

ST-SE370

SERVICE MANUAL

Ver 1.0 2001.04

US Model
AEP Model
UK model
E Model
Australian Model



Photo: Black model

SPECIFICATIONS

FM tuner section

Frequency range 87.5 - 108.0 MHz
(U.S. models: 100 kHz step, other models: 50 kHz step)

Aerial terminals 75 Ω , unbalanced
U.S. models: F-TYPE CONNECTOR,
other models: IEC-male

Intermediate frequency 10.7 MHz

Sensitivity at 26 dB quieting (mono)
10.3 dBf, 0.9 μ V/75 Ω
at 46 dB quieting (stereo)
38.5 dBf, 23 μ V/75 Ω

Usable sensitivity (IHF) 10.3 dBf, 0.9 μ V/75 Ω

S/N at 40 kHz deviation
74 dB (mono), 69 dB (stereo)

Harmonic distortion 0.09% (mono),
0.18% (stereo)

Frequency response 30 Hz - 15 kHz
(+0.5/-1.0 dB)

Separation 45 dB at 1 kHz

Selectivity at 400 kHz
85 dB
at 300 kHz
70 dB

Output at 40 kHz deviation
600 mV

AM tuner section

Frequency range MW:
U.S. models: 530 - 1,710 kHz
(10 kHz step*)
Singaporean and Australian models:

531 - 1,710 kHz
(9 kHz step)
Other models: 531 - 1,602 kHz
(9 kHz step)
LW: 144 - 288 kHz
(1 kHz step)

Intermediate frequency 450 kHz

Usable Sensitivity (with AM loop aerial)
MW: 200 μ V/m
LW: 700 μ V/m

Signal-to-noise ratio MW:
54 dB
(50 mV/m, 999 kHz)
LW:
50 dB
(50 mV/m, 216 kHz)

Harmonic distortion 0.3% (50 mV/m,
400 Hz)

Selectivity 50 dB

General

Power requirements
U.S. models: 120 V AC, 60 Hz
Australian models: 230 V AC, 50 Hz
Other models: 230 V AC, 50/60 Hz

Power consumption 10 W

Dimensions 430 x 83 x 290 mm
(w/h/d)

Weight 2.5 kg

Supplied accessories

Audio cord (1)
AM loop antenna (1)
FM wire antenna (1)

* (U.S. models only.) You can change the AM tuning interval to 9 kHz. After tuning in any AM station, turn off the tuner. Hold down the numeric button 9 and press the POWER button. To reset the scale to 10 kHz, hold down the numeric button 0 and press the POWER button to turn on the tuner. All preset stations will be erased when you change the tuning interval.

Design and specifications are subject to change without notice.

FM STEREO FM-AM TUNER

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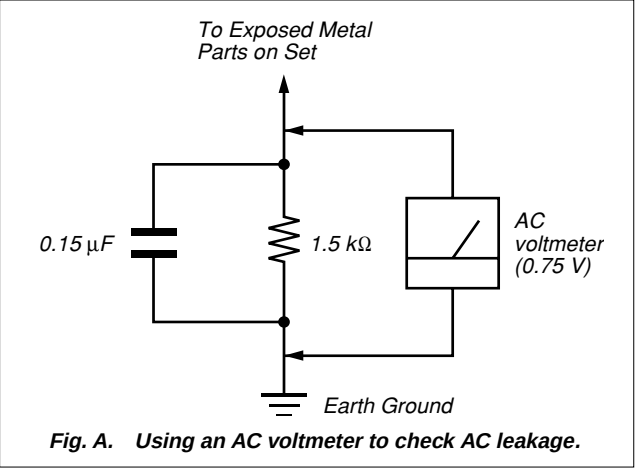
SAFETY CHECK-OUT

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

LEAKAGE TEST

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

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



SAFETY-RELATED COMPONENT WARNING!!

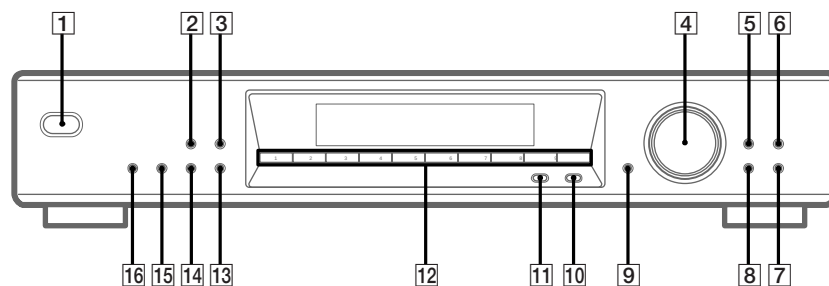
COMPONENTS IDENTIFIED BY MARK $\triangle$ OR DOTTED LINE WITH MARK $\triangle$ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 1 GENERAL

This section is extracted from instruction manual.

LOCATION OF CONTROLS

– Front Panel –



AUTO BETICAL SELECT (European model only)

16 (7, 12)

BAND **13** (9, 10, 12)

CHARACTER **5** (11)

DIRECT **10** (9)

DISPLAY **3** (10, 11, 13)

ENTER **9** (9, 11, 12, 14)

FM MODE **14** (9, 10)

MEMORY **2** (8, 11)

MENU **8** (9, 11, 14)

Numeric buttons **12** (7–9)

POWER **1** (7, 8, 12)

PTY (European model only) **15** (14, 15)

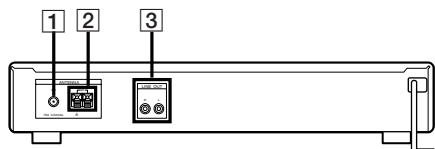
RETURN **7** (9)

SHIFT **11** (8, 11)

TUNE MODE **6** (8, 10)

TUNING/SELECT **4** (7–12, 14)

– Rear Panel –



1 FM ANTENNA terminal

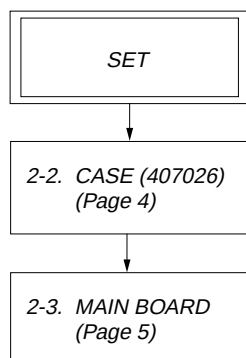
2 AM ANTENNA terminal

3 LINE OUT jack

SECTION 2 DISASSEMBLY

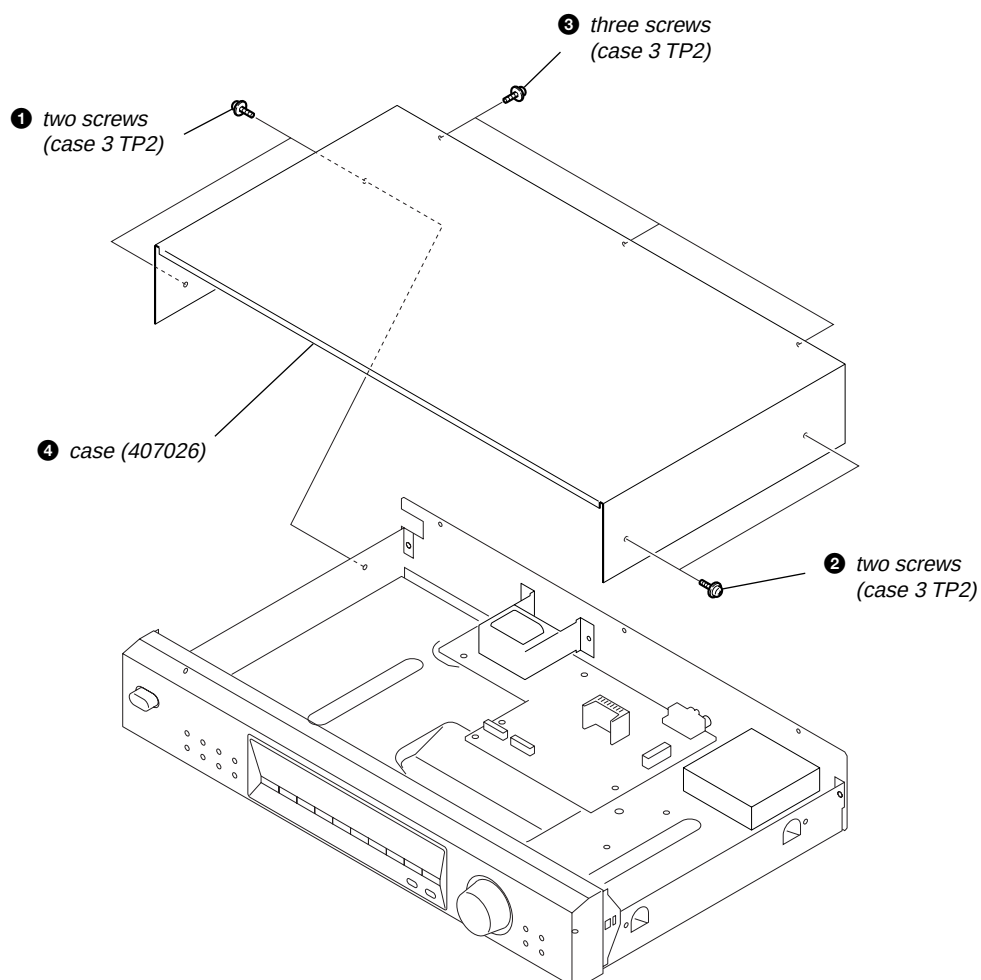
• This set can be disassembled in the order shown below.

