBON	10	5%	1/2W F (RV990D)
⚠R311	1-212-881-11	FUSIBLE	100	5%	1/4W F (RV990D)
R315	1-249-433-11	CARBON	22K	5%	1/4W (RV990D)
R316	1-249-441-11	CARBON	100K	5%	1/4W (RV990D)
R317	1-249-441-11	CARBON	100K	5%	1/4W (RV990D)
R318	1-249-428-11	CARBON	8.2K	5%	1/4W (RV990D)
R319	1-249-441-11	CARBON	100K	5%	1/4W (RV990D)
⚠R320	1-202-972-61	FUSIBLE	1	5%	1/4W F (RV990D)
⚠R321	1-202-972-61	FUSIBLE	1	5%	1/4W F (RV990D)
R331	1-249-437-11	CARBON	47K	5%	1/4W (RV990D)
R332	1-249-438-11	CARBON	56K	5%	1/4W (RV990D)
R333	1-249-439-11	CARBON	68K	5%	1/4W (RV990D)
R341	1-249-417-11	CARBON	1K	5%	1/4W (RV990D)
R342	1-249-437-11	CARBON	47K	5%	1/4W (RV990D)
R343	1-249-418-11	CARBON	1.2K	5%	1/4W (RV990D)
R344	1-249-437-11	CARBON	47K	5%	1/4W (RV990D)
⚠R345	1-245-235-21	METAL	0.22	10%	2W F (RV990D)
R347	1-249-417-11	CARBON	1K	5%	1/4W (RV990D)
R348	1-249-431-11	CARBON	15K	5%	1/4W (RV990D)
R349	1-249-441-11	CARBON	100K	5%	1/4W (RV990D)
R350	1-260-076-11	CARBON	10	5%	1/2W F (RV990D)
R351	1-249-417-11	CARBON	1K	5%	1/4W (RV990D)
R352	1-249-437-11	CARBON	47K	5%	1/4W (RV990D)
R353	1-249-418-11	CARBON	1.2K	5%	1/4W (RV990D)
R354	1-249-437-11	CARBON	47K	5%	1/4W (RV990D)
⚠R355	1-245-235-21	METAL	0.22	10%	2W F (RV990D)
R357	1-249-417-11	CARBON	1K	5%	1/4W (RV990D)
R358	1-249-431-11	CARBON	15K	5%	1/4W (RV990D)

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

SURROUND AMP | SW | TRANS

Ref. No.	Part No.	Description			Remark
R359	1-249-441-11	CARBON	100K	5%	1/4W (RV990D)
R360	1-260-076-11	CARBON	10	5%	1/2W F (RV990D)
R381	1-260-330-11	CARBON	1.5K	5%	1/2W F (RV990D)
R382	1-260-330-11	CARBON	1.5K	5%	1/2W F (RV990D)
R383	1-260-330-11	CARBON	1.5K	5%	1/2W F (RV990D)
R385	1-260-076-11	CARBON	10	5%	1/2W F (RV990D)
R386	1-260-076-11	CARBON	10	5%	1/2W F (RV990D)
R390	1-249-429-11	CARBON	10K	5%	1/4W (RV990D)
R391	1-260-076-11	CARBON	10	5%	1/2W F (RV990D)
⚠R394	1-215-888-00	METAL OXIDE	220	5%	2W F (RV990D)
R395	1-249-429-11	CARBON	10K	5%	1/4W (RV990D)
R396	1-249-433-11	CARBON	22K	5%	1/4W (RV990D)
R397	1-249-417-11	CARBON	1K	5%	1/4W (RV990D)
R398	1-249-433-11	CARBON	22K	5%	1/4W (RV990D)
⚠R399	1-215-888-00	METAL OXIDE	220	5%	2W F (RV990D)
		< RELAY >			
RY381	1-515-920-11	RELAY (RV990D)			
RY382	1-515-920-11	RELAY (RV990D)			
		< THERMISTOR >			
TH301	1-807-796-11	THERMISTOR (RV990D)			
		< TERMINAL BOARD >			
TM401	1-694-674-22	TERMINAL BOARD (6P) (SURROUND SPEAKER, CENTER SPEAKER) (RV990D)			
**********					
	1-687-669-11	SW BOARD			
		**********			
		< SWITCH >			
S751	1-786-514-11	SWITCH, LEVER (SLIDE) (OPEN/CLOSE DETECT)			
**********					

Ref. No.	Part No.	Description			Remark
	A-4733-305-A	TRANS BOARD, COMPLETE (RV990D:EXCEPT E51,AUS,MX,TH)			
	A-4733-308-A	TRANS BOARD, COMPLETE (RV990D:AUS)			
	A-4733-311-A	TRANS BOARD, COMPLETE (RV990D:E51)			
	A-4733-314-A	TRANS BOARD, COMPLETE (MX)			
	A-4747-999-A	TRANS BOARD, COMPLETE (RV990D:TH)			
	A-4748-005-A	TRANS BOARD, COMPLETE (RV660D:TH)			
	A-4749-048-A	TRANS BOARD, COMPLETE (RV660D:EXCEPT E51,AUS,TH)			
	A-4749-062-A	TRANS BOARD, COMPLETE (RV660D:AUS)			
	A-4749-072-A	TRANS BOARD, COMPLETE (RV660D:E51)			
		**********			
	1-533-217-31	HOLDER, FUSE			
		< CAPACITOR >			
⚠C271	1-130-777-00	MYLAR	0.1uF	5%	100V
⚠C272	1-130-777-00	MYLAR	0.1uF	5%	100V
C371	1-136-153-00	FILM	0.01uF	5%	50V (RV990D)
C372	1-136-153-00	FILM	0.01uF	5%	50V (RV990D)
C912	1-126-960-11	ELECT	1uF	20%	50V
C913	1-126-968-11	ELECT	100uF	20%	50V
C915	1-164-159-11	CERAMIC	0.1uF		50V
C918	1-128-576-11	ELECT	100uF	20%	63V
C929	1-126-964-11	ELECT	10uF	20%	50V
C930	1-126-964-11	ELECT	10uF	20%	50V
		< CONNECTOR >			
* CN913	1-564-518-11	PLUG, CONNECTOR 3P (RV990D)			
* CN914	1-564-526-11	PLUG, CONNECTOR 11P			
* CN915	1-564-519-11	PLUG, CONNECTOR 4P			
		< DIODE >			
⚠D271	8-719-510-68	DIODE D5SBA204101			
⚠D371	8-719-510-68	DIODE D5SBA204101 (RV990D)			
⚠D911	6-500-522-11	DIODE 10EDB40-TA2B5			
D912	8-719-983-76	DIODE MTZJ-T-72-27A			
D913	8-719-160-29	DIODE RD6.2F-B2			
		< TRANSISTOR >			
Q971	8-729-048-52	TRANSISTOR 2SA1932(TP)			
		< RESISTOR >			
⚠R911	1-219-124-11	FUSIBLE	0.68	5%	1/4W F
R914	1-249-429-11	CARBON	10K	5%	1/4W
R915	1-247-807-31	CARBON	100	5%	1/4W
R916	1-247-807-31	CARBON	100	5%	1/4W
R917	1-249-393-11	CARBON	10	5%	1/4W
R938	1-249-429-11	CARBON	10K	5%	1/4W
**********					

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Replace only with part number specified.

VIDEO

Ref. No.	Part No.	Description			Remark
	A-4733-300-A	VIDEO BOARD, COMPLETE (EXCEPT TH)			
	A-4747-997-A	VIDEO BOARD, COMPLETE (TH)			
		**********			
		< CAPACITOR >			
C800	1-126-935-11	ELECT	470uF	20%	6.3V
C801	1-162-306-11	CERAMIC	0.01uF	30%	16V
C802	1-126-960-11	ELECT	1uF	20%	50V
C804	1-126-960-11	ELECT	1uF	20%	50V
C806	1-126-960-11	ELECT	1uF	20%	50V
C807	1-104-665-11	ELECT	100uF	20%	10V
C808	1-162-306-11	CERAMIC	0.01uF	30%	16V
C810	1-164-159-11	CERAMIC	0.1uF		50V
C812	1-126-960-11	ELECT	1uF	20%	50V
C814	1-126-960-11	ELECT	1uF	20%	50V
C816	1-126-960-11	ELECT	1uF	20%	50V
C817	1-162-294-31	CERAMIC	0.001uF	10%	50V
C818	1-126-965-11	ELECT	22uF	20%	50V
C819	1-104-665-11	ELECT	100uF	20%	10V
C821	1-126-965-11	ELECT	22uF	20%	50V
C822	1-104-665-11	ELECT	100uF	20%	10V
C824	1-104-665-11	ELECT	100uF	20%	10V
C825	1-126-935-11	ELECT	470uF	20%	6.3V
C827	1-104-665-11	ELECT	100uF	20%	10V
C828	1-126-935-11	ELECT	470uF	20%	6.3V
C830	1-104-665-11	ELECT	100uF	20%	10V
C831	1-126-935-11	ELECT	470uF	20%	6.3V
C833	1-164-159-11	CERAMIC	0.1uF		50V
C836	1-126-964-11	ELECT	10uF	20%	50V
C837	1-162-282-31	CERAMIC	100PF	10%	50V
C838	1-162-306-11	CERAMIC	0.01uF	30%	16V
C839	1-104-665-11	ELECT	100uF	20%	10V
C840	1-162-282-31	CERAMIC	100PF	10%	50V
C841	1-126-935-11	ELECT	470uF	20%	6.3V
C851	1-126-934-11	ELECT	220uF	20%	10V
C852	1-126-964-11	ELECT	10uF	20%	50V
C860	1-126-942-61	ELECT	1000uF	20%	25V
C861	1-117-245-11	ELECT	330uF	20%	6.3V
C862	1-128-646-11	ELECT	1000uF	20%	6.3V
C863	1-117-317-11	ELECT	1000uF	20%	25V
C871	1-117-245-11	ELECT	330uF	20%	6.3V
C872	1-128-646-11	ELECT	1000uF	20%	6.3V
C873	1-117-317-11	ELECT	1000uF	20%	25V
C876	1-117-245-11	ELECT	330uF	20%	6.3V
C877	1-117-245-11	ELECT	330uF	20%	6.3V
		< CONNECTOR >			
CN801	1-779-285-11	CONNECTOR, FFC (LIF(NON-ZIF)) 17P			
* CN804	1-564-730-11	PIN, CONNECTOR (SMALL TYPE) 14P			
		< DIODE >			
D838	8-719-991-33	DIODE 1SS133T-77			
D861	8-719-210-21	DIODE 11EQS04			
D871	8-719-210-21	DIODE 11EQS04			
		< GROUND TERMINAL BOARD >			
EP802	1-537-771-21	TERMINAL BOARD, GROUND			

Ref. No.	Part No.	Description			Remark
		< COIL >			
FB818	1-412-473-21	INDUCTOR (SMALL TYPE)			
FB821	1-412-473-21	INDUCTOR (SMALL TYPE)			
FB824	1-412-473-21	INDUCTOR (SMALL TYPE)			
FB827	1-412-473-21	INDUCTOR (SMALL TYPE)			
FB833	1-412-473-21	INDUCTOR (SMALL TYPE)			
FB834	1-412-473-21	INDUCTOR (SMALL TYPE)			
FB835	1-412-473-21	INDUCTOR (SMALL TYPE)			
		< IC >			
IC801	6-702-335-01	IC MM1568AJBE			
IC802	8-759-295-90	IC NJM2244M-TE2			
IC803	8-759-231-53	IC TA7805S			
IC804	8-759-659-28	IC SI-8033S			
IC805	8-759-474-09	IC SI-8050S-LF1101			
		< JACK >			
J801	1-817-449-11	JACK, PIN 3P (COMPONENT VIDEO OUT)			
J802	1-794-970-11	JACK, PIN 1P (VIDEO OUT)			
		< S TERMINAL >			
J803	1-537-943-11	TERMINAL, S (S VIDEO OUT)			
		< COIL >			
L800	1-410-470-11	INDUCTOR	10uH		
L861	1-456-513-11	COIL, CHOKE	150uH		
L862	1-414-741-11	INDUCTOR	10uH		
L871	1-456-513-11	COIL, CHOKE	150uH		
L872	1-414-741-11	INDUCTOR	10uH		
		< TRANSISTOR >			
Q801	8-729-029-21	TRANSISTOR DTA114ESA-TP			
Q802	8-729-029-66	TRANSISTOR DTC114ESA			
Q851	8-729-040-20	TRANSISTOR RT1P137L-TP			
Q852	8-729-029-66	TRANSISTOR DTC114ESA			
Q853	8-729-029-66	TRANSISTOR DTC114ESA			
Q855	8-729-029-66	TRANSISTOR DTC114ESA			
Q857	8-729-029-66	TRANSISTOR DTC114ESA			
		< RESISTOR >			
R803	1-249-429-11	CARBON	10K	5%	1/4W
R815	1-249-429-11	CARBON	10K	5%	1/4W
R818	1-247-804-11	CARBON	75	5%	1/4W
R821	1-247-804-11	CARBON	75	5%	1/4W
R824	1-247-804-11	CARBON	75	5%	1/4W
R827	1-247-804-11	CARBON	75	5%	1/4W
R830	1-247-804-11	CARBON	75	5%	1/4W
R833	1-247-804-11	CARBON	75	5%	1/4W
R834	1-249-429-11	CARBON	10K	5%	1/4W
R835	1-249-429-11	CARBON	10K	5%	1/4W
R836	1-249-425-11	CARBON	4.7K	5%	1/4W
R837	1-249-437-11	CARBON	47K	5%	1/4W
R838	1-249-403-11	CARBON	68	5%	1/4W
R839	1-249-429-11	CARBON	10K	5%	1/4W
R851	1-249-429-11	CARBON	10K	5%	1/4W

