

TC-KA1ESA/KE500S

SERVICE MANUAL

US Model
TC-KA1ESA/KE500S

Canadian Model
TC-KA1ESA

AEP Model

UK Model

Australian Model

E Model

TC-KE500S



Photo : TC-KE500S

* Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.

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Model Name Using Similar Mechanism	NEW
Tape Transport Mechanism Type	TCM-190VB14

SPECIFICATIONS

System

Recording system

4-track 2-channel stereo

Fast winding time (approx.)

90 sec. (with Sony C-60 cassette)

High-speed fast-winding time (approx.)

45 sec. (with Sony C-60 cassette)

Bias

AC bias

Heads

Erasing head \times 1 (S&F head)
Recording head \times 1 (SD head)
Playing head \times 1 (SD head)

Motors

Capstan motor \times 1 (DC servo motor)
Reel motor \times 1 (DC motor)

Signal-to-noise ratio (at peak level, weighted, and with Dolby NR off)

Type I tape, Sony Type I (NORMAL): 57 dB
Type II tape, Sony Type II (HIGH): 59 dB
Type IV tape, Sony Type IV (METAL): 61 dB

S/N ratio improvement (approximate values)

With Dolby B NR on: 5 dB at 1 kHz, 10 dB at 5 kHz
With Dolby C NR on: 15 dB at 500 Hz, 20 dB at 1 kHz
With Dolby S NR on: 10 dB at 100 Hz, 24 dB at 1 kHz

Harmonic distortion

0.4% (with Type I tape, Sony Type I (NORMAL):
160n Wb/m 315 Hz, 3rd H.D.)
1.5% (with Type IV tape, Sony Type IV (METAL):
250n Wb/m 315 Hz, 3rd H.D.)

Frequency response (Dolby NR off)

Type I tape, Sony Type I (NORMAL):
20 - 17,000 Hz (\pm 3 dB, IEC)
15 - 18,000 Hz (\pm 6 dB)
Type II tape, Sony Type II (HIGH):
20 - 18,000 Hz (\pm 3 dB, IEC)
15 - 19,000 Hz (\pm 6 dB)
Type IV tape, Sony Type IV (METAL):
20 - 19,000 Hz (\pm 3 dB, IEC)
20 - 16,000 Hz (\pm 3 dB, -4dB recording)
15 - 21,000 Hz (\pm 6 dB)

— Continued on page 2 —

STEREO CASSETTE DECK
SONY[®]

Wow and flutter

±0.085% W. Peak (IEC)
 0.055% W. RMS (NAB)
 ±0.16% W. Peak (DIN)

Inputs**Line inputs (phono jacks)**

Sensitivity: 0.16 V
 Input impedance: 47 kilohms

Outputs**Line outputs (phono jacks)**

Rated output level: 0.5 V at a load impedance of
 47 kilohms
 Load impedance: Over 10 kilohms

Headphones (stereo phone jack)

Output level: 0.25 mW at a load impedance of
 32 ohms

General**Power requirements**

Where purchased	Power requirements
US, Canadian model :	120 V AC, 60 Hz
AEP, UK, German, Malaysia, Singapore model :	220 - 230 V AC, 50/60 Hz
Australian model :	240 V AC, 50 Hz
E model :	120, 220, or 240 V AC, 50/60 Hz adjustable with the voltage selector

Power consumption

21 W

Dimensions (approx.) (w/h/d)

430 × 120 × 310 mm (17 × 4 3/4 × 12 1/4 inches)
 incl. projecting parts and controls

Mass (approx.)

4.2 kg (9 lbs 5 oz)

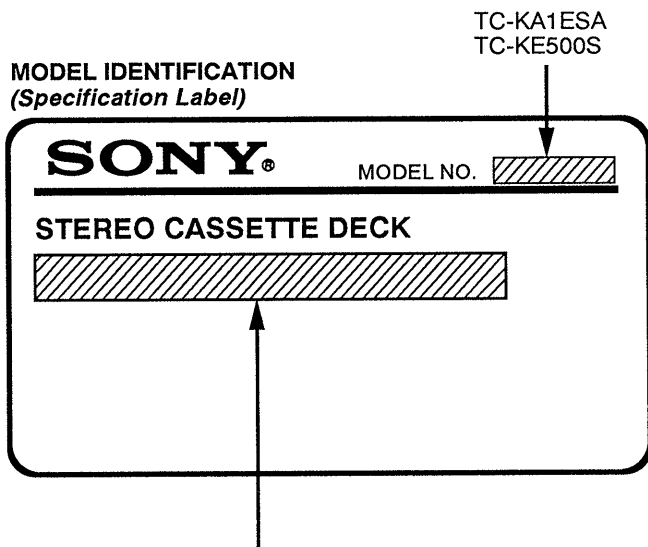
Supplied accessories

Audio connecting cords (2)

Design and specifications are subject to change without notice.



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US, Canadian model : AC 120V~60Hz
 AEP, UK, German, Malaysia,
 Singapore model : AC 220-230V~50/60Hz
 Australian model : AC 240V~50/60Hz
 E model : AC 120, 220 or 240V
 adjustable~50/60Hz

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.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE  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.

SAFETY CHECK-OUT (US Model)

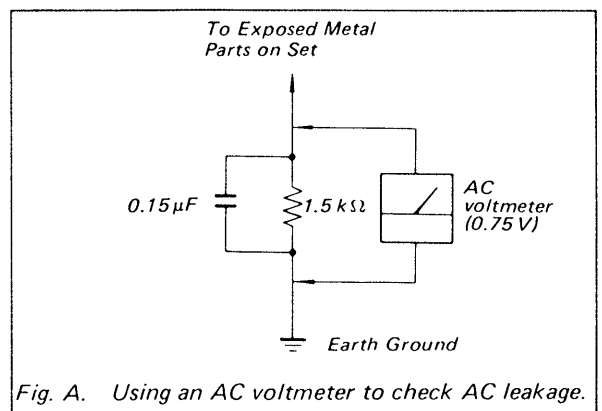
After correcting the original service problem, perform the following safety check before releasing the set to the customer:

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

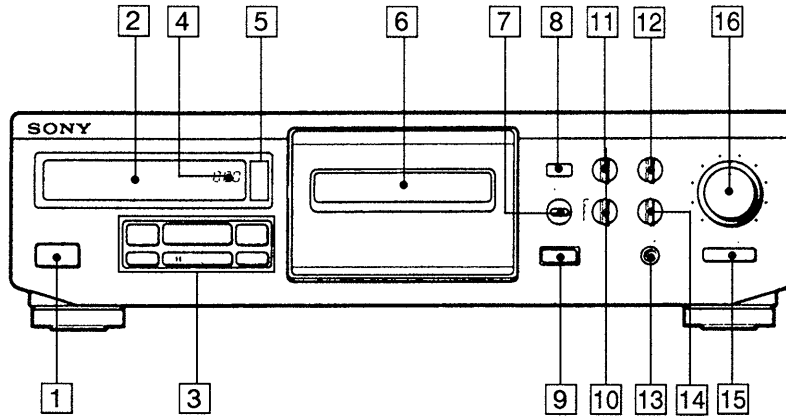
The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

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)



SECTION 1 GENERAL

IDENTIFYING THE PARTS ON THE FRONT PANEL



- | | |
|---|--|
| <p>1 POWER switch</p> <p>2 Display panel</p> <p>3 Tape operation buttons
 ◀◀ (rewind) (Multi - AMS**) button
 ▷ (play) button
 ▶▶ (fast - forward) (Multi - AMS**) button
 ■ (stop) button
 PAUSE button
 ○ REC MUTE (record muting) button
 ● REC (record) button</p> <p>4 Tape counter</p> <p>5 Counter buttons
 RESET button
 MEMORY button</p> <p>6 Cassette holder</p> <p>7 CALIBRATION button</p> <p>8 Remote control sensor</p> | <p>9 ≡ (eject) button</p> <p>10 DOLBY NR (noise reduction) button</p> <p>11 BIAS control</p> <p>12 REC (recording) LEVEL control for calibration</p> <p>13 PHONES jack (stereo phone jack)</p> <p>14 BALANCE control</p> <p>15 MONITOR button</p> <p>16 REC (recording) LEVEL control</p> <p>**AMS is an abbreviation for Automatic Music Sensor</p> |
|---|--|

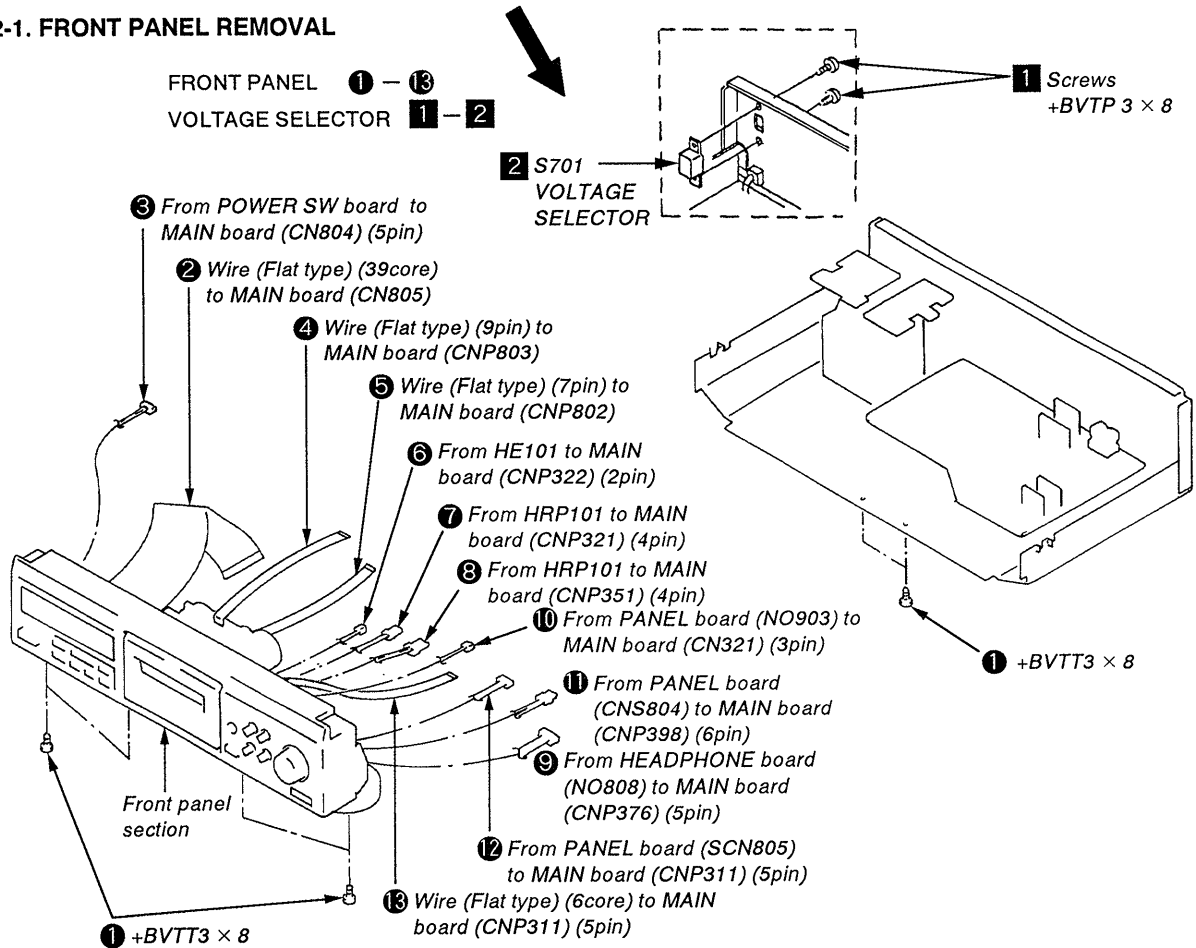
SECTION 2 DISASSEMBLY

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

CASE

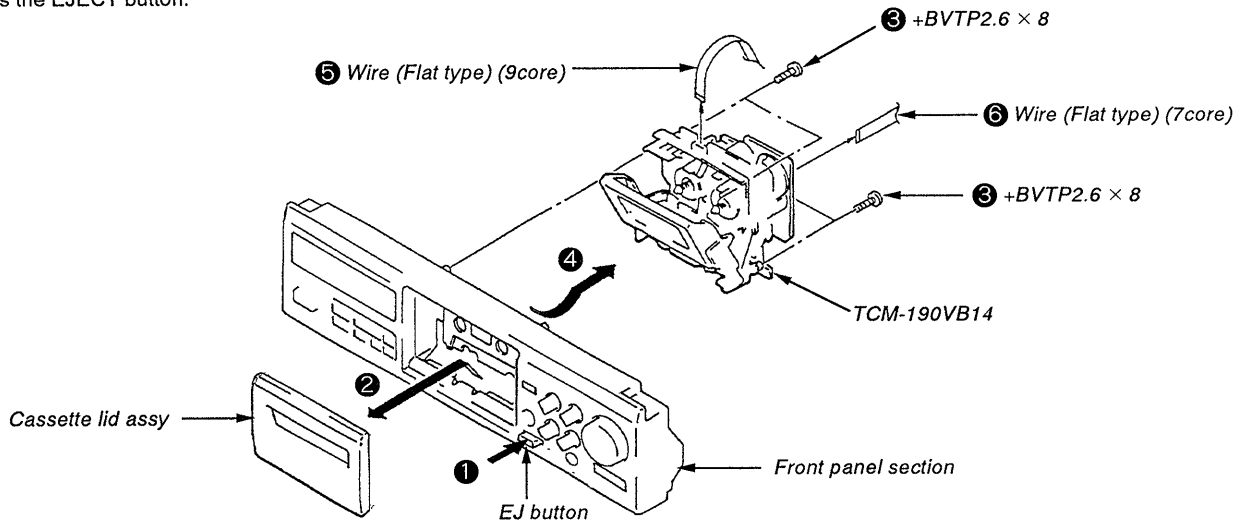
Unscrew the four case attachment screws M3 × 8 and remove the case.

2-1. FRONT PANEL REMOVAL

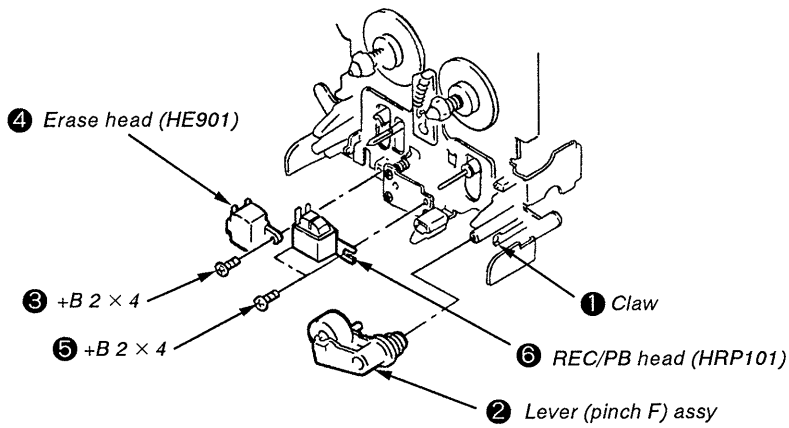


2-2. MECHANISM DECK

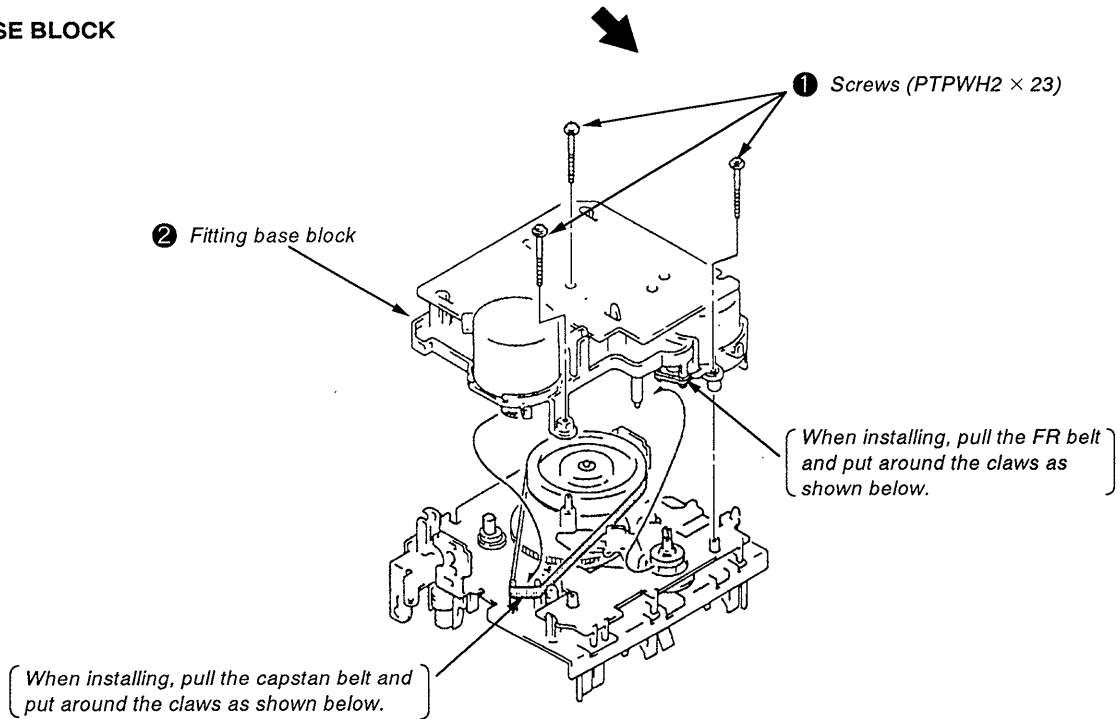
① Press the EJECT button.



