

HCD-EP50

SERVICE MANUAL

Ver 1.1 2001.09

US Model
Canadian Model
AEP Model
UK Model
E Model
Chinese Model



HCD-EP50 is the amplifier, CD player, tape deck and tuner section in CMT-EP50.

CD Section	Model Name Using Similar Mechanism	HCD-EP30
	CD Mechanism Type	CS-21SC-1280
TAPE Section	Model Name Using Similar Mechanism	NEW
	Tape Transport Mechanism Type	CRL3439

SPECIFICATIONS

AUDIO POWER SPECIFICATIONS: (US model only)

POWER OUTPUT AND TOTAL HARMONIC DISTORTION:

with 8 Ω loads both channels driven, from 120 - 10,000 Hz; rates 12 W per channel minimum RMS power, with no more than 10% total harmonic distortion from 250 mW to rated output.

Amplifier section Canadian model:

Continuous RMS power output (reference)
12 + 12 W
(8 Ω at 1 kHz, 10% THD)

AEP, UK models:

DIN power output (rated) 11 + 11 W
(8 Ω at 1 kHz, DIN)

Continuous RMS power output (reference)
12 + 12 W
(8 Ω at 1 kHz, 10% THD)

Music power output (reference)
27 + 27 W

Other models:

The following measured at AC 230 V, 50/60 Hz
DIN power output (rated) 11 + 11 W
(8 Ω at 1 kHz, DIN)

Continuous RMS power output (reference)
12 + 12 W
(8 Ω at 1 kHz, 10% THD)

Outputs

PHONES: Accepts headphones of

(stereo mini jack) 8 Ω or more

SPEAKER: Accepts impedance of 8 to 16 Ω

CD player section

System Compact disc and digital audio system

Laser Semiconductor laser ($\lambda=780$ nm)
Emission duration: continuous
Frequency response 20 Hz - 20 kHz (± 0.5 dB)

Tape player section

Recording system 4-track 2-channel stereo
Frequency response 50 - 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 terminal 75 Ω coaxial
Intermediate frequency 10.7 MHz

AM tuner section

Tuning range
Pan-American model: 530 - 1 710 kHz (with the interval set at 10 kHz)
531 - 1 710 kHz (with the interval set at 9 kHz)
European 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 terminal External antenna terminal
Intermediate frequency 450 kHz

General

Power requirements
US, Canadian models: 120 V AC, 60 Hz
AEP, UK models: 230 V AC, 50/60 Hz
Mexican model: 120 V AC, 60 Hz
Argentine model: 220 V AC, 50/60 Hz
Hong Kong model: 230 V AC, 50/60 Hz
Chinese model: 220 V AC, 50/60 Hz
Other models: 230 V AC, 50/60 Hz

Power consumption
US model: 35 W
Canadian model: 35 W
AEP, UK models: 40 W
0.9 W (in the standby mode)
Other models: 40 W

Dimensions (w/h/d): Approx. 145 \times 238 \times 234 mm

Mass: Approx. 3.4 kg

Supplied accessories: AM loop antenna (1)
Remote Commander (1)
Batteries (2)
FM lead antenna (1)
Speaker pads (8)

Design and specifications are subject to change without notice.

COMPACT DISC DECK RECEIVER

9-873-897-12
2001I0500-1
© 2001.9

Sony Corporation
Home Audio Company
Shinagawa Tec Service Manual Production Group

SONY®

TABLE OF CONTENTS

1. SERVICING NOTES	4
2. GENERAL	5
3. DISASSEMBLY	
3-1. Disassembly Flow	7
3-2. Front Panel Section	8
3-3. MAIN Board	8
3-4. CD Cabinet Section	9
3-5. CD Mechanism Deck (CS-21SC-1280)	9
3-6. Tape Mechanism Deck (CRL3439)	10
3-7. Cassette Lid	10
4. MECHANICAL ADJUSTMENTS	11
5. ELECTRICAL ADJUSTMENTS	11
6. DIAGRAMS	
6-1. Block Diagram – TUNER Section –	15
6-2. Block Diagram – TAPE DECK Section –	16
6-3. Block Diagram – MAIN Section –	17
6-4. Block Diagram – DISPLAY/POWER SUPPLY Section –	18
6-5. Note for Printed Wiring Boards and Schematic Diagrams	19
6-6. Schematic Diagram – FM TUNER Section –	19
6-7. Schematic Diagram – MAIN Board (1/3) –	20
6-8. Schematic Diagram – MAIN Board (2/3) –	21
6-9. Schematic Diagram – MAIN (3/3)/HEADPHONE Boards –	22
6-10. Printed Wiring Boards – MAIN/HEADPHONE Boards –	23
6-11. Printed Wiring Board – DISPLAY Board –	24
6-12. Schematic Diagram – DISPLAY Board –	25
6-13. Printed Wiring Board – POWER Board –	26
6-14. Schematic Diagram – POWER Board –	27
6-15. IC Pin Function Description	31
7. EXPLODED VIEWS	
7-1. Cabinet Section	33
7-2. Front Panel Section-1	34
7-3. Front Panel Section-2	35
7-4. CD Cabinet Section	36
8. ELECTRICAL PARTS LIST	37

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 the 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.

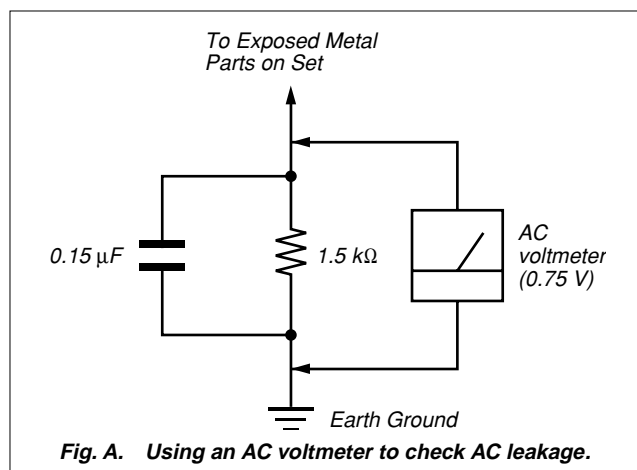
SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer: Check the antenna terminals, metal trim, “metallized” knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes.). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers’ instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The “limit” indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

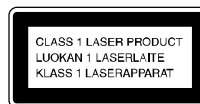


SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK \triangle OR DOTTED LINE WITH MARK \triangle 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.



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



The following caution label is located inside the unit.



与安全有关的零部件须知

在原理图上用阴影及 \triangle 标记来识别的零部件在安全操作上是具有关键性的。这些零部件要用本手册中所示的部件号对应的索尼零部件进行更换。

在安全操作上具有关键性的电路调整与索尼公司出版的维修手册完全一致。在更换关键零部件时或怀疑动作失常时，请进行这些调整操作。

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE \triangle SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SECTION 1 SERVICING NOTES

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

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.



During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.

The flexible board is easily damaged and should be handled with care.

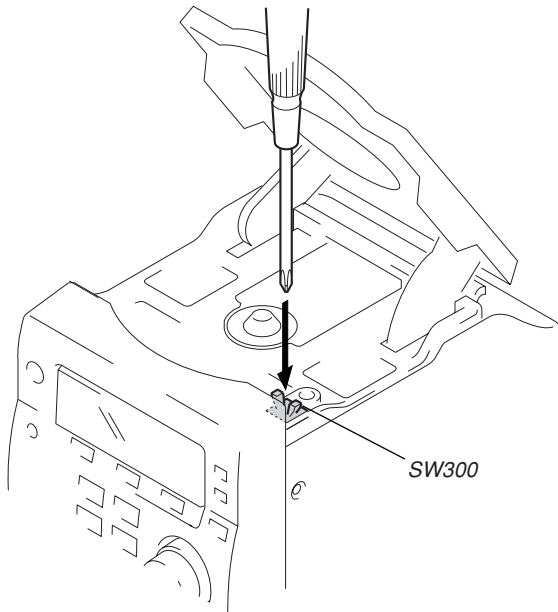
NOTES ON LASER DIODE EMISSION CHECK

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

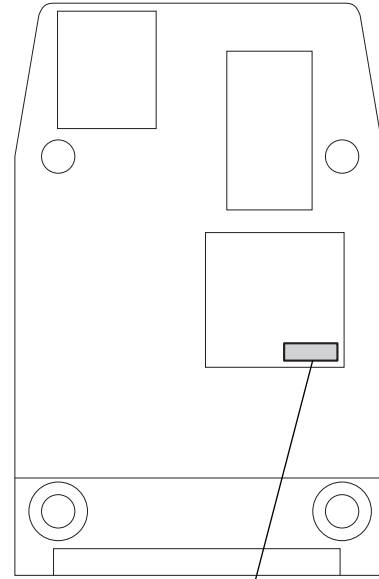
LASER DIODE AND FOCUS SEARCH OPERATION CHECK

1. Press the  button to the power ON with no disc inserted and press the  button.
2. Open the lid for CD.
3. Turn on SW300 as following figure.
4. Confirm the laser diode emission while observing the objecting lens. When there is no emission, Auto Power Control circuit or Optical Pick-up is broken.

Objective lens moves up and down five times for the focus search.



**• MODEL IDENTIFICATION
– Bottom View –**

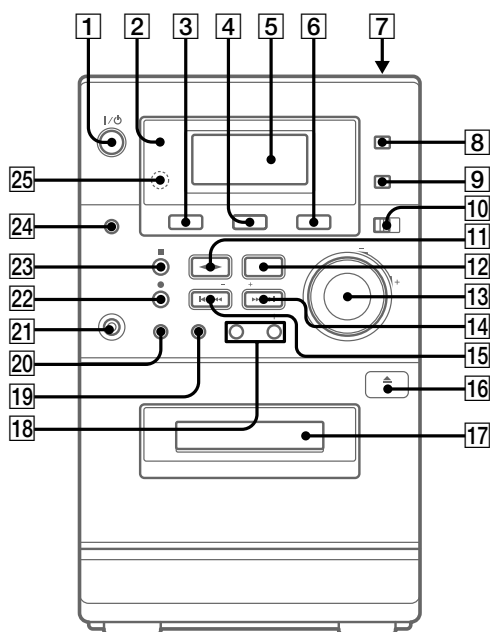


MODEL	PART No.
AEP and UK models	4-235-177-0□
US and Canadian models	4-235-179-0□
Singapore and Hong Kong models	4-235-180-0□
Mexican model	4-235-182-0□
Argentina model	4-235-183-0□
Chinese model	4-238-634-0□

SECTION 2 GENERAL

This section is extracted from
instruction manual.

LOCATION OF CONTROLS – Front Panel –



Cassette compartment **17** (13)
 CD **4** (8, 9, 14)
 DISPLAY **24** (9, 11)
 Display Window **5** (8, 9, 10)
 ENTER **19** (7, 9, 10, 12)
 ISS **10** (14)
 MEGA BASS **8** (16)
 MONO STEREO **10** (11)
 MUSIC MENU **9** (16)
 PHONES jack **21**
 PLAY MODE **20** (8, 9)
 PRESET +/- **18** (10, 11, 12)

RDS (European model only)/DIR
20 (12, 13, 14, 15)
 Remote sensor **25**
 TAPE **3** (13)
 TIMER indicator **2** (15, 18)
 TUNER **6** (10, 11, 14)
 TUNER MEM **19** (10)
 TUNING + **14** (10, 11, 12, 15)
 TUNING - **15** (10, 11, 12, 15)
 VOLUME control **13**

BUTTON DESCRIPTIONS

I/⏻ (power) **1** (7, 11, 15, 18)

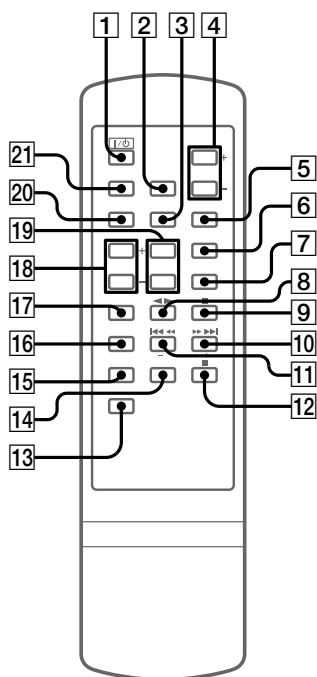
CD

⏮ (go back) **15** (8, 9)
⏭ (go forward) **14** (8, 9)
▶ (play) **11** (8, 9)
⏸ (pause) **23** (8)
⏵ PUSH OPEN/CLOSE **7** (8)
■ (stop) **12** (8, 9)

TAPE

⏭ (fast forward) **14** (13)
⏸ (pause) **23** (13)
▶ (play) **11** (13, 14, 15)
● (recording) **22** (14, 15)
⏮ (rewind) **15** (13)
⏵ PUSH OPEN/CLOSE **16** (13)
■ (stop) **12** (13, 14)

Remote Control



- CD **3** (8, 9, 14)
- CLOCK/TIMER **15** (7, 15, 17)
- DISPLAY **16** (9, 11)
- MEGA BASS **2** (16)
- MUSIC MENU **21** (16)
- PLAY MODE/RDS (European model only)/DIR **17** (8, 9, 12, 13, 14, 15)
- PRESET +/- **18** (10, 11)
- REPEAT **7** (8)
- SLEEP **13** (17)
- TAPE **20** (13)
- TIMER ON/OFF **14** (15, 18)
- TUNER/BAND **5** (10, 11, 14)
- TUNER MEM/ENTER **6** (7, 9, 10, 12, 15, 17, 18)
- TUNING/CLOCK/TIMER +/- **19** (7, 10, 11, 12, 15, 17, 18)
- VOLUME +/- **4**

BUTTON DESCRIPTIONS

- ▶▶ (fast forward) ▶▶▶ (go forward) **10** (8, 9, 13)
- ◀◀ (go back) ◀◀◀ (rewind) **11** (8, 9, 13)
- ⏸ (pause) **12** (8, 13)
- ▶▶▶ (play) **8** (8, 9, 13, 14, 15)
- ⏻ (power) **1** (7, 11, 15, 18)
- (stop) **9** (8, 9, 13, 14)

Setting the time

- 1** Turn on the system.
- 2** Press **CLOCK/TIMER** on the remote.
When you set the clock for the first time, go to step 5.
- 3** Press **CLOCK/TIMER** on the remote repeatedly until **CSET CLK** appears in the display.
- 4** Press **TUNER MEM/ENTER** on the remote.
- 5** Press **TUNING/CLOCK/TIMER +** or **-** on the remote repeatedly to set the hour.
- 6** Press **TUNER MEM/ENTER** on the remote.
- 7** Press **TUNING/CLOCK/TIMER +** or **-** on the remote repeatedly to set the minute.
- 8** Press **TUNER MEM/ENTER** on the remote.

To reset the system clock

Start over from step 1.

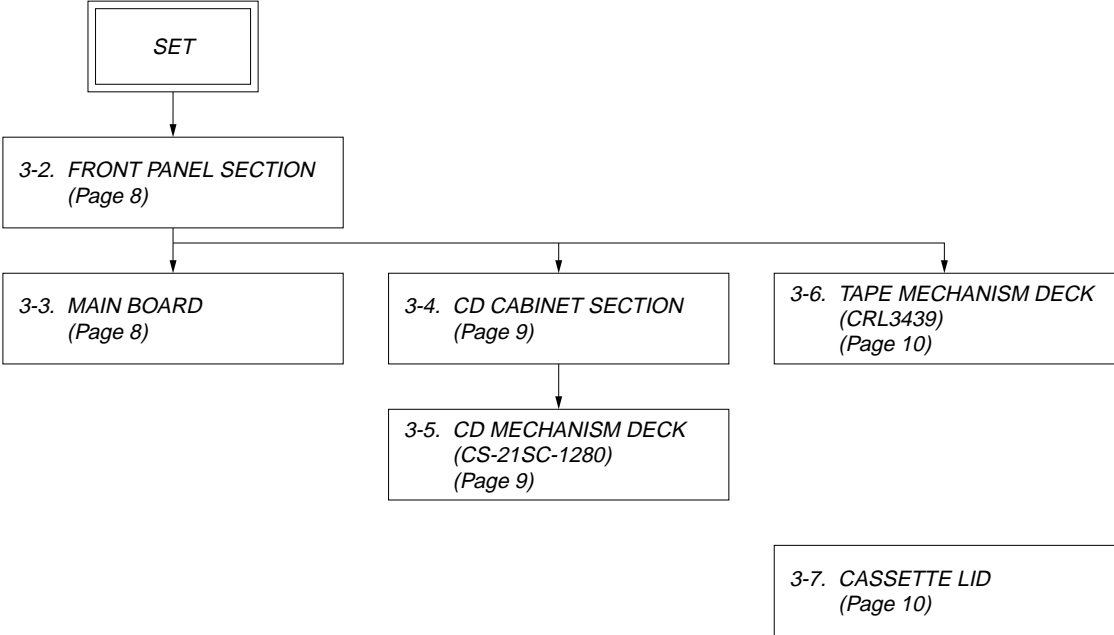
Note

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

SECTION 3 DISASSEMBLY

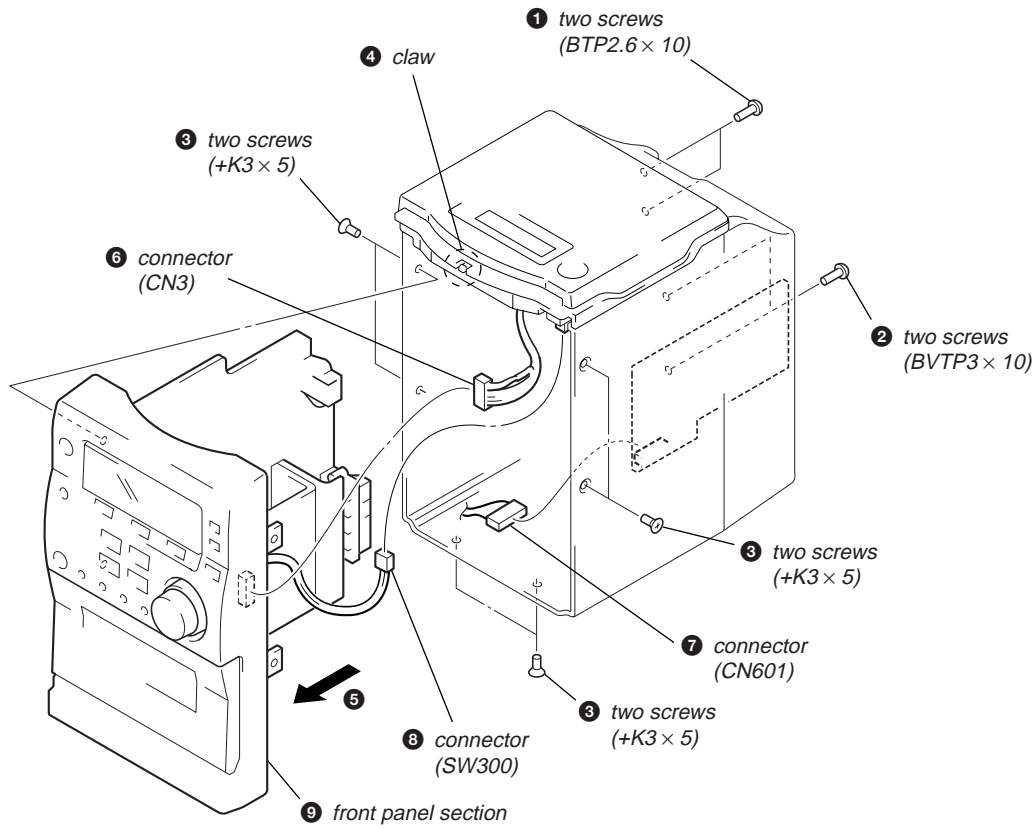
• This set can be disassembled in the order shown below.

3-1. DISASSEMBLY FLOW

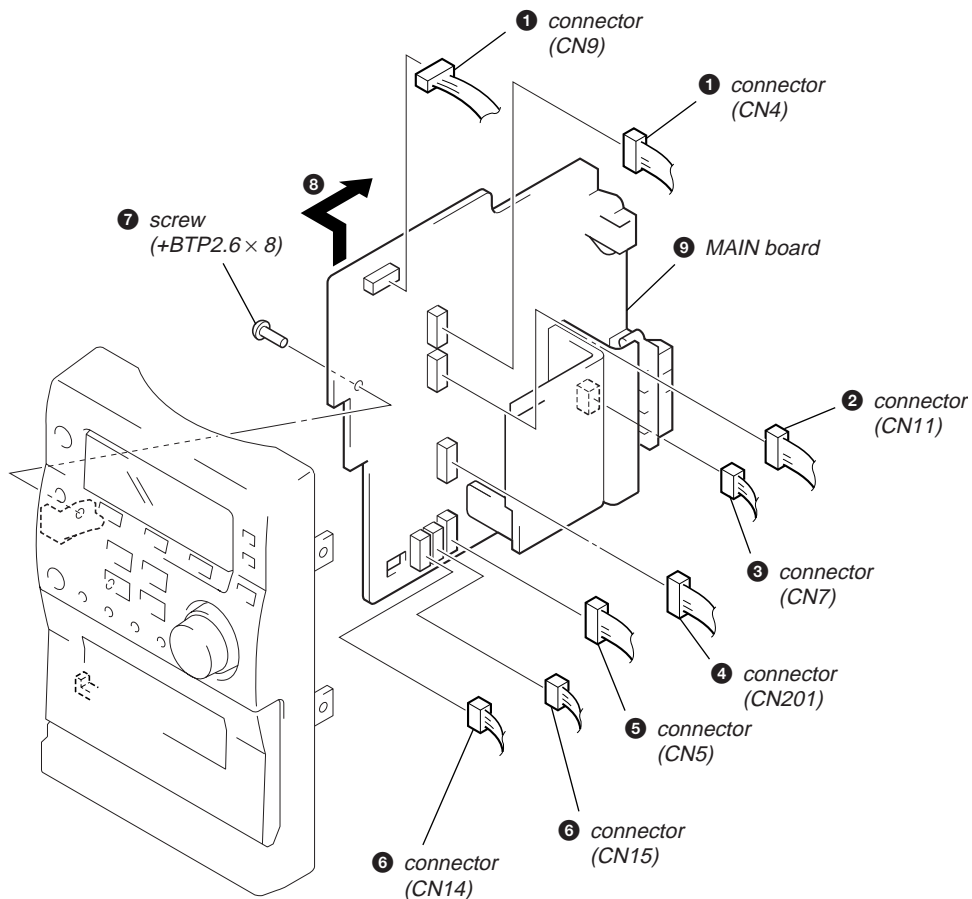


Note: Follow the disassembly procedure in the numerical order given.

