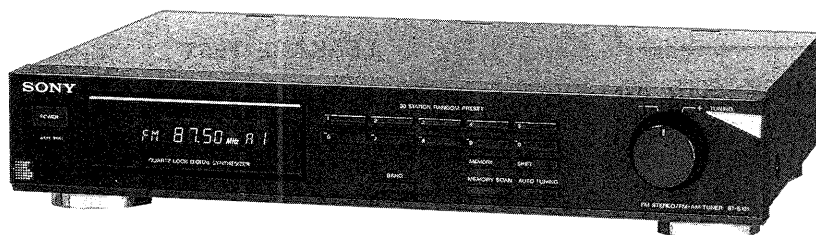


ST-S101

SERVICE MANUAL

*Canadian Model
AEP Model*



Canadian model : This set is
the tuner section in STU-51.

SPECIFICATIONS

Tuner

Circuit system FM stereo, FM/AM superheterodyne tuner
Quartz-locked PLL digital synthesizer system

FM tuner

Frequency range 87.5 – 108 MHz
Antenna terminals 75 ohms unbalanced
300 ohms balanced

Intermediate frequency

10.7 MHz

Sensitivity 22.1 dBf, 7 μ V (mono)
42.1 dBf, 70 μ V (stereo)
(at 50 dB quieting)
AEP model :
18.0 dBf, 2.2 μ V (mono)
40.0 dBf, 24.5 μ V (stereo)
(at 46 dB quieting)

Signal-to-noise ratio

80 dB (mono)
75 dB (stereo)
(at 75 kHz deviation)
AEP model :
74 dB (mono)
69 dB (stereo)
(at 40 kHz deviation)

Harmonic distortion 0.3% (mono), 0.5% (stereo) (at 1 kHz)

Separation

40 dB (at 1 kHz)

Frequency response 30 Hz – 15 kHz ± 0.5 dB

AEP model :

40 Hz – 12.5 kHz ± 0.5 dB

Selectivity 55 dB (at 400 kHz)

Capture ratio 1.0 dB

AM suppression ratio 54 dB

Image response ratio 50 dB

IF response ratio 90 dB

Spurious response ratio

70 dB

Automatic tuning threshold

17.8 μ V (30 dBf)

Output 775 mV, 4.7 kohms (at 75 kHz deviation)

AEP model : 410 mV, 4.7 kohms (at 40

kHz deviation)

AM tuner

Frequency range

AEP model :

MW: 531 – 1,602 kHz

LW: 153 – 279 kHz

Canadian model:

AM: 530 – 1,710 kHz at 10 kHz step

(531 – 1,710 kHz at 9 kHz step)

Antenna

AM loop antenna

External antenna terminal

Intermediate frequency

450 kHz

Usable sensitivity (with AM loop antenna)

300 μ V/m (999 kHz)

1 mV/m (216 kHz)

Signal-to-noise ratio

54 dB (50 mV/m) (999 kHz)

50 dB (50 mV/m) (216 kHz)

Harmonic distortion

0.5% (50 mV/m, 400 Hz)

Selectivity

32 dB

General

Power requirements

AEP model : 220 V AC (or 240V AC
adjustable by authorized Sony personnel),
50/60 Hz

Canadian Model: 120 V AC, 60 Hz

Power consumption

8 W

Dimensions

Approx. 430 $\times$ 85 $\times$ 295 mm (w/h/d)

(17 $\times$ 3 $\frac{3}{8}$ $\times$ 11 $\frac{5}{8}$ inches)

Weight

Approx. 2.8 kg (6 lb 3 oz)

Accessories supplied

Remote control cord (1)

Connecting cord (1)

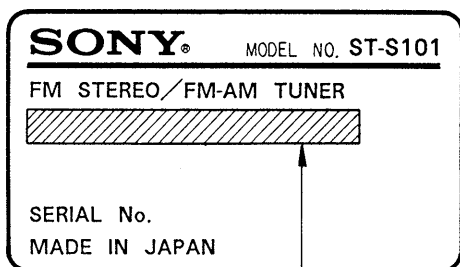
FM antenna (1)

AM loop antenna (1)

FM STEREO/FM-AM TUNER
SONY®

MODEL IDENTIFICATION

—BACK PANEL (TOP LEFT CORNER) —



Canadian model : AC120V~60Hz 8W

AEP model : AC220V~50/60Hz

To change the AM tuning interval (Canadian model)

The AM tuning interval is preset at the factory to 10 kHz or to 9 kHz to match the frequency allocation system of your country. To change the interval, proceed as follows.

- 1 Depress the POWER switch to turn on the system.
- 2 Set the BAND selector to AM.
- 3 Press the POWER switch again to turn off the unit.
- 4 Hold the TUNING knob in the "+" position, and depress the POWER switch to turn on the unit.

To reset the interval, follow the same procedure.

Note

When the interval is changed, all stored stations will be erased.

After changing the interval, be sure to store the stations again.

SAFETY-RELATED COMPONENT WARNING!!

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

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

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

SAFETY CHECK-OUT

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)

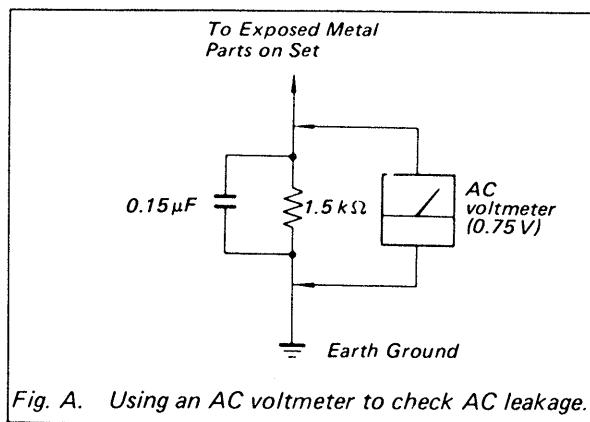


Fig. A. Using an AC voltmeter to check AC leakage.

SECTION 1

ELECTRICAL ADJUSTMENTS

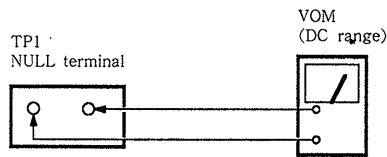
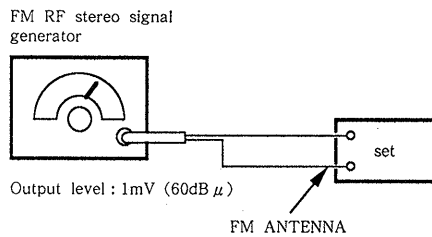
FM SECTION

SSG	Carrier frequency	98MHz
	Modulation	MONO : 1kHz, 75kHz [40kHz] deviation
		STEREO : Audio 1kHz, 33.75 [16.25] kHz deviation Pilot 19kHz, 7.5kHz deviation Sub-carrier 38kHz, 33.75 [16.25] kHz deviation

[] : AEP model

• FM Discriminator Alignment (NULL check)

Setting :



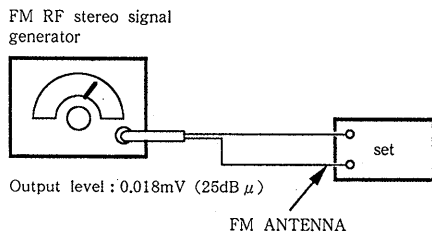
Procedure :

1. Tune the set to 98MHz.
2. Adjust T21 for 0V reading on the VOM.

Note : FM tuning level adjustment should be made after FM discriminator alignment.

• FM Tuning Level Adjustment

Setting :

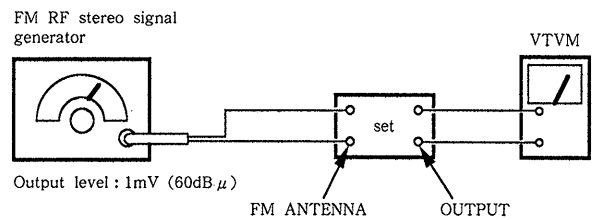


Procedure :

1. Tune the set to 98MHz.
2. Adjust RV24 so that the TUNED LED goes on.

• FM Stereo Separation Adjustment

Setting :



Procedure :

Tune the set to 98MHz

FM stereo Signal generator Output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV21 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV21 for minimum reading.