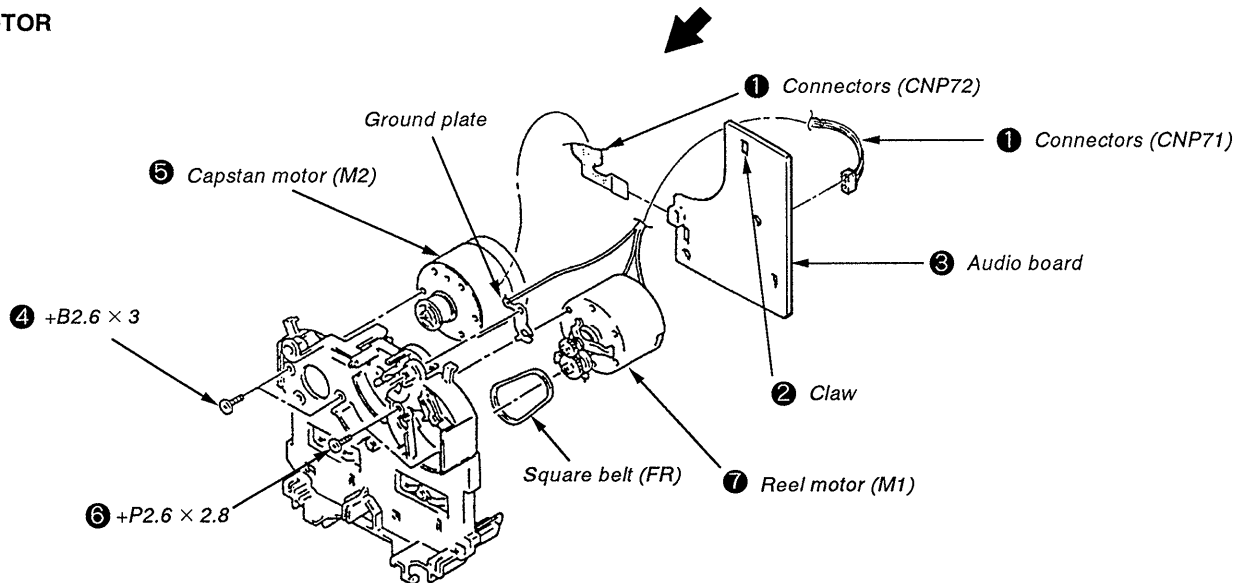
2-3. HEAD



2-4. FITTING BASE BLOCK



2-5. MOTOR



SECTION 3 ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

PRECAUTION

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

record/playback/erase head	pinch roller
rubber belts	capstan
idlers	
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustment.
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
Forward	CQ-102C	30 to 65g•cm (0.42 to 0.90oz•inch)
Forward back tension	CQ-102C	1 to 6g•cm (0.014 to 0.08 oz•inch)
FF/REW	CQ-201B	70 to 120g•cm (0.98 to 1.66 oz•inch)

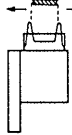
Record/Playback Head Height/Declination Adjustment Procedures :

1. Test cassette : CQ-009C
2. Insert the mirror cassette and put the unit in record/Playback mode.

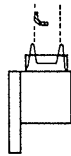
1) Height Adjustment :

Check to see if the tape is curling at the tape guide of the head. If it is curling, tighten screws **A** , **B** and **C** , respectively by the same angle, moving the head so that it remains at the same angle throughout the procedure. If it curls on the bottom side of the mirror cassette (actually the inner side), tighten all the screws equally ; but loosen them if the tape begins to curl on the top side (outer side).

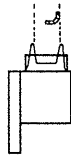
inside *outside*



*Normal
(Record/playback head
as seen from the side
of the erasehead.)*



*Curling on the inner
side
Tighten screws **A** , **B**
and **C**.*



*Curling on the outer
side
Loosen screws **A** , **B**
and **C**.*

2) Declination Adjustment :

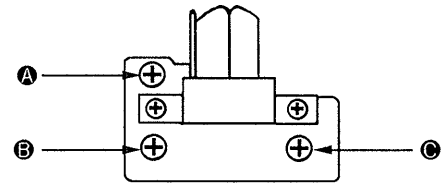
While in the record/playback position, set the back tension to 0 (wind the supply reel with something thin like a pencil in a counterclockwise direction) and make sure there is no curling or shifting (shifting up/shifting down) at the guide of the record/playback head.

Because shifting can only occur due to a difference in the width of the tape and that of the tape guides (curling will otherwise occur), it is necessary to pay close attention since it can be easily overlooked.

When there is a shift, tighten screws **B** and **C** equally and change the declination of the head. If the tape is shifting up, tighten the screws, and if it is shifting down, loosen them.

Repeat the adjustments in steps 1) to 2) and fine adjust the height and the declination.

Adjustment Location : – record/playback head –

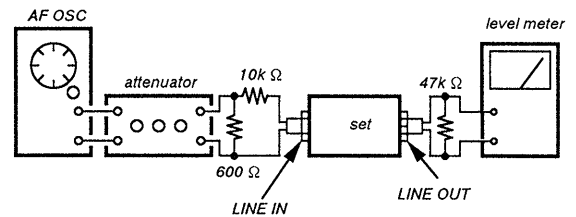


3-2. ELECTRICAL ADJUSTMENTS

PRECAUTION

1. The adjustment should be performed in the publication.
(Be sure to make playback adjustment at first.)
2. The adjustments and measurement should be performed for both L-CH and R-CH.
 - Switch position
DOLBY NR switch : OFF
 - Standard record position:
Deliver the standard input signal level to input jack and set the REC LEVEL control to obtain the standard output signal level as follows.

– Record Mode –



Standard Input Level

Input terminal	LINE IN
source impedance	10k Ω
input signal level	0.5V (- 3.8dB)

Standard Output Level

Output terminal	LINE OUT
load impedance	47k Ω
output signal level	0.5V (- 3.8dB)

Test Tape

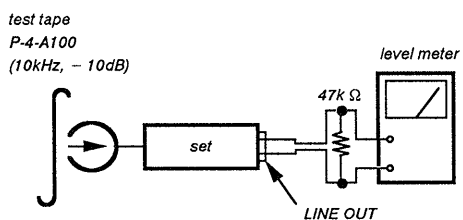
Tape	Contents	Use
P-4-A100	10kHz, - 10dB	Azimuth Adjustment
P-4-L300	315Hz, 0dB	PB Level Adjustment
WS-48B	3kHz, 0dB	Tape Speed Adjustment

0dB=0.775V

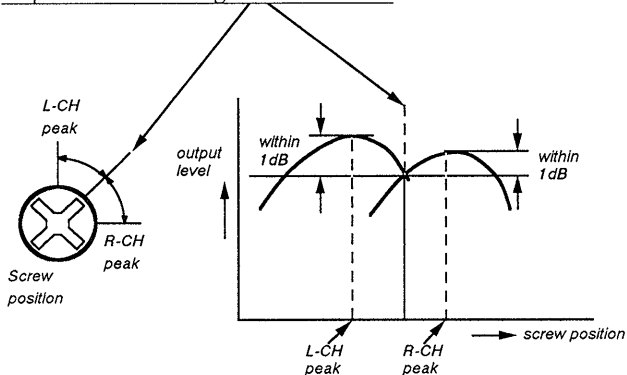
Record/Playback Head Azimuth Adjustment

Procedure :

1. Forward playback Mode

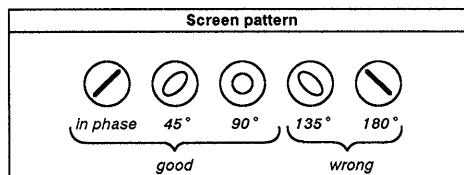
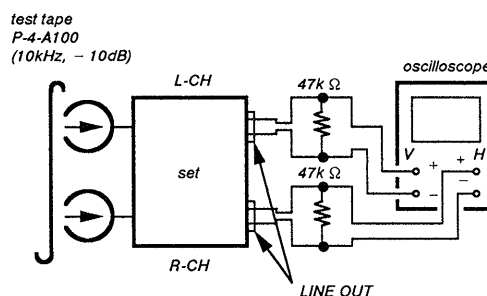


2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1dB.



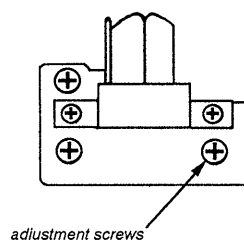
3. Phase check

Playback Mode



4. After the adjustment, lock the adjustment screws with suitable locking compound.

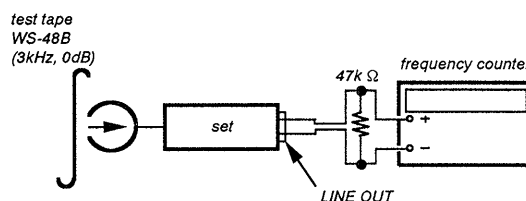
Adjustment Location : - record/playback head -



Tape Speed Adjustment

Procedure :

- Forward Playback Mode -



1. Set to FWD playback mode.
2. Adjust RV71 so that the frequency counter reading becomes $3,000 \pm 15\text{Hz}$.

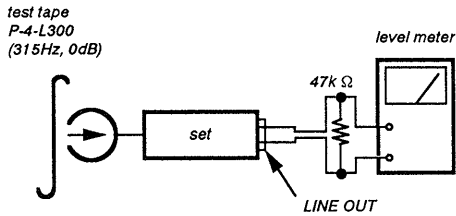
Frequency difference between the beginning and the end of the tape should be within 3%.

Adjustment Location : AUDIO board (Page 10)

Playback Level Adjustment

Procedure :

– Forward Playback Mode –



Adjust RV151 (L-CH) and RV251 (R-CH) so the level meter reading becomes the adjustment limits below.

Adjustment Value :

LINE OUT level : $-7.7 \pm 0.5\text{dB}$ (0.301 to 0.338V)

Level difference between channels : within 0.5dB

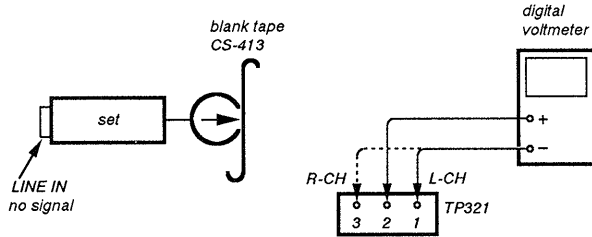
Confirm the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times

Adjustment Location : MAIN board (Page 10)

Bias Consumption Current Adjustment

This adjustment should be performed when replacing the head assy or the bias oscillating transformer (T121, T221).

Procedure :



1. Connect the digital voltmeter to test point TP321.
2. Set RV121 (L-CH) and RV221 (R-CH) to mechanical center.
3. Set to FWD record mode.
4. Adjust T121 (L-CH) and T221 (R-CH) so that the digital voltmeter reading becomes minimum.

Adjustment Location : MAIN board (Page 10)

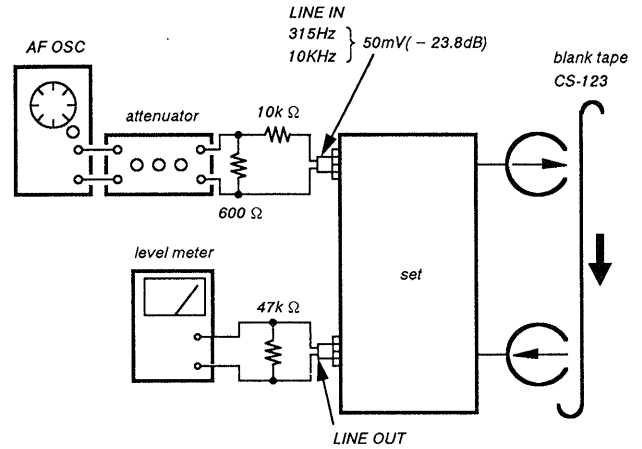
Record Bias Adjustment

Setting :

REC LEVEL control : Standard Record

Procedure :

1. Mode : Simultaneous record and playback



2. Adjust RV121 (L-CH) and RV221 (R-CH) so that the 10 kHz playback output is $0 \pm 0.3\text{dB}$ relative to the 315Hz output.

Adjustment Location : MAIN board (Page 10)

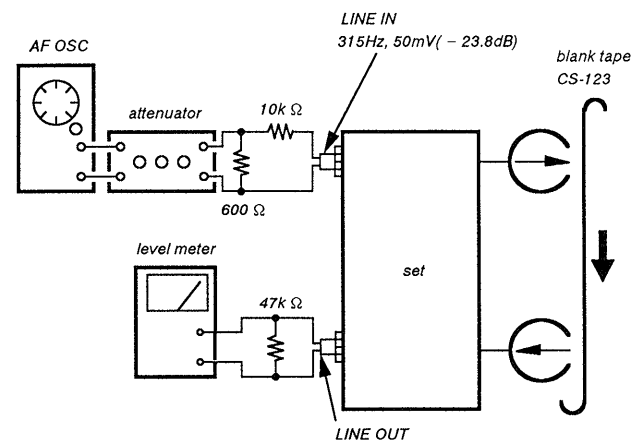
Record Level Adjustment

Setting :

REC LEVEL control : Standard Record

Procedure :

1. Mode : Simultaneous record and playback



2. Adjust RV112 (L-CH) and RV212 (R-CH) so that the level meter reading becomes the adjustment limits below.

Adjustment Value : $-23.8 \pm 0.5\text{dB}$ (47.2 to 53mV)

Adjustment Location : MAIN board (Page 10)

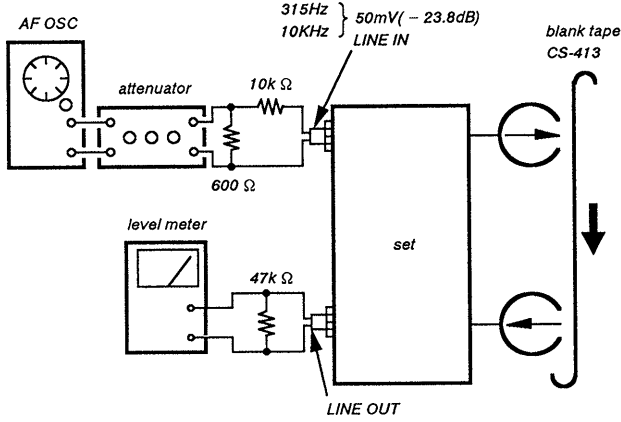
Record EQ (IV) Adjustment

Setting :

REC LEVEL control : Standard Record

Procedure :

1. Mode : Simultaneous record and playback



2. Adjust RV111 (L-CH) and RV211 (R-CH) so that they become maximum.
3. Adjust RV111 (L-CH) and RV211 (R-CH) so that the difference between R-CH and L-CH at 10 kHz is within 1dB.
4. Adjust RV312 so that the R-CH becomes the adjustment value.

Adjustment Level :

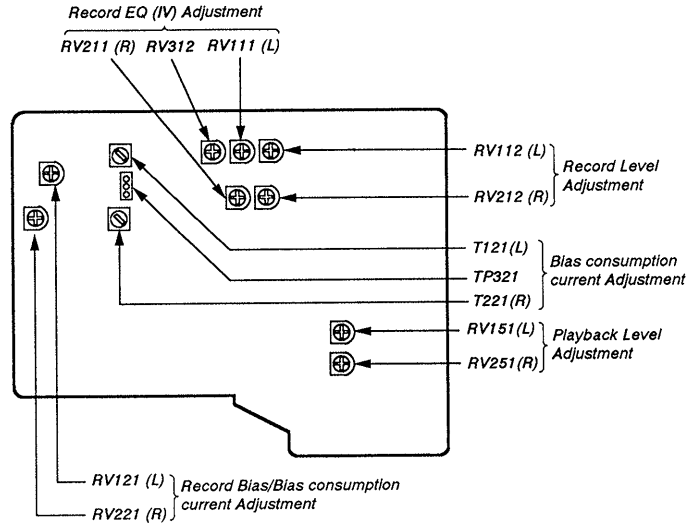
The playback output of 10kHz level difference against 315Hz reference should be $\pm 1.0\text{dB}$.