2-1. DISASSEMBLY FLOW

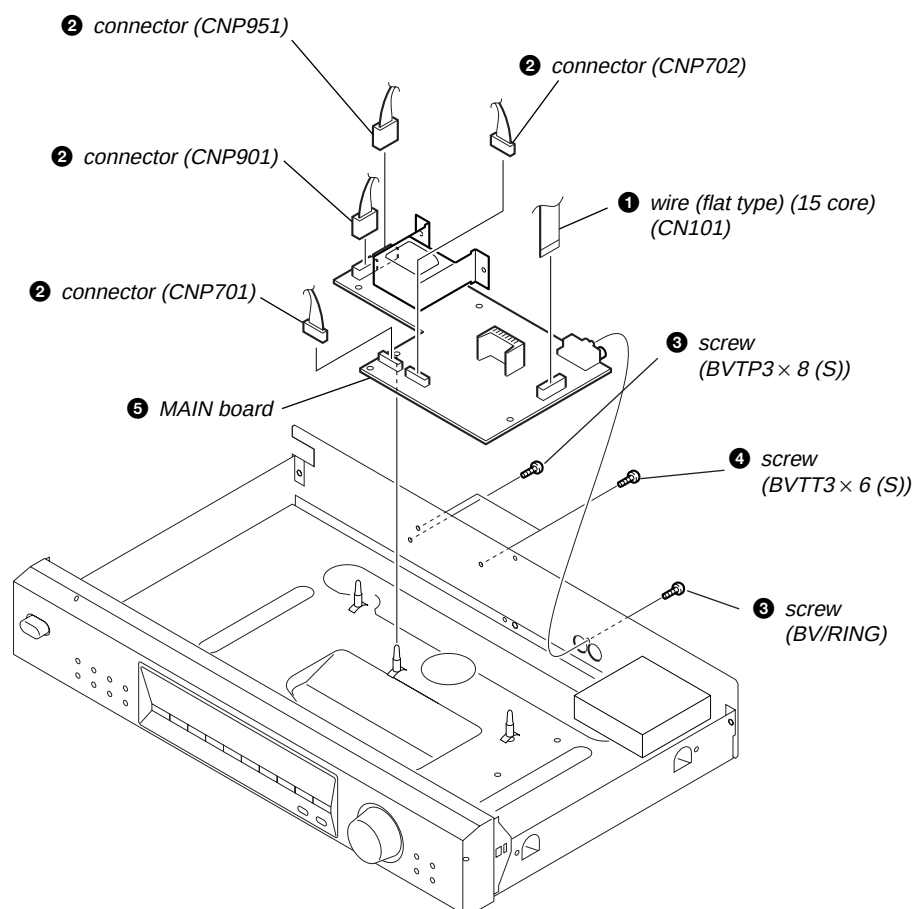


Note: Follow the disassembly procedure in the numerical order given.

2-2. CASE (407026)



2-3. MAIN BOARD



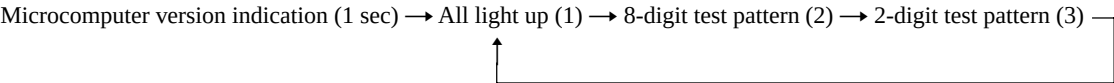
SECTION 3
TEST MODE

NOTE : The preset data will be erased when this test mode is used. Therefore, take down the data before setting this mode and preset the data again after completing operations in this mode.

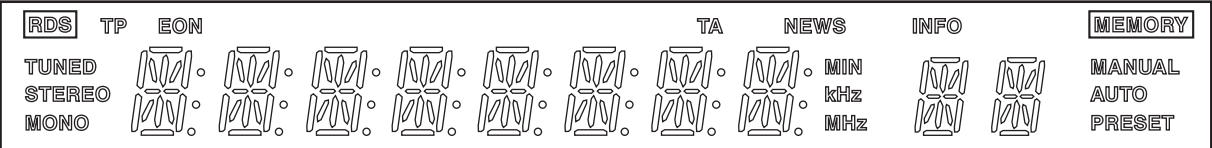
1. Display Tube and Key Check Mode

1-1. Display Tube Check

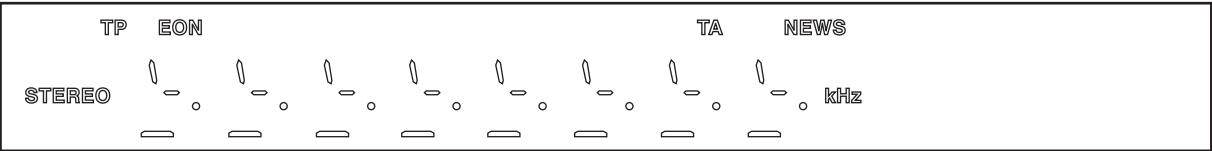
- 1-1-1. Turn OFF the power.
- 1-1-2. While pressing **[1]** and **[BAND]** together, turn ON **[POWER]** .
- 1-1-3. While continuously pressing **[1]** and **[BAND]** together, check the following.



(1) All light up



(2) 8-digit test pattern



(3) 2-digit test pattern



The display changes every 500 msec.

1-2. Key Check

- 1-2-1. Release **[1]** and **[BAND]** . The KEY CHECK mode will be set.
- 1-2-2. All key numbers will be displayed. Key Number : 23
- 1-2-3. Each time the key is pressed, the key number will be counted down.
Each key will be counted only once, at the first time.
- 1-2-4. When all keys have been pressed, the process will end and the factory preset will be entered.

2. Entering the Factory Preset

To skip “1. Display Tube Key Check Mode”, and factory preset :

- (1) Turn OFF the power.
- (2) While pressing **[3]** and **[BAND]** together, turn ON **[POWER]** .

3. Circuit Check Mode

Set to the reception frequency that the circuit can receive (FM : STEREO, RDS stations). (Set the input level to above 70 dB.) This enables circuit check to be performed in any of the reception modes-FM, AM (MW, LW). Set to a desired band before setting the test mode.

- (1) Turn OFF the power.
- (2) While pressing **[4]** and **[BAND]** together, turn ON **[POWER]** .
- The items in the following table will be checked automatically in order every 2 seconds.

Display	Items	DISPLAY		NG
		FM RDS	AM (MW, LW)	
TUNED	AST signal = LOW	OK or NG		IC201 NG, RV201 adjustments
IF	IF COUNT OK	OK or NG	OK or NG	TB101, IC201 NG
SIG L	SI LEVEL ≥ 70dB	OK or NG		TB101 NG
ST	ST signal = LOW	OK or NG		TB101 NG
RDS	RDS DATA OK	OK or NG		IC801 NG

4. Forced RESET

Clears all the RAMs and sets the initial state.

- (1) Turn OFF the power.
- (2) While pressing **[5]** and **[BAND]** together, turn ON **[POWER]**.

5. Language Change

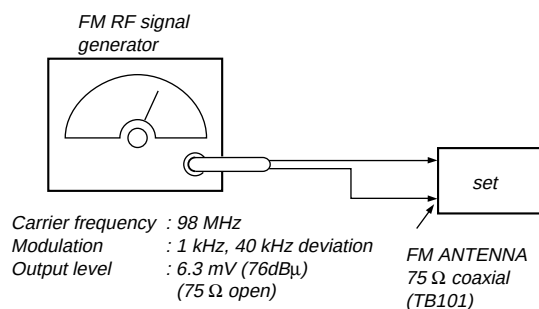
1. Turn OFF the power.
2. While pressing **[2]**, turn ON **[POWER]**.

6. Change-over of AM Tuner Step between 9 kHz and 10 kHz (US model only)

- A step of AM channels can be changed over between 9 kHz and 10 kHz.
1. Turn OFF the power.
 2. While pressing **[9]** or **[0]**, turn ON **[POWER]**.

SECTION 4 ELECTRICAL ADJUSTMENTS

FM Signal Level Adjustment

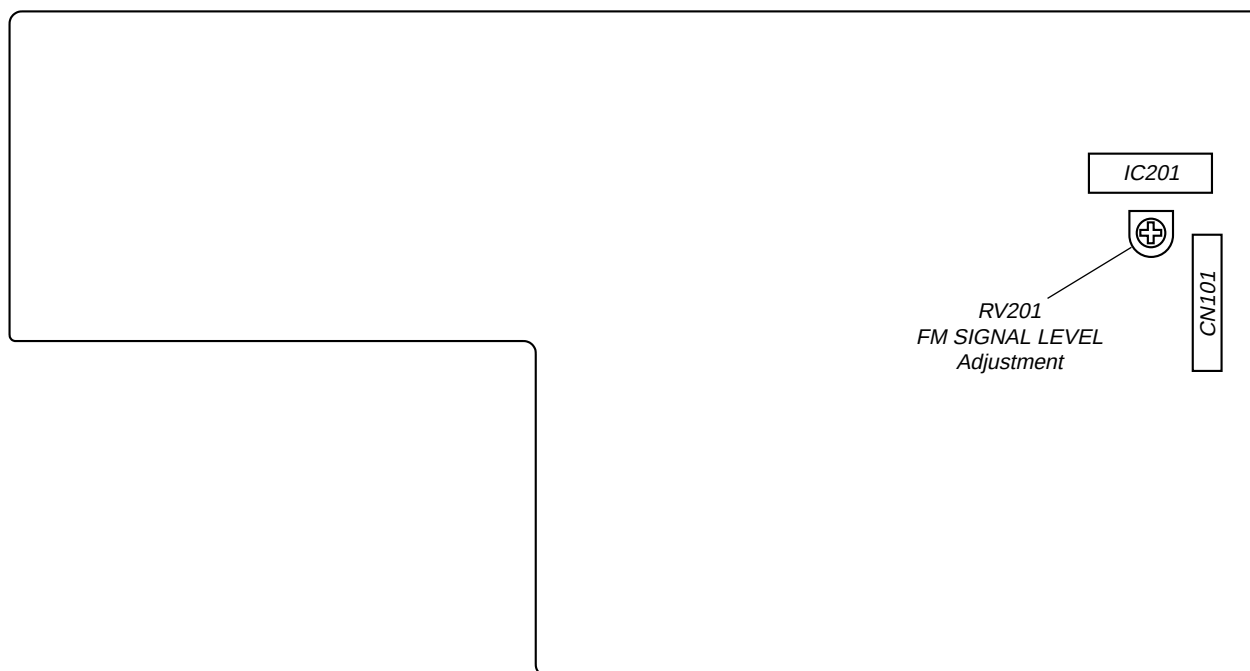


Procedure:

1. Tune the set to 98 MHz.
2. Push the **DISPLAY** button for digital signal meter indication.
3. Adjust RV201 to the place where level and “70dB” indication lights on fluorescent indicator tube.