L-CH Stereo separation : Ⓐ - Ⓑ

R-CH Stereo separation : Ⓒ - Ⓓ

The separations of both channels should be equal.

AM SECTION

• AM Tuning Level Adjustment

Setting :

BAND selector : AM (Canadian model)
LW (AEP model)

AM RF signal generator



Put the lead-wire antenna close to the set.

Carrier frequency : 1,050kHz (Canadian model)
216kHz (AEP model)

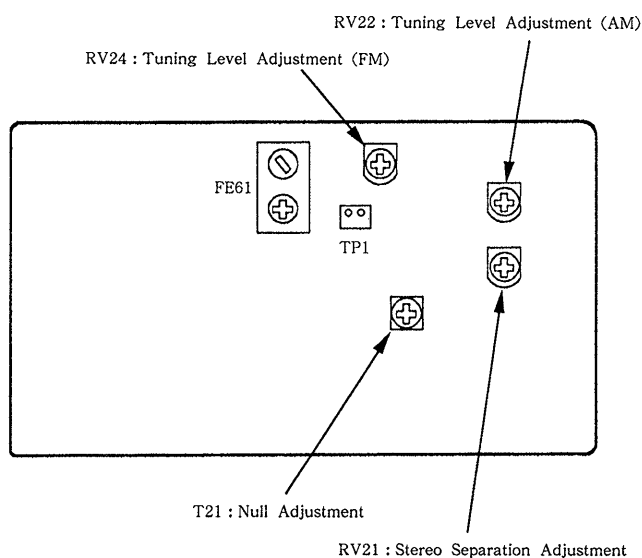
30% amplitude modulation by 400Hz signal
Output level : 58dB μ (Canadian model)
68dB μ (AEP model)

Procedure :

1. Tune the set to 1,050kHz (Canadian model), 216kHz (AEP model).
2. Adjust the RV22 so that the TUNED LED goes on.

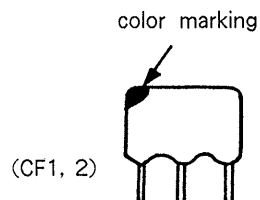
Parts Arrangement Diagram for Adjustments

—tuner board—



Note on Ceramic Filter (CF1, 2) Replacement.

This set employs three ceramic filters (CF1, 2) which should have the same color marking to identify their center frequency. Therefore FM IF offset adjustment by D708, D709 mounted is necessary to match the center frequency of the ceramic filters used with FM intermediate frequency.



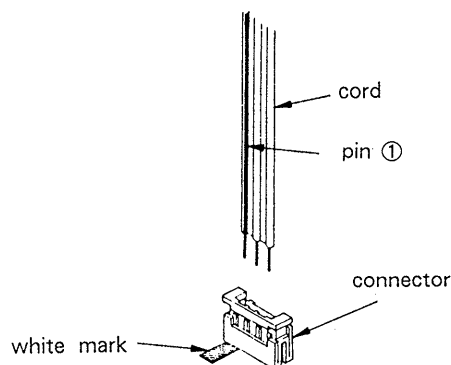
○ : Mounted
× : not Mounted

Ceramic filter		Mount		FM intermediate frequency (MHz)
Color mark	Center frequency (MHz)	*A D708	*B D709	
White	10.750	×	○	10.750
Red	10.700	○	○	10.700
Black	10.650	○	×	10.650

FM intermediate frequency is determined by the three types as shown above. Ceramic filters of same center frequency, i. e., of same color coding should be used for CF1 and CF2. When replacing the ceramic filters, perform the FM Discriminator Adjustment.

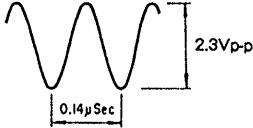
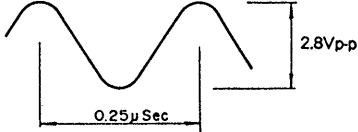
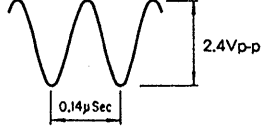
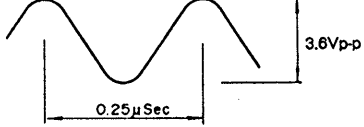
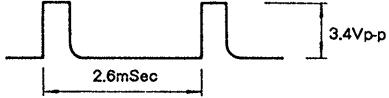
[Note on Inserting the Cord to the Connector on Tuner Board]

- Insert the cord to the connector fitting Pin ① of the cord in accordance with the white mark on the board at the connector as shown in the figure.

