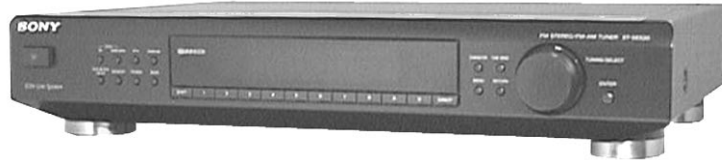


ST-SE520

SERVICE MANUAL

AEP Model
UK Model



SPECIFICATIONS

FM tuner section

Frequency range 87.5 - 108.0 MHz

Aerial terminals 75Ω, unbalanced

Intermediate frequency
10.7 MHz

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

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

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: 522 - 1,611 kHz
(9 kHz step)
LW: 144 - 288 kHz
(1 kHz step)

Intermediate frequency
450 kHz

Usable Sensitivity (with AM loop
aerial)
MW: 200 μV/m
LW: 700 μV/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 220 - 230 V,
AC 50/60 Hz

Power consumption 10 W

Dimensions 430 × 82 × 295 mm
(w/h/d)

Weight 2.5 kg

Supplied accessories

- Audio cord (1)
- AM loop aerial (1)
- FM wire aerial (1)
- EON connecting cord (1)

Design and specifications are
subject to change without notice.

FM STEREO FM-AM TUNER

SONY®

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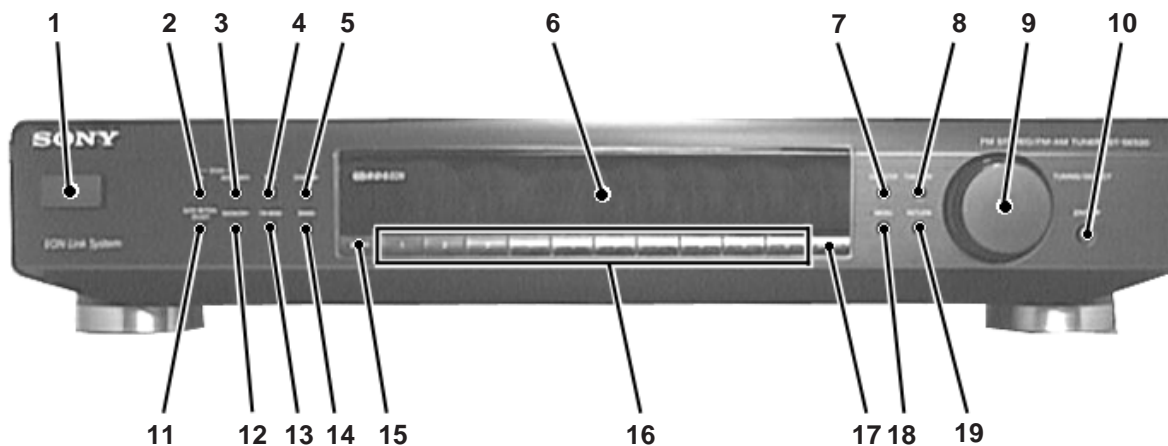
6. ELECTRICAL PARTS LIST 13

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

Front Panel Descriptions



- | | |
|------------------------|-------------------------------|
| 1 ① (Power)switch | 11 AUTO-BETICAL SELECT button |
| 2 EON TA button | 12 MEMORY button |
| 3 EON NEWS/INFO button | 13 FM MODE button |
| 4 PTY button | 14 BAND button |
| 5 DISPLAY button | 15 SHIFT button |
| 6 Display window | 16 Numeric buttons |
| 7 CHARACTER button | 17 DIRECT button |
| 8 TUNE MODE button | 18 MENU button |
| 9 TUNING/SELECT knob | 19 RETURN button |
| 10 ENTER button | |

SECTION 2 TEST MODE

1. Circuit Check Mode

Set to the reception frequency that the circuit can 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 **[AUTO-BETICAL SELECT]** together, turn ON **[Ⓜ]**.

- 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	\overline{AST} signal =LOW	OK or NG	/	IC201 NG, RV201 adjustments
IF Frq	IF COUNT OK	OK or NG	OK or NG	TB101, IC201 NG
Sig Level	SI LEVELh70dB	OK or NG	OK or NG	TB101 NG
Stereo	\overline{ST} signal=LOW	OK or NG	/	TB101 NG
RDS Signal	RDS DATA OK	OK or NG	/	IC802 NG

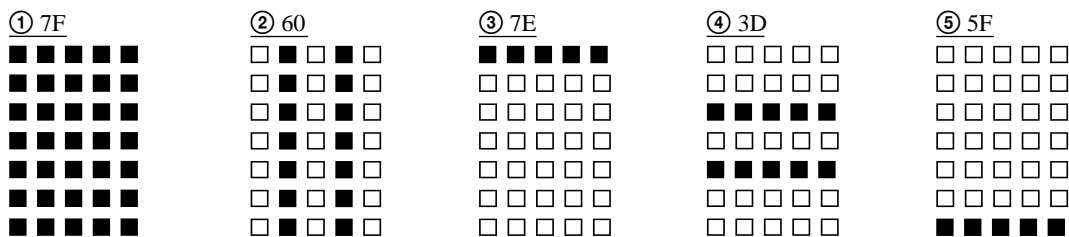
NOTE : The preset data will be erased when this test mode is used. Therefore, take down the data before setting this mode and preset the data again after completing operations in this mode.

2. Display Tube Check and KEY Check mode

1. Turn OFF the power.
2. While pressing [1] and [AUTO-BETICAL SELECT] together, turn ON [1].
3. While continuously pressing [1] and [AUTO-BETICAL SELECT] together, check the following.

Microcomputer version indication (1 sec) → All light up “7F” → Dot area only “60” → Dot area only “7E”
 ↑ Dot area only “5F” ← Dot area only “3D” ↓

Indication test pattern



The display changes every 1 sec.

4. Release [1] and [AUTO-BETICAL SELECT]. The KEY CHECK mode will be set.
5. All key numbers will be displayed.
Key Number : 25
6. Each time the key is pressed, the key number will be counted down.
Each key will be counted only once, at the first time.
7. When all keys have been pressed, the process will end.

NOTE : As contents of the Factory Preset will be written into memory after completing this check mode, delete contents of memory according to 4. Forced RESET.

3. Entering the Factory Preset (In case perform just to write memory of the Factory Preset.)

1. Turn OFF the power.
2. While pressing [3] and [AUTO-BETICAL SELECT] together, turn ON [1].

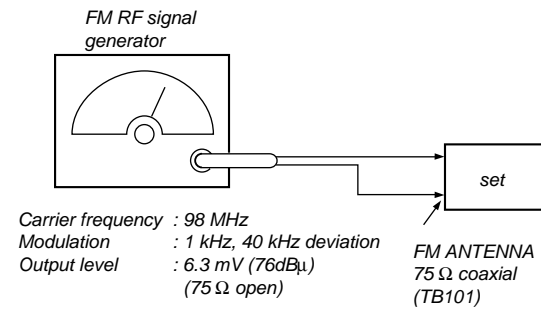
4. Forced RESET (Used to delete the contents of Factory Preset when it is written into the preset memory.)

Clears all the RAMs and sets the initial state

1. Turn OFF the power.
2. While pressing [5] and [AUTO-BETICAL SELECT] together, turn ON [1].
3. When “All clear” is indicated on the fluorescent display tube, it means that “Forced Reset” has been completed.