Adjustment Location:

[MAIN BOARD] — Component Side —

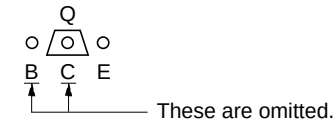


SECTION 5
DIAGRAMS

5-1. NOTE FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS
(In addition to this, the necessary note is printed in each block)

Note on Printed Wiring Board:

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



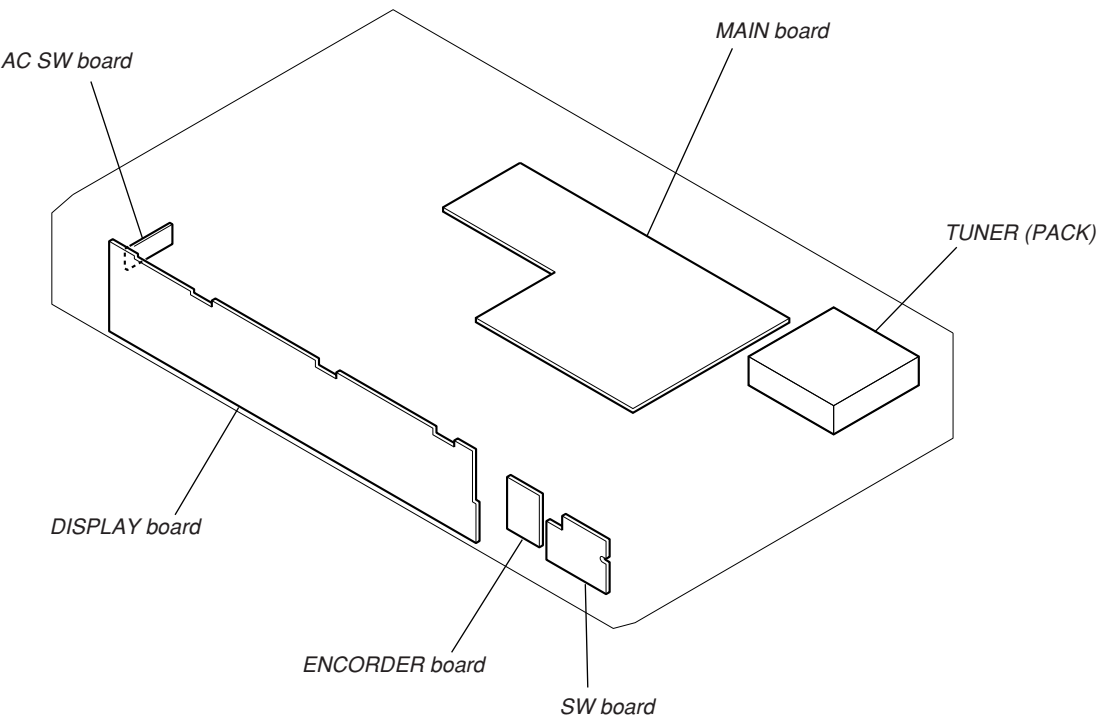
Note on Schematic Diagram:

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

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

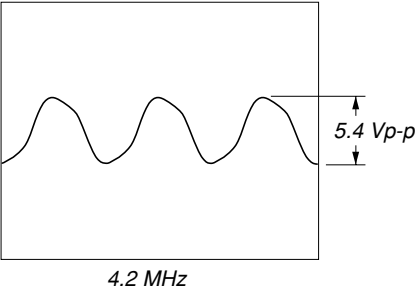
- : B+ Line.
- : B- Line.
- : adjustment for repair.
- Voltagess and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- no mark : FM
- * : Can not be measured.
- Voltagess are taken with a VOM (Input impedance 10 M Ω). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
- : FM

• Circuit Boards Location



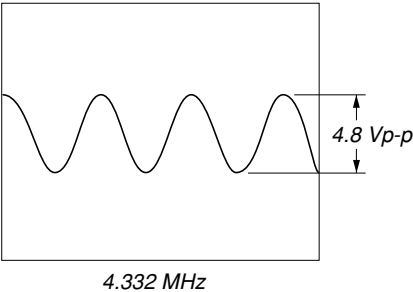
• Waveforms
– DISPLAY Board –

① IC701 ③⑤ (X2)

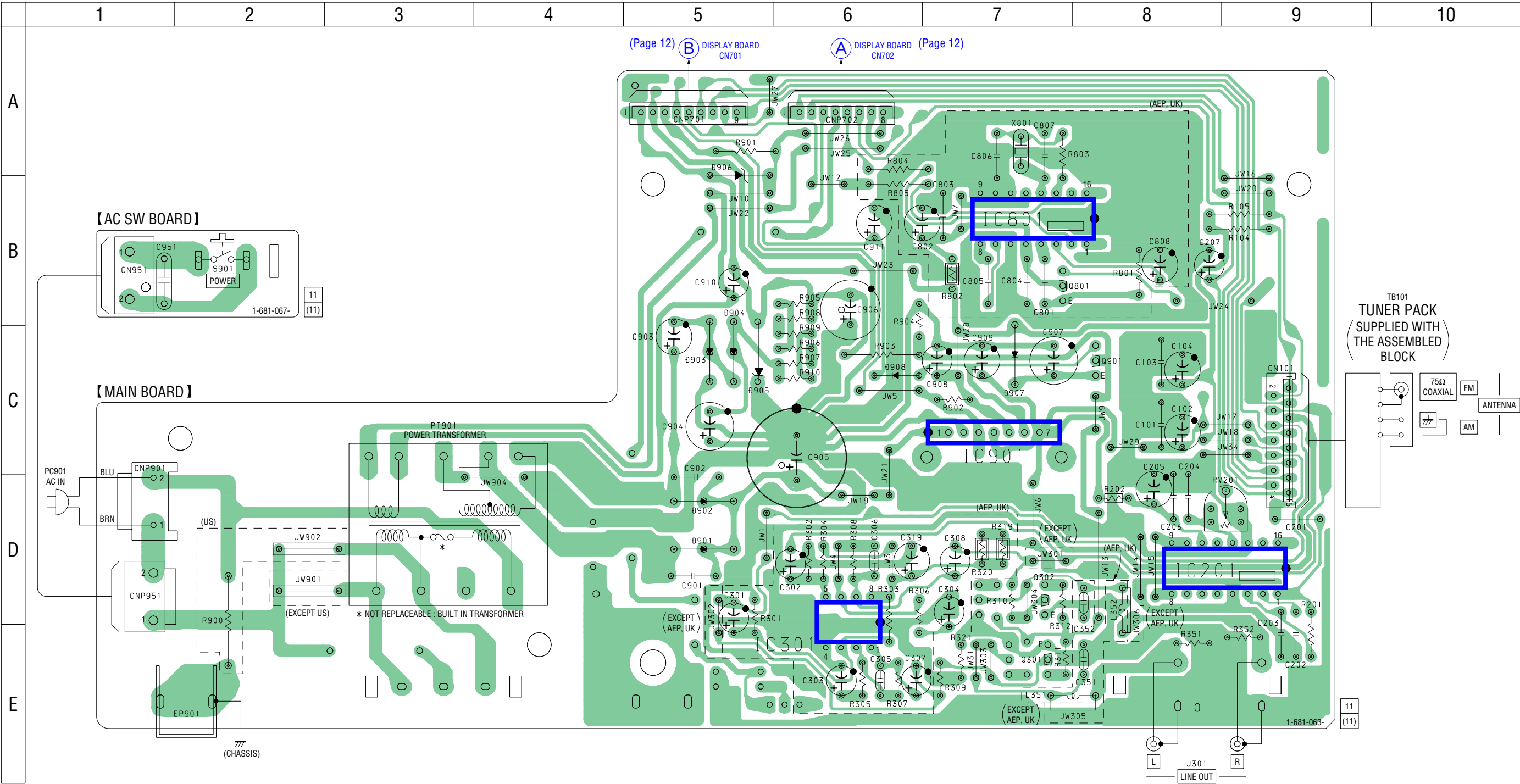


– MAIN Board –

② IC801 ⑭ (OSCO) (AEP, UK model only)