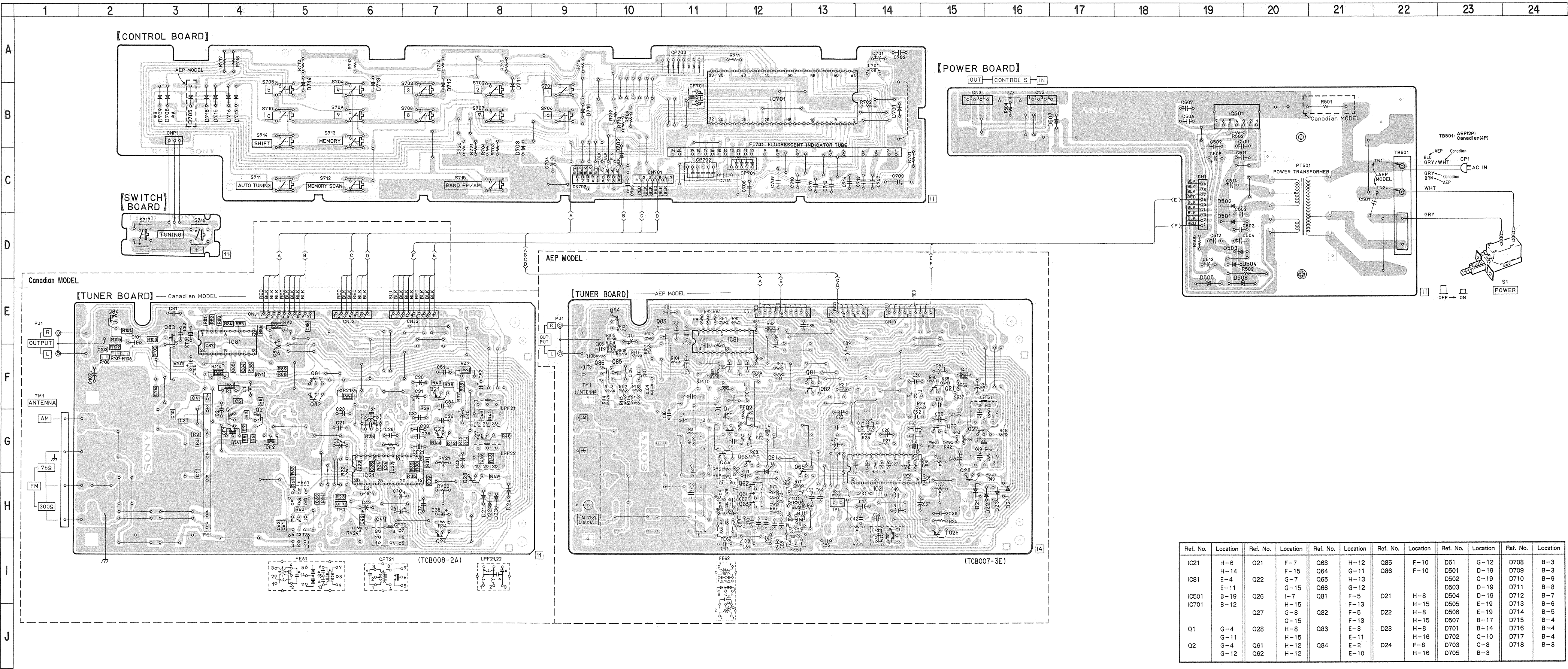


SECTION 2 DIAGRAMS

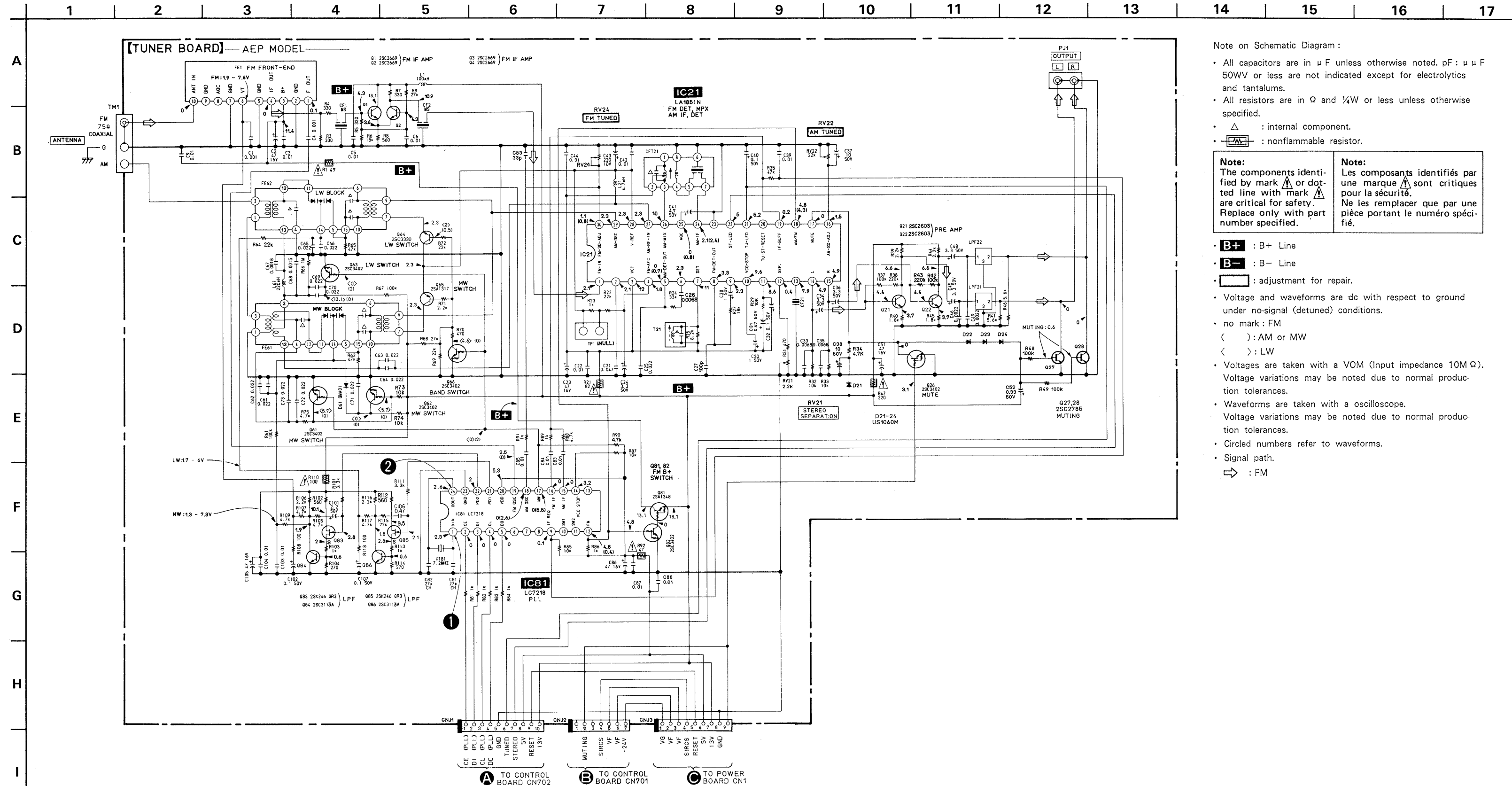
2-1. WAVEFORMS

No.	Waveforms	No.	Waveforms
①		③	
②		④	
		⑤	

2-2. PRINTED WIRING BOARDS



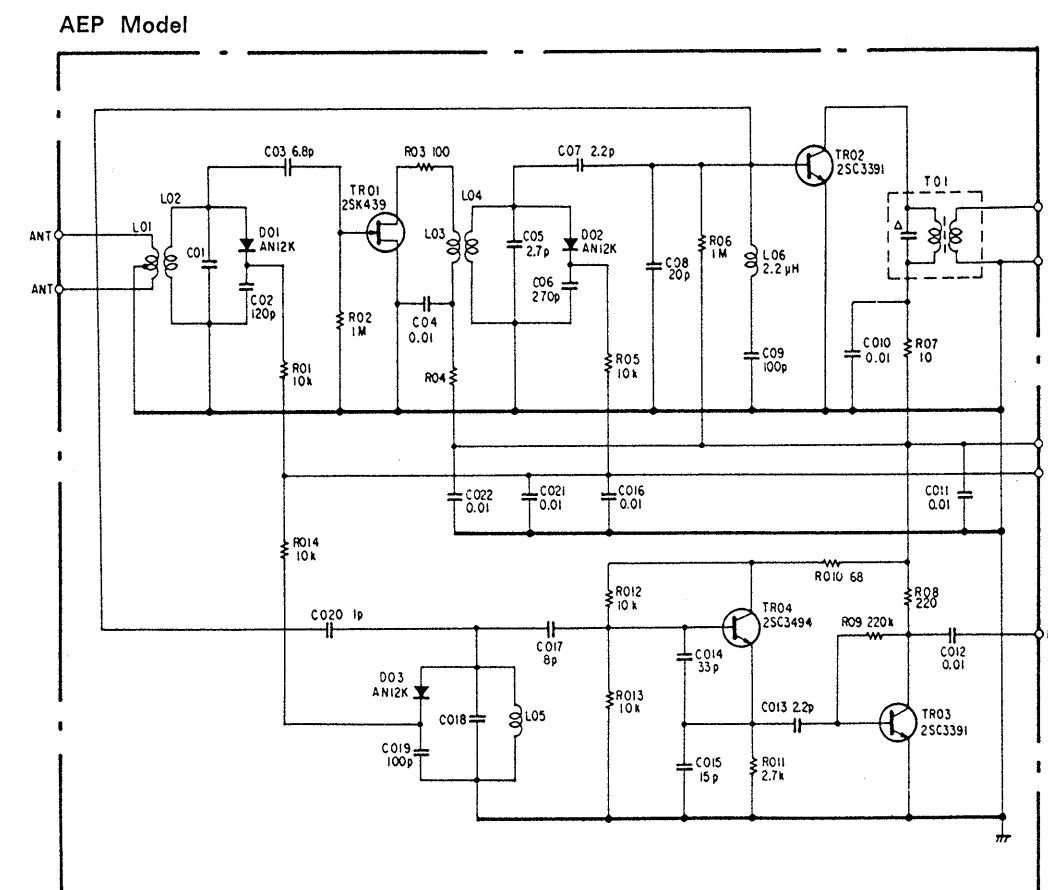
2-4. SCHEMATIC DIAGRAM –Tuner Section (AEP model) –