****

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		**********	
6	1-769-956-11	WIRE (FLAT TYPE) (11 CORE)	
56	1-696-656-11	WIRE (FLAT TYPE) (13 CORE)	
58	1-769-912-11	WIRE (FLAT TYPE) (9 CORE)	
59	1-796-487-31	DECK, MECHANICAL	
202	1-757-079-11	WIRE (FLAT TYPE) (17 CORE)	
203	1-827-412-11	WIRE (FLAT TYPE) (7 CORE)	
204	1-827-411-11	WIRE (FLAT TYPE) (25 CORE) (RV990D)	
204	1-827-413-11	WIRE (FLAT TYPE) (13 CORE) (RV660D)	
⚠259	1-690-608-11	CORD, POWER (AUS)	
⚠259	1-777-071-83	CORD, POWER (E51,EA,PH,SP,MY)	
⚠259	1-824-818-11	CORD, POWER (WITH CONNECTOR)	(RV990D:TH)
⚠259	1-824-828-11	CORD (WITH PLUG) (RV660D:TH)	
⚠259	1-827-226-11	CORD, POWER (E3,E15,MX)	
302	1-776-182-11	WIRE (FLAT TYPE) (5 CORE)	
⚠371	1-477-263-11	OPTICAL PICK-UP UNIT	
373	1-824-106-12	CABLE, FLEXIBLE FLAT (24 CORE)	
374	1-827-410-11	WIRE (FLAT TYPE) (29 CORE)	
⚠F911	1-533-472-11	FUSE, GLASS TUBE (DIA.5) (T5AL/250V)	(EXCEPT AUS,MX,TH)
⚠F912	1-533-472-11	FUSE, GLASS TUBE (DIA.5) (T5AL/250V)	(EXCEPT AUS,MX,TH)
⚠F913	1-533-473-11	FUSE, GLASS TUBE (DIA.5) (T6.3AL/250V)	(RV660D:EXCEPT TH)
⚠F913	1-576-655-11	FUSE, GLASS TUBE (DIA.5) (T8AL/250V)	(RV990D:EXCEPT TH)
⚠F914	1-533-473-11	FUSE, GLASS TUBE (DIA.5) (T6.3AL/250V)	
⚠F915	1-533-473-11	FUSE, GLASS TUBE (DIA.5) (T6.3AL/250V)	
⚠F916	1-533-473-11	FUSE, GLASS TUBE (DIA.5) (T6.3AL/250V)	(RV990D)
⚠F917	1-533-473-11	FUSE, GLASS TUBE (DIA.5) (T6.3AL/250V)	(RV990D)
⚠F918	1-533-471-11	FUSE, GLASS TUBE (DIA.5) (T4AL/250V)	(RV660D:EXCEPT E15,PH)
⚠F918	1-533-472-11	FUSE, GLASS TUBE (DIA.5) (T5AL/250V)	(RV660D:E15,PH/RV990D)
⚠F919	1-533-471-11	FUSE, GLASS TUBE (DIA.5) (T4AL/250V)	
IC921	8-759-518-68	IC PQ12RF21	
IC922	8-759-701-59	IC NJM78M09FA	
IC923	8-759-701-59	IC NJM78M09FA	
IC932	6-703-546-01	IC TA7804LS	
IC934	8-759-231-53	IC TA7805S	
M741	A-4723-963-A	MOTOR ASSY, TABLE (TABLE)	
M751	A-4736-655-A	MOTOR ASSY, LOADING (LOADING)	
M961	1-763-072-11	FAN, DC	
RE701	1-477-680-11	ENCODER, ROTARY	(DISC TRAY ADDRESS DETECT)
⚠T911	1-437-790-12	TRANSFORMER, POWER (RV660D:EA)	
⚠T911	1-437-797-12	TRANSFORMER, POWER	(RV660D:EXCEPT EA,TH)
⚠T911	1-443-089-11	TRANSFORMER, POWER	(RV660D:TH/RV990D:EXCEPT EA,MX)
⚠T911	1-443-090-11	TRANSFORMER, POWER (RV990D:EA,MX)	
TM301	1-693-615-21	TUNER PACK (FM/AM) (ANTENNA)	

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

MEMO

HCD-RV660D/RV990D

SONY

E Model
Australian Model

SERVICE MANUAL

Ver 1.2 2004. 07

SUPPLEMENT-1

File this supplement with the service manual.

Subject : Addition of Service Positions, Test Mode, Mechanical Adjustments, Electrical Adjustments, Block Diagrams and IC Pin Descriptions.

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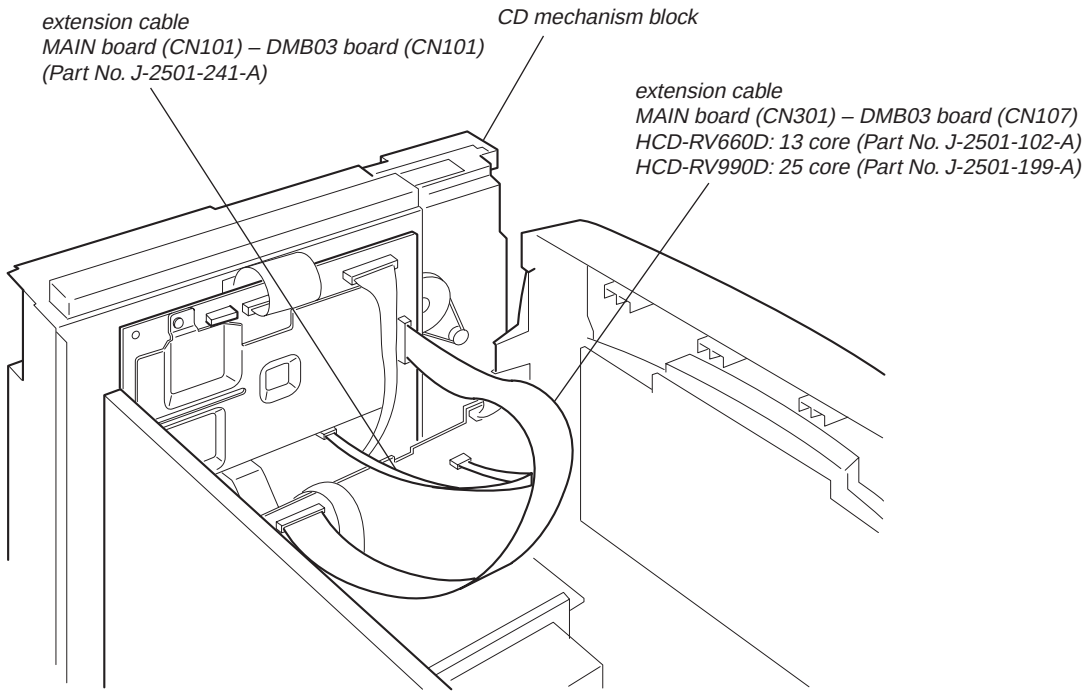
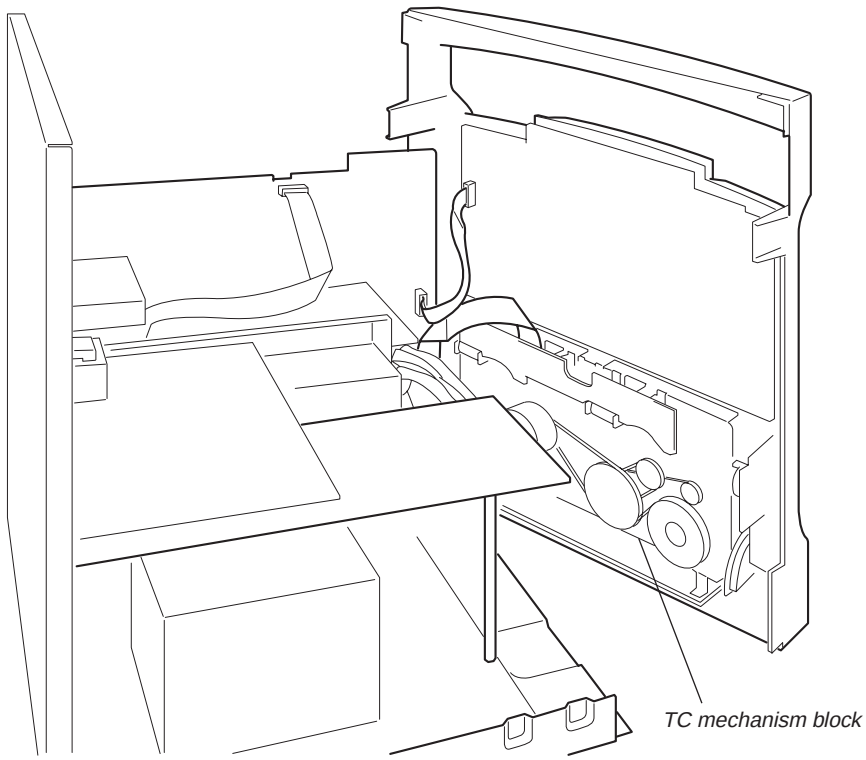
9-961-078-82

1. SERVICE POSITIONS

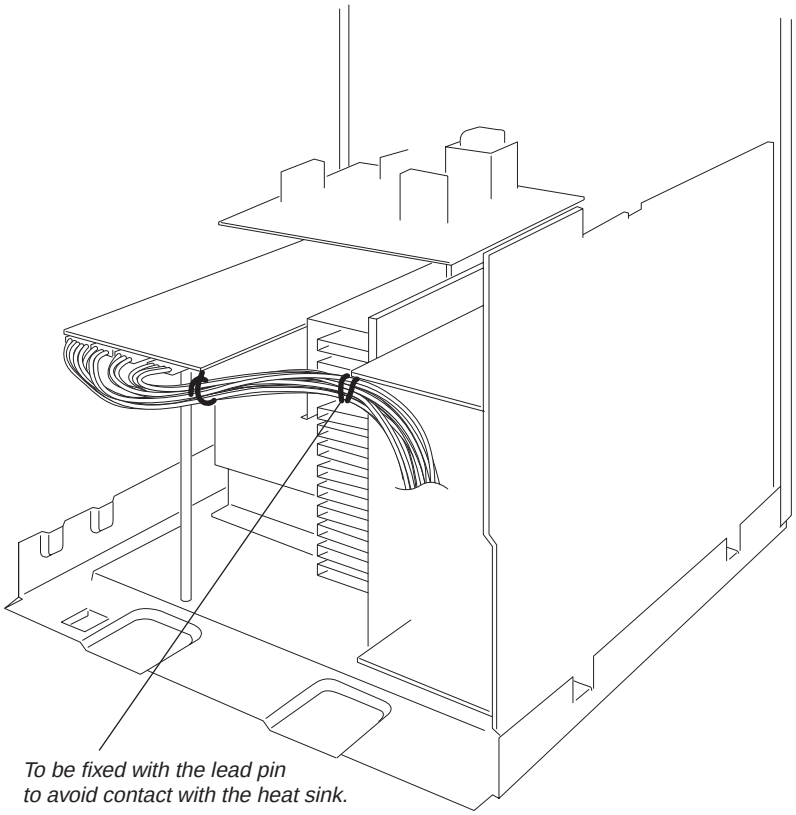
1-1. CD MECHANISM BLOCK



1-2. TC MECHANISM BLOCK



1-3. TYING OF WIRES



2. TEST MODE

[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:

1. Press three buttons of ■ , GROOVE and DISPLAY simultaneously.
2. The message "COLD RESET" is displayed, and the set is reset.

[Hot Reset]

1. Press three buttons of ■ , GAME EQ and DISPLAY simultaneously.
2. The message becomes blank instantaneously, and the set is reset.

[Tuner Step Change] (Except for European and Middle Eastern models)

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

Procedure:

1. Press the I/⏻ button to turn the power ON, and set the function to TUNER/BAND "AM".
2. Press the I/⏻ button to turn the power OFF.
3. Press two buttons of ENTER and I/⏻ simultaneously, and the message changes to "AM 9 k STEP" or "AM 10 k STEP", and thus the channel step is changed over.

[VIDEO/MD Function Change]

- Change of function VIDEO or MD (also the input level changes).

Procedure:

1. Press the I/⏻ button to turn the power ON.
2. Press two buttons of MD (VIDEO) and I/⏻ simultaneously, and the message changes to "MD" or "VIDEO", and thus the channel step is changed over.
3. Press the I/⏻ button to turn the power OFF.

[DISC TRAY LOCK]

The disc tray lock function for the antitheft of a demonstration disc in the store is equipped.

Setting Procedure :

1. Press the I/⏻ button to turn the power ON.
2. Press two buttons of ■ and ⏏ simultaneously for five seconds.
3. The message "LOCKED" is displayed, and the tray is locked.

Releasing Procedure :

1. Press two buttons of ■ and ⏏ simultaneously for five seconds.
2. The message "UNLOCKED" is displayed, and the tray is unlocked.

Note: When the message "LOCKED" is displayed, the tray lock is not released by turning power ON/OFF with the I/⏻ button.

[GC Test Mode]

- This mode is used to check the fluorescent indicator tube, LEDs, keyboard, volume and phones.

Procedure:

1. Press three buttons of ■ , GAME EQ and DISC 2 simultaneously.
2. LEDs and fluorescent indicator tube are all turned on.
3. Press two buttons of GAME EQ and DISC 2 simultaneously. Whenever these two buttons are pressed simultaneously, the mode changes from Key check, Key count check, Headphones input check and Volume check in this order.
4. When the Key check mode is entered, the message "KEY :0 0 0" is displayed.
   The keys that are assigned to the respective channels of the key entry signal lines (KEY0, KEY1, KEY2) that are input to IC101 Display Controller on the PANEL board, are checked. While you press the button, the number that corresponds to the key shown in the table below, is displayed in the location of the corresponding channel. (The I/⏻ and DISPLAY buttons are not included in these channels.)

Display	Left (KEY0)	Center (KEY1)	Right (KEY2)
1	—	❚❚	DVD
2	—	■	TUNER/BAND
3	◁▷	▶▶❙	TAPE A/B
4	DISC 1	▶▶ +	MD (VIDEO)
5	DISC 2	ALBUM +	GAME
6	DISC 3	—	CD SYNC
7	DISC SKIP/ EX-CHANGE	ALBUM –	REC PAUSE/ START
8	⏏	◀◀ –	KARAOKE/ MPX
9	SOUND FIELD	❙◀◀	DVD MENU
10	MOVIE EQ	TUNER MEMORY/ PLAY MODE	ENTER
11	↑	FM MODE/REPEAT	MUSIC EQ
12	↓	DVD TOP MENU DIRECTION	GAME EQ
13	←	GAME MIXING	GROOVE
14	P FILE	ILLUMINATION	→

5. When the Key count check mode is entered, the message "KEYCN:T 0 1" is displayed.
   Whenever the button is pressed, number in the first digit increments (39). At the same time, only when the key is being pressed, the KEY channel is displayed in the second digit. (KEY0: 1, KEY1: 2, KEY2: 3)
   (The buttons that are already pressed once and the buttons of I/⏻ and DISPLAY are not counted.)
6. When the Headphones input check mode is entered, the message "H_P OFF" or "H_P ON" is displayed, and depending on the PHONES jack status.
7. When the Volume check mode is entered, the message "VOLUME FLAT" or "VOLUME DOWN" or "VOLUME UP" is displayed, and depending on the VOLUME status.
8. You can exit the Test Mode when you press two buttons of GAME EQ and DISC 2 simultaneously.

[MC Test Mode]

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

Procedure:

- To enter MC Test Mode

1. Press the I/⏻ button to turn the power ON.
2. Press three buttons of ■ , GAME EQ and DISC 3 simultaneously.

* Check of Amplifier

Initial settings: Input ➡ GAME
EQ ➡ FLAT
Mode ➡ MUSIC
VACS ➡ OFF

Output channel switching:

MUSIC key: L ➡ L R ➡ R through
MOVIE key: L ➡ SL R ➡ SR through
GAME key:L ➡ L, SL, C R ➡ R, SR, SW through
TOOL MODE key: L ➡ C R ➡ SW through

1. When VOLUME control knob is turned clockwise even slightly, the sound volume increases to is maximum and the message "VOLUME MAX" is displayed for two seconds, then the display returns to the original display.
2. When VOLUME control knob is tuned counter-clockwise even slightly, the sound volume decreases to its minimum and the message "VOLUME MIN" is displayed for two seconds, then the display returns to the original display.
3. When you press the ▲ button, the message "GEQ MAX" is displayed, and the entire band of the graphic equalizer is set to the maximum level.
4. When you press the ▼ button, the message "GEQ MIN" is displayed, and the entire band of the graphic equalizer is set to the minimum level.
5. When you press the ◀ , ▶ or P FILE button, the message "GEQ FLAT" is displayed, and the entire band of the graphic equalizer is set to the center level.
6. Whenever you press the ENTER button, it toggles between "VACS ON" and "VACS OFF" so that you can switch ON or OFF of VACS.

* To return to normal mode again.