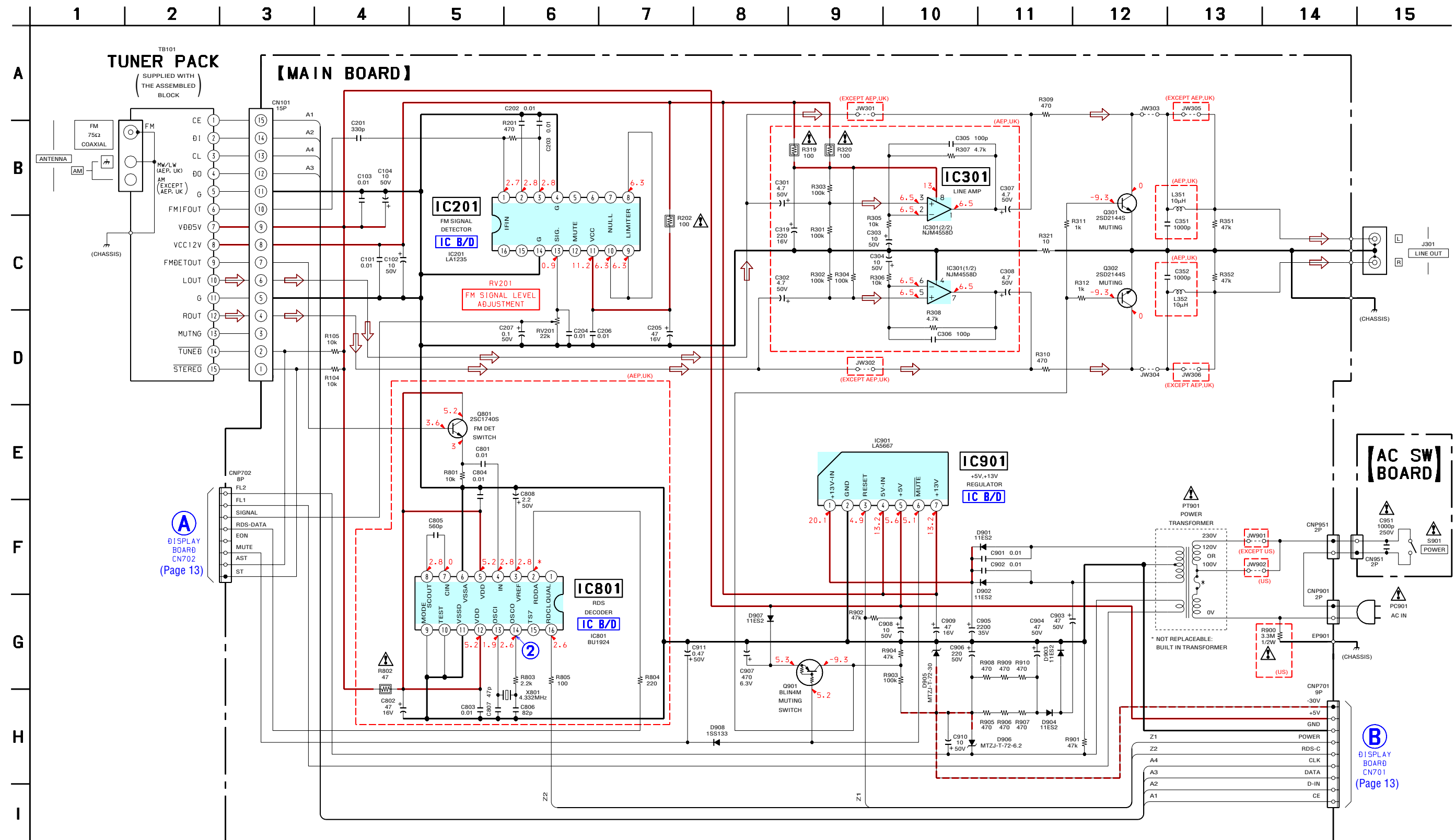
5-2. PRINTED WIRING BOARDS – MAIN Section – • See page 9 for Circuit Boards Location.



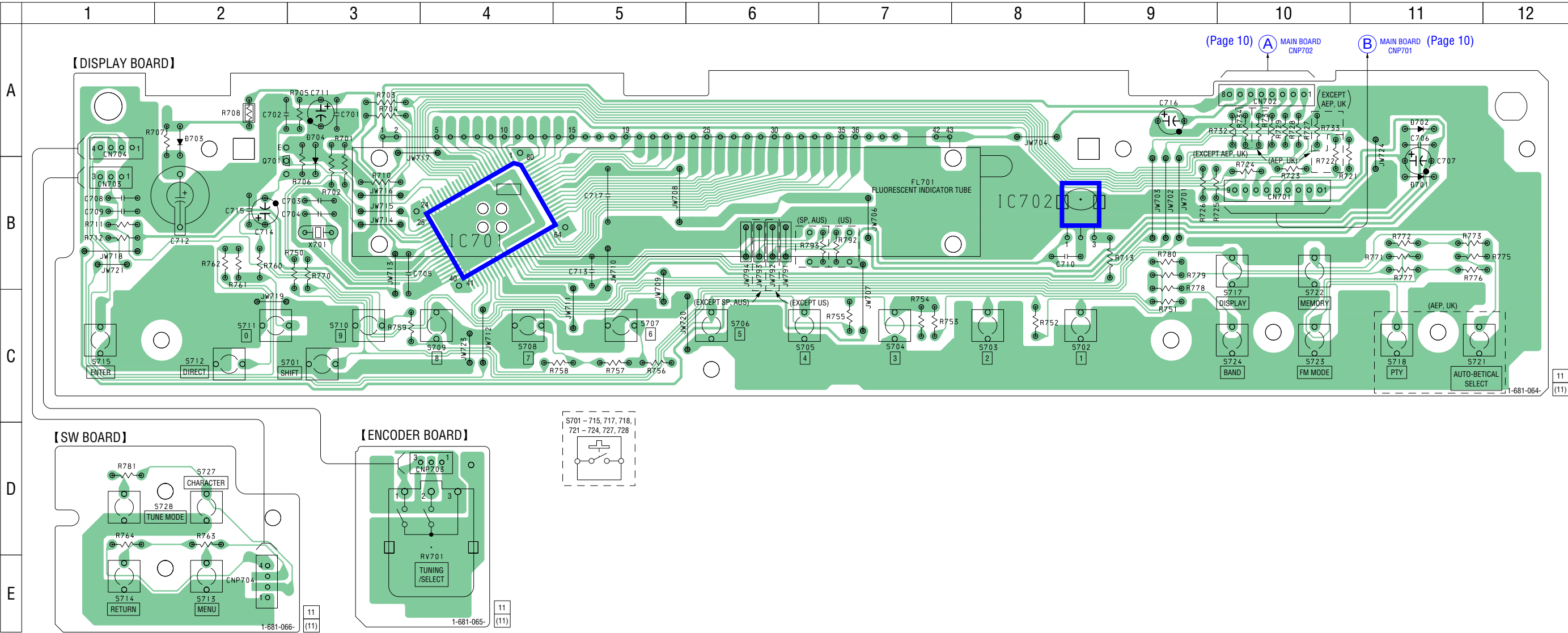
• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D901	D-5	IC301	D-6
D902	D-5	IC801	B-7
D903	C-5	IC901	C-7
D904	C-5		
D905	C-5	Q301	E-7
D906	A-5	Q302	D-7
D907	C-7	Q801	B-7
D908	C-6	Q901	C-8
IC201	D-9		

5-3. SCHEMATIC DIAGRAM – MAIN Section – • See page 9 for Waveform. • See page 14 for IC Block Diagram.



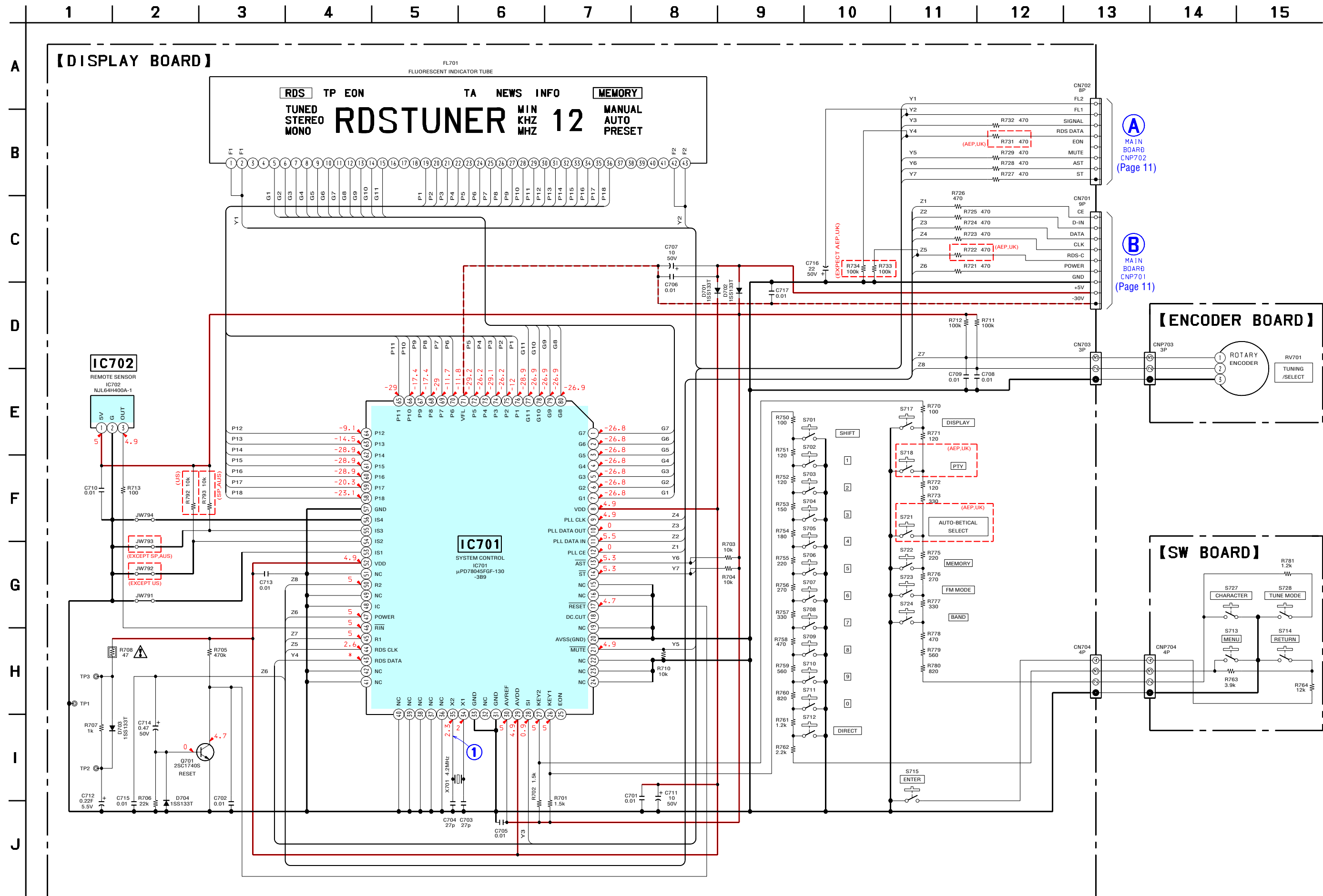
5-4. PRINTED WIRING BOARDS – DISPLAY Section – • See page 9 for Circuit Boards Location.



