

HCD-T1

SERVICE MANUAL

AEP Model
UK Model



- HCD-T1 is the tuner, CD and pre amplifier section in CMT-T1/CMT-D1/CMD-M1.

Photo : AEP model

Model Name Using Similar Mechanism	NEW
CD Mechanism Type	CDM13C-5BD19
Base Unit Type	BU-5BD19

SPECIFICATIONS

Tuner section

Tuning range

FM: 87.5 – 108 MHz
German, Italian Model :
AM: 531 – 1,602 kHz
AEP, UK Model :
MW: 531 – 1,602 kHz
LW: 153 – 279 kHz

Intermediate frequency

FM: 10.7 MHz
AM: 450 kHz

Aerial terminals

FM: 75 ohm unbalanced
AM: External aerial terminal

Timer

Quartz lock system

Timer setting

One-minute step

Sleep timer

10-minute step, max. 90 minutes

CD player section

System Compact disc digital audio system

Laser Semiconductor laser

Wavelength

780 – 790 nm

Frequency response

2 Hz – 20 kHz ± 0.5 dB

Signal to noise ratio

More than 90 dB

Harmonic distortion

Less than 0.03%

Preamplifier section

Frequency response

15 Hz – 50 kHz ± 0.5 dB

Inputs

MD IN:
Stereo phone jack, sensitivity
450 mV, impedance 47 kilohms

Outputs

DIGITAL OUT (CD OPTICAL
OUT) jack:

Digital connector, -18 dBm,
wavelength 660 nm

OUTPUT jack:

Stereo phone jack, 1 V, 1 kohm

MD OUT jack:

Stereo phone jack, 250 mV,
1 kohm

PHONES (headphones) jack:

Stereo mini jack, accepts
headphones of 8 ohms or more.

— Continued on page 2 —



TUNER CD PLAYER
SONY®

Power consumption
25 W

Dimensions
Approx. 142 x 125 x 252 mm
(w/h/d) (5⁵/₈ x 5 x 10 inches)
incl. projecting parts and
controls

Mass
Approx. 3 kg (6 lb 10 oz)

General
Power requirements
220 – 230 V AC, 50/60 Hz

Supplied accessories
AM loop aerial (1)
Remote (1)
Sony SUM-3 (NS) batteries (2)
FM lead aerial (1)
Speaker cable (1)
Audio cord (1)

Design and specifications are subject to
change without notice.

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

CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

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

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

The laser diode in the optical pick-up block may suffer electrostatic
breakdown because of the potential difference generated by the
charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown 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.

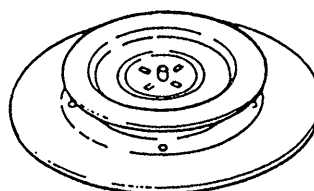
NOTES ON LASER DIODE EMISSION CHECK

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 more than 25cm away from the objective lens.

CHUCK PLATE JIG ON REPAIRING

On repairing CD section, playing a disc without the CD lid, use
Chuck Plate Jig.

- Code number of Chuck Plate Jig : X-4918-255-1

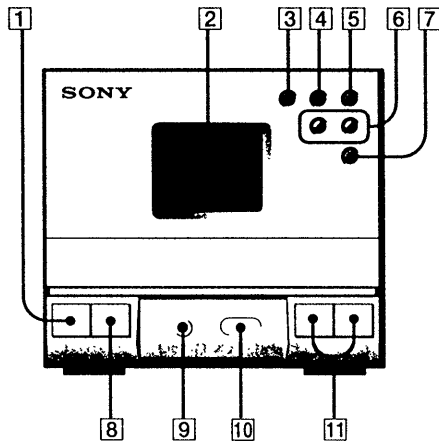


SECTION 2 GENERAL

This section is extracted from instruction manual.

Front Panel

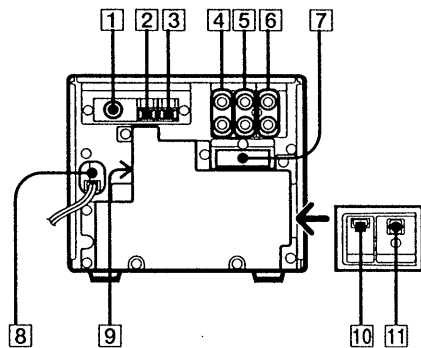
Tuner CD player



- 1 POWER switch
- 2 Display window
- 3 ►|| (play / pause) button*
- 4 ■ (stop) button
- 5 ▲ (open/close) button
- 6 ◀◀ and ▶▶▶▶ (AMS / search) / TUNING + and - buttons
- 7 BAND button
- 8 FUNCTION button
- 9 PHONES jack
- 10 Remote sensor
- 11 VOL + and - buttons

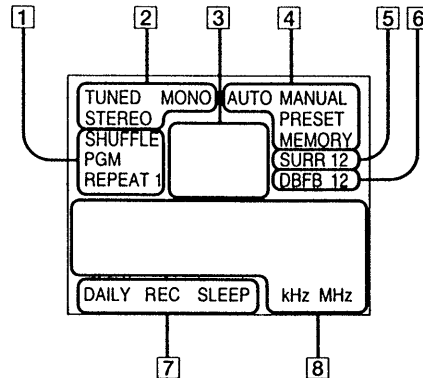
Rear Panel

Tuner CD player



- 1 FM 75 Ω COAXIAL connector
- 2 ⏏ (earth) terminal
- 3 AM terminal
- 4 MD OUT jacks
- 5 MD IN jacks
- 6 OUTPUT jacks
- 7 SYSTEM CONTROL connector
- 8 Mains lead
- 9 AC OUTLET connector
- 10 AU BUS (audio bus) connector
- 11 DIGITAL OUT (CD OPTICAL OUT) jack

Display Window



- 1 CD play mode indications
- 2 Tuner indications
- 3 Track number/band indication
- 4 AUTO / MANUAL / PRESET / MEMORY indications
- 5 SURR (surround) indication
- 6 DBFB indication
- 7 DAILY / REC / SLEEP timer indications
- 8 Time / frequency indication

5 CD and tuner operating buttons

- ▶ (play) button
- || (pause) button
- (stop) button
- BAND button
- TUNING + and - /◀◀ and ▶▶▶▶ (AMS) buttons
- STEREO / MONO button
- TUNING / PLAY MODE button
- REPEAT button
- DISPLAY button
- MEMORY button

6 Tape operating buttons

- ◀ (reverse side play) and ▶ (front side play) buttons
- (stop) button
- ◀◀ (fast leftward) and ▶▶ (fast rightward) buttons

7 FUNCTION button

- 8 Sound adjustment buttons
- DBFB button
- SURROUND button

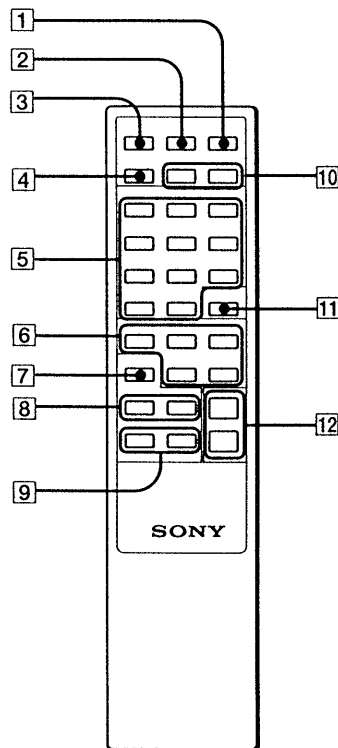
9 BALANCE L and R buttons

10 TIMER + and - buttons

11 ENTER button

12 VOL + and - buttons

Remote

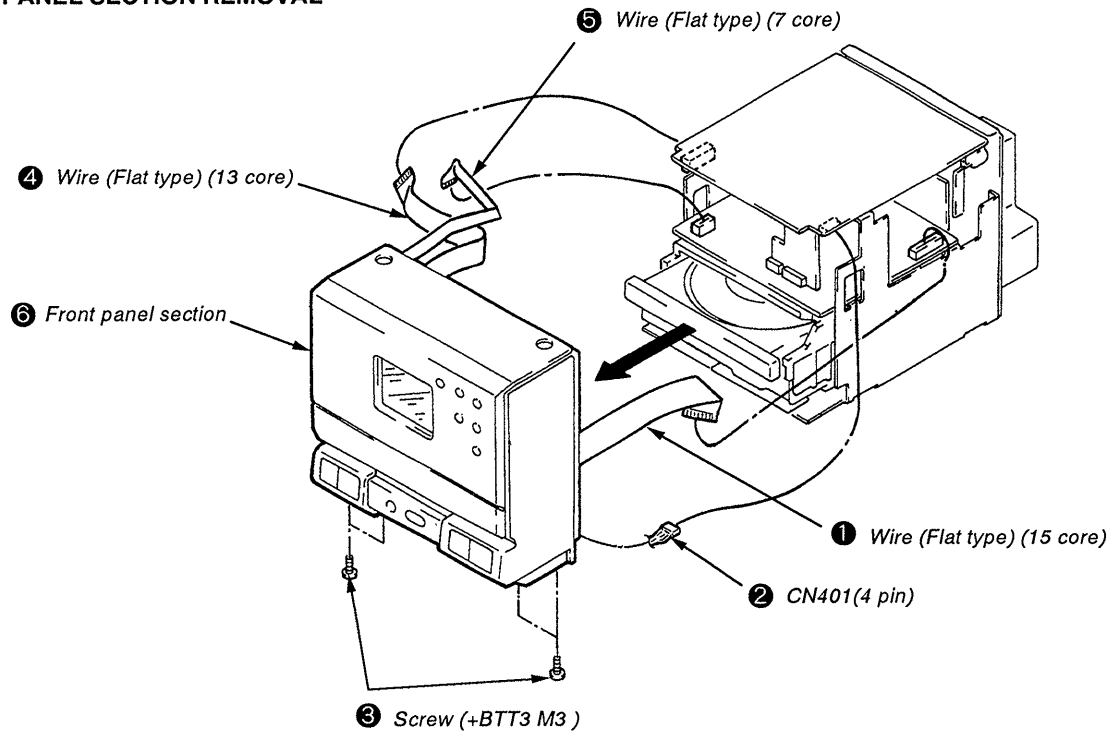


- 1 SYSTEM POWER switch
- 2 SLEEP button
- 3 TIMER SELECT button
- 4 TIMER SET button