1. When you want to exit this mode, press the I/⏻ button.
2. The cold reset is enforced at the same time.

[Aging Mode]

This mode can for operation check of tape deck section.

- If an error occurred:

The aging operation stops and display then status.

- If no error occurs:

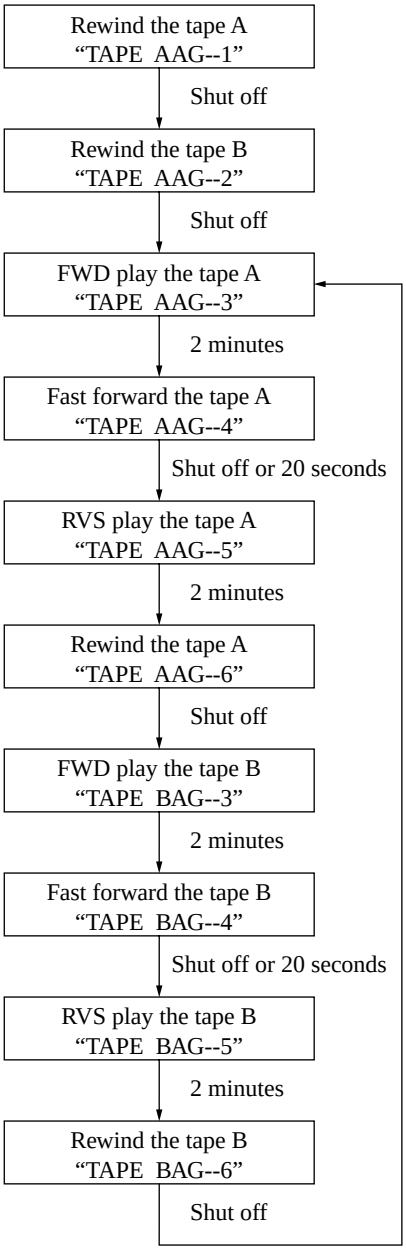
The aging operation continues repeatedly.

Procedure:

1. Press the DVD button to select the function "DVD".
2. Load the tapes into the decks A and B respectively.
3. Set a disc in "DISC 1" tray.
4. Press the TUNER MEMORY/PLAY MODE button to set the "ALL DISCS" mode, and press the FM MODE/REPEAT button to "REPEAT" off.
5. Press three buttons of ■ , GAME EQ and DISC SKIP/EX-CHANGE simultaneously.
6. The message "AGING" is displayed, and aging mode start.
7. To exit from the aging mode, operate the cold reset.

- The sequence during the aging mode is following as below.
- If an error occurred, stop display that step.

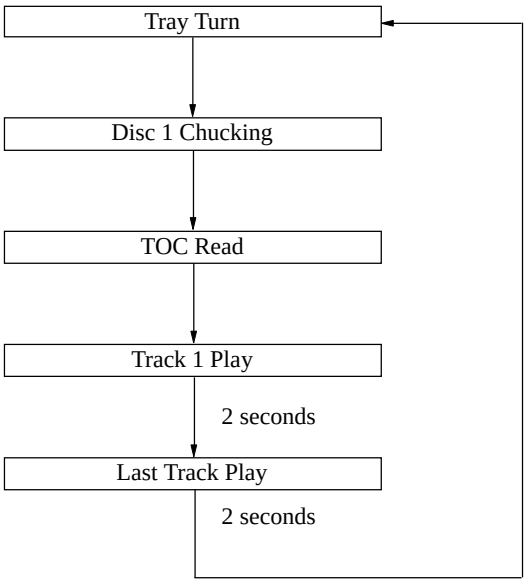
Aging mode sequence (Tape deck section):



[DVD Service Mode]

• The sequence during the aging mode is following as below.

Aging mode sequence (DVD section):



Error History Display

1. BD Error History Display

11 digits are displayed after the D character.

Example of display : D00209010100

1st digit : Indicates the error history number.
0 is the latest error

2nd to 3rd digits : Indicates details of the problem.
- 01 : Cannot focus
- 02 : GFS NG
- 03 : Start time over
- 04 : Focus deviates continuously
- 05 : Q code absent for some time

4th to 5th digits : Processing when problems occur
- 01 : Currently SHIP processing
- 02 : Currently POWER OFF processing
- 03 : Currently initializing
- 04 : Currently stopping
- 05 : Currently STOP operation processing
- 06 : Currently start processing
- 07 : Currently TOC reading
- 08 : Currently searching
- 09 : Currently playing
- 0A : Currently pausing
- 0B : Currently PLAY manual searching
- 0C : Currently PAUSE manual searching

6th to 7th digits : Operations currently performed for problems which have occurred

8th to 9th digits : Rotation speed of DISC when problems occur
- 01 : x1 speed
- 02 : x2 speed

10th to 11th digits : Fixed at 00

2. CDM Error History <CDM74S Error History Display>

11 digits are displayed after the M character.

Example of display : M0FF400220000

1st digit : Indicates the error history number.
0 is the latest error

2nd to 3rd digits : Indicates the details of the problem.
- 01 : Initialization table is currently rotating 1
- 02 : Initialization table is currently rotating 2
- 03 : Initialization table is currently rotating 3
- 04 : Currently DISC SKIP in OPEN mode
- 05 : CLOSE table is currently rotating
- 06 : Chucking table is currently rotating
- 07 : Currently performing SHIP operations
- 08 : Currently performing release operations
- 09 : Currently performing POWER OFF operations

4th to 5th digits : Processing when problems occur
- 01 : Currently performing SHIP operations
- 02 : Currently performing POWER OFF operations
- 03 : Currently initializing
- 04 : Currently performing release operations
- 05 : Currently in chuck stop state
- 06 : Currently performing CLOSE operations
- 07 : Currently performing exchange CLOSE operations
- 08 : Currently performing OPEN operations
- 09 : Currently performing OPEN POP UP operations
- 0A: Currently performing exchange OPEN operations

6 to 7th digits : Operations currently performed for problems which have occurred

8th to 9th digits : Targets of processing when problems occur
Same as 4th to 5th digits

10th to 11th digits : Fixed at 00

[DVD and CD Ship Mode (No Memory Clear)]

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

Procedure:

1. Press the [I/⏻] button to turn the power ON.
2. Press two buttons of [DVD] and [I/⏻] simultaneously.
3. After the “STANDBY” display blinks 15 times, the message “LOCK” is displayed, and the DVD ship mode is set.

[DVD and CD Ship Mode (Memory Clear)]

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

Procedure:

1. Press the [I/⏻] button to turn the power ON.
2. Press three buttons of [ENTER], [DISC 1] and [DVD] simultaneously.
3. After the “STANDBY” display blinks 15 times, the message “LOCK” is displayed, and the DVD ship mode is set.

[REPEAT 5 LIMIT OFF MODE]

- This mode is used to enable infinite repetitions. Normally, the number of repetitions allowed is 5.

Procedure:

1. Press the I/⏻ button to turn the power ON.
2. Set the function "DVD".
3. Press three buttons of ■, GAME EQ and DISPLAY is simultaneously.
4. Infinite repetitions is enabled.
5. This state is maintained (memorized) until COLD RESET is executed.

DVD OSD Test Mode

[GENERAL DESCRIPTION]

The Test Mode allows you to make diagnosis and adjustment easily using the remote commander and monitor TV. The instructions, diagnostic results, etc. are given on the on-screen display (OSD).

[STARTING TEST MODE]

1. Press the I/⏻ button to turn the power ON, and set the function to DVD.
2. While pressing two buttons of ■ and ⏏ simultaneously, and turn the VOLUME control knob clockwise to enter the test mode.
3. The message "SERVICE IN" is displayed, and displays the Test Mode Menu on the monitor screen as follows. (At the bottom of the menu screen, the model name and revision number are displayed)

```
            Test Mode Menu

 0. Syscon Diagnosis
 1. Drive Auto Adjustment
 2. Drive Manual Operation
 3. Mecha Aging
 4. Emergency History
 5. Mecha Error History
 6. Version Information
 7. Video Level Adjustment
                     Exit: POWER Key
 Model    :MHC-RVXXXD xx
 Revision :x.xx
```

4. To execute each function, select the desired menu and press its number on the remote commander RM-SR246D.
5. To release from test mode, press the I/⏻ button and turn the power OFF.

[OPERATING TEST MODE]

0. SYSCON DIAGNOSIS

The same contents as board detail check by serial interface can be checked from the remote commander operation.
On the Test Mode Menu screen, press 10/0 button on the remote commander, and the following Check Menu will be displayed.

```
      ### Syscon Diagnosis ###

              Check Menu
 0. Quit
 1. All
 2. Version
 3. EEPROM
 4. GPIO
 5. SD Bus
 6. Video
```

0-0. Quit

Quit the Syscon Diagnosis and return to the Test Mode Menu.

0-1. All (All items continuous check)

This menu checks all diagnostic items continuously. Normally, all items are checked successively one after another automatically unless an error is found, but at a certain item that requires judgment through a visual check to the result, the following screen is displayed for the key entry.

• *Example display*

```
      ### Syscon Diagnosis ###

           Diag All Check
            No.2 Version

         2-3. ROM Check Sum
Check Sum = xxxx




Press NEXT Key to Continue
Press PREV Key to Repeat
```

For the ROM Check, the check sum calculated by the Syscon is output, and therefore you must compare it with the specified value for confirmation.
Following the message, press the NEXT ▶▶I button to go to the next item, or press the I◀◀ PREV button to repeat the same operation again.
To quit the diagnosis and return to Check Menu screen, press the ENTER button on the remote commander to display Check Menu.

• Error occurred
If an error occurred, the diagnosis is suspended and error is displayed. Press the ENTER button on the remote commander to quit the diagnosis, or press the I◀◀ PREV button to repeat the same check where an error occurred, or press the NEXT ▶▶I button to continue the check from the item next to faulty item.

General Description of Checking Method
Selecting 2 and subsequent items calls the submenu screen of each item. And selecting 2 and subsequent items executes respective menus and outputs the results.
For the contents of each sub menu, see "Check Items List" as below.

Check Items List:

0-2. Version
  0-2-1. All
  0-2-2. Revision
  0-2-3. ROM Check Sum
  0-2-4. Model Type
  0-2-5. Region
0-3. EEPROM Check
  0-3-1. Sampling Check
  0-3-2. Detail Check
0-4. GP I/O Check
0-5. SD Bus Check
0-6. Video Check

0-2. Version

0-2-2. Revision
The revision number of ROM (IC206) that the program for the DVD system processor (IC207) is stored.

0-2-3. ROM Check Sum
Check sum is calculated.
(4 digits hexadecimal number)

0-2-4. Model Type
Model name is displayed. (MHC-RVXXXD)

0-2-5. Region
Model destination code is displayed. (2 digits number)

0-3. EEPROM Check

0-3-1. Sampling Check
EEPROM check at every 64 words.
It compares read data with write data of each address. When there are discrepancies between two data, it displays error.

0-3-2. Detail Check
EEPROM check at every 1 word.
It compares read data with write data of each address. When there are discrepancies between two data, it displays error.

0-4. GP I/O Check
Pull up/down setting check of the DVD system processor (IC207) pin 150, 151 and 154 (for clock setting port).

0-5. SD Bus Check
SD bus data check between DVD decoder (IC701) and D-RAM (IC706).

0-6. Video Check
Output the color bars for video level adjustment.

1. DRIVE AUTO ADJUSTMENT
On the Test Mode Menu screen, press the 1 button on the remote commander, and the Adjustment Menu will be displayed.

```
    ## Drive Auto Adjustment ##
          Adjustment Menu

  0. ALL
  1. DVD-SL
  2. CD
  3. DVD-DL




                        Exit: RETURN
```

Normally, 10/0 button is selected to adjust DVD (single layer), CD and DVD (dual layers) in this order. But, individual items can be adjusted for the case where adjustment is suspended due to an error. In this mode, the adjustment can be made easily through the operation following the message displayed on the monitor screen. The disc used for adjustment must be the one specified for adjustment.

1-0. ALL
Press the 10/0 button on the remote commander, and the servo set data in EEPROM will be initialized. Then, 1. DVD-SL disc, 2. CD disc and 3. DVD-DL disc are adjusted in this order.
Each time one disc was adjusted, it is ejected. Replace it with the specified disc following the message. You can finish the adjustment by pressing the RETURN button on the remote commander.

Note: During adjustment of each disc, the measurement for disc type judgment is made. As automatic adjustment does not judge the disc type unlike conventional models, take care not to insert wrong type discs. Also, do not give a shock during adjustment.

1-1. DVD-SL (single layer)

Press the [1] button on the remote commander and insert a DVD single layer disc following the message. Then the adjustment will be made through the steps below, then adjusted values will be written to the EEPROM.

DVD Single Layer Disc Adjustment Steps:

1. Sled reset
2. Disc check memory SL
3. Wait 300 msec
4. Set disc type SL
5. LD on
6. Spindle start
7. Wait 1 sec
8. Focus servo on 0
9. Auto track offset adjust
10. CLVA on
11. Wait 500 msec
12. Tracking on
13. Wait 1 sec
14. Sled on
15. Check CLV on
16. Auto focus offset adjust
17. Auto focus gain adjust
18. Auto focus offset adjust
19. EQ boost adjust
20. Auto track gain adjust
21. All servo stop
22. EEP copy loop filter offset

1-2. CD

Press the [2] button on the remote commander and insert a CD disc following the message. Then the adjustment will be made through the steps below, then adjusted values will be written to the EEPROM.

CD Adjustment Steps:

1. Sled tilt reset
2. Disc check memory CD
3. Wait 500 msec
4. Set disc type CD
5. LD on
6. Spindle start
7. Wait 500 msec
8. Focus servo on 0
9. Auto track offset adjust
10. CLVA on
11. Wait 500 msec
12. Tracking on
13. (TC display start)
14. Wait 1 sec
15. Sled on
16. Check CLV on
17. Auto focus offset adjust
18. Auto focus gain adjust
19. Auto focus offset adjust
20. EQ boost adjust
21. Auto track gain adjust
22. All servo stop

1-3. DVD-DL (dual layers)

Press the [3] button on the remote commander and insert a DVD dual layers disc following the message. Then the adjustment will be made through the steps below, then adjusted values will be written to the EEPROM.

DVD Dual Layers Disc Adjustment Steps:

1. Sled tilt reset
2. Disc check memory DL
3. Wait 500 msec
4. Set disc type DL
5. LD on
6. Spindle start
7. Wait 1 sec

Layer 1 Adjust

8. Focus servo on 0
9. Auto track offset adjust
10. CLVA on
11. Wait 500 msec
12. Tracking on
13. Wait 500 msec
14. Sled on
15. Check CLV lock
16. Auto loop filter offset adjust, Auto focus adjust
17. Auto focus gain adjust
18. Auto focus offset adjust
19. EQ boost adjust
20. Auto loop filter offset adjust
21. Auto track gain adjust

Layer 0 Adjust

22. Focus jump (L1 → L0)
23. Auto track offset adjust L0
24. CLVA on
25. Wait 500 msec
26. Tracking on
27. Wait 500 msec
28. Sled on
29. Check CLV lock
30. Auto focus adjust
31. Auto focus gain adjust
32. Auto focus offset adjust
33. EQ boost adjust
34. Auto track gain adjust
35. All servo stop

2. DRIVE MANUAL OPERATION

Note: This mode is used for design, and not used in service fundamentally.