• Semiconductor Location

Ref. No.	Location
D701	B-11
D702	A-11
D703	A-2
D704	B-3
IC701	B-4
IC702	B-8
Q701	B-2

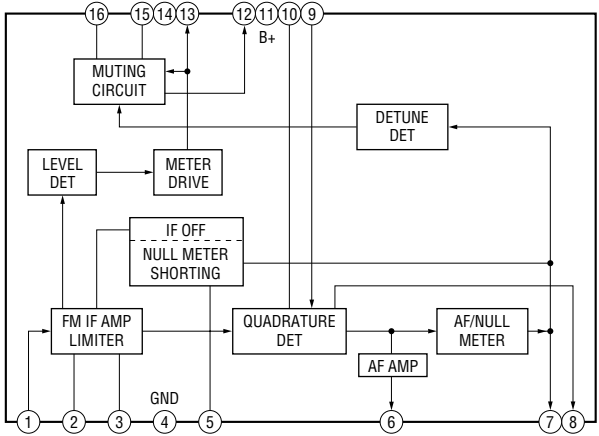
5-5. SCHEMATIC DIAGRAM – DISPLAY Section – • See page 9 for Waveform. • See page 14 for IC Pin Function Description.



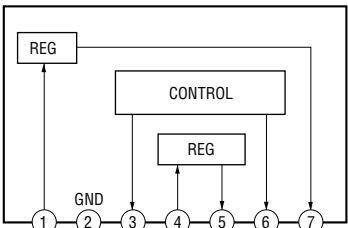
Note: The components identified by mark **▲** or dotted line with mark **▲** are critical for safety. Replace only with part number specified.

• IC Block Diagrams
– MAIN Board –

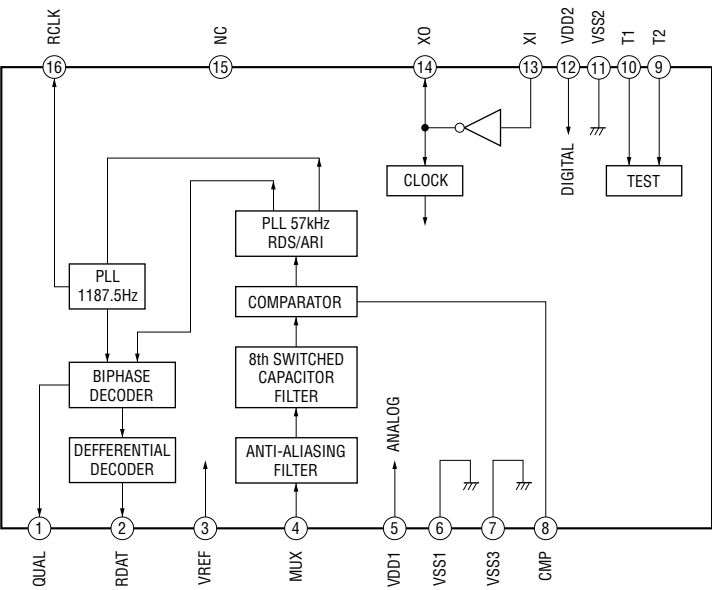
IC201 LA1235



IC901 LA5667



IC801 BU1924



5-6. IC PIN FUNCTION DESCRIPTION

• DISPLAY BOARD IC701 μPD78045FGF-130-3B9 (SYSTEM CONTROL)

Pin No.	Pin Name	I/O	Description
1 to 7	G7 to G1	O	Grid drive signal output to the fluorescent indicator tube (FL701)
8	VDD	—	Power supply terminal (+5V)
9	PLL CLK	O	Serial data transfer clock signal output to the PLL IC on tuner pack (TB101)
10	PLL DATA OUT	O	Serial data output to the PLL IC on tuner pack (TB101)
11	PLL DATA IN	I	Serial data input from the PLL IC on tuner pack (TB101)
12	PLL CE	O	Serial chip enable signal output to the PLL IC on tuner pack (TB101)
13	AST	I	Tuned display detection signal input from the tuner pack “L”: tuned
14	ST	I	Stereo detection signal input from the tuner pack “L”: stereo
15, 16	NC	—	Not used (fixed at “L”)
17	RESET	I	System reset signal input terminal “L”: reset
18	DC. CUT	—	Not used (open)
19	NC	—	Not used (fixed at “L”)
20	AVSS (GND)	—	Ground terminal
21	MUTE	O	Muting on/off control signal output terminal
22 to 24	NC	—	Not used (fixed at “L”)
25	EON	—	EON output control terminal Not used (open)
26	KEY1	I	Key input terminal (A/D input)
27	KEY2	I	Key input terminal (A/D input)
28	SI	I	Signal input terminal
29	AVDD	—	Analog power supply terminal (+5V)
30	AVREF	—	Reference voltage input terminal (+5V)
31	GND	—	Ground terminal
32	NC	—	Not used (open)
33	GND	—	Ground terminal
34	X1	I	Main system clock input terminal (4.19MHz)
35	X2	O	Main system clock output terminal (4.19MHz)
36 to 42	NC	—	Not used (fixed at “L”)
43	RDS DATA	I	RDS data input from the RDS decoder (IC801) (Used for the AEP and UK models only)
44	RDS CLK	I	RDS serial clock signal input from the RDS decoder (IC801) (Used for the AEP and UK models only)
45	R1	I	Rotary encoder number of rotation detection
46	RIN	I	Remote control signal input from the remote sensor (IC702)
47	POWER	I	Power supply ON/OFF monitor
48	IC	I	Signal chip mode detection Not used (fixed at “L”)
49	NC	—	Not used (fixed at “L”)
50	R2	O	Rotary encoder phase detection
51	NC	—	Not used (fixed at “L”)
52	VDD	—	Power supply terminal (+5V)
53 to 56	IS1 to IS4	I	Setting terminal for the model
57	GND	—	Ground terminal
58 to 70	P18 to P6	O	Segment drive signal output to the fluorescent indicator tube (FL701)
71	VFL	—	Negative power supply terminal for the fluorescent indicator tube drive (–30V)
72 to 76	P5 to P1	O	Segment drive signal output to the fluorescent indicator tube (FL701)
77 to 80	G11 to G8	O	Grid drive signal output to the fluorescent indicator tube (FL701)

SECTION 6

EXPLODED VIEWS

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
Example:
KNOB, BALANCE (WHITE) . . . (RED)

↑
Parts Color

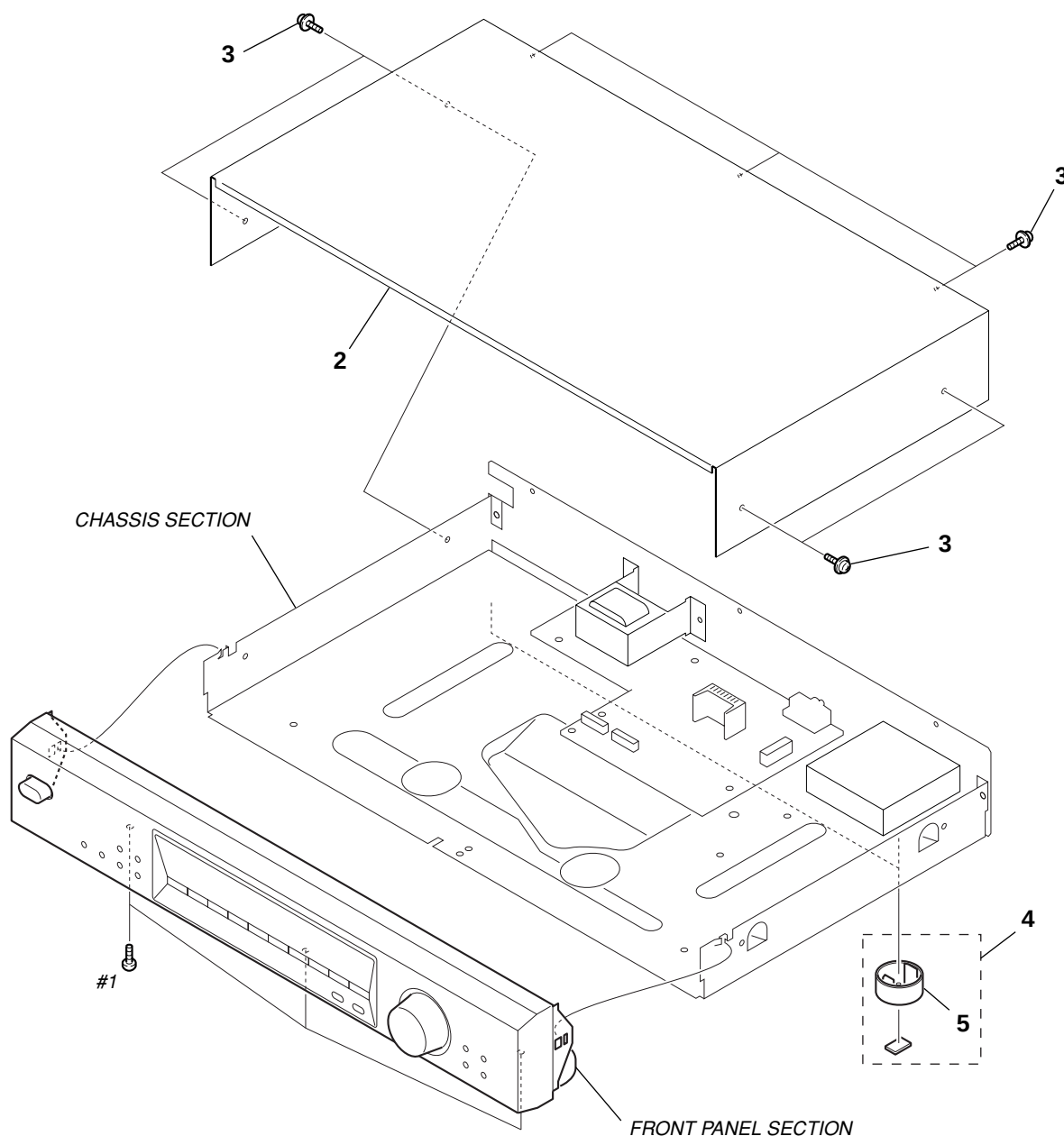
↑
Cabinet's Color

- 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.
- Accessories and packing materials are given in the last of the electrical parts list.
- Accessories and packing materials are given in the last of the electrical parts list.