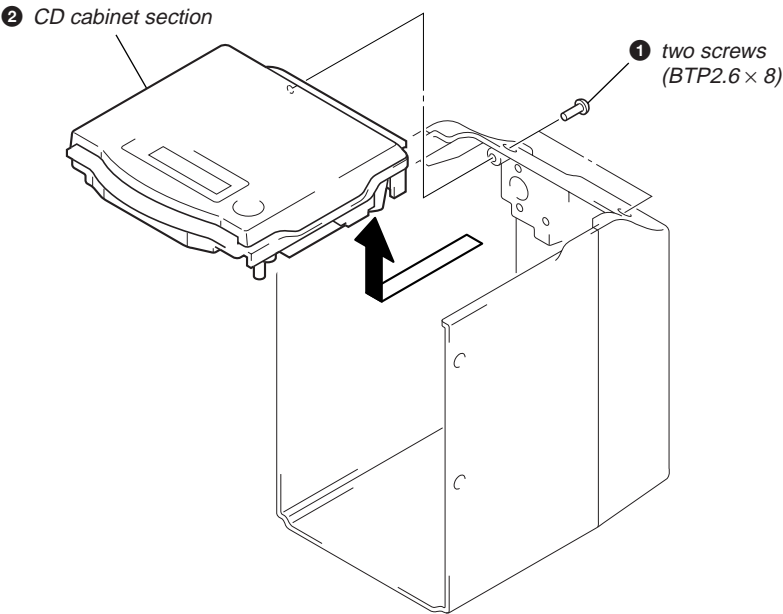
3-2. FRONT PANEL SECTION



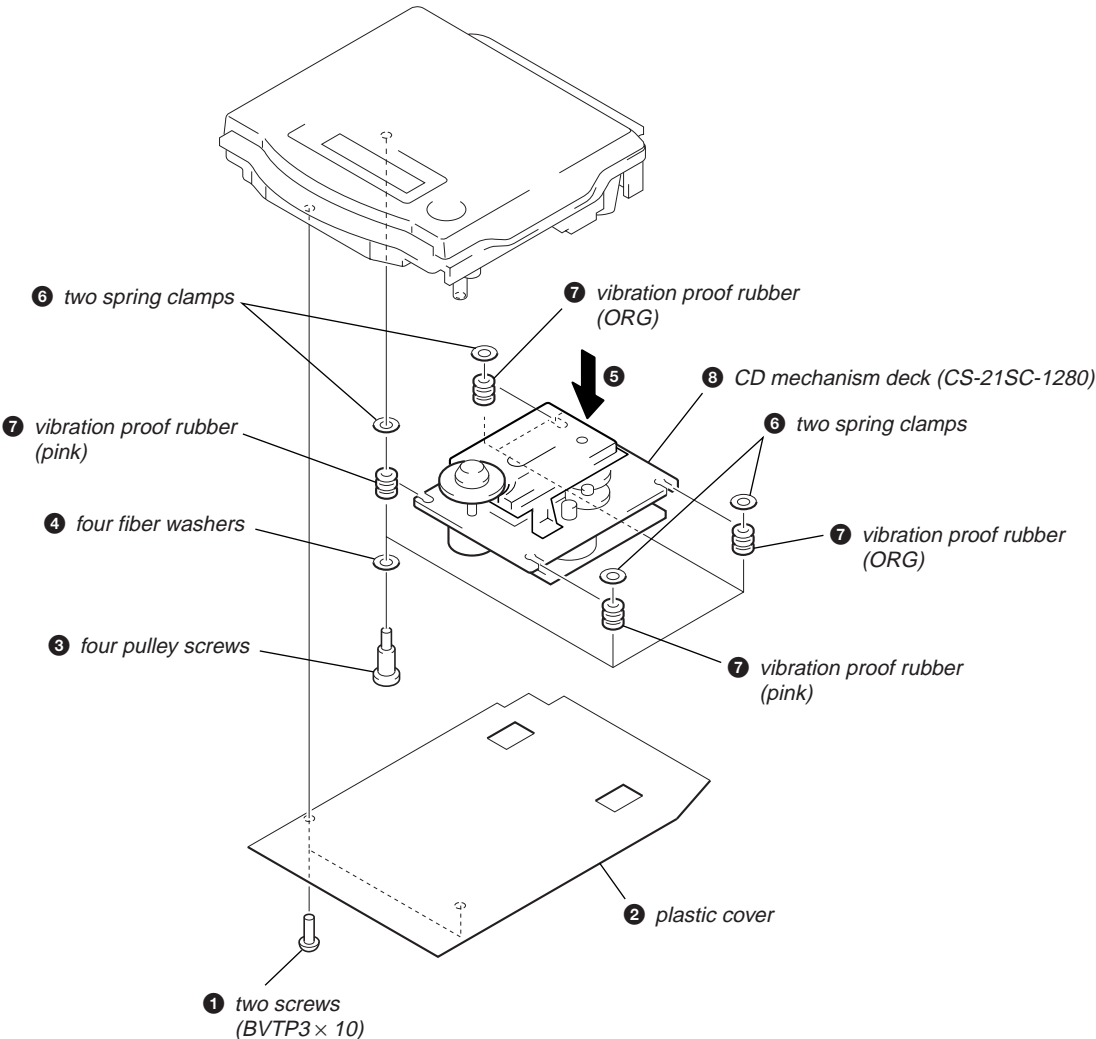
3-3. MAIN BOARD



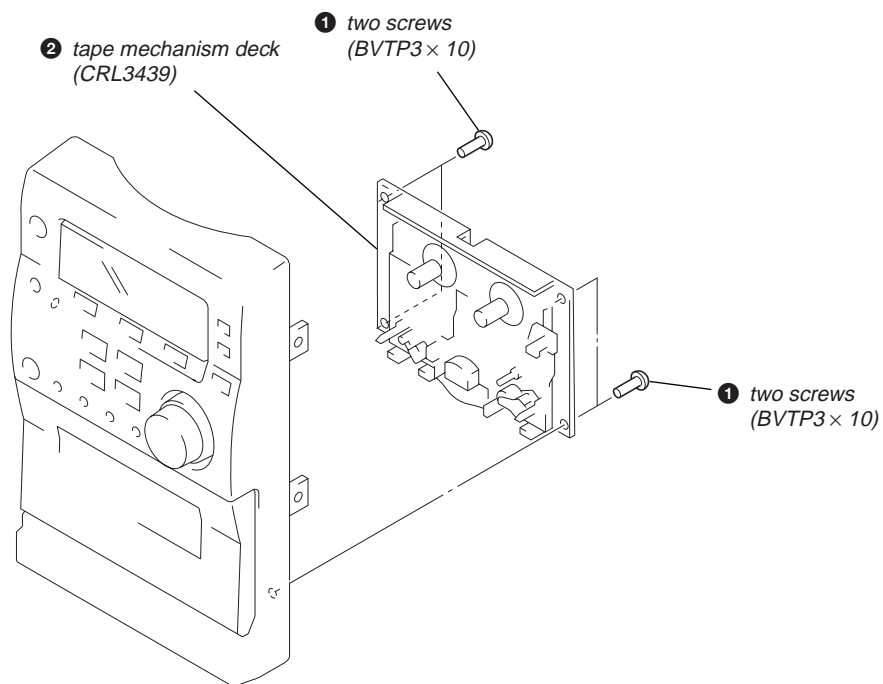
3-4. CD CABINET SECTION



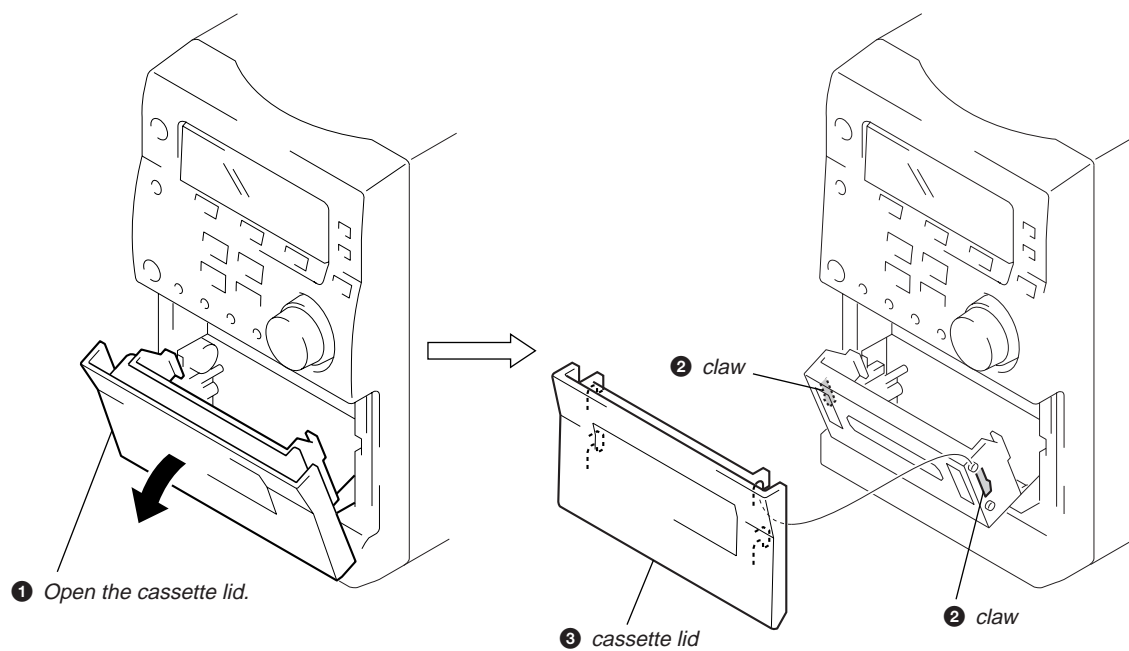
3-5. CD MECHANISM DECK (CS-21SC-1280)



3-6. TAPE MECHANISM DECK (CRL3439)



3-7. CASSETTE LID



SECTION 4 MECHANICAL ADJUSTMENTS

PRECAUTION

- Clean the following parts with a denatured-alcohol-moistened swab :

record/playback head	pinch roller
erase head	rubber belts
capstan	idlers
- Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head magnetizer close to the erase head.)
- Do not use a magnetized screwdriver for the adjustments.
- After the adjustments, apply suitable locking compound to the parts adjusted.
- The adjustments should be performed with the rated power supply voltage unless otherwise noted.

• Torque Measurement

Mode	Torque Meter	Meter Reading
FWD	CQ-102C	2.95 – 6.86 mN•m (30 – 70 g•cm) (0.42 – 0.97 oz•inch)
FWD Back Tension	CQ-102C	0.15 – 5.39 mN•m (1.5 – 5.5 g•cm) (0.021 – 0.076 oz•inch)
FF	CQ-201B	more than 5.89 mN•m (more than 60 g•cm) (more than 0.83 oz•inch)
REW	CQ-201B	more than 5.89 mN•m (more than 60 g•cm) (more than 0.83 oz•inch)

• Tape Tension Measurement

Mode	Tension Meter	Meter Reading
FWD	CQ-403A	more than 100 g (more than 3.53 oz)

SECTION 5 ELECTRICAL ADJUSTMENTS

PRECAUTION

- Setting
MEGA BASS switch : OFF

TAPE DECK SECTION

0 dB=0.775 V

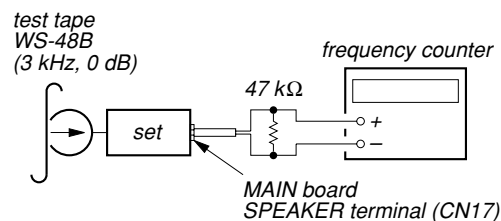
Test tape

Type	Signal	Used for
WS-48B	3 kHz, 0 dB	Tape Speed Adjustment
P-4-A100	10 kHz, -10 dB	Head Azimuth Adjustment

Tape Speed Adjustment

Setting:

Function: TAPE



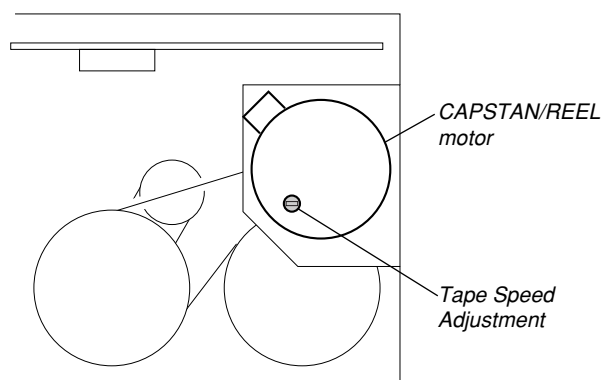
Procedure:

- Playback WS-48B (tape center) in the FWD state.
- Adjust the volume in CAPSTAN/REEL motor so that the frequency counter reading becomes 3,000 Hz.

Specified Value: 2,970 to 3,030 Hz

- Confirm that the frequency at the beginning and that at the end of tape winding are between 2,955 to 3,045 Hz.

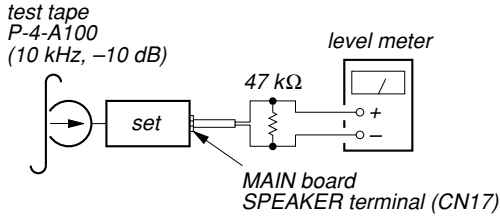
Adjustment Location:



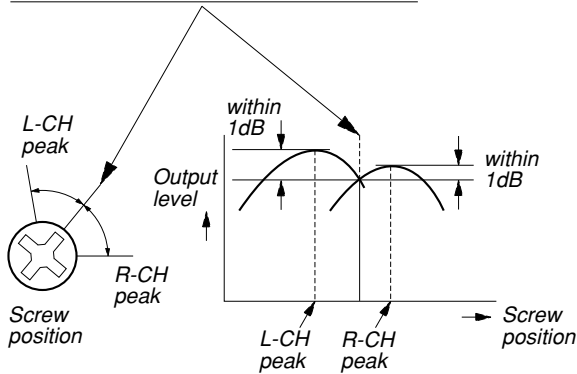
Record/Playback Head Azimuth Adjustment

Procedure:

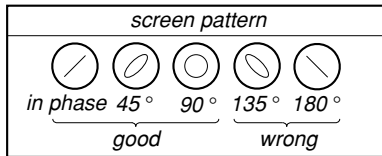
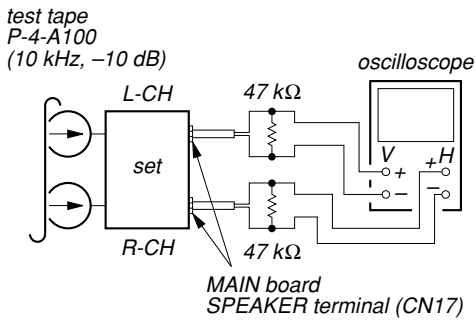
1. Mode: Playback (FWD)



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.

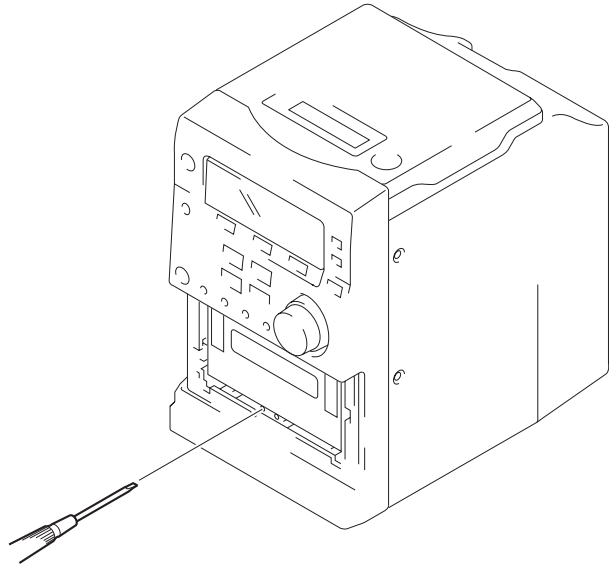


3. Mode: Playback (FWD)



4. Repeat step 1 to 3 in playback (REV) mode.
5. After the adjustments, apply suitable locking compound to the parts adjusted.

Adjustment Location: Record/Playback Head.



Note: Refer to "3-7. CASSETTE LID" (see page 10)

TUNER SECTION

0 dB=1 μ V

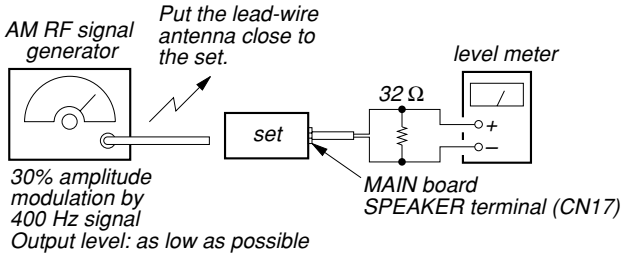
no mark : EXCEPT AEP, UK, Chinese models
< > : AEP, UK, Chinese models

[AM]

Setting:

Function : TUNER

Band switch : AM

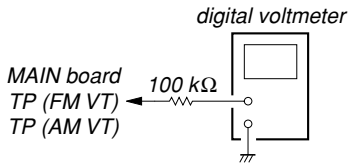
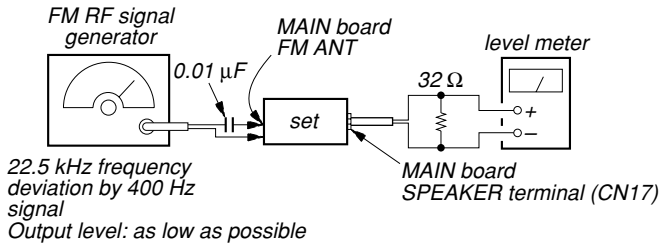


[FM]

Setting:

Function : TUNER

Band switch : FM



- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

AM IF ADJUSTMENT	
Adjust for a maximum reading on level meter	
T1	450 kHz

AM FREQUENCY COVERAGE ADJUSTMENT		
Adjustment Part	Frequency Display	Reading on Digital Voltmeter
T8	530 kHz <531 kHz>	1.3 \pm 0.1 V
Confirmation	1,710 kHz <1,602 kHz>	7.8 \pm 0.5 V <7.1 \pm 0.5 V>

AM TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter	
T6	603 kHz
TC1	1,404 kHz

FM FREQUENCY COVERAGE ADJUSTMENT		
Adjustment Part	Frequency Display	Reading on Digital Voltmeter
L901 <Confirmation>	87.5 MHz	2.4 \pm 0.1 V <1.4 to 1.6 V>
Confirmation	108 MHz	6.8 \pm 0.5 V <7.3 to 8.5 V>

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter	
L902	90.1 MHz
TC901	106.1 MHz

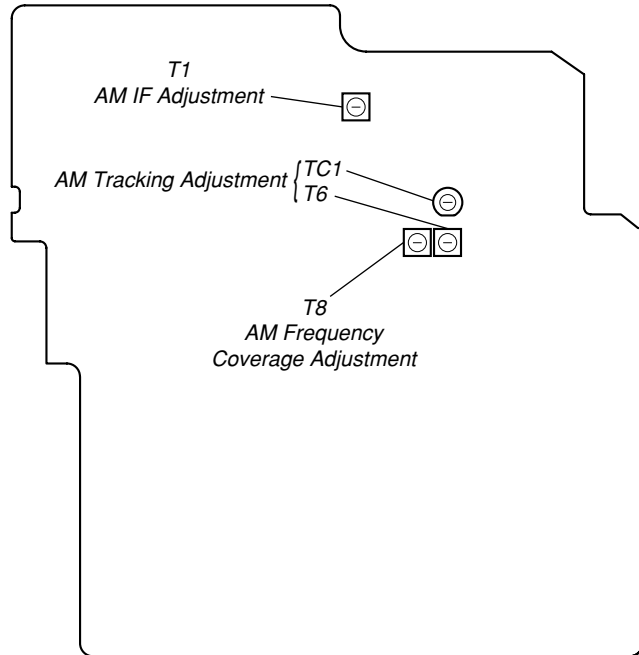
(EXCEPT AEP, UK, Chinese models)

Adjustment Location: MAIN board (See page 14)

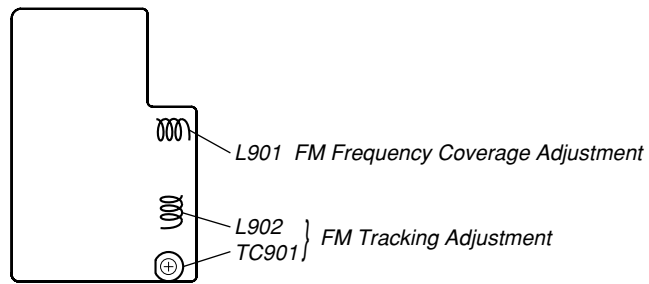
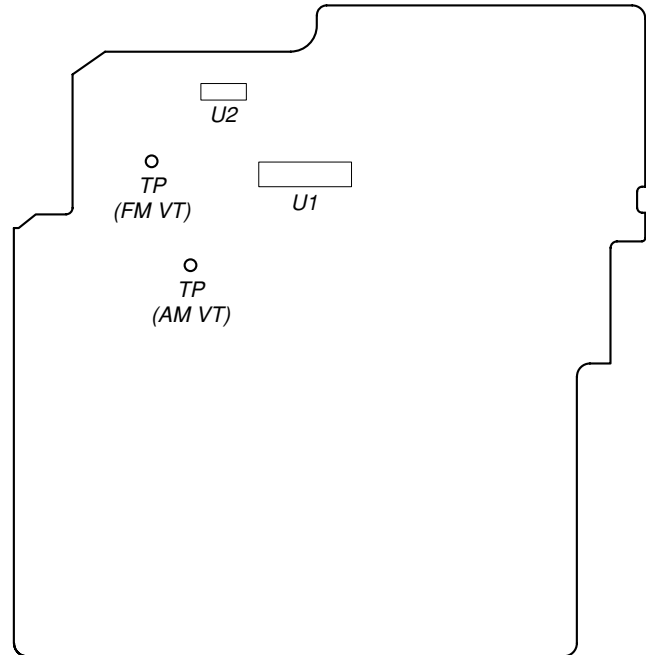
HCD-EP50