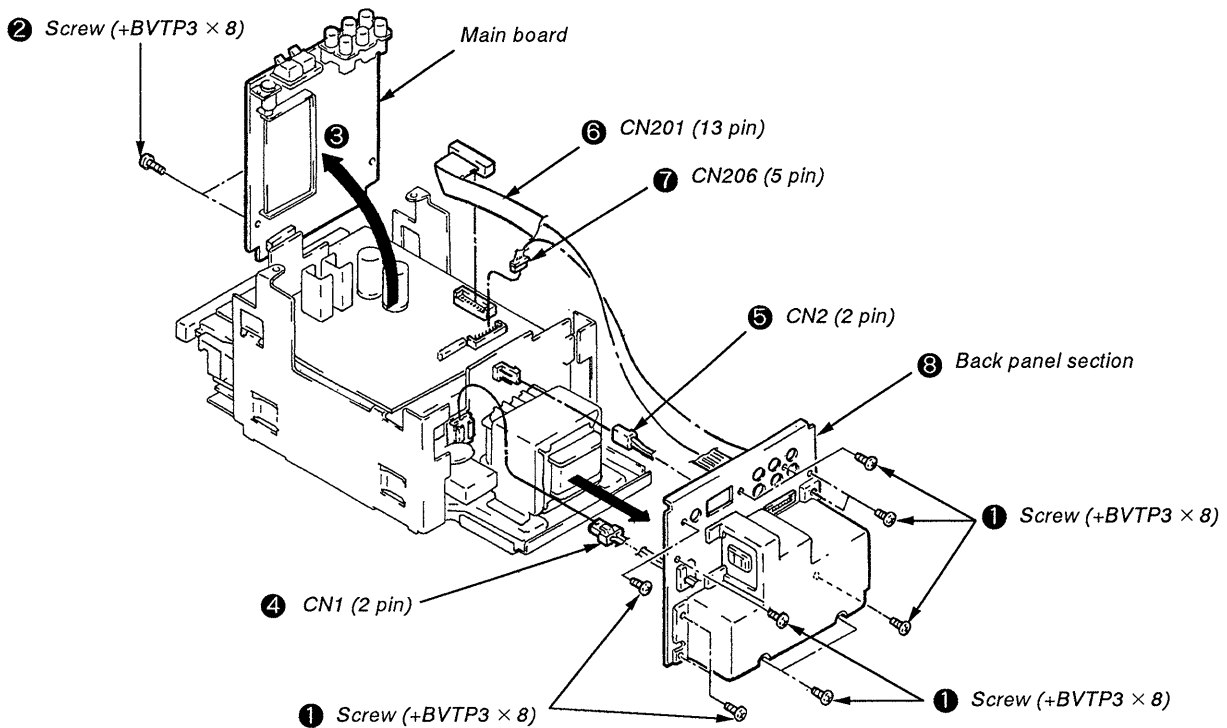
SECTION 3 DISASSEMBLY

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

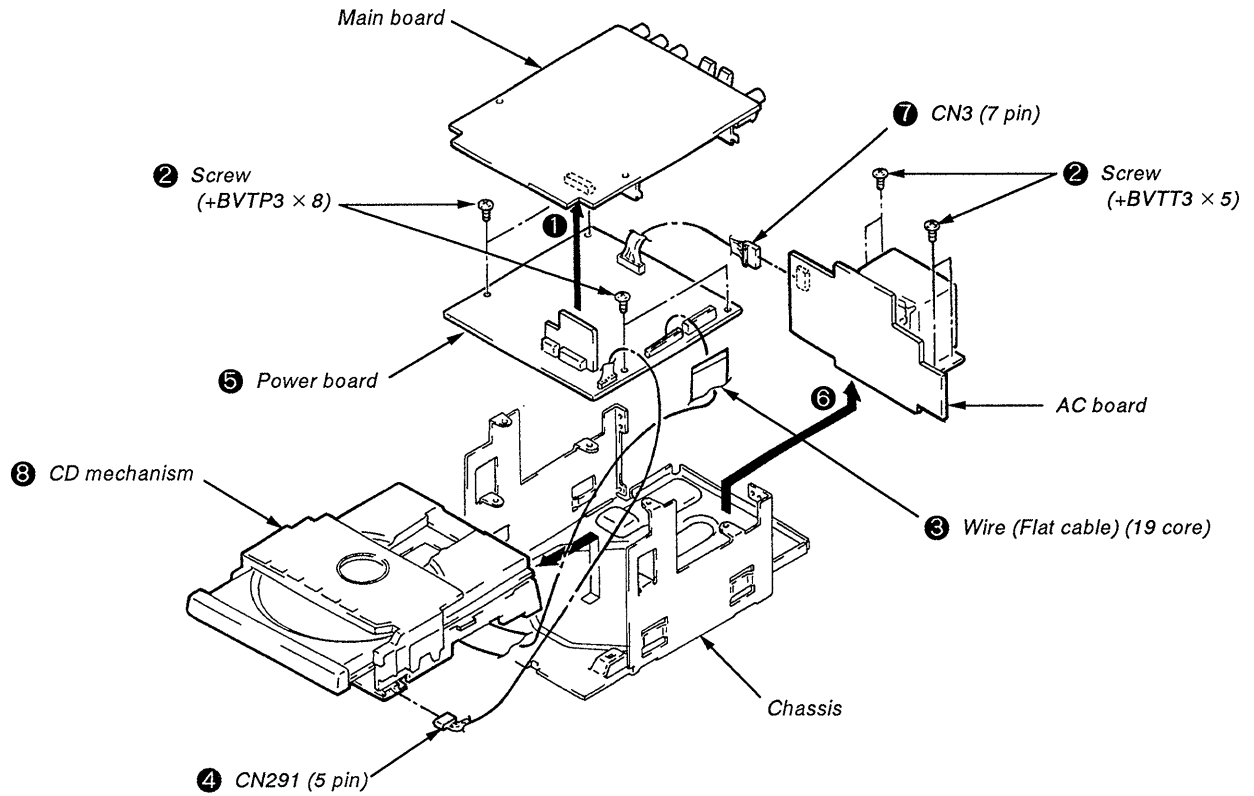
3-1. FRONT PANEL SECTION REMOVAL



3-2. BACK PANEL SECTION REMOVAL

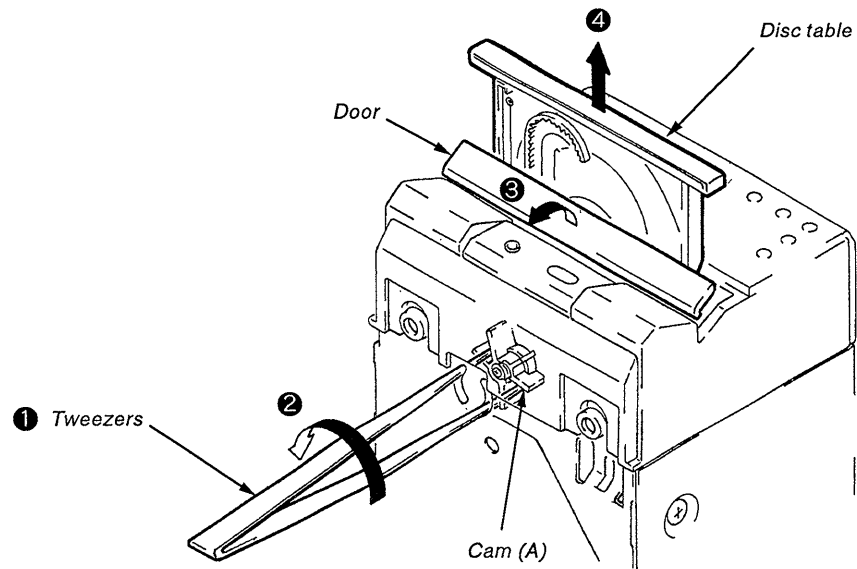


3-3. CD MECHANISM REMOVAL



SECTION 4

DISC TABLE GETTING OUT PROCEDURE ON THE POWER SUPPLY IS OFF



SECTION 5 ELECTRICAL ADJUSTMENTS

TUNER SECTION

As a front-end (TB101) is difficult to repair if faulty, replace it with new one.

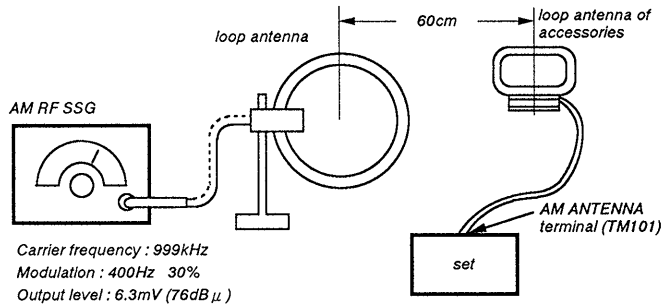
Please note, however, that the following adjustments are possible :

AM Section Adjustment

AM Tuned Indication Lighting Level Adjustment

Band : MW

Setting :



Procedure :

1. Set AM RF SSG output level to 76dB μ so that the input level becomes 50dB μ .
2. Tune the set to 999kHz.
3. Adjust **AM TUN (W)** so that the TUNED light up.

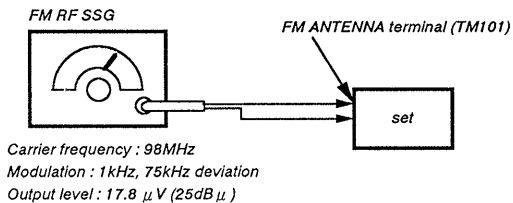
Adjustment Location : Main board (TB101) (See page 8)

FM Section Adjustment

FM Tuned Indication Lighting Level Adjustment

Band : FM

Setting :



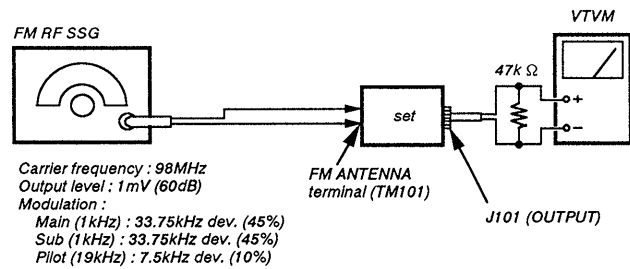
Procedure :

1. Supply a 17.8 μ V (25dB μ) 98MHz signal to the ANTENNA terminal.
2. Tune the set to 98MHz.
3. Adjust **FM TUN (W)** so that the TUNED light up.

Adjustment Location : Main board (TB101) (See page 8)

FM Stereo Separation Adjustment

Setting :



Procedure :

Turn the set to 98MHz.

FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ [ⓑ] Adjust SEP (W) for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ [ⓓ] Adjust SEP (W) for minimum reading.

L-CH Stereo separation : Ⓐ – Ⓑ

R-CH Stereo separation : Ⓒ – Ⓓ

The separations of both channels should be equal.

Adjustment Location : Main board (TB101) (See page 8)

CD SECTION

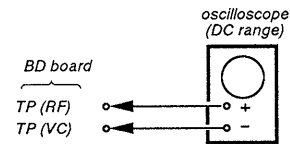
Note :

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

Focus Bias Adjustment

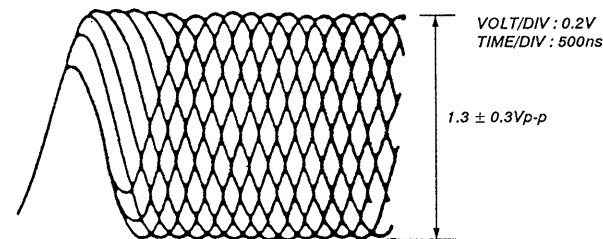
This adjustment is to be done when the optical block is replaced.

Adjustment procedure :



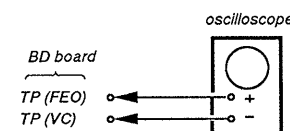
1. Connect oscilloscope to test point TP (VC) and TP (RF) on main board.
2. Ground display board IC704 pin ②④ with the lead wire.
3. Turned power switch ON. (Stop mode)
4. Put disc (YEDS-18) in and press the ► button.
5. Press the ► button again. (Tracking servo ON)
6. Adjust RV101 so that the oscilloscope waveform is as shown in the figure below (eye pattern).
A good eye pattern means that the diamond shape (◇) in the center of the waveform can be clearly distinguished.
7. Remove the lead wire connected in step2.

● RF signal reference waveform (eye pattern)



When observing the eye pattern, set the oscilloscope for AC range and raise vertical sensitivity.

S-Curve Check

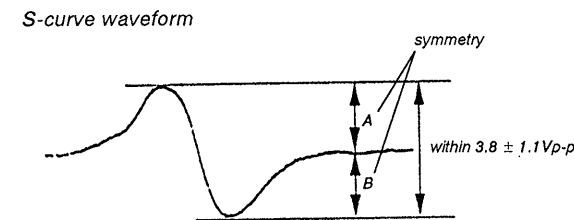


Procedure :

1. Connect oscilloscope to test point TP (FEO) and BD board.
2. Connect between test point TP (FOK) and TP (VC) by lead wire.
3. Turned Power switch on.
4. Put disc (YEDS-18) in and turned Power switch on again and

actuate the focus search. (actuate the focus search when disc table is moving in and out.)

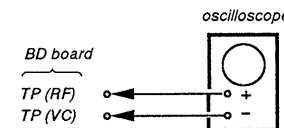
5. Check the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within $3.8 \pm 1.1Vp-p$.



6. After check, remove the lead wire connected in step 2.

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

RF Level Check

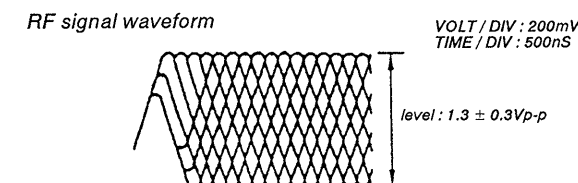


Procedure :

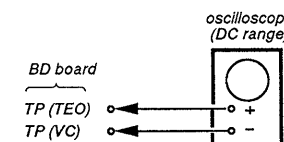
1. Connect oscilloscope to test point TP (RF) on BD board.
2. Turned Power switch on.
3. Put disc (YEDS-18) in and press the ► button.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

Note :

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



E-F Balance Check



Procedure :

1. Ground display board IC701 pin ②④ with the lead wire.
2. Connect oscilloscope to test point TP (TEO) on BD board.
3. Turned Power switch on.
4. Put disc (YEDS-18) in and press the ► button.
5. Confirm that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0V, and check this level.

Traverse waveform



6. Remove the lead wire connected in step 1.

Focus/Tracking Gain

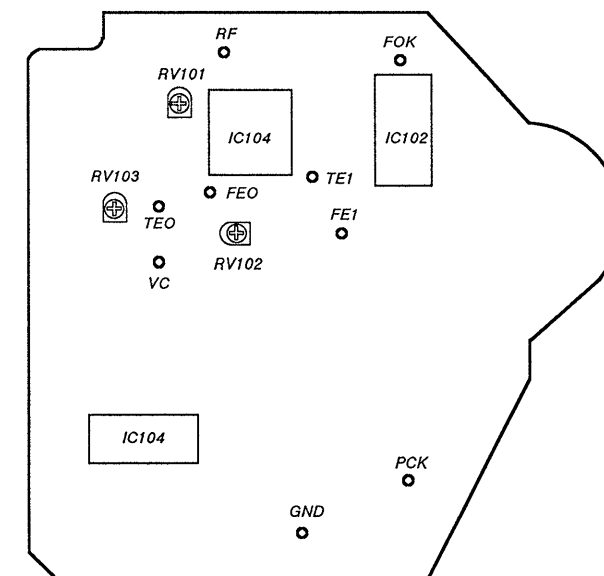
This gain has a margin, so even if it is slightly off. There is no problem.

Therefore, do not perform, this adjustment.

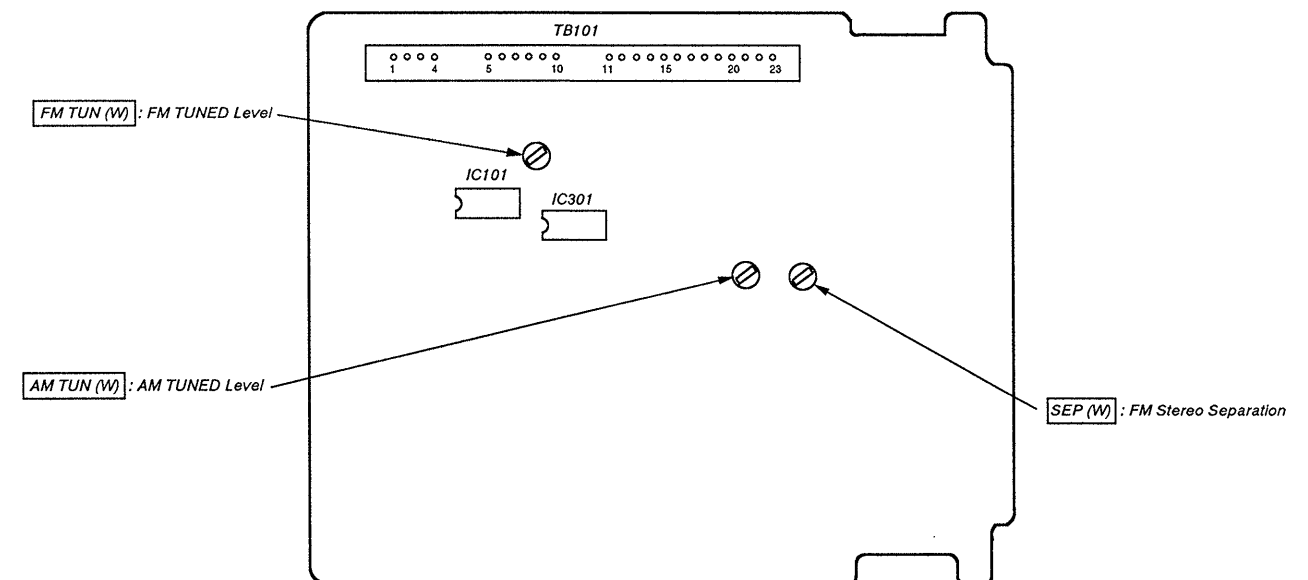
Please note that it should be fixed to mechanical center position when you moved and do not know original position.

Adjustment Location :

[BD BOARD] — Component side —



[MAIN BOARD] — Conductor side —



SECTION 6

EXPLANATION OF IC TERMINALS

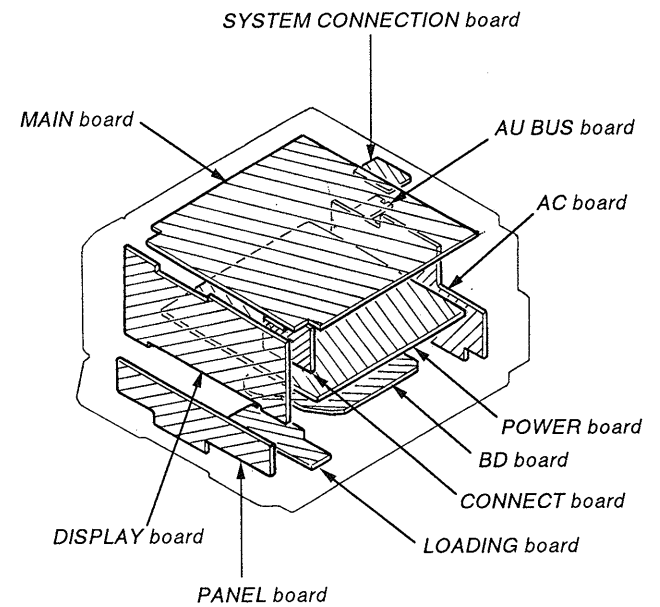
IC701 μ PD78044AGF-102-3B9 (System Control : DISPLAY board)

Pin No.	Pin name	I/O	Description
1	7G	O	LCD drive.
2	6G		
3	5G		
4	4G		
5	3G		
6	2G		
7	1G		
8	V _{DD}	—	Power supply. (+5V)
9	CD CLOCK	O	CD serial clock output.
10	CD DATA	O	CD serial data output.
11	SENSE	I	SENS input from DSP (CXD2507AQ).
12	XLT	O	Latch output to DSP (CXD2507AQ).
13	PRGL	O	Latch output to D/A converter (PCM710 μ).
14	SQCLK	O	Sub-code Q data scanning clock output.
15	—	—	Not used. (OPEN)
16	SUB Q	I	Sub-code Q data serial input.
17	RESET	—	System reset.
18	BACK UP	I	Back up mode input terminal.
19	MD/TC	I	MD/TC select data input terminal.
20	A/D GND	—	A/D converter GND terminal.
21	FCS SW	O	Focus gain select data output.
22	LOAD OUT	O	Loading motor (M903) load out output.
23	LOAD IN	O	Loading motor (M903) load in input.
24	ADJ	I	CD test mode input. “L” : Test mode
25	IN/OUT SW	I	CD tray loading IN/OUT switch input.
26	VERSION	I	Model select input.
27	KEY IN	I	CD control key input.
28	KEY IN	I	Amplifier control key input.
29	A/DVDD	—	A/D converter power supply. (connect to VDD)
30	AVREF	—	A/D converter reference voltage input.
31	XT1	—	Sub system clock. (32.768kHz)
32	XT2	—	Sub system clock. (32.768kHz)
33	GND	—	GND.
34	X1	—	Main system clock. (5MHz)
35	X2	—	Main system clock. (5MHz)
36	STD IN	I	Data input from LC72130.
37	STD OUT	O	Data input from LC72130.
38	ST CLK	O	Clock output to LC72130.
39	ST CE	O	Latch output to LC72130.
40	DATA	O	Data output TC9210 (Electrical volume) and BU2092 (Serial/parallel).