SECTION 3 ELECTRICAL ADJUSTMENTS

FM Signal Level Adjustment

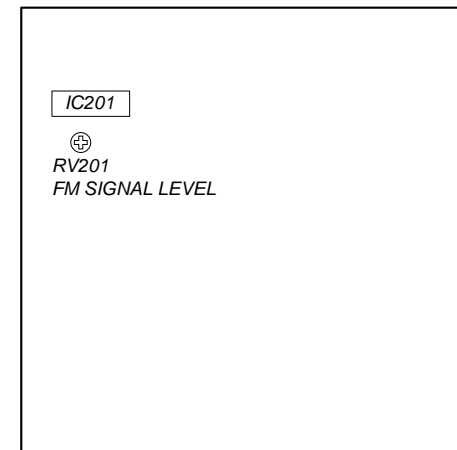


Procedure:

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.

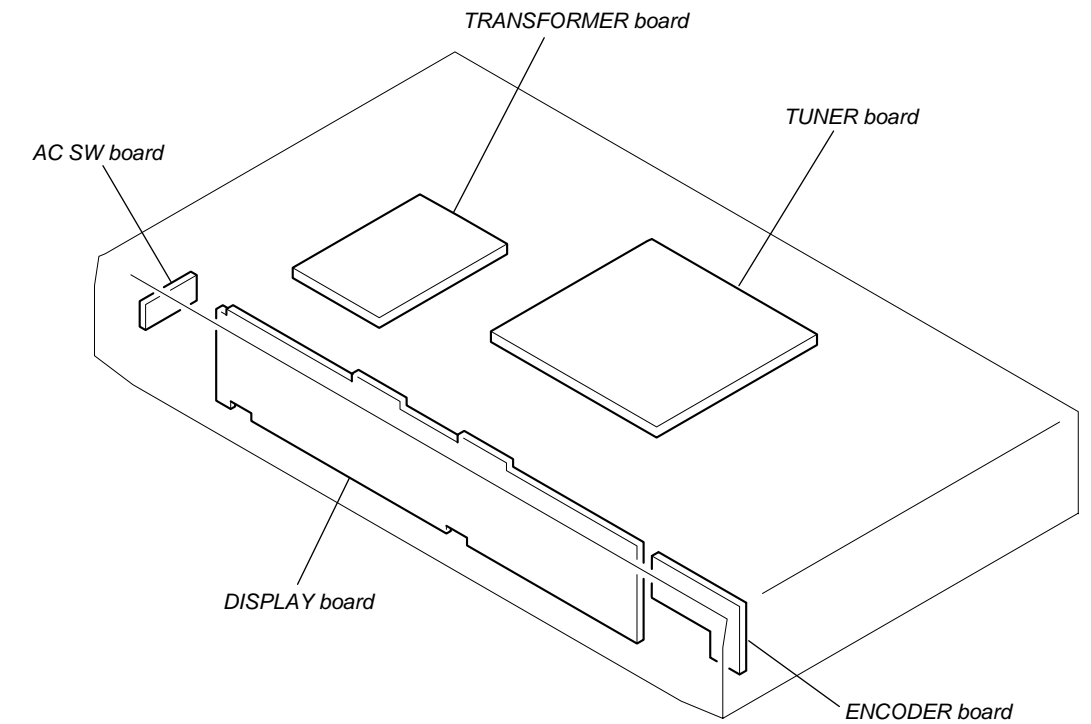
Adjustment Location:

[TUNER BOARD] — Component Side —



SECTION 4 DIAGRAMS

4-1. CIRCUIT BOARDS LOCATION



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

For schematic diagrams.

Note:

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

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

- **B+** : B+ Line.
- **B-** : B- Line.
- : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- no mark : FM
- * : Can not be measured.

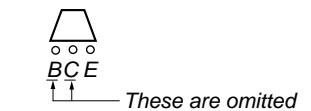
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
- ⇒ : FM

For printed wiring boards.

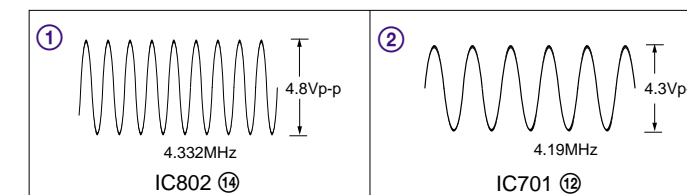
Note:

- : parts extracted from the component side.
- : parts mounted on the conductor side.
- : Pattern from the side which enables seeing.