Adjustment Location and Connecting Points

- MAIN BOARD (Component Side) -

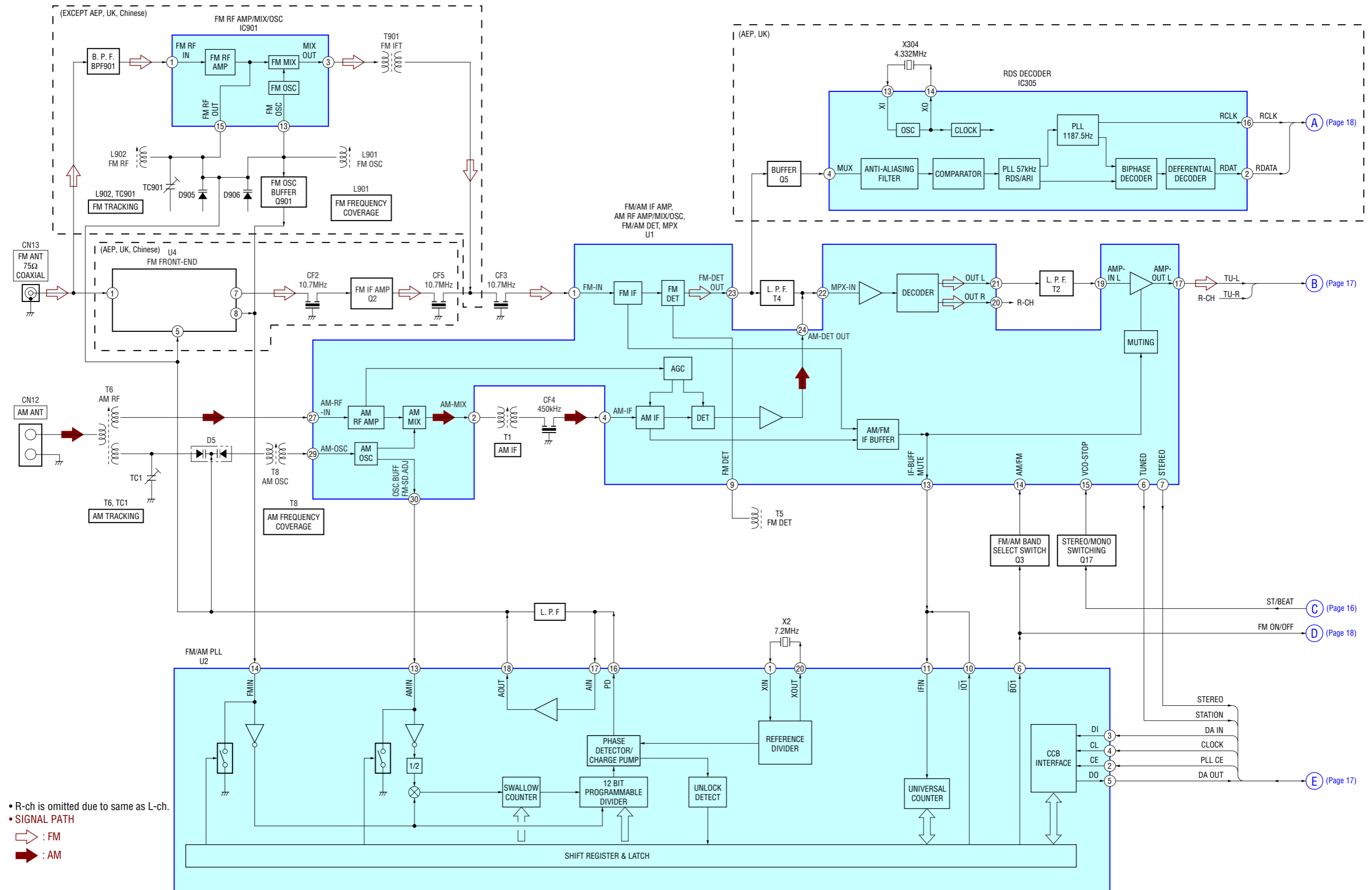


- MAIN BOARD (Conductor Side) -



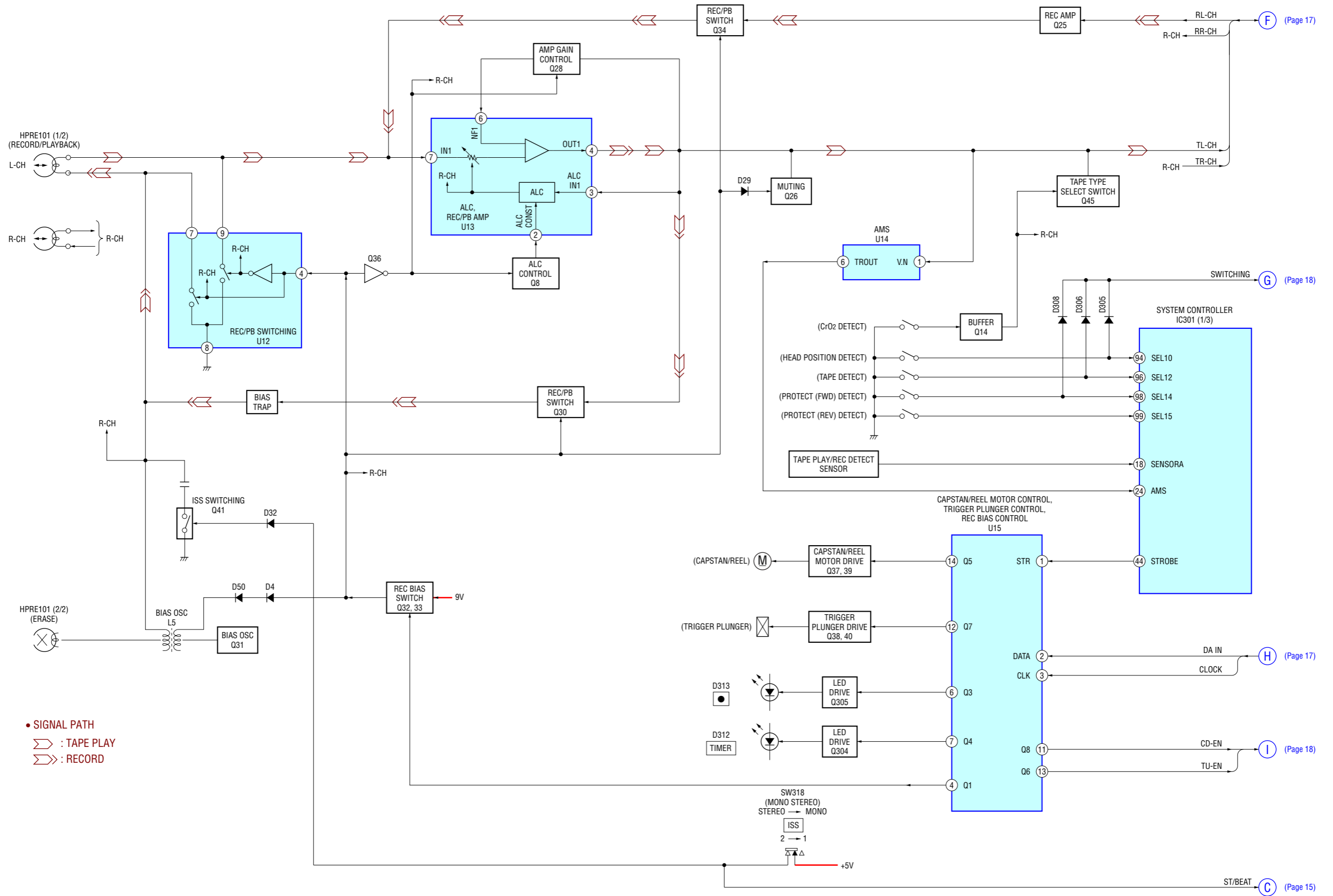
SECTION 6
DIAGRAMS

6-1. BLOCK DIAGRAM – TUNER Section –

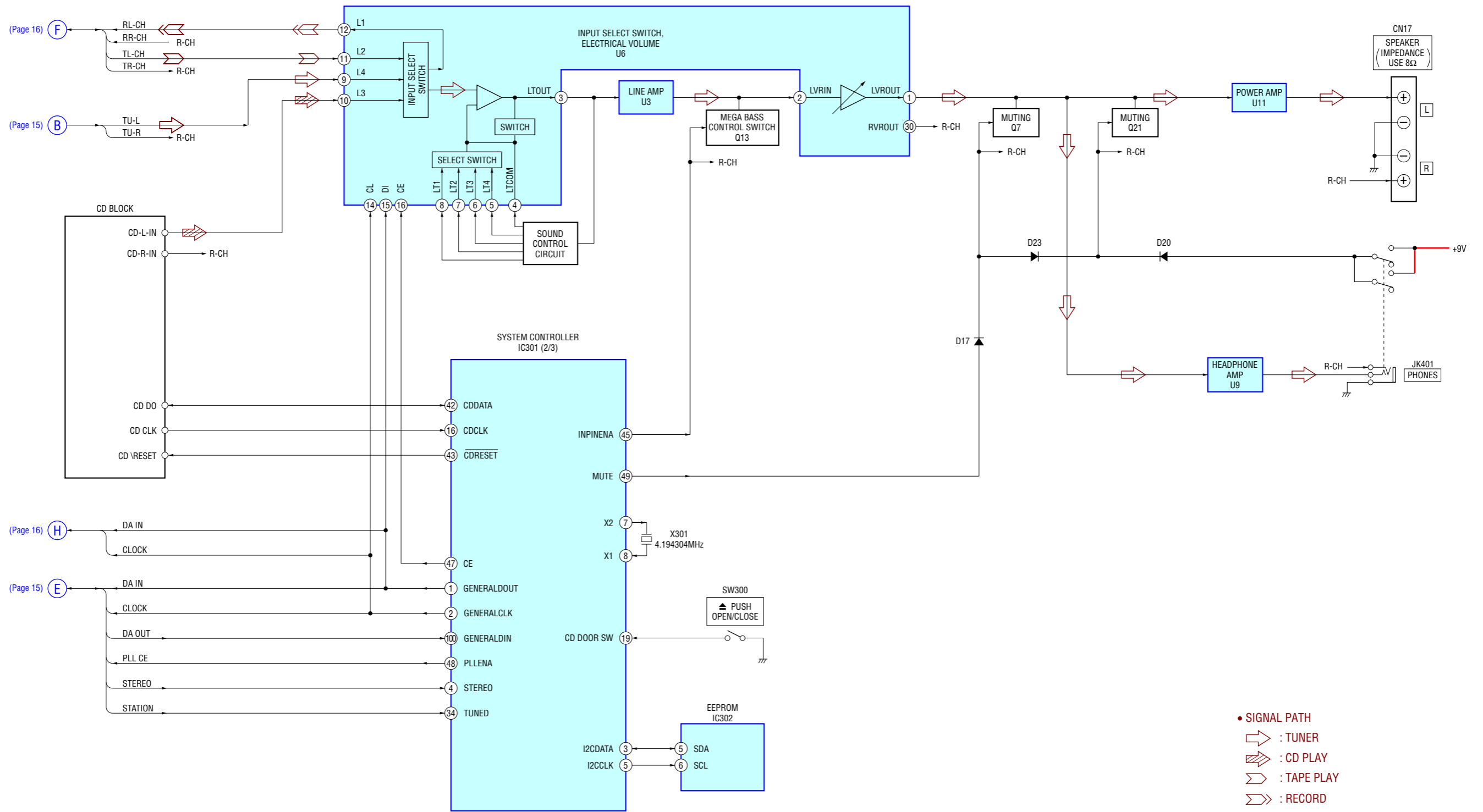


• R-ch is omitted due to same as L-ch.
• SIGNAL PATH
→ : FM
→ : AM

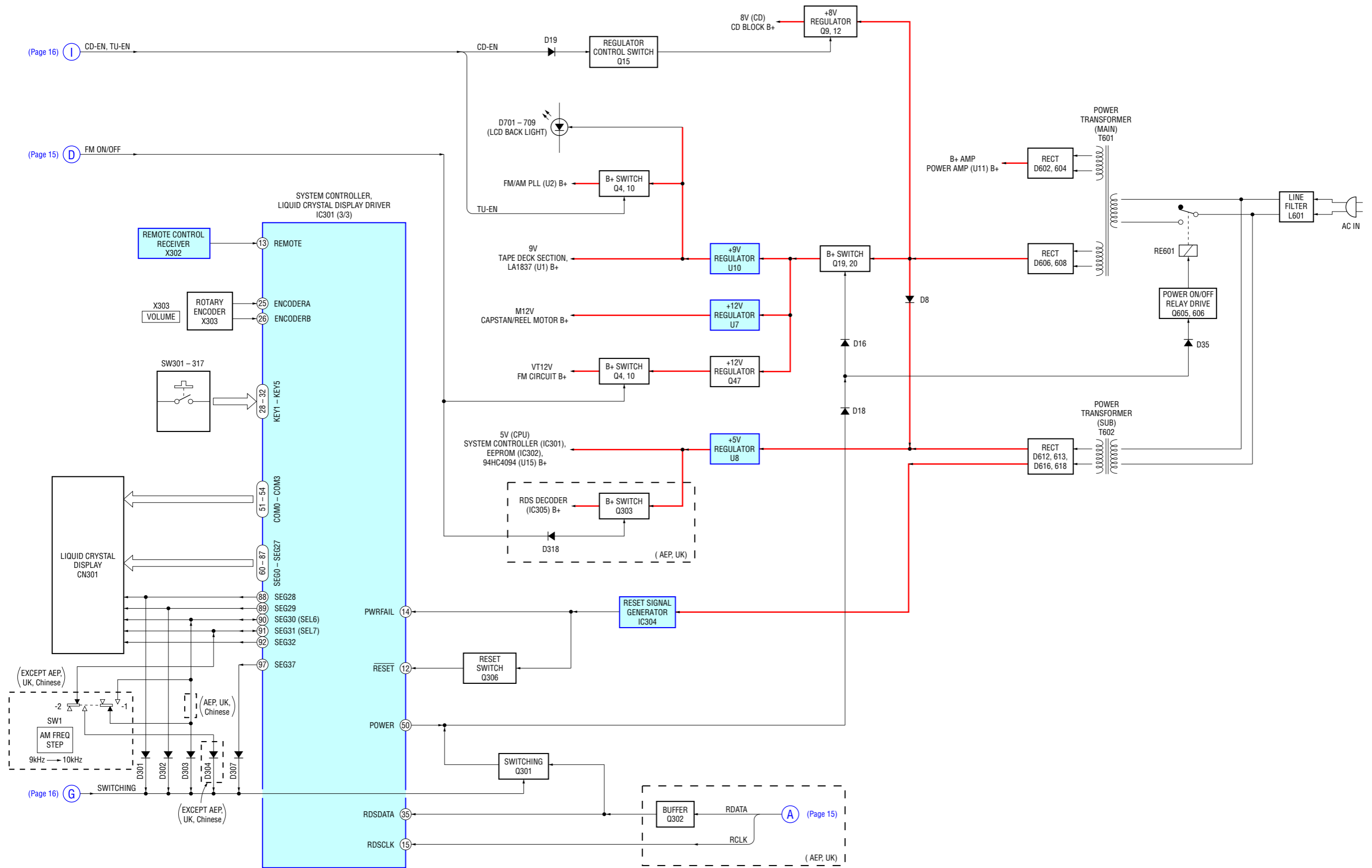
6-2. BLOCK DIAGRAM - TAPE DECK Section -



6-3. BLOCK DIAGRAM – MAIN Section –



6-4. BLOCK DIAGRAM – DISPLAY/POWER SUPPLY Section –



6-5. NOTE FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note on Printed Wiring Board:

- : indicates side identified with part number.
- : Pattern from the side which enables seeing. (The other layers' patterns are not indicated.)

Note on Schematic Diagram:

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

Note:

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

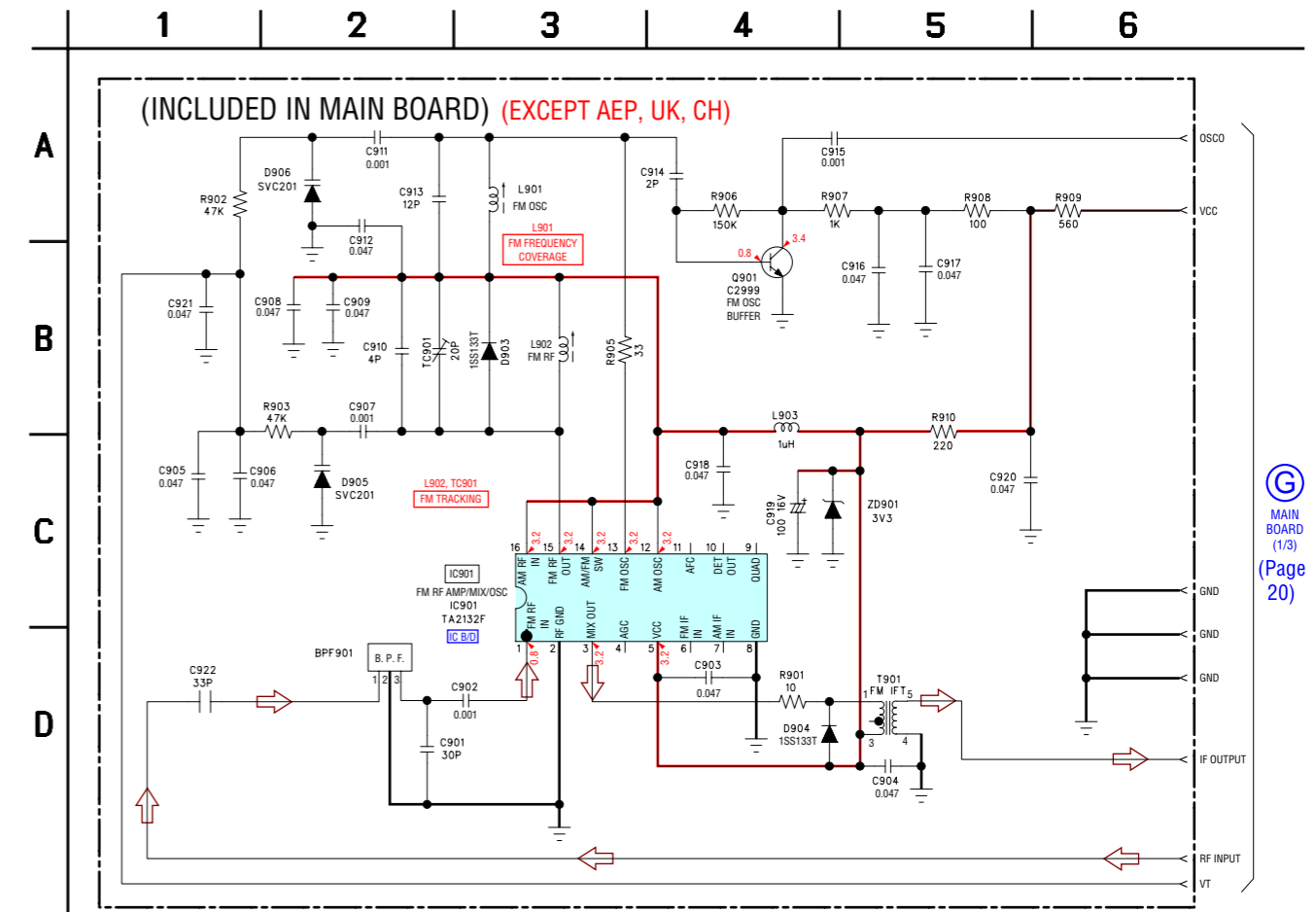
Note:

Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

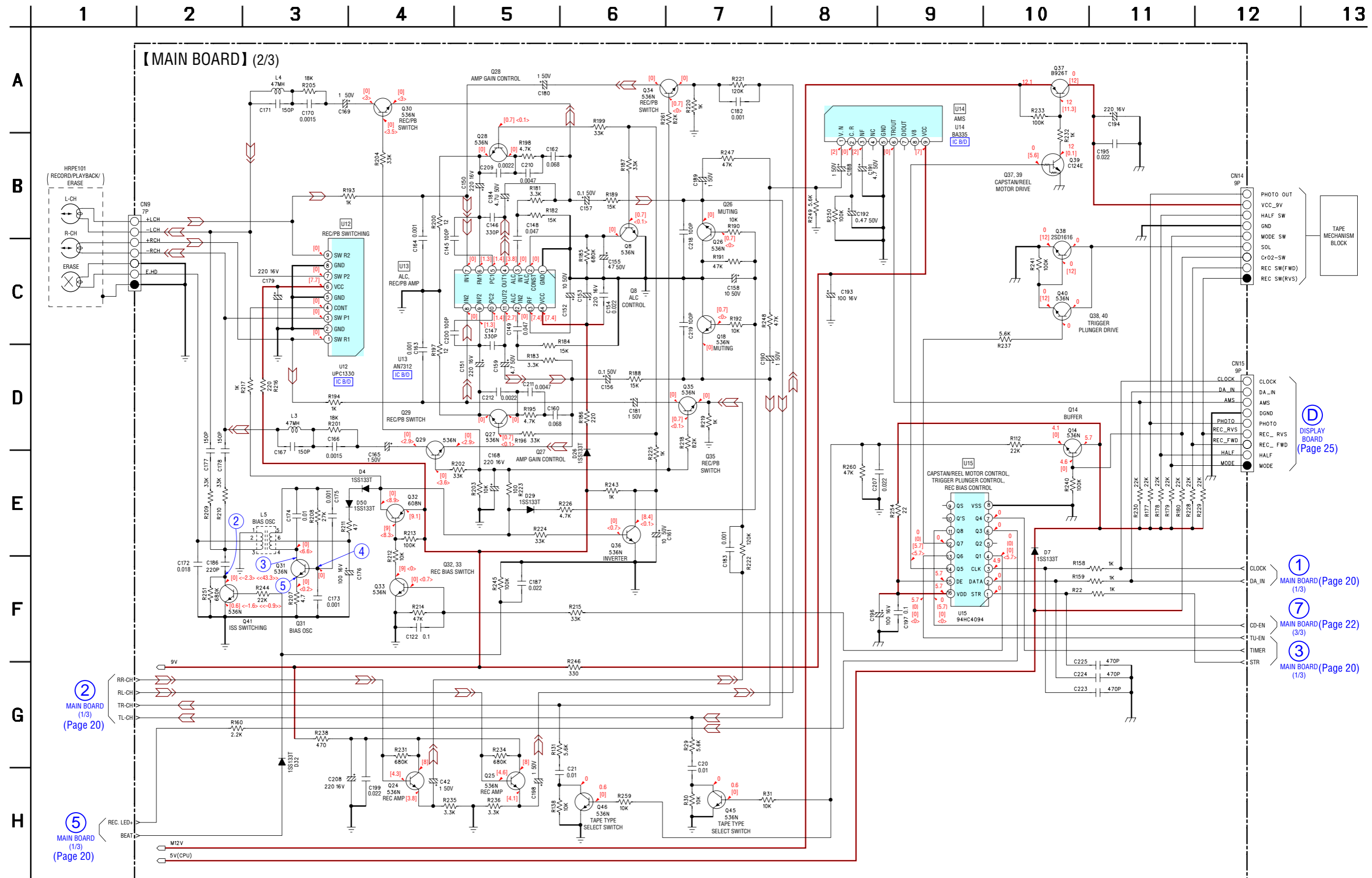
以阴影和 Δ 标志来识别的零部件，在安全方面具有关键性，因此只能以规定号码的零部件来更换。

- : B+ Line.
- : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
 - () : AM
 - { } : CD PLAY
 - [] : TAPE PLAY
 - < > : RECORD (ISS 1)
 - << >> : RECORD (ISS 2)
 - * : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 M Ω). 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.
 - ⇨ : FM
 - ⇨ : AM
 - ⇨ : TAPE PLAY
 - ⇨ : RECORD
 - ⇨ : CD PLAY
- Abbreviation
 - AR : Argentina model
 - CH : Chinese model
 - CND : Canadian model
 - HK : Hong Kong model
 - MX : Mexican model
 - SP : Singapore model

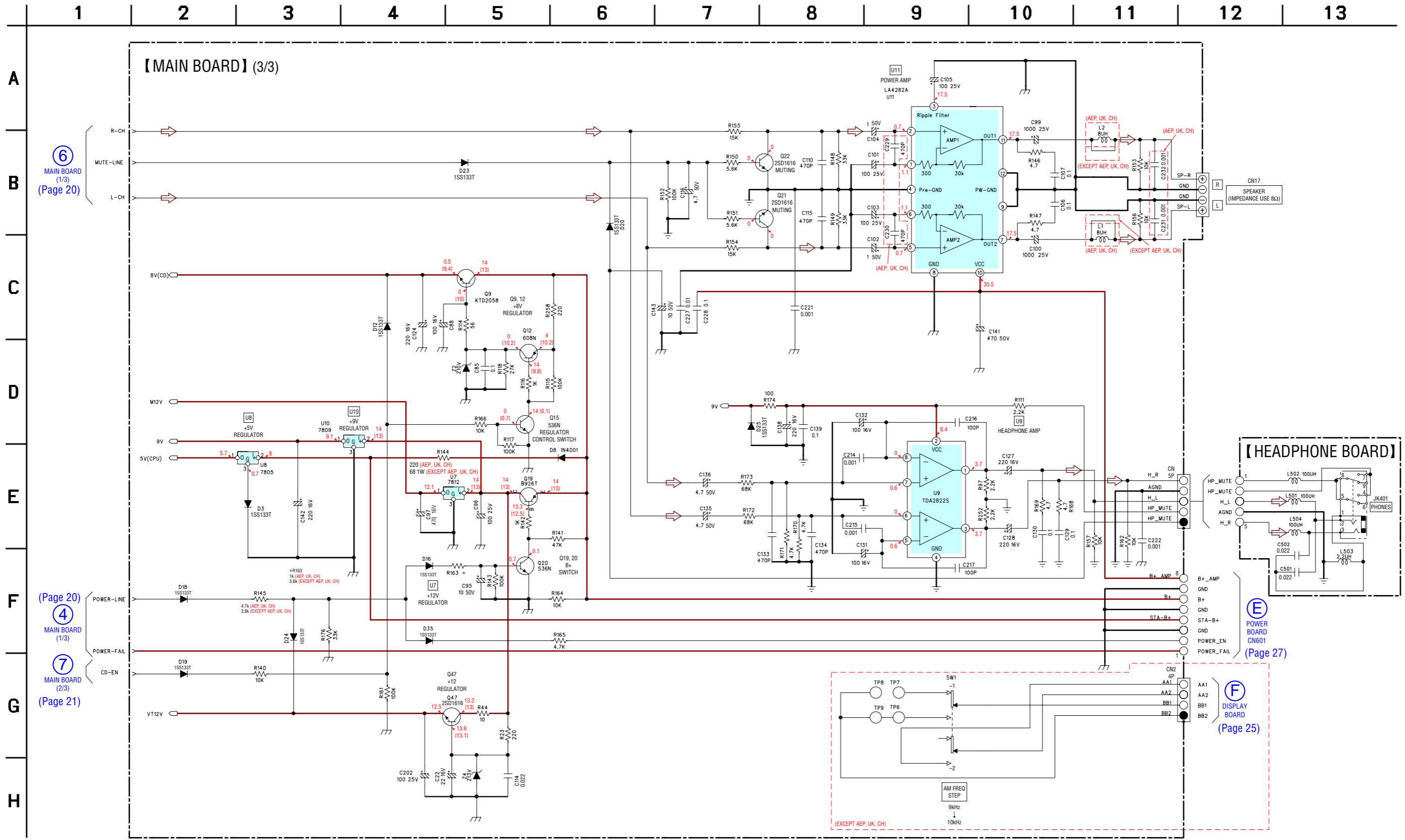
6-6. SCHEMATIC DIAGRAM – FM TUNER Section – • See page 28 for IC Block Diagram.