Pin No.	Pin name	I/O	Description
41	CLOCK	O	Clock output TC9210 (Electrical volume) and BU2092 (Serial/parallel).
42	S-P LATCH	O	Latch output to BU2092.
43	VOL LATCH	O	Latch output to TC9210.
44	SCOR	I	Sub-cord sync SO + SI detection input.
45	SIRCS	I	SIRCS code input from remote commander.
46	AUB OUT	O	Audio Bus output.
47	AUB IN	I	Audio Bus input.
48	GND	—	GND.
49	TUNED	I	FM/AM tuning identification.
50	STEREO	I	FM stereo identification.
51	MUTE	O	Mute output.
52	V _{DD}	—	Power supply. (+5V)
53	PLAY LED	O	PLAY LED output.
54	P24	O	LCD drive.
55	P22		
56	P21, 23		
57	P20		
58	P19		
59	P18		
60	P17		
61	P16		
62	P15		
63	P14		
64	P13		
65	P12		
66	P11		
67	P10		
68	P9		
69	P8		
70	P7		
71	— 24V	—	LCD drive — 24V power supply.
72	P6	O	LCD drive.
73	P5		
74	P4		
75	P3		
76	P2		
77	P1		
78	PAUSE LED	O	PAUSE LED output.
79	9G	O	LCD drive.
80	8G		

SECTION 7
DIAGRAMS

• CIRCUIT BOARD LOCATION



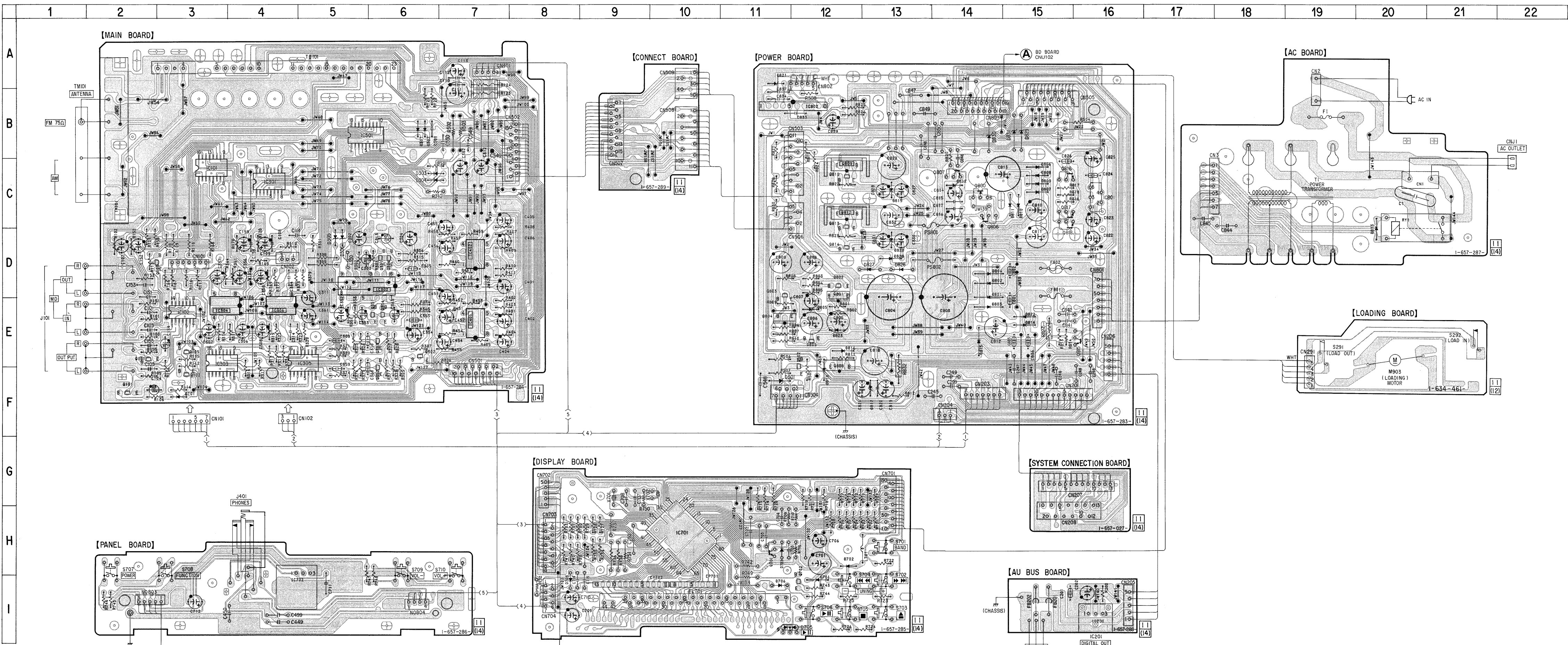
• SEMICONDUCTOR LOCATION

Ref. No.	Location	Ref. No.	Location
D101	F-3	IC303	E-3
D301	B-6	IC304	E-3
D302	B-6	IC305	E-5
D303	C-6	IC306	E-4
D304	C-6	IC401	E-7
D305	D-5	IC402	D-7
D306	D-5	IC501	B-5
D501	F-11	IC701	H-10
D701	I-12	IC702	I-4
D702	H-12	IC801	C-16
D703	H-11	IC802	B-12
D704	I-8		
D705	I-12	Q101	F-2
D706	I-11	Q102	F-3
D801	D-14	Q103	D-2
D802	D-14	Q105	E-3
D803	E-14	Q151	E-2
D804	D-14		
D805	E-12	Q301	D-6
D806	C-15	Q302	E-6
D807	C-15	Q303	E-8
D808	C-15	Q304	D-6
D809	C-15	Q351	E-6
D810	C-15		
D811	C-15	Q352	F-6
		Q354	E-6
		Q502	E-12
D812	C-14	Q701	H-11
D813	C-20	Q702	I-12
D814	E-15		
D815	E-14	Q800	C-14
D816	E-12	Q801	E-12
		Q802	D-12
D817	F-13	Q803	D-11
D818	F-12	Q804	E-11
D819	C-13		
D820	D-13	Q805	E-12
D821	A-11	Q806	C-14
		Q807	C-14
D822	E-15	Q808	E-12
D823	E-12	Q809	C-12
D826	D-13		
D827	D-13	Q810	C-12
D828	D-13	Q812	C-12
		Q813	C-12
D829	B-15	Q814	D-12
D830	B-14	Q815	E-16
D831	B-15		
		Q816	C-15
		Q817	C-15
		Q818	C-15
IC101	C-3		
IC102	E-3		
IC201	I-16		
IC301	C-4		
IC302	D-6		

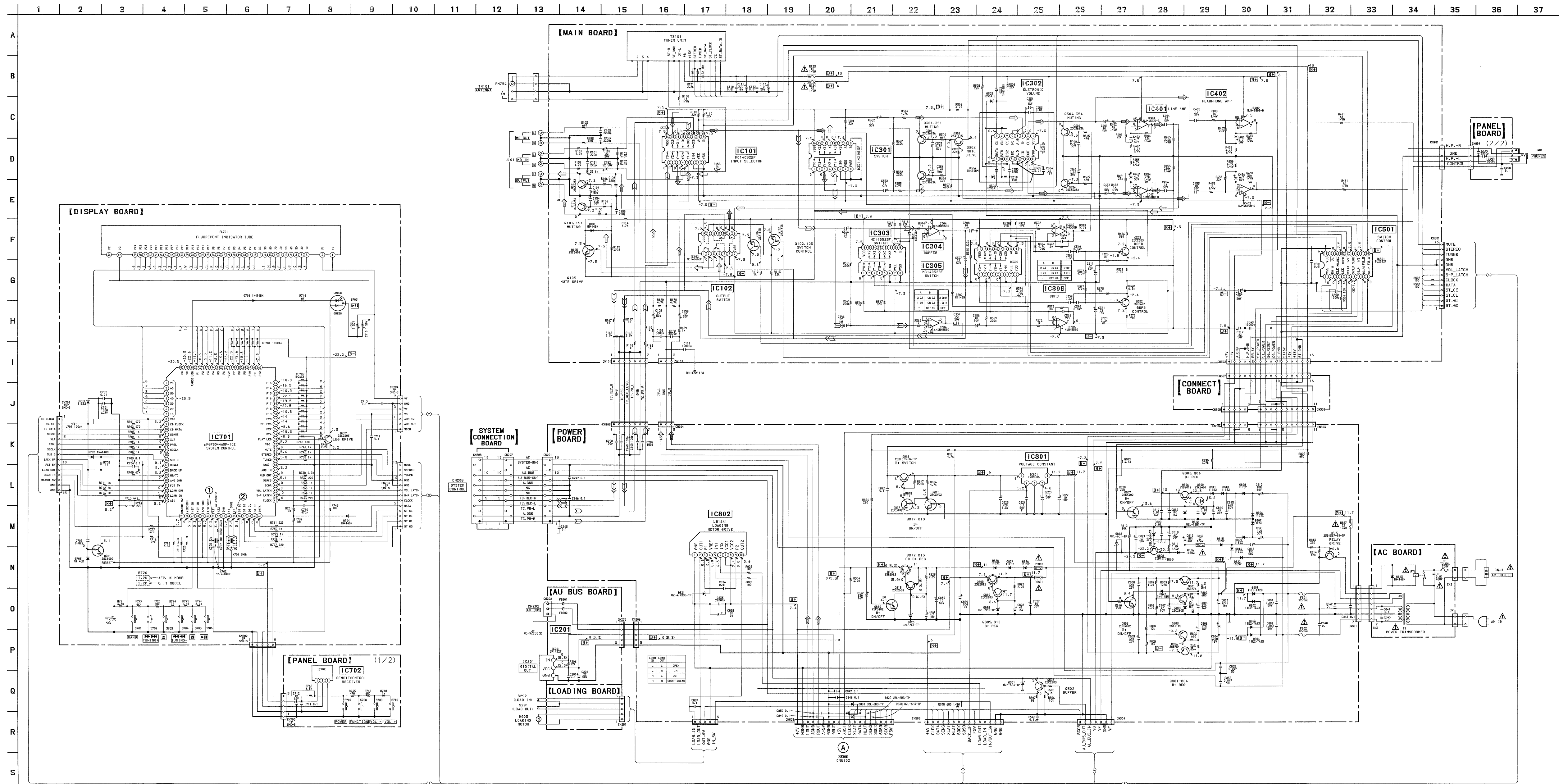
Note:

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

7-1. PRINTED WIRING BOARDS — MAIN SECTION —



7-2. SCHEMATIC DIAGRAM – MAIN SECTION – ● Refer to page 19 for IC Block Diagrams.

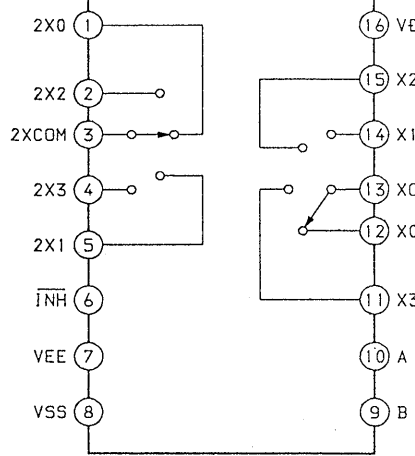


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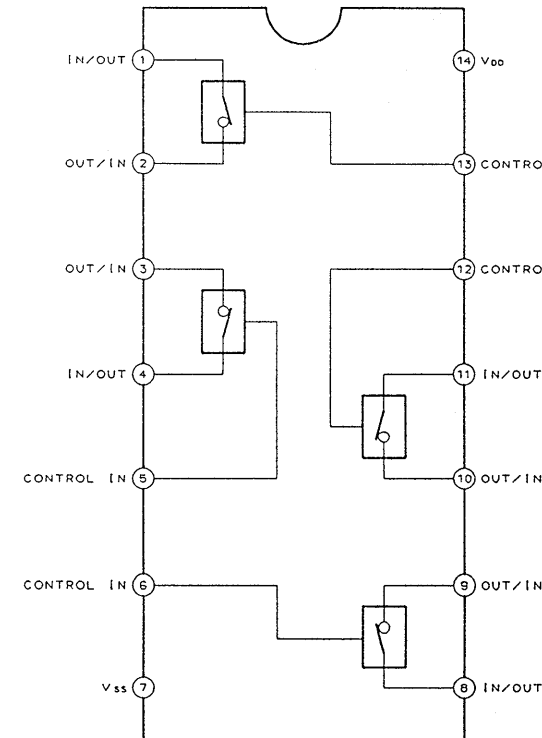
MIND

● IC BLOCK DIAGRAMS (MAIN SECTION)