On the Test Mode Menu screen, press the [2] button on the remote commander, and the Operation Menu will be displayed. For the manual operation, each servo on/off control and adjustment can be executed manually.

```
   ## Drive Manual Operation ##
         Operation Menu
 1. Disc Type
 2. Servo Control
 3. Track/Layer Jump
 4. Non EEPROM Write Adjust
 5. EEPROM Write Adjust
 6. Memory Check
 7. Disc Check Memory
 8. Error Rate Display
 9. SACD Water Mark

                      Exit: RETURN
```

In using the manual operation menu, take care of the following points. These commands do not provide protection, thus requiring correct operation. The sector address or time code field is displayed when a disc is loaded.

Note:
1. Set correctly the disc type to be used on the Disc Type screen.
2. In case of an alarm, immediately press the ■ button to stop the servo operation, and press the I/⏻ button to turn the power off.

Basic operation:
(controllable from front panel or remote commander)

I/⏻ : Power OFF (release the Test Mode)
■ : Servo stop
⏏ : Stop and eject/Loading
ENTER : Return to Operation Menu or Test Mode Menu
I◀◀ PREV, NEXT ▶▶I : Transition between sub modes of menu
1 to 9, 10/0 : Selection of menu items
Cursor ↓ / ↑ : Increase/Decrease in manually adjusted value

2-1. Disc Type

```
            Disc Type

          Disc Type Select

  1. Disc Type Auto Check
  2. Set Disc Type DVD
  3. Set Disc Type CD
  4. Set Disc Type Hybrid




                        Exit: RETURN
```

2-1-1. Disc Type Auto Check
1) Press the 1 button on the remote commander to display the Disc Type Auto Check screen.
2) Insert a disc and press the ENTER button on the remote commander.
3) It judges the type of inserted disc automatically and displays the disc type and so on as below.

```
        Disc Type Auto Check

  Disc Type     xx
  Layer         xx
  Mirr Time     xx
  Mirr Count    xx
  FZC Count     xx
  PI Reference  xx
  PI Peak       xx

  ENTER.Execute

                        Exit: RETURN
```

Disc Type : CD, DVD or Hybrid (SACD)
Layer : SINGLE, DUAL or HYBRID
Mirr Time : Mirror time of between disc surface and record surface when disc type judgment. (hexadecimal number)
Mirr Count : The number of times which mirror counts between disc surface and record surface when disc type judging.
FZC Count : The number of times which focus zero cross points of each layer when lens down.
PI Reference : The average of PI reference voltage. (hexadecimal number)
PI Peak : PI peak level voltage. It performs only when disc type judgment is successful. (hexadecimal number)

2-1-2. Disc Type DVD
It sets up s that it may judge as a disc type of specification of the disc with which the set was inserted.
1: DVD single layer disc (12 cm)
2: DVD dual layers disc (0 layer, 12 cm)
3: DVD dual layers disc (1 layer, 12 cm)
4: DVD-RW disc (12 cm)
5: DVD single layer disc (8 cm)
6: DVD dual layers disc (0 layer, 8 cm)
7: DVD dual layers disc (1 layer, 8 cm)
8: DVD-RW disc (8 cm)

2-1-3. Disc Type CD
It sets up so that it may judge as a disc type of specification of the disc with which the set was inserted.
1: CD disc (normal speed, 12 cm)
2: CD disc (double speed, 12 cm)
3: CD disc (normal speed, 8 cm)
4: CD disc (double speed, 8 cm)
5: CD-RW disc (normal speed, 12 cm)
6: CD-RW disc (double speed, 12 cm)
7: CD-RW disc (normal speed, 8 cm)
8: CD-RW disc (double speed, 8 cm)

2-1-4. Disc Type Hybrid
It sets up so that it may judge as a disc type of specification of the disc with which the set was inserted.
1: SACD Hybrid disc (SACD layer, 12 cm)
2: SACD Hybrid disc (CD layer, normal speed, 12 cm)
3: SACD Hybrid disc (CD layer, double speed, 12 cm)
4: SACD Hybrid disc (SACD layer, 8 cm)
5: SACD Hybrid disc (CD layer, normal speed, 8 cm)
6: SACD Hybrid disc (CD layer, double speed, 8 cm)

2-2. Servo Control

Note: Be sure to perform the disc type setup before performing this item.

```
            Servo Control
  1.LD          off R.Sled FWD
  2.Focus       off L.Sled REV
  3.SPDL        off U.Sled Reset
  4.CLVA        off D.Sled Limit
  5.Trk.        off
  6.Sled        off
  7.Fcs.Srch    off


  0.All Servo Off

                        Exit: RETURN
```

On this screen, the servo on/off control necessary for replay is executed. Normally, turn on each servo from 1 sequentially and

when CLVA is turned on, the usual trace mode becomes active. In the trace mode, DVD sector address or CD time code is displayed. This is not displayed where the spindle is not locked.
The spindle could run overriding the control if the spindle system is faulty or RF is not present. In such a case, do not operate CLVA.

[1] LD : Turn on/off the laser.
[2] Focus : Search the focus and turn on the focus.
[3] SPDL : Turn on/off the spindle.
[4] CLVA : Turn on/off normal servo of spindle servo.
[5] Trk. : Turn on/off the tracking servo.
[6] Sled : Turn on/off the sled servo.
[7] Fcs. Srch : Turn on/off the focus search.
[10/0] : All servo off.
[R] Sled FWD (right cursor) : Move the sled forward.
[L] Sled REV (left cursor) : Move the sled reverse.
[U] Sled FWD (up cursor) : Reset the sled.
[D] Sled REV (down cursor) : Limit in the sled.

2-3. Track/Layer Jump

```
          Track/Layer Jump
1.  1Tj         FWD
2.  1Tj         REV
3.500Tj Fine    FWD
4.500Tj Fine    REV
5.10kTj Dirc    FWD
6.10kTj Dirc    REV
7.20kTj Dirc    FWD
8.20kTj Dirc    REV

0. All Servo Off

                        Exit: RETURN
```

On this screen, track jump, etc. can be performed. Only for the DVD dual layer disc, the focus jump and layer jump are displayed in the right field

[1] 1Tj FWD : 1 track jump forward.
[2] 1Tj REV : 1 track jump reverse.
[3] 500Tj FWD : 500 track jump (fine search)forward.
[4] 500Tj REV : 500 track jump (fine search) reverse.
[5] 10kTj FWD : 10k track jump (direct search) forward.
[6] 10kTj REV : 10k track jump (direct search) reverse.
[7] 20kTj FWD : 20k track jump (direct search) forward.
[8] 20kTj REV : 20k track jump (direct search) reverse.
[10/0] : All servo off.

2-4. Non EEPROM Write Adjust

```
      Non EEPROM Write Adjust

1. Focus Offset
2. Focus Gain
3. Trk.  Offset Coarse
4. Trk.  Offset Fine
5. Trk.  Gain
6. EQ    Boost

0.All Servo Off


                        Exit: RETURN
```

On this screen, each item can be adjusted manually. Select the desired number [1] to [10/0] from the remote commander, and current setting for the selected item will be displayed, then increase or decrease numeric value with the [↑] button or [↓] button. If CLV has been applied, the jitter is displayed for reference for the adjustment.

[1] Focus Offset : Adjusts focus offset.
[2] Focus Gain : Adjusts focus gain.
[3] Trk. Offset Coarse :
Adjusts tracking offset of the RF amp (IC001) side.
[4] Trk. Offset Fine :
Adjusts tracking offset of the DSP (IC509) side.
[5] Trk. Gain : Adjusts tracking gain.
[6] EQ Boost : Adjusts amount of boost of equalizer.
[10/0] : All servo off.

2-5. EEPROM Write Adjust

```
        EEPROM Write Adjust

1. Focus  Offset
2. Focus  Gain
3. Trk.   Offset Coarse
4. ———————
5. Trk.   Gain
6. EQ     Boost

0.All Servo Off


                        Exit: RETURN
```

On this screen, each item can be adjusted automatically. Select the desired number [1] to [10/0] from the remote commander, and selected item is adjusted automatically.

[1] Focus Offset : Adjusts focus offset.
[2] Focus Gain : Adjusts focus gain.
[3] Trk. Offset Coarse :
Adjusts tracking offset of the RF amp (IC001) side.
[5] Trk. Gain : Adjusts tracking gain.
[6] EQ Boost : Adjusts amount of boost of equalizer.
[10/0] : All servo off.

2-6. Memory Check

Display images are shown as follows, and all two screens are able to switch by the [↑] button (UP) or [↓] button (DW).

```
EEPROM Data 1/2   CD  SL  L0  L1
Focus  Gain       xx  xx  xx  xx
Trk.   Gain       xx  xx  xx  xx
Focus  Offset     xx  xx  xx  xx
Trk.   Offset     xx  xx  xx  xx
EQ.    Boost      xx  xx  xx  xx
PI     Level      xx  xx  --  --
Fcs. Balance      --  xx  --  --
Jitter            xx  xx  xx  xx
Mirror Time       xx  xx  xx  --
FE Level          --  xx  --  --
Traverse Lv1.     --  xx  --  --
Next:DW Default:CLR    Exit:RET
```

```
EEPROM Data 2/2    CDRW DVDRW
Focus  Gain          xx    xx
Trk.   Gain          xx    xx
Focus  Offset        xx    xx
Trk.   Offset        xx    xx
EQ.    Boost         xx    xx




Prev:UP Default:CLR        Exit:RET
```

On this screen, current servo adjusted data stored in the EEPROM are displayed. The adjusted data are initialized by pressing the CLEAR button, but be careful that they are not recoverable after initialization.
Before clearing the adjusted data, make a note of the set data. This screen will also appear if 0-All is selected in the Drive Auto Adjustment. In this case, default setting cannot be made.

2-7. Disc Check Memory

```
          Disc Check Memory

 1. SL Disc check
 2. CD Disc check
 3. DL Disc check









                         Exit: RETURN
```

On this screen, measure the mirror time of chucked disc, and write to the EEPROM.

2-8. Error Rate Display

```
          Error Rate Display
              UC   CR Address
PI1 Err  Now xx xxxx xxxxxxxx
         Max xx xxxx xxxxxxxx
         Avg xx xxxx
PI2 Err  Now xx xxxx xxxxxxxx
         Max xx xxxx xxxxxxxx
         Avg xx xxxx
PO  Err  Now xx xxxx xxxxxxxx
         Max xx xxxx xxxxxxxx
         Avg xx xxxx

                         Exit: RETURN
```

On this screen, measure and display the error rate.

UC : Incorrect value
CR : Correct value
Add : Address

2-9. SACD Water Mark Check (Not used)

```
SACD Water Mark Check



 PSP AMP
 PSN









 Start: ENTER          Stop: RETURN
```

On this screen, measure the PSP AMP value and PSN value of SACD water mark.

3. MECHA AGING

On the Test Mode Menu screen, selecting 3 executes the aging of the mechanism deck.

```
      ### Aging Test MENU ###
   ** Pls use over 40min. CD **
         Operation Menu

1. Open/Close Test









                         Exit: RETURN
```

1) On the Aging Test MENU screen, press the 1 button on the remote commander to display the Open/Close Test screen.
2) Insert discs and press the ENTER button on the remote commander.
3) Is starts the aging.
   During aging, the disc number, operating status and repeat cycle are displayed. Aging can be aborted at any time by pressing the ENTER button. After the operation is stopped, press the ENTER button to return to the Aging Test MENU.

4. EMERGENCY HISTORY

On the Test Mode Menu screen, selecting 4 displays the information such as servo emergency history.
The history information from last 1 up to 10 can be scrolled with the ↑ button or ↓ button. Also, specific information can be displayed by directly entering that number with ten keys.

```
        ### EMG. History ###

  Laser Hours     CD   xxxxhxxm
                  DVD  xxxxhxxm

a.   bb xx xx xx  xx xx xx xx
     xx xx xx xx  xx xx xx xx

a.   bb xx xx xx  xx xx xx xx
     xx xx xx xx  xx xx xx xx

   Select:1-9        Scroll:UP/DOWN
  (1.Latest EMG.)      Exit: RETURN
```

xxxxhxxm : The laser on total hours. Data below minutes are omitted.
a. : Error number.
bb : Error code.
xx : Not used.

• Clearing History Information

Clearing laser hours:

Press the DVD DISPLAY and CLEAR buttons in this order. Then both CD and DVD data are cleared.

Clearing emergency history:

Press the DVD TOP MENU and CLEAR buttons in this order.

Initializing set up data:

Press DVD MENU and CLEAR buttons in this order. The data have been initialized when "EEPROM Initialize Finished" message is displayed.

• Code list of Emergency History

10: Communication to RF amp (IC001) failed.
11: Each servo for focus, tracking, and spindle is unlocked.
12: Check sum error of EEPROM (IC204).
14: Communication to servo DSP (IC509) failed, or servo DSP (IC509) is faulty.
15: Communication to DVD decoder (IC701) failed, or DVD decoder (IC701) is faulty.
16: Communication to DSD decoder (IC801) failed, or DSD decoder (IC801) is faulty. (Not used)
20: Initialization of sled servo failed. It is not placed in the initial position.
23: Sled servo operation error.
24: Made a request to move the sled servo to wrong position.
30: Tracking balance adjustment error.
31: Tracking gain adjustment error.
33: Focus bias adjustment error.
34: Focus gain adjustment error.
35: Equalizer adjustment error.
40: Focus servo does not operate.
41: With a DVD dual layers disc, focus jump failed.
50: CLV (spindle) servo does not operate.
51: Spindle does not stop.
60: Made a request to seek nonexistent address.
61: Seek error of retry more than regulated times.
70: Control data could not be read.
80: Disc reading failed.

5. MECHA ERROR HISTORY

On the Test Mode Menu screen, selecting 5 displays the information of mechanism deck error history.
The history information from last 1 up to 8 can be scrolled with the ↑ button or ↓ button.

```
     ### Mecha Error History ###

   1. aa bb cc dd ee xx xx xx
   2. aa bb cc dd ee xx xx xx
   3. aa bb cc dd ee xx xx xx
   4. aa bb cc dd ee xx xx xx
   5. aa bb cc dd ee xx xx xx
   6. aa bb cc dd ee xx xx xx
   7. aa bb cc dd ee xx xx xx
   8. aa bb cc dd ee xx xx xx

                      Scroll:UP/DOWN
 (1.Latest Err.)        Exit: RETURN
```

aa: Initialization is completed or not.
FF : Complete.
other number : Not complete.
bb: Operating status of mechanism deck at an error occurred. (lod sq jcp)
00 : Initializing.
10 to 15 : Open operating.
16 to 19 : Kicking cause open failed.
1A to 1F : Open operating.
20 to 27 : Complete the open operation.
28 : No disc and complete the open operation.
29 to 2F : Complete the open operation.
30 to 3F : Close requesting.
40 to 4F : Open requesting.
50 to 5F : Close operating.
60 to 6F : Complete the chucking operation.
80 to 8F : Complete the release operation. (BU is home position)
90 to 9F : BU down operating.
A0 to AF : Opening/closing the shutter. Or stationary state in open/close the shutter is enablement.
B0 to BF : BU up requesting.
C0 to CF : BU down requesting.
D0 to DF : BU upping.
E0 to EF : No disc checking in disc loading.
cc : Operating status of table at an error occurred. (tbl sq jcp)
13 : The rotation stop position determination error of a table
11 to 12 : The loading position determination error of a table
dd: Operating status of mechanism deck at an error occurred. (lod op jcp)
00 : Complete the operation.
10 to 1F : Open operating.
20 to 2F : Close operating.
30 to 3F : Release operating.
60 to 6F : Chucking operating.
70 to 7F : Kicking operating.
80 to 8F : Returning the BU to home position. (after kicking)
ee : The status of table operation. ("n" is unfixed) (tbl op jcp)
1n : Rotating in the direction of a forward.
2n : Rotating in the direction of a reverse.