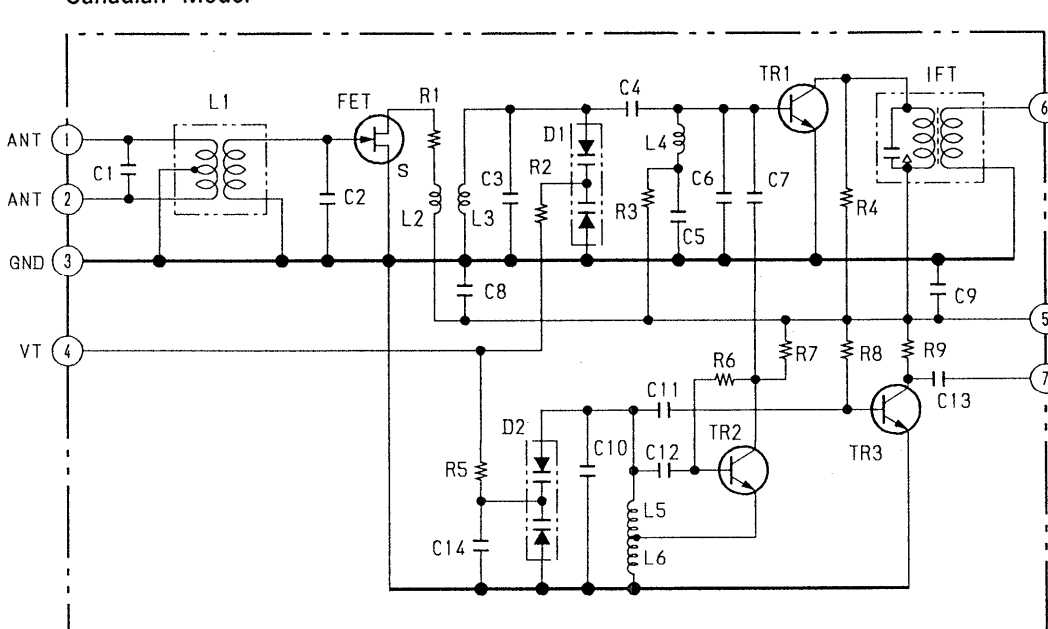
Note:
The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

- **B+** : B+ Line
- **B-** : B- Line
-  : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- no mark : FM
- () : AM or MW
- < : LW
- 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.
-  : FM