Adjustment Location : MAIN board

— Adjustment Parts Location Diagrams —

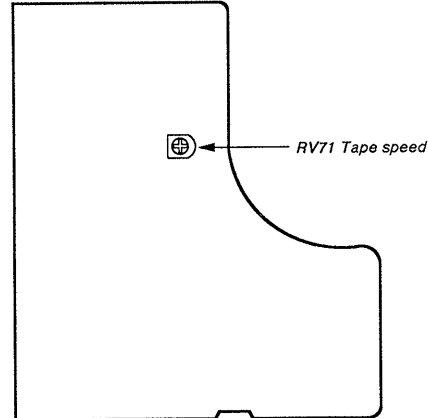
[MAIN BOARD]

(Component Side)



[AUDIO BOARD]

(Component Side)



SECTION 4 EXPLANATION OF IC TERMINALS

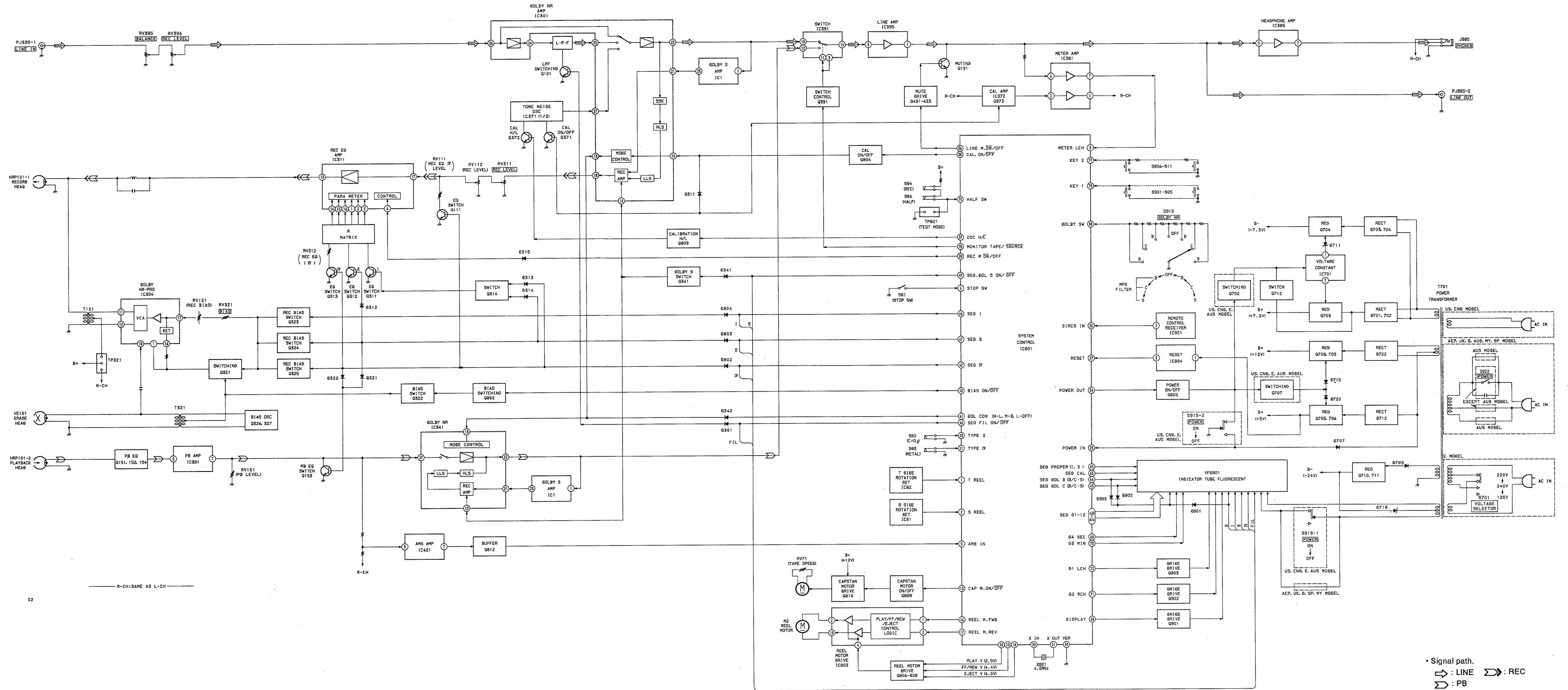
IC801 M38172M4-171FP (SYSTEM CONTROL/VFD901 DRIVE)

Pin No.	Pin name	I/O	Description
1	T • REEL	I	Take up reel rotation detection input.
2	S • REEL	I	Supply reel rotation detection input.
3	METER L-CH	I	Meter level L-CH input.
4	METER R-CH	I	Meter level R-CH input.
5	AMS • IN	I	AMS signal input terminal.
6	STOP SW	I	Mechanism stop switch input terminal.
7	CLOSE SW	–	Not used. (H level)
8	OPEN SW	–	Not used. (H level)
9	CAM • SW3	–	Not used. (H level)
10	CAM • SW2	–	Not used. (H level)
11	CAM • SW1	–	Not used. (H level)
12	CAM • SW0	–	Not used. (H level)
13	CAP • M • ON/ $\overline{\text{OFF}}$	O	Capstan motor ON/OFF control. H : ON
14	ASIST M • UP	–	Not used. (L level)
15	ASIST M • DOWN	–	Not used. (L level)
16	REEL M • FWD	O	Reel motor FWD control.
17	REEL M • REV	O	Reel motor REW control.
18	EJECT • V (6.5V)	O	Reel motor eject control.
19	FF/REW • V (4.4V)	O	Reel motor FF/REW control.
20	PLAY • V (2.5V)	O	Reel motor play control.
21	TYPE • IV	I	Type IV SW input terminal.
22	HALF SW	–	Not used. (Open)
23	TYPE • II	I	Type II SW input terminal.
24	TAB • SW	–	Not used. (H level)
25	POWER IN	I	Power OFF detection terminal.
26	SIRCS IN	I	Sires signal input terminal.
27	RESET	I	System reset terminal.
28	XC IN	–	Not used. (Open)
29	XC OUT	–	Not used. (Open)
30	X IN	I	System clock oscillator input. (4.0MHz)
31	X OUT	O	System clock oscillator output. (4.0MHz)
32	VSS	–	Ground.
33	VER 200/ $\overline{\text{I90}}$	I	Version selection input.
34	POWER OUT	O	Power hold output terminal.
35	MONITOR TAPE/ $\overline{\text{SOURCE}}$	O	Audio mode select terminal.
36	LINE M • $\overline{\text{ON/OFF}}$	O	Line mute ON/OFF control.
37	OSC H/ $\overline{\text{L}}$	O	OSC frequency H/L selection terminal.
38	CAL ON/ $\overline{\text{OFF}}$	O	Calibration ON/OFF control.
39	REC M • $\overline{\text{ON/OFF}}$	O	REC mute ON/OFF control.
40	BIAS ON/ $\overline{\text{OFF}}$	O	Bias ON/OFF control.

Pin No.	Pin name	I/O	Description
41	DOL • CON (H-C, M – B, L-OFF)	O	Dolby ON/OFF control.
42	SEG • IV	O	Bias EQ IV control.
43	SEG • DOL C (B/C • \bar{S})	O	VFD segment drive (Dolby C).
44	SEG • DOL B (B/C • \bar{S})	O	VFD segment drive (Dolby B).
45	SEG PROPER (I , II)	O	VFD segment drive (Type I , II).
46	SEG•FIL ON/ \bar{OFF}	O	VFD segment drive (Filter).
47	SEG•DOL S ON/ \bar{OFF}	O	VFD segment drive (Dolby S).
48		–	Not used. (Open)
49	SEG01	O	VFD segment drive.
50	SEG02	O	VFD segment drive.
51	SEG06	O	VFD segment drive.
52	SEG07	O	VFD segment drive.
53	SEG03	O	VFD segment drive.
54	SEG05	O	VFD segment drive.
55	SEG04	O	VFD segment drive.
56	SEG08	O	VFD segment drive.
57	SEG16	O	VFD segment drive.
58	SEG9	O	VFD segment drive.
59	SEG10	O	VFD segment drive.
60	SEG14	O	VFD segment drive.
61	SEG15	O	VFD segment drive.
62	SEG11	O	VFD segment drive.
63	SEG13	O	VFD segment drive.
64	SEG12	O	VFD segment drive.
65	SEG • CAL	O	VFD segment drive. (calibration)
66	SEG • I	O	Bias EQ I control.
67	SEG • II	O	Bias EQ II control.
68	G5-DISPLAY	O	VFD colum display.
69	G4-SEC	O	VFD colum SEC.
70	G3-MIN	O	VFD colum MIN.
71	G2-RCH	O	VFD colum R-CH.
72	G1-LCH	O	VFD colum L-CH.
73	VCC	–	Power supply. (+5V)
74	VEE	–	Power supply. (–24V)
75	AVSS	–	Analog for power supply. (Ground)
76	VREF	–	A/D referance voltage. (+5V)
77	KEY2	I	Key input terminal.
78	KEY1	I	Key input terminal.
79	HALF SW	I	Half pawl switch input terminal.
80	DOLBY SW	I	Dolby switch input terminal.

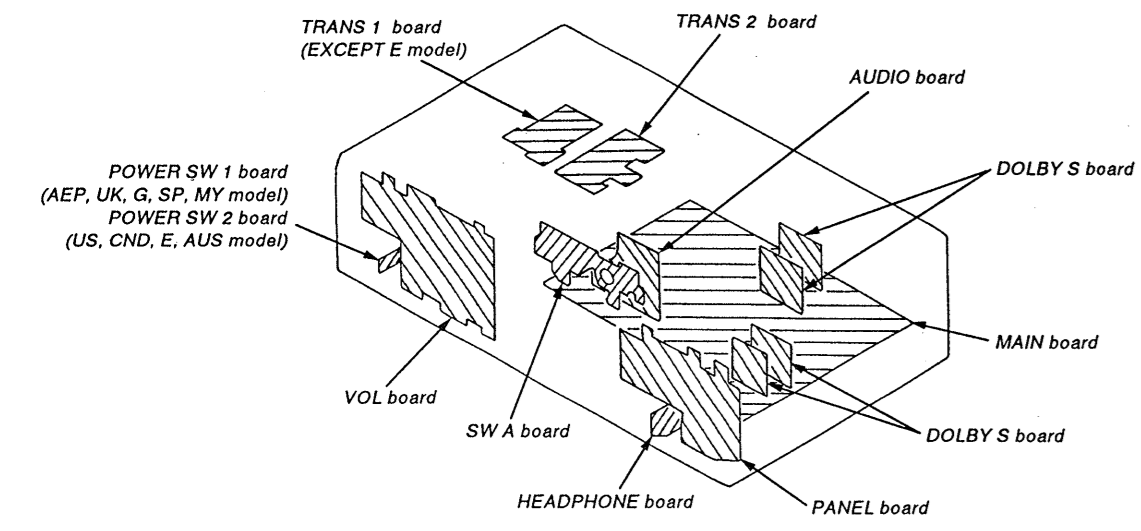
SECTION 5
DIAGRAMS

5-1. BLOCK DIAGRAM



• Signal path.
 ⇨ : LINE ⇨⇨ : REC
 ⇨⇨ : PB
 • Abbreviation
 CND : Canadian SP : Singapore
 AUS : Australian G : German
 MY : Malaysia

5-2. CIRCUIT BOARDS LOCATION

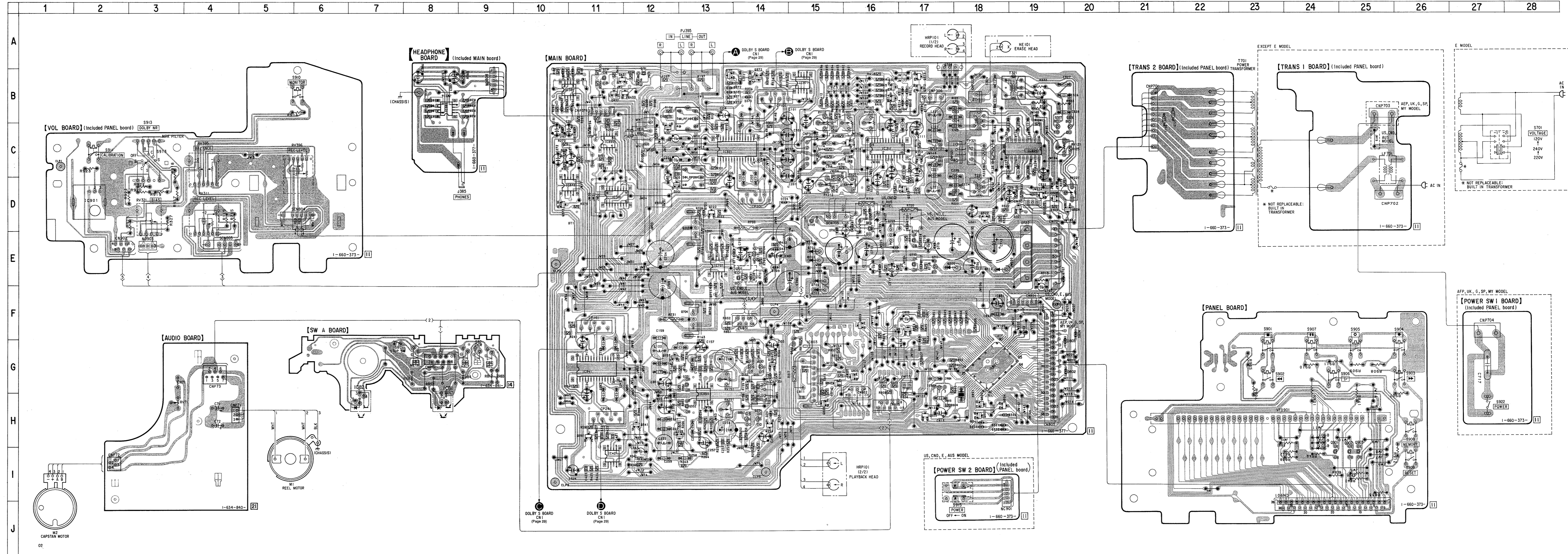


● SEMICONDUCTOR LOCATION

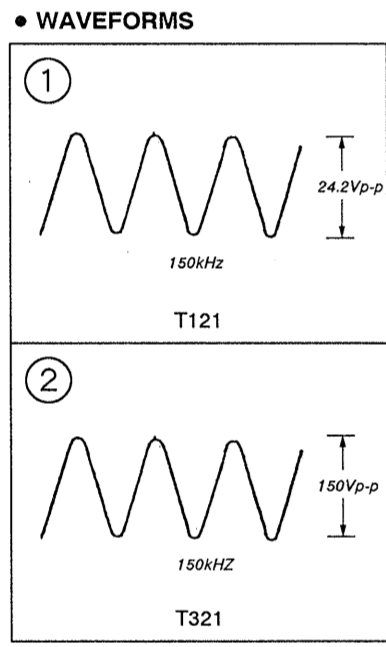
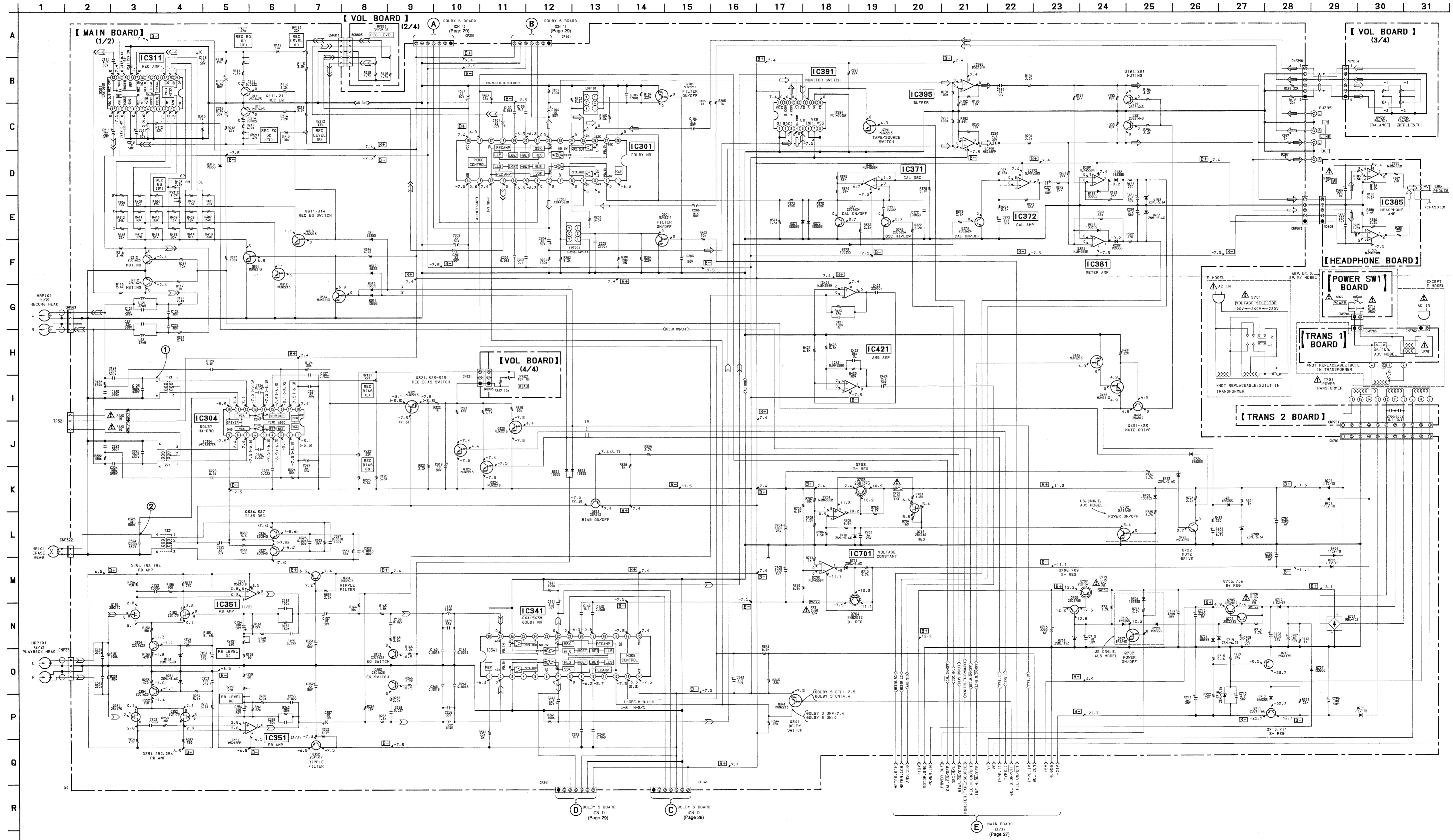
Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D151	G-14	D715	D-16	IC801	G-18	Q352	H-13
D181	B-11	D716	D-15	IC803	G-15	Q371	B-2
D182	B-10	D717	E-17	IC804	G-17	Q372	B-14
D183	C-10	D718	E-16	IC901	D-2	Q373	D-10
D251	H-14	D719	E-17			Q391	H-11
D281	B-11	D720	D-17	Q101	C-12	Q431	B-11
D282	B-10	D721	E-16	Q111	C-16	Q432	B-11
D283	C-11	D722	E-19	Q112	C-17	Q433	B-12
D301	H-18	D723	D-13	Q151	G-14	Q702	E-14
D311	B-17	D724	D-14	Q152	G-14	Q703	D-13
D312	B-17	D801	G-17	Q153	G-12	Q704	F-13
D313	B-17	D802	G-20	Q154	G-14	Q705	D-16
D314	B-17	D803	G-19	Q191	B-12	Q706	E-17
D315	B-17	D804	F-20	Q201	D-12	Q707	D-16
D321	H-18	D901	H-24	Q211	C-16	Q708	A-17
D322	H-18	D902	H-24	Q212	D-17	Q709	D-15
D341	H-18	D903	I-24	Q251	H-14	Q710	E-17
D342	H-18			Q252	H-14	Q711	E-17
D371	B-13			Q253	H-12	Q712	E-14
D372	B-13			Q254	H-14	Q722	D-13
D373	B-14	IC81	H-8	Q291	B-11	Q802	H-17
D431	E-14	IC304	C-13	Q311	B-16	Q803	H-17
D701	E-15	IC311	C-16	Q312	B-17	Q804	H-17
D702	E-15			Q313	B-17	Q805	H-17
D703	F-15	IC341	G-11	Q314	B-16	Q806	G-16
D704	E-15	IC351	H-13				
D705	E-17	IC371	B-15	Q321	D-19	Q807	G-15
D706	D-16	IC372	D-11	Q322	D-18	Q808	H-15
D707	E-19	IC381	B-10	Q323	D-19	Q809	F-16
D708	E-14			Q324	D-20	Q810	G-15
D709	E-14	IC385	B-8	Q325	D-19	Q812	F-17
D710	E-13	IC391	D-11				
D711	F-13	IC395	C-11	Q326	C-19	Q901	I-24
D712	E-18	IC421	I-11	Q327	C-20	Q902	I-25
		IC701	E-13	Q341	H-12	Q903	I-25
				Q351	G-13		

Note:

- : parts extracted from the component side.
- ▨ : Pattern on the side which is seen.
- Abbreviation
- CND : Canadian SP : Singapore
- AUS : Australian G : German
- MY : Malaysia



5-4. SCHEMATIC DIAGRAM (MAIN (1/2) SECTION)



Note :

- All capacitors are in μF unless otherwise noted. pF: μF , μF , μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $1/4W$ or less unless otherwise specified.
- % : indicates tolerance.
- Δ : internal component.
- ---/--- : fusible resistor.