6. VERSION INFORMATION

On the Test Mode Menu screen, selecting [6] displays the ROM version and region code.
The parenthesized hexadecimal number in version field is checksum value of ROM.

```
    ## Version Information ##

IF con.   Ver.x. xx

SYScon.   Ver.x. xx  (xxxx)
      Model      MHC-RVXXXD
      Region     0x
      Config     xxxxxxxx

Front End Ver.x.xx


                       Exit: RETURN
```

IF con. : The version of system controller (IC501).
SYScon. : The version of DVD system processor (IC207).
Front End: The version of mechanism controller (IC901).

7. VIDEO LEVEL ADJUSTMENT

On the Test Mode Menu screen, selecting [7] displays color bars for video level adjustment. During display of color bars, OSD disappears but the menu screen will be restored if pressing the [ENTER] button.

3. MECHANICAL ADJUSTMENTS

Precaution

1. Clean the following parts with a denatured alcohol-moistened swab:
   record/playback heads — pinch rollers
   erase head — rubber belts
   capstan — idlers
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement

Mode	Torque meter	Meter reading
FWD	CQ-102C	3.06 N • m to 6.96 N • m 31 to 71 g • cm (0.43 – 0.98 oz • inch)
FWD back tension	CQ-102C	0.19 N • m to 0.58 N • m 2 to 6 g • cm (0.02 – 0.08 oz • inch)
REV	CQ-102RC	3.06 N • m to 6.96 N • m 31 to 71 g • cm (0.43 – 0.98 oz • inch)
REV back tension	CQ-102RC	0.19 N • m to 0.58 N • m 2 to 6 g • cm (0.02 – 0.08 oz • inch)
FF/REW	CQ-201B	6.96 N • m to 14.02 N • m 71 to 143 g • cm (0.98 – 1.99 oz • inch)
FWD tension	CQ-403A	9.80 N • m 100 g or more (3.53 oz or more)
REV tension	CQ-403R	9.80 N • m 100 g or more (3.53 oz or more)

4. ELECTRICAL ADJUSTMENTS

VIDEO SECTION

Note:

1. VIDEO board is basically designed to operate without adjustment. Therefore, check each item in order given.
2. Use DVD reference disc unless othermise indicated.
   [DVD reference disc]
   LUV-P01 (CD) : PART No. 4-999-032-01
   TDV-520CSO (DVD-SL) : PART No. J-2501-236-A
   TDV-540C (DVD-DL) : PART No. J-2501-235-A
   Note: Do not use exiting test disc for DVD.
3. Use an oscilloscope with more than 10MΩ 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.

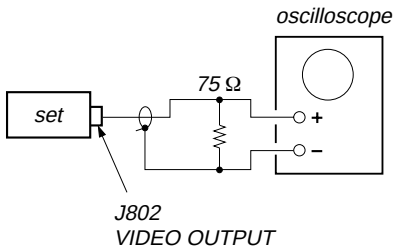
AUTO SERVO ADJUSTMENT

After parts related to the servo circuit (RF amplifier (IC001), DSP (IC509), motor driver (IC501), EEPROM (IC903) so on) are replaced, re-adjusting the servo circuit is necessary. Select “ALL” at “1. DRIVE AUTO ADJUSTMENT” (Refer to page 8 in TEST MODE) and adjust DVD-SL (single layer), CD and DVD-DL (dual layer).

Video Level Check (VIDEO BOARD)

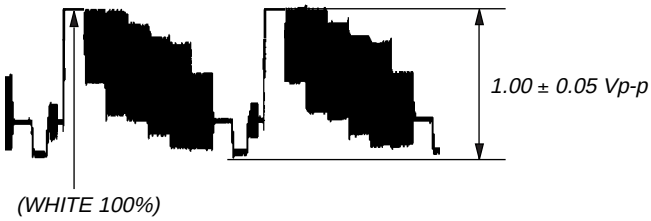
Purpose

This adjustment is made to satisfy the NTSC standard, and if not adjusted correctly, the brightness will be too large or small.



Procedure:

1. Connect oscilloscope to VIDEO output.
2. Load a DVD reference disc playback.
3. Check the video signal level is 1.00±0.05Vp-p.



DECK SECTION | 0 dB=0.775 V

1. Demagnetize the record/playback head with a head demagnetizer.
2. Do not use a magnetized screwdriver for the adjustments.
3. After the adjustments, apply suitable locking compound to the parts adjust.
4. The adjustments should be performed with the rated power supply voltage unless otherwise noted.
5. The adjustments should be performed in the order given in this service manual. (As a general rule, playback circuit adjustment should be completed before performing recording circuit adjustment.)
6. The adjustments should be performed for both L-CH and R-CH.
7. Switches and controls should be set as follows unless otherwise specified.

• Test Tape

Tape	Signal	Used for
P-4-A063	6.3 kHz, –10 dB	Azimuth Adjustment

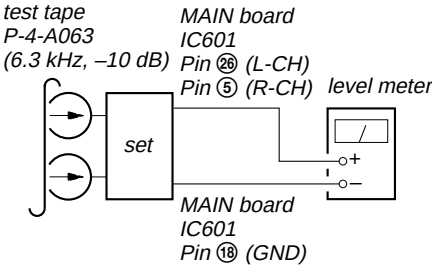
Record/Playback Head Azimuth Adjustment

DECK A **DECK B**

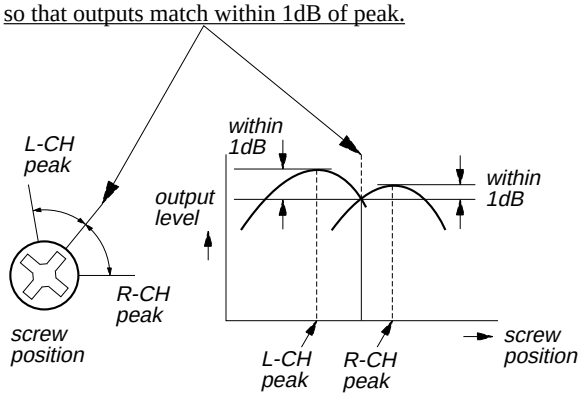
Note: Perform this adjustments for both decks

Procedure:

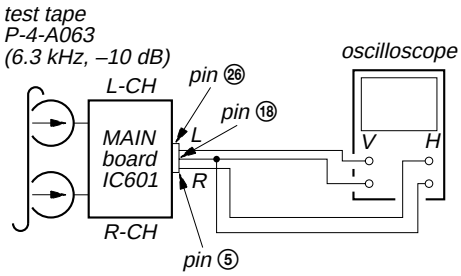
1. Mode: Playback

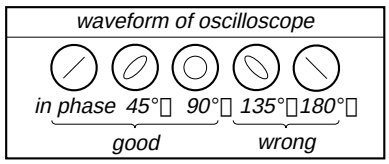


2. Turn the adjustment screw and check output peaks. If the peaks do not match for L-CH and R-CH, turn the adjustment screw so that outputs match within 1dB of peak.



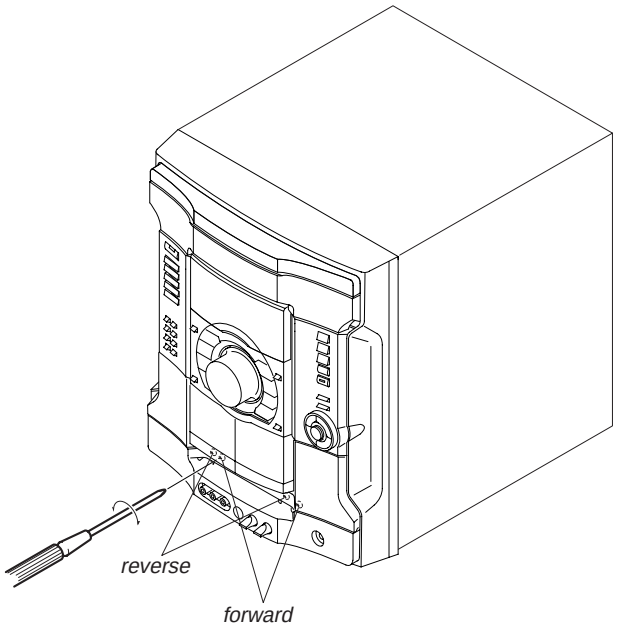
3. Mode: Playback





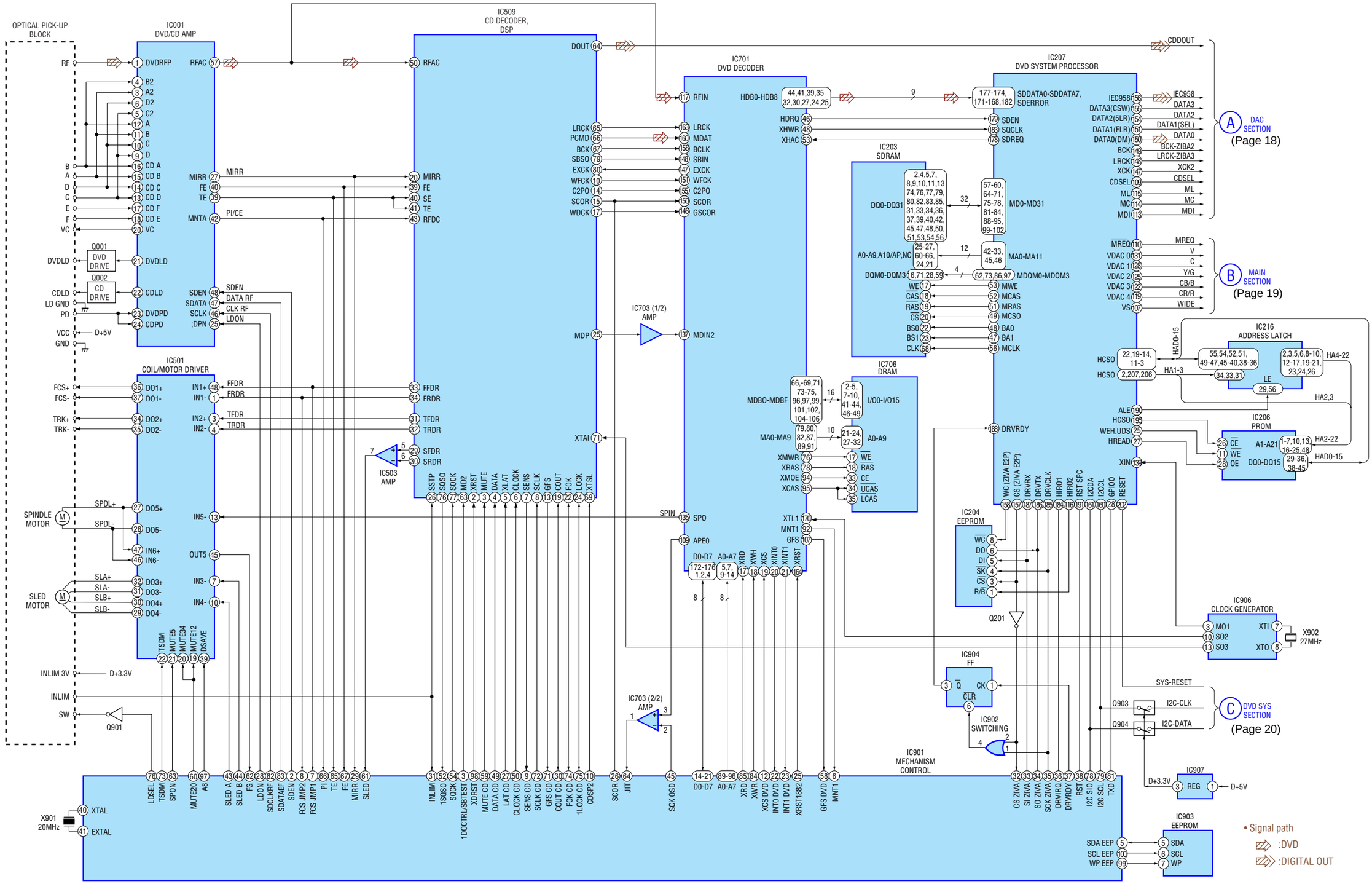
4. After the adjustments, apply suitable locking compound to the pats adjusted.

Adjustment Location: Playback Head (Deck A).
Record/Playback/Erase Head (Deck B).