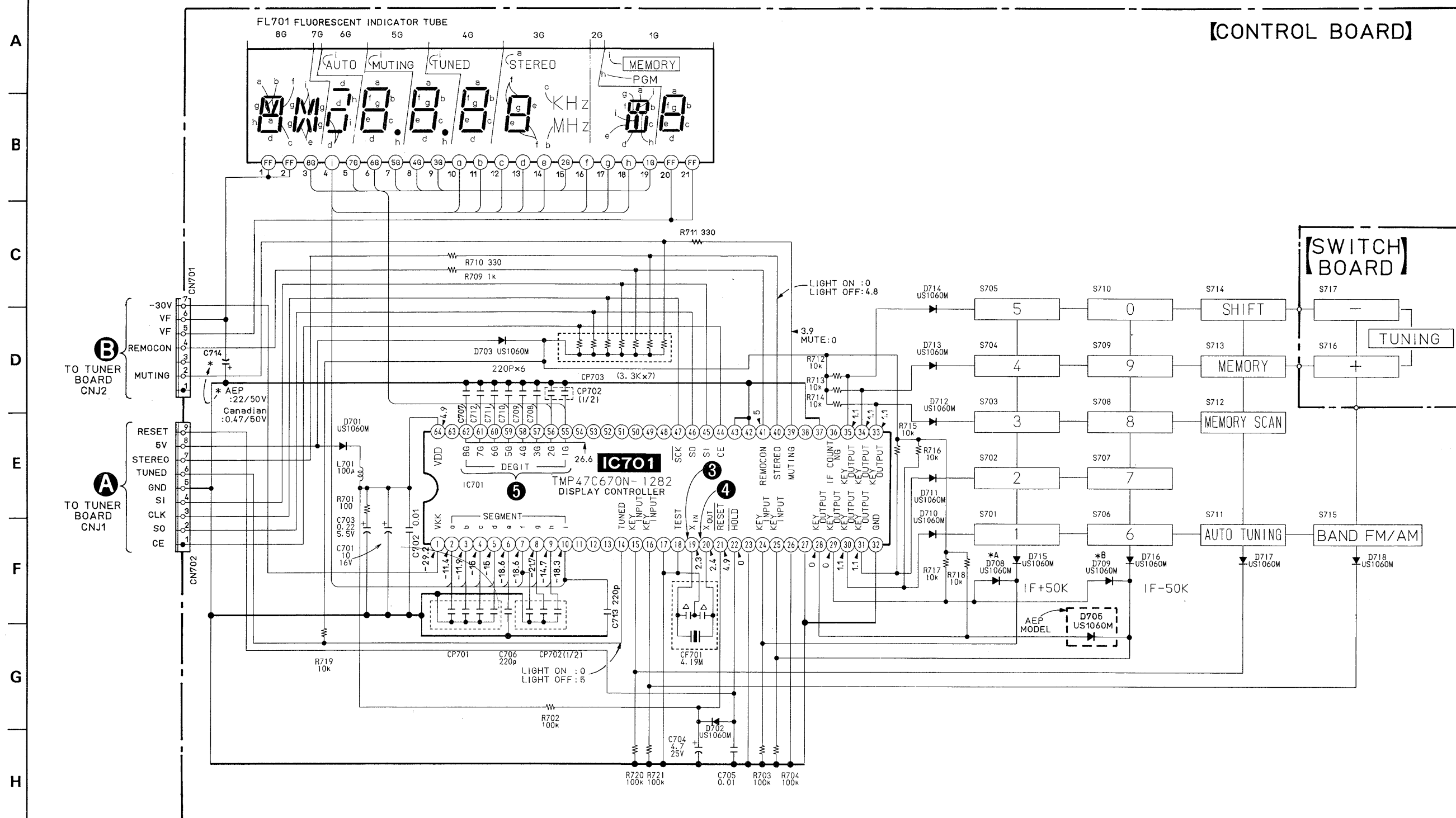
AEP Model



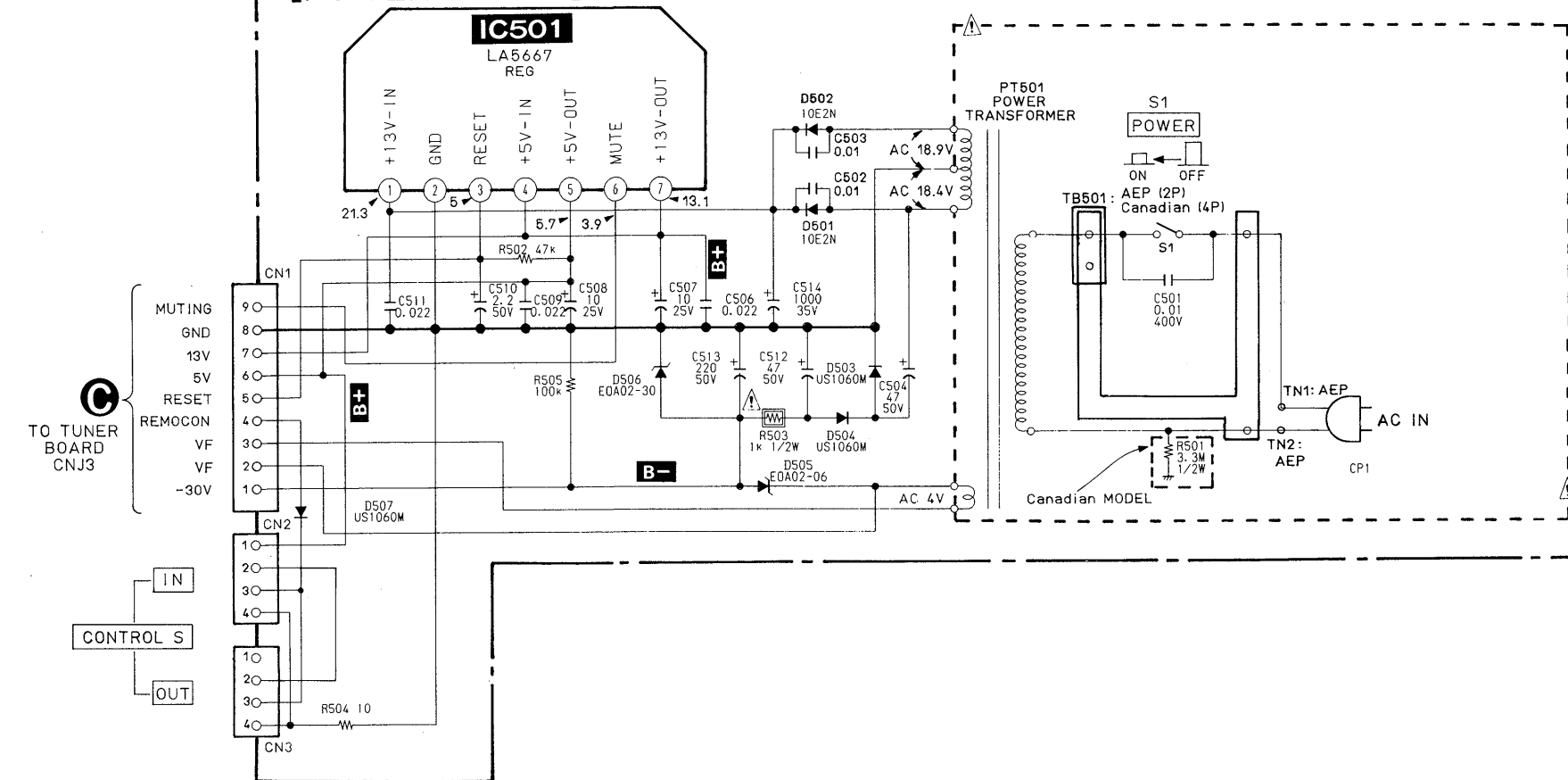
Canadian Model



1.



IC501



- *A, *B : See page 4 Note on Ceramic Filter (CF1, 2) Replacement.
- All capacitors are in μF unless otherwise noted, pF: μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{2}\text{W}$ or less unless otherwise specified.
- $\triangle$: internal component.
-  : nonflammable resistor.

The c
fied b

ted line with mark	por
--	-----

Replace only with part	pièce
------------------------	-------

number specified.	ne.
-------------------	-----

- **B+** : B+ Line

- **B—** : B— Line

- ☐ : adjustment for repair.

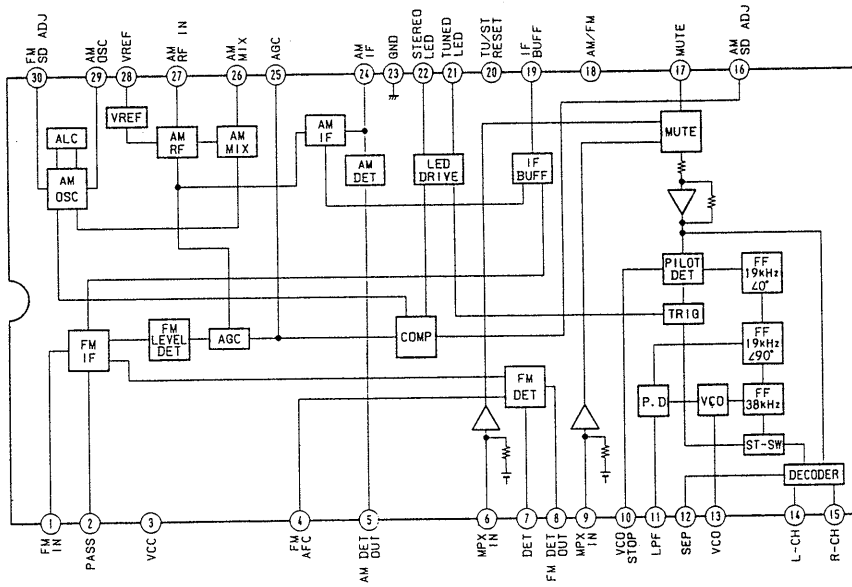
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- no mark : FM
 (): AM or MW
 <): LW
- Voltages are taken with a VOM (input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.

[Service Note]

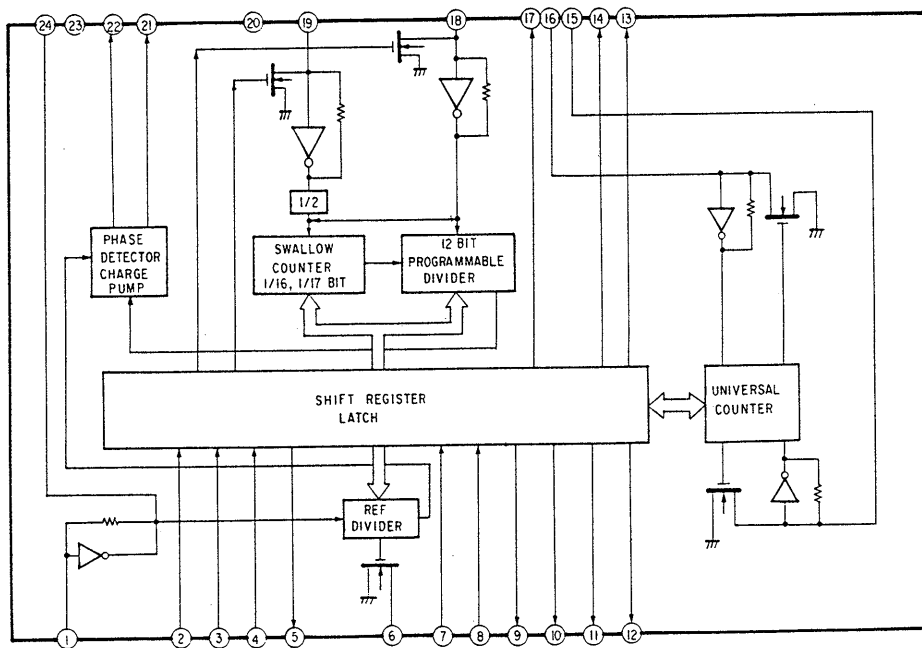
INDICATOR TUBE ALL LIGHT-UP MODE
When turning POWER switch on while pressing PRESET 1 and AUTO TUNING KEYS simultaneously, all the segments of FL701 will light.

• IC BLOCK DIAGRAM

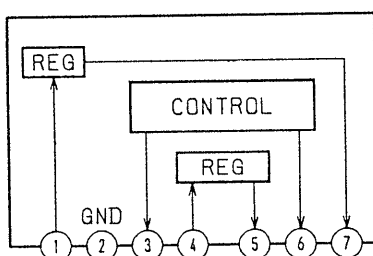
IC21 LA1851N



IC81 LC7218



IC501 LA5667



SECTION 3 EXPLODED VIEW

NOTE:

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

- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.

- Color Indication of Appearance Parts
Example:

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



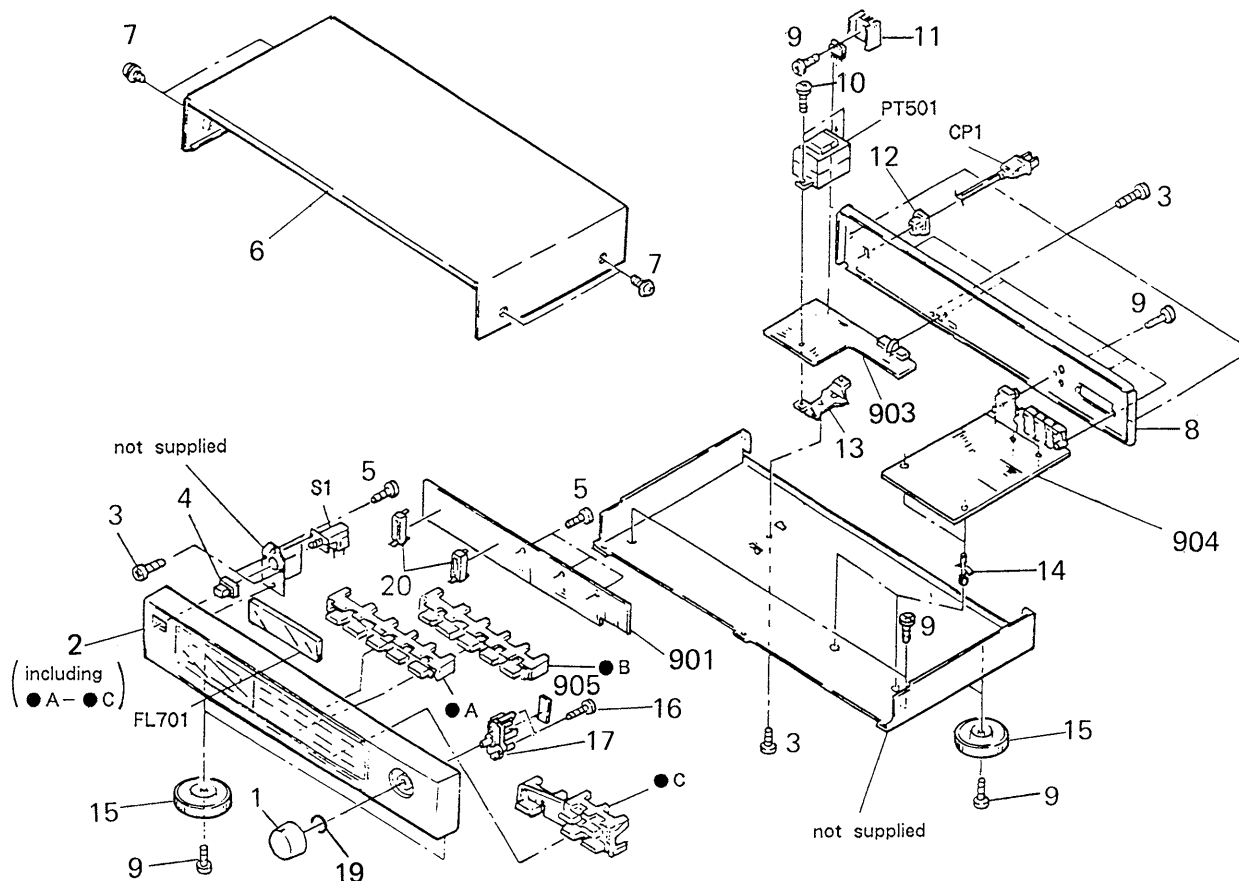
Cabinet's Color



Parts' Color

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

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



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
1	4-922-790-11	KNOB (TUNING)		16	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S	
2	X-4886-051-1	PANEL ASSY, FRONT		17	X-4905-269-1	SHAFT ASSY, TUNING	
3	7-682-547-04	SCREW +BVT 3X6 (S)		19	3-350-426-01	SPRING	
4	3-354-912-01	KNOB, POWER		20	*4-924-989-11	HOLDER (FL TUBE)	
5	4-928-635-01	SCREW, +BV (2.6X8) TAPPING		901	*A-4334-200-A	(Canadian)...MOUNTED PCB, CONTROL	
6	4-923-457-01	CASE			*A-4334-554-A	(AEP).....MOUNTED PCB, CONTROL	
7	3-704-366-01	SCREW (CASE) (M3X8)		903	*1-634-531-11	PC BOARD, POWER	
8	*4-935-821-11	(Canadian)...PANEL, BACK		904	*A-4303-244-A	(Canadian)...MOUNTED PCB, TUNER (TCB008-2AJ)	
	*4-935-821-21	(AEP).....PANEL, BACK			*A-4303-262-A	(AEP).....MOUNTED PCB, TUNER (TCB007-3EJ)	
9	7-685-646-79	SCREW +BTP 3X8 TYPE2 N-S		905	*1-634-532-11	PC BOARD, SWITCH	
10	7-682-550-04	SCREW +BVT 3X12 (S)		CP1	1-558-945-11	(Canadian)...CORD, POWER (POLAR.SPT-1)	
11	*4-363-146-31	HEAT SINK, V.OUT		CP1	1-555-750-00	(AEP).....CORD, POWER	
12	*3-703-244-00	(AEP).....BUSHING (2104), CORD		FL701	1-519-512-11	INDICATOR TUBE, FLUORESCENT	
	*3-703-571-11	(Canadian)...BUSHING (S) (4516), CORD		PT501	1-450-009-11	(AEP).....TRANSFORMER, POWER	
13	*4-917-044-01	BRACKET (PT)		PT501	1-450-010-11	(Canadian)...TRANSFORMER, POWER	
14	*3-346-265-11	HOLDER, PC BOARD		S1	1-554-920-21	SWITCH, PUSH (AC POWER)(1 KEY)	
15	X-3304-938-2	(AEP).....FOOT ASSY					
	X-4885-950-1	(Canadian)...FOOT ASSY					

SECTION 4

ELECTRICAL PARTS LIST

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.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:MF: μ F, PF: μ F.**RESISTORS**

- All resistors are in ohms.
- F: nonflammable

COILS

- MMH: mH, UH: μ H

SEMICONDUCTORS

In each case, U: μ , for example:
 UA...: μ A..., UPA...: μ PA...,
 UPC...: μ PC, UPD...: μ PD...