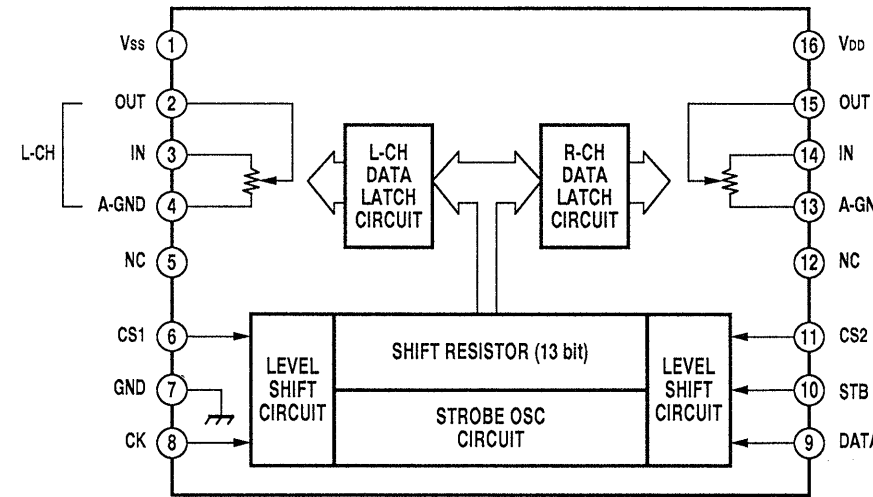
IC101, 301, 303, 305 MC14052BF



IC102 MC14066BF

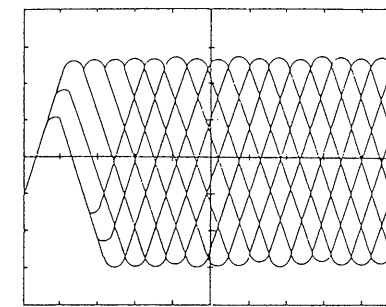


IC302 TC9210P

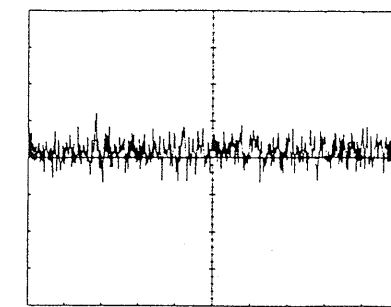


● WAVEFORMS

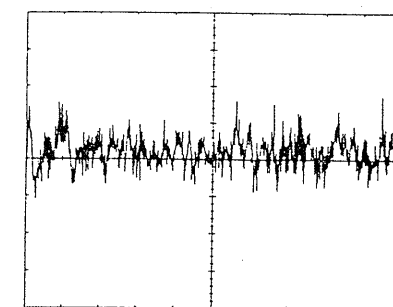
① IC101 @pin 1.4Vp-p



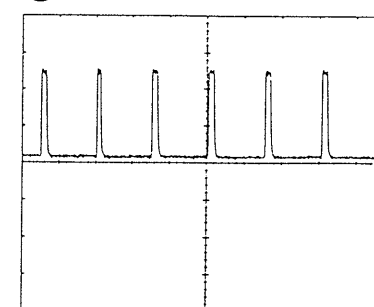
② IC101 @pin 8mVp-p 0.2ms/DIV



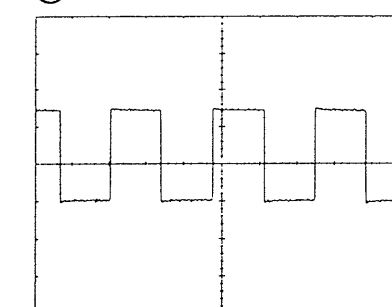
③ IC101 @pin 20mVp-p 2ms/DIV



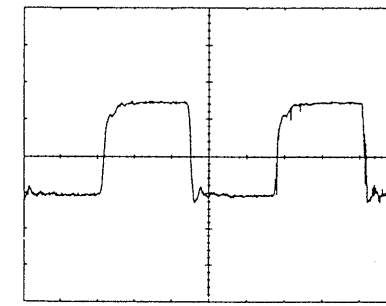
④ IC103 @pin 2.4Vp-p 7.5μsec



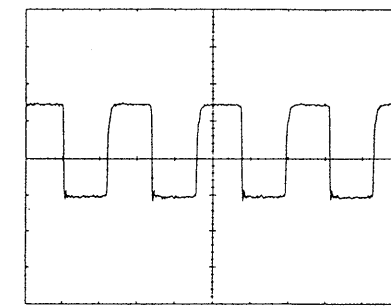
⑤ IC103 @pin 5.1Vp-p 137μsec



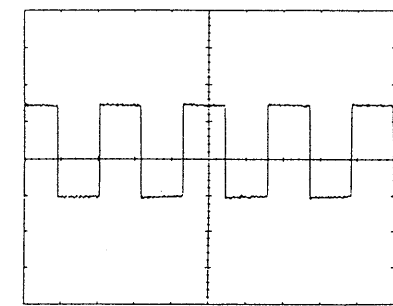
⑥ IC103 @pin 5.1Vp-p 232.7nsec



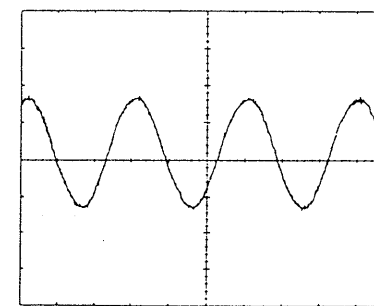
⑦ IC103 @pin 5.1Vp-p 472.7nsec



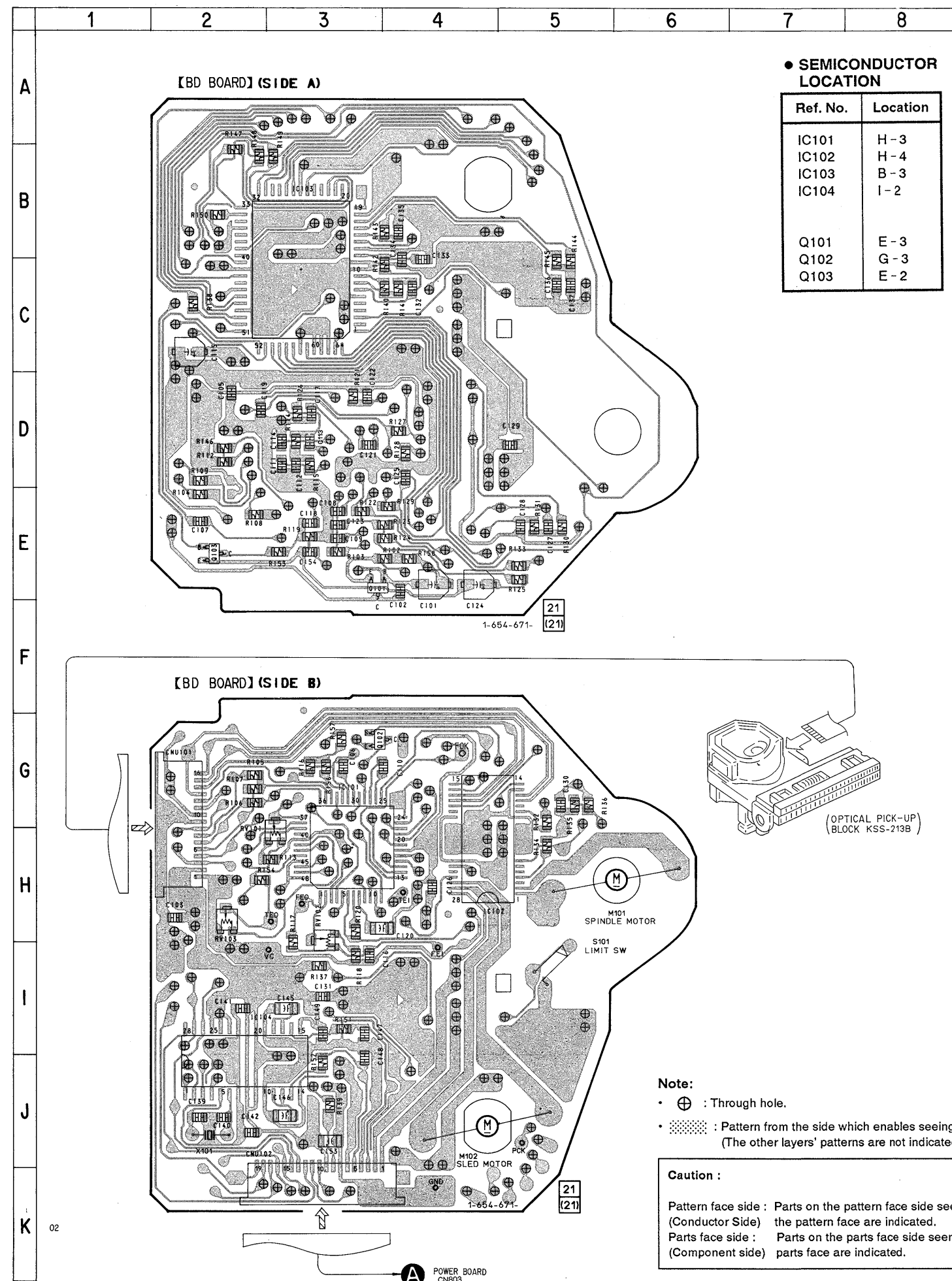
⑧ IC103 @pin 5.1Vp-p 23μsec



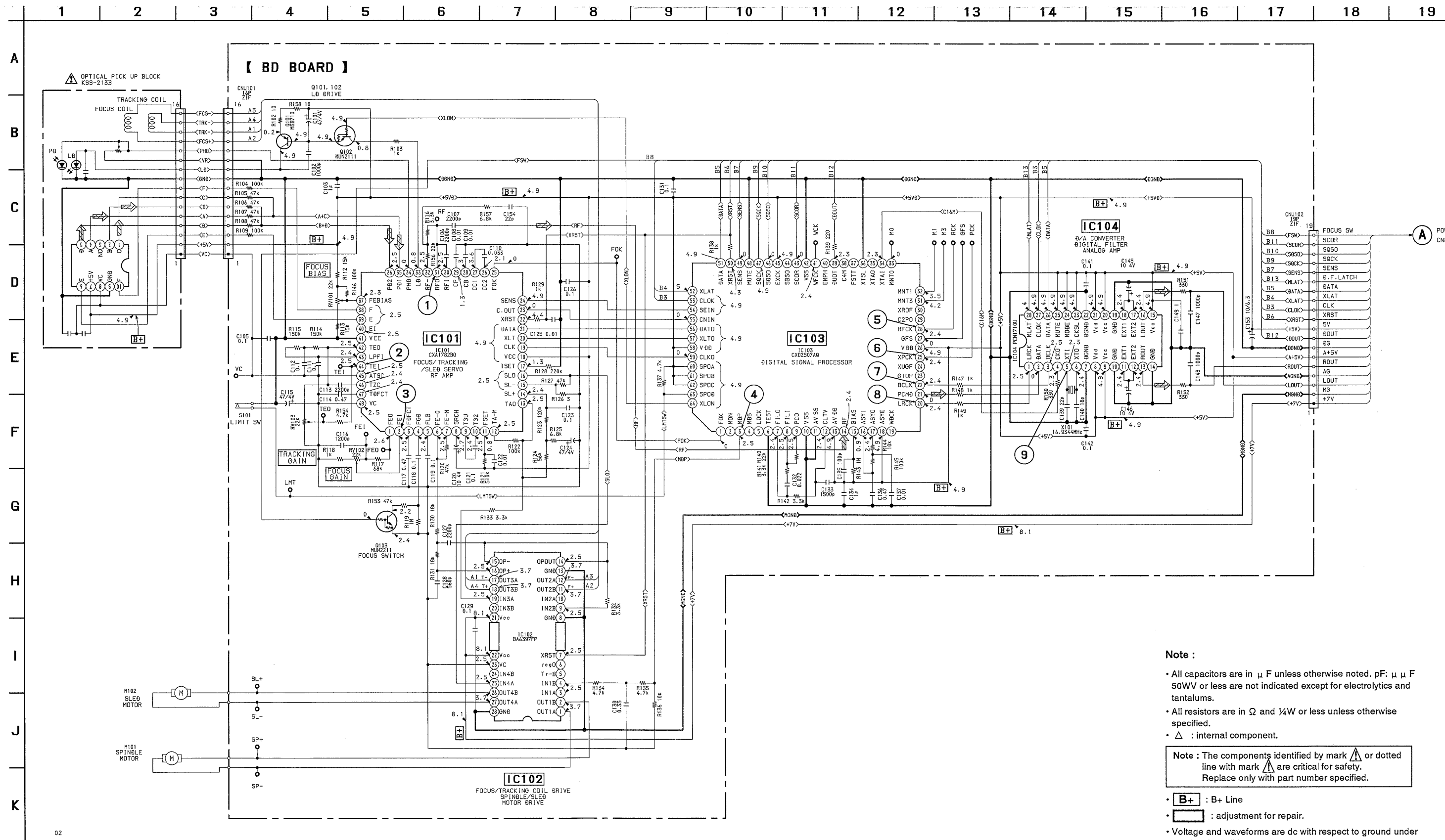
⑨ IC104 @pin 3Vp-p 16.9344MHz



7-3. PRINTED WIRING BOARDS – BD SECTION –



7-4. SCHEMATIC DIAGRAM – BD SECTION –



Note :

- All capacitors are in μF unless otherwise noted. pF: μF 50V 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.
- Δ : Internal component.

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

• [B+] : B+ Line

• [] : adjustment for repair.

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

• 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.

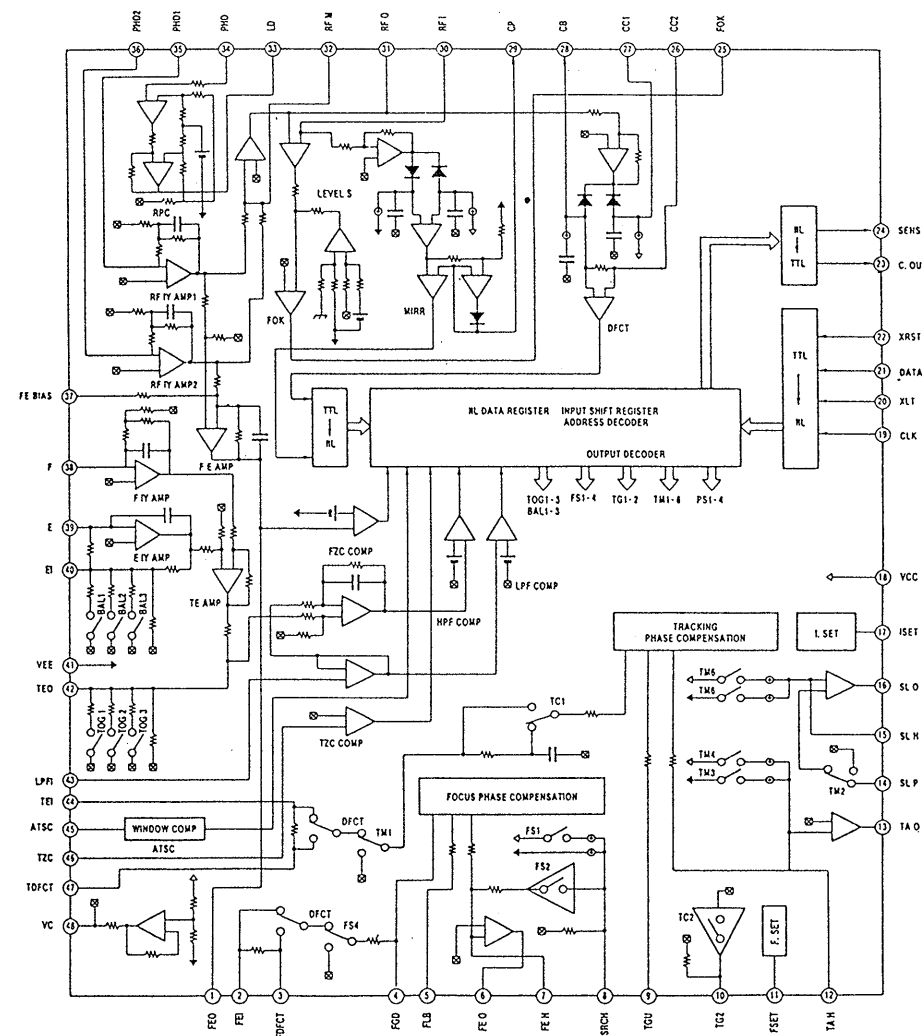
• Circled numbers refer to waveforms.

• Signal path.