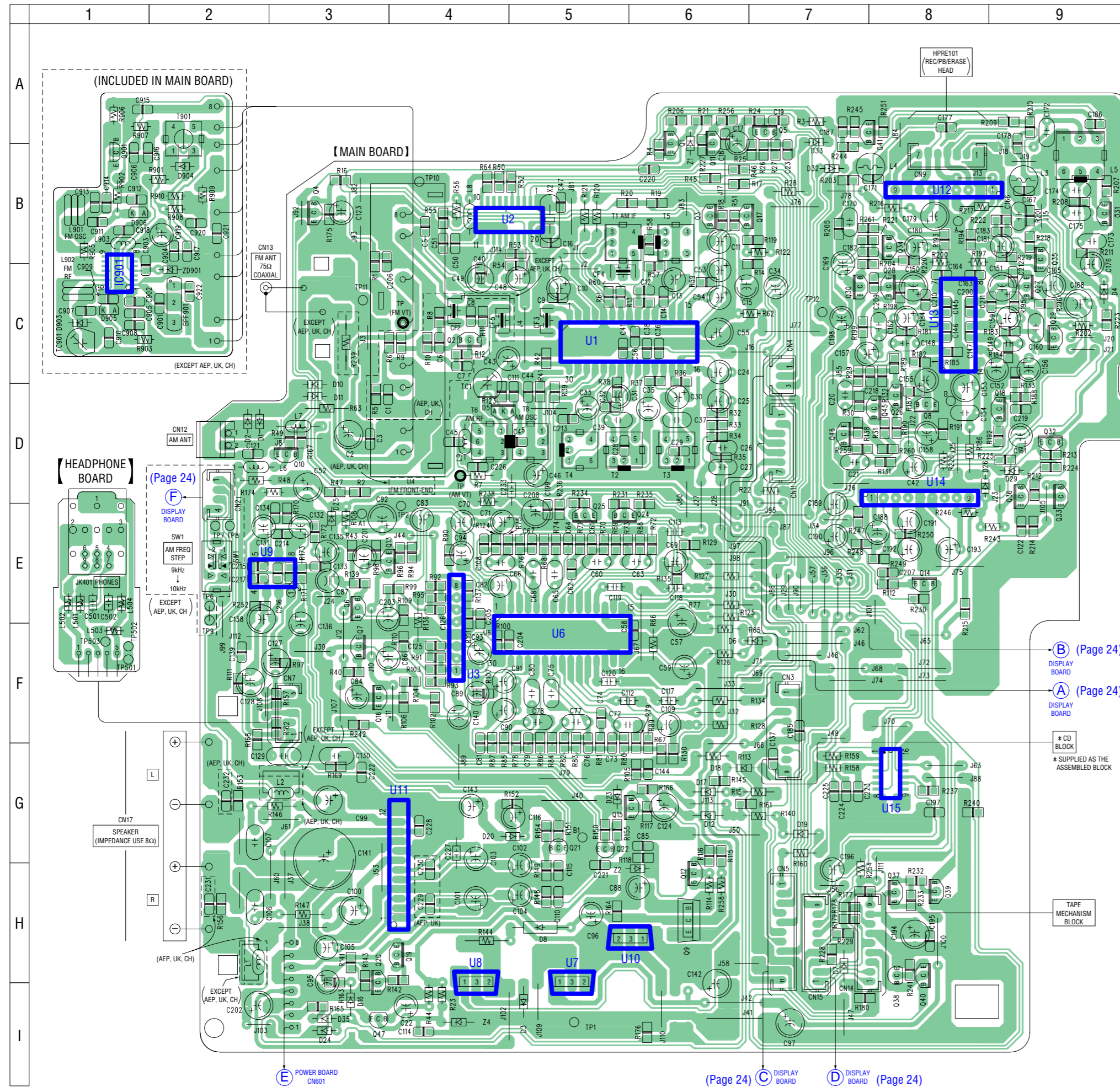
6-8. SCHEMATIC DIAGRAM – MAIN Board (2/3) – • See page 28 for Waveforms. • See page 28 for IC Block Diagrams.



6-9. SCHEMATIC DIAGRAM – MAIN (3/3)/HEADPHONE Boards –



6-10. PRINTED WIRING BOARDS – MAIN/HEADPHONE Boards –



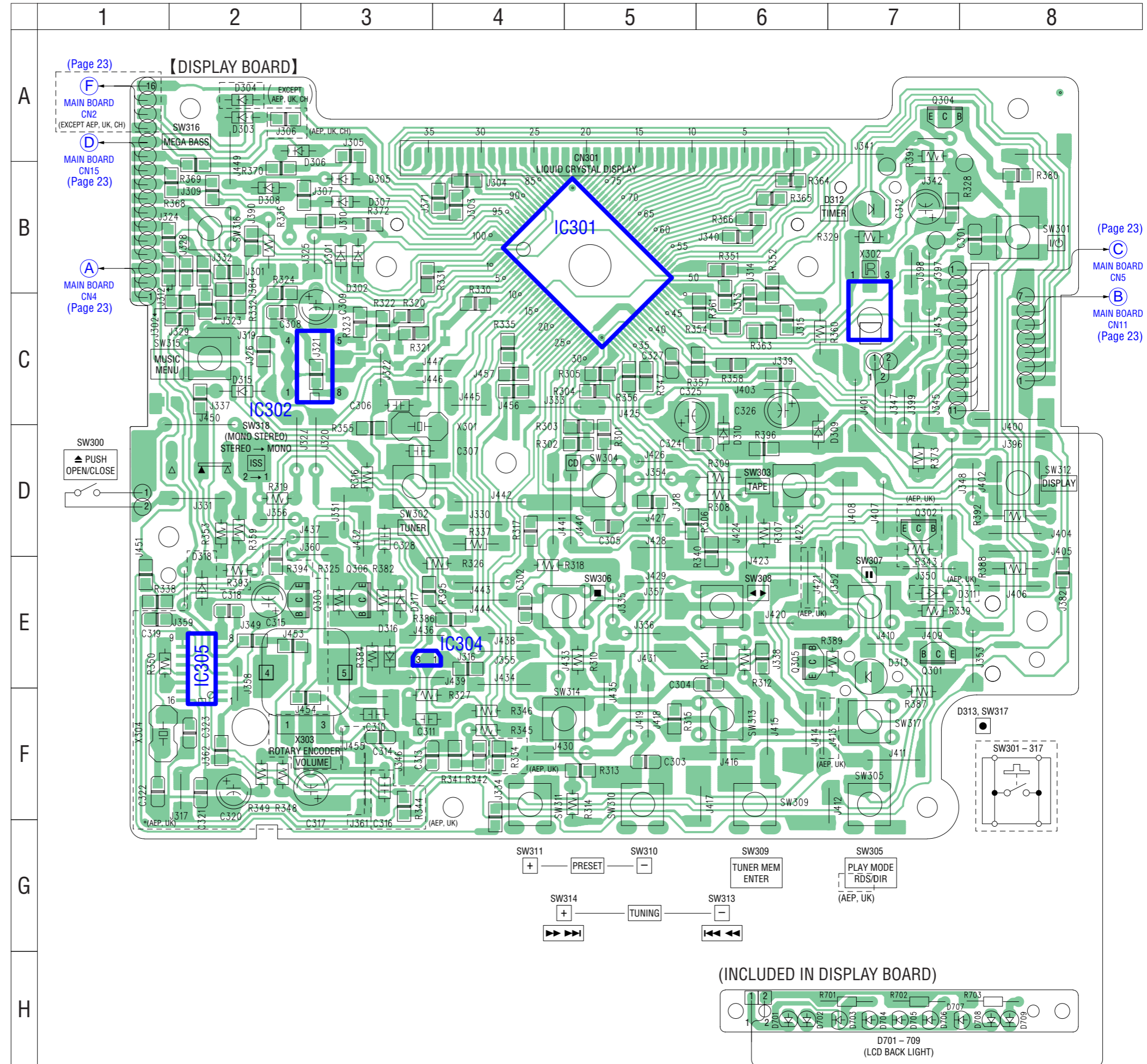
• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D1	D-2	Q19	H-4
D2	D-2	Q20	H-3
D3	I-5	Q21	G-5
D4	C-9	Q22	G-5
D5	D-4	Q24	E-5
D6	F-7	Q25	E-5
D7	H-7	Q26	D-8
D8	H-5	Q27	C-9
D10	D-3	Q28	C-8
D11	D-3	Q29	C-9
D12	G-6	Q30	C-7
D16	I-3	Q31	B-9
D17	G-6	Q32	D-9
D18	G-6	Q33	D-9
D19	G-7	Q34	B-8
D20	G-5	Q35	B-9
D23	G-5	Q36	D-9
D24	I-3	Q37	H-8
D25	E-3	Q38	H-8
D26	D-8	Q39	H-8
D29	D-9	Q40	H-8
D32	B-7	Q41	A-8
D33	A-7	Q45	D-8
D35	I-3	Q46	D-7
		Q47	I-3
		Q907	B-1
IC901	C-1	Q907	B-1
Q1	A-6	U1	C-5
Q2	C-4	U2	B-4
Q3	B-6	U3	F-4
Q4	B-3	U6	F-5
Q5	A-7	U7	H-5
Q6	E-3	U8	H-4
Q7	F-3	U9	E-3
Q8	D-8	U10	H-6
Q9	H-6	U11	G-4
Q10	D-3	U12	B-8
Q11	A-6	U13	C-8
Q12	H-6	U14	D-8
Q13	E-3	U15	G-8
Q14	E-8	Z1	A-6
Q15	G-6	Z2	H-6
Q16	F-3	Z4	I-4
Q17	B-6		
Q18	D-9		

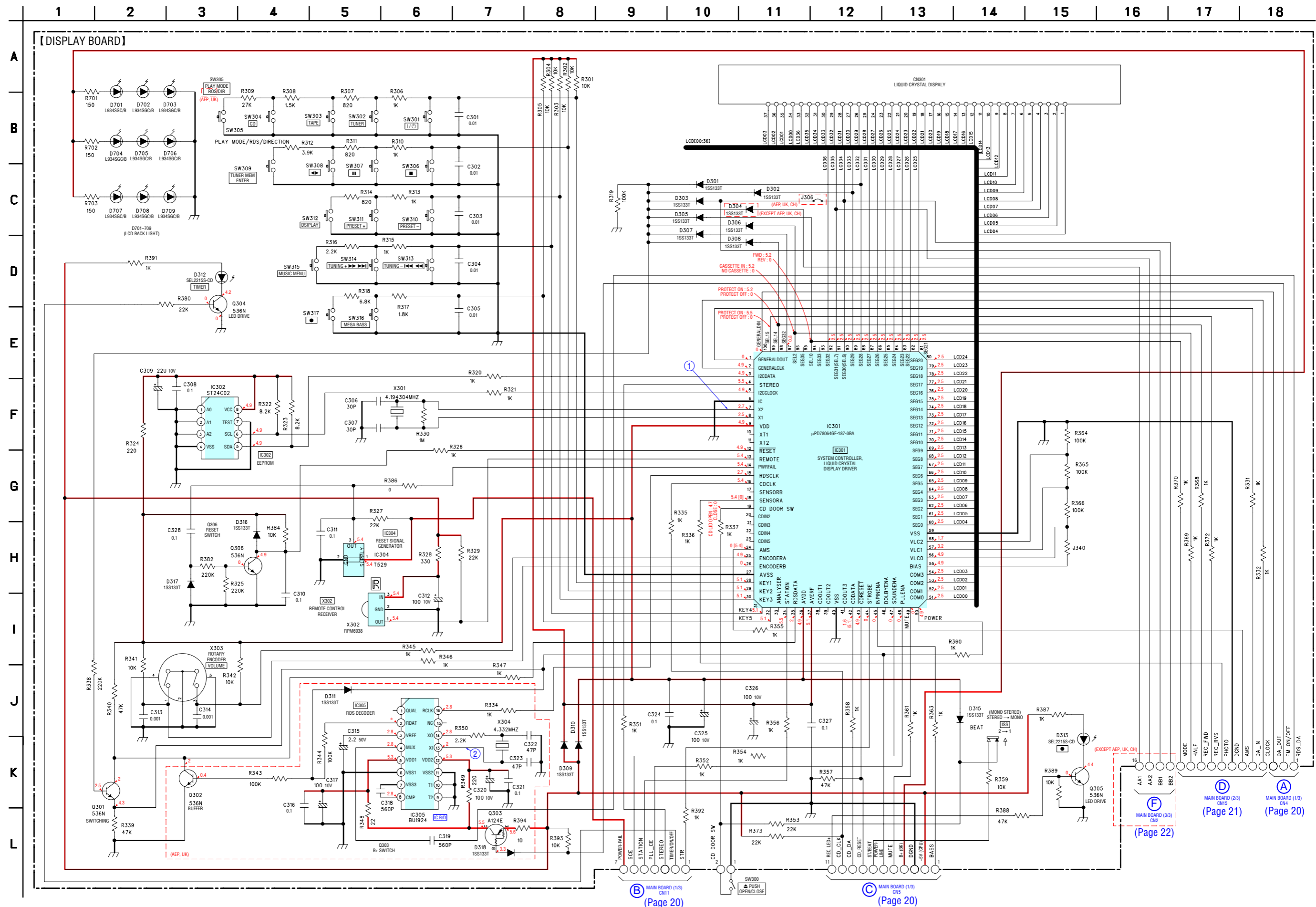
6-11. PRINTED WIRING BOARD – DISPLAY Board –

• Semiconductor Location

Ref. No.	Location
D301	B-3
D302	B-3
D303	A-2
D304	A-2
D305	B-3
D306	A-2
D307	B-3
D308	B-2
D309	D-6
D310	D-6
D311	E-7
D312	B-7
D313	E-7
D315	C-2
D316	E-3
D317	E-3
D318	E-2
D701	H-6
D702	H-6
D703	H-7
D704	H-7
D705	H-7
D706	H-7
D707	H-8
D708	H-8
D709	H-8
IC301	B-5
IC302	C-3
IC304	E-3
IC305	E-2
Q301	E-7
Q302	D-7
Q303	E-2
Q304	A-7
Q305	E-6
Q306	E-3
X302	F-3



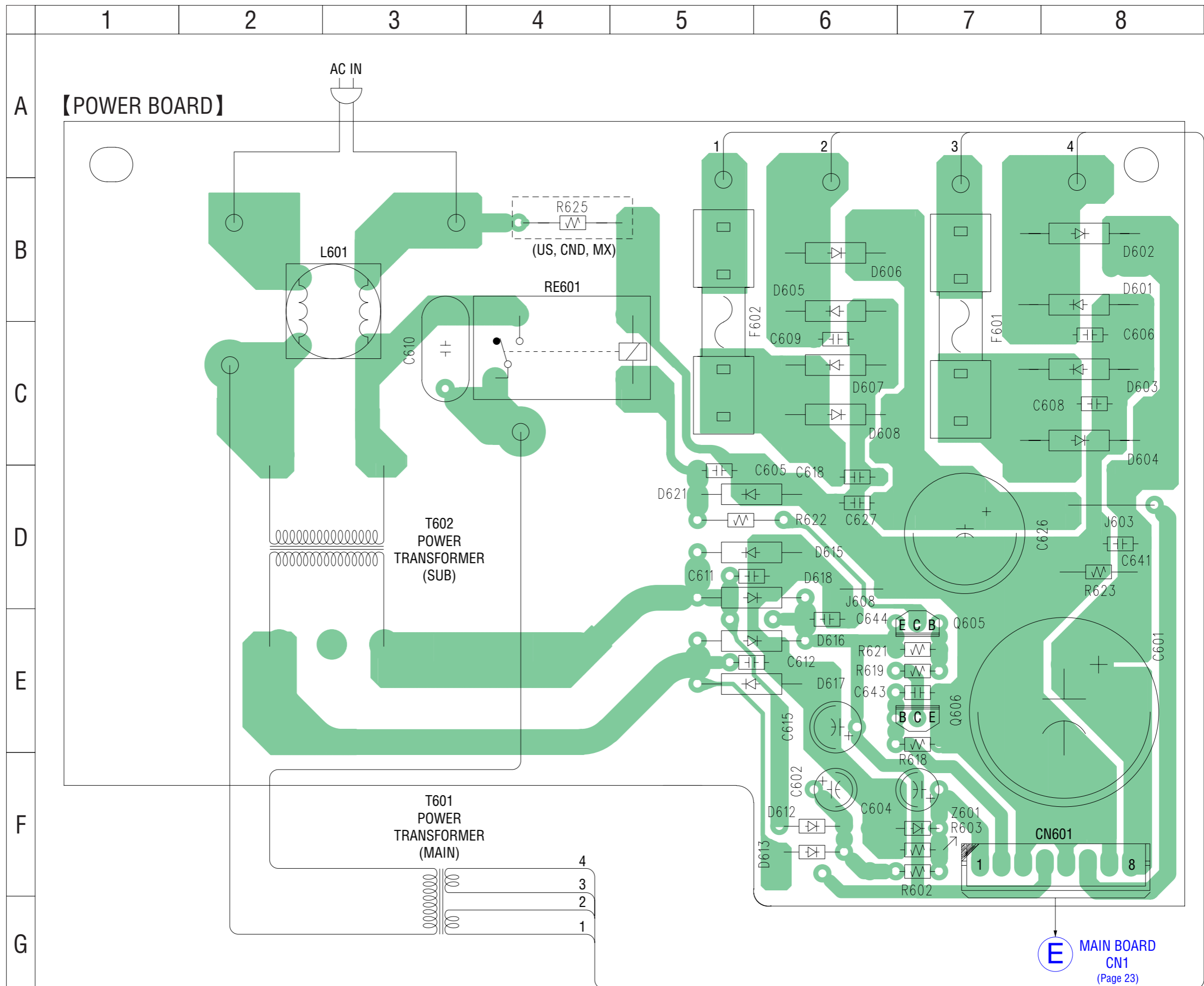
6-12. SCHEMATIC DIAGRAM – DISPLAY Board – • See page 28 for Waveforms. • See page 28 for IC Block Diagram.



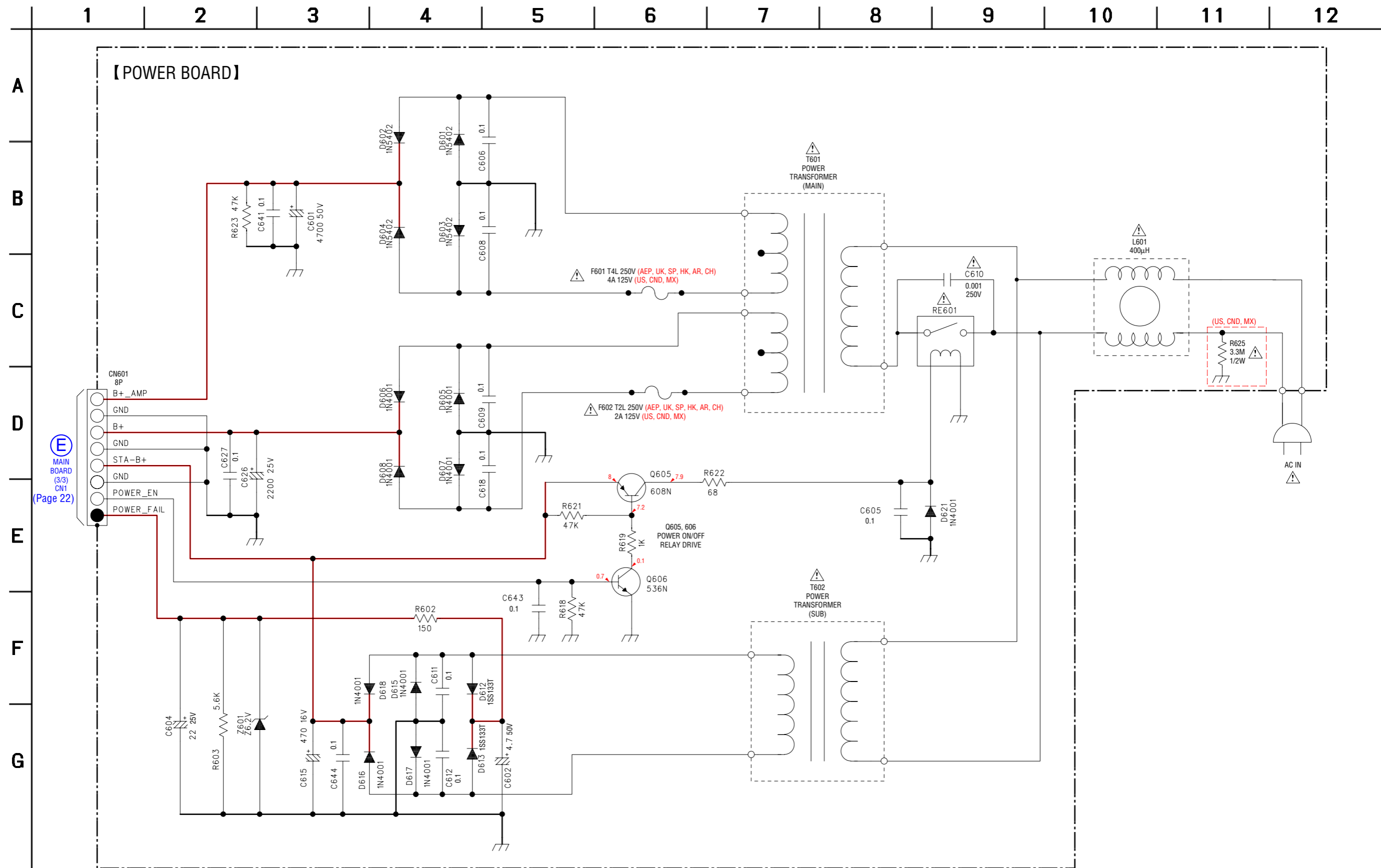
6-13. PRINTED WIRING BOARD – POWER Board –

• Semiconductor Location

Ref. No.	Location
D601	B-8
D602	B-8
D603	C-8
D604	C-8
D605	B-6
D606	B-6
D607	C-6
D608	C-6
D612	F-6
D613	F-6
D615	D-5
D616	E-5
D617	E-5
D618	D-5
D621	D-5
Q605	E-7
Q606	E-7
Z601	F-7



6-14. SCHEMATIC DIAGRAM – POWER Board –

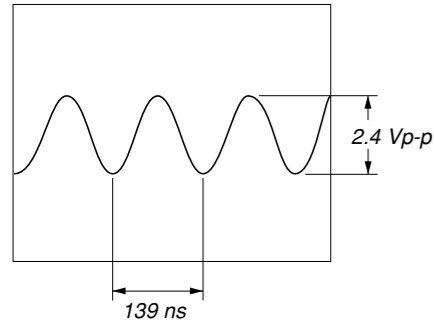


<p>The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.</p>	<p>Les composants identifiés par une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.</p>	<p>以阴影和 \triangle 标志来识别的零部件在安全方面具有关键性。因此只能以规定号码的零部件来更换。</p>
---	--	--

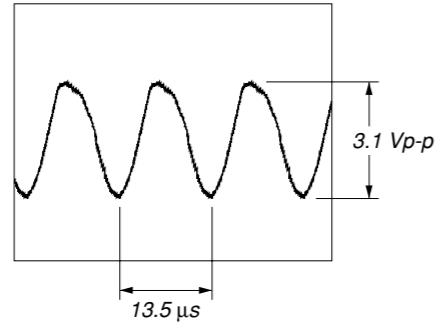
HCD-EP50

• Waveforms – MAIN Board –

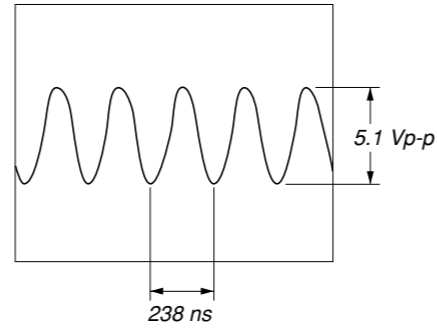
1 U2 (X2)



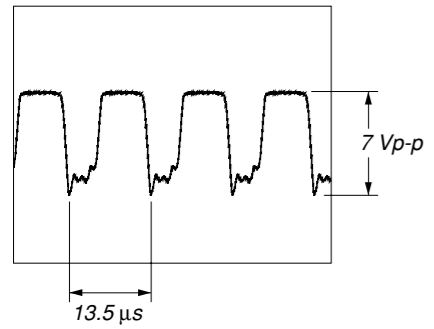
4 Q31 (Base) (REC (ISS 1) mode)



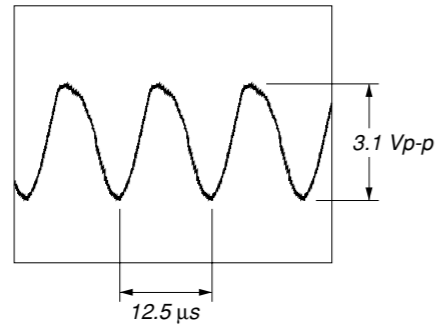
1 IC301 (X2)



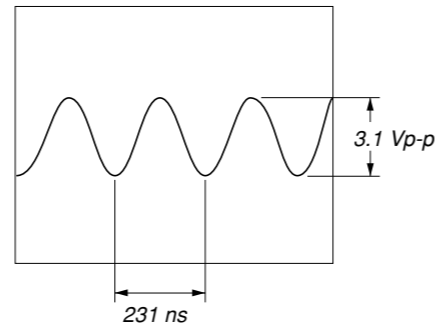
2 Q41 (Collector) (REC (ISS 1) mode)



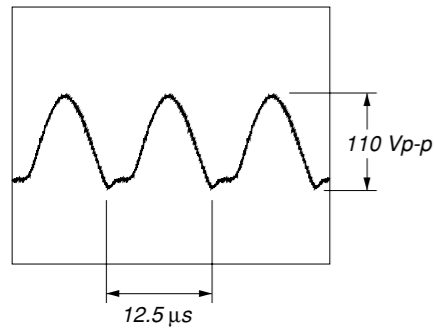
4 Q31 (Base) (REC (ISS 2) mode)



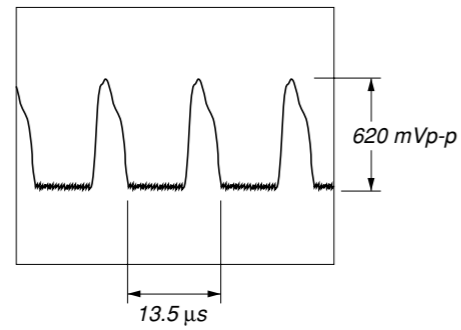
2 IC305 (XI)