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.

• B+ : B+ Line
• B- : B- Line
• : adjustment for repair.

• Voltage and waveforms are dc with respect to ground under no-signal conditions.
no mark : STOP
() : REC

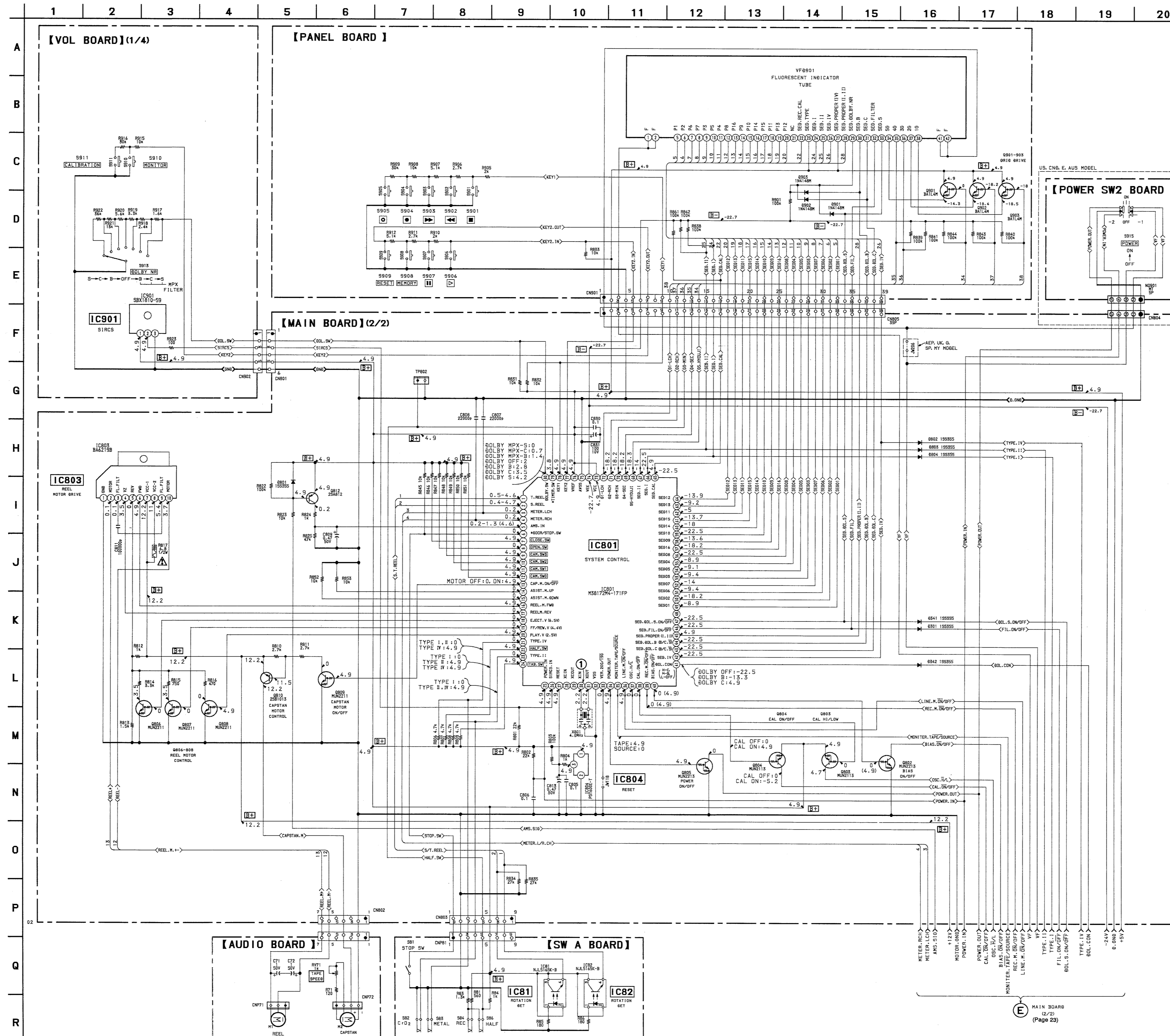
• Voltages are taken with a VOM (Input impedance 10M Ω).
Voltage variations may be noted due to normal production tolerances.

• Waveforms are taken with an oscilloscope.
Voltage variations may be noted due to normal production tolerances.

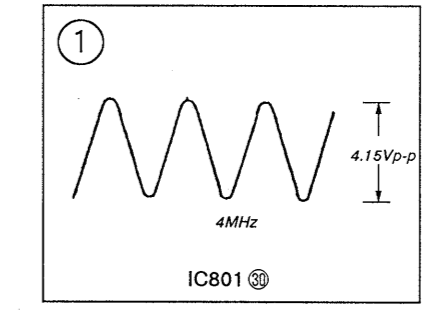
• Circled numbers refer to waveforms.

• Signal path
➡ LINE ➡ PB
➡ LINE ➡ REC

• Abbreviation
CND : Canadian SP : Singapore
AUS : Australian G : German
MY : Malaysia



• WAVEFORMS



Note :

- All capacitors are in μ F unless otherwise noted. pF: μ F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{2}W$ or less unless otherwise specified.
- % : indicates tolerance.
- Δ : internal component.
- $\text{---} \text{---}$: fusible resistor.

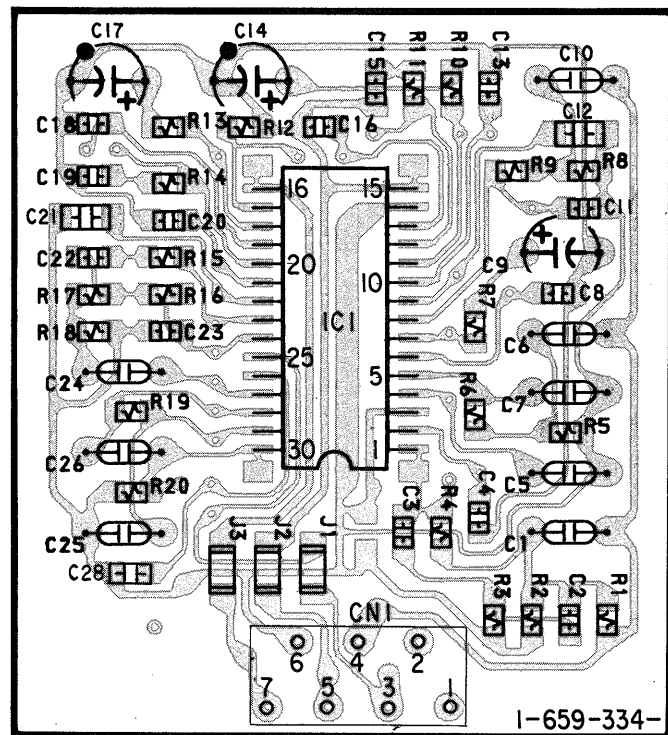
Note :
The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

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

- $\text{---} \text{---}$: B+ Line
 - $\text{---} \text{---}$: B - Line
 - --- : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
no mark : STOP
() : REC
- Voltages are taken with a VOM (Input impedance 10M 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.
- Abbreviation
 CHD : Canadian SP : Singapore
 AUS : Australian G : German
 MY : Malaysia

5-6. PRINTED WIRING BOARDS (DOLBY (S) BOARD)

[DOLBY S BOARD]



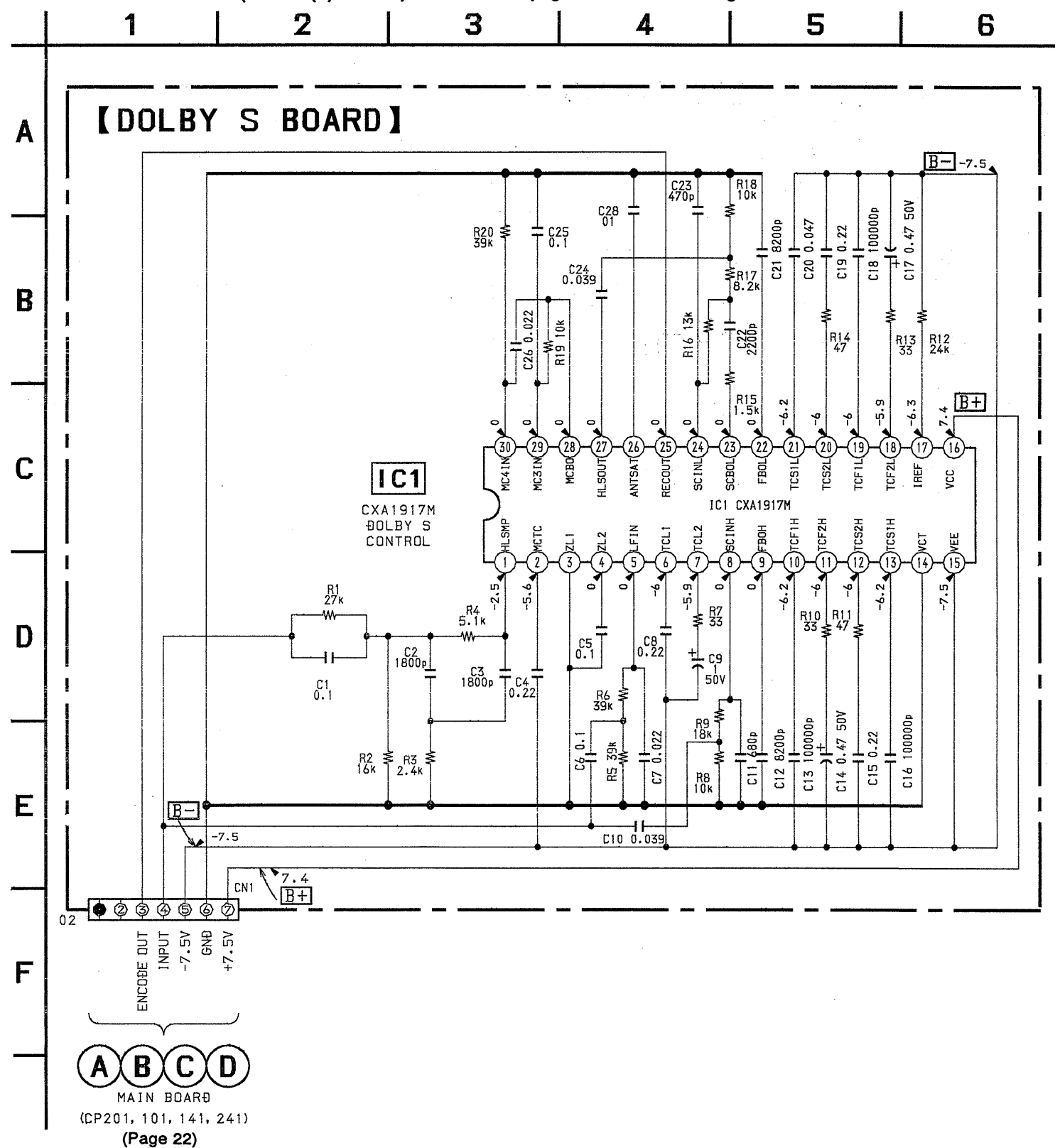
A B C D

MAIN BOARD
CP201, 101, 141, 241
(Page 18) (Page 18)
(Page 19) (Page 18)

Note:

- : parts extracted from the component side.
- ⊙ : Pattern on the side which is seen.

5-7. SCHEMATIC DIAGRAM (DOLBY (S) BOARD) • Refer to page 31 for IC Block Diagram.



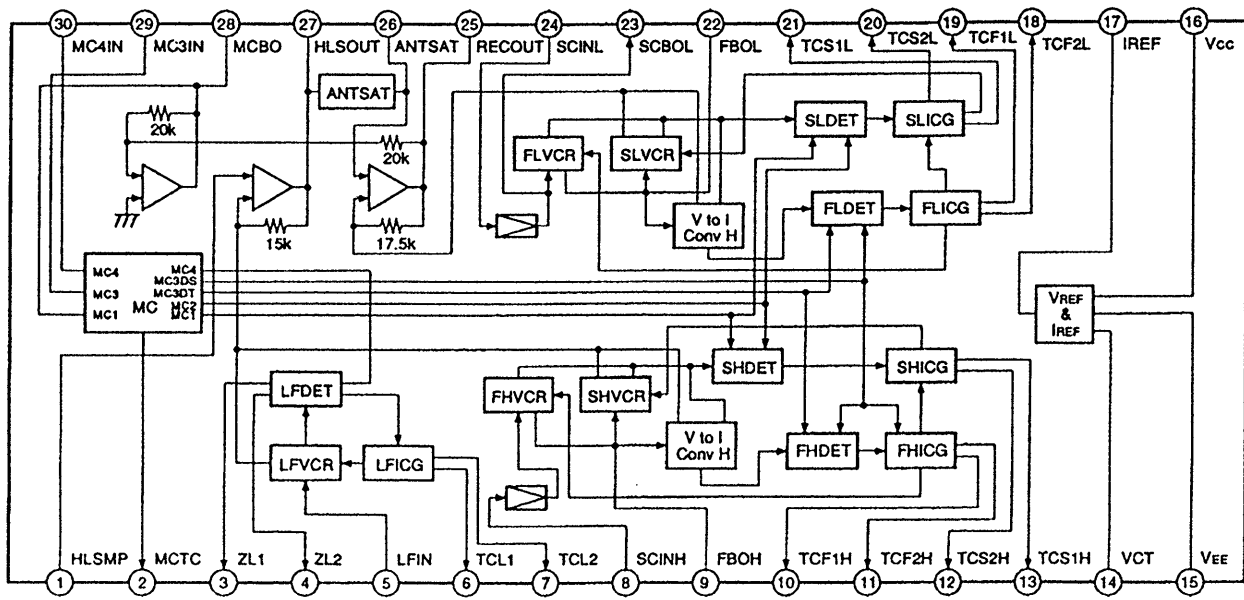
A B C D

MAIN BOARD
(CP201, 101, 141, 241)
(Page 22)

Note :

- All capacitors are in μF unless otherwise noted. pF: $\mu \mu F$ 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}W$ or less unless otherwise specified.
- % : indicates tolerance.
- B+** : B+ Line
- B-** : B- Line
- Voltage and waveforms are dc with respect to ground under no-signal conditions. no mark: STOP
- Voltages are taken with a VOM (Input impedance $10M \Omega$). Voltage variations may be noted due to normal production tolerances.
- Voltage variations may be noted due to normal production tolerances.