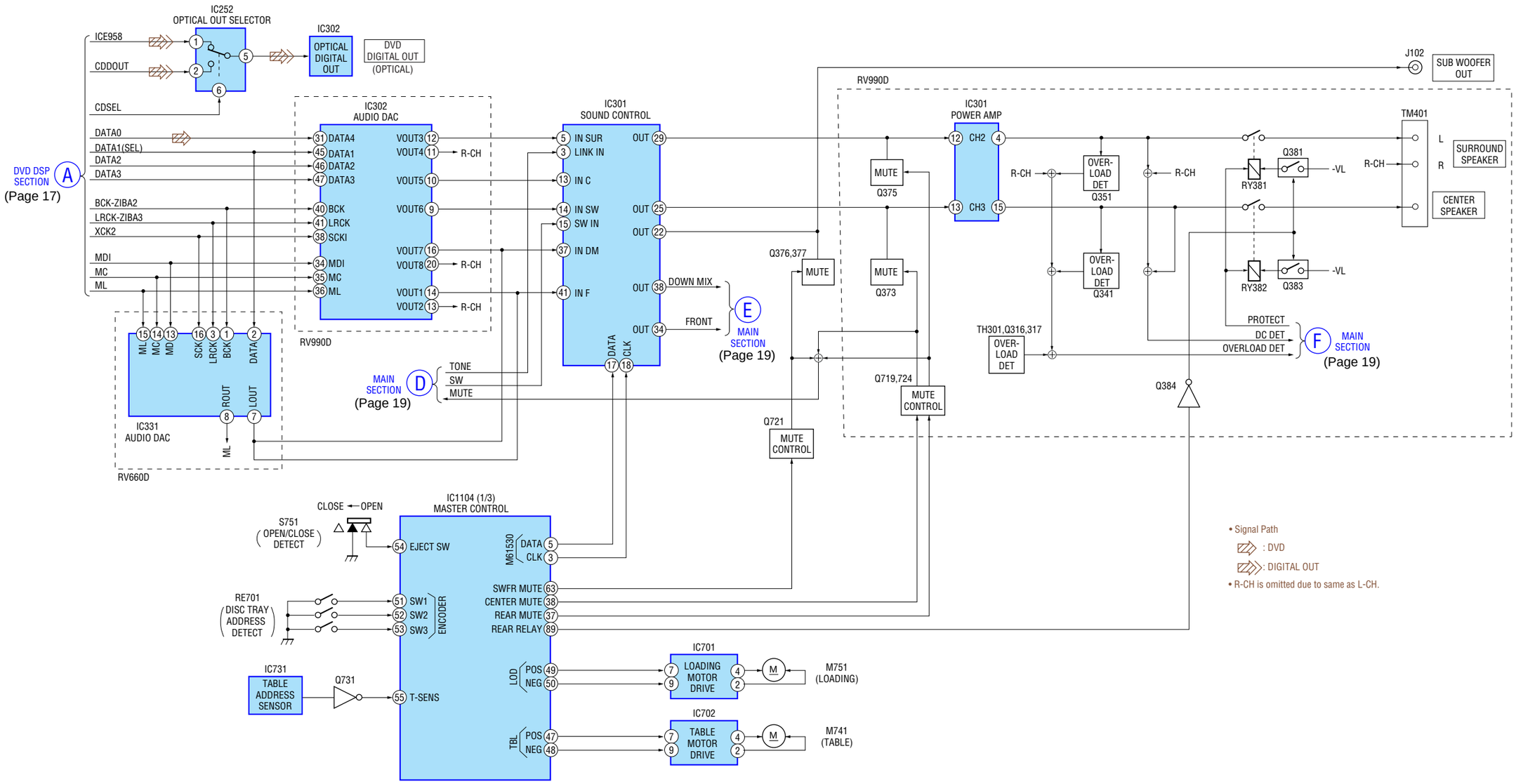


5. BLOCK DIAGRAMS

5-1. DVD DSP SECTION

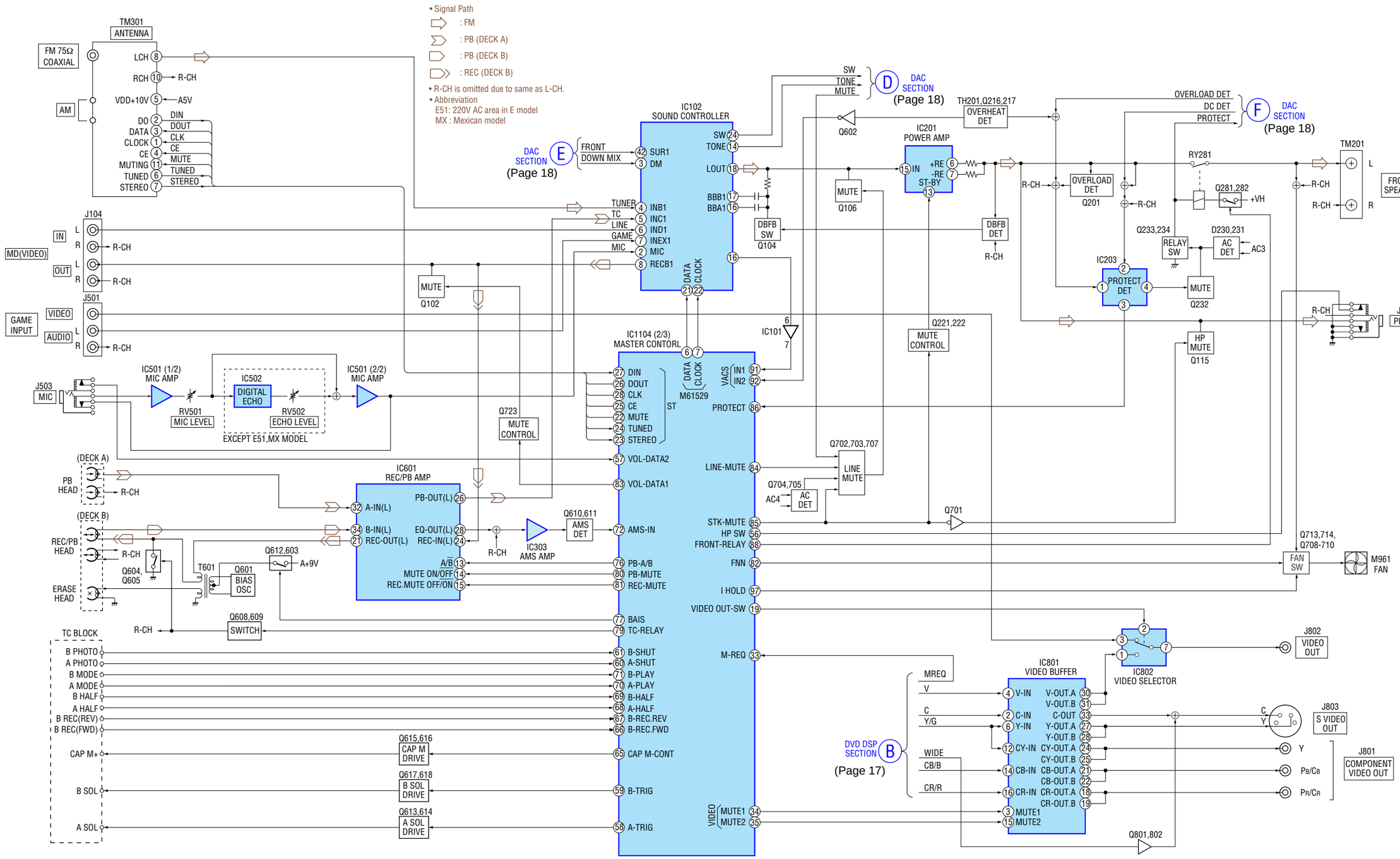


5-2. DAC SECTION

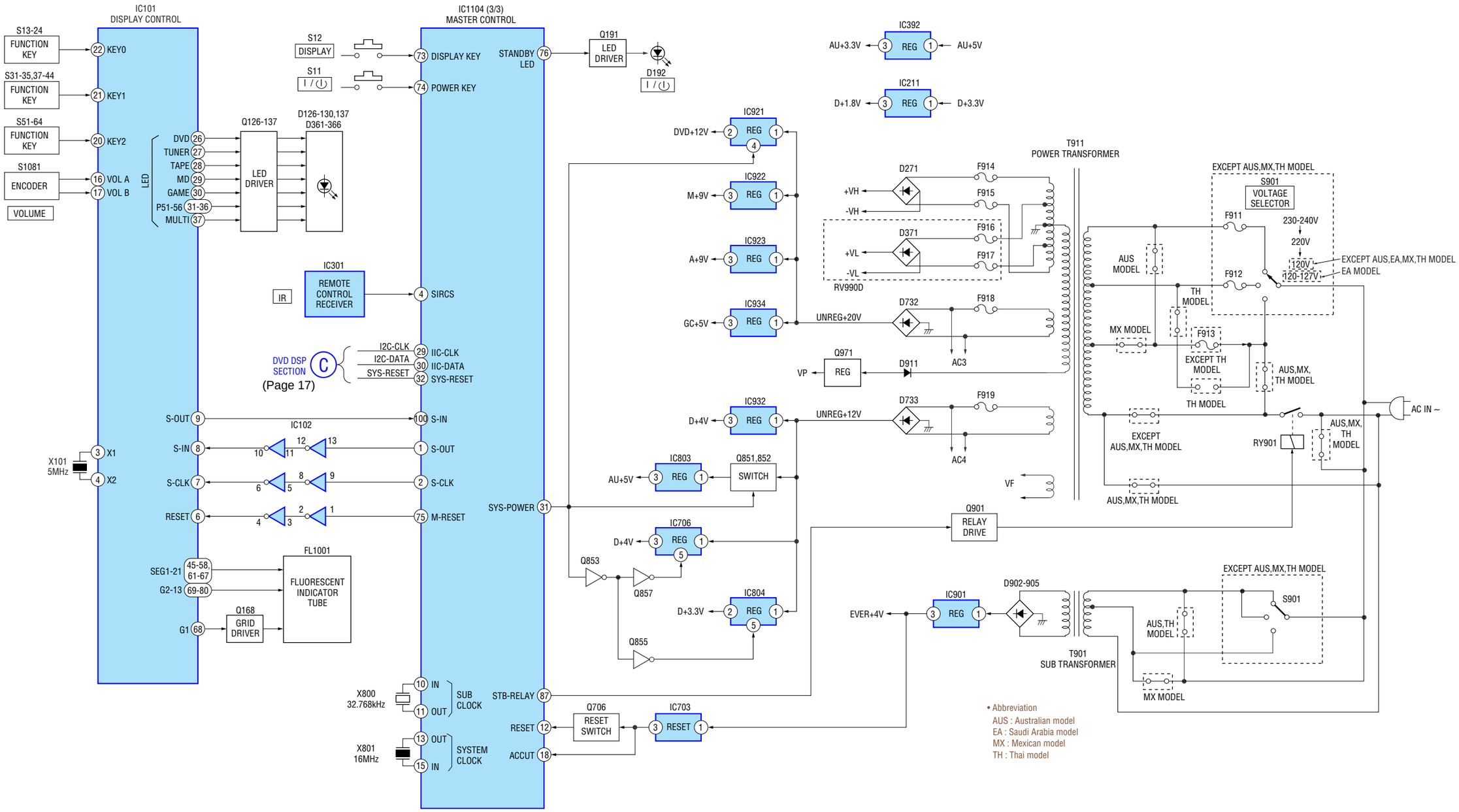


- Signal Path
  - : DVD
  - : DIGITAL OUT
- R-CH is omitted due to same as L-CH.

5-3. MAIN SECTION



5-4. DVD SYS SECTION



6. IC PIN DESCRIPTIONS

• IC701 TMC57929PGF-RDP (DVD DECODER) (DMB03 Board (3/8))

Pin No.	Pin Name	I/O	Pin Description
1, 2	D5, D6	I/O	Two-way data bus signal input from/output to mechanism control IC.
3	VSS	—	Ground
4	D7	I/O	Two-way data bus signal input from/output to mechanism control IC.
5	A0	I/O	Address signal input from/output to mechanism control IC.
6	VDD	—	Power supply pin (+3.2 V)
7	A1	I/O	Address signal input from/output to mechanism control IC.
8	VDD5V	—	Power supply pin (+5 V)
9 to 14	A2 to A7	I/O	Address signal input from/output to mechanism control IC.
15	VSS	—	Ground
16	XWAIT	O	Not used (Open)
17	XRD	I	Read strobe signal input from mechanism control IC.
18	XWR	I	Write strobe signal input from mechanism control IC.
19	XCS	I	Chip select signal input from mechanism control IC.
20, 21	XINT0, XINT1	O	Interrupt signal output to mechanism control IC.
22	VDD	—	Power supply pin (+3.2 V)
23	XHRS	I	Not used (Open)
24	HDB7	I/O	Stream data input from/output to DVD system processor IC.
25	VSS	—	Ground
26	HDB8	I/O	Error flag signal input from/output to DVD system processor IC.
27	HDB6	I/O	Stream data input from/output to DVD system processor IC.
28	VDDS	—	Power supply pin (+5 V)
29	HDB9	I/O	Not used (Open)
30	HDB5	I/O	Stream data input from/output to DVD system processor IC.
31	HDBA	I/O	Not used (Open)
32	HDB4	I/O	Stream data input from/output to DVD system processor IC.
33	VSS	—	Ground
34	HDBB	I/O	Not used (Open)
35	HDB3	I/O	Stream data input from/output to DVD system processor IC.
36	VDD	—	Power supply pin (+3.2 V)
37	HDBC	I/O	Not used (Open)
38	VDDS	—	Power supply pin (+5 V)
39	HDB2	I/O	Stream data input from/output to DVD system processor IC.
40	HDBD	I/O	Not used (Open)
41	HDB1	I/O	Stream data input from/output to DVD system processor IC.
42	VSS	—	Ground
43	HDBE	I/O	Not used (Open)
44	HDBO	I/O	Stream data input from/output to DVD system processor IC.
45	HDBF	I/O	Not used (Open)
46	HDRQ	O	Serial data effect flag signal output to DVD system processor IC.
47	VDDS	—	Power supply pin (+5 V)
48	XHWR	I	Serial data transfer clock signal input from DVD system processor IC.
49	XHRD	I	Not used (Open)
50	VDD	—	Power supply pin (+3.2 V)
51	REDY	O	Not used (Open)
52	VSS	—	Ground
53	XHAC	I	Serial data request signal input from DVD system processor IC. (DVD mode)
54	HINT	I/O	Not used (Fixed at H)
55	XS16	I	Not used (Fixed at H)
56	HA1	I	Not used (Fixed at H)
57	XPDI	I/O	Not used (Fixed at H)
58	VDDS	—	Power supply pin (+5 V)
59, 60	HA0, HA2	I	Not used (Fixed at H)

Pin No.	Pin Name	I/O	Pin Description
61	VSS	—	Ground
62, 63	HCS0, HCS1	I	Not used (Open)
64	VDD	—	Power supply pin (+3.2 V)
65	DASP	I/O	Not used (Fixed at H)
66 to 69	MDB0 to MDB3	I/O	Two-way data bus signal input from/output to 16Mbit D-RAM IC.
70	VSS	—	Ground
71	MDB4	I/O	Two-way data bus signal input from/output to 16Mbit D-RAM IC.
72	VDD5V	—	Power supply pin (+5 V)
73 to 75	MDB5 to MDB7	I/O	Two-way data bus signal input from/output to 16Mbit D-RAM IC.
76	XMWR	O	Write enable signal output to 16Mbit D-RAM IC.
77	VDD	—	Power supply pin (+3.2 V)
78	XRAS	O	Row address strobe signal output to 16Mbit D-RAM IC.
79, 80	MA0, MA1	O	Address signal output to 16Mbit D-RAM IC.
81	VSS	—	Ground
82 to 87	MA2 to MA7	O	Address signal output to 16Mbit D-RAM IC.
88	VDD	—	Power supply pin (+3.2 V)
89	MA8	O	Address signal output to 16Mbit D-RAM IC.
90	VSS	—	Ground
91	MA9/mnt0	O	Address signal output to 16Mbit D-RAM IC.
92	MA10/mnt1	O	EEPROM ready signal output to mechanism control IC.
93	MA11/mnt2	O	Address signal output to 16Mbit D-RAM IC.
94	XMOE	O	Output enable signal output to 16Mbit D-RAM IC.
95	XCAS	O	Column address strobe signal output to 16Mbit D-RAM IC.
96, 97	MDB8, MDB9	I/O	Two-way data bus signal input from/output to 16Mbit D-RAM IC.
98	VSS	—	Ground
99	MDBA	I/O	Two-way data bus signal input from/output to 16Mbit D-RAM IC.
100	VDD	—	Power supply pin (+3.2 V)
101, 102	MDBB, MDBC	I/O	Two-way data bus signal input from/output to 16Mbit D-RAM IC.
103	VDD5V	—	Power supply pin (+5 V)
104 to 106	MDBD to MDBF	I/O	Two-way data bus signal input from/output to 16Mbit D-RAM IC.
107	GFS	O	Guard frame sync signal output to mechanism control IC.
108	VSS	—	Ground
109	APE0	O	Absolute phase error signal output
110	VDD	—	Power supply pin (+3.2 V)
111	DASY0	O	RF binary signal output
112	GNDA5	—	Ground
113, 114	ASF1, ASF2	O	Filter connected pin for selection the constant asymmetry compensation.
115	DASY1	I	Analog signal input after integrated from the RF binary signal.
116	RFDCC	I	Input pin for adjusting DC cut high-pass filter for RF signal.
117	RFIN	I	RF signal input from RS-232C. (for check)
118, 119	VCCA5, VCCA4	—	Power supply pin (+3.2 V)
120	VCOR1	I	VCO oscillating range setting resistor connected
121	VCOIN	I	VCO input
122, 123	GNDA4, GNDA3	—	Ground
124	LPF5	O	Inverted signal output to operation amplifier from PLL loop filter.
125	VC1	I	Middle point voltage (+1.65 V) input
126, 127	LPF1, LPF2	I	Inverted signal input from operation amplifier from PLL loop filter.
128, 129	VCCA3, VCCA2	—	Power supply pin (+3.2 V)
130	PD0	O	Signal output to charge pump for phase comparator.
131	PDHVCC	O	Middle point voltage output to RF PLL.
132	FDO	O	Signal output to charge pump for frequency comparator.
133, 134	GNDA2, GNDA1	—	Ground