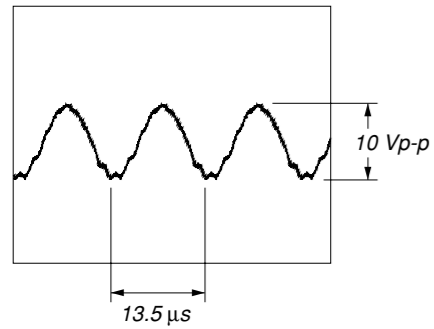
2 Q41 (Collector) (REC (ISS 2) mode)



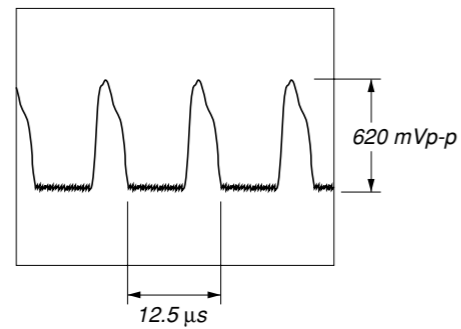
5 Q31 (Emitter) (REC (ISS 1) mode)



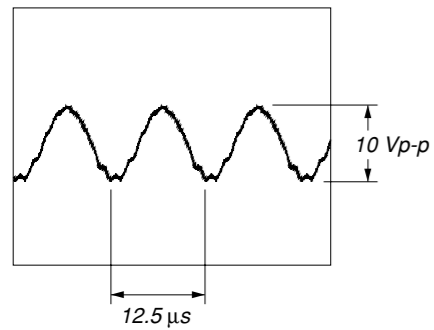
3 Q31 (Collector) (REC (ISS 1) mode)



5 Q31 (Emitter) (REC (ISS 2) mode)



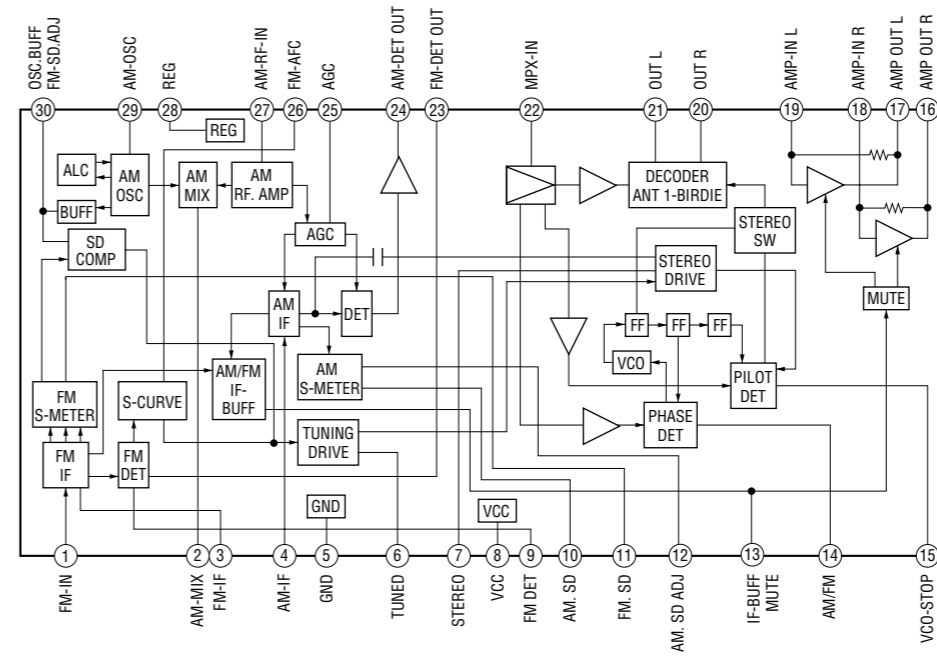
3 Q31 (Collector) (REC (ISS 2) mode)



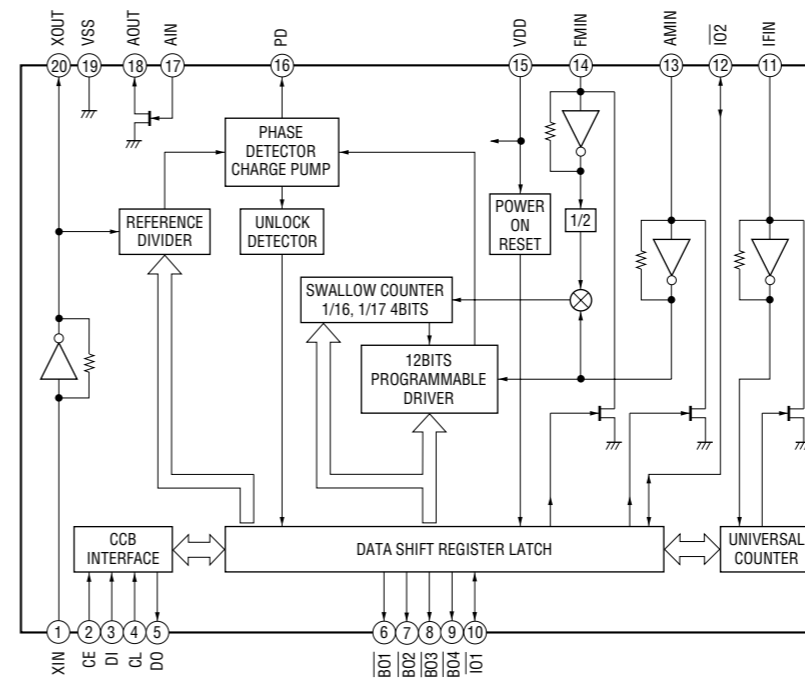
– DISPLAY Board –

• IC Block Diagrams – MAIN Board –

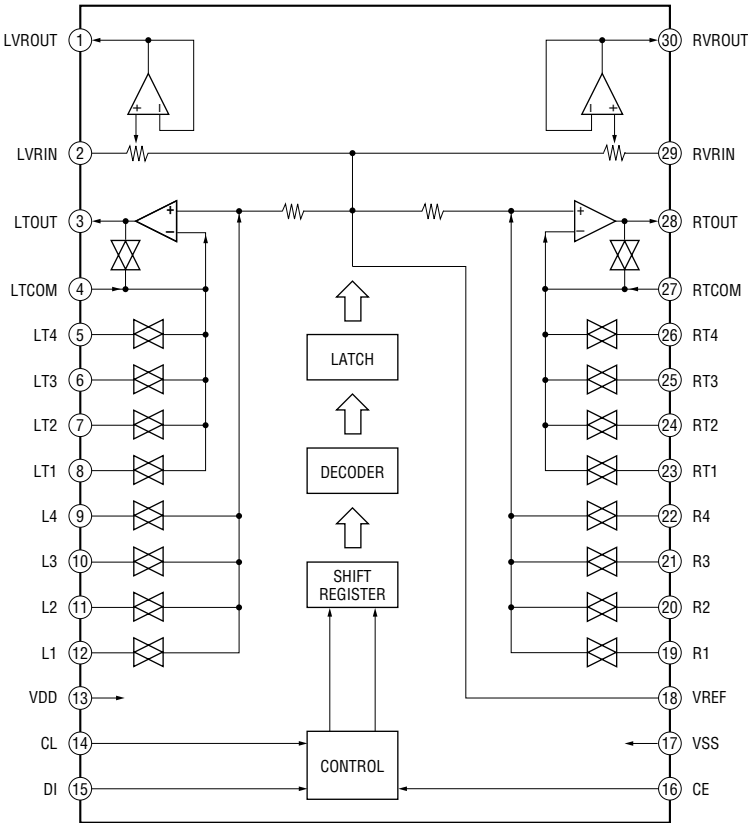
U1 LA1837L



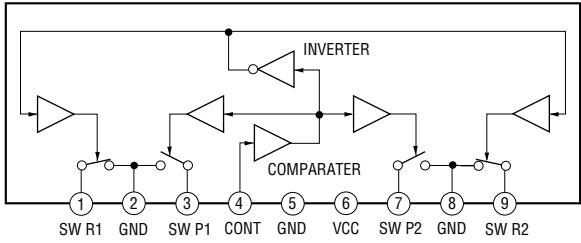
U2 LC72131M-TL-M



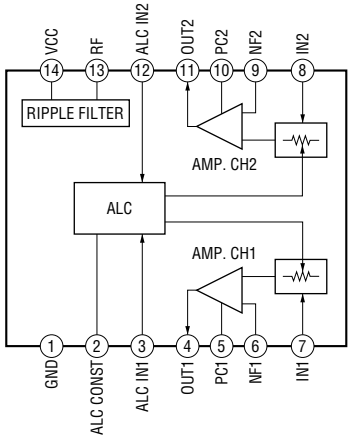
U6 LC75392



U12 μPC1330HA-NA



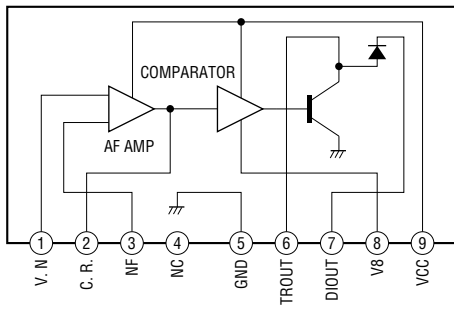
U13 AN7312



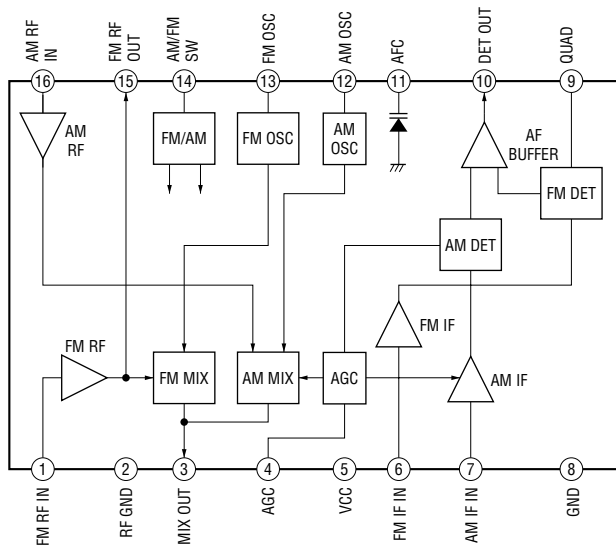
HCD-EP50

Ver 1.1

U14 BA335

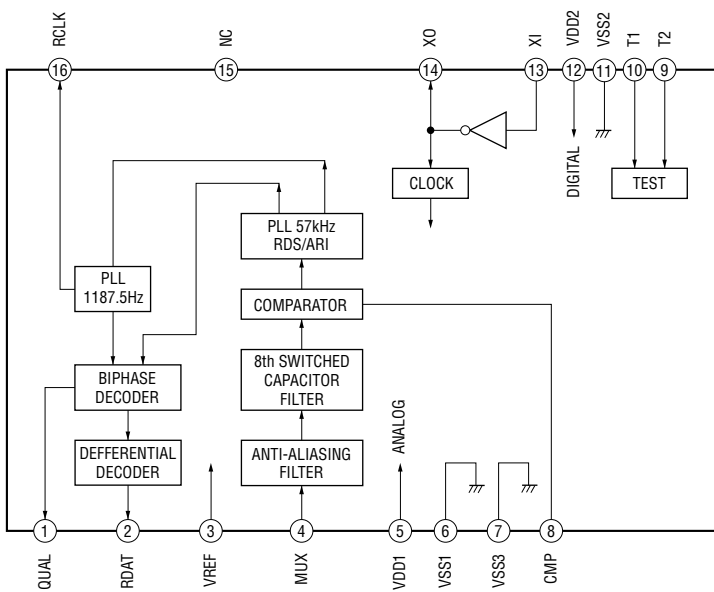


IC901 TA2132AF (EL) (EXCEPT AEP, UK, Chinese models)



- DISPLAY Board -

IC305 BU1924F-E2 (AEP, UK models)



6-15. IC PIN FUNCTION DESCRIPTION

• DISPLAY BOARD IC301 μ PD78064GF-187-3BA (SYSTEM CONTROLLER, LIQUID CRYSTAL DISPLAY DRIVER)

Pin No.	Pin Name	I/O	Description
1	GENERALDOUT	O	Serial data output to the FM/AM PLL (U2), LC75392 (U6) and 94HC4094 (U15)
2	GENERALCLK	O	Serial data transfer clock signal output to the FM/AM PLL (U2), LC75392 (U6) and 94HC4094 (U15)
3	I2CDATA	I/O	Two-way data bus with the EEPROM (IC302)
4	STEREO	I	FM stereo detection signal input from the LA1837 (U1) "L": stereo
5	I2CCLK	O	Clock signal output to the EEPROM (IC302)
6	IC	—	Internal connection terminal (connected to ground)
7	X2	O	Main system clock output terminal (4.194304 MHz)
8	X1	I	Main system clock input terminal (4.194304 MHz)
9	VDD	—	Power supply terminal
10	XT1	I	Sub system clock input terminal (32.768 kHz) Not used (open)
11	XT2	O	Sub system clock output terminal (32.768 kHz) Not used (open)
12	$\overline{\text{RESET}}$	I	System reset signal input from the reset signal generator (IC304) "L": reset For several hundreds msec. after the power supply rises, "L" is input, then it changes to "H"
13	REMOTE	I	Remote control signal input from the remote control receiver (X302)
14	PWRFAIL	I	Power failure detection signal input terminal "L": power failure, "H": power on
15	RDSCLK	I	Serial data transfer clock signal input from the RDS decoder (IC305) (Used for the AEP, UK models)
16	CDCLK	I	Serial data transfer clock signal input from the CD block
17	SENSORB	I	Tape sensor input terminal Not used (open)
18	SENSORA	I	Tape play/rec detect sensor input terminal "L" input when the tape play/rec detect
19	CD DOOR SW	I	CD lid open/close detect switch (SW300) input terminal "L": CD lid is closed
20 to 23	CDIN2 to CDIN5	I	Not used (open)
24	AMS	I	Whether a music is present or not from BA335 (U14) is detected at auto music sensor "L": music is not present, "H": music is present
25	ENCODERA	I	Jog dial pulse input from the rotary encoder (X303 VOLUME) (A phase input)
26	ENCODERB	I	Jog dial pulse input from the rotary encoder (X303 VOLUME) (B phase input)
27	AVSS	—	Ground terminal
28	KEY1	I	Key input terminal (A/D input) SW301 to SW305 (I/⏪, TUNER, TAPE, CD, PLAY MODE RDS/DIR) keys input (RDS: used for the AEP, UK models)
29	KEY2	I	Key input terminal (A/D input) SW306 to SW309 (■, ■■, ◀▶, TUNER MEM ENTER) keys input
30	KEY3	I	Key input terminal (A/D input) SW310 to SW312 (PRESET +/-, DISPLAY) keys input
31	KEY4	I	Key input terminal (A/D input) SW313 to SW315 (TUNING - ◀◀◀ ◀◀, TUNING + ▶▶▶ ▶▶▶, MUSIC MENU) keys input
32	KEY5	I	Key input terminal (A/D input) SW316, SW317 (MEGA BASS, ●) keys input
33	ANALYZER	I	Analyzer level detection signal input terminal (A/D input) Not used (open)
34	TUNED	I	Tuning detection signal input from the LA1837 (U1) (A/D input) "L": tuned
35	RDSDATA	I	Serial data input from the RDS decoder (IC305) (Used for the AEP, UK models)
36	AVDD	—	Power supply terminal
37	AVREF	I	Reference voltage input terminal
38, 39	CDOUT1, CDOUT2	O	Not used (open)
40	VSS	—	Ground terminal
41	CDOUT3	O	Not used (open)
42	CDDATA	I/O	Two-way data bus with the CD block
43	$\overline{\text{CDRESET}}$	O	Reset signal output to the CD block "L": reset

Pin No.	Pin Name	I/O	Description
44	STROBE	O	Strobe signal output to the 94HC4094 (U15) "H" active
45	INPINENA	O	Mega bass on/off selection signal output "H": mega bass on
46	DOLBYENA	O	Dolby NR on/off selection signal output terminal "L": dolby off, "H": dolby on Not used (open)
47	CE	O	Chip enable signal output to the LC75392 (U6) "H" active
48	PLENA	O	PLL chip enable signal output to the FM/AM PLL (U2) "H" active
49	MUTE	O	Audio line muting on/off control signal output "H": muting on
50	POWER	O	System power on/off control signal output "H": power on
51 to 54	COM0 to COM3	O	Common drive signal output to the liquid crystal display (CN301)
55	BIAS	O	Bias output for the liquid crystal display drive
56 to 58	VLC0 to VLC2	I	Input terminal for doubler circuit capacitor connection to develop liquid crystal display drive voltage
59	VSS	—	Ground terminal
60 to 89	SEG0 to SEG29	O	Segment drive signal output to the liquid crystal display (CN301)
90	SEG30 (SEL6)	I/O	Segment drive signal output to the liquid crystal display (CN301) AM frequency select switch (SW1) input terminal (AM frequency select switch: used for the except AEP, UK, Chinese models)
91	SEG31 (SEL7)	I/O	Segment drive signal output to the liquid crystal display (CN301) AM frequency select switch (SW1) input terminal (AM frequency select switch: used for the except AEP, UK, Chinese models)
92	SEG32	O	Segment drive signal output to the liquid crystal display (CN301)
93	SEG33	O	Segment drive signal output to the liquid crystal display Not used (open)
94	SEL10	I	Head position detect switch input terminal "L": reverse direction, "H": forward direction
95	SEG35	O	Segment drive signal output to the liquid crystal display Not used (open)
96	SEL12	I	Cassette tape detect switch input terminal "L": no cassette, "H": cassette in
97	SEG37	O	Segment drive signal output to the liquid crystal display Not used
98	SEL14	I	Rec-proof claw (forward direction) detection signal input from the protect detect switch "L": recording possible, "H": protect
99	SEL15	I	Rec-proof claw (reverse direction) detection signal input from the protect detect switch "L": recording possible, "H": protect
100	GENERALDIN	I	Serial data input from the FM/AM PLL (U2)

SECTION 7 EXPLODED VIEWS

NOTE:

- XX and -X mean standardized parts, so they may have some difference from the original one.

- Color Indication of Appearance Parts

Example:

KNOB, BALANCE (WHITE) . . . (RED)

↑
↑
 Parts Color Cabinet's Color

- Abbreviation

AR : Argentina model

HK : Hong Kong model

CH : Chinese model

MX : Mexican model

CND : Canadian model

SP : Singapore model

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- The mechanical parts with no reference number in the exploded views are not supplied.

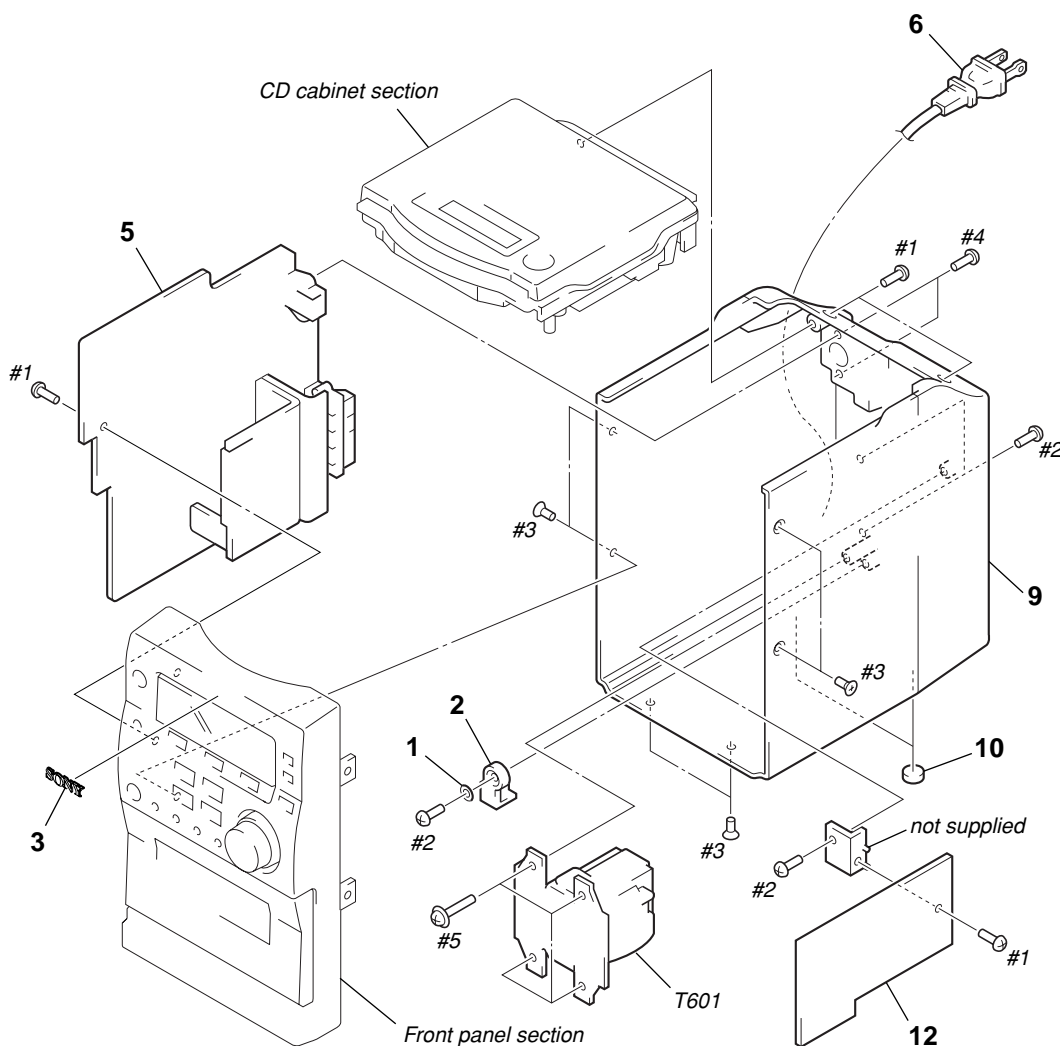
- Hardware (# mark) list and accessories are given in the last of the electrical parts list.