● IC BLOCK DIAGRAM
IC1 CXA1917AM-T6



SECTION 6 EXPLODED VIEWS

NOTE :

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

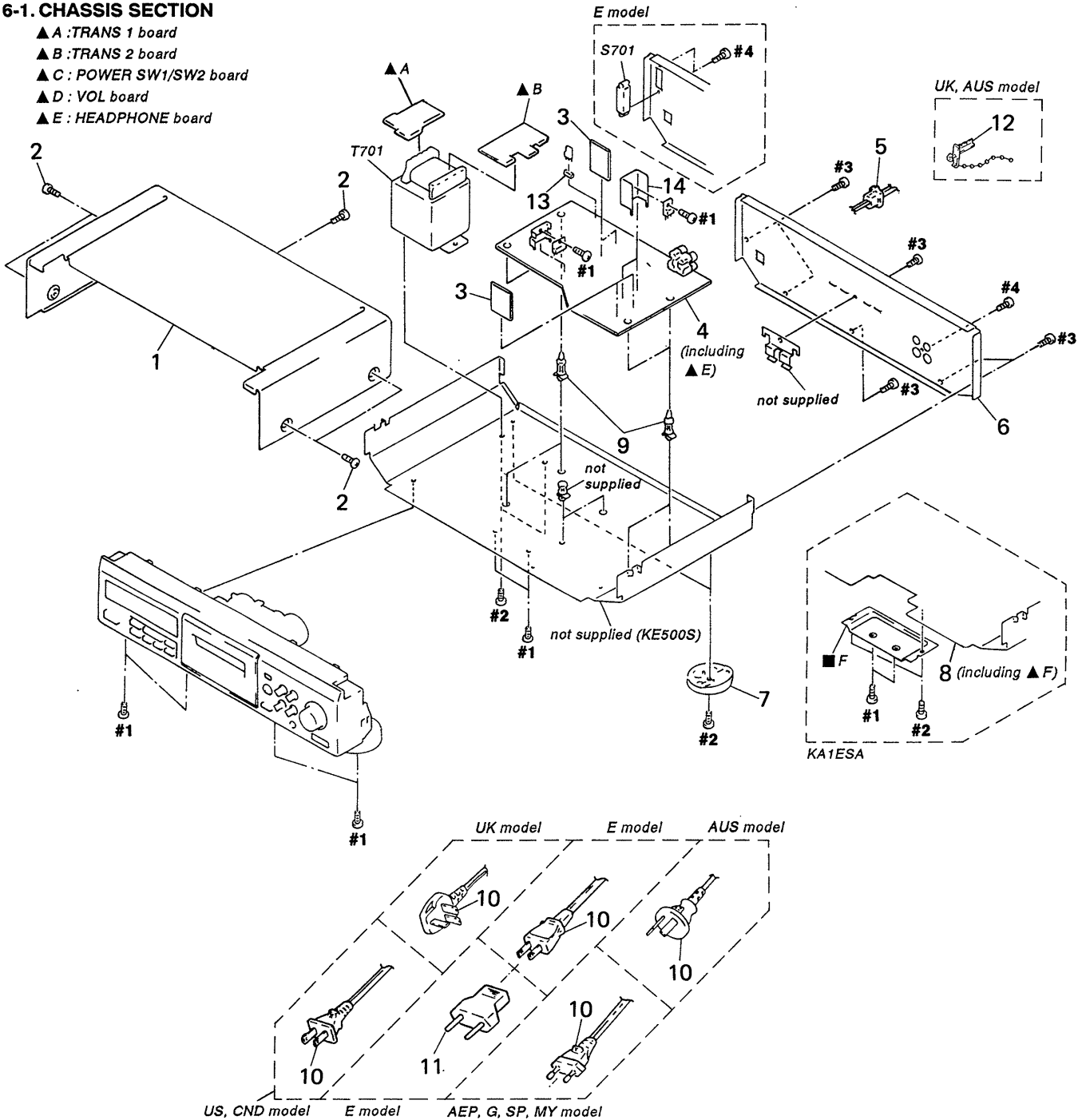
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviation
 CND : Canadian SP : Singapore
 AUS : Australian G : German
 MY : Malaysia

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.

6-1. CHASSIS SECTION

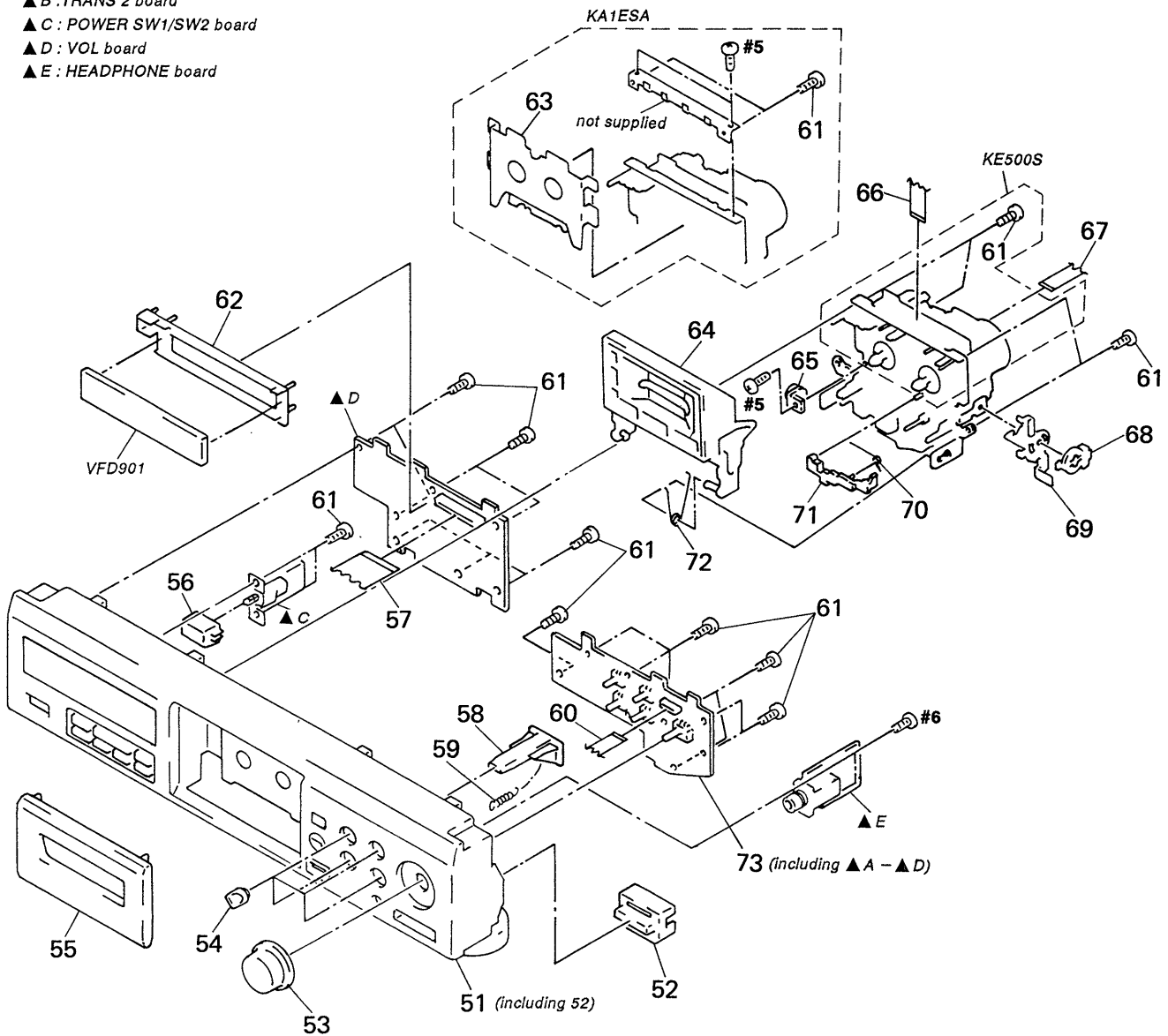
- \blacktriangle A : TRANS 1 board
- \blacktriangle B : TRANS 2 board
- \blacktriangle C : POWER SW1/SW2 board
- \blacktriangle D : VOL board
- \blacktriangle E : HEADPHONE board



<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>
* 1	3-931-432-01	CASE (410726)		* 9	3-346-265-31	HOLDER, PC BOARD	
2	3-704-366-01	SCREW (CASE) (M3X8)		△ 10	1-551-188-XX	CORD, POWER (E)	
* 3	A-2007-481-A	DOLBY-S BOARD, COMPLETE		△ 10	1-558-945-21	CORD, POWER (POLAR.SPT-1)(US,CND)	
* 4	A-2007-530-A	MAIN BOARD, COMPLETE (KA1ESA)		△ 10	1-575-651-21	CORD, POWER (AEP,G,SP,MY)	
* 4	A-2007-531-A	MAIN BOARD, COMPLETE (KE500S:US,E,AUS)		△ 10	1-696-586-11	CORD, POWER (UK)	
* 4	A-2007-533-A	MAIN BOARD, COMPLETE(KE500S:AEP,UK,G,SP,MY)		△ 10	1-696-845-11	CORD, POWER (AUS)	
* 5	3-703-244-00	BUSHING (2104),CORD (AEP,UK,G,AUS,SP,MY)		△ 10	1-751-523-11	CORD, POWER (UK)	
5	3-703-571-11	BUSHING (S) (4516), CORD (US,CND,E)		△ 11	1-569-007-11	ADAPTER, CONVERSION 2P (E)	
* 6	3-933-308-31	PANEL, BACK (KE500S:US)		12	4-956-370-12	BAND, PLUG FIXED (UK,AUS)	
* 6	3-933-308-41	PANEL, BACK (KE500S:AEP,G,SP,MY)		13	3-923-762-11	HOLDER (TR)	
* 6	3-933-308-51	PANEL, BACK (KE500S:UK)		* 14	3-356-925-01	HEAT SINK	
* 6	3-933-308-61	PANEL, BACK (KE500S:E)		△ S701	1-692-155-11	SELECTOR, POWER VOLTAGE (VOLTAGE SELECTOR) (E)	
* 6	3-933-308-91	PANEL, BACK (KE500S:AUS)		△ T701	1-429-611-11	TRANSFORMER, POWER (US,CND)	
* 6	3-933-309-01	PANEL, BACK (KA1ESA)		△ T701	1-429-612-11	TRANSFORMER, POWER (EXCEPT US,CND,AUS,E)	
7	X-4947-207-1	FOOT ASSY (F50150S) (EXCEPT US,CND)		△ T701	1-429-613-11	TRANSFORMER, POWER (E)	
7	X-4947-208-1	FOOT ASSY (F50150S) (US,CND)		△ T701	1-429-659-11	TRANSFORMER, POWER (AUS)	
* 8	A-2004-600-A	CHASSIS ASSY (KA1ESA)					

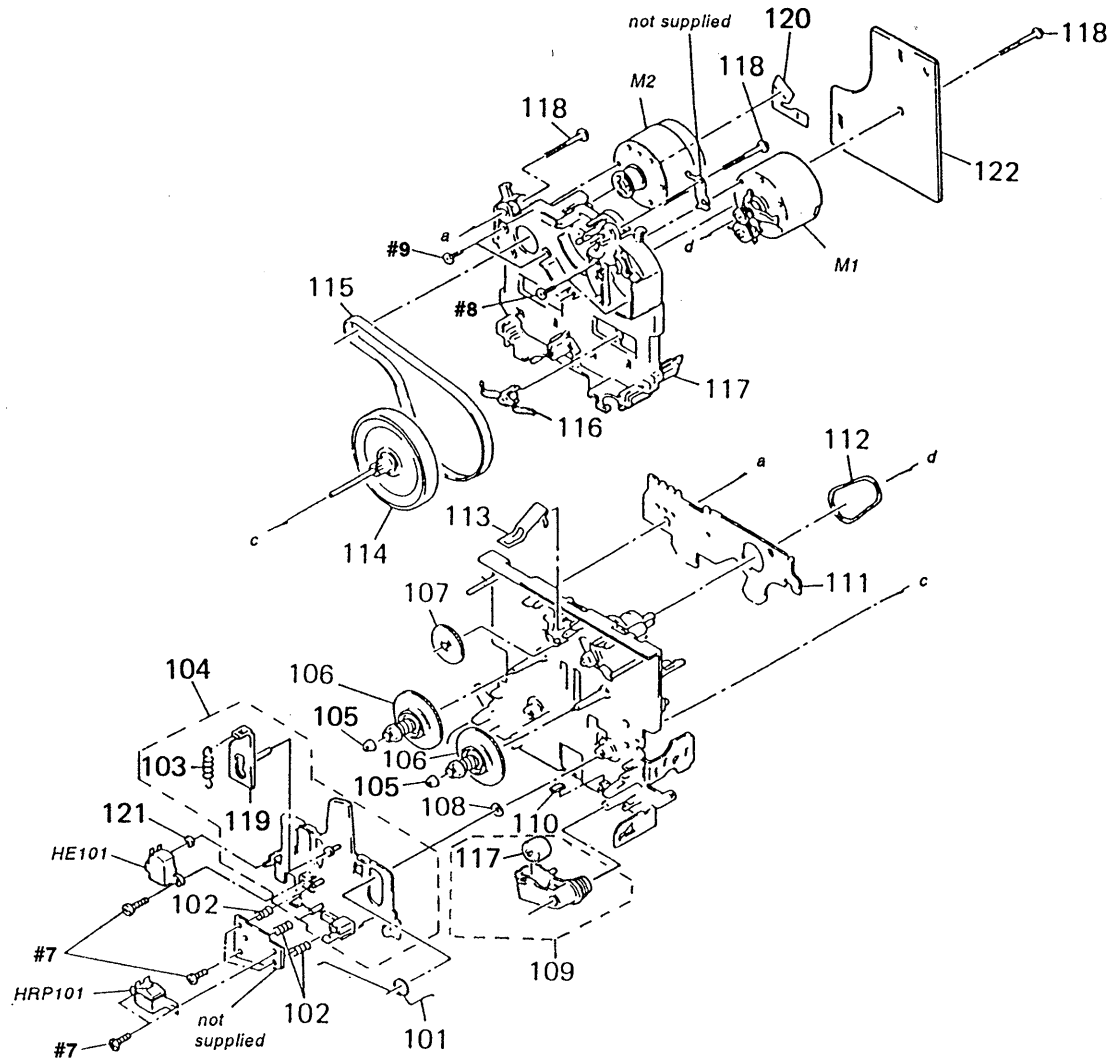
6-2. FRONT PANEL SECTION

- ▲ A : TRANS 1 board
- ▲ B : TRANS 2 board
- ▲ C : POWER SW1/SW2 board
- ▲ D : VOL board
- ▲ E : HEADPHONE board



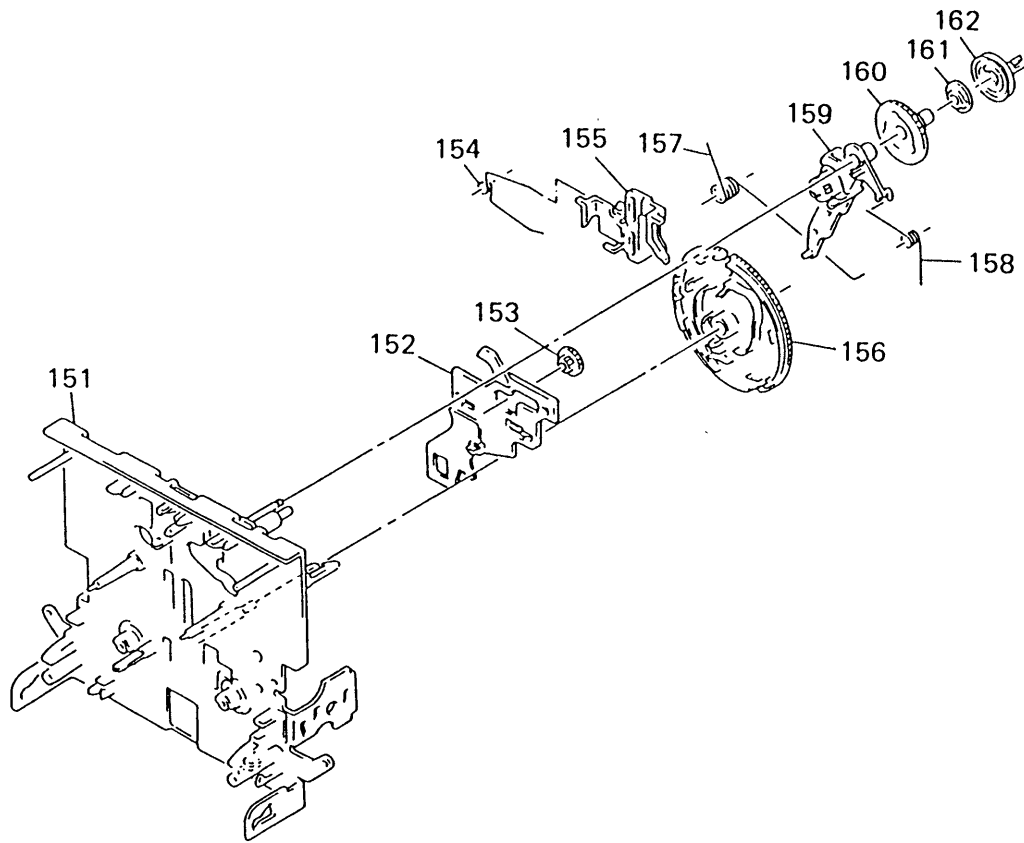
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	X-3371-677-2	PANEL ASSY, FRONT (EXCEPT KA1ESA, KE500S: US)		63	3-367-711-01	RETAINER, CASSETTE (KA1ESA)	
51	X-3371-678-2	PANEL ASSY, FRONT (KE500S:US)		64	X-3368-119-1	HOLDER (R) ASSY, CASSETTE	
51	X-3371-681-2	PANEL ASSY, FRONT (KA1ESA)		65	3-354-963-01	DAMPER	
52	3-933-296-01	BUTTON (MONITOR)		66	1-769-916-11	WIRE (FLAT TYPE) (9 CORE)	
53	3-933-300-11	KNOB (REC)		67	1-769-878-11	WIRE (FLAT TYPE) (7 CORE)	
54	3-933-299-01	KNOB (DIA. 12)		68	3-354-957-01	JOINT (LOCK LEVER)	
55	X-3371-684-2	LID ASSY, CASSETTE (KE500S)		* 69	3-354-954-01	LEVER (LOCK LEVER R)	
55	X-3371-686-1	LID ASSY, CASSETTE (KA1ESA)		70	3-354-962-01	SPRING (EJ SAFTY SPRING R)	
56	3-931-429-01	BUTTON (POWER)		71	3-354-956-01	LEVER (EJ SAFTY LEVER R)	
57	1-777-109-11	WIRE (FLAT TYPE) (39 CORE)		72	3-354-960-01	SPRING (LOADING R), TORSION	
58	3-933-295-01	BUTTON (EJECT)		* 73	A-2007-529-A	PANEL BOARD, COMPLETE (US,CND,AUS)	
59	3-937-169-01	SPRING, TENSION		* 73	A-2007-532-A	PANEL BOARD, COMPLETE(AEP,UK,G,SP,MY)	
60	1-777-110-11	WIRE (FLAT TYPE) (6 CORE)		* 73	A-2007-534-A	PANEL BOARD, COMPLETE (E)	
61	4-951-620-01	SCREW (2.6X8), +BVTP		VFD901	1-517-163-11	INDICATOR TUBE, FLUORESCENT	
* 62	3-386-245-11	HOLDER (FL)					