Indication of transistor

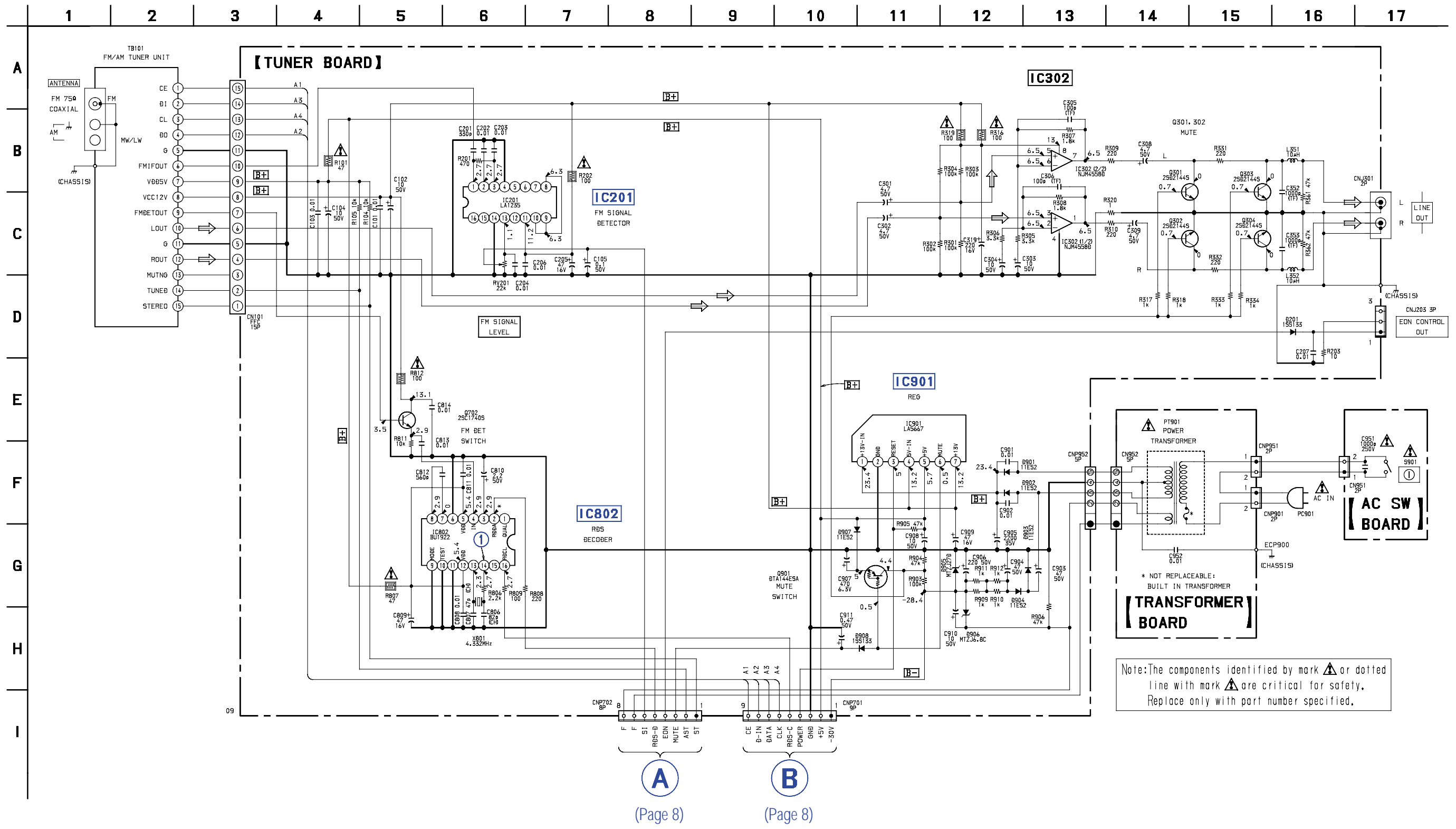


WAVEFORMS

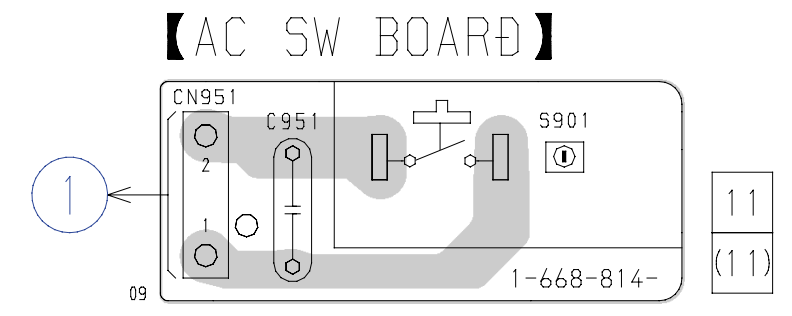
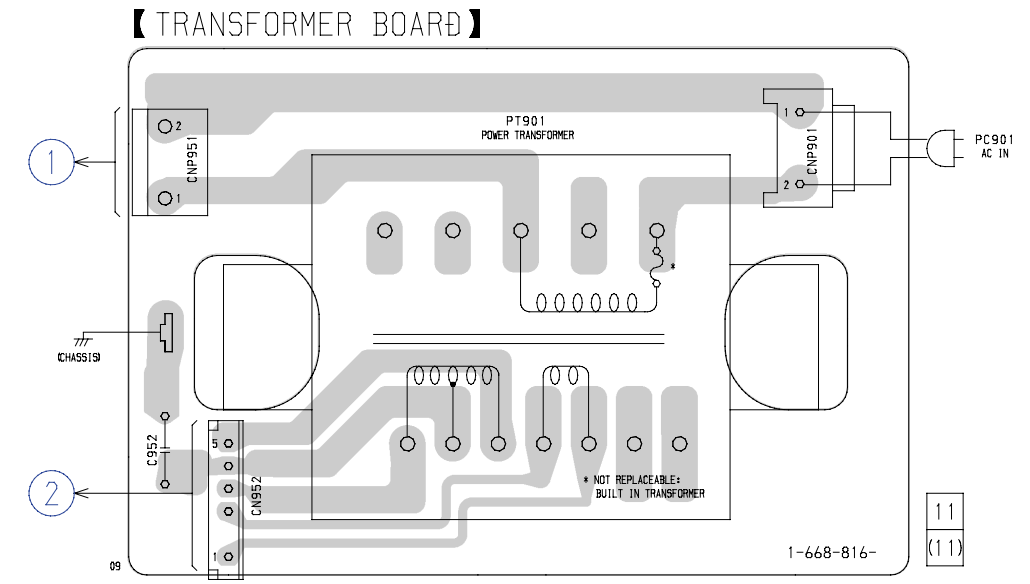
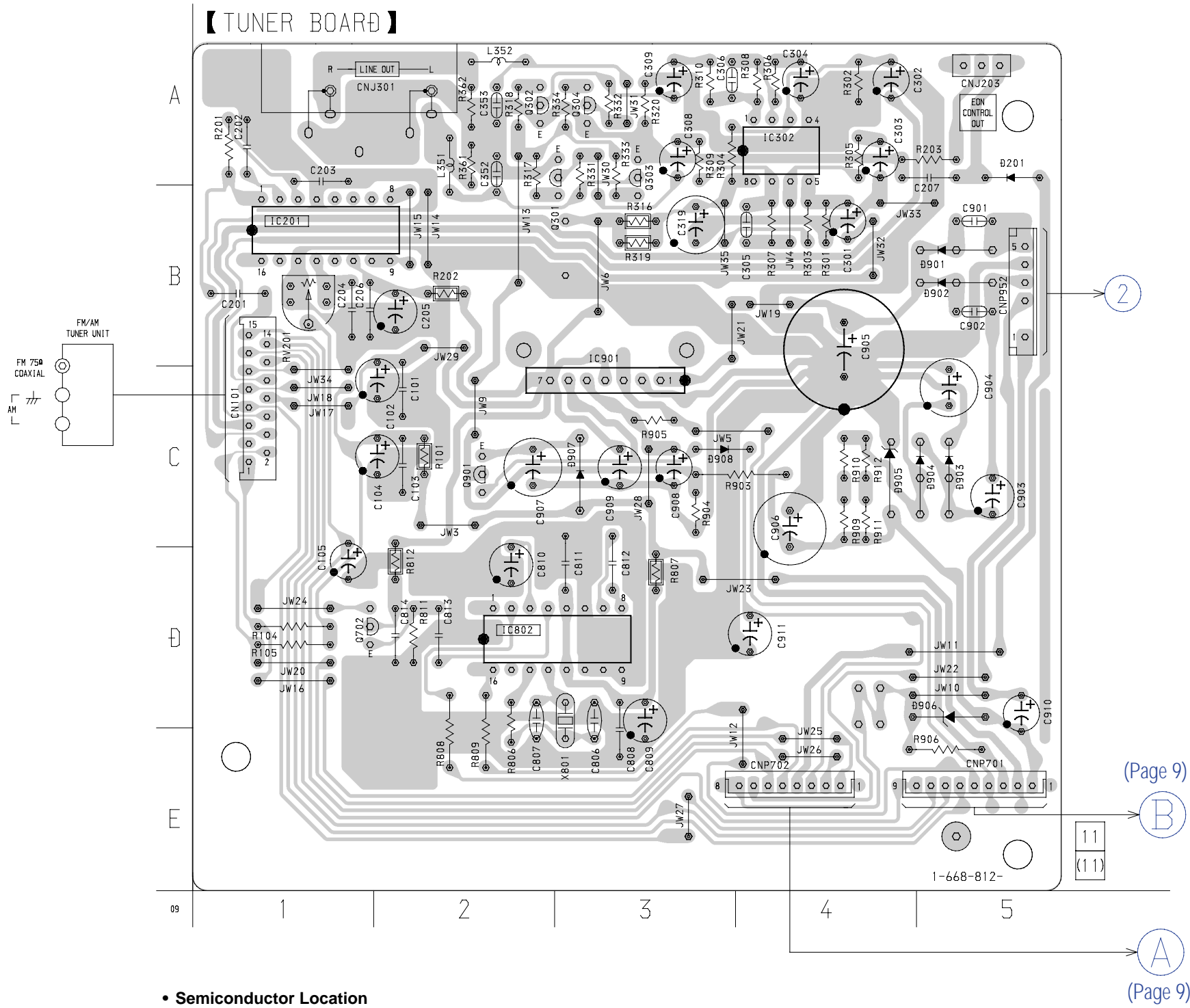


4-2. SCHEMATIC DIAGRAM – TUNER SECTION –

- See page 5 for Waveform.
- See page 11 for IC Block Diagram.



4-3. PRINTED WIRING BOARD - TUNER SECTION -
• See page 5 for Circuit Boards Location.