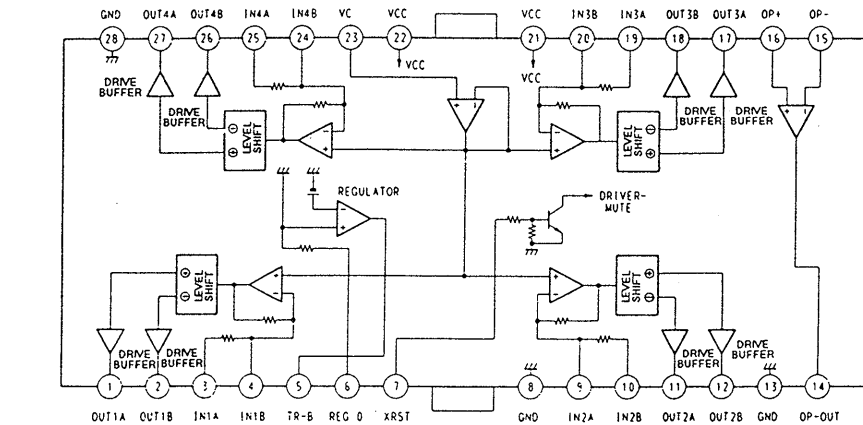
$\Rightarrow$: CD

● IC BLOCK DIAGRAMS (BD SECTION)

IC101 CXA1782BQ



IC102 BA6397FP



SECTION 8 EXPLODED VIEWS

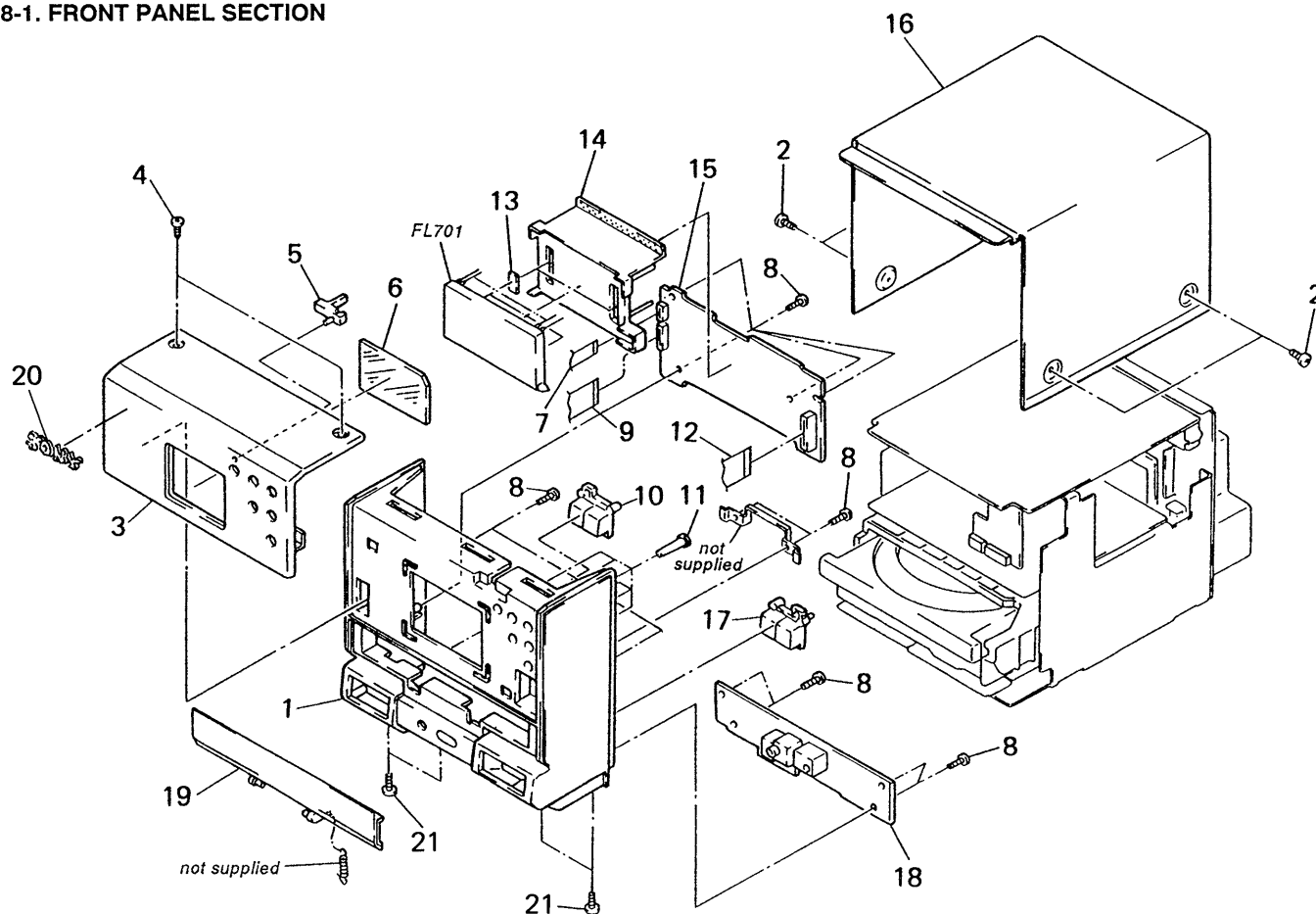
NOTE :

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

- 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.

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

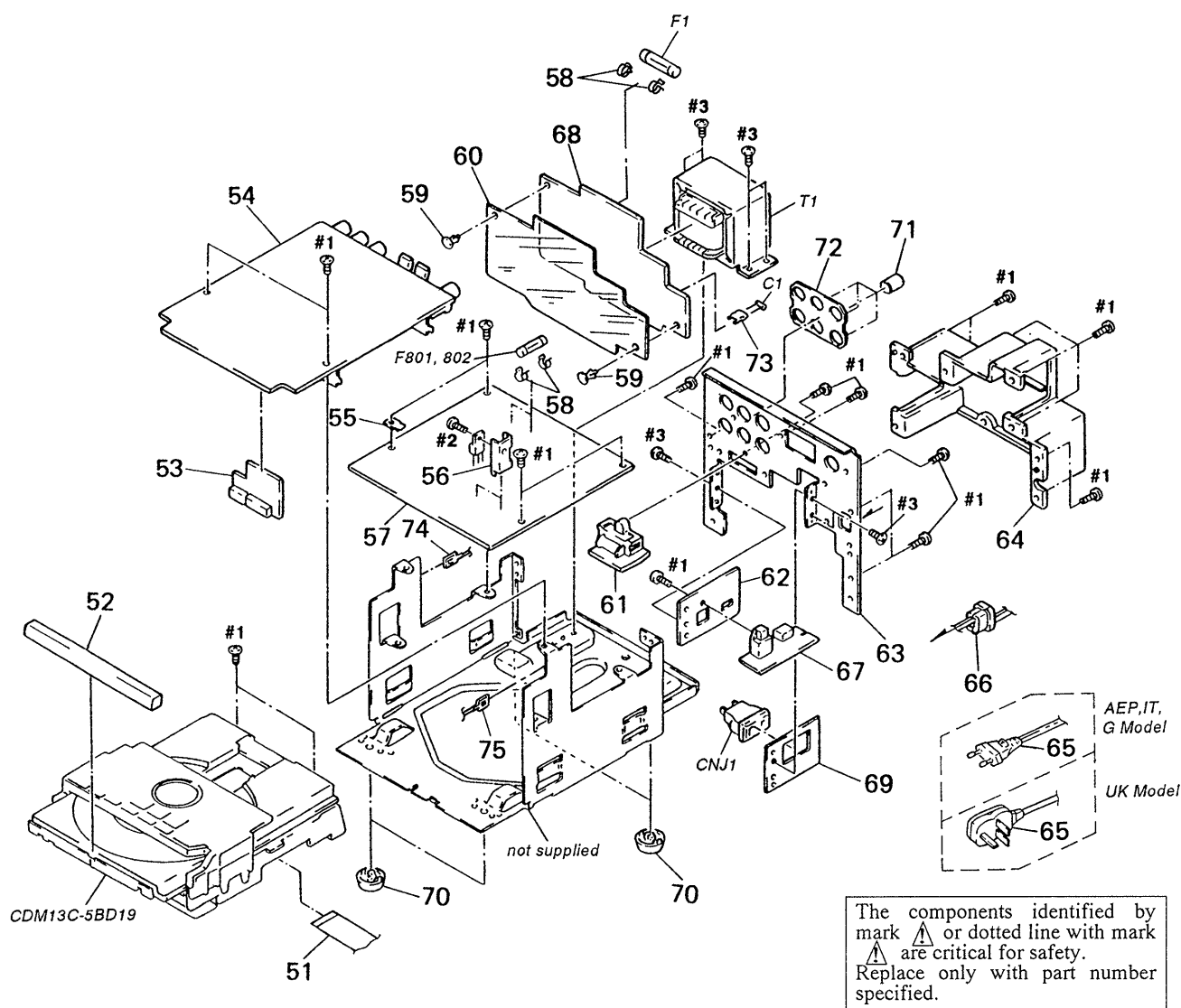
8-1. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
1	X-4946-207-1	PANEL SUB ASSY, FRONT	
2	3-704-366-61	SCREW (CASE)	
3	4-975-343-01	PANEL (AL), FRONT	
4	4-975-365-01	SCREW (ALUMINUM)	
5	4-975-346-01	INDICATOR (PLAY)	
6	4-975-345-01	PLATE (WINDOW), INDICATION	
7	1-775-731-11	WIRE (FLAT TYPE) (7 CORE)	
8	4-951-620-01	SCREW (2.6×8), +BVTP	
9	1-775-732-11	WIRE (FLAT TYPE) (13 CORE)	
10	4-975-351-01	BUTTON (POWER)	
11	4-975-355-01	BUTTON (PLAY)	
12	1-775-733-11	WIRE (FLAT TYPE) (15 CORE)	

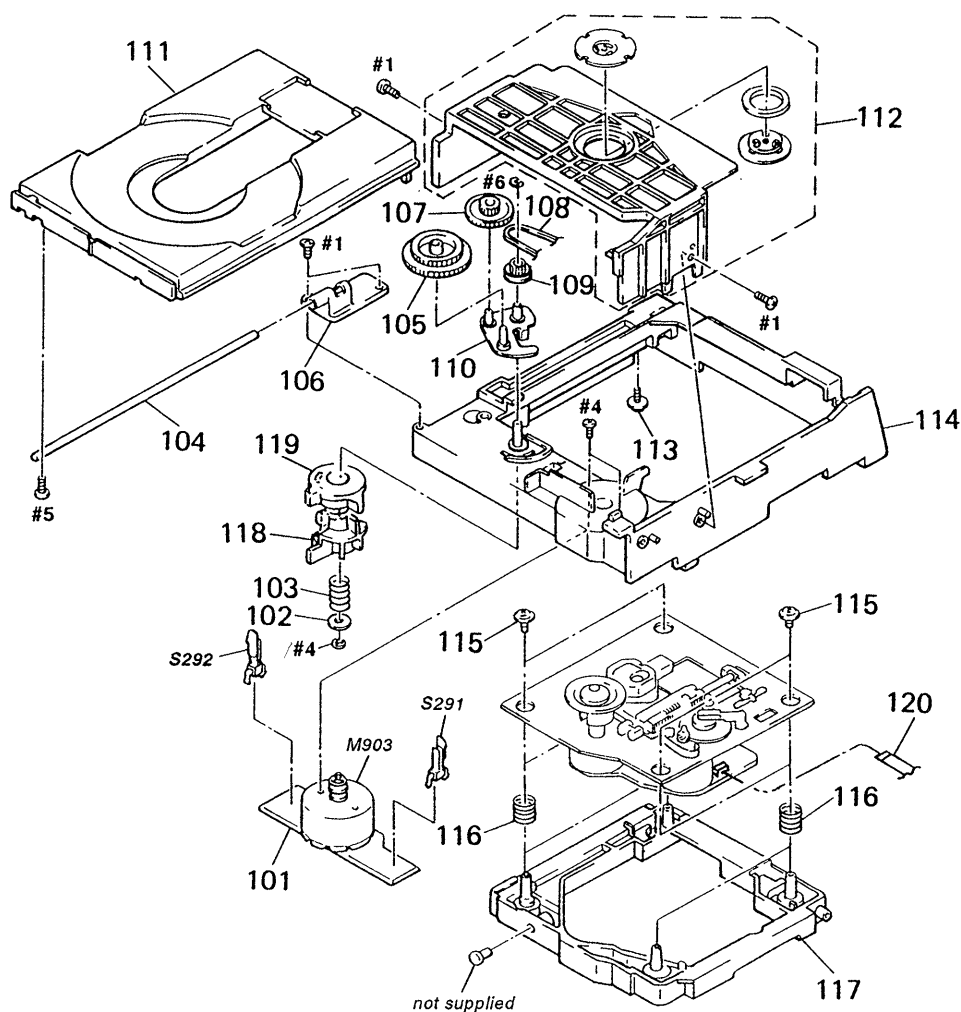
Ref. No.	Part No.	Description	Remark
* 13	4-932-810-11	CUSHION (FL)	
* 14	4-975-363-02	HOLDER (FL TUBE)	
* 15	A-4378-474-A	DISPLAY BOARD, COMPLETE (AEP, IT)	
* 15	A-4378-775-A	DISPLAY BOARD, COMPLETE (UK, G)	
16	4-975-358-11	CASE	
17	4-975-352-01	BUTTON (VOLUME)	
* 18	1-657-286-11	PANEL BOARD	
19	X-4946-431-1	DOOR ASSY	
20	4-942-636-21	EMBLEM (NO. 3.5), SONY	
21	7-682-547-09	SCREW, +BIT (M3) (S) TITE	
FL701	1-517-441-11	INDICATOR TUBE, FLUORESCENT	

8-2. CHASSIS SECTION



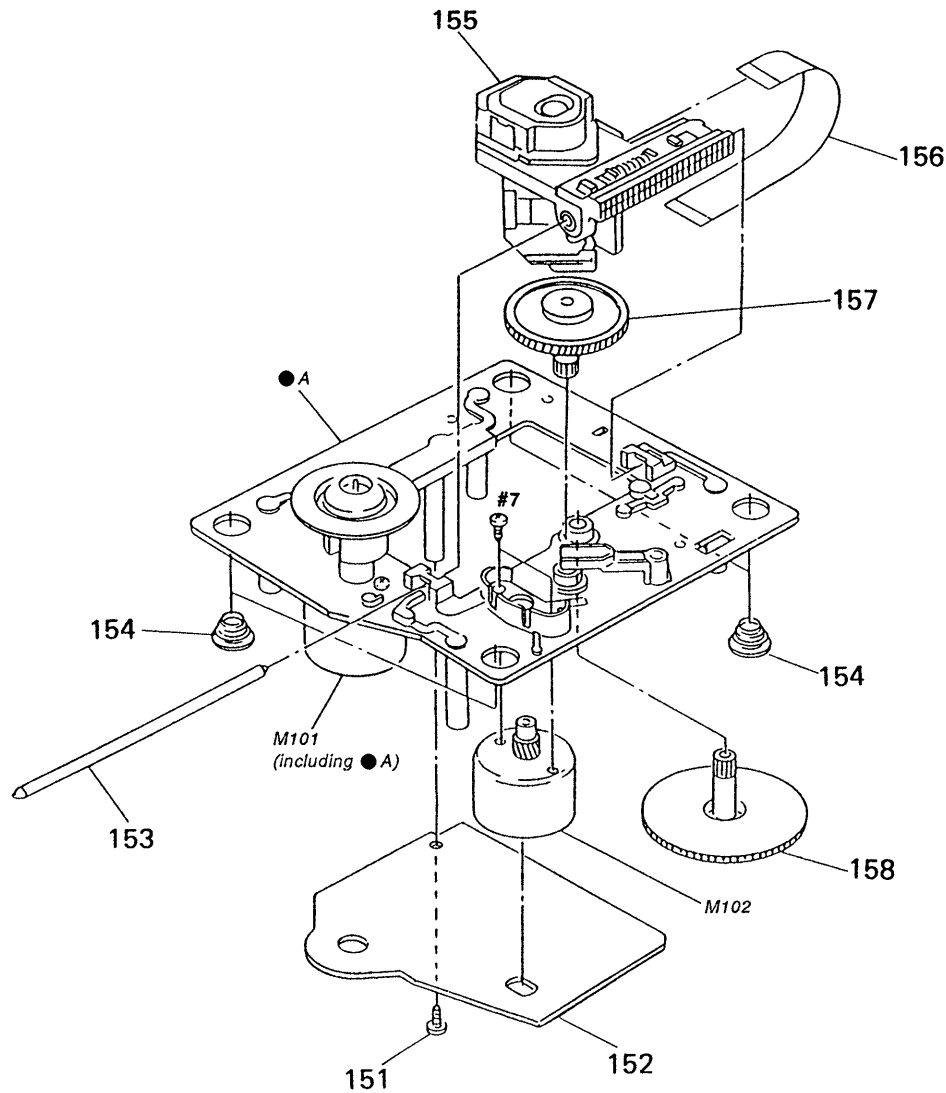
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	1-775-172-11	WIRE (FLAT TYPE) (19 CORE)		* 66	3-703-244-00	BUSHING (2104), CORD	
* 52	4-975-356-01	PANEL, LOADING		* 67	1-657-288-11	AU BUS BOARD	
* 53	1-657-289-11	CONNECT BOARD		* 68	1-657-287-11	AC BOARD	
* 54	A-4378-472-A	MAIN BOARD, COMPLETE (AEP, UK)		* 69	4-975-360-11	PANEL (AC OUTLET), BACK	
* 54	A-4378-774-A	MAIN BOARD, COMPLETE (IT, G)		70	4-965-822-01	FOOT	
55	1-537-771-21	TERMINAL BOARD, GROUND		* 71	4-977-364-01	COVER (PIN JACK 2P)	
* 56	3-309-144-21	HEAT SINK		72	4-975-903-01	PLATE (PIN JACK 6P), INDICATION	
* 57	A-4378-773-A	POWER BOARD, COMPLETE		* 73	4-875-455-31	COVER (DIA. 20), CAPACITOR	
* 58	1-533-213-31	HOLDER, FUSE		* 74	1-690-880-31	LEAD (WITH CONNECTOR)	
59	3-531-576-11	RIVET		75	1-690-880-51	LEAD (WITH CONNECTOR)	
60	4-975-366-01	SHEET (TRANSFORMER)		⚠ C1	1-161-744-00	CERAMIC	0.01uF 400V
* 61	1-658-027-11	SYSTEM CONNECTION BOARD		⚠ CNJ1	1-526-794-11	OUTLET, AC	
* 62	4-975-361-11	PANEL (AU BASS), BACK		⚠ F1	1-532-286-00	FUSE (T2.5AL 250V)	
* 63	4-975-359-11	PANEL (MAIN), BACK		⚠ F801	1-532-286-00	FUSE (T2.5AL 250V)	
* 64	4-975-362-01	COVER (BACK PANEL)		⚠ F802	1-532-286-00	FUSE (T2.5AL 250V)	
⚠ 65	1-776-060-11	CORD, POWER (AEP, IT, G)		⚠ T1	1-429-095-11	TRANSFORMER, POWER	
⚠ 65	1-776-061-11	CORD, POWER (UK)					