6-3. MECHANISM SECTION 1
(TCM-190VB14)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	3-911-014-01	SPRING, TORSION		114	X-3368-368-1	FLYWHEEL (FWD) COMPLETE ASSY	
102	3-356-659-11	SPRING (RPH), COMPRESSION		115	3-937-332-01	BELT (CAPSTAN)	
103	3-363-868-01	SPRING (HEAD CHASSIS), TENSION		116	3-575-321-00	RETAINER, THRUST, CAPSTAN	
* 104	X-3369-024-1	SLIDER (HEAD CHASSIS) ASSY		117	3-355-808-02	PINCH ROLLER	
105	3-362-308-01	CAP (REEL)		118	3-359-414-01	SCREW (+PTPWH 2X23)	
106	X-3366-971-1	TABLE ASSY (B), REEL		* 119	X-3368-865-1	SLIDER (LIMITER) ASSY	
107	3-359-424-01	GEAR (REV GEAR)		120	1-638-983-11	MOTOR FLEXIBLE BOARD	
108	3-356-713-01	WASHER		121	3-701-437-11	WASHER	
109	X-3366-047-1	LEVER (PINCH F) ASSY		* 122	1-634-840-21	AUDIO BOARD	
110	3-359-469-01	SPACER		HE101	1-543-673-11	HEAD, MAGNETIC (ERASE)	
* 111	1-634-841-14	SW A BOARD		HRP101	1-543-733-11	HEAD, MAGNETIC (RECORD/PLAYBACK)	
112	3-359-466-01	BELT (FR), SQUARE		M1	X-3363-501-2	MOTOR ASSY (REEL)	
113	3-359-430-01	SPRING (CASSETTE RETAINER), LEAF		M2	X-3368-855-1	MOTOR ASSY (CAPSTAN)	

6-4. MECHANISM SECTION 2
(TCM-190VB14)



<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	X-3368-719-2	CHASSIS(ONE)ASSY,MECHANICAL		157	3-359-456-01	SPRING(TRIGGER SPRING),TORSION	
152	3-359-415-11	SLIDER (TRIGGER SLIDER)		158	3-924-185-11	SPRING (FR ARM), TORSION	
153	3-359-448-01	GEAR (TRIGGER)		159	X-3366-569-1	ARM ASSY, FR	
154	3-359-454-01	SPRING, TORSION		160	3-359-419-11	GEAR (FR GEAR)	
155	3-359-429-11	SLIDER (BRAKE PLATE)		161	3-359-421-01	CLUTCH (REEL DISK)	
156	3-936-483-01	GEAR (CAM GEAR)		162	3-359-418-01	PULLEY (FR PULLEY)	

SECTION 7 ELECTRICAL PARTS LIST

AUDIO

DOLBY S

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, -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.... : μ A.... , uPA.... : μ PA....
 uPB.... : μ PB.... , uPC.... : μ PC....
 uPD.... : μ PD....

● CAPACITORS

uF : μ F

● COILS

uH : μ H

● Abbreviation

CND : Canadian
 AUS : Australian
 MY : Malaysia

SP : Singapore
 G : German

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.

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

Ref. No.	Part No.	Description				Remark	Ref. No.	Part No.	Description				Remark
*	1-634-840-21	AUDIO BOARD *****					C16	1-163-038-91	CERAMIC CHIP	0.1uF			25V
		< CAPACITOR >					C17	1-124-465-00	ELECT	0.47uF	20%		50V
							C18	1-163-038-91	CERAMIC CHIP	0.1uF			25V
C71	1-124-903-11	ELECT	1uF	20%		50V	C19	1-164-222-11	CERAMIC CHIP	0.22uF			25V
C72	1-124-903-11	ELECT	1uF	20%		50V	C20	1-163-035-00	CERAMIC CHIP	0.047uF			50V
		< CONNECTOR >					C21	1-164-717-11	CERAMIC CHIP	0.0082uF	5%		50V
* CNP71	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P					C22	1-164-161-11	CERAMIC CHIP	0.0022uF	10%		100V
* CNP72	1-764-902-11	CONNECTOR, FFC/FPC 4P					C23	1-163-005-11	CERAMIC CHIP	470PF	10%		50V
* CNP73	1-568-826-11	SOCKET, CONNECTOR 7P					C24	1-137-442-11	FILM	0.039uF	5%		50V
		< RESISTOR >					C25	1-136-165-00	FILM	0.1uF	5%		50V
R71	1-249-406-11	CARBON	120	5%		1/4W	C26	1-137-372-11	FILM	0.022uF	5%		50V
		< VARIABLE RESISTOR >					C28	1-163-038-91	CERAMIC CHIP	0.1uF			25V
RV71	1-241-761-11	RES, ADJ, CARBON 1K (TEPE SPEED)					CN1	1-695-092-11	SOCKET, CONNECTOR 7P				

*	A-2007-481-A	DOLBY S BOARD, COMPLETE *****					IC1	8-752-076-30	IC CXA1917AM-T6				
		< CAPACITOR >							< JUMPER RESISTOR >				
C1	1-136-165-00	FILM	0.1uF	5%		50V	J1	1-216-296-00	METAL CHIP	0	5%		1/8W
C2	1-163-012-00	CERAMIC CHIP	0.0018uF	10%		50V	J2	1-216-296-00	METAL CHIP	0	5%		1/8W
C3	1-163-012-00	CERAMIC CHIP	0.0018uF	10%		50V	J3	1-216-296-00	METAL CHIP	0	5%		1/8W
C4	1-164-222-11	CERAMIC CHIP	0.22uF			25V			< RESISTOR >				
C5	1-136-165-00	FILM	0.1uF	5%		50V	R1	1-216-685-11	METAL CHIP	27K	0.5%		1/10W
C6	1-136-165-00	FILM	0.1uF	5%		50V	R2	1-208-811-11	METAL GLAZE	16K	2%		1/10W
C7	1-137-372-11	FILM	0.022uF	5%		50V	R3	1-208-791-11	METAL GLAZE	2.4K	2%		1/10W
C8	1-164-222-11	CERAMIC CHIP	0.22uF			25V	R4	1-208-799-11	METAL GLAZE	5.1K	2%		1/10W
C9	1-126-301-11	ELECT	1uF	20%		50V	R5	1-216-689-11	METAL CHIP	39K	0.5%		1/10W
C10	1-137-442-11	FILM	0.039uF	5%		50V	R6	1-216-689-11	METAL CHIP	39K	0.5%		1/10W
C11	1-163-007-11	CERAMIC CHIP	680PF	10%		50V	R7	1-216-615-11	METAL CHIP	33	0.5%		1/10W
C12	1-164-717-11	CERAMIC CHIP	0.0082uF	5%		50V	R8	1-208-462-41	METAL GLAZE	10K	2%		1/10W
C13	1-163-038-91	CERAMIC CHIP	0.1uF			25V	R9	1-208-812-11	METAL GLAZE	18K	2%		1/10W
C14	1-124-465-00	ELECT	0.47uF	20%		50V	R10	1-216-615-11	METAL CHIP	33	0.5%		1/10W
C15	1-164-222-11	CERAMIC CHIP	0.22uF			25V	R11	1-216-619-11	METAL CHIP	47	0.5%		1/10W

DOLBY S **MAIN** **HEADPHONE**

Ref. No.	Part No.	Description	Remark
R12	1-216-684-11	METAL CHIP 24K	0.5% 1/10W
R13	1-216-615-11	METAL CHIP 33	0.5% 1/10W
R14	1-216-619-11	METAL CHIP 47	0.5% 1/10W
R15	1-216-655-11	METAL CHIP 1.5K	0.5% 1/10W
R16	1-216-678-11	METAL CHIP 13K	0.5% 1/10W
R17	1-216-673-11	METAL CHIP 8.2K	0.5% 1/10W
R18	1-208-462-41	METAL GLAZE 10K	2% 1/10W
R19	1-208-462-41	METAL GLAZE 10K	2% 1/10W
R20	1-216-689-11	METAL CHIP 39K	0.5% 1/10W

- * A-2007-530-A MAIN BOARD, COMPLETE (KA1ESA)
- * A-2007-531-A MAIN BOARD, COMPLETE (KE500S:US,E,AUS)
- * A-2007-533-A MAIN BOARD, COMPLETE (AEP,UK,G,SP,MY)

HEADPHONE BOARD

- * 3-356-925-01 HEAT SINK
- 3-923-762-11 HOLDER (TR)
- 7-682-548-04 SCREW +BVTT 3X8 (S)

< CAPACITOR >

C101	1-126-965-11	ELECT	22uF	20%	50V
C102	1-136-495-11	FILM	0.068uF	5%	50V
C103	1-136-165-00	FILM	0.1uF	5%	50V
C104	1-126-964-11	ELECT	10uF	20%	50V
C105	1-163-014-00	CERAMIC CHIP	0.0027uF	5%	50V
C106	1-126-963-11	ELECT	4.7uF	20%	50V
C111	1-126-963-11	ELECT	4.7uF	20%	50V
C112	1-136-173-00	FILM	0.47uF	5%	50V
C113	1-126-964-11	ELECT	10uF	20%	50V
C114	1-137-366-11	FILM	0.0022uF	5%	50V
C118	1-124-902-00	ELECT	0.47uF	20%	50V
C121	1-107-597-11	CERAMIC	22PF	5%	500V
C122	1-137-428-11	FILM	180PF	5%	50V
C123	1-137-431-11	FILM	560PF	5%	50V
C124	1-101-810-00	CERAMIC	100PF	5%	500V
C125	1-136-803-11	FILM	560PF	5%	630V
C126	1-136-161-00	FILM	0.047uF	5%	50V
C127	1-136-157-00	FILM	0.022uF	5%	50V
C128	1-136-153-00	FILM	0.01uF	5%	50V
C141	1-124-925-11	ELECT	2.2uF	20%	50V
C142	1-136-165-00	FILM	0.1uF	5%	50V
C143	1-136-495-11	FILM	0.068uF	5%	50V
C151	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C152	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C153	1-104-665-11	ELECT	100uF	20%	25V
C154	1-126-968-11	ELECT	100uF	20%	50V
C155	1-136-157-00	FILM	0.022uF	5%	50V
C156	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C157	1-126-964-11	ELECT	10uF	20%	50V
C158	1-136-158-00	FILM	0.027uF	5%	50V

Ref. No.	Part No.	Description	Remark
C159	1-102-518-11	CERAMIC	33PF 5% 50V
C160	1-137-434-11	FILM	0.0018uF 5% 50V
C161	1-137-434-11	FILM	0.0018uF 5% 50V
C181	1-124-925-11	ELECT	2.2uF 20% 100V
C191	1-126-963-11	ELECT	4.7uF 20% 50V
C201	1-126-965-11	ELECT	22uF 20% 50V
C202	1-136-495-11	FILM	0.068uF 5% 50V
C203	1-136-165-00	FILM	0.1uF 5% 50V
C204	1-126-964-11	ELECT	10uF 20% 50V
C205	1-163-014-00	CERAMIC CHIP	0.0027uF 5% 50V
C206	1-126-963-11	ELECT	4.7uF 20% 50V
C211	1-126-963-11	ELECT	4.7uF 20% 50V
C212	1-136-173-00	FILM	0.47uF 5% 50V
C213	1-126-964-11	ELECT	10uF 20% 50V
C214	1-137-366-11	FILM	0.0022uF 5% 50V
C218	1-124-902-00	ELECT	0.47uF 20% 50V
C221	1-107-597-11	CERAMIC	22PF 5% 500V
C222	1-137-428-11	FILM	180PF 5% 50V
C223	1-137-431-11	FILM	560PF 5% 50V
C224	1-101-810-00	CERAMIC	100PF 5% 500V
C225	1-136-803-11	FILM	560PF 5% 630V
C226	1-136-161-00	FILM	0.047uF 5% 50V
C227	1-136-157-00	FILM	0.022uF 5% 50V
C228	1-136-153-00	FILM	0.01uF 5% 50V
C241	1-124-925-11	ELECT	2.2uF 20% 50V
C242	1-136-165-00	FILM	0.1uF 5% 50V
C243	1-136-495-11	FILM	0.068uF 5% 50V
C251	1-163-127-00	CERAMIC CHIP	270PF 5% 50V
C252	1-163-145-00	CERAMIC CHIP	0.0015uF 5% 50V
C253	1-104-665-11	ELECT	100uF 20% 25V
C254	1-126-968-11	ELECT	100uF 20% 50V
C255	1-136-157-00	FILM	0.022uF 5% 50V
C256	1-163-117-00	CERAMIC CHIP	100PF 5% 50V
C257	1-126-964-11	ELECT	10uF 20% 50V
C258	1-136-158-00	FILM	0.027uF 5% 50V
C259	1-102-518-11	CERAMIC	33PF 5% 50V
C260	1-137-434-11	FILM	0.0018uF 5% 50V
C261	1-137-434-11	FILM	0.0018uF 5% 50V
C271	1-126-964-11	ELECT	10uF 20% 50V
C272	1-124-925-11	ELECT	2.2uF 20% 100V
C281	1-124-925-11	ELECT	2.2uF 20% 100V
C291	1-126-963-11	ELECT	4.7uF 20% 50V
C301	1-126-965-11	ELECT	22uF 20% 50V
C302	1-126-965-11	ELECT	22uF 20% 50V
C303	1-124-903-11	ELECT	1uF 20% 50V
C311	1-124-903-11	ELECT	1uF 20% 50V
C319	1-126-964-11	ELECT	10uF 20% 50V
C321	1-126-967-11	ELECT	47uF 20% 35V
C322	1-126-967-11	ELECT	47uF 20% 35V
C323	1-107-584-11	CERAMIC	4PF 0.25PF 500V
C324	1-136-558-11	FILM	0.0039uF 5% 630V
C325	1-126-965-11	ELECT	22uF 20% 50V

Ref. No.	Part No.	Description			Remark
C326	1-106-359-00	MYLAR	4700PF	5%	200V
C327	1-106-349-00	MYLAR	0.0018uF	5%	100V
C328	1-106-349-00	MYLAR	0.0018uF	5%	100V
C343	1-124-925-11	ELECT	2.2uF	20%	100V
C351	1-126-965-11	ELECT	22uF	20%	50V
C352	1-126-965-11	ELECT	22uF	20%	50V
C371	1-130-494-11	MYLAR	0.082uF	5%	50V
C372	1-137-436-11	FILM	0.0039uF	5%	50V
C386	1-126-923-11	ELECT	220uF	20%	10V
C387	1-126-923-11	ELECT	220uF	20%	10V
C421	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C422	1-163-033-91	CERAMIC CHIP	0.022uF		50V
C423	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C424	1-124-925-11	ELECT	2.2uF	20%	100V
C431	1-126-916-11	ELECT	1000uF	20%	6.3V
C701	1-126-768-11	ELECT	2200uF	20%	16V
C702	1-126-936-11	ELECT	3300uF	20%	16V
C703	1-104-664-11	ELECT	47uF	20%	25V
C704	1-126-027-11	ELECT	1000uF	20%	25V
C705	1-126-027-11	ELECT	1000uF	20%	25V
C706	1-126-968-11	ELECT	100uF	20%	50V
C707	1-126-964-11	ELECT	10uF	20%	50V
C708	1-126-937-11	ELECT	4700uF	20%	16V
C709	1-126-964-11	ELECT	10uF	20%	50V
C710	1-126-963-11	ELECT	4.7uF	20%	50V
C711	1-126-967-11	ELECT	47uF	20%	35V
C712	1-126-927-11	ELECT	2200uF	20%	10V
C713	1-124-564-11	ELECT	4700uF	20%	25V
C715	1-126-964-11	ELECT	10uF	20%	50V
C716	1-126-768-11	ELECT	2200uF	20%	16V
C805	1-136-165-00	FILM	0.1uF	5%	50V
C806	1-136-165-00	FILM	0.1uF	5%	50V
C807	1-163-033-91	CERAMIC CHIP	0.022uF		50V
C808	1-163-033-91	CERAMIC CHIP	0.022uF		50V
C809	1-124-902-00	ELECT	0.47uF	20%	50V
C811	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C813	1-124-902-00	ELECT	0.47uF	20%	50V
C830	1-136-165-00	FILM	0.1uF	5%	50V
C831	1-126-933-11	ELECT	100uF	20%	10V
< CONNECTOR >					
CN321	1-506-468-11	PIN, CONNECTOR 3P			
CN701	1-766-272-11	PIN, CONNECTOR (PC BOARD) 10P			
CN801	1-568-825-11	CONNECTOR, FFC/FPC 6P			
CN802	1-568-826-11	CONNECTOR, FFC/FPC 7P			
CN803	1-750-414-11	CONNECTOR, FFC/FPC 9P			
* CN804	1-568-954-11	PIN, CONNECTOR 5P (US,E,AUS)			
CN805	1-778-065-11	SOCKET, CONNECTOR 39P			
CNP311	1-764-328-11	PIN, CONNECTOR (PCB)(V TYPE)5P			
* CNP321	1-560-062-00	PIN, CONNECTOR 4P			
* CNP322	1-560-060-00	PIN, CONNECTOR 2P			