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

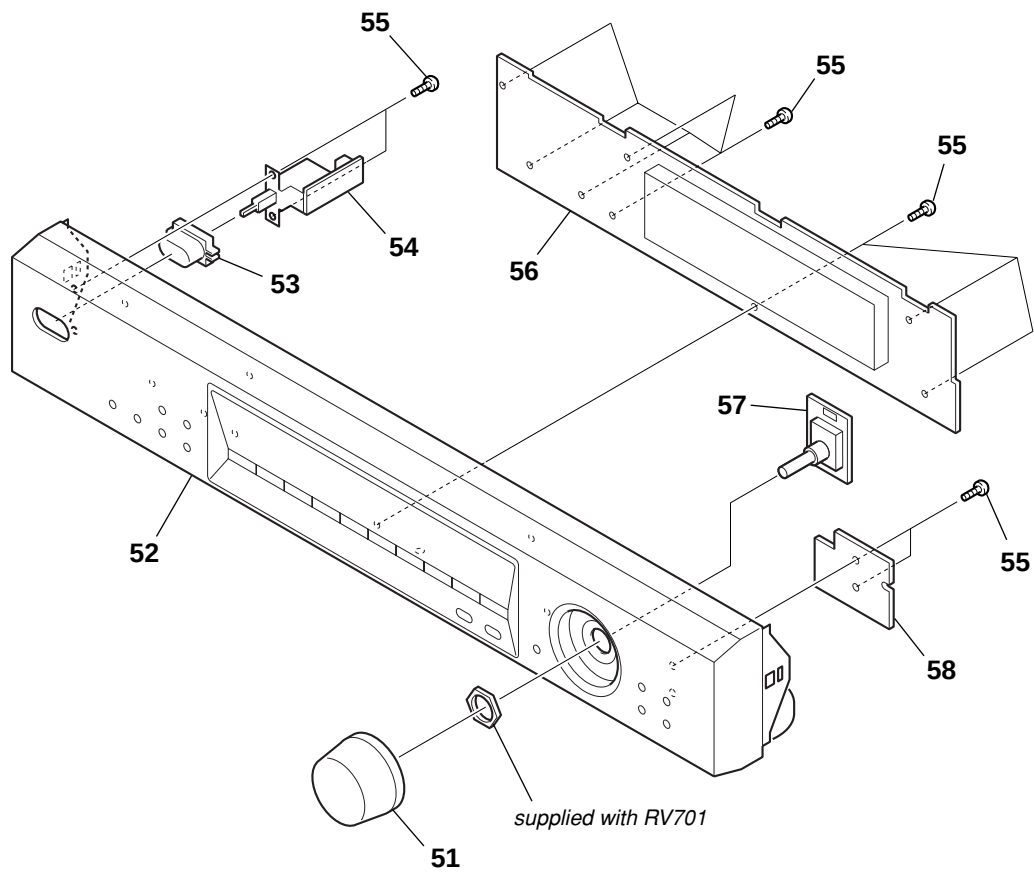
- Abbreviation
AUS : Australian model
SP : Singapore model

6-1. CASE SECTION



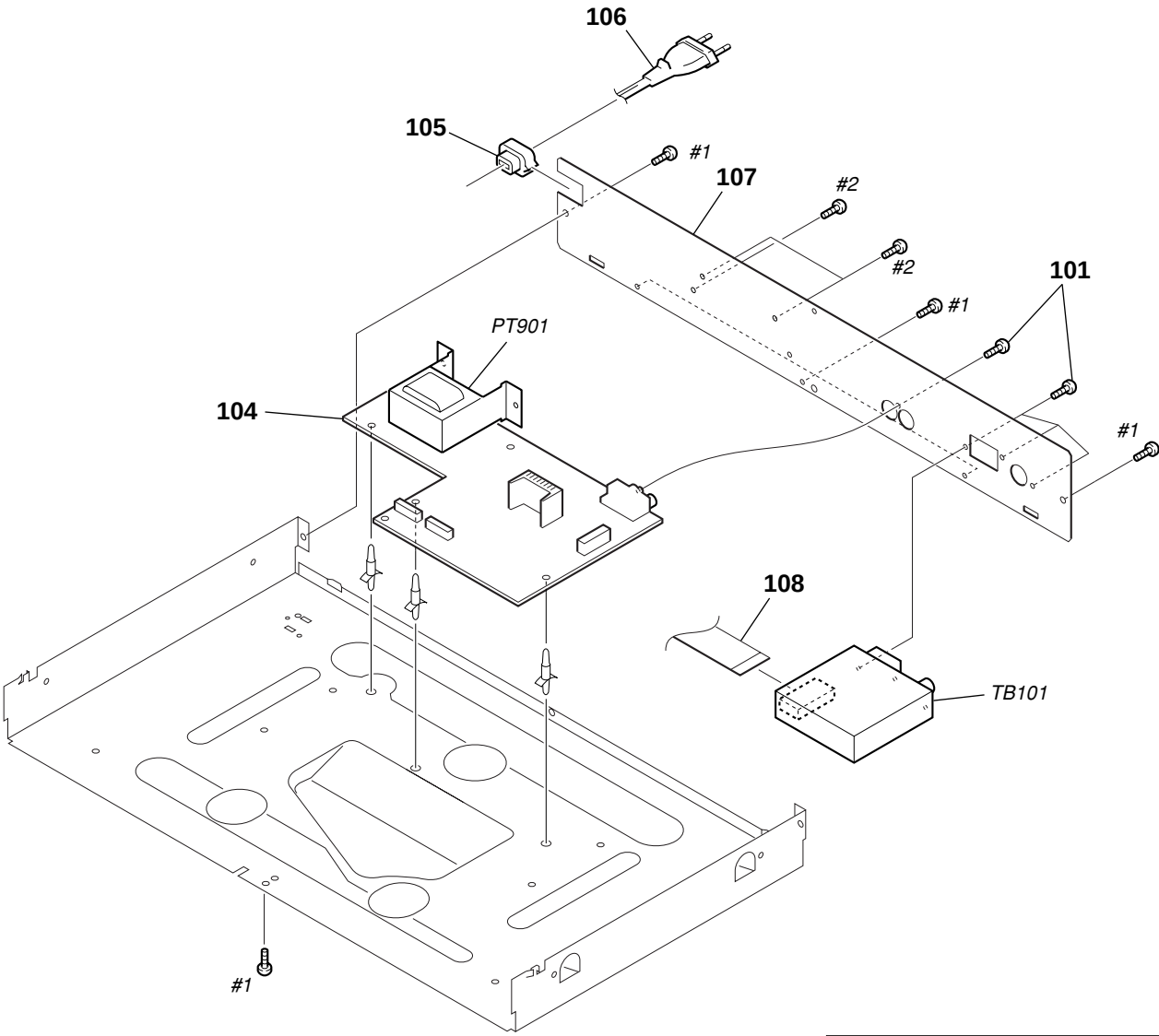
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
2	4-232-149-11	CASE (407026) (BLACK)		4	X-4953-448-1	FOOT ASSY	
2	4-232-580-11	CASE (407026) (SILVER)		5	4-232-237-01	FOOT (DIA. 30)	
3	4-210-291-01	SCREW (CASE 3 TP2) (BLACK)		#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
3	4-210-291-11	SCREW (CASE 3 TP2) (SILVER)					

6-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	4-997-882-41	KNOB (T) (SILVER)		54	1-681-067-11	AC SW BOARD	
51	4-997-882-51	KNOB (T) (BLACK)		55	4-951-620-01	SCREW (2.6X8), +BVTP	
52	X-4953-632-1	PANEL ASSY, FRONT (AEP: BLACK, UK)		56	A-4476-428-A	DISPLAY BOARD, COMPLETE (AEP, UK)	
52	X-4953-633-1	PANEL ASSY, FRONT (AEP: SILVER)		56	A-4476-434-A	DISPLAY BOARD, COMPLETE (US)	
52	X-4953-634-1	PANEL ASSY, FRONT (US)		56	A-4476-437-A	DISPLAY BOARD, COMPLETE (SP, AUS)	
52	X-4953-635-1	PANEL ASSY, FRONT (SP, AUS)		57	1-681-065-11	ENCORDER BOARD	
53	4-231-973-01	BUTTON (POWER) (BLACK)		58	1-681-066-11	SW BOARD	
53	4-231-973-11	BUTTON (POWER) (SILVER)					

6-3. CHASSIS SECTION



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

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	3-704-515-31	SCREW (BV/RING)		107	4-233-386-11	PANEL, BACK (UK)	
104	A-4476-427-A	MAIN BOARD, COMPLETE (AEP, UK)		107	4-233-386-21	PANEL, BACK (US)	
104	A-4476-433-A	MAIN BOARD, COMPLETE (US)		107	4-233-386-31	PANEL, BACK (AUS)	
104	A-4476-436-A	MAIN BOARD, COMPLETE (AUS)		108	1-773-002-11	WIRE (FLAT TYPE) (15 CORE)	
104	A-4476-439-A	MAIN BOARD, COMPLETE (SP)		$\triangle$ PT901	1-429-466-11	TRANSFORMER, POWER (US)	
* 105	3-703-244-00	BUSHING (2104), CORD		$\triangle$ PT901	1-429-467-11	TRANSFORMER, POWER (EXCEPT US)	
$\triangle$ 106	1-575-651-21	CORD, POWER (AEP, SP, UK)		TB101	1-693-407-23	TUNER (US)	
$\triangle$ 106	1-696-845-11	CORD, POWER (AUS)		TB101	1-693-410-25	TUNER (PACK) (EXCEPT US)	
$\triangle$ 106	1-783-531-31	CORD, POWER (US)		#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
107	4-233-386-01	PANEL, BACK (AEP, SP)		#2	7-685-871-09	SCREW +BVTT 3X6 (S)	