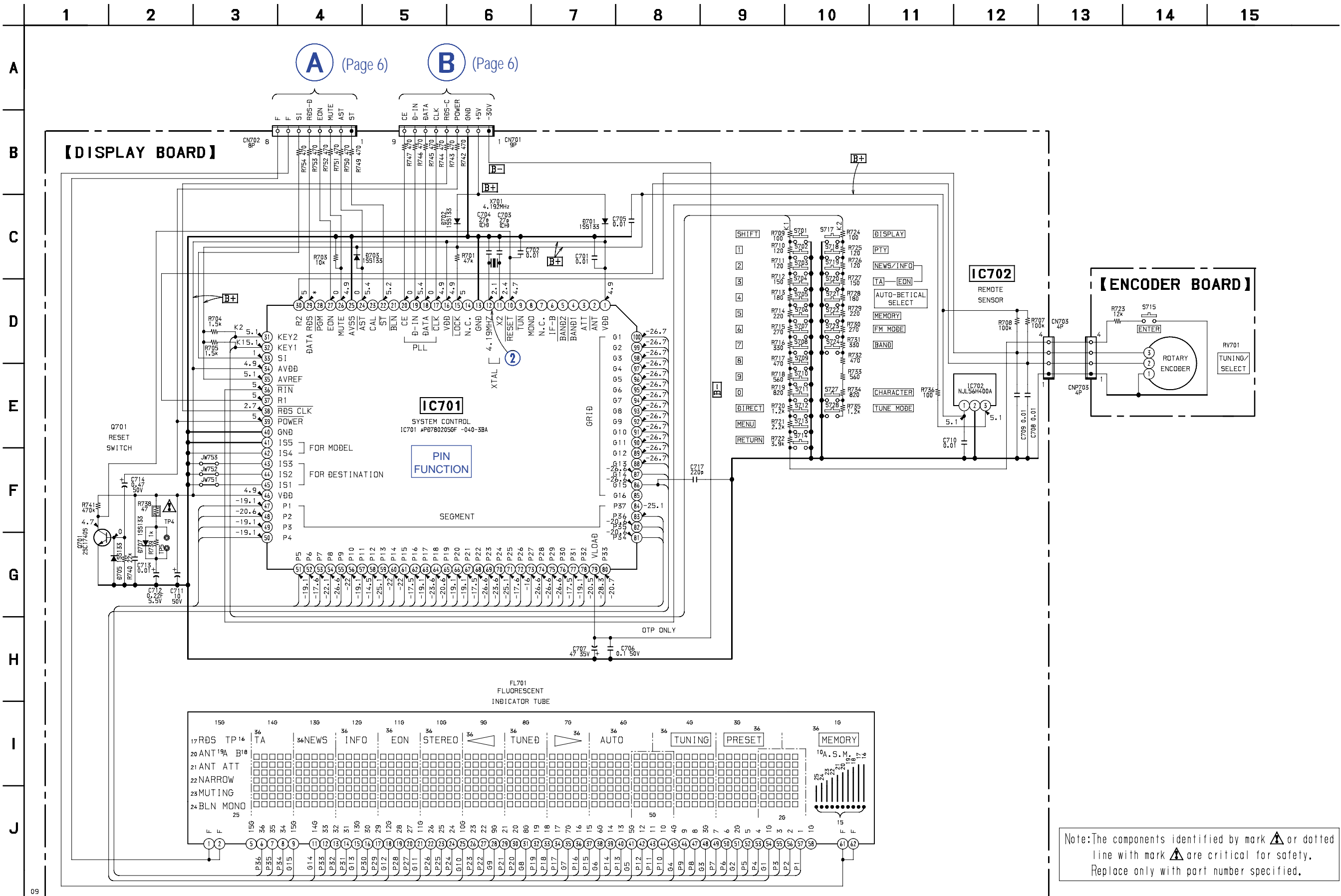


• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D201	A-5	IC201	B-1
D901	B-5	IC302	A-4
D902	B-5	IC802	D-3
D903	C-5	IC901	C-3
D904	C-5		
D905	C-4	Q301	A-3
D906	D-5	Q302	A-2
D907	C-3	Q303	A-3
D908	C-3	Q304	A-3
		Q702	D-1
		Q901	C-2

4-4. SCHEMATIC DIAGRAM – DISPLAY SECTION –

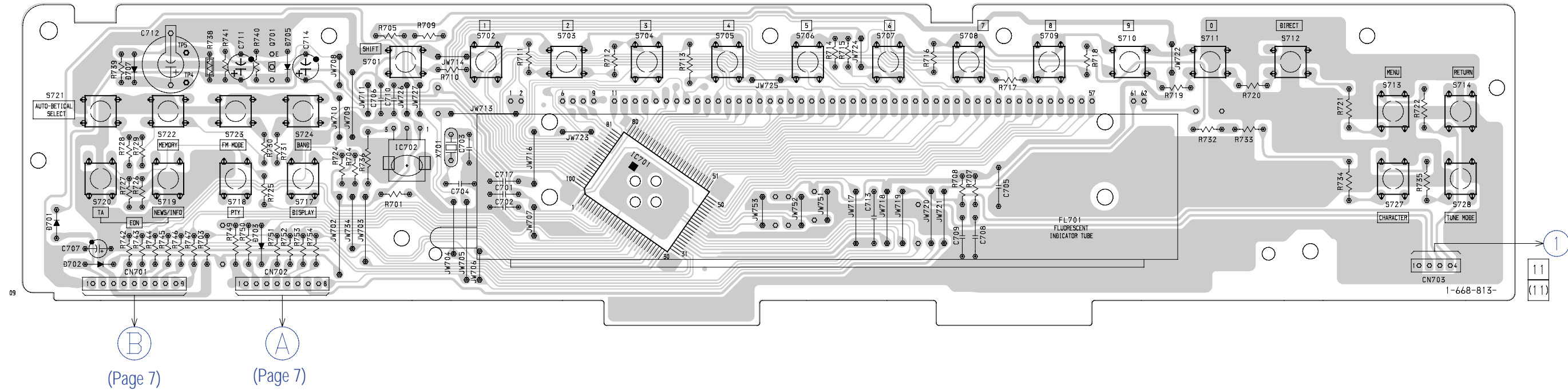
- See page 5 for Waveform.
- See page 10 for IC Pin function.



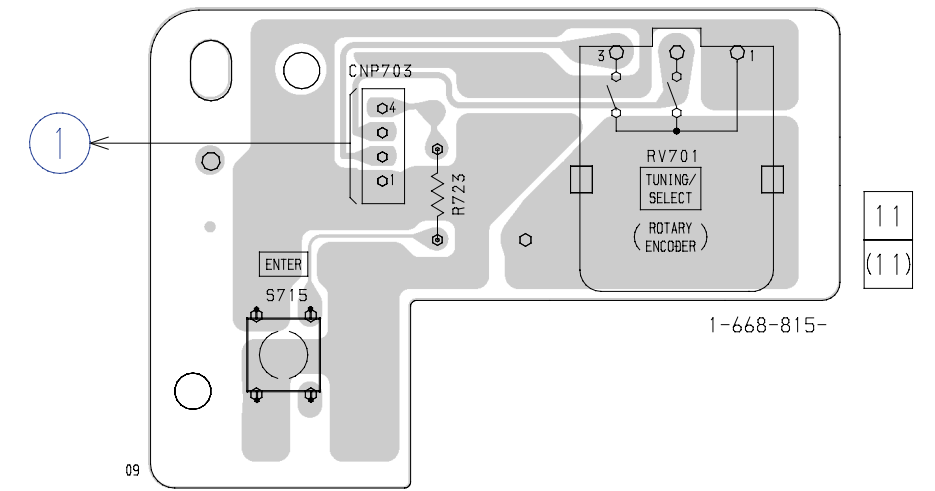
Note: The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.

4-5. PRINTED WIRING BOARD – DISPLAY SECTION –
• See page 5 for Circuit Boards Location.