Ref. No.	Part No.	Description		Remark
* CNP351	1-560-062-00	PIN, CONNECTOR 4P		
* CNP376	1-568-954-11	PIN, CONNECTOR 5P		
* CNP398	1-691-462-11	PIN, CONNECTOR (PC BOARD) 6P		
CP101	1-695-087-11	PIN, CONNECTOR (PC BOARD) 7P		
CP141	1-695-087-11	PIN, CONNECTOR (PC BOARD) 7P		
CP201	1-695-087-11	PIN, CONNECTOR (PC BOARD) 7P		
CP241	1-695-087-11	PIN, CONNECTOR (PC BOARD) 7P		
< DIODE >				
D151	8-719-019-12	DIODE ZSML-5.6X-T1		
D181	8-719-988-62	DIODE 1SS355		
D182	8-719-988-62	DIODE 1SS355		
D183	8-719-019-12	DIODE ZSML-5.6X-T1		
D251	8-719-019-12	DIODE ZSML-5.6X-T1		
D281	8-719-988-62	DIODE 1SS355		
D282	8-719-988-62	DIODE 1SS355		
D283	8-719-019-12	DIODE ZSML-5.6X-T1		
D301	8-719-988-62	DIODE 1SS355		
D311	8-719-988-62	DIODE 1SS355		
D312	8-719-988-62	DIODE 1SS355		
D313	8-719-988-62	DIODE 1SS355		
D314	8-719-988-62	DIODE 1SS355		
D315	8-719-988-62	DIODE 1SS355		
D321	8-719-988-62	DIODE 1SS355		
D322	8-719-988-62	DIODE 1SS355		
D341	8-719-988-62	DIODE 1SS355		
D342	8-719-988-62	DIODE 1SS355		
D371	8-719-988-62	DIODE 1SS355		
D372	8-719-988-62	DIODE 1SS355		
D373	8-719-988-62	DIODE 1SS355		
D431	8-719-988-62	DIODE 1SS355		
D701	8-719-200-02	DIODE 10E2		
D702	8-719-200-02	DIODE 10E2		
D703	8-719-200-02	DIODE 10E2		
D704	8-719-200-02	DIODE 10E2		
D705	8-719-200-02	DIODE 10E2		
D706	8-719-988-62	DIODE 1SS355 (US,CND,E,AUS)		
D707	8-719-988-62	DIODE 1SS355		
D708	8-719-988-62	DIODE 1SS355 (US,CND,E,AUS)		
D709	8-719-019-12	DIODE ZSML-5.6X-T1		
D710	8-719-019-12	DIODE ZSML-5.6X-T1		
D711	8-719-019-12	DIODE ZSML-5.6X-T1		
D712	8-719-200-02	DIODE 10E2		
D715	8-719-988-62	DIODE 1SS355 (US,CND,E,AUS)		
D716	8-719-019-46	DIODE ZSML-12Z-T1		
D717	8-719-988-62	DIODE 1SS355		
D718	8-719-019-25	DIODE ZSML-7.5Y-T1		
D719	8-719-019-18	DIODE ZSML-6.2Z-T1		
D720	8-719-988-62	DIODE 1SS355 (US,CND,E,AUS)		
D721	8-719-988-62	DIODE 1SS355		

MAIN

HEADPHONE

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
D722	8-719-025-03	DIODE RBA-402-SL		Q201	8-729-421-22	TRANSISTOR UN2211	
D723	8-719-019-12	DIODE ZSML-5.6X-T1		Q211	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
D724	8-719-988-62	DIODE 1SS355					
D801	8-719-988-62	DIODE 1SS355		Q212	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
D802	8-719-988-62	DIODE 1SS355		Q251	8-729-217-03	TRANSISTOR 2SK170	
D803	8-719-988-62	DIODE 1SS355		Q252	8-729-217-03	TRANSISTOR 2SK170	
D804	8-719-988-62	DIODE 1SS355		Q253	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
		< IC >		Q254	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
IC301	8-752-066-36	IC CXA1563M		Q291	8-729-922-37	TRANSISTOR 2SD2144S	
IC304	8-759-106-56	IC uPC1297CA		Q311	8-729-421-19	TRANSISTOR UN2213	
IC311	8-752-070-68	IC CXA1598M		Q312	8-729-421-19	TRANSISTOR UN2213	
IC341	8-752-066-36	IC CXA1563M		Q313	8-729-421-19	TRANSISTOR UN2213	
IC351	8-759-636-55	IC M5218AFP		Q314	8-729-421-19	TRANSISTOR UN2213	
IC371	8-759-100-96	IC uPC4558G2		Q321	8-729-421-19	TRANSISTOR UN2213	
IC372	8-759-100-96	IC uPC4558G2		Q322	8-729-216-22	TRANSISTOR 2SA1162-G	
IC381	8-759-100-96	IC uPC4558G2		Q323	8-729-421-19	TRANSISTOR UN2213	
IC385	8-759-100-96	IC uPC4558G2		Q324	8-729-421-19	TRANSISTOR UN2213	
IC391	8-759-300-71	IC HD14053BFP		Q325	8-729-421-19	TRANSISTOR UN2213	
IC395	8-759-636-55	IC M5218AFP		Q326	8-729-194-57	TRANSISTOR 2SC945-P	
IC421	8-759-100-96	IC uPC4558G2		Q327	8-729-194-57	TRANSISTOR 2SC945-P	
IC701	8-759-100-96	IC uPC4558G2		Q341	8-729-421-19	TRANSISTOR UN2213	
IC801	8-759-422-06	IC M38172M4-171FP		Q351	8-729-230-45	TRANSISTOR 2SC2458-YGR	
IC803	8-759-973-95	IC BA6219B		Q352	8-729-821-04	TRANSISTOR 2SA1317-STU	
IC804	8-759-165-82	IC PST600E-T		Q371	8-729-107-43	TRANSISTOR 2SC3624-L18	
		< JACK >		Q372	8-729-107-43	TRANSISTOR 2SC3624-L18	
J385	1-568-519-41	JACK, LARGE TYPE (PHONES)		Q373	8-729-107-43	TRANSISTOR 2SC3624-L18	
		< COIL >		Q391	8-729-421-19	TRANSISTOR UN2213	
L121	1-410-780-11	INDUCTOR 27mH		Q431	8-729-216-22	TRANSISTOR 2SA1162-G	
L122	1-410-778-11	INDUCTOR 18mH		Q432	8-729-901-06	TRANSISTOR DTA144EK	
L221	1-410-780-11	INDUCTOR 27mH		Q433	8-729-421-19	TRANSISTOR UN2213	
L222	1-410-778-11	INDUCTOR 18mH		Q702	8-729-900-80	TRANSISTOR DTC114ES (US,CND,E,AUS)	
		< FILTER >		Q703	8-729-141-83	TRANSISTOR 2SB1094-LK	
LPF101	1-236-147-11	FILTER, LOW PASS		Q704	8-729-209-15	TRANSISTOR 2SD2012	
LPF201	1-236-147-11	FILTER, LOW PASS		Q705	8-729-209-15	TRANSISTOR 2SD2012	
		< JACK >		Q706	8-729-119-78	TRANSISTOR 2SC403SP-51	
PJ395	1-770-614-11	JACK, PIN 4P (LINE IN/OUT)		Q707	8-729-900-80	TRANSISTOR DTC114ES (US,CND,E,AUS)	
		< TRANSISTOR >		Q708	8-729-141-83	TRANSISTOR 2SB1094-LK	
Q101	8-729-421-22	TRANSISTOR UN2211		Q709	8-729-119-78	TRANSISTOR 2SC403SP-51	
Q111	8-729-120-28	TRANSISTOR 2SC1623-L5L6		Q710	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q112	8-729-120-28	TRANSISTOR 2SC1623-L5L6		Q711	8-729-140-04	TRANSISTOR 2SB1116A-L	
Q151	8-729-217-03	TRANSISTOR 2SK170		Q712	8-729-224-63	TRANSISTOR 2SK246-BL	
Q152	8-729-217-03	TRANSISTOR 2SK170		Q722	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q153	8-729-120-28	TRANSISTOR 2SC1623-L5L6		Q802	8-729-421-19	TRANSISTOR UN2213	
Q154	8-729-120-28	TRANSISTOR 2SC1623-L5L6		Q803	8-729-901-06	TRANSISTOR DTA144EK	
Q191	8-729-922-37	TRANSISTOR 2SD2144S		Q804	8-729-901-06	TRANSISTOR DTA144EK	
				Q805	8-729-421-19	TRANSISTOR UN2213	
				Q806	8-729-421-22	TRANSISTOR UN2211	
				Q807	8-729-421-22	TRANSISTOR UN2211	
				Q808	8-729-421-22	TRANSISTOR UN2211	
				Q809	8-729-421-22	TRANSISTOR UN2211	
				Q810	8-729-801-84	TRANSISTOR 2SB1013-4	
				Q812	8-729-216-22	TRANSISTOR 2SA1162-G	

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
		< RESISTOR >		R202	1-216-071-00	METAL CHIP 8.2K 5%	1/10W
R101	1-216-097-91	METAL GLAZE 100K 5%	1/10W	R203	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R102	1-216-071-00	METAL CHIP 8.2K 5%	1/10W	R204	1-216-105-91	METAL GLAZE 220K 5%	1/10W
R103	1-216-061-00	METAL CHIP 3.3K 5%	1/10W	R205	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R104	1-216-105-91	METAL GLAZE 220K 5%	1/10W	R211	1-216-065-00	METAL CHIP 4.7K 5%	1/10W
R105	1-216-049-91	METAL GLAZE 1K 5%	1/10W	R212	1-216-073-00	METAL CHIP 10K 5%	1/10W
R111	1-216-065-00	METAL CHIP 4.7K 5%	1/10W	R213	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R112	1-216-073-00	METAL CHIP 10K 5%	1/10W	R214	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R113	1-216-061-00	METAL CHIP 3.3K 5%	1/10W	R216	1-216-058-00	METAL GLAZE 2.4K 5%	1/10W
R114	1-216-057-00	METAL CHIP 2.2K 5%	1/10W	R217	1-216-073-00	METAL CHIP 10K 5%	1/10W
R116	1-216-058-00	METAL GLAZE 2.4K 5%	1/10W	R218	1-216-089-91	METAL GLAZE 47K 5%	1/10W
R117	1-216-073-00	METAL CHIP 10K 5%	1/10W	R221	1-216-058-00	METAL GLAZE 2.4K 5%	1/10W
R118	1-216-089-91	METAL GLAZE 47K 5%	1/10W	R222	1-216-101-00	METAL CHIP 150K 5%	1/10W
R121	1-216-058-00	METAL GLAZE 2.4K 5%	1/10W	△ R223	1-219-153-11	FUSIBLE 10 5%	1/4W F
R122	1-216-101-00	METAL CHIP 150K 5%	1/10W	R224	1-216-085-00	METAL CHIP 33K 5%	1/10W
△ R123	1-219-153-11	FUSIBLE 10 5%	1/4W F	R225	1-216-067-00	METAL CHIP 5.6K 5%	1/10W
R124	1-216-085-00	METAL CHIP 33K 5%	1/10W	R241	1-216-097-91	METAL GLAZE 100K 5%	1/10W
R125	1-216-067-00	METAL CHIP 5.6K 5%	1/10W	R251	1-216-097-91	METAL GLAZE 100K 5%	1/10W
R141	1-216-097-91	METAL GLAZE 100K 5%	1/10W	R252	1-216-029-00	METAL CHIP 150 5%	1/10W
R151	1-216-097-91	METAL GLAZE 100K 5%	1/10W	R253	1-216-041-00	METAL CHIP 470 5%	1/10W
R152	1-216-029-00	METAL CHIP 150 5%	1/10W	R254	1-216-066-00	METAL CHIP 5.1K 5%	1/10W
R153	1-216-041-00	METAL CHIP 470 5%	1/10W	R255	1-216-066-00	METAL CHIP 5.1K 5%	1/10W
R154	1-216-066-00	METAL CHIP 5.1K 5%	1/10W	R256	1-216-046-00	METAL CHIP 750 5%	1/10W
R155	1-216-066-00	METAL CHIP 5.1K 5%	1/10W	R257	1-216-046-00	METAL CHIP 750 5%	1/10W
R156	1-216-046-00	METAL CHIP 750 5%	1/10W	R258	1-216-025-91	METAL GLAZE 100 5%	1/10W
R157	1-216-046-00	METAL CHIP 750 5%	1/10W	R259	1-216-021-00	METAL CHIP 68 5%	1/10W
R158	1-216-025-91	METAL GLAZE 100 5%	1/10W	R260	1-216-068-00	METAL CHIP 6.2K 5%	1/10W
R159	1-216-021-00	METAL CHIP 68 5%	1/10W	R261	1-216-081-00	METAL CHIP 22K 5%	1/10W
R160	1-216-068-00	METAL CHIP 6.2K 5%	1/10W	R262	1-216-100-00	METAL GLAZE 130K 5%	1/10W
R161	1-216-081-00	METAL CHIP 22K 5%	1/10W	R263	1-216-055-00	METAL CHIP 1.8K 5%	1/10W
R162	1-216-100-00	METAL GLAZE 130K 5%	1/10W	R264	1-216-073-00	METAL CHIP 10K 5%	1/10W
R163	1-216-055-00	METAL CHIP 1.8K 5%	1/10W	R265	1-216-056-00	METAL GLAZE 2K 5%	1/10W
R164	1-216-073-00	METAL CHIP 10K 5%	1/10W	R266	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R165	1-216-056-00	METAL GLAZE 2K 5%	1/10W	R271	1-216-089-91	METAL GLAZE 47K 5%	1/10W
R166	1-216-057-00	METAL CHIP 2.2K 5%	1/10W	R272	1-216-083-00	METAL CHIP 27K 5%	1/10W
R181	1-216-083-00	METAL CHIP 27K 5%	1/10W	R273	1-216-088-00	METAL CHIP 43K 5%	1/10W
R182	1-216-035-00	METAL CHIP 270 5%	1/10W	R274	1-216-066-00	METAL CHIP 5.1K 5%	1/10W
R183	1-216-092-00	METAL GLAZE 62K 5%	1/10W	R281	1-216-083-00	METAL CHIP 27K 5%	1/10W
R185	1-216-053-00	METAL CHIP 1.5K 5%	1/10W	R282	1-216-035-00	METAL CHIP 270 5%	1/10W
R186	1-216-061-00	METAL CHIP 3.3K 5%	1/10W	R283	1-216-092-00	METAL GLAZE 62K 5%	1/10W
R187	1-216-033-00	METAL CHIP 220 5%	1/10W	R285	1-216-053-00	METAL CHIP 1.5K 5%	1/10W
R188	1-216-067-00	METAL CHIP 5.6K 5%	1/10W	R286	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R191	1-216-097-91	METAL GLAZE 100K 5%	1/10W	R287	1-216-033-00	METAL CHIP 220 5%	1/10W
R192	1-216-082-00	METAL GLAZE 24K 5%	1/10W	R288	1-216-067-00	METAL CHIP 5.6K 5%	1/10W
R193	1-216-073-00	METAL CHIP 10K 5%	1/10W	R291	1-216-097-91	METAL GLAZE 100K 5%	1/10W
R194	1-216-057-00	METAL CHIP 2.2K 5%	1/10W	R292	1-216-082-00	METAL GLAZE 24K 5%	1/10W
R195	1-216-079-00	METAL CHIP 18K 5%	1/10W	R293	1-216-073-00	METAL CHIP 10K 5%	1/10W
R196	1-216-057-00	METAL CHIP 2.2K 5%	1/10W	R294	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R197	1-216-049-91	METAL GLAZE 1K 5%	1/10W	R295	1-216-079-00	METAL CHIP 18K 5%	1/10W
R198	1-216-081-00	METAL CHIP 22K 5%	1/10W	R296	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R201	1-216-097-91	METAL GLAZE 100K 5%	1/10W	R297	1-216-049-91	METAL GLAZE 1K 5%	1/10W
				R298	1-216-081-00	METAL CHIP 22K 5%	1/10W