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

Les composants identifiés par une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

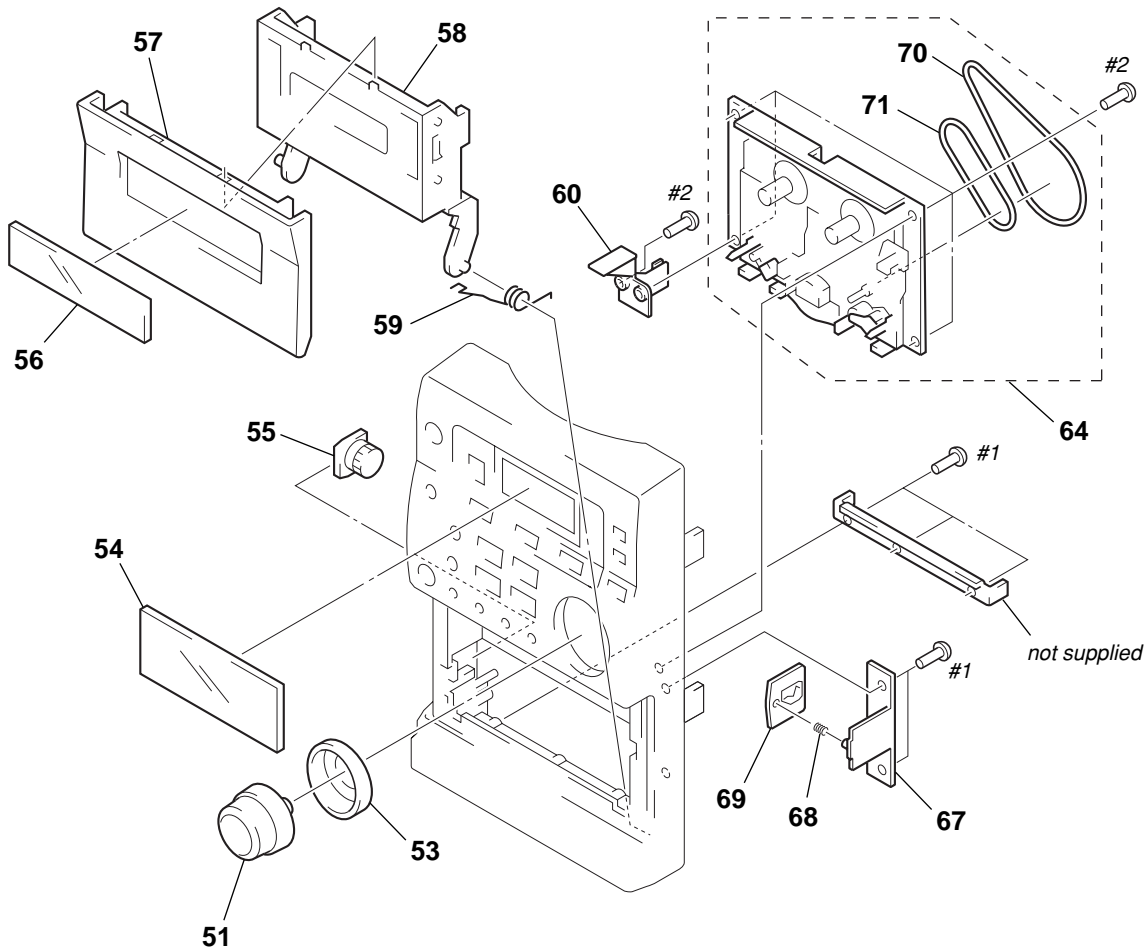
以阴影和 \triangle 标志来识别的零部件，在安全方面具有关键性。因此只能以规定号码的零部件来更换。

7-1. CABINET SECTION



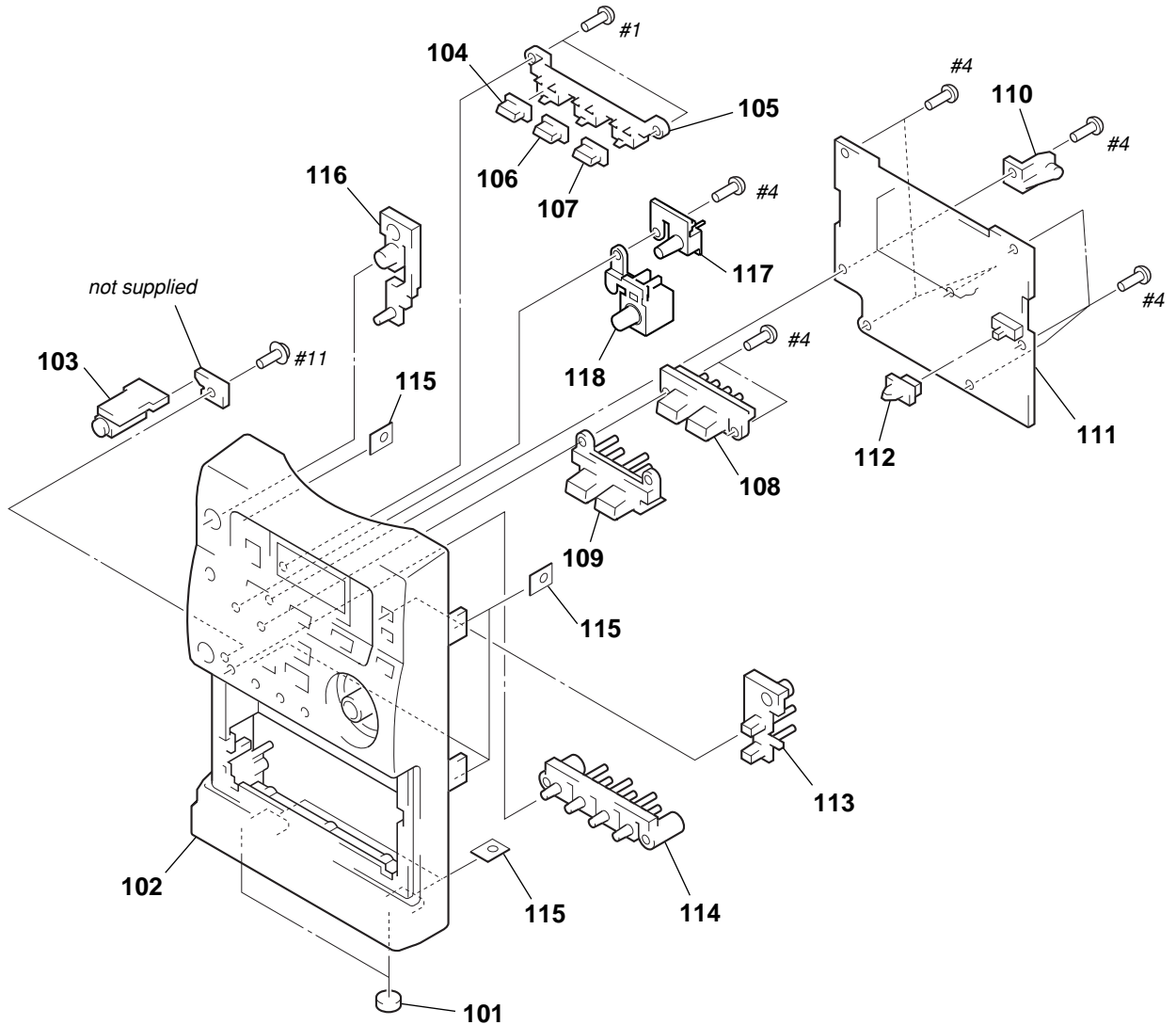
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	3-451-162-00	WASHER		9	4-236-914-01	REAR CABINET (AEP, CH, UK)	
2	4-235-952-01	AC CORD HOLDER		9	4-237-126-01	REAR CABINET (CND, US)	
3	4-236-194-01	EMBLEM BADGE		9	4-237-128-01	REAR CABINET (AR, HK, MX, SP)	
5	A-4727-039-A	MAIN BOARD, COMPLETE (AEP, CH, UK)		10	4-235-995-01	RUBBER FOOT	
5	A-4727-281-A	MAIN BOARD, COMPLETE (AR, CND, HK, MX, SP, US)		12	A-4727-041-A	POWER BOARD, COMPLETE (AEP, AR, CH, HK, SP, UK)	
\triangle 6	1-555-750-00	CORD, POWER (AEP, HK, SP, UK)		12	A-4727-282-A	POWER BOARD, COMPLETE (CND, MX, US)	
\triangle 6	1-782-464-21	CORD, POWER (CH)		\triangle T601	1-437-513-11	TRANSFORMER, POWER (AEP, AR, CH, HK, SP, UK)	
\triangle 6	1-783-525-31	CORD, POWER (TRACKING) (MX)		\triangle T601	1-437-514-11	TRANSFORMER, POWER (CND, MX, US)	
\triangle 6	1-783-820-11	CORD, POWER (CND, US)					
\triangle 6	1-783-941-51	CORD, POWER (AR)					

7-2. FRONT PANEL SECTION-1



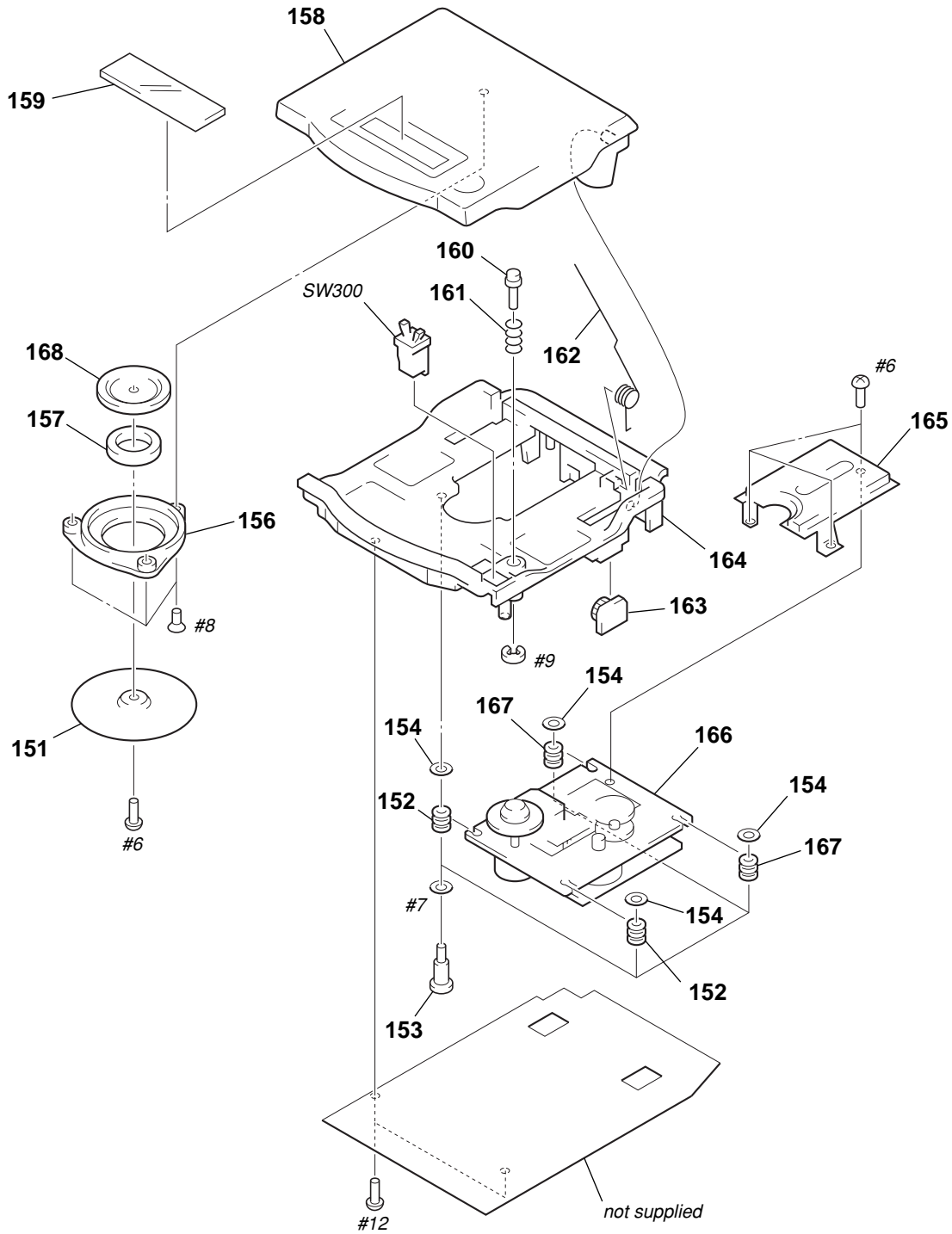
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	4-237-055-01	VOLUME ROTARY KNOB		60	4-237-121-01	MAIN PWB MOUNTING BKT (A) (CND, US)	
53	4-236-900-01	VOL. DECORATION RING		64	1-796-228-11	DECK, MECH (TCM) (CRL3439)	
54	4-236-917-01	DISPLAY WINDOW		67	4-236-907-01	CASS LID LATCH HOLDER	
55	4-236-899-01	DAMPER		68	4-236-905-01	CASS LATCH SPRING	
56	4-236-067-01	CASS LID WINDOW		69	4-236-906-01	CASS LID LATCH	
57	4-236-903-01	CASS LID		70	3-709-645-01	BELT SR	
58	4-236-901-01	CASS LID BKT		71	4-235-777-01	BELT (FR)	
59	4-236-904-01	CASS LID SPRING					
60	4-236-915-01	MAIN PWB MOUNTING BKT (A) (AEP, AR, CH, HK, MX, SP, UK)					

7-3. FRONT PANEL SECTION-2



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	4-235-995-01	RUBBER FOOT		110	4-237-122-01	MAIN PWB MOUNTING BKT (B) (CND, US)	
102	4-236-902-01	FRONT PANEL (RDS) (AEP, UK)		111	A-4727-038-A	DISPLAY BOARD, COMPLETE (AEP, UK)	
102	4-237-123-01	FRONT PANEL (CND, US)		111	A-4727-280-A	DISPLAY BOARD, COMPLETE	
102	4-237-127-01	FRONT PANEL (AR, CH, HK, MX, SP)		111	A-4727-283-A	DISPLAY BOARD, COMPLETE (HK, SP)	(AR, CND, MX, US)
103	A-4727-040-A	HEADPHONE BOARD, COMPLETE		111	A-4727-597-A	DISPLAY BOARD, COMPLETE (CH)	
104	4-235-968-01	TAPE KEY CAP		112	4-235-965-01	SLIDE KNOB	
105	4-235-946-01	FUNCTION KEY BKT		113	4-235-961-01	BASS/SELECT KNOB	
106	4-235-966-01	CD KEY CAP		114	4-235-964-01	PRESET UP/DOWN KNOB	
107	4-235-967-01	TUNER KEY CAP		115	4-235-994-01	PANEL FIXING PLATE	
108	4-236-908-01	PLAY/STOP KNOB		116	4-235-960-01	POWER KNOB	
109	4-235-962-01	SKIP/SEARCH KNOB		117	4-236-909-01	PAUSE KNOB	
110	4-236-916-01	MAIN PWB MOUNTING BKT (B) (AEP, AR, CH, HK, MX, SP UK)		118	4-236-910-01	RECORD KNOB	

7-4. CD CABINET SECTION



<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
151	4-235-971-01	PLASTIC COVER		162	4-235-982-01	CD LID SPRING	
152	4-236-280-01	RUBBER, VIBRATION PROOF (PINK)		163	4-236-899-01	DAMPER	
153	4-235-991-01	PULLEY SCREW		164	4-236-911-01	CD TRAY (T2) (AEP, AR, CH, HK, MX, SP, UK)	
* 154	3-509-138-00	CLAMP, SPRING		164	4-237-124-01	CD TRAY (T2) (CND, US)	
156	4-235-948-01	DISC HOLDER BKT		165	4-235-949-01	PU COVER	
157	1-471-144-11	MAGNET		166	1-796-189-11	MECH, CD (CS-21SC-1280)	
158	4-236-912-01	CD LID		167	4-236-281-01	RUBBER, VIBRATION PROOF (ORG)	
159	4-236-066-01	CD LID WINDOW		168	4-236-860-01	METAL COVER	
160	4-235-970-01	NSX1 PUSH ROD		SW300	1-692-960-21	SWITCH, PUSH (1 KEY) (OPEN/CLOSE)	
161	4-235-990-01	CD EJECT SPRING					

SECTION 8 ELECTRICAL PARTS LIST

DISPLAY

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
- Abbreviation
AR : Argentina model HK : Hong Kong model
CH : Chinese model MX : Mexican model
CND : Canadian model SP : Singapore model

- 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. . : μ A. . uPA. . : μ PA. .
uPB. . : μ PB. . uPC. . : μ PC. .
uPD. . : μ PD. .
- CAPACITORS
uF: μ F
- COILS
uH: μ H

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

Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

以阴影和 Δ 标志来识别的零部件，在安全方面具有关键性。因此只能以规定号码的零部件来更换。

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

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
	A-4727-038-A	DISPLAY BOARD, COMPLETE (AEP, UK)					
	A-4727-280-A	DISPLAY BOARD, COMPLETE (AR, CND, MX, US)		C326	1-126-382-11	ELECT 100uF 20%	10V
	A-4727-283-A	DISPLAY BOARD, COMPLETE (HK, SP)		C327	1-163-038-00	CERAMIC CHIP 0.1uF	25V
	A-4727-597-A	DISPLAY BOARD, COMPLETE (CH)		C328	1-164-159-11	CERAMIC 0.1uF	50V

	4-235-973-01	LCD REFLECTOR				< LIQUID CRYSTAL DISPLAY >	
	4-236-918-01	EM5 LED & REMOTE SENSOR HOLDER		CN301	1-804-496-11	DISPLAY PANEL, LIQUID CRYSTAL	
	4-236-919-01	EM5 REC. KNOB LED HOLDER				< DIODE >	
	7-685-534-14	SCREW +BTP 2.6X8 TYPE2 N-S					
	< CAPACITOR >						
C301	1-163-021-11	CERAMIC CHIP 0.01uF	10% 50V				
C302	1-163-021-11	CERAMIC CHIP 0.01uF	10% 50V				
C303	1-163-021-11	CERAMIC CHIP 0.01uF	10% 50V				
C304	1-163-021-11	CERAMIC CHIP 0.01uF	10% 50V				
C305	1-163-021-11	CERAMIC CHIP 0.01uF	10% 50V				
C306	1-102-962-00	CERAMIC 30PF	5% 50V				
C307	1-102-962-00	CERAMIC 30PF	5% 50V				
C308	1-163-038-00	CERAMIC CHIP 0.1uF	25V				
C309	1-126-514-11	ELECT 22uF	20% 10V				
C310	1-164-159-11	CERAMIC 0.1uF	50V				
C311	1-164-159-11	CERAMIC 0.1uF	50V				
C312	1-126-382-11	ELECT 100uF	20% 10V				
C313	1-163-009-11	CERAMIC CHIP 0.001uF	10% 50V				
C314	1-163-009-11	CERAMIC CHIP 0.001uF	10% 50V				
C315	1-115-872-11	ELECT 2.2uF	20% 50V (AEP, UK)				
C316	1-164-159-11	CERAMIC 0.1uF	50V (AEP, UK)				
C317	1-126-382-11	ELECT 100uF	20% 10V (AEP, UK)				
C318	1-163-135-00	CERAMIC CHIP 560PF	5% 50V (AEP, UK)				
C319	1-163-135-00	CERAMIC CHIP 560PF	5% 50V (AEP, UK)				
C320	1-126-382-11	ELECT 100uF	20% 10V (AEP, UK)				
C321	1-163-038-00	CERAMIC CHIP 0.1uF	25V (AEP, UK)				
C322	1-163-243-11	CERAMIC CHIP 47PF	5% 50V (AEP, UK)				
C323	1-163-243-11	CERAMIC CHIP 47PF	5% 50V (AEP, UK)				
C324	1-163-038-00	CERAMIC CHIP 0.1uF	25V				
C325	1-126-382-11	ELECT 100uF	20% 10V				
						< IC >	
				IC301	6-800-711-01	IC uPD78064GF-187-3BA	
				IC302	8-759-251-04	IC AT24C02-10PC	
				IC304	8-759-971-11	IC PST529D	
				IC305	8-759-557-36	IC BU1924F-E2 (AEP, UK)	

DISPLAY

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
< SHORT >				R309	1-249-434-11	CARBON	27K 5% 1/4W
J301	1-216-295-11	SHORT	0	R310	1-249-417-11	CARBON	1K 5% 1/4W
J302	1-216-295-11	SHORT	0	R311	1-216-047-00	RES-CHIP	820 5% 1/10W
J303	1-216-295-11	SHORT	0	R312	1-249-424-11	CARBON	3.9K 5% 1/4W
J304	1-216-295-11	SHORT	0	R313	1-216-049-11	RES-CHIP	1K 5% 1/10W
J305	1-216-295-11	SHORT	0	R314	1-249-416-11	CARBON	820 5% 1/4W
J306	1-216-295-11	SHORT	0 (AEP, CH, UK)	R315	1-216-049-11	RES-CHIP	1K 5% 1/10W
J307	1-216-295-11	SHORT	0	R316	1-249-421-11	CARBON	2.2K 5% 1/4W
J309	1-216-295-11	SHORT	0	R317	1-216-055-00	METAL CHIP	1.8K 5% 1/10W
J310	1-216-295-11	SHORT	0	R318	1-249-427-11	CARBON	6.8K 5% 1/4W
J312	1-216-295-11	SHORT	0	R319	1-249-441-11	CARBON	100K 5% 1/4W
J313	1-216-295-11	SHORT	0	R320	1-216-049-11	RES-CHIP	1K 5% 1/10W
J314	1-216-295-11	SHORT	0	R321	1-216-049-11	RES-CHIP	1K 5% 1/10W
J315	1-216-295-11	SHORT	0	R322	1-216-071-00	METAL CHIP	8.2K 5% 1/10W
J316	1-216-295-11	SHORT	0	R323	1-216-071-00	METAL CHIP	8.2K 5% 1/10W
J318	1-216-295-11	SHORT	0	R324	1-216-033-00	METAL CHIP	220 5% 1/10W
J321	1-216-295-11	SHORT	0	R325	1-247-887-00	CARBON	220K 5% 1/4W
J323	1-216-295-11	SHORT	0	R326	1-249-417-11	CARBON	1K 5% 1/4W
J324	1-216-295-11	SHORT	0	R327	1-249-433-11	CARBON	22K 5% 1/4W
J326	1-216-295-11	SHORT	0	R328	1-216-037-00	METAL CHIP	330 5% 1/10W
J328	1-216-295-11	SHORT	0	R329	1-249-433-11	CARBON	22K 5% 1/4W
J329	1-216-295-11	SHORT	0	R330	1-216-121-11	RES-CHIP	1M 5% 1/10W
J332	1-216-295-11	SHORT	0	R331	1-216-049-11	RES-CHIP	1K 5% 1/10W
J334	1-216-295-11	SHORT	0	R332	1-216-049-11	RES-CHIP	1K 5% 1/10W
J337	1-216-295-11	SHORT	0	R334	1-216-049-11	RES-CHIP	1K 5% 1/10W
J338	1-216-295-11	SHORT	0	R335	1-216-049-11	RES-CHIP	1K 5% 1/10W
J339	1-216-295-11	SHORT	0	R336	1-249-417-11	CARBON	1K 5% 1/4W
J340	1-216-295-11	SHORT	0	R337	1-249-417-11	CARBON	1K 5% 1/4W
J349	1-216-295-11	SHORT	0 (AEP, UK)	R338	1-216-105-00	RES-CHIP	220K 5% 1/10W
J362	1-216-295-11	SHORT	0 (AEP, UK)	R339	1-249-437-11	CARBON	47K 5% 1/4W
J371	1-216-295-11	SHORT	0	R340	1-216-089-00	RES-CHIP	47K 5% 1/10W
J382	1-216-295-11	SHORT	0	R341	1-216-073-00	RES-CHIP	10K 5% 1/10W
J384	1-216-295-11	SHORT	0	R342	1-216-073-00	RES-CHIP	10K 5% 1/10W
J390	1-216-295-11	SHORT	0	R343	1-249-441-11	CARBON	100K 5% 1/4W
J451	1-216-295-11	SHORT	0	R344	1-216-097-11	RES-CHIP	100K 5% 1/10W
J453	1-216-295-11	SHORT	0 (AEP, UK)	R345	1-249-417-11	CARBON	1K 5% 1/4W
J454	1-216-295-11	SHORT	0 (AEP, UK)	R346	1-249-417-11	CARBON	1K 5% 1/4W
J456	1-216-295-11	SHORT	0	R347	1-216-049-11	RES-CHIP	1K 5% 1/10W
J457	1-216-295-11	SHORT	0	R348	1-247-791-11	CARBON	22 5% 1/4W
< TRANSISTOR >				R349	1-249-409-11	CARBON	220 5% 1/4W
Q301	8-729-281-53	TRANSISTOR	2SC1815-GR	R350	1-249-421-11	CARBON	2.2K 5% 1/4W
Q302	8-729-281-53	TRANSISTOR	2SC1815-GR (AEP, UK)	R351	1-216-049-11	RES-CHIP	1K 5% 1/10W
Q303	8-729-900-63	TRANSISTOR	DTA124ES	R352	1-216-049-11	RES-CHIP	1K 5% 1/10W
Q304	8-729-281-53	TRANSISTOR	2SC1815-GR	R353	1-249-433-11	CARBON	22K 5% 1/4W
Q305	8-729-281-53	TRANSISTOR	2SC1815-GR	R354	1-216-049-11	RES-CHIP	1K 5% 1/10W
Q306	8-729-281-53	TRANSISTOR	2SC1815-GR	R355	1-216-049-11	RES-CHIP	1K 5% 1/10W
< RESISTOR >				R356	1-216-049-11	RES-CHIP	1K 5% 1/10W
R301	1-216-073-00	RES-CHIP	10K 5% 1/10W	R357	1-216-089-00	RES-CHIP	47K 5% 1/10W
R302	1-216-073-00	RES-CHIP	10K 5% 1/10W	R358	1-216-049-11	RES-CHIP	1K 5% 1/10W
R303	1-216-073-00	RES-CHIP	10K 5% 1/10W	R359	1-249-429-11	CARBON	10K 5% 1/4W
R304	1-216-073-00	RES-CHIP	10K 5% 1/10W	R360	1-249-417-11	CARBON	1K 5% 1/4W
R305	1-216-073-00	RES-CHIP	10K 5% 1/10W	R361	1-216-049-11	RES-CHIP	1K 5% 1/10W
R306	1-216-049-11	RES-CHIP	1K 5% 1/10W				
R307	1-249-416-11	CARBON	820 5% 1/4W				
R308	1-249-419-11	CARBON	1.5K 5% 1/4W				