8-3. MECHANISM SECTION-1
(CDM13C-5BD19)



Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
* 101	1-634-461-11	LOADING BOARD		* 113	4-917-583-21	BRACKET, YOKE	
102	4-927-654-01	WASHER (LIMITER)		* 114	X-4946-208-1	CHASSIS (MD) ASSY	
103	3-659-338-00	SPRING, COMPRESSION		115	4-933-134-01	SCREW (+PTPH M2.6×6)	
104	4-929-764-01	SHAFT (TABLE GUIDE)		116	4-958-593-01	SPRING (BU), COMPRESSION	
105	4-927-620-01	GEAR (P)		117	4-929-747-01	HOLDER (BU)	
106	4-944-006-11	BEARING		118	4-929-727-01	CAM (A)	
107	4-927-628-01	GEAR (C)		119	4-929-729-01	CAM (B)	
108	4-927-649-01	BELT		120	1-590-530-11	WIRE, FLAT TYPE	
109	4-929-724-01	PULLEY (B)		M903	A-4608-362-A	MOTOR (L) ASSY (LOADING)	
110	X-4929-703-1	ARM ASSY, SWING		S291	1-571-924-11	SWITCH, LEAF (LOAD OUT)	
111	4-944-012-01	TABLE, DISC		S292	1-571-924-11	SWITCH, LEAF (LOAD IN)	
112	A-4604-752-A	HOLDER (MG) ASSY					

8-4. MECHANISM SECTION-2
(BU-5BD19)



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

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
151	4-951-620-01	SCREW (2.6×8), +BVTP		156	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)	
152	A-4673-402-A	BD BOARD, COMPLETE		157	4-917-567-01	GEAR (M)	
153	4-917-565-01	SHAFT, SLED		158	4-917-564-01	GEAR (P), FLATNESS	
154	4-951-940-01	INSULATOR (BU)		M101	X-4917-523-3	BASE (OUTSERT) ASSY (SPINDLE)	
▲155	8-848-367-11	DEVICE, OPTICAL KSS-213B/K-N		M102	X-4917-504-1	MOTOR ASSY (SLED)	

SECTION 9 ELECTRICAL PARTS LIST

AC AU BUS BD

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

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

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

Ref.No.	Part No.	Description	Remark
*	1-657-287-11	AC BOARD *****	
*	1-533-213-31	HOLDER, FUSE < CAPACITOR >	
Δ C1	1-161-744-00	CERAMIC 0.01uF	400V
C844	1-164-159-11	CERAMIC 0.1uF	50V
C845	1-164-159-11	CERAMIC 0.1uF	50V
		< CONNECTOR >	
* CN1	1-580-230-31	PIN, CONNECTOR (PC BOARD) 2P	
CN2	1-564-321-00	PIN, CONNECTOR 2P	
* CN3	1-564-522-11	PLUG, CONNECTOR 7P	
		< DIODE >	
D813	8-719-987-63	DIODE 1N4148M	
		< FUSE >	
Δ F1	1-532-286-00	FUSE (T2.5AL 250V)	
		< RELAY >	
Δ RY1	1-755-018-11	RELAY	

*	1-657-288-11	AU BUS BOARD *****	
		< CAPACITOR >	
C201	1-136-165-00	FILM 0.1uF	5% 50V
C202	1-126-965-11	ELECT 22uF	20% 50V
		< CONNECTOR >	
* CN202	1-565-561-11	PIN, CONNECTOR 3P	
* CN205	1-564-508-11	PLUG, CONNECTOR 5P	
		< FERRITE BEAD >	
FB201	1-412-473-21	INDUCTOR 0UH	
FB202	1-412-473-21	INDUCTOR 0UH	

Ref.No.	Part No.	Description	Remark
		< IC >	
IC201	8-749-921-12	IC GP1F32T	
		< RESISTOR >	
R203	1-249-433-11	CARBON 22K 5% 1/4W	

	A-4673-402-A	BD BOARD, COMPLETE *****	
		< CAPACITOR >	
C101	1-126-607-11	ELECT CHIP 47uF	20% 4V
C102	1-163-275-11	CERAMIC CHIP 0.001uF	5% 50V
C103	1-164-346-11	CERAMIC CHIP 1uF	16V
C105	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C106	1-164-695-11	CERAMIC CHIP 0.0022uF	5% 50V
C107	1-164-695-11	CERAMIC CHIP 0.0022uF	5% 50V
C108	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C109	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C110	1-163-989-11	CERAMIC CHIP 0.033uF	10% 25V
C111	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C112	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C113	1-164-695-11	CERAMIC CHIP 0.0022uF	5% 50V
C114	1-164-005-11	CERAMIC CHIP 0.47uF	25V
C115	1-126-607-11	ELECT CHIP 47uF	20% 4V
C116	1-163-143-00	CERAMIC CHIP 0.0012uF	5% 50V
C117	1-164-005-11	CERAMIC CHIP 0.47uF	25V
C118	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C119	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C120	1-135-201-11	TANTALUM CHIP 10uF	20% 4V
C121	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C122	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C123	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C124	1-126-607-11	ELECT CHIP 47uF	20% 4V
C125	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C126	1-163-038-91	CERAMIC CHIP 0.1uF	25V

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
C127	1-164-695-11	CERAMIC CHIP	0.0022uF 5% 50V	R116	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
C128	1-163-135-00	CERAMIC CHIP	560PF 5% 50V	R117	1-216-093-00	METAL CHIP	68K 5% 1/10W
C129	1-163-038-91	CERAMIC CHIP	0.1uF 25V	R118	1-216-049-91	METAL GLAZE	1K 5% 1/10W
C130	1-164-336-11	CERAMIC CHIP	0.33uF 25V	R119	1-216-121-91	METAL GLAZE	1M 5% 1/10W
C131	1-163-038-91	CERAMIC CHIP	0.1uF 25V	R120	1-216-089-91	METAL GLAZE	47K 5% 1/10W
C132	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V	R121	1-216-114-00	METAL GLAZE	510K 5% 1/10W
C133	1-163-145-00	CERAMIC CHIP	0.0015uF 5% 50V	R122	1-216-097-91	METAL GLAZE	100K 5% 1/10W
C134	1-164-346-11	CERAMIC CHIP	1uF 16V	R123	1-216-099-00	METAL CHIP	120K 5% 1/10W
C135	1-163-251-11	CERAMIC CHIP	100PF 5% 50V	R124	1-216-091-00	METAL CHIP	56K 5% 1/10W
C136	1-164-005-11	CERAMIC CHIP	0.47uF 25V	R125	1-216-069-00	METAL CHIP	6.8K 5% 1/10W
C137	1-164-232-11	CERAMIC CHIP	0.01uF 50V	R126	1-216-063-91	METAL GLAZE	3.9K 5% 1/10W
C139	1-163-235-11	CERAMIC CHIP	22PF 5% 50V	R127	1-216-089-91	METAL GLAZE	47K 5% 1/10W
C140	1-163-235-11	CERAMIC CHIP	22PF 5% 50V	R128	1-216-105-91	METAL GLAZE	220K 5% 1/10W
C141	1-163-038-91	CERAMIC CHIP	0.1uF 25V	R129	1-216-049-91	METAL GLAZE	1K 5% 1/10W
C142	1-163-038-91	CERAMIC CHIP	0.1uF 25V	R130	1-216-079-00	METAL CHIP	18K 5% 1/10W
C145	1-135-201-11	TANTALUM CHIP	10uF 20% 4V	R131	1-216-079-00	METAL CHIP	18K 5% 1/10W
C146	1-135-201-11	TANTALUM CHIP	10uF 20% 4V	R132	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
C147	1-163-275-11	CERAMIC CHIP	0.001uF 5% 50V	R133	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
C148	1-163-275-11	CERAMIC CHIP	0.001uF 5% 50V	R134	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
C149	1-164-346-11	CERAMIC CHIP	1uF 16V	R135	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
C153	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V	R136	1-216-073-00	METAL CHIP	10K 5% 1/10W
C154	1-163-235-11	CERAMIC CHIP	22PF 5% 50V	R137	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
< CONNECTOR >				R138	1-216-049-91	METAL GLAZE	1K 5% 1/10W
CNU101	1-770-014-11	CONNECTOR, FFC/FPC 16P		R139	1-216-033-00	METAL CHIP	220 5% 1/10W
CNU102	1-770-013-11	CONNECTOR, FFC/FPC 19P		R140	1-216-081-00	METAL CHIP	22K 5% 1/10W
< IC >				R141	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
IC101	8-752-069-56	IC CXA1782BQ		R142	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
IC102	8-759-291-06	IC BA6397FP		R143	1-216-121-91	METAL GLAZE	1M 5% 1/10W
IC103	8-752-372-94	IC CXD2507AQ		R144	1-216-073-00	METAL CHIP	10K 5% 1/10W
IC104	8-759-185-29	IC PCM1710U-B		R145	1-216-097-91	METAL GLAZE	100K 5% 1/10W
< TRANSISTOR >				R146	1-216-097-91	METAL GLAZE	100K 5% 1/10W
Q101	8-729-010-08	TRANSISTOR MSB710-R		R147-149	1-216-049-91	METAL GLAZE	1K 5% 1/10W
Q102	8-729-424-08	TRANSISTOR UN2111		R150-152	1-216-037-00	METAL CHIP	330 5% 1/10W
Q103	8-729-421-22	TRANSISTOR UN2211		R153	1-216-089-91	METAL GLAZE	47K 5% 1/10W
< RESISTOR >				R154	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R102	1-216-001-00	METAL CHIP	10 5% 1/10W	R156	1-216-081-00	METAL CHIP	22K 5% 1/10W
R103	1-216-049-91	METAL GLAZE	1K 5% 1/10W	R157	1-216-069-00	METAL CHIP	6.8K 5% 1/10W
R104	1-216-097-91	METAL GLAZE	100K 5% 1/10W	R158	1-216-001-00	METAL CHIP	10 5% 1/10W
R105-108	1-216-089-91	METAL GLAZE	47K 5% 1/10W	< VARIABLE RESISTOR >			
R109	1-216-097-91	METAL GLAZE	100K 5% 1/10W	RV101	1-241-396-11	RES, ADJ, METAL GLAZE	22K (FOCUS BIAS)
R112	1-216-077-00	METAL CHIP	15K 5% 1/10W	RV102	1-241-396-11	RES, ADJ, METAL GLAZE	22K (FOCUS GAIN)
R113	1-216-077-00	METAL CHIP	15K 5% 1/10W	RV103	1-241-396-11	RES, ADJ, METAL GLAZE	22K (TRACKING GAIN)
R114	1-216-101-00	METAL CHIP	150K 5% 1/10W	< SWITCH >			
R115	1-216-101-00	METAL CHIP	150K 5% 1/10W	S101	1-572-085-11	SWITCH, LEAF	(LIMIT SWITCH)

BD

CONNECT

DISPLAY

Ref.No.	Part No.	Description	Remark
< VIBRATOR >			
X101	1-579-280-11	VIBRATOR, CRYSTAL (16.9344MHz)	

*	1-657-289-11	CONNECT BOARD	

< CONNECTOR >			
CN507	1-750-189-11	CONNECTOR, BOARD TO BOARD 16P	
CN508	1-695-094-11	SOCKET, CONNECTOR 11P	
CN509	1-750-179-11	SOCKET, CONNECTOR 5P	

*	A-4378-474-A	DISPLAY BOARD, COMPLETE (AEP, UK)	
*	A-4378-775-A	DISPLAY BOARD, COMPLETE (IT, G)	

< CAPACITOR >			
C701	1-126-916-11	ELECT 1000uF	20% 6.3V
C702	1-162-306-11	CERAMIC 0.01uF	30% 16V
C703	1-164-159-11	CERAMIC 0.1uF	50V
C704	1-164-159-11	CERAMIC 0.1uF	50V
C705	1-161-494-00	CERAMIC 0.022uF	25V
C706	1-124-907-11	ELECT 10uF	20% 50V
C707	1-102-953-00	CERAMIC 18PF	5% 50V
C708	1-102-959-00	CERAMIC 22PF	5% 50V
C709	1-124-903-11	ELECT 1uF	20% 50V
C710	1-124-903-11	ELECT 1uF	20% 50V
C714	1-164-159-11	CERAMIC 0.1uF	50V
C715	1-164-159-11	CERAMIC 0.1uF	50V
C750	1-162-290-31	CERAMIC 470PF	10% 50V
< CONNECTOR >			
* CN701	1-568-834-11	SOCKET, CONNECTOR 15P	
* CN702	1-568-954-11	PIN, CONNECTOR 5P	
* CN703	1-568-832-11	SOCKET, CONNECTOR 13P	
* CN704	1-568-826-11	SOCKET, CONNECTOR 7P	
< COMPOSITION CIRCUIT BLOCK >			
CP701	1-232-881-11	COMPOSITION CIRCUIT BLOCK	
CP702	1-239-054-11	COMPOSITION CIRCUIT BLOCK	
< DIODE >			
D701	8-719-200-82	DIODE 11ES2	
D702-704			
	8-719-987-63	DIODE 1N4148M	
D705	8-719-052-22	LED SEL58420C-TP (►II)	
D706	8-719-987-63	DIODE 1N4148M	