Pin No.	Pin Name	I/O	Pin Description
135	SPO	O	Spindle motor control signal output to focus/tracking coil driver, spindle/sled motor driver IC.
136	VC2	I	Middle point voltage (+1.65 V) input
137	MDIN2	I	Spindle motor servo drive signal input
138	MDIN1	I	MDP input
139	VCCA1	—	Power supply pin (+3.2 V)
140	CLVS	O	Control signal output to selection the spindle control filter constant at CLVS.
141	VSS	—	Ground
142	MDSOUT	O	Frequency error output pin of internal CLV circuit.
143	VDD	—	Power supply pin (+3.2 V)
144	MDPOUT	O	Phase error output pin of internal CLV circuit.
145	DFCT	I	Not used (Connected to ground)
146	GSCOR	I	Guard subcode sync (S0+S1) detection signal input from CD decoder, digital servo processor IC.
147	EXCK	O	Subcode serial data reading clock signal output to CD decoder, digital servo processor IC.
148	SBIN	I	Subcode serial data input from CD decoder, digital servo processor IC.
149	VSS	—	Ground
150	SCOR	I	Subcode sync (S0+S1) detection signal input from CD decoder, digital servo processor IC.
151	WFCK	I	Write frame clock signal input from CD decoder, digital servo processor IC.
152	VDD5V	—	Power supply pin (+5 V)
153	XRCI	I	Not used (Fixed at L)
154	VDDS	—	Power supply pin (+5 V)
155	C2PO	I	C2 pointer signal input from CD decoder, digital servo processor IC.
156	VDD	—	Power supply pin (+3.2 V)
157	DBCK	O	Not used (Open)
158	BCLK	I	Bit clock signal (2.8224 MHz) input from CD decoder, digital servo processor IC.
159	DDAT	O	Not used (Open)
160	MDAT	I	Signal data input from CD decoder, digital servo processor IC.
161	VSS	—	Ground
162	DLRC	O	Not used (Open)
163	LRCK	I	L/R sampling clock signal (44.1 kHz) input from CD decoder, digital servo processor IC.
164	XRST	I	Reset signal input from mechanism control IC. (L: reset)
165	IFS0	I	Not used (Connected to ground)
166	IFS1	I	Not used (Connected to VDD)
167	XTAL	I	33.8688 MHz clock signal input from clock generator IC.
168	VSS	—	Ground
169	XTL2	O	33.8688 MHz clock signal output to clock generator IC.
170	XTL1	I	33.8688 MHz clock signal input from clock generator IC.
171	VDD	—	Power supply pin (+3.2 V)
172 to 176	D0 to D4	I/O	Two-way data bus signal input from/output to mechanism control IC.

• IC901 CXP973064-226R (MECHANISM CONTROL) (DMB03 Board (5/8))

Pin No.	Pin Name	I/O	Pin Description
1	NO_USE	O	Not used (Open)
2	SDEN	O	Serial data enable signal output to CD/DVD/SACD RF amp, focus/tracking error amp IC.
3	DOCTRL/ISBTEST	O	Digital out ON/OFF control signal output to CD decoder, digital servo processor IC.
4	XRST_2753	O	Not used (Open)
5	SDA_EEP	I/O	Data bus signal input from/output to EEPROM IC.
6	MNT1	I	EEPROM ready signal input from DVD decoder IC.
7	FCS_JMP_1	O	Focus jump 1 signal output to focus/tracking coil driver, spindle/sled motor driver IC.
8	FCS_JMP_2	O	Focus jump 2 signal output to focus/tracking coil driver, spindle/sled motor driver IC.
9	SENS_CD	I	Internal status (SENSE) signal input from CD decoder, digital servo processor IC.
10	CDSP2	O	CD spectrum signal output to CD decoder, digital servo processor IC.
11	CDSP4	O	Not used (Open)
12	XCS_DVD	O	Chip select signal output to DVD decoder IC.
13	VSS	—	Ground
14 to 21	D0 to D7	I/O	Two-way data bus signal input from/output to DVD decoder IC.
22, 23	INIT0_DVD, INIT1_DVD	I	Interrupt signal input from DVD decoder IC.
24	MSCK_SAMBA	O	Not used (Fixed at L)
25	XRST_1882	O	Reset signal output to DVD decoder IC.
26	SCOR	I	Subcode sync (S0+S1) detection signal input from CD decoder, digital servo processor IC.
27	LAT_CD	O	Serial data latch pulse signal output to CD decoder, digital servo processor IC.
28	LDON	O	Laser diode ON/OFF control signal output to CD/DVD/SACD RF amp, focus/tracking error amp IC.
29	MIRR	I	Mirror signal input from CD/DVD/SACD RF amp, focus/tracking error amp IC.
30	COUT_CD	I	Numbers of track counted signal input from CD/DVD/SACD RF amp, focus/tracking error amp IC.
31	INLIM	I	Detection signal input from limit in switch. The optical pick-up is inner position when H.
32	CS_ZIVA	O	Chip select signal output to DVD system processor IC.
33	SI_ZIVA	I	Serial data input from DVD system processor IC.
34	SO_ZIVA	O	Serial data output to DVD system processor IC.
35	SCK_ZIVA	O	Serial data transfer clock signal output to DVD system processor IC.
36	DRVIRQ	O	Interrupt request signal output to DVD system processor IC.
37	DRVRDY	O	Ready signal output to DVD system processor IC.
38	RST	I	System reset signal input from DVD system processor IC.
39	VSS	—	Ground
40	XTAL	I	System clock input (20 MHz)
41	EXTAL	O	System clock output (20 MHz)
42	VDD	—	Power supply pin (+3.2 V)
43, 44	SLED_A, SLED_B	O	Sled motor drive signal output to focus/tracking coil driver, spindle/sled motor driver IC.
45	SCK_DSD	O	Clock signal output to DVD decoder IC.
46	SDOUT_DSD	O	Not used (Open)
47	SDIN_DSD	I	Not used (Open)
48	READY_DSD	I	Not used (Open)
49	DATA_CD	O	Serial data output to CD decoder, digital servo processor IC.
50	CLOK_CD	O	Serial data transfer clock signal output to CD decoder, digital servo processor IC.
51	XMSLAT	O	Not used (Open)
52	SQSO	I	Subcode Q data input from DVD decoder IC.
53	MUTE_DSD	O	Not used (Open)
54	SQCK	O	Subcode Q data reading clock signal output to DVD decoder IC.
55	VSS	—	Ground

Pin No.	Pin Name	I/O	Pin Description
56, 57	CONTROL_2, CONTROL_1	I	Not used (Open)
58	GFS_DVD	I	Guard frame sync signal input from DVD decoder IC.
59	MUTE_CD	O	Muting ON/OFF control signal output to CD decoder, digital servo processor IC.
60	MUTE_2D	O	Muting ON/OFF control signal output to focus/tracking coil driver, spindle/sled motor driver IC.
61	SLED	I	Sled motor servo drive PWM signal input from CD decoder, digital servo processor IC.
62	FG	I	Spindle motor control signal input from CD/DVD/SACD RF amp, focus/tracking error amp IC.
63	SP_ON	O	Muting ON/OFF control signal output to focus/tracking coil driver, spindle/sled motor driver IC.
64	JIT	I	Jitter signal input
65	TE	I	Tracking error signal input from CD/DVD/SACD RF amp, focus/tracking error amp IC.
66	PI	I	Pull in signal input from CD/DVD/SACD RF amp, focus/tracking error amp IC.
67	FE	I	Focus error signal input from CD/DVD/SACD RF amp, focus/tracking error amp IC.
68	AVSS	—	Ground
69	AVREF	I	Reference voltage input (for A/D converter)
70	AVDD	—	Power supply pin (+3.2 V) (for A/D converter)
71	GFS_CD	I	Guard frame sync signal input from CD decoder, digital servo processor IC.
72	SCLK_CD	O	SENSE serial data reading clock signal output to CD decoder, digital servo processor IC.
73	TSD-M	O	Thermal shut down signal output to focus/tracking coil driver, spindle/sled motor driver IC.
74	FOK_CD	I	Focus OK signal input from CD decoder, digital servo processor IC.
75	LOCK_CD	I	GFS is sampled by 460 Hz. (H input when GFS is H)
76	LDSEL	O	Laser diode selection signal output
77	SACD/$\overline{\text{DVD}}$	O	SACD/DVD selection signal output
78	I2C_SIO	I/O	Communication data bus signal input/output
79	I2C_SCL	I/O	Communication data reading clock signal input/output
80	RXD	I	Serial data input from RS-232C. (for check)
81	TXD	O	Serial data output to RS-232C. (for check)
82	SDCLK_RF	O	Serial data transfer clock signal output to CD/DVD/SACD RF amp, focus/tracking error amp IC.
83	SDATA_RF	I/O	Two-way data bus signal input from/output to CD/DVD/SACD RF amp, focus/tracking error amp IC.
84	XWR	O	Write strobe signal output to DVD decoder IC.
85	XRD	O	Read strobe signal output to DVD decoder IC.
86	(PWE)	—	Not used (Fixed at H)
87	VDD	—	Power supply pin (+3.2 V)
88	VSS	—	Ground
89 to 96	A0 to A8	O	Address signal output to DVD decoder IC.
97	A8	O	Power save control signal output to focus/tracking coil driver, spindle/sled motor driver IC.
98	XDRST	O	Reset signal output to CD decoder, digital servo processor IC.
99	WP_EEP	O	Write protect signal output to EEPROM IC.
100	SCL_EEP	O	Clock signal output to EEPROM IC.

• IC207 ZIVA5X-C1F (DVD SYSTEM PROCESSOR) (DMB03 Board (7/8))

Pin No.	Pin Name	I/O	Pin Description
1	VDDP	—	Power supply pin (+3.2 V) (I/O signal)
2	HA1	I/O	Address bus signal input from/output to bus interface IC.
3 to 11	HAD15 to HAD7	I/O	Data bus (address signal multiplexed) signal input from/output to bus interface IC.
12	VDDP	—	Power supply pin (+3.2 V) (I/O signal)
13	GNDP	—	Ground (I/O signal)
14 to 19	HAD6 to HAD1	I/O	Data bus (address signal multiplexed) signal input from/output to bus interface IC.
20	VDDP	—	Power supply pin (+3.2 V) (I/O signal)
21	GNDP	—	Ground (I/O signal)
22	HAD0	I/O	Data bus (address signal multiplexed) signal input from/output to bus interface IC.
23	HDTACK	I/O	Not used (Fixed at H)
24	HIRQ0	I	Not used (Fixed at H)
25	WEH.UDS	I/O	Host upper data strobe signal input from/output to programmable ROM IC.
26	WEL.LDS	I/O	Not used (Open)
27	HREAD	I/O	Read/write strobe signal input from/output to programmable ROM IC.
28	GPIO0(1)	I/O	Jig detection port
29	GND	—	Ground (inside core)
30	VDD	—	Power supply pin (+1.8 V) (inside core)
31	GND25	—	Ground (SDRAM I/O signal)
32	VDD25	—	Power supply pin (+3.2 V) (SDRAM I/O signal)
33 to 42	MA9 to MA0	O	SDRAM address bus signal output to 128 Mbit SD-RAM IC.
43	GND25	—	Ground (SDRAM I/O signal)
44	VDD25	—	Power supply pin (+3.2 V) (SDRAM I/O signal)
45, 46	MA10, MA11	O	SDRAM address bus signal output to 128 Mbit SD-RAM IC.
47, 48	BA1, BA0	O	SDRAM bank select signal output to 128 Mbit SD-RAM IC.
49	MCS0	O	SDRAM chip select signal output to 128 Mbit SD-RAM IC.
50	MCS1	O	Not used (Open)
51	MRAS	O	SDRAM row address strobe signal output to 128 Mbit SD-RAM IC.
52	MCAS	O	SDRAM column address strobe signal output to 128 Mbit SD-RAM IC.
53	MWE	O	SDRAM write enable signal output to 128 Mbit SD-RAM IC. (H: read, L: write)
54	GND25	—	Ground (SDRAM I/O signal)
55	VDD25	—	Power supply pin (+3.2 V) (SDRAM I/O signal)
56	MCLK	O	SDRAM clock signal output to 128 Mbit SD-RAM IC.
57 to 60	MD0 to MD3	I/O	SDRAM data input from/output to 128 Mbit SD-RAM IC.
61	GND25	—	Ground (SDRAM I/O signal)
62	MDQM0	O	Byte read/write mask signal output to 128 Mbit SD-RAM IC.
63	VDD25	—	Power supply pin (+3.2 V) (SDRAM I/O signal)
64 to 71	MD4 to MD11	I/O	SDRAM data input from/output to 128 Mbit SD-RAM IC.
72	GND25	—	Ground (SDRAM I/O signal)
73	MDQM1	O	Byte read/write mask signal output to 128 Mbit SD-RAM IC.
74	VDD25	—	Power supply pin (+3.2 V) (SDRAM I/O signal)
75 to 78	MD12 to MD15	I/O	SDRAM data input from/output to 128 Mbit SD-RAM IC.
79	GND	—	Ground (inside core)
80	VDD	—	Power supply pin (+1.8 V) (inside core)
81 to 84	MD16 to MD19	I/O	SDRAM data input from/output to 128 Mbit SD-RAM IC.
85	GND25	—	Ground (SDRAM I/O signal)
86	MDQM2	O	Byte read/write mask signal output to 128 Mbit SD-RAM IC.
87	VDD25	—	Power supply pin (+3.2 V) (SDRAM I/O signal)
88 to 95	MD20 to MD27	I/O	SDRAM data input from/output to 128 Mbit SD-RAM IC.
96	GND25	—	Ground (SDRAM I/O signal)
97	MDQM3	O	Byte read/write mask signal output to 128 Mbit SD-RAM IC.
98	VDD25	—	Power supply pin (+3.2 V) (SDRAM I/O signal)
99 to 102	MD28 to MD31	I/O	SDRAM data input from/output to 128 Mbit SD-RAM IC.