【 DISPLAY BOARD 】



【 ENCODER BOARD 】



4-6. IC PIN FUNCTION

• IC701 System Control (μ PD78205GF-040-3BA)

	Pin Name	I/O	Function
1	VDD	—	Power supply (+5V)
2	$\overline{\text{ANT}}$	—	Not used
3	ANT	—	Not used
4	$\overline{\text{BAND 1}}$	—	Not used
5	$\overline{\text{BAND 2}}$	—	Not used
6	IF-B	—	Not used
7	NC	—	Not used
8	MONO	—	Not used
9	$\overline{\text{TUN}}$	—	Not used
10	$\overline{\text{RESET}}$	I	System reset input
11	X2	O	Oscillation signal output (4.19MHz)
12	4.19MHz	I	Oscillation signal output (4.19MHz)
13	GND	—	Ground
14	NC	—	Not used
15	$\overline{\text{LOCK}}$	I	Lock signal input
16	VDD	—	Power supply (+5V)
17	$\overline{\text{CLK}}$	O	PLL clock to TB101
18	DATA	O	PLL data to TB101
19	D-IN	I	PLL clock from TB101
20	CE	O	PLL Latch to TB101
21	$\overline{\text{BLN}}$	—	Not used.
22	$\overline{\text{ST}}$	I	Stereo display detection.
23	CAL	—	Not used
24	$\overline{\text{AST}}$	I	Auto stop signal detection
25	AVSS	—	Ground
26	MUTE	O	Muting signal output
27	E ON	O	External control
28	$\overline{\text{PGM}}$	—	Not used
29	DATA RDS	I	RDS data input
30	R2	O	Rotary encoder phase detection
31	KEY 2	I	Key input
32	KEY 1	I	Key input
33	SI	I	Signal input
34	AVDD	—	Analog power supply (+5V)
35	AVREF	I	Reference voltage (+5V)
36	$\overline{\text{R IN}}$	I	Remote control input
37	R 1	I	Rotary encoder number of rotation detection
38	$\overline{\text{RDS CLK}}$	I	RDS data clock input
39	$\overline{\text{POWER}}$	I	Power supply ON/OFF monitor
40	GND	—	Ground

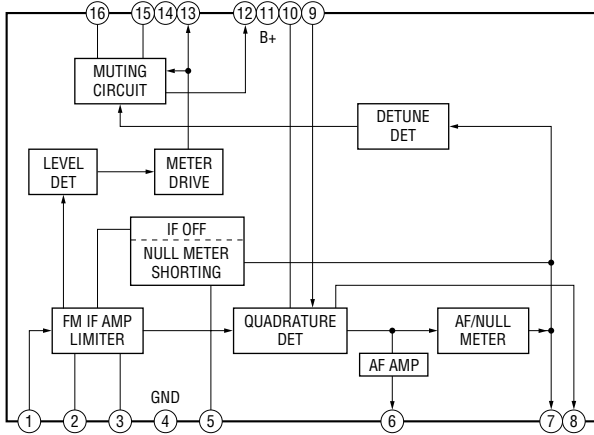
Pin No.	Pin Name	I/O	Function
41	IS 5	I	Model detection
42	IS 4	I	
43	IS 3	I	
44	IS 2	I	
45	IS 1	I	
46	VDD	—	Power supply (+5V)
47 to 78	P1 to P32	O	FL segment output
79	V LOAD	—	Power supply (-30V)
80 to 84	P33 to P37	O	FL segment output
85	G16	—	Not used
86 to 100	G15 to G1	O	FL grid output