SECTION 7
ELECTRICAL PARTS LIST

AC SW DISPLAY

- NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
 - -XX and -X mean standardized parts, so they may have some difference from the original one.
 - RESISTORS
All resistors are in ohms.
METAL: Metal-film resistor.
METAL OXIDE: Metal oxide-film resistor.
F: nonflammable
 - Abbreviation
AUS : Australian model
SP : Singapore model

- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u: μ , for example:
uA. . : μ A. . uPA. . : μ PA. .
uPB. . : μ PB. . uPC. . : μ PC. .
uPD. . : μ PD. .
- CAPACITORS
uF: μ F
- COILS
uH: μ H

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

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

Ref. No.	Part No.	Description	Remark			
	1-681-067-11	AC SW BOARD	*****			
		< CAPACITOR >				
△ C951	1-113-915-11	CERAMIC	0.001uF	20%	250V	
		< SWITCH >				
△ S901	1-572-267-51	SWITCH, PUSH (AC POWER) (1 KEY)	(POWER)			

	A-4476-428-A	DISPLAY BOARD, COMPLETE (AEP, UK)				
	A-4476-434-A	DISPLAY BOARD, COMPLETE (US)				
	A-4476-437-A	DISPLAY BOARD, COMPLETE (SP, AUS)	*****			
*	4-921-941-01	CUSHION (FL)				
*	4-979-925-01	HOLDER (FL-D)				
		< CAPACITOR >				
C701	1-127-876-11	CERAMIC	0.01uF	10%	50V	
C702	1-127-876-11	CERAMIC	0.01uF	10%	50V	
C703	1-128-802-11	CERAMIC	27PF	5%	50V	
C704	1-128-802-11	CERAMIC	27PF	5%	50V	
C705	1-127-876-11	CERAMIC	0.01uF	10%	50V	
C706	1-127-876-11	CERAMIC	0.01uF	10%	50V	
C707	1-126-964-11	ELECT	10uF	20%	50V	
C708	1-127-876-11	CERAMIC	0.01uF	10%	50V	
C709	1-127-876-11	CERAMIC	0.01uF	10%	50V	
C710	1-127-876-11	CERAMIC	0.01uF	10%	50V	
C711	1-126-964-11	ELECT	10uF	20%	50V	
C712	1-104-905-11	CAPACITOR	0.22F		5.5V	
C713	1-127-876-11	CERAMIC	0.01uF	10%	50V	
C714	1-126-959-11	ELECT	0.47uF	20%	50V	
C715	1-127-876-11	CERAMIC	0.01uF	10%	50V	
C716	1-126-965-11	ELECT	22uF	20%	50V	
C717	1-127-876-11	CERAMIC	0.01uF	10%	50V	
		< DIODE >				
D701	8-719-911-19	DIODE 1SS133T-72				
D702	8-719-911-19	DIODE 1SS133T-72				
D703	8-719-911-19	DIODE 1SS133T-72				
D704	8-719-911-19	DIODE 1SS133T-72				

Ref. No.	Part No.	Description	Remark			
		< FILTER >				
FL701	1-517-516-11	INDICATOR TUBE, FLUORESCENT				
		< IC >				
IC701	8-759-834-92	IC uPD78045FGF-130-3B9				
IC702	8-759-827-70	IC NJL64H400A-1				
		< TRANSISTOR >				
Q701	8-729-119-78	TRANSISTOR	2SC1740S-QRT			
		< RESISTOR >				
R701	1-249-419-11	CARBON	1.5K	5%	1/4W	
R702	1-249-419-11	CARBON	1.5K	5%	1/4W	
R703	1-249-429-11	CARBON	10K	5%	1/4W	
R704	1-249-429-11	CARBON	10K	5%	1/4W	
R705	1-247-895-00	CARBON	470K	5%	1/4W	
R706	1-249-433-11	CARBON	22K	5%	1/4W	
R707	1-249-417-11	CARBON	1K	5%	1/4W	
△R708	1-249-401-11	CARBON	47	5%	1/4W	F
R710	1-249-429-11	CARBON	10K	5%	1/4W	
R711	1-249-441-11	CARBON	100K	5%	1/4W	
R712	1-249-441-11	CARBON	100K	5%	1/4W	
R713	1-247-807-31	CARBON	100	5%	1/4W	
R721	1-249-413-11	CARBON	470	5%	1/4W	
R722	1-249-413-11	CARBON	470	5%	1/4W	
R723	1-249-413-11	CARBON	470	5%	1/4W	(AEP, UK)
R724	1-249-413-11	CARBON	470	5%	1/4W	
R725	1-249-413-11	CARBON	470	5%	1/4W	
R726	1-249-413-11	CARBON	470	5%	1/4W	
R727	1-249-413-11	CARBON	470	5%	1/4W	
R728	1-249-413-11	CARBON	470	5%	1/4W	
R729	1-249-413-11	CARBON	470	5%	1/4W	
R731	1-249-413-11	CARBON	470	5%	1/4W	
R732	1-249-413-11	CARBON	470	5%	1/4W	(AEP, UK)
R733	1-249-441-11	CARBON	100K	5%	1/4W	
R734	1-249-441-11	CARBON	100K	5%	1/4W	(EXCEPT AEP, UK)
R750	1-247-807-31	CARBON	100	5%	1/4W	
R751	1-249-406-11	CARBON	120	5%	1/4W	
R752	1-249-406-11	CARBON	120	5%	1/4W	

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

DISPLAY

ENCODER

MAIN

Ref. No.	Part No.	Description	Remark		
R753	1-249-407-11	CARBON	150	5%	1/4W
R754	1-249-408-11	CARBON	180	5%	1/4W
R755	1-249-409-11	CARBON	220	5%	1/4W
R756	1-249-410-11	CARBON	270	5%	1/4W
R757	1-249-411-11	CARBON	330	5%	1/4W
R758	1-249-413-11	CARBON	470	5%	1/4W
R759	1-249-414-11	CARBON	560	5%	1/4W
R760	1-249-416-11	CARBON	820	5%	1/4W
R761	1-249-418-11	CARBON	1.2K	5%	1/4W
R762	1-249-421-11	CARBON	2.2K	5%	1/4W
R770	1-247-807-31	CARBON	100	5%	1/4W
R771	1-249-406-11	CARBON	120	5%	1/4W
R772	1-249-406-11	CARBON	120	5%	1/4W
R773	1-249-411-11	CARBON	330	5%	1/4W
R775	1-249-409-11	CARBON	220	5%	1/4W
R776	1-249-410-11	CARBON	270	5%	1/4W
R777	1-249-411-11	CARBON	330	5%	1/4W
R778	1-249-413-11	CARBON	470	5%	1/4W
R779	1-249-414-11	CARBON	560	5%	1/4W
R780	1-249-416-11	CARBON	820	5%	1/4W
R792	1-249-429-11	CARBON	10K	5%	1/4W
R793	1-249-429-11	CARBON	10K	5%	1/4W (US) (SP, AUS)
< SWITCH >					
S701	1-771-349-11	SWITCH, KEYBOARD (SHIFT)			
S702	1-771-349-21	SWITCH, KEYBOARD (1)			
S703	1-771-349-21	SWITCH, KEYBOARD (2)			
S704	1-771-349-21	SWITCH, KEYBOARD (3)			
S705	1-771-349-21	SWITCH, KEYBOARD (4)			
S706	1-771-349-21	SWITCH, KEYBOARD (5)			
S707	1-771-349-21	SWITCH, KEYBOARD (6)			
S708	1-771-349-21	SWITCH, KEYBOARD (7)			
S709	1-771-349-21	SWITCH, KEYBOARD (8)			
S710	1-771-349-21	SWITCH, KEYBOARD (9)			
S711	1-771-349-21	SWITCH, KEYBOARD (0)			
S712	1-771-349-11	SWITCH, KEYBOARD (DIRECT)			
S715	1-771-349-21	SWITCH, KEYBOARD (ENTER)			
S717	1-771-349-21	SWITCH, KEYBOARD (DISPLAY)			
S718	1-771-349-21	SWITCH, KEYBOARD (PTY) (AEP, UK)			
S721	1-771-349-21	SWITCH, KEYBOARD (AUTO-BETICAL SELECT) (AEP, UK)			
S722	1-771-349-21	SWITCH, KEYBOARD (MEMORY)			
S723	1-771-349-21	SWITCH, KEYBOARD (FM MODE)			
S724	1-771-349-21	SWITCH, KEYBOARD (BAND)			
< VIBRATOR >					
X701	1-760-422-11	VIBRATOR, CRYSTAL (4.2MHz)			

	1-681-065-11	ENCODER BOARD			

< VARIABLE RESISTOR >					
RV701	1-467-703-11	ENCODER, ROTARY (TUNING/SELECT)			

Ref. No.	Part No.	Description	Remark		
	A-4476-427-A	MAIN BOARD, COMPLETE (AEP, UK)			
	A-4476-433-A	MAIN BOARD, COMPLETE (US)			
	A-4476-436-A	MAIN BOARD, COMPLETE (AUS)			
	A-4476-439-A	MAIN BOARD, COMPLETE (SP)			