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MAIN HEADPHONE

Ref. No.	Part No.	Description	Remark
R301	1-208-813-11	METAL GLAZE	20K 2% 1/10W
R302	1-216-081-00	METAL CHIP	22K 5% 1/10W
R303	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R311	1-216-685-11	METAL CHIP	27K 2% 1/10W
R312	1-216-081-00	METAL CHIP	22K 5% 1/10W
R313	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R316	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R317	1-216-097-91	METAL GLAZE	100K 5% 1/10W
R321	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R322	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R323	1-216-041-00	METAL CHIP	470 5% 1/10W
R324	1-216-050-00	METAL GLAZE	1.1K 5% 1/10W
R325	1-216-080-00	METAL CHIP	20K 5% 1/10W
R328	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R329	1-216-059-00	METAL CHIP	2.7K 5% 1/10W
R330	1-249-390-11	CARBON	5.6 5% 1/4W
R331	1-249-390-11	CARBON	5.6 5% 1/4W
R332	1-249-440-11	CARBON	82K 5% 1/4W
R333	1-249-440-11	CARBON	82K 5% 1/4W
R341	1-208-813-11	METAL GLAZE	20K 2% 1/10W
R342	1-216-069-00	METAL CHIP	6.8K 5% 1/10W
R343	1-216-081-00	METAL CHIP	22K 5% 1/10W
R344	1-216-081-00	METAL CHIP	22K 5% 1/10W
R351	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R352	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R371	1-216-054-00	METAL GLAZE	1.6K 5% 1/10W
R372	1-216-097-91	METAL GLAZE	100K 5% 1/10W
R373	1-216-097-91	METAL GLAZE	100K 5% 1/10W
R374	1-216-689-11	METAL CHIP	39K 0.5% 1/10W
R375	1-216-081-00	METAL CHIP	22K 5% 1/10W
R376	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R377	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R378	1-216-066-00	METAL CHIP	5.1K 5% 1/10W
R379	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
△R385	1-249-401-11	CARBON	47 5% 1/4W F
R391	1-216-081-00	METAL CHIP	22K 5% 1/10W
R401	1-216-080-00	METAL CHIP	20K 5% 1/10W
R402	1-216-078-00	METAL CHIP	16K 5% 1/10W
R403	1-216-070-00	METAL CHIP	7.5K 5% 1/10W
R404	1-216-089-91	METAL CHIP	47K 5% 1/10W
R405	1-216-080-00	METAL GLAZE	20K 5% 1/10W
R406	1-216-092-00	METAL GLAZE	62K 5% 1/10W
R407	1-216-082-00	METAL CHIP	24K 5% 1/10W
R408	1-216-079-00	METAL CHIP	18K 5% 1/10W
R409	1-216-074-00	METAL CHIP	11K 5% 1/10W
R410	1-216-085-00	METAL CHIP	33K 0.5% 1/10W
R411	1-216-087-91	METAL GLAZE	39K 5% 1/10W
R412	1-216-082-00	METAL GLAZE	24K 5% 1/10W
R413	1-216-085-00	METAL CHIP	33K 5% 1/10W
R414	1-216-090-00	METAL GLAZE	51K 5% 1/10W
R415	1-216-083-00	METAL CHIP	27K 5% 1/10W
R416	1-216-090-00	METAL GLAZE	51K 5% 1/10W

Ref. No.	Part No.	Description	Remark
R417	1-216-083-00	METAL CHIP	27K 5% 1/10W
R418	1-216-081-00	METAL CHIP	22K 5% 1/10W
R423	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R425	1-216-097-91	METAL GLAZE	100K 5% 1/10W
R426	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
R427	1-216-069-00	METAL CHIP	6.8K 5% 1/10W
R431	1-216-081-00	METAL CHIP	22K 5% 1/10W
R432	1-216-033-00	METAL CHIP	220 5% 1/10W
R701	1-249-417-11	CARBON	1K 5% 1/4W
R702	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R703	1-216-055-00	METAL CHIP	1.8K 5% 1/10W
R704	1-216-030-00	METAL CHIP	160 5% 1/10W
R705	1-216-069-00	METAL CHIP	6.8K 5% 1/10W
R706	1-216-053-00	METAL CHIP	1.5K 5% 1/10W
R707	1-216-073-00	METAL CHIP	10K 5% 1/10W
R708	1-216-053-00	METAL CHIP	1.5K 5% 1/10W
R709	1-216-069-00	METAL CHIP	6.8K 5% 1/10W
R710	1-216-069-00	METAL CHIP	6.8K 5% 1/10W
R711	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R712	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R713	1-249-417-11	CARBON	1K 5% 1/4W
R714	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R715	1-216-072-00	METAL CHIP	9.1K 5% 1/10W
R716	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R717	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R718	1-216-081-00	METAL CHIP	22K 5% 1/10W
△R719	1-219-135-11	FUSIBLE	0.15 10% 1/4W F
△R720	1-219-137-11	FUSIBLE	0.33 10% 1/4W F
R721	1-249-425-11	CARBON	4.7K 5% 1/4W
R722	1-216-689-11	METAL CHIP	39K 0.5% 1/10W
R723	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R724	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R725	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
△R730	1-219-139-11	FUSIBLE	0.68 10% 1/4W F
△R731	1-219-139-11	FUSIBLE	0.68 10% 1/4W F
R801	1-216-081-00	METAL CHIP	22K 5% 1/10W
R802	1-216-081-00	METAL CHIP	22K 5% 1/10W
R803	1-216-097-91	METAL GLAZE	100K 5% 1/10W
R804	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R806	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R807	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R808	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R809	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R810	1-216-059-00	METAL CHIP	2.7K 5% 1/10W
R811	1-216-059-00	METAL CHIP	2.7K 5% 1/10W
R812	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R813	1-216-053-00	METAL CHIP	1.5K 5% 1/10W
R814	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R815	1-216-046-00	METAL CHIP	750 5% 1/10W
R816	1-216-041-00	METAL CHIP	470 5% 1/10W

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MAIN

HEADPHONE

PANEL

POWER SW1

POWER SW2

TRANS 1

TRANS 2

VOL

Ref. No.	Part No.	Description			Remark
△ R817	1-212-954-11	FUSIBLE	6.8	5%	1/2W F
R822	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R823	1-216-073-00	METAL CHIP	10K	5%	1/10W
R824	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R825	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R831	1-216-073-00	METAL CHIP	10K	5%	1/10W
R832	1-216-073-00	METAL CHIP	10K	5%	1/10W
R834	1-216-083-00	METAL CHIP	27K	5%	1/10W
R835	1-216-083-00	METAL CHIP	27K	5%	1/10W
R845	1-216-073-00	METAL CHIP	10K	5%	1/10W
R846	1-216-073-00	METAL CHIP	10K	5%	1/10W
R847	1-216-073-00	METAL CHIP	10K	5%	1/10W
R848	1-216-073-00	METAL CHIP	10K	5%	1/10W
R849	1-216-073-00	METAL CHIP	10K	5%	1/10W
R850	1-216-073-00	METAL CHIP	10K	5%	1/10W
R851	1-216-073-00	METAL CHIP	10K	5%	1/10W
R852	1-216-073-00	METAL CHIP	10K	5%	1/10W
R853	1-216-073-00	METAL CHIP	10K	5%	1/10W
< VARIABLE RESISTOR >					
RV111	1-238-019-11	RES, ADJ, CARBON 47K (REC EQ IV L)			
RV112	1-241-765-11	RES, ADJ, CARBON 22K (REC LEVEL L)			
RV121	1-241-765-11	RES, ADJ, CARBON 22K (REC BIAS L)			
RV151	1-241-759-21	RES, ADJ, CARBON 220 (PB LEVEL R)			
RV211	1-238-019-11	RES, ADJ, CARBON 47K (REC EQ IV R)			
RV212	1-241-765-11	RES, ADJ, CARBON 22K (REC LEVEL R)			
RV221	1-241-765-11	RES, ADJ, CARBON 22K (REC BIAS R)			
RV251	1-241-759-21	RES, ADJ, CARBON 220 (PB LEVEL R)			
RV312	1-241-762-11	RES, ADJ, CARBON 4.7K (REC EQ IV)			
< TRANSFORMER >					
T121	1-433-344-11	TRANSFORMER, BIAS OSCILLATION			
T221	1-433-344-11	TRANSFORMER, BIAS OSCILLATION			
T321	1-423-614-11	TRANSFORMER, BIAS OSCILLATION			
< TEST PIN >					
* TP321	1-564-506-11	PLUG, CONNECTOR 3P			
* TP802	1-560-060-00	PIN, CONNECTOR 2P			
< VIBRATOR >					
X801	1-577-358-21	VIBRATOR, CERAMIC (4MHz)			

Ref. No.	Part No.	Description			Remark
*	A-2007-529-A	PANEL BOARD, COMPLETE (US,CND,AUS)			
*	A-2007-532-A	PANEL BOARD, COMPLETE (AEP,UK,G,SP,MY)			
*	A-2007-534-A	PANEL BOARD, COMPLETE (E)			

POWER SW 1 BOARD (AEP,UK,G,SP,MY)					

POWER SW2 BOARD (US,CND,E,AUS)					

TRANS 1 BOARD (EXCEPT E)					

TRANS 2 BOARD					

VOL BOARD					

*	3-386-245-11	HOLDER (FL)			
< CAPACITOR >					
△ C717	1-113-925-11	ELECT	0.01uF	20%	250V (AEP,UK,G,SP,MY)
C720	1-136-165-00	FILM	0.1uF	5%	50V
C721	1-136-165-00	FILM	0.1uF	5%	50V
< CONNECTOR >					
CN901	1-778-065-11	SOCKET, CONNECTOR 39P			
CN902	1-568-825-11	CONNECTOR, FFC/FPC 6P			
< CONNECTOR >					
* CNP702	1-580-230-31	PIN, CONNECTOR (PC BOARD) 2P (EXCEPT E)			
CNP703	1-568-226-11	PIN, CONNECTOR 2P (AEP,UK,G,SP,MY)			
< DIODE >					
D901	8-719-987-63	DIODE 1N4148M			
D902	8-719-987-63	DIODE 1N4148M			
D903	8-719-987-63	DIODE 1N4148M			
< IC >					
IC901	8-741-810-59	IC SBX1810-59			
< LINE FILTER >					
△ LF701	1-424-485-11	FILTER, LINE (EXCEPT E)			
< TRANSISTOR >					
Q901	8-729-900-89	TRANSISTOR DTC144ES			
Q902	8-729-900-89	TRANSISTOR DTC144ES			
Q903	8-729-900-89	TRANSISTOR DTC144ES			
< RESISTOR >					
R115	1-249-425-11	CARBON	4.7K	5%	1/4W
R215	1-249-425-11	CARBON	4.7K	5%	1/4W
R327	1-249-429-11	CARBON	10K	5%	1/4W
R833	1-249-429-11	CARBON	10K	5%	1/4W
R838	1-249-441-11	CARBON	100K	5%	1/4W

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PANEL

POWER SW1

POWER SW2

TRANS 1

TRANS 2

VOL

SW A

Ref. No.	Part No.	Description	Remark
R839	1-249-441-11	CARBON 100K 5%	1/4W
R840	1-249-441-11	CARBON 100K 5%	1/4W
R841	1-249-441-11	CARBON 100K 5%	1/4W
R842	1-249-441-11	CARBON 100K 5%	1/4W
R843	1-249-441-11	CARBON 100K 5%	1/4W
R844	1-249-441-11	CARBON 100K 5%	1/4W
R861	1-249-441-11	CARBON 100K 5%	1/4W
R901	1-249-441-11	CARBON 100K 5%	1/4W
R905	1-247-838-00	CARBON 2K 5%	1/4W
R906	1-249-422-11	CARBON 2.7K 5%	1/4W
R907	1-247-848-11	CARBON 5.1K 5%	1/4W
R908	1-249-429-11	CARBON 10K 5%	1/4W
R909	1-247-866-11	CARBON 30K 5%	1/4W
R910	1-247-838-00	CARBON 2K 5%	1/4W
R911	1-249-422-11	CARBON 2.7K 5%	1/4W
R912	1-247-848-11	CARBON 5.1K 5%	1/4W
R915	1-249-429-11	CARBON 10K 5%	1/4W
R916	1-247-866-11	CARBON 30K 5%	1/4W
R917	1-247-836-11	CARBON 1.6K 5%	1/4W
R918	1-247-840-00	CARBON 2.4K 5%	1/4W
R919	1-249-423-11	CARBON 3.3K 5%	1/4W
R920	1-249-426-11	CARBON 5.6K 5%	1/4W
R921	1-247-858-11	CARBON 13K 5%	1/4W
R922	1-247-868-11	CARBON 36K 5%	1/4W
R923	1-247-807-31	CARBON 100 5%	1/4W
< VARIABLE RESISTOR >			
RV311	1-225-221-11	RES, VAR, CARBON 5K/5K (REC LEVEL)	
RV321	1-225-222-11	RES, VAR, CARBON 5K/5K (BIAS)	
RV395	1-225-219-11	RES, VAR, CARBON 50K/50K (BALANCE)	
RV396	1-225-220-11	RES, VAR, CARBON 50K/50K (REC LEVEL)	
< SWITCH >			
S901	1-554-303-21	SWITCH, TACTILE(■)	
S902	1-554-303-21	SWITCH, TACTILE(◀◀)	
S903	1-554-303-21	SWITCH, TACTILE(▶▶)	
S904	1-554-303-21	SWITCH, TACTILE(●)	
S905	1-554-303-21	SWITCH, TACTILE(○)	
S906	1-554-303-21	SWITCH, TACTILE(▷)	
S907	1-554-303-21	SWITCH, TACTILE(■)	
S908	1-554-303-21	SWITCH, TACTILE(MEMORY)	
S909	1-554-303-21	SWITCH, TACTILE(RESET)	
S910	1-554-303-21	SWITCH, TACTILE(MONITOR)	
S911	1-554-303-21	SWITCH, TACTILE(CALIBRATION)	
S913	1-762-647-11	SWITCH, ROTARY(DOLBY NR)	
S915	1-762-580-11	SWITCH, PUSH (1 KEY)(POWER)(US,CND,E,AUS)	
△ S922	1-762-581-11	SWITCH, AC POWER PUSH(1 KEY) (POWER) (AEP,UK,G,SP,MY)	
< INDICATOR TUBE >			
VFD901	1-517-163-11	INDICATOR TUBE, FLUORESCENT	

Ref. No.	Part No.	Description	Remark
*	1-634-841-14	SW A BOARD *****	
< CONNECTOR >			
* CNP81	1-568-852-11	SOCKET, CONNECTOR 9P	
< IC >			
IC81	8-749-924-10	IC PHONT REFLECTOR NJL5165K-B(H1)	
IC82	8-749-924-10	IC PHONT REFLECTOR NJL5165K-B(H1)	
< RESISTOR >			
R81	1-249-414-11	CARBON 560 5%	1/4W
R83	1-247-834-11	CARBON 1.3K 5%	1/4W
R84	1-249-417-11	CARBON 1K 5%	1/4W
R85	1-249-408-11	CARBON 180 5%	1/4W
R86	1-249-408-11	CARBON 180 5%	1/4W
< SWITCH >			
S81	1-571-958-11	SWITCH, PUSH (1 KEY)(STOP SW)	
S82	1-571-281-21	SWITCH, LEAF (CrO2)	
S83	1-571-281-21	SWITCH, LEAF (METAL)	
S84	1-571-281-21	SWITCH, LEAF (REC)	
S86	1-571-281-21	SWITCH, LEAF (HALF)	

MISCELLANEOUS			

△ 10	1-551-188-XX	CORD, POWER (E)	
△ 10	1-558-945-21	CORD, POWER (POLAR.SPT-1)(US,CND)	
△ 10	1-575-651-21	CORD, POWER (AEP,G,SP,MY)	
△ 10	1-696-586-11	CORD, POWER (UK)	
△ 10	1-696-845-11	CORD, POWER (AUS)	
△ 10	1-751-523-11	CORD, POWER (UK)	
△ 11	1-569-007-11	ADAPTER, CONVERSION 2P (E)	
57	1-777-109-11	WIRE (FLAT TYPE) (39 CORE)	
60	1-777-110-11	WIRE (FLAT TYPE) (6 CORE)	
66	1-769-916-11	WIRE (FLAT TYPE) (9 CORE)	
67	1-769-878-11	WIRE (FLAT TYPE) (7 CORE)	
120	1-638-983-11	MOTOR FLEXIBLE BOARD	
HE101	1-543-673-11	HEAD, MAGNETIC (ERASE)	
HRP101	1-543-733-11	HEAD, MAGNETIC(RECORD/PLAYBACK)	
M1	X-3363-501-2	MOTOR ASSY(REEL)	
M2	X-3368-855-1	MOTOR ASSY(CAPSTAN)	
△ S701	1-692-155-11	SELECTOR, POWER VOLTAGE (VOLTAGE SELECTOR) (E)	
△ T701	1-429-611-11	TRANSFORMER, POWER (US,CND)	
△ T701	1-429-612-11	TRANSFORMER, POWER (EXCEPT US,CND,AUS, E)	
△ T701	1-429-613-11	TRANSFORMER, POWER (E)	
△ T701	1-429-659-11	TRANSFORMER, POWER (AUS)	
VFD901	1-517-163-11	INDICATOR TUBE, FLUORESCENT	

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.
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Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS *****	
	1-551-734-11	CORD, CONNECTION	
	3-856-131-11	MANUAL, INSTRUCTION (ENGLISH,FRENCH, SPANISH,PORTUGUESE)(CND,AEP)	
	3-856-131-21	MANUAL, INSTRUCTION (ENGLISH)(US,UK,AUS)	
	3-856-131-31	MANUAL, INSTRUCTION (GERMAN,DUTCH, SWEDISH,ITALIAN)(AEP)	
	3-856-131-41	MANUAL, INSTRUCTION (GERMAN)(G)	
	3-856-131-51	MANUAL, INSTRUCTION (ENGLISH,FRENCH, SPANISH,CHINESE)(E,SP,MY)	
*	3-932-083-01	CUSHION (KE500S)	
*	3-935-038-01	INDIVIDUAL CARTON (AEP,UK,G,SP,MY)	
*	3-935-040-01	INDIVIDUAL CARTON (KA1ESA)	
*	3-935-093-01	INDIVIDUAL CARTON (KE500S:US,E,AUS)	
*	3-936-086-01	CUSHION (KA1ESA)	

HARDWARE LIST

#1	7-682-548-04	SCREW +BVTT 3X8 (S)
#2	7-685-871-01	SCREW +BVTT 3X6 (S)
#3	7-685-871-09	SCREW +BVTT 3X6 (S)(KA1ESA)
#4	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S
#5	7-685-862-09	SCREW +BVTT 2.6X6 (S)
#6	7-685-134-19	SCREW (+ PTPWH)(2.6X8)
#7	7-621-772-10	SCREW +B 2X4
#8	7-627-556-08	SCREW +P 2.6X2.8
#9	7-621-775-00	SCREW +B 2.6X3