DISPLAY

HEADPHONE

MAIN

Ref. No.	Part No.	Description	Remark
R363	1-216-049-11	RES-CHIP 1K 5%	1/10W
R364	1-216-097-11	RES-CHIP 100K 5%	1/10W
R365	1-216-097-11	RES-CHIP 100K 5%	1/10W
R366	1-216-097-11	RES-CHIP 100K 5%	1/10W
R368	1-216-049-11	RES-CHIP 1K 5%	1/10W
R369	1-216-049-11	RES-CHIP 1K 5%	1/10W
R370	1-216-049-11	RES-CHIP 1K 5%	1/10W
R372	1-216-049-11	RES-CHIP 1K 5%	1/10W
R373	1-249-433-11	CARBON 22K 5%	1/4W
R380	1-216-081-00	METAL CHIP 22K 5%	1/10W
R382	1-247-887-00	CARBON 220K 5%	1/4W
R384	1-249-429-11	CARBON 10K 5%	1/4W
R386	1-216-295-11	SHORT 0	
R387	1-249-417-11	CARBON 1K 5%	1/4W
R388	1-249-437-11	CARBON 47K 5%	1/4W
R389	1-249-429-11	CARBON 10K 5%	1/4W
R391	1-249-417-11	CARBON 1K 5%	1/4W
R392	1-249-417-11	CARBON 1K 5%	1/4W
R393	1-249-429-11	CARBON 10K 5%	1/4W
R394	1-216-001-00	METAL CHIP 10 5%	1/10W (AEP, UK)
R395	1-216-295-11	SHORT 0	
R396	1-216-295-11	SHORT 0	
R701	1-249-407-11	CARBON 150 5%	1/4W
R702	1-249-407-11	CARBON 150 5%	1/4W
R703	1-249-407-11	CARBON 150 5%	1/4W
< SWITCH >			
SW301	1-570-472-11	SWITCH, KEY BOARD (I/⏏)	
SW302	1-570-472-11	SWITCH, KEY BOARD (TUNER)	
SW303	1-570-472-11	SWITCH, KEY BOARD (TAPE)	
SW304	1-570-472-11	SWITCH, KEY BOARD (CD)	
SW305	1-570-472-11	SWITCH, KEY BOARD (PLAY MODE, RDS/DIR)	
SW306	1-570-472-11	SWITCH, KEY BOARD (■)	
SW307	1-570-472-11	SWITCH, KEY BOARD (▣)	
SW308	1-570-472-11	SWITCH, KEY BOARD (◀▶)	
SW309	1-570-472-11	SWITCH, KEY BOARD (TUNER MEM, ENTER)	
SW310	1-570-472-11	SWITCH, KEY BOARD (PRESET -)	
SW311	1-570-472-11	SWITCH, KEY BOARD (PRESET +)	
SW312	1-570-472-11	SWITCH, KEY BOARD (DISPLAY)	
SW313	1-570-472-11	SWITCH, KEY BOARD (TUNING -, ◀◀◀◀)	
SW314	1-570-472-11	SWITCH, KEY BOARD (TUNING +, ▶▶▶▶)	
SW315	1-570-472-11	SWITCH, KEY BOARD (MUSIC MENU)	
SW316	1-570-472-11	SWITCH, KEY BOARD (MEGA BASS)	
SW317	1-570-472-11	SWITCH, KEY BOARD (●)	
SW318	1-786-224-11	SW, SLIDE (MONO STEREO, ISS)	
< VIBRATOR/IC/ROTARY ENCODER >			
X301	1-795-436-11	VIBRATOR, CRYSTAL (4.194304MHz)	
X302	8-749-016-29	IC RPM6938 (REMOTE CONTROL RECEIVER)	
X303	1-476-916-11	ENCODER (VOLUME)	
X304	1-579-900-21	VIBRATOR, CRYSTAL (4.332MHz) (AEP, UK)	

A-4727-040-A	HEADPHONE BOARD, COMPLETE *****		
< CAPACITOR >			
C501	1-161-494-00	CERAMIC 0.022uF	25V

Ref. No.	Part No.	Description	Remark
C502	1-161-494-00	CERAMIC 0.022uF	25V
< JACK >			
JK401	1-815-813-11	JACK (LARGE TYPE) (PHONES)	
< COIL >			
L501	1-410-521-11	INDUCTOR 100uH	
L502	1-410-521-11	INDUCTOR 100uH	
L503	1-410-501-11	INDUCTOR 2.2uH	
L504	1-410-521-11	INDUCTOR 100uH	

A-4727-039-A	MAIN BOARD, COMPLETE (AEP, CH, UK)		
A-4727-281-A	MAIN BOARD, COMPLETE (AR, CND, HK, MX, SP, US) *****		
7-682-548-04	SCREW +B 3X8		
< BAND PASS FILTER >			
BPF901	1-234-704-11	FILTER, BAND PASS (FM)	(EXCEPT AEP, CH, UK)
< CAPACITOR >			
C1	1-104-760-11	CERAMIC CHIP 0.047uF	10% 50V (AEP, CH, UK)
C2	1-126-935-11	ELECT 470uF	20% 16V
C3	1-104-760-11	CERAMIC CHIP 0.047uF	10% 50V
C4	1-104-760-11	CERAMIC CHIP 0.047uF	10% 50V
C5	1-163-009-11	CERAMIC CHIP 0.001uF	10% 50V
C6	1-163-117-00	CERAMIC CHIP 100PF	5% 50V (AEP, CH, UK)
C7	1-104-760-11	CERAMIC CHIP 0.047uF	10% 50V (AEP, CH, UK)
C8	1-163-021-11	CERAMIC CHIP 0.01uF	10% 50V (AEP, CH, UK)
C9	1-104-760-11	CERAMIC CHIP 0.047uF	10% 50V
C10	1-126-967-11	ELECT 47uF	20% 50V
C11	1-115-870-11	ELECT 0.47uF	20% 50V
C12	1-104-760-11	CERAMIC CHIP 0.047uF	10% 50V
C13	1-126-794-11	ELECT 4.7uF	20% 50V
C14	1-104-760-11	CERAMIC CHIP 0.047uF	10% 50V
C15	1-126-514-11	ELECT 22uF	20% 16V
C16	1-163-239-11	CERAMIC CHIP 33PF	5% 50V
C17	1-126-933-11	ELECT 100uF	20% 16V (AEP, CH, UK)
C18	1-115-339-11	CERAMIC CHIP 0.1uF	10% 50V (AEP, CH, UK)
C19	1-163-009-11	CERAMIC CHIP 0.001uF	10% 50V (AEP, CH, UK)
C20	1-130-483-00	MYLAR 0.01uF	5% 50V
C21	1-130-483-00	MYLAR 0.01uF	5% 50V
C22	1-126-514-11	ELECT 22uF	20% 16V
C23	1-163-009-11	CERAMIC CHIP 0.001uF	10% 50V (AEP, CH, UK)
C24	1-126-961-11	ELECT 2.2uF	20% 50V
C25	1-126-961-11	ELECT 2.2uF	20% 50V
C26	1-130-479-00	MYLAR 0.0047uF	5% 50V
C27	1-130-479-00	MYLAR 0.0047uF	5% 50V
C28	1-163-019-00	CERAMIC CHIP 0.0068uF	10% 50V

HCD-EP50

Ver 1.1

MAIN

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C29	1-163-019-00	CERAMIC CHIP	0.0068uF 10% 50V				
C30	1-126-961-11	ELECT	2.2uF 20% 50V	C86	1-126-794-11	ELECT	4.7uF 20% 50V
				C87	1-126-960-11	ELECT	1uF 20% 50V
C31	1-126-964-11	ELECT	10uF 20% 50V	C88	1-126-933-11	ELECT	100uF 20% 16V
C32	1-115-185-11	CERAMIC CHIP	0.033uF 10% 50V	C89	1-126-961-11	ELECT	2.2uF 20% 50V
C33	1-126-514-11	ELECT	22uF 20% 16V	C90	1-126-794-11	ELECT	4.7uF 20% 50V
C34	1-126-964-11	ELECT	10uF 20% 50V				
			(AEP, CH, UK)	C91	1-126-794-11	ELECT	4.7uF 20% 50V
C35	1-126-961-11	ELECT	2.2uF 20% 50V	C92	1-126-934-11	ELECT	220uF 20% 16V
				C93	1-126-961-11	ELECT	2.2uF 20% 50V
C36	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V	C94	1-126-961-11	ELECT	2.2uF 20% 50V
C37	1-130-479-00	MYLAR	0.0047uF 5% 50V	C95	1-126-964-11	ELECT	10uF 20% 50V
C38	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V				
C39	1-130-479-00	MYLAR	0.0047uF 5% 50V	C96	1-104-665-11	ELECT	100uF 20% 25V
C40	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V	C97	1-126-935-11	ELECT	470uF 20% 16V
				C99	1-126-942-61	ELECT	1000uF 20% 25V
C41	1-163-006-11	CERAMIC CHIP	560PF 10% 50V	C100	1-126-942-61	ELECT	1000uF 20% 25V
C42	1-126-960-11	ELECT	1uF 20% 50V	C101	1-104-665-11	ELECT	100uF 20% 25V
C43	1-126-964-11	ELECT	10uF 20% 50V				
C44	1-104-760-11	CERAMIC CHIP	0.047uF 10% 50V	C102	1-126-960-11	ELECT	1uF 20% 50V
C45	1-104-760-11	CERAMIC CHIP	0.047uF 10% 50V	C103	1-104-665-11	ELECT	100uF 20% 25V
				C104	1-126-960-11	ELECT	1uF 20% 50V
C46	1-126-962-11	ELECT	3.3uF 20% 50V	C105	1-104-665-11	ELECT	100uF 20% 25V
C47	1-163-239-11	CERAMIC CHIP	33PF 5% 50V	C106	1-130-495-00	MYLAR	0.1uF 5% 50V
C48	1-126-961-11	ELECT	2.2uF 20% 50V				
C49	1-126-935-11	ELECT	470uF 20% 16V	C107	1-130-495-00	MYLAR	0.1uF 5% 50V
C50	1-115-339-11	CERAMIC CHIP	0.1uF 10% 50V	C108	1-163-227-11	CERAMIC CHIP	10PF 0.5PF 50V
				C109	1-126-960-11	ELECT	1uF 20% 50V
C51	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V	C110	1-163-133-00	CERAMIC CHIP	470PF 5% 50V
C52	1-126-935-11	ELECT	470uF 20% 16V	C111	1-163-101-00	CERAMIC CHIP	22PF 5% 50V
C53	1-126-960-11	ELECT	1uF 20% 50V				
C54	1-126-960-11	ELECT	1uF 20% 50V	C112	1-164-159-11	CERAMIC	0.1uF 50V
C55	1-126-935-11	ELECT	470uF 20% 16V	C113	1-164-159-11	CERAMIC	0.1uF 50V
				C114	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V
C56	1-115-339-11	CERAMIC CHIP	0.1uF 10% 50V	C115	1-163-133-00	CERAMIC CHIP	470PF 5% 50V
C57	1-126-935-11	ELECT	470uF 20% 16V	C116	1-126-794-11	ELECT	4.7uF 20% 50V
C58	1-115-339-11	CERAMIC CHIP	0.1uF 10% 50V				
C59	1-126-933-11	ELECT	100uF 20% 16V	C117	1-164-159-11	CERAMIC	0.1uF 50V
C60	1-130-491-00	MYLAR	0.047uF 5% 50V	C118	1-164-159-11	CERAMIC	0.1uF 50V
				C119	1-164-159-11	CERAMIC	0.1uF 50V
C61	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	C120	1-164-159-11	CERAMIC	0.1uF 50V
C62	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	C121	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V
C63	1-130-480-00	MYLAR	0.0056uF 5% 50V				
C64	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	C122	1-115-339-11	CERAMIC CHIP	0.1uF 10% 50V
C65	1-130-487-00	MYLAR	0.022uF 5% 50V	C123	1-126-514-11	ELECT	22uF 20% 16V
				C124	1-126-934-11	ELECT	220uF 20% 16V
C66	1-130-479-00	MYLAR	0.0047uF 5% 50V	C125	1-163-117-00	CERAMIC CHIP	100PF 5% 50V
C67	1-163-121-00	CERAMIC CHIP	150PF 5% 50V	C126	1-163-117-00	CERAMIC CHIP	100PF 5% 50V
C68	1-130-489-00	MYLAR	0.033uF 5% 50V				
C69	1-126-960-11	ELECT	1uF 20% 50V	C127	1-126-934-11	ELECT	220uF 20% 16V
C70	1-126-794-11	ELECT	4.7uF 20% 50V	C128	1-126-934-11	ELECT	220uF 20% 16V
				C129	1-130-495-00	MYLAR	0.1uF 5% 50V
C71	1-126-794-11	ELECT	4.7uF 20% 50V	C130	1-130-495-00	MYLAR	0.1uF 5% 50V
C72	1-130-491-00	MYLAR	0.047uF 5% 50V	C131	1-126-933-11	ELECT	100uF 20% 16V
C73	1-163-117-00	CERAMIC CHIP	100PF 5% 50V				
C74	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	C132	1-126-933-11	ELECT	100uF 20% 16V
C75	1-130-480-00	MYLAR	0.0056uF 5% 50V	C133	1-163-133-00	CERAMIC CHIP	470PF 5% 50V
				C134	1-163-133-00	CERAMIC CHIP	470PF 5% 50V
C76	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	C135	1-126-794-11	ELECT	4.7uF 20% 50V
C77	1-130-487-00	MYLAR	0.022uF 5% 50V	C136	1-126-794-11	ELECT	4.7uF 20% 50V
C78	1-130-479-00	MYLAR	0.0047uF 5% 50V				
C79	1-163-121-00	CERAMIC CHIP	150PF 5% 50V	C137	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V
C80	1-130-489-00	MYLAR	0.033uF 5% 50V	C138	1-126-934-11	ELECT	220uF 20% 16V
				C139	1-115-339-11	CERAMIC CHIP	0.1uF 10% 50V
C81	1-163-227-11	CERAMIC CHIP	10PF 0.5PF 50V	C140	1-126-960-11	ELECT	1uF 20% 50V
C82	1-126-961-11	ELECT	2.2uF 20% 50V	C141	1-126-971-11	ELECT	470uF 20% 50V
C83	1-126-794-11	ELECT	4.7uF 20% 50V				
C84	1-126-959-11	ELECT	0.47uF 20% 50V	C142	1-126-934-11	ELECT	220uF 20% 16V
C85	1-115-339-11	CERAMIC CHIP	0.1uF 10% 50V	C143	1-126-964-11	ELECT	10uF 20% 50V

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C144	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V	C202	1-104-665-11	ELECT	100uF 20% 25V
C145	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	C203	1-126-960-11	ELECT	1uF 20% 50V
C146	1-163-003-11	CERAMIC CHIP	330PF 10% 50V	C204	1-163-117-00	CERAMIC CHIP	100PF 5% 50V
C147	1-163-003-11	CERAMIC CHIP	330PF 10% 50V	C205	1-163-117-00	CERAMIC CHIP	100PF 5% 50V
C148	1-130-491-00	MYLAR	0.047uF 5% 50V	C206	1-104-760-11	CERAMIC CHIP	0.047uF 10% 50V
C149	1-130-491-00	MYLAR	0.047uF 5% 50V	C207	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V
C150	1-126-934-11	ELECT	220uF 20% 16V	C208	1-126-934-11	ELECT	220uF 20% 16V
C151	1-126-934-11	ELECT	220uF 20% 16V	C209	1-164-161-11	CERAMIC CHIP	0.0022uF 10% 100V
C152	1-126-964-11	ELECT	10uF 20% 50V	C210	1-163-017-00	CERAMIC CHIP	0.0047uF 5% 50V
C153	1-126-934-11	ELECT	220uF 20% 16V	C211	1-163-017-00	CERAMIC CHIP	0.0047uF 5% 50V
C154	1-130-487-00	MYLAR	0.022uF 5% 50V	C212	1-164-161-11	CERAMIC CHIP	0.0022uF 10% 100V
C155	1-126-967-11	ELECT	47uF 20% 50V	C213	1-163-133-00	CERAMIC CHIP	470PF 5% 50V
C156	1-126-956-11	ELECT	0.1uF 20% 50V	C214	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V
C157	1-126-956-11	ELECT	0.1uF 20% 50V	C215	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V
C158	1-126-964-11	ELECT	10uF 20% 50V	C216	1-163-117-00	CERAMIC CHIP	100PF 5% 50V
C159	1-126-794-11	ELECT	4.7uF 20% 50V	C217	1-163-117-00	CERAMIC CHIP	100PF 5% 50V
C160	1-130-493-00	MYLAR	0.068uF 5% 50V	C218	1-163-117-00	CERAMIC CHIP	100PF 5% 50V
C161	1-126-964-11	ELECT	10uF 20% 50V	C219	1-163-117-00	CERAMIC CHIP	100PF 5% 50V
C162	1-130-493-00	MYLAR	0.068uF 5% 50V	C220	1-115-339-11	CERAMIC CHIP	0.1uF 10% 50V
C163	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V	C221	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V
C164	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V	C222	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V
C165	1-126-960-11	ELECT	1uF 20% 50V	C223	1-163-133-00	CERAMIC CHIP	470PF 5% 50V
C166	1-130-473-00	MYLAR	0.0015uF 5% 50V	C224	1-163-133-00	CERAMIC CHIP	470PF 5% 50V
C167	1-163-121-00	CERAMIC CHIP	150PF 5% 50V	C225	1-163-133-00	CERAMIC CHIP	470PF 5% 50V
C168	1-126-934-11	ELECT	220uF 20% 16V	C226	1-163-220-11	CERAMIC CHIP	3PF 0.25PF 50V
C169	1-126-960-11	ELECT	1uF 20% 50V	C227	1-163-021-11	CERAMIC CHIP	0.01uF 10% 50V
C170	1-130-473-00	MYLAR	0.0015uF 5% 50V	C228	1-115-339-11	CERAMIC CHIP	0.1uF 10% 50V
C171	1-163-121-00	CERAMIC CHIP	150PF 5% 50V	C229	1-163-133-00	CERAMIC CHIP	470PF 5% 50V (AEP, CH, UK)
C172	1-130-486-00	MYLAR	0.018uF 10% 50V	C230	1-163-133-00	CERAMIC CHIP	470PF 5% 50V (AEP, CH, UK)
C173	1-130-471-00	MYLAR	0.001uF 5% 50V	C231	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V (AEP, CH, UK)
C174	1-130-483-00	MYLAR	0.01uF 5% 50V	C232	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V (AEP, CH, UK)
C175	1-130-471-00	MYLAR	0.001uF 5% 50V	C233	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V
C176	1-126-933-11	ELECT	100uF 20% 16V	C901	1-104-699-11	CERAMIC CHIP	30PF 2% 50V (EXCEPT AEP, CH, UK)
C177	1-163-121-00	CERAMIC CHIP	150PF 5% 50V	C902	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V (EXCEPT AEP, CH, UK)
C178	1-163-121-00	CERAMIC CHIP	150PF 5% 50V	C903	1-104-760-11	CERAMIC CHIP	0.047uF 10% 50V (EXCEPT AEP, CH, UK)
C179	1-126-934-11	ELECT	220uF 20% 16V	C904	1-104-760-11	CERAMIC CHIP	0.047uF 10% 50V (EXCEPT AEP, CH, UK)
C180	1-126-960-11	ELECT	1uF 20% 50V	C905	1-104-760-11	CERAMIC CHIP	0.047uF 10% 50V (EXCEPT AEP, CH, UK)
C181	1-126-960-11	ELECT	1uF 20% 50V	C906	1-104-760-11	CERAMIC CHIP	0.047uF 10% 50V (EXCEPT AEP, CH, UK)
C182	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V	C907	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V (EXCEPT AEP, CH, UK)
C183	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V	C908	1-104-760-11	CERAMIC CHIP	0.047uF 10% 50V (EXCEPT AEP, CH, UK)
C184	1-126-794-11	ELECT	4.7uF 20% 50V	C909	1-104-760-11	CERAMIC CHIP	0.047uF 10% 50V (EXCEPT AEP, CH, UK)
C185	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V	C910	1-163-087-00	CERAMIC CHIP	4PF 50V (EXCEPT AEP, CH, UK)
C186	1-163-125-00	CERAMIC CHIP	220PF 5% 50V	C911	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50V (EXCEPT AEP, CH, UK)
C187	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V	C912	1-104-760-11	CERAMIC CHIP	0.047uF 10% 50V (EXCEPT AEP, CH, UK)
C188	1-126-960-11	ELECT	1uF 20% 50V				
C189	1-126-960-11	ELECT	1uF 20% 50V				
C190	1-126-960-11	ELECT	1uF 20% 50V				
C191	1-126-794-11	ELECT	4.7uF 20% 50V				
C192	1-115-870-11	ELECT	0.47uF 20% 50V				
C193	1-126-933-11	ELECT	100uF 20% 16V				
C194	1-126-934-11	ELECT	220uF 20% 16V				
C195	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V				
C196	1-126-933-11	ELECT	100uF 20% 16V				
C197	1-115-339-11	CERAMIC CHIP	0.1uF 10% 50V				
C198	1-126-960-11	ELECT	1uF 20% 50V				
C199	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V				
C200	1-163-117-00	CERAMIC CHIP	100PF 5% 50V				
C201	1-126-959-11	ELECT	0.47uF 20% 50V				

HCD-EP50

Ver 1.1

MAIN

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C913	1-163-229-11	CERAMIC CHIP 12PF 5% 50V	(EXCEPT AEP, CH, UK)	D19	8-719-991-33	DIODE 1SS133T-77	
C914	1-163-085-00	CERAMIC CHIP 2PF 50V	(EXCEPT AEP, CH, UK)	D20	8-719-991-33	DIODE 1SS133T-77	
C915	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	(EXCEPT AEP, CH, UK)	D23	8-719-991-33	DIODE 1SS133T-77	
C916	1-104-760-11	CERAMIC CHIP 0.047uF 10% 50V	(EXCEPT AEP, CH, UK)	D24	8-719-991-33	DIODE 1SS133T-77	
C917	1-104-760-11	CERAMIC CHIP 0.047uF 10% 50V	(EXCEPT AEP, CH, UK)	D25	8-719-991-33	DIODE 1SS133T-77	
C918	1-104-760-11	CERAMIC CHIP 0.047uF 10% 50V	(EXCEPT AEP, CH, UK)	D26	8-719-991-33	DIODE 1SS133T-77	
C919	1-126-933-11	ELECT 100uF 20% 16V	(EXCEPT AEP, CH, UK)	D29	8-719-991-33	DIODE 1SS133T-77	
C920	1-104-760-11	CERAMIC CHIP 0.047uF 10% 50V	(EXCEPT AEP, CH, UK)	D32	8-719-991-33	DIODE 1SS133T-77	
C921	1-104-760-11	CERAMIC CHIP 0.047uF 10% 50V	(EXCEPT AEP, CH, UK)	D33	8-719-991-33	DIODE 1SS133T-77	
C922	1-163-239-11	CERAMIC CHIP 33PF 5% 50V	(EXCEPT AEP, CH, UK)	D35	8-719-991-33	DIODE 1SS133T-77	
		< CERAMIC FILTER >		D50	8-719-991-33	DIODE 1SS133T-77	
CF2	1-795-437-11	FILTER, CERAMIC (10.7MHz) (AEP, CH, UK)		D903	8-719-991-33	DIODE 1SS133T-77 (EXCEPT AEP, CH, UK)	
CF3	1-795-437-11	FILTER, CERAMIC (10.7MHz)		D904	8-719-991-33	DIODE 1SS133T-77 (EXCEPT AEP, CH, UK)	
CF4	1-795-397-11	FILTER, CERAMIC (450kHz)		D905	8-719-070-77	DIODE SVC201SPA-M1-AC	(EXCEPT AEP, CH, UK)
CF5	1-795-437-11	FILTER, CERAMIC (10.7MHz) (AEP, CH, UK)		D906	8-719-070-77	DIODE SVC201SPA-M1-AC	(EXCEPT AEP, CH, UK)
		< CONNECTOR/TERMINAL >				< IC >	
* CN2	1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P	(EXCEPT AEP, CH, UK)	IC901	8-759-697-57	IC TA2132AF (EL) (EXCEPT AEP, CH, UK)	
* CN3	1-564-711-11	PIN, CONNECTOR (SMALL TYPE) 9P				< COIL >	
* CN4	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P		L1	1-424-945-11	INDUCTOR 8uH (AEP, CH, UK)	
* CN5	1-564-713-11	PIN, CONNECTOR (SMALL TYPE) 11P		L2	1-424-945-11	INDUCTOR 8uH (AEP, CH, UK)	
CN7	1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P		L3	1-424-946-11	INDUCTOR 47mH	
* CN9	1-564-709-11	PIN, CONNECTOR (SMALL TYPE) 7P		L4	1-424-946-11	INDUCTOR 47mH	
* CN11	1-564-709-11	PIN, CONNECTOR (SMALL TYPE) 7P		L5	1-424-933-11	COIL (BIAS)	
CN12	1-778-310-11	PLUG, CONNECTOR 2P (AM ANT)		L6	1-410-509-11	INDUCTOR 10uH	
CN13	1-694-848-11	TERMINAL BOARD (ANT FM) (FM ANT)	(AEP, CH, UK)	L7	1-410-509-11	INDUCTOR 10uH	
CN13	1-815-968-11	CONNECTOR (F TYPE) (FM ANT)	(EXCEPT AEP, CH, UK)	L8	1-410-509-11	INDUCTOR 10uH	
* CN14	1-564-711-11	PIN, CONNECTOR (SMALL TYPE) 9P		L9	1-410-509-11	INDUCTOR 10uH	
* CN15	1-564-711-11	PIN, CONNECTOR (SMALL TYPE) 9P		L901	1-424-942-11	COIL (FM OSC) (EXCEPT AEP, CH, UK)	
CN17	1-537-238-11	TERMINAL BOARD (SPEAKER)		L902	1-424-941-11	COIL (FM ANT) (EXCEPT AEP, CH, UK)	
		< DIODE >		L903	1-414-142-11	INDUCTOR 1uH (EXCEPT AEP, CH, UK)	
D1	8-719-991-33	DIODE 1SS133T-77				< TRANSISTOR >	
D2	8-719-991-33	DIODE 1SS133T-77		Q1	8-729-173-38	TRANSISTOR 2SA733-K	
D3	8-719-991-33	DIODE 1SS133T-77		Q2	8-729-823-13	TRANSISTOR 2SC999D-SPA-AC	(AEP, CH, UK)
D4	8-719-991-33	DIODE 1SS133T-77		Q3	8-729-281-53	TRANSISTOR 2SC1815-GR	
D5	8-719-085-35	DIODE SVC348T		Q4	8-729-281-53	TRANSISTOR 2SC1815-GR	
D6	8-719-991-33	DIODE 1SS133T-77		Q5	8-729-823-13	TRANSISTOR 2SC2999D-SPA-AC	(AEP, CH, UK)
D7	8-719-991-33	DIODE 1SS133T-77		Q6	8-729-905-50	TRANSISTOR DTC343TS	
D8	8-719-200-02	DIODE 10E2		Q7	8-729-905-50	TRANSISTOR DTC343TS	
D10	8-719-991-33	DIODE 1SS133T-77		Q8	8-729-281-53	TRANSISTOR 2SC1815-GR	
D11	8-719-991-33	DIODE 1SS133T-77		Q9	8-729-037-08	TRANSISTOR KTD2058Y	
D12	8-719-991-33	DIODE 1SS133T-77		Q10	8-729-281-53	TRANSISTOR 2SC1815-GR	
D16	8-719-991-33	DIODE 1SS133T-77		Q11	8-729-281-53	TRANSISTOR 2SC1815-GR	
D17	8-719-991-33	DIODE 1SS133T-77		Q12	8-729-173-38	TRANSISTOR 2SA733-K	
D18	8-719-991-33	DIODE 1SS133T-77		Q13	8-729-281-53	TRANSISTOR 2SC1815-GR	
				Q14	8-729-281-53	TRANSISTOR 2SC1815-GR	
				Q15	8-729-281-53	TRANSISTOR 2SC1815-GR	
				Q16	8-729-281-53	TRANSISTOR 2SC1815-GR	
				Q17	8-729-281-53	TRANSISTOR 2SC1815-GR	
				Q18	8-729-281-53	TRANSISTOR 2SC1815-GR	
				Q19	8-729-808-22	TRANSISTOR 2SB926TP-T	
				Q20	8-729-281-53	TRANSISTOR 2SC1815-GR	