Ref.No.	Part No.	Description	Remark
< INDICATOR TUBE >			
FL701	1-517-441-11	INDICATOR TUBE, FLUORESCENT	
< IC >			
IC701	8-759-346-40	IC uPD78044AGF-102-3B9	
< COIL >			
L701	1-410-521-11	INDUCTOR 100uH	
< TRANSISTOR >			
Q701	8-729-900-36	TRANSISTOR DTC124ES	
Q702	8-729-620-05	TRANSISTOR 2SC2603-EF	
< RESISTOR >			
R701	1-249-413-11	CARBON 470 5% 1/4W	
R702	1-249-413-11	CARBON 470 5% 1/4W	
R703-708			
	1-249-417-11	CARBON 1K 5% 1/4W	
R709	1-249-437-11	CARBON 47K 5% 1/4W	
R711-713			
	1-249-417-11	CARBON 1K 5% 1/4W	
R714	1-249-409-11	CARBON 220 5% 1/4W	
R715	1-249-437-11	CARBON 47K 5% 1/4W	
R716	1-249-433-11	CARBON 22K 5% 1/4W	
R717	1-249-413-11	CARBON 470 5% 1/4W	
R718	1-249-423-11	CARBON 3.3K 5% 1/4W	
R719	1-249-423-11	CARBON 3.3K 5% 1/4W	
R720	1-249-418-11	CARBON 1.2K 5% 1/4W (AEP, UK)	
R720	1-249-421-11	CARBON 2.2K 5% 1/4W (IT, G)	
R721	1-249-423-11	CARBON 3.3K 5% 1/4W	
R722	1-249-413-11	CARBON 470 5% 1/4W	
R723	1-249-415-11	CARBON 680 5% 1/4W	
R724	1-249-417-11	CARBON 1K 5% 1/4W	
R725	1-249-419-11	CARBON 1.5K 5% 1/4W	
R726	1-249-421-11	CARBON 2.2K 5% 1/4W	
R727	1-249-409-11	CARBON 220 5% 1/4W	
R728-730			
	1-249-417-11	CARBON 1K 5% 1/4W	
R731	1-249-409-11	CARBON 220 5% 1/4W	
R732	1-249-429-11	CARBON 10K 5% 1/4W	
R733	1-249-409-11	CARBON 220 5% 1/4W	
R734-736			
	1-249-417-11	CARBON 1K 5% 1/4W	
R737	1-249-409-11	CARBON 220 5% 1/4W	
R738	1-249-425-11	CARBON 4.7K 5% 1/4W	
R739	1-249-417-11	CARBON 1K 5% 1/4W	
R740	1-249-417-11	CARBON 1K 5% 1/4W	
R741	1-249-409-11	CARBON 220 5% 1/4W	

DISPLAY

LOADING

MAIN

Ref.No.	Part No.	Description	Remark		
R742	1-249-437-11	CARBON	47K	5%	1/4W
R743	1-247-807-31	CARBON	100	5%	1/4W
R744	1-249-401-11	CARBON	47	5%	1/4W
R749	1-249-421-11	CARBON	2. 2K	5%	1/4W
R750	1-247-891-00	CARBON	330K	5%	1/4W
R751	1-249-429-11	CARBON	10K	5%	1/4W
< SWITCH >					
S701	1-554-303-21	SWITCH, TACTILE (BAND)			
S702	1-554-303-21	SWITCH, TACTILE (▶▶ ▶▶)			
S703	1-554-303-21	SWITCH, TACTILE (▲)			
S704	1-554-303-21	SWITCH, TACTILE (◀◀ ◀◀)			
S705	1-554-303-21	SWITCH, TACTILE (■)			
S706	1-554-303-21	SWITCH, TACTILE (▶▶)			
< VIBRATOR >					
X701	1-579-233-11	VIBRATOR, CERAMIC (5MHz)			
X702	1-567-098-41	VIBRATOR, CRYSTAL (32. 768kHz)			

*	1-634-461-11	LOADING BOARD			

< CONNECTOR >					
* CN291	1-564-498-11	PIN, CONNECTOR 5P			
< SWITCH >					
S291	1-571-924-11	SWITCH, LEAF (LOAD OUT)			
S292	1-571-924-11	SWITCH, LEAF (LOAD IN)			

*	A-4378-472-A	MAIN BOARD, COMPLETE (AEP, UK)			
*	A-4378-774-A	MAIN BOARD, COMPLETE (IT, G)			

< CAPACITOR >					
C101	1-162-286-31	CERAMIC	220PF	10%	50V
C102	1-126-965-11	ELECT	22uF	20%	50V
C103	1-162-302-11	CERAMIC	0. 0022uF	20%	16V
C104	1-124-257-00	ELECT	2. 2uF	20%	50V
C105	1-162-286-31	CERAMIC	220PF	10%	50V
C108	1-162-303-11	CERAMIC	0. 0033uF	20%	16V
C109	1-126-965-11	ELECT	22uF	20%	50V
C110	1-162-306-11	CERAMIC	0. 01uF	30%	16V
C111	1-124-120-11	ELECT	220uF	20%	25V
C112	1-162-306-11	CERAMIC	0. 01uF	30%	16V
C113	1-124-907-11	ELECT	10uF	20%	50V
C114	1-162-306-11	CERAMIC	0. 01uF	30%	16V

Ref.No.	Part No.	Description	Remark		
C151	1-162-286-31	CERAMIC	220PF	10%	50V
C152	1-126-965-11	ELECT	22uF	20%	50V
C153	1-162-302-11	CERAMIC	0. 0022uF	20%	16V
C154	1-124-257-00	ELECT	2. 2uF	20%	50V
C155	1-162-286-31	CERAMIC	220PF	10%	50V
C158	1-162-303-11	CERAMIC	0. 0033uF	20%	16V
C159	1-126-965-11	ELECT	22uF	20%	50V
C302	1-124-907-11	ELECT	10uF	20%	50V
C303	1-124-465-00	ELECT	0. 47uF	20%	50V
C304	1-124-234-00	ELECT	22uF	20%	16V
C305	1-137-370-11	FILM	0. 01uF	5%	50V
C306	1-126-965-11	ELECT	22uF	20%	50V
C307	1-126-965-11	ELECT	22uF	20%	50V
C308	1-124-907-11	ELECT	10uF	20%	50V
C309	1-136-171-00	FILM	0. 33uF	5%	50V
C310	1-137-374-11	FILM	0. 047uF	5%	50V
C311	1-124-234-00	ELECT	22uF	20%	16V
C312	1-126-965-11	ELECT	22uF	20%	50V
C313	1-124-465-00	ELECT	0. 47uF	20%	50V
C314	1-162-207-31	CERAMIC	22PF	5%	50V
C350	1-162-290-31	CERAMIC	470PF	10%	50V
C352	1-124-907-11	ELECT	10uF	20%	50V
C353	1-124-465-00	ELECT	0. 47uF	20%	50V
C354	1-124-234-00	ELECT	22uF	20%	16V
C355	1-137-370-11	FILM	0. 01uF	5%	50V
C356	1-126-965-11	ELECT	22uF	20%	50V
C357	1-126-965-11	ELECT	22uF	20%	50V
C358	1-124-907-11	ELECT	10uF	20%	50V
C359	1-136-171-00	FILM	0. 33uF	5%	50V
C360	1-137-374-11	FILM	0. 047uF	5%	50V
C361	1-124-234-00	ELECT	22uF	20%	16V
C362	1-126-965-11	ELECT	22uF	20%	50V
C363	1-124-465-00	ELECT	0. 47uF	20%	50V
C364	1-162-207-31	CERAMIC	22PF	5%	50V
C401	1-124-907-11	ELECT	10uF	20%	50V
C402	1-126-963-11	ELECT	4. 7uF	20%	50V
C404	1-124-916-11	ELECT	22uF	20%	63V
C405	1-124-907-11	ELECT	10uF	20%	50V
C406	1-126-963-11	ELECT	4. 7uF	20%	50V
C451	1-124-907-11	ELECT	10uF	20%	50V
C452	1-126-963-11	ELECT	4. 7uF	20%	50V
C454	1-124-916-11	ELECT	22uF	20%	63V
C455	1-124-907-11	ELECT	10uF	20%	50V
C456	1-126-963-11	ELECT	4. 7uF	20%	50V
C501	1-162-306-11	CERAMIC	0. 01uF	30%	16V
C549	1-162-306-11	CERAMIC	0. 01uF	30%	16V
C550	1-162-294-31	CERAMIC	0. 001uF	10%	50V

Ref. No.	Part No.	Description	Remark
< CONNECTOR >			
* CN101	1-568-934-11	PIN, CONNECTOR 7P	
CN102	1-506-468-11	PIN, CONNECTOR 3P	
* CN401	1-568-942-11	PIN, CONNECTOR 4P	
* CN501	1-568-856-11	SOCKET, CONNECTOR 13P	
CN502	1-750-198-11	CONNECTOR, BOARD TO BOARD 16P	
< DIODE >			
D101	8-719-987-63	DIODE 1N4148M	
D301-304	8-719-987-63	DIODE 1N4148M	
D305	8-719-933-33	DIODE HZS6A1L	
D306	8-719-933-33	DIODE HZS6A1L	
< IC >			
IC101	8-759-009-06	IC MC14052BF	
IC102	8-759-008-67	IC MC14066BF	
IC301	8-759-009-06	IC MC14052BF	
IC302	8-759-281-42	IC TC9210P	
IC303	8-759-009-06	IC MC14052BF	
IC304	8-759-634-51	IC M5218AP	
IC305	8-759-009-06	IC MC14052BF	
IC306	8-759-634-51	IC M5218AP	
IC401	8-759-710-59	IC NJM4580D-D	
IC402	8-759-710-59	IC NJM4580D-D	
IC501	8-759-267-27	IC BU2092F	
< JACK >			
J101	1-770-890-11	JACK, PIN 6P (MD IN/OUT, OUTPUT)	
< TRANSISTOR >			
Q101	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q102	8-729-900-61	TRANSISTOR DTA114ES	
Q103	8-729-900-61	TRANSISTOR DTA114ES	
Q105	8-729-900-80	TRANSISTOR DTC114ES	
Q151	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q301	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q302	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q303	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q304	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q351	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q352	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q354	8-729-141-30	TRANSISTOR 2SC3623A-LK	
< RESISTOR >			
R101	1-249-425-11	CARBON 4.7K 5% 1/4W	
R102	1-249-426-11	CARBON 5.6K 5% 1/4W	
R103	1-249-413-11	CARBON 470 5% 1/4W	

Ref. No.	Part No.	Description	Remark
R105	1-249-417-11	CARBON 1K 5% 1/4W	
R106	1-249-417-11	CARBON 1K 5% 1/4W	
R108	1-249-417-11	CARBON 1K 5% 1/4W	
R109	1-249-433-11	CARBON 22K 5% 1/4W	
R110	1-249-433-11	CARBON 22K 5% 1/4W	
R112	1-249-417-11	CARBON 1K 5% 1/4W	
R113	1-249-433-11	CARBON 22K 5% 1/4W	
R114	1-249-425-11	CARBON 4.7K 5% 1/4W	
R115	1-247-895-00	CARBON 470K 5% 1/4W	
R116	1-249-423-11	CARBON 3.3K 5% 1/4W	
R117-119	1-249-417-11	CARBON 1K 5% 1/4W	
R120	1-249-425-11	CARBON 4.7K 5% 1/4W	
R121	1-249-421-11	CARBON 2.2K 5% 1/4W	
R122	1-249-429-11	CARBON 10K 5% 1/4W	
△R123	1-212-857-00	FUSIBLE 10 5% 1/4W	F
△R124	1-212-873-11	FUSIBLE 47 5% 1/4W	F
R151	1-249-425-11	CARBON 4.7K 5% 1/4W	
R152	1-249-426-11	CARBON 5.6K 5% 1/4W	
R153	1-249-413-11	CARBON 470 5% 1/4W	
R155	1-249-417-11	CARBON 1K 5% 1/4W	
R156	1-249-417-11	CARBON 1K 5% 1/4W	
R158	1-249-417-11	CARBON 1K 5% 1/4W	
R166	1-249-423-11	CARBON 3.3K 5% 1/4W	
R167-169	1-249-417-11	CARBON 1K 5% 1/4W	
R170	1-249-425-11	CARBON 4.7K 5% 1/4W	
R301	1-249-433-11	CARBON 22K 5% 1/4W	
R302	1-247-887-00	CARBON 220K 5% 1/4W	
R303	1-249-425-11	CARBON 4.7K 5% 1/4W	
R304	1-249-413-11	CARBON 470 5% 1/4W	
R305	1-249-433-11	CARBON 22K 5% 1/4W	
R306	1-249-425-11	CARBON 4.7K 5% 1/4W	
R307	1-247-895-00	CARBON 470K 5% 1/4W	
R308	1-249-433-11	CARBON 22K 5% 1/4W	
R309	1-249-433-11	CARBON 22K 5% 1/4W	
R310	1-247-807-31	CARBON 100 5% 1/4W	
R311	1-247-887-00	CARBON 220K 5% 1/4W	
R312	1-249-433-11	CARBON 22K 5% 1/4W	
R313	1-249-433-11	CARBON 22K 5% 1/4W	
R314	1-249-417-11	CARBON 1K 5% 1/4W	
R315	1-249-413-11	CARBON 470 5% 1/4W	
R316	1-249-432-11	CARBON 18K 5% 1/4W	
R317	1-249-435-11	CARBON 33K 5% 1/4W	
R319	1-247-887-00	CARBON 220K 5% 1/4W	
R320	1-249-433-11	CARBON 22K 5% 1/4W	
R321	1-249-433-11	CARBON 22K 5% 1/4W	
R322	1-249-417-11	CARBON 1K 5% 1/4W	
R323	1-249-429-11	CARBON 10K 5% 1/4W	

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

MAIN

PANEL

POWER

Ref.No.	Part No.	Description	Remark
R324	1-249-425-11	CARBON	4.7K 5% 1/4W
R325	1-249-417-11	CARBON	1K 5% 1/4W
R326	1-249-412-11	CARBON	390 5% 1/4W
R327	1-247-895-00	CARBON	470K 5% 1/4W
R328	1-249-427-11	CARBON	6.8K 5% 1/4W
R329	1-249-421-11	CARBON	2.2K 5% 1/4W
R352	1-247-887-00	CARBON	220K 5% 1/4W
R353	1-249-425-11	CARBON	4.7K 5% 1/4W
R354	1-249-413-11	CARBON	470 5% 1/4W
R361	1-247-887-00	CARBON	220K 5% 1/4W
R364	1-249-417-11	CARBON	1K 5% 1/4W
R365	1-249-413-11	CARBON	470 5% 1/4W
R369	1-247-887-00	CARBON	220K 5% 1/4W
R372	1-249-417-11	CARBON	1K 5% 1/4W
R373	1-249-429-11	CARBON	10K 5% 1/4W
R374	1-249-425-11	CARBON	4.7K 5% 1/4W
R375	1-249-417-11	CARBON	1K 5% 1/4W
R376	1-249-412-11	CARBON	390 5% 1/4W
R377	1-247-895-00	CARBON	470K 5% 1/4W
R378	1-249-427-11	CARBON	6.8K 5% 1/4W
R379	1-249-421-11	CARBON	2.2K 5% 1/4W
R401	1-249-433-11	CARBON	22K 5% 1/4W
R402	1-249-417-11	CARBON	1K 5% 1/4W
R403	1-249-425-11	CARBON	4.7K 5% 1/4W
R404	1-249-433-11	CARBON	22K 5% 1/4W
R405	1-247-887-00	CARBON	220K 5% 1/4W
R407	1-249-433-11	CARBON	22K 5% 1/4W
R408	1-249-417-11	CARBON	1K 5% 1/4W
R409	1-249-425-11	CARBON	4.7K 5% 1/4W
R410	1-249-436-11	CARBON	39K 5% 1/4W
R411	1-249-403-11	CARBON	68 5% 1/4W
R451	1-249-433-11	CARBON	22K 5% 1/4W
R452	1-249-417-11	CARBON	1K 5% 1/4W
R453	1-249-425-11	CARBON	4.7K 5% 1/4W
R454	1-249-433-11	CARBON	22K 5% 1/4W
R455	1-247-887-00	CARBON	220K 5% 1/4W
R457	1-249-433-11	CARBON	22K 5% 1/4W
R458	1-249-417-11	CARBON	1K 5% 1/4W
R459	1-249-425-11	CARBON	4.7K 5% 1/4W
R460	1-249-436-11	CARBON	39K 5% 1/4W
R461	1-249-403-11	CARBON	68 5% 1/4W
R501-503	1-247-807-31	CARBON	100 5% 1/4W
< TUNER >			
TB101	1-233-355-11	ENCAPSULATED COMPONENT (TUNER) (AEP, UK)	
TB101	1-693-311-11	TUNER (CE) (IT, G)	