	7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3			
		< CAPACITOR >			
C101	1-127-876-11	CERAMIC	0.01uF	10%	50V
C102	1-126-964-11	ELECT	10uF	20%	50V
C103	1-127-876-11	CERAMIC	0.01uF	10%	50V
C104	1-126-964-11	ELECT	10uF	20%	50V
C201	1-162-288-31	CERAMIC	330PF	10%	50V
C202	1-127-876-11	CERAMIC	0.01uF	10%	50V
C203	1-127-876-11	CERAMIC	0.01uF	10%	50V
C204	1-127-876-11	CERAMIC	0.01uF	10%	50V
C205	1-104-660-11	ELECT	47uF	20%	16V
C206	1-127-876-11	CERAMIC	0.01uF	10%	50V
C207	1-126-956-11	ELECT	0.1uF	20%	50V
C301	1-126-963-11	ELECT	4.7uF	20%	50V
C302	1-126-963-11	ELECT	4.7uF	20%	(AEP, UK) 50V
C303	1-126-964-11	ELECT	10uF	20%	(AEP, UK) 50V
C304	1-126-964-11	ELECT	10uF	20%	(AEP, UK) 50V
C305	1-110-335-11	MYLAR	100PF	5%	(AEP, UK) 50V
C306	1-110-335-11	MYLAR	100PF	5%	(AEP, UK) 50V
C307	1-126-963-11	ELECT	4.7uF	20%	(AEP, UK) 50V
C308	1-126-963-11	ELECT	4.7uF	20%	(AEP, UK) 50V
C319	1-126-934-11	ELECT	220uF	20%	(AEP, UK) 16V
C351	1-130-471-00	MYLAR	0.001uF	5%	(AEP, UK) 50V
C352	1-130-471-00	MYLAR	0.001uF	5%	(AEP, UK) 50V
C801	1-127-876-11	CERAMIC	0.01uF	10%	(AEP, UK) 50V
C802	1-104-660-11	ELECT	47uF	20%	(AEP, UK) 16V
C803	1-127-876-11	CERAMIC	0.01uF	10%	(AEP, UK) 50V
C804	1-127-876-11	CERAMIC	0.01uF	10%	(AEP, UK) 50V
C805	1-162-291-31	CERAMIC	560PF	10%	(AEP, UK) 50V
C806	1-128-808-11	CERAMIC	82PF	5%	(AEP, UK) 50V
C807	1-128-805-11	CERAMIC	47PF	5%	(AEP, UK) 50V
C808	1-126-961-11	ELECT	2.2uF	20%	(AEP, UK) 50V
C901	1-127-876-11	CERAMIC	0.01uF	10%	50V
C902	1-127-876-11	CERAMIC	0.01uF	10%	50V
C903	1-126-967-11	ELECT	47uF	20%	50V
C904	1-126-967-11	ELECT	47uF	20%	50V

MAIN

SW

Ref. No.	Part No.	Description	Remark		
C905	1-126-953-11	ELECT 2200uF 20%	35V		
C906	1-126-969-11	ELECT 220uF 20%	50V		
C907	1-126-935-11	ELECT 470uF 20%	6.3V		
C908	1-126-964-11	ELECT 10uF 20%	50V		
C909	1-104-660-11	ELECT 47uF 20%	16V		
C910	1-126-964-11	ELECT 10uF 20%	50V		
C911	1-126-959-11	ELECT 0.47uF 20%	50V		
< CONNECTOR >					
CN101	1-784-776-11	CONNECTOR, FFC 15P			
< CONNECTOR >					
* CNP701	1-568-936-11	PIN, CONNECTOR 9P			
* CNP702	1-568-935-11	PIN, CONNECTOR 8P			
* CNP901	1-580-230-11	PIN, CONNECTOR (PC BOARD) 2P			
CNP951	1-564-321-00	PIN, CONNECTOR 2P			
< DIODE >					
D901	8-719-024-99	DIODE 11ES2-NTA2B			
D902	8-719-024-99	DIODE 11ES2-NTA2B			
D903	8-719-024-99	DIODE 11ES2-NTA2B			
D904	8-719-024-99	DIODE 11ES2-NTA2B			
D905	8-719-983-80	DIODE MTZJ-T-72-30			
D906	8-719-109-93	DIODE MTZJ-T-72-6.2			
D907	8-719-024-99	DIODE 11ES2-NTA2B			
D908	8-719-911-19	DIODE 1SS133T-72			
< IC >					
IC201	8-759-812-35	IC LA1235			
IC301	8-759-634-51	IC NJM4558D (AEP, UK)			
IC801	8-759-541-48	IC BU1924 (AEP, UK)			
IC901	8-759-820-09	IC LA5667			
< JACK >					
J301	1-778-940-11	JACK 2P (LINE OUT)			
< COIL >					
L351	1-410-509-11	INDUCTOR 10uH (AEP, UK)			
L352	1-410-509-11	INDUCTOR 10uH (AEP, UK)			
< TRANSFORMER >					
△ PT901	1-429-466-11	TRANSFORMER, POWER (US)			
△ PT901	1-429-467-11	TRANSFORMER, POWER (EXCEPT US)			
< TRANSISTOR >					
Q301	8-729-922-37	TRANSISTOR 2SD2144S-TP-UVW			
Q302	8-729-922-37	TRANSISTOR 2SD2144S-TP-UVW			
Q801	8-729-119-78	TRANSISTOR 2SC1740S-QRT (AEP, UK)			
Q901	8-729-900-65	TRANSISTOR BN1L4M-TP			
< RESISTOR >					
R104	1-249-429-11	CARBON 10K 5%	1/4W		
R105	1-249-429-11	CARBON 10K 5%	1/4W		
R201	1-249-413-11	CARBON 470 5%	1/4W		
△ R202	1-249-405-11	CARBON 100 5%	1/4W		
R301	1-249-441-11	CARBON 100K 5%	1/4W		(AEP, UK)

Ref. No.	Part No.	Description	Remark		
R302	1-249-441-11	CARBON 100K 5%	1/4W		(AEP, UK)
R303	1-249-441-11	CARBON 100K 5%	1/4W		(AEP, UK)
R304	1-249-441-11	CARBON 100K 5%	1/4W		(AEP, UK)
R305	1-249-429-11	CARBON 10K 5%	1/4W		(AEP, UK)
R306	1-249-429-11	CARBON 10K 5%	1/4W		(AEP, UK)
R307	1-249-425-11	CARBON 4.7K 5%	1/4W		(AEP, UK)
R308	1-249-425-11	CARBON 4.7K 5%	1/4W		(AEP, UK)
R309	1-249-413-11	CARBON 470 5%	1/4W		
R310	1-249-413-11	CARBON 470 5%	1/4W		
R311	1-249-417-11	CARBON 1K 5%	1/4W		
R312	1-249-417-11	CARBON 1K 5%	1/4W		
△ R319	1-249-405-11	CARBON 100 5%	1/4W F		(AEP, UK)
△ R320	1-249-405-11	CARBON 100 5%	1/4W F		(AEP, UK)
R321	1-249-393-11	CARBON 10 5%	1/4W		
R351	1-249-437-11	CARBON 47K 5%	1/4W		
R352	1-249-437-11	CARBON 47K 5%	1/4W		
R801	1-249-429-11	CARBON 10K 5%	1/4W		(AEP, UK)
△ R802	1-249-401-11	CARBON 47 5%	1/4W F		(AEP, UK)
R803	1-249-421-11	CARBON 2.2K 5%	1/4W		(AEP, UK)
R804	1-249-409-11	CARBON 220 5%	1/4W		(AEP, UK)
R805	1-247-807-31	CARBON 100 5%	1/4W		(AEP, UK)
R900	1-219-237-11	SOLID 3.3M 20%	1/2W		(US)
R901	1-249-437-11	CARBON 47K 5%	1/4W		
R902	1-249-437-11	CARBON 47K 5%	1/4W		
R903	1-249-441-11	CARBON 100K 5%	1/4W		
R904	1-249-437-11	CARBON 47K 5%	1/4W		
R905	1-249-413-11	CARBON 470 5%	1/4W		
R906	1-249-413-11	CARBON 470 5%	1/4W		
R907	1-249-413-11	CARBON 470 5%	1/4W		
R908	1-249-413-11	CARBON 470 5%	1/4W		
R909	1-249-413-11	CARBON 470 5%	1/4W		
R910	1-249-413-11	CARBON 470 5%	1/4W		
< VARIABLE RESISTOR >					
RV201	1-241-765-11	RES, ADJ, CARBON 22K			
< VIBRATOR >					
X801	1-579-900-21	VIBRATOR, CRYSTAL (4.332MHz) (AEP, UK)			

	1-681-066-11	SW BOARD			

< RESISTOR >					
R763	1-249-424-11	CARBON 3.9K 5%	1/4W		

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
R764	1-249-430-11	CARBON 12K 5%	1/4W
R781	1-249-418-11	CARBON 1.2K 5%	1/4W

< SWITCH >

S713	1-771-349-21	SWITCH, KEYBOARD (MENU)
S714	1-771-349-21	SWITCH, KEYBOARD (RETURN)
S727	1-771-349-21	SWITCH, KEYBOARD (CHARACTER)
S728	1-771-349-21	SWITCH, KEYBOARD (TUNE MODE)

MISCELLANEOUS

△ 106	1-575-651-21	CORD, POWER (AEP, SP, UK)
△ 106	1-696-845-11	CORD, POWER (AUS)
△ 106	1-783-531-31	CORD, POWER (US)
108	1-773-002-11	WIRE (FLAT TYPE) (15 CORE)
△ PT901	1-429-466-11	TRANSFORMER, POWER (US)
△ PT901	1-429-467-11	TRANSFORMER, POWER (EXCEPT US)
TB101	1-693-407-23	TUNER (US)
TB101	1-693-410-25	TUNER (PACK) (EXCEPT US)

ACCESSORIES & PACKING MATERIALS

	1-501-374-11	ANTENNA, LOOP (AM)
	1-501-659-41	ANTENNA (FM)
△	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (UK)
	1-776-263-11	CORD, CONNECTION (AUDIO CORD)
	4-233-395-11	MANUAL, INSTRUCTION (ENGLISH)
	4-233-395-21	MANUAL, INSTRUCTION (FRENCH, GERMAN, SPANISH, DUTCH) (AEP)
	4-233-395-31	MANUAL, INSTRUCTION (SWEDISH, ITALIAN, POLISH) (AEP)
	4-233-395-41	MANUAL, INSTRUCTION (DANISH, FINNISH) (AEP)
	4-233-395-51	MANUAL, INSTRUCTION (PORTUGUESE) (AEP)
	4-233-395-61	MANUAL, INSTRUCTION (RUSSIAN) (AEP)

REVISION HISTORY

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