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
Q21	8-729-116-82	TRANSISTOR	2SD1616-L	R24	1-216-061-00	RES-CHIP	3.3K 5% 1/10W (AEP, CH, UK)
Q22	8-729-116-82	TRANSISTOR	2SD1616-L	R25	1-216-053-00	METAL CHIP	1.5K 5% 1/10W (AEP, CH, UK)
Q24	8-729-281-53	TRANSISTOR	2SC1815-GR	R26	1-216-113-00	METAL CHIP	470K 5% 1/10W (AEP, CH, UK)
Q25	8-729-281-53	TRANSISTOR	2SC1815-GR	R27	1-216-109-00	METAL CHIP	330K 5% 1/10W (AEP, CH, UK)
Q26	8-729-281-53	TRANSISTOR	2SC1815-GR	R28	1-249-417-11	CARBON	1K 5% 1/4W (AEP, CH, UK)
Q27	8-729-281-53	TRANSISTOR	2SC1815-GR	R29	1-216-067-00	METAL CHIP	5.6K 5% 1/10W
Q28	8-729-281-53	TRANSISTOR	2SC1815-GR	R30	1-216-073-00	RES-CHIP	10K 5% 1/10W
Q29	8-729-281-53	TRANSISTOR	2SC1815-GR	R31	1-216-073-00	RES-CHIP	10K 5% 1/10W
Q30	8-729-281-53	TRANSISTOR	2SC1815-GR	R32	1-216-689-11	METAL CHIP	39K 0.5% 1/10W
Q31	8-729-281-53	TRANSISTOR	2SC1815-GR	R33	1-216-689-11	METAL CHIP	39K 0.5% 1/10W
Q32	8-729-173-38	TRANSISTOR	2SA733-K	R34	1-216-063-00	RES-CHIP	3.9K 5% 1/10W
Q33	8-729-281-53	TRANSISTOR	2SC1815-GR	R35	1-216-063-00	RES-CHIP	3.9K 5% 1/10W
Q34	8-729-281-53	TRANSISTOR	2SC1815-GR	R36	1-216-063-00	RES-CHIP	3.9K 5% 1/10W
Q35	8-729-281-53	TRANSISTOR	2SC1815-GR	R37	1-216-063-00	RES-CHIP	3.9K 5% 1/10W
Q36	8-729-281-53	TRANSISTOR	2SC1815-GR	R38	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
Q37	8-729-808-22	TRANSISTOR	2SB926TP-T	R39	1-216-077-00	RES-CHIP	15K 5% 1/10W
Q38	8-729-116-82	TRANSISTOR	2SD1616-L	R40	1-216-065-00	RES-CHIP	4.7K 5% 1/10W
Q39	8-729-029-86	TRANSISTOR	DTC124ES	R41	1-216-001-00	METAL CHIP	10 5% 1/10W
Q40	8-729-281-53	TRANSISTOR	2SC1815-GR	R42	1-216-067-00	METAL CHIP	5.6K 5% 1/10W
Q41	8-729-281-53	TRANSISTOR	2SC1815-GR	R43	1-216-097-11	RES-CHIP	100K 5% 1/10W
Q45	8-729-281-53	TRANSISTOR	2SC1815-GR	R44	1-249-393-11	CARBON	10 5% 1/4W
Q46	8-729-281-53	TRANSISTOR	2SC1815-GR	R45	1-216-049-11	RES-CHIP	1K 5% 1/10W
Q47	8-729-116-82	TRANSISTOR	2SD1616-L	R46	1-216-049-11	RES-CHIP	1K 5% 1/10W
Q901	8-729-823-13	TRANSISTOR	2SC2999D-SPA-AC (EXCEPT AEP, CH, UK)	R47	1-216-067-00	METAL CHIP	5.6K 5% 1/10W
< RESISTOR >				R48	1-249-421-11	CARBON	2.2K 5% 1/4W
R1	1-216-067-00	METAL CHIP	5.6K 5% 1/10W	R49	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R2	1-216-067-00	METAL CHIP	5.6K 5% 1/10W	R50	1-216-073-00	RES-CHIP	10K 5% 1/10W
R3	1-249-409-11	CARBON	220 5% 1/4W	R51	1-216-065-00	RES-CHIP	4.7K 5% 1/10W
R4	1-216-089-00	RES-CHIP	47K 5% 1/10W	R52	1-216-049-11	RES-CHIP	1K 5% 1/10W
R5	1-216-073-00	RES-CHIP	10K 5% 1/10W (AEP, CH, UK)	R53	1-216-049-11	RES-CHIP	1K 5% 1/10W
R6	1-216-081-00	METAL CHIP	22K 5% 1/10W (AEP, CH, UK)	R54	1-216-049-11	RES-CHIP	1K 5% 1/10W
R7	1-249-429-11	CARBON	10K 5% 1/4W	R55	1-216-073-00	RES-CHIP	10K 5% 1/10W
R8	1-216-037-00	METAL CHIP	330 5% 1/10W (AEP, CH, UK)	R56	1-249-429-11	CARBON	10K 5% 1/4W
R9	1-216-025-11	RES-CHIP	100 5% 1/10W (AEP, CH, UK)	R57	1-216-029-00	METAL CHIP	150 5% 1/10W
R10	1-216-099-00	METAL CHIP	120K 5% 1/10W (AEP, CH, UK)	R58	1-216-065-00	RES-CHIP	4.7K 5% 1/10W
R11	1-216-041-00	METAL CHIP	470 5% 1/10W (AEP, CH, UK)	R59	1-216-065-00	RES-CHIP	4.7K 5% 1/10W
R12	1-216-037-00	METAL CHIP	330 5% 1/10W (AEP, CH, UK)	R60	1-216-089-00	RES-CHIP	47K 5% 1/10W
R13	1-216-017-00	RES-CHIP	47 5% 1/10W	R61	1-216-089-00	RES-CHIP	47K 5% 1/10W
R14	1-216-065-00	RES-CHIP	4.7K 5% 1/10W	R62	1-249-401-11	CARBON	47 5% 1/4W
R15	1-249-421-11	CARBON	2.2K 5% 1/4W	R63	1-249-393-11	CARBON	10 5% 1/4W
R16	1-216-089-00	RES-CHIP	47K 5% 1/10W	R64	1-216-073-00	RES-CHIP	10K 5% 1/10W
R17	1-216-049-11	RES-CHIP	1K 5% 1/10W	R65	1-247-807-31	CARBON	100 5% 1/4W
R18	1-216-065-00	RES-CHIP	4.7K 5% 1/10W	R66	1-249-425-11	CARBON	4.7K 5% 1/4W
R19	1-216-089-00	RES-CHIP	47K 5% 1/10W	R67	1-216-073-00	RES-CHIP	10K 5% 1/10W
R20	1-216-089-00	RES-CHIP	47K 5% 1/10W	R68	1-216-085-00	RES-CHIP	33K 5% 1/10W
R21	1-216-025-11	RES-CHIP	100 5% 1/10W (AEP, CH, UK)	R69	1-216-081-00	METAL CHIP	22K 5% 1/10W
R22	1-249-417-11	CARBON	1K 5% 1/4W	R70	1-216-089-00	RES-CHIP	47K 5% 1/10W
R23	1-249-409-11	CARBON	220 5% 1/4W	R71	1-216-095-00	METAL CHIP	82K 5% 1/10W
				R72	1-216-063-00	RES-CHIP	3.9K 5% 1/10W
				R73	1-216-073-00	RES-CHIP	10K 5% 1/10W
				R74	1-216-085-00	RES-CHIP	33K 5% 1/10W
				R75	1-216-071-00	METAL CHIP	8.2K 5% 1/10W
				R76	1-216-073-00	RES-CHIP	10K 5% 1/10W

HCD-EP50

Ver 1.1

MAIN

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R77	1-249-417-11	CARBON	1K 5%	1/4W	R135	1-216-073-00	RES-CHIP 10K 5% 1/10W
R78	1-216-085-00	RES-CHIP	33K 5%	1/10W	R136	1-249-440-11	CARBON 82K 5% 1/4W
R79	1-216-081-00	METAL CHIP	22K 5%	1/10W	R137	1-216-095-00	METAL CHIP 82K 5% 1/10W
R80	1-216-089-00	RES-CHIP	47K 5%	1/10W	R138	1-216-073-00	RES-CHIP 10K 5% 1/10W
R81	1-216-095-00	METAL CHIP	82K 5%	1/10W	R139	1-216-065-00	RES-CHIP 4.7K 5% 1/10W
R82	1-216-063-00	RES-CHIP	3.9K 5%	1/10W	R140	1-249-429-11	CARBON 10K 5% 1/4W
R83	1-216-073-00	RES-CHIP	10K 5%	1/10W	R141	1-216-089-00	RES-CHIP 47K 5% 1/10W
R84	1-216-085-00	RES-CHIP	33K 5%	1/10W	R142	1-216-049-11	RES-CHIP 1K 5% 1/10W
R85	1-216-071-00	METAL CHIP	8.2K 5%	1/10W	R143	1-216-097-11	RES-CHIP 100K 5% 1/10W
R86	1-216-073-00	RES-CHIP	10K 5%	1/10W	R144	1-249-403-11	CARBON 68 5% 1/4W
R87	1-216-095-00	METAL CHIP	82K 5%	1/10W			(EXCEPT AEP, CH, UK)
R88	1-216-085-00	RES-CHIP	33K 5%	1/10W	R144	1-249-409-11	CARBON 220 5% 1/4W
R89	1-216-085-00	RES-CHIP	33K 5%	1/10W			(AEP, CH, UK)
R90	1-216-077-00	RES-CHIP	15K 5%	1/10W	R145	1-216-063-00	RES-CHIP 3.9K 5% 1/10W
R91	1-216-091-00	METAL CHIP	56K 5%	1/10W			(EXCEPT AEP, CH, UK)
R92	1-216-091-00	METAL CHIP	56K 5%	1/10W	R145	1-216-065-00	RES-CHIP 4.7K 5% 1/10W
R93	1-216-079-00	METAL CHIP	18K 5%	1/10W			(AEP, CH, UK)
R94	1-216-049-11	RES-CHIP	1K 5%	1/10W	R146	1-249-389-11	CARBON 4.7 5% 1/4W
R95	1-216-065-00	RES-CHIP	4.7K 5%	1/10W	R147	1-249-389-11	CARBON 4.7 5% 1/4W
R96	1-216-053-00	METAL CHIP	1.5K 5%	1/10W	R148	1-216-085-00	RES-CHIP 33K 5% 1/10W
R97	1-216-057-00	RES-CHIP	2.2K 5%	1/10W	R149	1-216-085-00	RES-CHIP 33K 5% 1/10W
R98	1-216-061-00	RES-CHIP	3.3K 5%	1/10W	R150	1-216-067-00	METAL CHIP 5.6K 5% 1/10W
R99	1-216-079-00	METAL CHIP	18K 5%	1/10W	R151	1-216-067-00	METAL CHIP 5.6K 5% 1/10W
R100	1-216-097-11	RES-CHIP	100K 5%	1/10W	R152	1-216-097-11	RES-CHIP 100K 5% 1/10W
R101	1-216-097-11	RES-CHIP	100K 5%	1/10W	R153	1-216-073-00	RES-CHIP 10K 5% 1/10W
R102	1-216-049-11	RES-CHIP	1K 5%	1/10W	R154	1-216-077-00	RES-CHIP 15K 5% 1/10W
R103	1-216-065-00	RES-CHIP	4.7K 5%	1/10W	R155	1-216-077-00	RES-CHIP 15K 5% 1/10W
R104	1-216-053-00	METAL CHIP	1.5K 5%	1/10W	R156	1-216-073-00	RES-CHIP 10K 5% 1/10W
R105	1-216-089-00	RES-CHIP	47K 5%	1/10W	R157	1-216-073-00	RES-CHIP 10K 5% 1/10W
R106	1-216-061-00	RES-CHIP	3.3K 5%	1/10W	R158	1-249-417-11	CARBON 1K 5% 1/4W
R107	1-216-077-00	RES-CHIP	15K 5%	1/10W	R159	1-249-417-11	CARBON 1K 5% 1/4W
R108	1-249-413-11	CARBON	470 5%	1/4W	R160	1-249-421-11	CARBON 2.2K 5% 1/4W
R109	1-216-097-11	RES-CHIP	100K 5%	1/10W	R161	1-216-097-11	RES-CHIP 100K 5% 1/10W
R110	1-216-097-11	RES-CHIP	100K 5%	1/10W	R162	1-216-073-00	RES-CHIP 10K 5% 1/10W
R111	1-216-057-00	METAL CHIP	2.2K 5%	1/10W	R163	1-216-049-11	RES-CHIP 1K 5% 1/10W
R112	1-216-081-00	METAL CHIP	22K 5%	1/10W			(AEP, CH, UK)
R113	1-249-421-11	CARBON	2.2K 5%	1/4W	R163	1-216-067-00	RES-CHIP 5.6K 5% 1/10W
R114	1-249-402-11	CARBON	56 5%	1/4W			(EXCEPT AEP, CH, UK)
R115	1-216-097-11	RES-CHIP	100K 5%	1/10W	R164	1-216-073-00	RES-CHIP 10K 5% 1/10W
R116	1-216-049-11	RES-CHIP	1K 5%	1/10W	R165	1-216-065-00	RES-CHIP 4.7K 5% 1/10W
R117	1-216-097-11	RES-CHIP	100K 5%	1/10W	R166	1-216-073-00	RES-CHIP 10K 5% 1/10W
R118	1-216-083-00	METAL CHIP	27K 5%	1/10W	R167	1-216-049-11	RES-CHIP 1K 5% 1/10W
R119	1-216-089-00	RES-CHIP	47K 5%	1/10W	R168	1-216-308-00	METAL CHIP 4.7 5% 1/10W
R120	1-249-426-11	CARBON	5.6K 5%	1/4W	R169	1-216-308-00	METAL CHIP 4.7 5% 1/10W
R121	1-249-426-11	CARBON	5.6K 5%	1/4W	R170	1-216-065-00	RES-CHIP 4.7K 5% 1/10W
R122	1-249-437-11	CARBON	47K 5%	1/4W	R171	1-216-065-00	RES-CHIP 4.7K 5% 1/10W
R123	1-216-097-11	RES-CHIP	100K 5%	1/10W	R172	1-216-093-11	RES-CHIP 68K 5% 1/10W
R124	1-216-095-00	METAL CHIP	82K 5%	1/10W	R173	1-216-093-11	RES-CHIP 68K 5% 1/10W
R125	1-249-417-11	CARBON	1K 5%	1/4W	R174	1-247-807-31	CARBON 100 5% 1/4W
R126	1-249-417-11	CARBON	1K 5%	1/4W	R175	1-216-097-11	RES-CHIP 100K 5% 1/10W
R127	1-249-432-11	CARBON	18K 5%	1/4W	R176	1-216-085-00	RES-CHIP 33K 5% 1/10W
R128	1-249-432-11	CARBON	18K 5%	1/4W	R177	1-216-081-00	METAL CHIP 22K 5% 1/10W
R129	1-216-059-00	METAL CHIP	2.7K 5%	1/10W	R178	1-216-081-00	METAL CHIP 22K 5% 1/10W
R130	1-216-059-00	METAL CHIP	2.7K 5%	1/10W	R179	1-216-081-00	METAL CHIP 22K 5% 1/10W
R131	1-216-067-00	METAL CHIP	5.6K 5%	1/10W	R180	1-216-081-00	METAL CHIP 22K 5% 1/10W
R132	1-216-089-00	RES-CHIP	47K 5%	1/10W	R181	1-216-061-00	RES-CHIP 3.3K 5% 1/10W
R133	1-216-089-00	RES-CHIP	47K 5%	1/10W	R182	1-216-077-00	RES-CHIP 15K 5% 1/10W
R134	1-249-429-11	CARBON	10K 5%	1/4W	R183	1-216-061-00	RES-CHIP 3.3K 5% 1/10W

HCD-EP50

Ver 1.1

MAIN

POWER

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
U4	1-693-564-11	TUNER (AEP, CH, UK)		D606	8-719-200-02	DIODE 10E2	
U6	8-759-473-59	IC LC75392		D607	8-719-200-02	DIODE 10E2	
U7	8-759-231-58	IC TA7812S		D608	8-719-200-02	DIODE 10E2	
U8	8-759-701-75	IC NJM7805FA		D612	8-719-991-33	DIODE 1SS133T-77	
U9	8-759-576-76	IC TDA2822D013TR		D613	8-719-991-33	DIODE 1SS133T-77	
U10	8-759-701-59	IC NJM78M09FA		D615	8-719-200-02	DIODE 10E2	
U11	6-700-957-01	IC LA4282		D616	8-719-200-02	DIODE 10E2	
U12	8-759-079-42	IC uPC1330HA-NA		D617	8-719-200-02	DIODE 10E2	
U13	6-700-579-01	IC AN7312		D618	8-719-200-02	DIODE 10E2	
U14	8-759-933-50	IC BA335		D621	8-719-200-02	DIODE 10E2	
U15	8-759-009-22	IC MC14094BF				< FUSE >	
		< VIBRATOR >		△ F601	1-533-419-11	FUSE, GLASS CYLINDRICAL (DIA.5) (4A/125V) (CND, MX, US)	
X2	1-577-126-11	VIBRATOR, CRYSTAL (7.2MHz)		△ F601	1-533-471-11	FUSE, GLASS TUBE (DIA.5) (T4AL/250V) (AEP, AR, CH, HK, SP, UK)	
		< DIODE >		△ F602	1-533-296-11	FUSE, GLASS CYLINDRICAL (DIA.5) (2A/125V) (CND, MX, US)	
Z1	8-719-947-13	DIODE MTZJ-T-72-4.7B		△ F602	1-533-468-11	FUSE, GLASS TUBE (DIA.5) (T2AL/250V) (AEP, AR, CH, HK, SP, UK)	
Z2	8-719-110-17	DIODE RD10ESB2				< COIL >	
Z4	8-719-110-36	DIODE MTZJ-T-72-13B		△ L601	1-424-944-11	INDUCTOR 400uH	
ZD901	8-719-983-63	DIODE MTZJ-T-72-3.3B				< TRANSISTOR >	
		(EXCEPT AEP, CH, UK)		Q605	8-729-173-38	TRANSISTOR 2SA733-K	
*****				Q606	8-729-281-53	TRANSISTOR 2SC1815-GR	
A-4727-041-A		POWER BOARD, COMPLETE (AEP, AR, CH, HK, SP, UK)				< RESISTOR >	
A-4727-282-A		POWER BOARD, COMPLETE (CND, MX, US) *****		R602	1-249-407-11	CARBON 150 5% 1/4W	
1-533-217-31		HOLDER, FUSE		R603	1-249-426-11	CARBON 5.6K 5% 1/4W	
		< CAPACITOR >		R618	1-249-437-11	CARBON 47K 5% 1/4W	
C601	1-119-940-51	ELECT 4700uF 20% 50V		R619	1-249-417-11	CARBON 1K 5% 1/4W	
C602	1-126-963-11	ELECT 4.7uF 20% 50V		R621	1-249-437-11	CARBON 47K 5% 1/4W	
C604	1-128-551-11	ELECT 22uF 20% 25V		R622	1-249-403-11	CARBON 68 5% 1/4W	
C605	1-164-159-21	CERAMIC 0.1uF 50V		R623	1-249-437-11	CARBON 47K 5% 1/4W	
C606	1-164-159-21	CERAMIC 0.1uF 50V		△ R625	1-219-237-11	SOLID 3.3M 20% 1/2W (CND, MX, US)	
C608	1-164-159-21	CERAMIC 0.1uF 50V				< RELAY >	
C609	1-164-159-21	CERAMIC 0.1uF 50V		△ RE601	1-755-446-11	RELAY (AEP, AR, CH, HK, SP, UK)	
△ C610	1-113-889-11	CERAMIC 0.001uF 10% 250V		△ RE601	1-755-448-11	RELAY (CND, MX, US)	
C611	1-164-159-21	CERAMIC 0.1uF 50V				< TRANSFORMER >	
C612	1-164-159-21	CERAMIC 0.1uF 50V		△ T602	1-437-462-11	TRANSFORMER, POWER (AEP, AR, CH, HK, SP, UK)	
C615	1-126-935-11	ELECT 470uF 20% 16V		△ T602	1-437-475-11	TRANSFORMER, POWER (CND, MX, US)	
C618	1-164-159-21	CERAMIC 0.1uF 50V				< DIODE >	
C626	1-126-943-11	ELECT 2200uF 20% 25V		Z601	8-719-109-93	DIODE RD6.2ESB2	
C627	1-164-159-21	CERAMIC 0.1uF 50V		*****			
C641	1-164-159-21	CERAMIC 0.1uF 50V				MISCELLANEOUS *****	
C643	1-164-159-21	CERAMIC 0.1uF 50V		△ 6	1-555-750-00	CORD, POWER (AEP, HK, SP, UK)	
C644	1-164-159-21	CERAMIC 0.1uF 50V		△ 6	1-782-464-21	CORD, POWER (CH)	
		< CONNECTOR >		△ 6	1-783-525-31	CORD, POWER (TRACKING) (MX)	
* CN601	1-506-710-11	PLUG, CONNECTOR (2.5mm) 8P		△ 6	1-783-820-11	CORD, POWER (CND, US)	
		< DIODE >		△ 6	1-783-941-51	CORD, POWER (AR)	
D601	8-719-077-63	DIODE 1N5402					
D602	8-719-077-63	DIODE 1N5402					
D603	8-719-077-63	DIODE 1N5402					
D604	8-719-077-63	DIODE 1N5402					
D605	8-719-200-02	DIODE 10E2					

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.	以阴影和 △ 标志来识别的零部件，在安全方面具有关键性。因此只能以规定号码的零部件来更换。
--	--	---