Ref.No.	Part No.	Description	Remark
< TERMINAL >			
TM101	1-537-489-11	TERMINAL BOARD (ANT) (ANTENNA)	

*	1-657-286-11	PANEL BOARD	

< CAPACITOR >			
C449	1-162-303-11	CERAMIC	0.0033uF 20% 16V
C450	1-164-159-11	CERAMIC	0.1uF 50V
C499	1-162-303-11	CERAMIC	0.0033uF 20% 16V
C711	1-164-159-11	CERAMIC	0.1uF 50V
C712	1-126-157-11	ELECT	10uF 20% 16V
< IC >			
IC702	8-749-922-36	IC GP1U50XB	
< JACK >			
J401	1-764-106-11	JACK (PHONES)	
< RESISTOR >			
R745	1-249-413-11	CARBON	470 5% 1/4W
R746	1-249-423-11	CARBON	3.3K 5% 1/4W
R747	1-249-415-11	CARBON	680 5% 1/4W
R748	1-249-417-11	CARBON	1K 5% 1/4W
< SWITCH >			
S707	1-554-303-21	SWITCH, TACTILE (POWER)	
S708	1-554-303-21	SWITCH, TACTILE (FUNCTION)	
S709	1-554-303-21	SWITCH, TACTILE (VOL -)	
S710	1-554-303-21	SWITCH, TACTILE (VOL +)	

*	A-4378-773-A	POWER BOARD, COMPLETE	

< CAPACITOR >			
C245-247	1-164-159-11	CERAMIC	0.1uF 50V
C248	1-162-282-31	CERAMIC	100PF 10% 50V
C249	1-162-282-31	CERAMIC	100PF 10% 50V
C298	1-162-282-31	CERAMIC	100PF 10% 50V
C299	1-162-282-31	CERAMIC	100PF 10% 50V
C548	1-164-159-11	CERAMIC	0.1uF 50V
C801	1-130-491-00	MYLAR	0.047uF 5% 50V
C802	1-130-491-00	MYLAR	0.047uF 5% 50V
C803	1-126-016-11	ELECT	4700uF 20% 16V
C804	1-126-016-11	ELECT	4700uF 20% 16V
C805	1-126-024-11	ELECT	220uF 20% 16V

Ref. No.	Part No.	Description	Remark
C806	1-126-024-11	ELECT	220uF 20% 16V
C807	1-126-022-11	ELECT	47uF 20% 10V
C808	1-126-025-11	ELECT	330uF 20% 25V
C809	1-126-025-11	ELECT	330uF 20% 25V
C810	1-124-122-11	ELECT	100uF 20% 50V
C811	1-124-122-11	ELECT	100uF 20% 50V
C812	1-126-970-11	ELECT	330uF 20% 50V
C813	1-124-913-11	ELECT	470uF 20% 50V
C814	1-124-477-11	ELECT	47uF 20% 25V
C815	1-162-306-11	CERAMIC	0. 01uF 30% 16V
C816	1-126-933-11	ELECT	100uF 20% 16V
C817	1-162-306-11	CERAMIC	0. 01uF 30% 16V
C818	1-124-572-11	ELECT	100uF 20% 63V
C819	1-124-910-11	ELECT	47uF 20% 50V
C820	1-162-306-11	CERAMIC	0. 01uF 30% 16V
C821	1-124-910-11	ELECT	47uF 20% 50V
C822	1-124-907-11	ELECT	10uF 20% 50V
C823	1-124-463-00	ELECT	0. 1uF 20% 50V
C824	1-136-165-00	FILM	0. 1uF 5% 50V
C825	1-104-666-11	ELECT	220uF 20% 6. 3V
C826	1-136-165-00	FILM	0. 1uF 5% 50V
C827	1-124-907-11	ELECT	10uF 20% 50V
C828	1-104-664-11	ELECT	47uF 20% 16V
C829	1-126-926-11	ELECT	1000uF 20% 10V
C830	1-126-059-11	ELECT	10uF 20% 50V
C831	1-126-163-11	ELECT	4. 7uF 20% 50V
C832	1-126-011-11	ELECT	330uF 20% 16V
C833	1-161-494-00	CERAMIC	0. 022uF 25V
C834	1-162-306-11	CERAMIC	0. 01uF 30% 16V
C835	1-136-161-00	FILM	0. 047uF 5% 50V
C836	1-136-161-00	FILM	0. 047uF 5% 50V
C837	1-164-159-11	CERAMIC	0. 1uF 50V
C839	1-124-443-00	ELECT	100uF 20% 10V
C841	1-164-159-11	CERAMIC	0. 1uF 50V
C842	1-164-159-11	CERAMIC	0. 1uF 50V
C846	1-164-159-11	CERAMIC	0. 1uF 50V
C847	1-164-159-11	CERAMIC	0. 1uF 50V
C849	1-164-159-11	CERAMIC	0. 1uF 50V
C850	1-164-159-11	CERAMIC	0. 1uF 50V
< CONNECTOR >			
CN201	1-774-280-11	PIN, CONNECTOR	13P
* CN203	1-568-934-11	PIN, CONNECTOR	7P
CN204	1-506-468-11	PIN, CONNECTOR	3P
* CN206	1-564-508-11	PLUG, CONNECTOR	5P
CN503	1-695-089-11	PIN, CONNECTOR (PC BOARD)	11P
* CN504	1-568-826-11	SOCKET, CONNECTOR	7P
CN505	1-569-932-11	SOCKET, CONNECTOR	15P
CN506	1-750-180-11	PIN, CONNECTOR (PC BOARD)	5P

Ref. No.	Part No.	Description	Remark
CN801	1-564-510-11	PLUG, CONNECTOR	7P
CN803	1-770-167-11	CONNECTOR, FFC/FPC	19P
< DIODE >			
D501	8-719-933-41	DIODE	HZS6C3L
D801-804	8-719-200-02	DIODE	10E2
D805	8-719-933-33	DIODE	HZS6A1L
D806-811	8-719-200-82	DIODE	11ES2
D812	8-719-001-79	DIODE	UZL-12H1-TP
D814-816	8-719-200-82	DIODE	11ES2
D817	8-719-934-13	DIODE	HZS24-1L
D818	8-719-933-33	DIODE	HZS6A1L
D819	8-719-933-57	DIODE	HZS9B2L
D820	8-719-000-75	DIODE	UZL-7L1
D821	8-719-010-33	DIODE	UZ-4. 7BSB
D822	8-719-200-82	DIODE	11ES2
D823	8-719-987-63	DIODE	1N4148M
D826-828	8-719-200-82	DIODE	11ES2
D829-831	8-719-933-41	DIODE	HZS6C3L
< FUSE >			
△F801	1-532-286-00	FUSE (T2. 5AL	250V)
△F802	1-532-286-00	FUSE (T2. 5AL	250V)
< IC >			
IC801	8-759-820-13	IC	L78MR06
IC802	8-759-822-09	IC	LB1641
< IC LINK >			
△PS801	1-532-841-21	LINK, IC	
△PS802	1-532-841-21	LINK, IC	
< TRANSISTOR >			
Q502	8-729-620-05	TRANSISTOR	2SC2603-EF
Q800	8-729-224-61	FET	2SK246-Y
Q801	8-729-140-96	TRANSISTOR	2SD774-34
Q802	8-729-620-05	TRANSISTOR	2SC2603-EF
Q803	8-729-119-76	TRANSISTOR	2SA1175-HFE
Q804	8-729-140-97	TRANSISTOR	2SB734-34
Q805	8-729-900-80	TRANSISTOR	DTC114ES
Q806	8-729-209-15	TRANSISTOR	2SD2012
Q807	8-729-900-80	TRANSISTOR	DTC114ES
Q808	8-729-141-83	TRANSISTOR	2SB1094-LK
Q809	8-729-209-15	TRANSISTOR	2SD2012

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

POWER

SYSTEM CONNECTION

Ref. No.	Part No.	Description	Remark
Q810	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q812	8-729-209-15	TRANSISTOR 2SD2012	
Q813	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q814	8-729-900-80	TRANSISTOR DTC114ES	
Q815	8-729-801-93	TRANSISTOR 2SD1387	
Q816	8-729-801-84	TRANSISTOR 2SB1013-4	
Q817	8-729-900-80	TRANSISTOR DTC114ES	
Q818	8-729-900-80	TRANSISTOR DTC114ES	
< RESISTOR >			
R504	1-249-425-11	CARBON 4.7K 5% 1/4W	
R505	1-249-417-11	CARBON 1K 5% 1/4W	
R506	1-249-429-11	CARBON 10K 5% 1/4W	
R507	1-249-393-11	CARBON 10 5% 1/4W	
R508	1-249-415-11	CARBON 680 5% 1/4W	
R801	1-249-423-11	CARBON 3.3K 5% 1/4W	
R802	1-249-415-11	CARBON 680 5% 1/4W	
R803	1-249-419-11	CARBON 1.5K 5% 1/4W	
R804	1-249-418-11	CARBON 1.2K 5% 1/4W	
R805	1-249-425-11	CARBON 4.7K 5% 1/4W	
R806	1-249-415-11	CARBON 680 5% 1/4W	
R807	1-249-423-11	CARBON 3.3K 5% 1/4W	
R808	1-249-430-11	CARBON 12K 5% 1/4W	
R809	1-249-429-11	CARBON 10K 5% 1/4W	
R810	1-249-409-11	CARBON 220 5% 1/4W	
R811	1-249-420-11	CARBON 1.8K 5% 1/4W	
R812	1-249-429-11	CARBON 10K 5% 1/4W	
R813	1-249-409-11	CARBON 220 5% 1/4W	
R814	1-249-437-11	CARBON 47K 5% 1/4W	
R816	1-249-425-11	CARBON 4.7K 5% 1/4W	
R817	1-249-421-11	CARBON 2.2K 5% 1/4W	
R818	1-249-417-11	CARBON 1K 5% 1/4W	
R819	1-249-425-11	CARBON 4.7K 5% 1/4W	
R820	1-249-409-11	CARBON 220 5% 1/4W	
R821	1-249-425-11	CARBON 4.7K 5% 1/4W	
R822	1-249-421-11	CARBON 2.2K 5% 1/4W	
R823	1-249-421-11	CARBON 2.2K 5% 1/4W	
R824	1-249-409-11	CARBON 220 5% 1/4W	
R825	1-247-807-31	CARBON 100 5% 1/4W	
R826	1-247-807-31	CARBON 100 5% 1/4W	
△R827	1-212-865-00	FUSIBLE 22 5% 1/4W F	
R829	1-249-415-11	CARBON 680 5% 1/4W	
R830	1-249-425-11	CARBON 4.7K 5% 1/4W	
△R832	1-212-873-11	FUSIBLE 47 5% 1/4W F	

Ref. No.	Part No.	Description	Remark
*	1-658-027-11	SYSTEM CONNECTION BOARD	

		< CONNECTOR >	
CN207	1-774-280-11	PIN, CONNECTOR 13P	
* CN208	1-565-291-11	SOCKET, CONNECTOR 13P	

		MISCELLANEOUS	

7	1-775-731-11	WIRE (FLAT TYPE) (7 CORE)	
9	1-775-732-11	WIRE (FLAT TYPE) (13 CORE)	
12	1-775-733-11	WIRE (FLAT TYPE) (15 CORE)	
51	1-775-172-11	WIRE (FLAT TYPE) (19 CORE)	
55	1-537-771-21	TERMINAL BOARD, GROUND	
* 58	1-533-213-31	HOLDER, FUSE	
△65	1-776-060-11	CORD, POWER (AEP, IT, G)	
△65	1-776-061-11	CORD, POWER (UK)	
* 74	1-690-880-31	LEAD (WITH CONNECTOR)	
75	1-690-880-51	LEAD (WITH CONNECTOR)	
120	1-590-530-11	WIRE, FLAT TYPE	
△155	8-848-367-11	DEVICE, OPTICAL KSS-213B/K-N	
156	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)	
△CNJ1	1-526-794-11	OUTLET, AC	
△F1	1-532-286-00	FUSE (2.5A 250V)	
△F801	1-532-286-00	FUSE (2.5A 250V)	
△F802	1-532-286-00	FUSE (2.5A 250V)	
M101	X-4917-523-3	BASE (OUTSERT) ASSY (SPINDLE)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	
M903	A-4608-362-A	MOTOR (L) ASSY (LOADING)	
△T1	1-429-095-11	TRANSFORMER, POWER	

		ACCESSORIES & PACKING MATERIALS	

	1-473-271-11	COMMANDER, STANDARD (RM-ST1)	
	1-501-594-31	ANTENNA (FM)	
	1-501-721-11	ANTENNA (LOOP)	
	1-558-271-11	CORD, CONNECTION	
	1-775-761-11	CORD, SPEAKER	
	3-800-711-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE) (AEP, UK)	
	3-800-711-21	MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN) (AEP, IT, G)	
	4-941-762-41	COVER (MLY), BATTERY (For RM-ST1)	
*	4-976-503-02	CUSHION (CM) (FRONT)	
*	4-976-504-01	CUSHION (CM) (REAR)	

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

Ref.No.	Part No.	Description	Remark
*	4-977-135-01	INDIVIDUAL CARTON	

HARDWARE LIST			

#1	7-685-646-79	SCREW +BVTP 3×8 TYPE2 N-S	
#2	7-685-871-01	SCREW +BVTT 3×6 (S)	
#3	7-685-870-01	SCREW +BVTT 3×5 (S)	
#4	7-621-775-10	SCREW +B 2.6×4	
#5	7-685-234-19	SCREW +KTP 2.6×8 TYPE2NON-SLIT	
#6	7-624-105-04	STOP RING 2.3, TYPE -E	
#7	7-621-255-15	SCREW +P 2×3	

HCD-T1

SONY[®] SERVICE MANUAL

AEP Model
UK Model

SUPPLEMENT-1

File this supplement with the service manual.

Subject: COLOR VARIATION (GOLD TYPE) ADDITION

- The others are common parts so that please refer to the previous issued service manual.

Page	SILVER TYPE			GOLD TYPE		
	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
23	1	X-4946-207-1	PANEL SUB ASSY, FRONT	1	X-4947-698-1	PANEL SUB ASSY, FRONT
	3	4-975-343-01	PANEL (AL), FRONT	3	4-975-343-11	PANEL (AL), FRONT
	10	4-975-351-01	BUTTON (POWER)	10	4-975-351-11	BUTTON (POWER)
	11	4-975-355-01	BUTTON (PLAY)	11	4-975-355-11	BUTTON (PLAY)
	16	4-975-358-11	CASE	16	4-975-358-51	CASE
	17	4-975-352-01	BUTTON (VOLUME)	17	4-975-352-11	BUTTON (VOLUME)
	19	X-4946-431-1	DOOR ASSY	19	X-4947-699-1	DOOR ASSY
	20	4-942-636-21	EMBLEM (No. 3.5), SONY	20	4-942-636-31	EMBLEM (No. 3.5), SONY