- Abbreviation
FL: FLUORESCENT INDICATOR TUBE

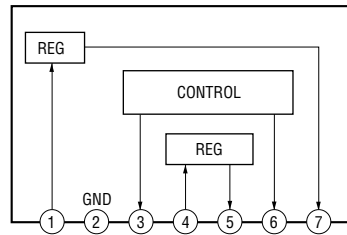
4-7. IC BLOCK DIAGRAMS

• Tuner section

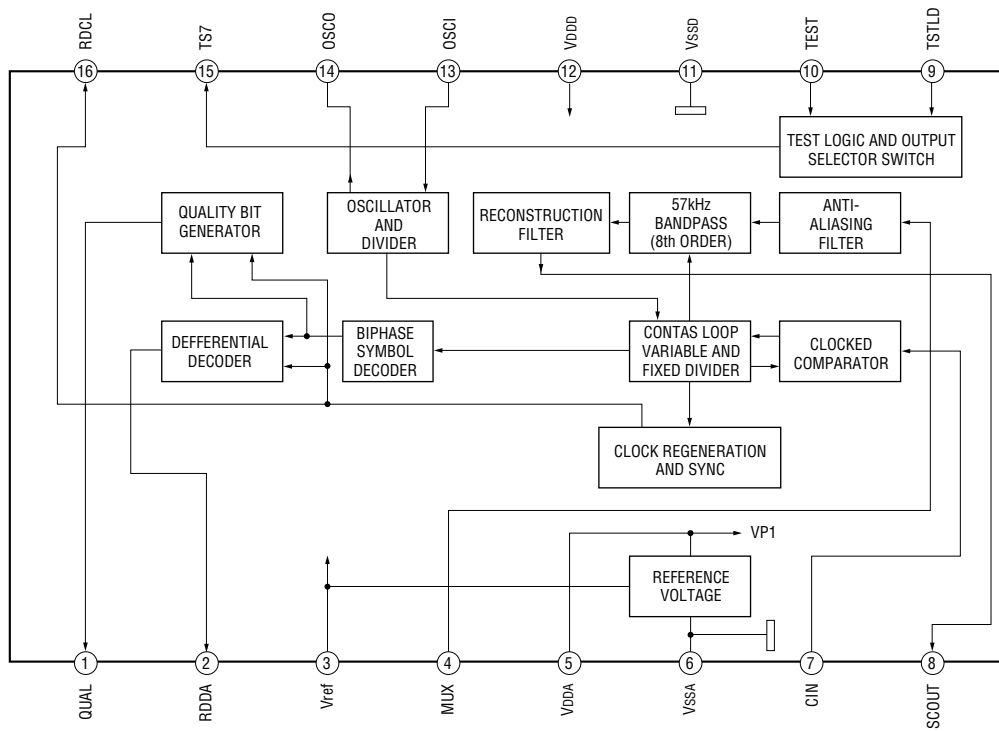
IC201 LA1235



IC901 LA5667



IC802 BU1922



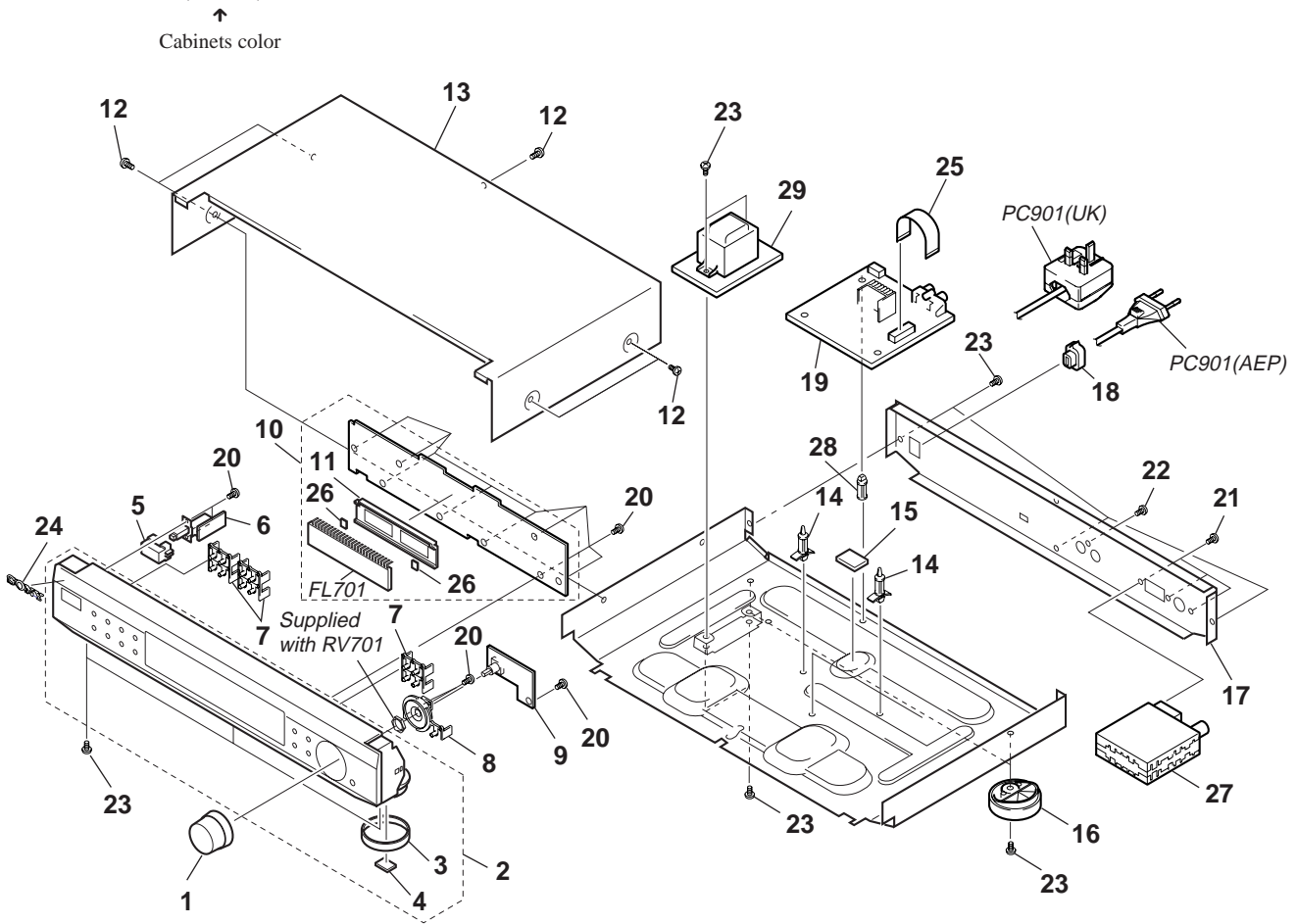
SECTION 5 EXPLODED VIEW

NOTE:

- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Color Indication of Appearance Parts Example: KNOB, BALANCE (WHITE)

- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories and packing materials are given in the last of this parts list.

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



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	4-997-882-01	KNOB (T)(BLACK)		* 14	3-346-265-31	HOLDER, PC BOARD	
1	4-997-882-11	KNOB (T)(SILVER)		* 15	3-697-679-01	CUSHION, LS	
2	X-4949-582-2	PANEL ASSY, FRONT (BLACK)		16	X-4947-124-1	FOOT ASSY (F50150S)(SILVER)	
2	X-4949-583-2	PANEL ASSY, FRONT (SILVER)		16	X-4947-207-1	FOOT ASSY (F50150S)(BLACK)	
3	4-977-593-01	RING (DIA. 50), ORNAMENTAL		* 17	4-215-931-01	PANEL, BACK (AEP)	
4	4-977-358-31	CUSHION		17	4-215-931-51	PANEL, BACK (UK)	
5	3-931-429-71	BUTTON (POWER)(BLACK)		18	3-703-244-00	BUSHING, CORD	
5	3-931-429-81	BUTTON (POWER)(SILVER)		* 19	A-4407-374-A	TUNER BOARD, COMPLETE	
* 6	1-668-814-11	AC SW BOARD		20	4-951-620-01	SCREW (2.6X8), +BVTP	
7	4-981-264-01	BUTTON (4)(BLACK)		21	3-703-685-21	SCREW (+BV 3X8)	
7	4-981-264-21	BUTTON (4)(SILVER)		22	3-704-515-31	SCREW (BV/RING)	
8	4-997-881-01	ESCUTCHEON (BLACK)		23	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
8	4-997-881-11	ESCUTCHEON (SILVER)		24	4-963-404-21	EMBLEM (5-A), SONY	
* 9	1-668-815-11	ENCODER BOARD		25	1-773-002-11	WIRE (FLAT TYPE)(15 CORE)	
* 10	A-4407-375-A	DISPLAY BOARD, COMPLETE		* 26	4-921-941-01	CUSHION (FL)	
* 11	4-945-292-01	HOLDER, INDICATION TUBE		27	1-693-410-21	TUNER (PACK)	
12	3-710-901-01	SCREW, TAPPING (SILVER)		* 28	3-669-610-00	SPACER	
12	3-710-901-11	SCREW, TAPPING (BLACK)		* 29	1-668-816-11	TRANSFORMER BOARD	
* 13	4-978-901-41	CASE (407026)(BLACK)		FL701	1-517-177-21	INDICATOR TUBE, FLUORESCENT	
* 13	4-985-744-01	CASE (407026)(SILVER)		Δ PC901	1-575-651-21	CORD, POWER (AEP)	
				Δ PC901	1-751-523-11	CORD, POWER (UK)	

SECTION 6 ELECTRICAL PARTS LIST

AC SW

DISPLAY

Note:

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 name.

- 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.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
All resistors are in ohms
METAL: Metal-film resistor
METAL OXIDE: Metal Oxide-film resistor
F : nonflammable