Pin No.	Pin Name	I/O	Pin Description
103	GND25	—	Ground (SDRAM I/O signal)
104	VDD25	—	Power supply pin (+3.2 V) (SDRAM I/O signal)
105	VCLK	I/O	Not used (Open)
106	XCK_I/O_SEL	I/O	Not used (Open)
107	VS	O	S1 signal output
108	I/P SW	O	Not used (Open)
109	CDSEL	O	CD-DA select signal output
110	MREQ	O	Audio muting signal output to sound control IC.
111	VDDP	—	Power supply pin (+3.2 V) (I/O signal)
112	GNDP	—	Ground (I/O signal)
113	MDI	O	Serial data output to 2CH DAC IC (HCD-RV660D) and D/A converter IC (HCD-RV990D).
114	MC	O	Serial data clock signal output to 2CH DAC IC (HCD-RV660D) and D/A converter IC (HCD-RV990D).
115	ML	O	Latch enable signal output to 2CH DAC IC (HCD-RV660D) and D/A converter IC (HCD-RV990D).
116	HIRQ2	I	Busy signal input from EEPROM IC.
117	VDAC_4B	—	Video DAC bias bit 4 (Connect to ground)
118	VDAC_VDD4	—	Power supply pin (+3.3 V) (Video DAC 4)
119	VDAC_4	O	VDAC output 4
120	VDAC_3B	—	Video DAC bias bit 3 (Connect to ground)
121	VDAC_VDD3	—	Power supply pin (+3.3 V) (Video DAC 3)
122	VDAC_3	O	VDAC output 3
123	VDAC_2B	—	Video DAC bias bit 2 (Connect to ground)
124	VDAC_VDD2	—	Power supply pin (+3.3 V) (Video DAC 2)
125	VDAC_2	O	VDAC output 2
126	VDAC_1B	—	Video DAC bias bit 1 (Connect to ground)
127	VDAC_VDD1	—	Power supply pin (+3.3 V) (Video DAC 1)
128	VDAC_1	O	VDAC output 1
129	VDAC_0B	—	Video DAC bias bit 0 (Connect to ground)
130	VDAC_VDD0	—	Power supply pin (+3.3 V) (Video DAC 0)
131	VDAC_0	O	VDAC output 0
132	VDAC_DVSS	—	Ground (Video DAC digital system)
133	VDAC_DVDD	—	Power supply pin (+3.2 V) (Video DAC digital system)
134	VDAC_REFVDD	—	Power supply pin (+3.3 V) (Video DAC reference)
135	VDAC_REF	I	Reference voltage input (for Video DAC)
136	VDAC_REFVSS	—	Ground (Video DAC reference)
137	XVSS	—	Ground (crystal oscillator)
138	XOUT	O	Not used (Open)
139	XIN	I	Crystal oscillation signal input
140	XVDD	—	Power supply pin (+3.2 V) (crystal oscillator)
141	AVSS2	—	Ground (analog PLL)
142, 143	AVDD2, AVDD1	—	Power supply pin (+3.2 V) (analog PLL)
144	AVSS1	—	Ground (analog PLL)
145	VDD	—	Power supply pin (+1.8 V) (inside core)
146	GND	—	Ground (inside core)
147	XCK	O	Audio system clock signal output to 2CH DAC IC (HCD-RV660D) and D/A converter IC (HCD-RV990D).
148	LRCK	O	LRCK signal output to 2CH DAC IC (HCD-RV660D) and D/A converter IC (HCD-RV990D).
149	BCK	O	BCK signal output to 2CH DAC IC (HCD-RV660D) and D/A converter IC (HCD-RV990D).
150	DATA0(DM)	O	Audio data (down mix signal) output to D/A converter IC (HCD-RV990D).

Pin No.	Pin Name	I/O	Pin Description
151	DATA1(FLR)	O	Audio data (front L/R signal) output to 2CH DAC IC (HCD-RV660D) and D/A converter IC (HCD-RV990D).
152	VDDP	—	Power supply pin (+3.2 V) (I/O signal)
153	GNDP	—	Ground (I/O signal)
154	DATA2(SLR)	O	Audio data (rear L/R signal) output to D/A converter IC (HCD-RV990D).
155	DATA3(CSW)	O	Audio data (center/subwoofer signal) output to D/A converter IC (HCD-RV990D).
156	IEC958	O	S/PDIF signal output
157	DAI_DATA	I	Not used (Open)
158	DAI_BCK	I	Not used (Open)
159	DAI_LRCK	I	Not used (Open)
160	I2C_CL	I/O	I2C clock bus signal input from/output to mechanism control IC.
161	I2C_DA	I/O	I2C data bus signal input from/output to mechanism control IC.
162	CS(ZIVA_E2P)	O	Chip select signal output to EEPROM IC.
163	RXD1	I	Serial data input from check jig
164	TXD1	O	Serial data output to check jig
165	WRITE_CTRL(ZIVA_E2P)	O	Write control signal output to EEPROM IC.
166	GNDP	—	Ground (I/O signal)
167	VDDP	—	Power supply pin (+3.2 V) (I/O signal)
168 to 171	SDDATA7 to SDDATA4	I	SDBUS data input from DVD decoder IC.
172	GND	—	Ground (inside core)
173	VDD	—	Power supply pin (+1.8 V) (inside core)
174 to 177	SDDATA3 to SDDATA0	I	SDBUS data input from DVD decoder IC.
178	SDREQ	O	SDBUS data request signal output to DVD decoder IC.
179	SDEN	I	SDBUS data enable signal input from DVD decoder IC.
180	GNDP	—	Ground (I/O signal)
181	VDDP	—	Power supply pin (+3.2 V) (I/O signal)
182	SDERROR	I	SDBUS data error signal input from DVD decoder IC.
183	SDCLK	I	SDBUS data clock signal input from DVD decoder IC.
184	HIRQ1	I	Interrupt signal input from mechanism control IC.
185	DRVCLK	I	Serial data clock signal input from mechanism control IC.
186	DRVTX	I	Serial data input from mechanism control IC and EEPROM IC.
187	DRVRX	O	Serial data output to mechanism control IC and EEPROM IC.
188	DRVRDY	I	Ready signal input from mechanism control IC.
189	VNW	—	Power supply for 5 V tolerance voltage input
190	ALE	O	Latch enable signal output for address data demux.
191	RST_SPC	O	Reset signal output to mechanism control IC.
192	INT/EXT	O	Not used (Open)
193	HCS2	O	Not used (Open)
194	HCS1	I/O	Not used (Open)
195	HCS0	O	Chip select signal output to programmable ROM IC.
196	VDDP	—	Power supply pin (+3.2 V) (I/O signal)
197	TRST	I	Reset signal input
198	TDO	O	Data output
199	TDI	I	Data input
200	TMS	I	TMS signal input
201	TCK	I	TCK signal input
202	RESET	I	ZIVA reset signal input
203	BUS CLK	I/O	Not used (Open)
204	GND	—	Ground (inside core)
205	VDD	—	Power supply pin (+1.8 V) (inside core)
206, 207	HA3, HA2	I/O	Address bus signal input from/output to bus interface IC.
208	GNDP	—	Ground (I/O signal)

• IC1104 M30620MCN-A28FP (SOUND CONTROL) (MAIN Board (4/4))

Pin No.	Pin Name	I/O	Pin Description
1	S-OUT	O	Serial out signal output
2	S-CLK	O	Serial clock signal output
3	M61530-CLK	O	M61530FP clock signal output
4	SIRCS	I	Sircs signal input
5	M61530-DATA	O	M61530FP data output
6	M61529-DATA	O	M61529FP data output
7	M61529-CLK	O	M61529FP clock signal output
8	EXT.BUS-INPUT	I	External bus input with selector input (Fixed at L)
9	PROCESSOR.MODE-SW	I	Processor mode switch signal input (Fixed at L)
10	SUB.CLOCK-IN	I	Sub clock signal input (32.768 kHz)
11	SUB.CLOCK-OUT	O	Sub clock signal output (32.768 kHz)
12	RESET	I	System reset signal input
13	SYSTEM.CLOCK.OUT (16M)	O	System clock signal output (16 MHz)
14	VSS	—	Ground
15	SYSTEM.CLOCK.IN (16M)	I	System clock signal input (16 MHz)
16	VCC	—	Power supply pin (+3.3 V)
17	PULL.UP (EVER3.3V)	I	Pull up (EVER +3.3 V)
18	AC-CUT	I	AC cut select signal input (L: ON, H: OFF)
19	VIDEO-OUT-SW	O	Video out switch signal output (L: DVD, H: other)
20	RDS-INT	I	Not used (Connect to VSS)
21	RDS-DATA	I	Not used (Connect to VSS)
22	ST-MUTE	O	Stereo mute select signal output (L: OFF, H: ON)
23	STEREO	I	Stereo select signal input (L: ON, H: OFF)
24	TUNED	I	Tuned select signal input (L: ON, H: OFF)
25	ST-CE	O	Stereo chip enable signal output
26	ST-DOUT	O	Stereo data out signal output
27	ST-DIN	I	Stereo data in signal input
28	ST-CLK	O	Stereo clock signal output
29	IIC-CLK	I/O	IIC clock signal input/output
30	IIC-DATA	I/O	IIC data input/output
31	SYS-POWER	O	System power select signal output (L: OFF, H: ON)
32	SYS-RESET	O	System reset signal output
33	M-REQ	I	DAC mute request select signal input from ZIVA. (L: ON, H: OFF)
34	VIDEO-MUTE1	O	Video mute 1 select signal output (L: ON, H: OFF)
35	VIDEO-MUTE2	O	Video mute 2 select signal output (L: ON, H: OFF)
36	DAC-MUTE	O	Not used (Open)
37	REAR-MUTE	O	Surround (rear) mute select signal output (L: ON, H: OFF)
38	CENTER-MUTE	O	Center mute select signal output (L: ON, H: OFF)
39 to 46	NO-USE	O	Not used (Open)
47	TBL-POS	O	Table motor drive control signal output (+)
48	TBL-NEG	O	Table motor drive control signal output (-)
49	LOD-POS	O	Loading motor drive control signal output (+)
50	LOD-NEG	O	Loading motor drive control signal output (-)
51	ENCODER-SW1	I	Disc tray address signal input (Disc 1)
52	ENCODER-SW2	I	Disc tray address signal input (Disc 2)
53	ENCODER-SW3	I	Disc tray address signal input (Disc 3)
54	EJECT-SW	I	Open/close select signal input (L: open, H: close)
55	T-SENS	I	Table sensor signal input
56	HP-SW	I	Headphones in/out select signal input (L: out, H: in)
57	MIC-SW	I	Microphone in/out select signal input (L: out, H: in)
58	A-TRG	O	Trigger out ON/OFF select signal output (deck A) (L: OFF, H: ON)

Pin No.	Pin Name	I/O	Pin Description
59	B-TRG	O	Trigger out ON/OFF select signal output (deck B) (L: OFF, H: ON)
60	A-SHUT-IN	I	Reel pulse signal input (deck A)
61	B-SHUT-IN	I	Reel pulse signal input (deck B)
62	VCC	—	Power supply pin (+3.3 V)
63	SWFR-MUTE	O	Sub woofer mute ON/OFF select signal output (L: ON, H: OFF)
64	VSS	—	Ground
65	CAPM-CONT	O	Capstan motor ON/OFF select signal output (L: OFF, H: ON)
66	B-REC.FWD	I	REC (FWD) switch in signal input (deck B) (active L)
67	B-REC.REV	I	REC (REV) switch in signal input (deck B) (active L)
68	A-HALF	I	Half in signal input (deck A) (active L)
69	B-HALF	I	Half in signal input (deck B) (active L)
70	A-PLAY	I	Playback switch in signal input (deck A) (active L)
71	B-PLAY	I	Playback switch in signal input (deck B) (active L)
72	AMS-IN	I	AMS in select signal input (L: without music, H: with music)
73	DISPLAY-KEY	I	Display key signal input (active L)
74	POWER-KEY	I	Power key signal input (active L)
75	M-RESET	O	To other micon’s reset signal output
76	STANDBY-LED	O	Standby LED ON/OFF select signal output (L: ON, H: OFF)
77	BIAS	O	Bias ON/OFF select signal output (L: OFF, H: ON)
78	PB-A/B	O	PB deck A/B select signal output (L: deck B, H: deck A)
79	TC-RELAY	O	Tape REC/PB control signal output (L: REC, H: PB (other))
80	PB-MUTE	O	PB mute select signal output (L: ON, H: OFF)
81	REC-MUTE	O	REC mute select signal output (L: ON, H: OFF)
82	FAN	O	Fan motor ON/OFF control signal output (L: OFF, H: 300 msec)
83	LINEOUT-MUTE	O	MD (VIDEO) mute ON/OFF select signal output (L: ON, H: OFF)
84	LINE-MUTE	O	TA line mute ON/OFF select signal output (L: ON, H: OFF)
85	STK-MUTE	O	STK mute ON/OFF select signal output (L: ON, H: OFF)
86	PROTECT	I	Protect ON/OFF select signal input (L: ON, H: OFF)
87	STB-RELAY	O	Standby relay ON/OFF select signal output (L: OFF, H: ON)
88	FRONT-RELAY	O	Front speaker relay ON/OFF select signal output (L: OFF, H: ON)
89	REAR-RELAY	O	Rear/center/sub woofer speaker relay ON/OFF select signal output (L: OFF, H: ON)
90	NO-USE	O	Not used (Open)
91	VACS-IN1 ILLUMI-IN	I	VACS & Illumi in 1 signal input (A/D)
92	VACS-IN2	I	VACS in 2 signal input (thermal VACS)
93	NO-USE	O	Not used (Open)
94	MODEL-IN	I	Model in signal input (A/D)
95	SPEC-IN	I	Destination in signal input (A/D)
96	AVSS	—	Analog ground
97	I-HOLD	O	Fan motor ON/OFF select signal output (L: OFF, H: ON)
98	V.REF	—	AV reference voltage pin (+3.3 V)
99	AVCC	—	Power supply pin (+3.3 V)
100	S-IN	I	Serial in signal input

• IC101 µPD780232GC-081-8BT (SYSTEM CONTROL, FL DRIVER) (PANEL Board)

Pin No.	Pin Name	I/O	Pin Description
1	VDD	—	Power supply pin (+5 V)
2	VSS	—	Ground
3	X1	I	System clock signal input (5 MHz)
4	X2	I	System clock signal input (5 MHz)
5	IC	I	Directly connect to ground.
6	RESET	I	Reset signal input (active L)
7	S-CLK	I	Serial clock signal input
8	S-IN	I	Serial in signal input
9	S-OUT	O	Serial out signal output
10 to 15	NC	O	Not used (Open)
16	VOL-A	I	VOLUME encoder in A signal input
17	VOL-B	I	VOLUME encoder in B signal input
18	AVSS	—	Analog ground
19	NC	I	Not used (Connect to ground)
20 to 22	KEY2 to KEY0	—	Key in signal input
23	VSS	—	Ground
24	AVDD	—	Analog power supply pin (+5 V)
25	VDD	—	Power supply pin (+5 V)
26	DVD-LED	O	DVD LED ON/OFF select signal output (L: OFF, H: ON)
27	TUNER-LED	O	TUNER/BAND LED ON/OFF select signal output (L: OFF, H: ON)
28	TAPE-LED	O	TAPE A/B LED ON/OFF select signal output (L: OFF, H: ON)
29	MD-LED	O	MD (VIDEO) LED ON/OFF select signal output (L: OFF, H: ON)
30	GAME-LED	O	GAME LED ON/OFF select signal output (L: OFF, H: ON)
31 to 36	PS1-LED to PS6-LED	O	Power stream LEDs ON/OFF control signal output (L: OFF, H: ON)
37	MULTI-LED	O	MULTI CHANNEL DECODING LED ON/OFF select signal output (L: OFF, H: ON)
38 to 44	NC	O	Not used (Open)
45 to 58	S1 to S14	O	FL segment control signal output (L: OFF, H: ON)
59	VDD	—	Power supply pin (+5 V)
60	V.LOAD	—	V.LOAD
61 to 67	S15 to S21		FL segment control signal output (L: OFF, H: ON)
68 to 80	G1 to G13		FL grid control signal output (L: OFF, H: ON)

REVISION HISTORY

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Ver.	Date	Description of Revision
1.0	2002. 05	New
1.1	2003. 10	Corrected errors. Addition of Part No. for SUPPLEMENT-1 (9-961-078-81).
1.2	2004. 07	Error correction of the extension cable. (SPM-04065)