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

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

Ref.No.	Part No.	Description				Ref.No.	Part No.	Description			
901	*A-4334-200-A	(Canadian)...MOUNTED PCB, CONTROL				C49	1-161-375-00	CERAMIC MELF 0.0022MF	20%	25V	
	*A-4334-554-A	(AEP)...MOUNTED PCB, CONTROL				C51	1-126-022-11	ELECT 47MF	20%	25V	
903	*1-634-531-11	PC BOARD, POWER				C52	1-124-252-00	ELECT 0.33MF	20%	50V	
904	*A-4303-244-A	(Canadian)...MOUNTED PCB, TUNER				C53	1-163-467-11	(AEP)...CERAMIC CHIP 33PF	5%	50V	
	*A-4303-262-A	(AEP)...MOUNTED PCB, TUNER				C61	1-163-063-00	CERAMIC MELF 0.022MF		25V	
905	*1-634-532-11	PC BOARD, SWITCH				C62	1-163-063-00	CERAMIC MELF 0.022MF		25V	
C1	1-162-294-31	CERAMIC CHIP 0.001MF	20%	25V		C63	1-163-063-00	CERAMIC MELF 0.022MF		25V	
C2	1-126-022-11	ELECT 47MF	20%	16V		C64	1-163-063-00	CERAMIC MELF 0.022MF		25V	
C3	1-163-059-00	CERAMIC MELF 0.01MF	20%	16V		C65	1-163-063-00	(AEP)...CERAMIC MELF 0.022MF		25V	
C4	1-162-294-31	CERAMIC CHIP 0.001MF	20%	25V		C66	1-163-063-00	(AEP)...CERAMIC MELF 0.022MF		25V	
C5	1-163-059-00	CERAMIC MELF 0.01MF	20%	16V		C67	1-102-120-00	(AEP)...CERAMIC 0.0018MF	10%	50V	
C6	1-163-059-00	CERAMIC MELF 0.01MF	20%	16V		C68	1-162-523-11	(AEP)...CERAMIC CHIP 0.0015MF	20%	25V	
C9	1-163-059-00	(AEP)...CERAMIC MELF 0.01MF	20%	16V		C69	1-163-063-00	(AEP)...CERAMIC CHIP 0.022MF		25V	
C21	1-161-021-11	CERAMIC 0.047MF	10%	25V		C70	1-163-063-00	(AEP)...CERAMIC CHIP 0.022MF		25V	
C22	1-163-059-00	CERAMIC MELF 0.01MF	20%	16V		C71	1-163-063-00	(AEP)...CERAMIC CHIP 0.022MF		25V	
C23	1-126-022-11	ELECT 47MF	20%	25V		C72	1-163-063-00	(AEP)...CERAMIC CHIP 0.022MF		25V	
C24	1-126-162-11	ELECT 3.3MF	20%	50V		C73	1-163-063-00	(AEP)...CERAMIC CHIP 0.022MF		25V	
C25	1-163-059-00	(Canadian)				C81	1-102-961-00	CERAMIC 27PF	5%	50V	
		...CERAMIC MELF 0.01MF	20%	16V		C82	1-102-961-00	CERAMIC 27PF	5%	50V	
C25	1-163-063-00	(AEP)...CERAMIC MELF 0.022MF		25V		C83	1-163-059-00	CERAMIC MELF 0.01MF	20%	16V	
C26	1-163-019-00	CERAMIC MELF 0.0068MF	20%	12V		C84	1-163-059-00	CERAMIC MELF 0.01MF	20%	16V	
C27	1-162-516-11	CERAMIC CHIP 100PF	10%	50V		C85	1-163-059-00	CERAMIC MELF 0.01MF	20%	16V	
C28	1-126-301-11	ELECT 1.0MF	20%	50V		C86	1-126-022-11	ELECT 47MF	20%	25V	
C30	1-126-301-11	ELECT 1.0MF	20%	50V		C87	1-163-059-00	CERAMIC MELF 0.01MF	20%	16V	
C31	1-126-300-11	ELECT 0.47MF	20%	50V		C88	1-163-059-00	CERAMIC MELF 0.01MF	20%	16V	
C32	1-124-463-00	ELECT 0.1MF	20%	50V		C101	1-126-161-11	ELECT 2.2MF	20%	50V	
C33	1-130-481-00	(AEP)...MYLAR 0.0068MF	5%	50V		C102	1-124-463-00	ELECT 0.1MF	20%	50V	
C33	1-130-482-00	(Canadian)...MYLAR 0.0082MF	5%	50V		C103	1-163-059-00	CERAMIC MELF 0.01MF	20%	16V	
C34	1-126-162-11	ELECT 3.3MF	20%	50V		C104	1-163-059-00	CERAMIC MELF 0.01MF	20%	16V	
C35	1-130-481-00	(AEP)...MYLAR 0.0068MF	5%	50V		C105	1-126-022-11	ELECT 47MF	20%	25V	
C35	1-130-482-00	(Canadian)...MYLAR 0.0082MF	5%	50V		C106	1-136-173-00	(AEP)...FILM 0.47MF	5%	25V	
C36	1-126-162-11	ELECT 3.3MF	20%	50V		C107	1-124-463-00	(AEP)...ELECT 0.1MF	20%	50V	
C37	1-126-059-11	ELECT 10MF	20%	50V		C501	Δ 1-161-744-00	CERAMIC 0.01MF		400V	
C38	1-123-875-11	ELECT 10MF	20%	50V		C502	1-101-004-00	CERAMIC 0.01MF		50V	
C39	1-163-059-00	CERAMIC MELF 0.01MF	20%	16V		C503	1-101-004-00	CERAMIC 0.01MF		50V	
C40	1-124-463-00	ELECT 0.1MF	20%	50V		C504	1-124-910-11	ELECT 47MF	20%	50V	
C41	1-124-045-00	ELECT 4.7MF	20%	50V		C506	1-101-005-00	CERAMIC 0.022MF		50V	
C42	1-163-059-00	CERAMIC MELF 0.01MF	20%	16V		C507	1-126-059-11	ELECT 10MF	20%	50V	
C43	1-126-101-11	ELECT 220MF	20%	10V		C508	1-126-059-11	ELECT 10MF	20%	50V	
C44	1-163-059-00	CERAMIC MELF 0.01MF	20%	16V		C509	1-101-005-00	CERAMIC 0.022MF		50V	
C45	1-126-162-11	ELECT 3.3MF	20%	50V		C510	1-126-161-11	ELECT 2.2MF	20%	50V	
C46	1-161-375-00	CERAMIC MELF 0.0022MF	20%	25V		C511	1-101-005-00	CERAMIC 0.022MF		50V	
C48	1-126-162-11	ELECT 3.3MF	20%	50V		C512	1-124-910-11	ELECT 47MF	20%	50V	
						C513	1-124-911-11	ELECT 220MF	20%	50V	
						C514	1-126-105-11	ELECT 1000MF	20%	35V	

Ref.No.	Part No.	Description
C701	1-126-157-11	ELECT 10MF 20% 16V
C702	1-161-379-00	CERAMIC 0.01MF 30% 16V
C703	1-125-486-11	DOUBLELAYERS 0.22F 5.5V
C704	1-126-094-11	ELECT 4.7MF 20% 25V
C705	1-161-379-00	CERAMIC 0.01MF 30% 16V
C706	1-162-286-31	CERAMIC 220PF 10% 50V
C707	1-162-286-31	CERAMIC 220PF 10% 50V
C708	1-162-286-31	CERAMIC 220PF 10% 50V
C709	1-162-286-31	CERAMIC 220PF 10% 50V
C710	1-162-286-31	CERAMIC 220PF 10% 50V
C711	1-162-286-31	CERAMIC 220PF 10% 50V
C712	1-162-286-31	CERAMIC 220PF 10% 50V
C713	1-162-286-31	CERAMIC 220PF 10% 50V
C714	1-123-357-00	(AEP).....ELECT 22MF 20% 50V
C714	1-124-465-00	(Canadian)...ELECT 0.47MF 20% 50V
CF1	1-567-389-11	FILTER, CERAMIC
CF2	1-567-389-11	FILTER, CERAMIC
CF21	1-577-075-11	OSCILLATOR, CERAMIC 19kHz
CF701	1-577-101-11	VIBRATOR, CERAMIC 4.19MHZ
CFT21	1-404-853-11	TRANSFORMER, IF (CERAMIC FILTER)
CN1	*1-568-284-11	SOCKET, CONNECTOR 9P
CN2	1-564-980-11	PIN, CONNECTOR 4P
CN3	1-564-980-11	PIN, CONNECTOR 4P
CN701	1-568-282-11	SOCKET, CONNECTOR 7P
CN702	*1-568-284-11	SOCKET, CONNECTOR 9P
CNJ1	*1-568-276-11	SOCKET, CONNECTOR 10P
CNJ2	*1-568-311-21	SOCKET, CONNECTOR 7P
CNJ3	*1-568-313-11	SOCKET, CONNECTOR 9P
CNP1	*1-564-337-00	PIN, CONNECTOR 3P
CP1	▲1-555-750-00	(AEP).....CORD, POWER
CP1	▲1-558-945-11	(Canadian)...CORD, POWER
CP701	1-233-148-11	COMPOSITION CIRCUIT BLOCK
CP702	1-233-187-11	COMPOSITION CIRCUIT BLOCK
CP702	1-233-185-11	COMPOSITION CIRCUIT BLOCK
D21	8-719-912-20	DIODE 1SS120
D22	8-719-912-20	DIODE 1SS120
D23	8-719-912-20	DIODE 1SS120
D24	8-719-912-20	DIODE 1SS120
D61	8-719-912-20	(AEP)...DIODE 1SS120
D501	8-719-200-77	DIODE 10E2N
D502	8-719-200-77	DIODE 10E2N
D503	8-719-912-20	DIODE 1SS120
D504	8-719-912-20	DIODE 1SS120
D505	8-719-912-81	DIODE EQA02-06C
D506	8-719-904-93	DIODE EQA02-30B
D507	8-719-912-20	DIODE 1SS120
D701	8-719-912-20	DIODE 1SS120
D702	8-719-912-20	DIODE 1SS120
D703	8-719-912-20	DIODE 1SS120
D705	8-719-912-20	(AEP)...DIODE 1SS120
D708	8-719-912-20	DIODE 1SS120
D709	8-719-912-20	DIODE 1SS120
D710	8-719-912-20	DIODE 1SS120
D711	8-719-912-20	DIODE 1SS120
D712	8-719-912-20	DIODE 1SS120