- 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

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	1-668-814-11	AC SW BOARD *****				< TRANSISTOR >	
		< CAPACITOR >		Q701	8-729-119-78	TRANSISTOR 2SC2785-HFE	
		< SWITCH >				< RESISTOR >	
Δ C951	1-113-915-11	CERAMIC 0.001uF 20% 250V		R701	1-249-437-11	CARBON 47K 5%	1/4W
		< SWITCH >		R703	1-249-429-11	CARBON 10K 5%	1/4W
Δ S901	1-572-267-51	SWITCH, PUSH (AC POWER)(1 KEY)(①)		R704	1-249-419-11	CARBON 1.5K 5%	1/4W F
		*****		R705	1-249-419-11	CARBON 1.5K 5%	1/4W F
		*****		R707	1-249-441-11	CARBON 100K 5%	1/4W
*	A-4407-375-A	DISPLAY BOARD, COMPLETE *****		R708	1-249-441-11	CARBON 100K 5%	1/4W
		*****		R709	1-247-807-31	CARBON 100 5%	1/4W
*	4-921-941-01	CUSHION (FL)		R710	1-249-406-11	CARBON 120 5%	1/4W F
*	4-945-292-01	HOLDER, INDICATION TUBE		R711	1-249-406-11	CARBON 120 5%	1/4W F
	7-685-872-09	SCREW +BVTT 3X8 (S)		R712	1-249-407-11	CARBON 150 5%	1/4W F
		< CAPACITOR >		R713	1-249-408-11	CARBON 180 5%	1/4W F
C701	1-162-306-11	CERAMIC 0.01uF 20% 16V		R714	1-247-815-91	CARBON 220 5%	1/4W
C702	1-162-306-11	CERAMIC 0.01uF 20% 16V		R715	1-249-410-11	CARBON 270 5%	1/4W F
C703	1-162-209-31	CERAMIC 27PF 5% 50V		R716	1-249-411-11	CARBON 330 5%	1/4W
C704	1-162-209-31	CERAMIC 27PF 5% 50V		R717	1-249-413-11	CARBON 470 5%	1/4W F
C705	1-162-306-11	CERAMIC 0.01uF 20% 16V		R718	1-249-414-11	CARBON 560 5%	1/4W F
C706	1-164-159-21	CERAMIC 0.1uF 50V		R719	1-249-416-11	CARBON 820 5%	1/4W F
C707	1-126-947-11	ELECT 47uF 20% 35V		R720	1-249-418-11	CARBON 1.2K 5%	1/4W F
C708	1-162-306-11	CERAMIC 0.01uF 20% 16V		R721	1-249-421-11	CARBON 2.2K 5%	1/4W F
C709	1-162-306-11	CERAMIC 0.01uF 20% 16V		R722	1-249-424-11	CARBON 3.9K 5%	1/4W F
C710	1-162-306-11	CERAMIC 0.01uF 20% 16V		R724	1-247-807-31	CARBON 100 5%	1/4W
C711	1-126-964-11	ELECT 10uF 20% 50V		R725	1-249-406-11	CARBON 120 5%	1/4W F
C712	1-104-905-11	CAPACITOR 0.22F 5.5V		R726	1-249-406-11	CARBON 120 5%	1/4W F
C713	1-162-306-11	CERAMIC 0.01uF 20% 16V		R727	1-249-407-11	CARBON 150 5%	1/4W F
C714	1-126-959-11	ELECT 0.47uF 20% 50V		R728	1-249-408-11	CARBON 180 5%	1/4W F
C717	1-162-286-21	CERAMIC 220PF 10% 50V		R729	1-247-815-91	CARBON 220 5%	1/4W
		< DIODE >		R730	1-249-410-11	CARBON 270 5%	1/4W F
D701	8-719-991-33	DIODE 1SS133T-77		R731	1-249-411-11	CARBON 330 5%	1/4W F
D702	8-719-991-33	DIODE 1SS133T-77		R732	1-249-413-11	CARBON 470 5%	1/4W F
D703	8-719-991-33	DIODE 1SS133T-77		Δ R733	1-249-414-11	CARBON 560 5%	1/4W F
D705	8-719-991-33	DIODE 1SS133T-77		R734	1-249-416-11	CARBON 820 5%	1/4W F
D707	8-719-991-33	DIODE 1SS133T-77		R735	1-249-418-11	CARBON 1.2K 5%	1/4W F
		< FLUORESCENT INDICATOR >		R736	1-247-807-31	CARBON 100 5%	1/4W
FL701	1-517-177-21	INDICATOR TUBE, FLUORESCENT		R738	1-249-401-11	CARBON 47 5%	1/4W F
		< IC >		R739	1-249-417-11	CARBON 1K 5%	1/4W F
IC701	8-759-495-96	IC uPD780205GF-040-3BA		R740	1-247-863-91	CARBON 22K 5%	1/4W
IC702	8-749-014-66	IC NJL64H400A		R741	1-247-895-91	CARBON 470K 5%	1/4W
				R742	1-249-413-11	CARBON 470 5%	1/4W F
				R743	1-249-413-11	CARBON 470 5%	1/4W F
				R744	1-249-413-11	CARBON 470 5%	1/4W F
				R745	1-249-413-11	CARBON 470 5%	1/4W F
				R746	1-249-413-11	CARBON 470 5%	1/4W F

DISPLAY **ENCODER** **TRANSFORMER** **TUNER**

Ref. No.	Part No.	Description	Remark
R747	1-249-413-11	CARBON	470 5% 1/4W F
R749	1-249-413-11	CARBON	470 5% 1/4W F
R750	1-249-413-11	CARBON	470 5% 1/4W F
R751	1-249-413-11	CARBON	470 5% 1/4W F
R752	1-249-413-11	CARBON	470 5% 1/4W F
R753	1-249-413-11	CARBON	470 5% 1/4W F
R754	1-249-413-11	CARBON	470 5% 1/4W F
< SWITCH >			
S701	1-554-303-21	SWITCH, TACTILE (SHIFT)	
S702	1-554-303-21	SWITCH, TACTILE (1)	
S703	1-554-303-21	SWITCH, TACTILE (2)	
S704	1-554-303-21	SWITCH, TACTILE (3)	
S705	1-554-303-21	SWITCH, TACTILE (4)	
S706	1-554-303-21	SWITCH, TACTILE (5)	
S707	1-554-303-21	SWITCH, TACTILE (6)	
S708	1-554-303-21	SWITCH, TACTILE (7)	
S709	1-554-303-21	SWITCH, TACTILE (8)	
S710	1-554-303-21	SWITCH, TACTILE (9)	
S711	1-554-303-21	SWITCH, TACTILE (0)	
S712	1-554-303-21	SWITCH, TACTILE (DIRECT)	
S713	1-554-303-21	SWITCH, TACTILE (MENU)	
S714	1-554-303-21	SWITCH, TACTILE (RETURN)	
S717	1-554-303-21	SWITCH, TACTILE (DISPLAY)	
S718	1-554-303-21	SWITCH, TACTILE (PTY)	
S719	1-554-303-21	SWITCH, TACTILE (EON NEWS/INFO)	
S720	1-554-303-21	SWITCH, TACTILE (EON TA)	
S721	1-554-303-21	SWITCH, TACTILE (AUTO-BETICAL SELECT)	
S722	1-554-303-21	SWITCH, TACTILE (MEMORY)	
S723	1-554-303-21	SWITCH, TACTILE (FM MODE)	
S724	1-554-303-21	SWITCH, TACTILE (BAND)	
S727	1-554-303-21	SWITCH, TACTILE (CHARACTER)	
S728	1-554-303-21	SWITCH, TACTILE (TUNE MODE)	
< VIBRATOR >			
X701	1-760-422-11	VIBRATOR, CRYSTAL (4.192MHz)	

*	1-668-815-11	ENCODER BOARD	*****
< RESISTOR >			
R723	1-249-430-11	CARBON	12K 5% 1/4W
< VARIABLE RESISTOR >			
RV701	1-475-696-11	ENCODER, ROTARY (TUNING/SELECT)	
< SWITCH >			
S715	1-554-303-21	SWITCH, TACTILE (ENTER)	

*	1-668-816-11	TRANSFORMER BOARD	*****
< CAPACITOR >			
C952	1-162-306-11	CERAMIC	0.01uF 20% 16V

Ref. No.	Part No.	Description	Remark
< CONNECTOR >			
CNP901	1-580-230-11	PIN, CONNECTOR (PC BOARD) 2P	
CNP951	1-564-321-00	PIN, CONNECTOR 2P	
< LEAD >			
ECP900	1-690-880-51	LEAD (WITH CONNECTOR)	
< TRANSFORMER >			
△ PT901	1-423-525-11	TRANSFORMER, POWER	

*	A-4407-374-A	TUNER BOARD, COMPLETE	*****
< CAPACITOR >			
C101	1-162-306-11	CERAMIC	0.01uF 20% 16V
C102	1-126-964-11	ELECT	10uF 20% 50V
C103	1-162-306-11	CERAMIC	0.01uF 20% 16V
C104	1-126-964-11	ELECT	10uF 20% 50V
C105	1-124-463-00	ELECT	0.1uF 20% 50V
C201	1-162-288-31	CERAMIC	330PF 10% 50V
C202	1-162-306-11	CERAMIC	0.01uF 20% 16V
C203	1-162-306-11	CERAMIC	0.01uF 20% 16V
C204	1-162-306-11	CERAMIC	0.01uF 20% 16V
C205	1-126-967-11	ELECT	47uF 20% 16V
C206	1-162-306-11	CERAMIC	0.01uF 20% 16V
C207	1-162-306-11	CERAMIC	0.01uF 20% 16V
C301	1-126-963-11	ELECT	4.7uF 20% 50V
C302	1-126-963-11	ELECT	4.7uF 20% 50V
C303	1-126-964-11	ELECT	10uF 20% 50V
C304	1-126-964-11	ELECT	10uF 20% 50V
C305	1-110-335-11	MYLAR	100PF 5% 50V
C306	1-110-335-11	MYLAR	100PF 5% 50V
C308	1-126-963-11	ELECT	4.7uF 20% 50V
C309	1-126-963-11	ELECT	4.7uF 20% 50V
C319	1-126-934-11	ELECT	220uF 20% 16V
C352	1-130-471-00	MYLAR	0.001uF 5% 50V
C353	1-130-471-00	MYLAR	0.001uF 5% 50V
C806	1-102-527-11	CERAMIC	82PF 5% 50V
C807	1-102-852-91	CERAMIC	47PF 5% 50V
C808	1-162-306-11	CERAMIC	0.01uF 20% 16V
C809	1-126-967-11	ELECT	47uF 20% 16V
C810	1-126-961-11	ELECT	2.2uF 20% 50V
C811	1-162-306-11	CERAMIC	0.01uF 20% 16V
C812	1-162-291-31	CERAMIC	560PF 10% 50V
C813	1-162-306-11	CERAMIC	0.01uF 20% 16V
C814	1-162-306-11	CERAMIC	0.01uF 20% 16V
C901	1-101-004-00	CERAMIC	0.01uF 50V
C902	1-101-004-00	CERAMIC	0.01uF 50V
C903	1-126-967-11	ELECT	47uF 20% 50V
C904	1-126-967-11	ELECT	47uF 20% 50V
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

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

TUNER

Ref. No.	Part No.	Description	Remark
C909	1-126-967-11	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	1-568-834-11	SOCKET, CONNECTOR 15P	
CNJ203	1-566-212-11	PIN, CONNECTOR 3P (EON CONTROL OUT)	
CNJ301	1-568-250-11	JACK, PIN 2P (LINE OUT)	
* CNP701	1-568-936-11	PIN, CONNECTOR 9P	
* CNP702	1-568-935-11	PIN, CONNECTOR 8P	
CNP952	1-766-267-11	PIN, CONNECTOR (PC BOARD) 5P	
< DIODE >			
D201	8-719-991-33	DIODE 1SS133T-77	
D901	8-719-200-82	DIODE 11ES2	
D902	8-719-200-82	DIODE 11ES2	
D903	8-719-200-82	DIODE 11ES2	
D904	8-719-200-82	DIODE 11ES2	
D905	8-719-110-69	DIODE RD27ES-B4	
D906	8-719-109-97	DIODE RD6.8ES-B2	
D907	8-719-200-82	DIODE 11ES2	
D908	8-719-991-33	DIODE 1SS133T-77	
< IC >			
IC201	8-759-812-35	IC LA1235	
IC302	8-759-634-51	IC M5218AP	
IC802	8-759-450-86	IC BU1922	
IC901	8-759-820-09	IC LA5667	
< COIL >			
L351	1-410-509-11	INDUCTOR 10uH	
L352	1-410-509-11	INDUCTOR 10uH	
< TRANSISTOR >			
Q301	8-729-922-37	TRANSISTOR 2SD2144S-UVW	
Q302	8-729-922-37	TRANSISTOR 2SD2144S-UVW	
Q303	8-729-922-37	TRANSISTOR 2SD2144S-UVW	
Q304	8-729-922-37	TRANSISTOR 2SD2144S-UVW	
Q702	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q901	8-729-029-56	TRANSISTOR DTA144ESA	
< RESISTOR >			
△ R101	1-249-401-11	CARBON 47 5% 1/4W F	
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 F	
△ R202	1-249-405-11	CARBON 100 5% 1/4W F	
R203	1-249-393-11	CARBON 10 5% 1/4W F	
R301	1-249-441-11	CARBON 100K 5% 1/4W	
R302	1-249-441-11	CARBON 100K 5% 1/4W	
R303	1-249-441-11	CARBON 100K 5% 1/4W	
R304	1-249-441-11	CARBON 100K 5% 1/4W	
R305	1-247-843-11	CARBON 3.3K 5% 1/4W	
R306	1-247-843-11	CARBON 3.3K 5% 1/4W	
R307	1-249-420-11	CARBON 1.8K 5% 1/4W F	
R308	1-249-420-11	CARBON 1.8K 5% 1/4W F	
R309	1-247-815-91	CARBON 220 5% 1/4W	

Ref. No.	Part No.	Description	Remark
R310	1-247-815-91	CARBON 220 5% 1/4W	
△ R316	1-249-405-11	CARBON 100 5% 1/4W F	
R317	1-249-417-11	CARBON 1K 5% 1/4W F	
R318	1-249-417-11	CARBON 1K 5% 1/4W F	
△ R319	1-249-405-11	CARBON 100 5% 1/4W F	
△ R320	1-249-381-11	CARBON 100 5% 1/4W F	
R331	1-247-815-91	CARBON 220 5% 1/4W	
R332	1-247-815-91	CARBON 220 5% 1/4W	
R333	1-249-417-11	CARBON 1K 5% 1/4W F	
R334	1-249-417-11	CARBON 1K 5% 1/4W F	
R361	1-249-437-11	CARBON 47K 5% 1/4W	
R362	1-249-437-11	CARBON 47K 5% 1/4W	
R806	1-249-421-11	CARBON 2.2K 5% 1/4W F	
△ R807	1-249-401-11	CARBON 47 5% 1/4W F	
R808	1-247-815-91	CARBON 220 5% 1/4W	
R809	1-247-807-31	CARBON 100 5% 1/4W	
R811	1-249-429-11	CARBON 10K 5% 1/4W	
△ R812	1-249-405-11	CARBON 100 5% 1/4W F	
△ R902	1-247-752-11	CARBON 1K 5% 1/2W F	
R903	1-249-441-11	CARBON 100K 5% 1/4W	
R904	1-249-437-11	CARBON 47K 5% 1/4W	
R905	1-249-437-11	CARBON 47K 5% 1/4W	
R906	1-249-437-11	CARBON 47K 5% 1/4W	
R909	1-249-417-11	CARBON 1K 5% 1/4W F	
R910	1-249-417-11	CARBON 1K 5% 1/4W F	
R911	1-249-417-11	CARBON 1K 5% 1/4W F	
R912	1-249-417-11	CARBON 1K 5% 1/4W F	
< VARIABLE RESISTOR >			
RV201	1-241-765-11	RES, ADJ, CARBON 22K	
< VIBRATOR >			
X801	1-579-900-21	VIBRATOR, CRYSTAL (4.332MHZ)	

MISCELLANEOUS			

25	1-773-002-11	WIRE (FLAT TYPE)(15 CORE)	
27	1-693-410-21	TUNER (PACK)	
FL701	1-517-177-21	INDICATOR TUBE, FLUORESCENT	
△ PC901	1-575-651-21	CORD, POWER (AEP)	
△ PC901	1-751-523-11	CORD, POWER (UK)	

ACCESSORIES & PACKING MATERIALS			

1-501-594-11	ANTENNA (FM)		
1-501-721-11	ANTENNA (LOOP)		
1-558-271-11	CORD, CONNECTION (AUDIO, 108cm)		
1-765-383-11	CORD (WITH CONNECTOR)		
3-865-569-12	MANUAL, INSTRUCTION (ENGLISH,FRENCH,SPANISH,PORTUGUESE)(AEP,UK)		
3-865-569-22	MANUAL, INSTRUCTION (GERMAN,DUTCH,SWEDISH,ITALIAN)(AEP)		
3-865-569-32	MANUAL,INSTRUCTION (DANISH,FINNISH)(AEP)		

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