Ref.No.	Part No.	Description
D713	8-719-912-20	DIODE 1SS120
D714	8-719-912-20	DIODE 1SS120
D715	8-719-912-20	DIODE 1SS120
D716	8-719-912-20	DIODE 1SS120
D717	8-719-912-20	DIODE 1SS120
D718	8-719-912-20	DIODE 1SS120
FE1	1-463-862-21	(AEP).....FRONT END, FM
FE1	1-463-962-11	(Canadian)...FRONT END, FM
FE61	1-236-461-11	(Canadian)...ENCAPSULATED COMPONENT
FE61	1-236-462-11	(AEP).....ENCAPSULATED COMPONENT
FE62	1-236-463-11	(AEP).....ENCAPSULATED COMPONENT
FL701	1-519-512-11	INDICATOR TUBE, FLUORESCENT
IC21	8-759-821-45	IC LA1851N
IC81	8-759-820-91	IC LC7218
IC501	8-759-820-09	IC LA5667
IC701	8-759-234-35	IC TMP47C670N-1283
L1	1-408-421-00	MICRO INDUCTOR (100UH)
L21	1-410-494-11	(Canadian)...MICRO INDUCTOR (1MMH)
L21	1-407-500-00	(AEP).....MICRO INDUCTOR (4.7MMH)
L61	1-410-525-11	(AEP)...MICRO INDUCTOR (100UH)
L701	1-410-521-11	INDUCTOR 100UH
LPF21	1-235-164-00	FILTER, LOW PASS
LPF22	1-235-164-00	FILTER, LOW PASS
PJ1	1-565-352-21	JACK, PIN 2P (OUTPUT)
PT501	▲1-450-009-11	(AEP).....TRANSFORMER, POWER
PT501	▲1-450-010-11	(Canadian)...TRANSFORMER, POWER
Q1	8-729-230-XX	TRANSISTOR 2SC2669
Q2	8-729-230-XX	TRANSISTOR 2SC2669
Q21	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q22	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q26	8-729-900-80	TRANSISTOR DTC114ES
Q27	8-729-620-05	TRANSISTOR 2SC2603-EF
Q28	8-729-620-05	TRANSISTOR 2SC2603-EF
Q61	8-729-900-80	(AEP)...TRANSISTOR DTC114ES
Q62	8-729-900-80	(AEP)...TRANSISTOR DTC114ES
Q63	8-729-900-80	(AEP)...TRANSISTOR DTC114ES
Q64	8-729-620-05	(AEP)...TRANSISTOR 2SC2603-EF
Q65	8-729-119-76	(AEP)...TRANSISTOR 2SA1175-HFE
Q66	8-729-900-80	(AEP)...TRANSISTOR DTC114ES
Q81	8-729-900-61	TRANSISTOR DTA114ES
Q82	8-729-900-80	TRANSISTOR DTC114ES
Q83	8-729-202-67	TRANSISTOR 2SK246GR3
Q84	8-729-230-93	TRANSISTOR 2SC3113-AB
Q85	8-729-202-67	(AEP)...TRANSISTOR 2SK246-GR3
Q86	8-729-230-93	(AEP)...TRANSISTOR 2SC3113-AB
R1	▲1-249-401-11	(AEP)...CARBON (SMALL) 47 5% 1/4W F
R1	▲1-249-409-11	(Canadian) ...CARBON (SMALL) 220 5% 1/4W F
R3	1-249-329-11	CARBON MELF 330 5% 1/8W
R4	1-249-329-11	CARBON MELF 330 5% 1/8W
R5	1-249-329-11	CARBON MELF 330 5% 1/8W
R6	1-249-350-11	CARBON MELF 18K 5% 1/8W
R7	1-249-329-11	CARBON MELF 330 5% 1/8W
R8	1-249-332-11	CARBON MELF 560 5% 1/8W
R9	1-249-352-11	CARBON MELF 27K 5% 1/8W
R21	▲1-249-404-00	CARBON (SMALL) 82 5% 1/4W F

Note:

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

Note:

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

Ref.No.	Part No.	Description
R22	1-249-428-11	(Canadian)
		...CARBON (SMALL) 8.2K 5% 1/4W
R22	1-249-433-11	(AEP)...CARBON (SMALL) 22K 5% 1/4W
R23	1-249-335-11	CARBON MELF 1K 5% 1/8W
R24	1-249-353-11	CARBON MELF 33K 5% 1/8W
R25	1-249-346-11	CARBON MELF 8.2K 5% 1/8W
R27	1-249-432-11	CARBON (SMALL) 18K 5% 1/4W
R29	1-249-347-11	CARBON MELF 10K 5% 1/8W
R31	1-249-331-11	CARBON MELF 470 5% 1/8W
R32	1-249-347-11	CARBON MELF 10K 5% 1/8W
R33	1-249-347-11	CARBON MELF 10K 5% 1/8W
R34	1-249-425-11	CARBON (SMALL) 4.7K 5% 1/4W
R35	1-249-355-11	CARBON MELF 47K 5% 1/8W
R37	1-249-359-11	CARBON MELF 100K 5% 1/8W
R38	1-249-363-11	CARBON MELF 220K 5% 1/8W
R39	1-249-339-11	CARBON MELF 2.2K 5% 1/8W
R40	1-249-338-11	CARBON MELF 1.8K 5% 1/8W
R41	1-249-344-11	CARBON MELF 5.6K 5% 1/8W
R42	1-249-359-11	CARBON MELF 100K 5% 1/8W
R43	1-249-363-11	CARBON MELF 220K 5% 1/8W
R44	1-249-339-11	CARBON MELF 2.2K 5% 1/8W
R45	1-249-338-11	CARBON MELF 1.8K 5% 1/8W
R46	1-249-344-11	CARBON MELF 5.6K 5% 1/8W
R47	△ 1-249-409-11	CARBON (SMALL) 220 5% 1/4W F
R48	1-249-359-11	CARBON MELF 100K 5% 1/8W
R49	1-249-359-11	CARBON MELF 100K 5% 1/8W
R61	1-249-359-11	CARBON MELF 100K 5% 1/8W
R62	1-249-355-11	CARBON MELF 47K 5% 1/8W
R63	1-249-315-11	CARBON MELF 22 5% 1/8W
R64	1-249-351-11	(AEP)...CARBON MELF 22K 5% 1/8W
R65	1-249-355-11	(AEP)...CARBON MELF 47K 5% 1/8W
R66	1-249-073-11	(AEP)...CARBON MELF 1M 5% 1/5W
R67	1-249-359-11	(AEP)...CARBON MELF 100K 5% 1/8W
R68	1-249-352-11	(AEP)...CARBON MELF 27K 5% 1/8W
R69	1-249-351-11	(AEP)...CARBON MELF 22K 5% 1/8W
R70	1-249-331-11	(AEP)...CARBON MELF 470 5% 1/8W
R71	1-249-339-11	(AEP)...CARBON MELF 2.2K 5% 1/8W
R72	1-249-351-11	(AEP)...CARBON MELF 2.2K 5% 1/8W
R73	1-249-347-11	(AEP)...CARBON MELF 10K 5% 1/8W
R74	1-249-347-11	(AEP)...CARBON MELF 10K 5% 1/8W
R75	1-249-343-11	(AEP)...CARBON MELF 4.7K 5% 1/8W
R81	1-249-335-11	CARBON MELF 1K 5% 1/8W
R82	1-249-335-11	CARBON MELF 1K 5% 1/8W
R83	1-249-335-11	CARBON MELF 1K 5% 1/8W
R84	1-249-335-11	CARBON MELF 1K 5% 1/8W
R85	1-249-347-11	CARBON MELF 10K 5% 1/8W
R86	1-249-335-11	CARBON MELF 1K 5% 1/8W
R87	1-249-347-11	(AEP)...CARBON MELF 10K 5% 1/8W
R88	1-249-343-11	CARBON MELF 4.7K 5% 1/8W
R89	1-249-335-11	CARBON MELF 1K 5% 1/8W
R90	1-249-343-11	(AEP)...CARBON MELF 4.7K 5% 1/8W
R91	1-249-335-11	CARBON MELF 1K 5% 1/8W
R92	△ 1-249-401-11	CARBON (SMALL) 47 5% 1/4W F
R101	1-249-341-11	CARBON MELF 3.3K 5% 1/8W
R102	1-249-332-11	CARBON MELF 560 5% 1/8W
R103	1-249-335-11	CARBON MELF 1K 5% 1/8W
R104	1-249-328-11	CARBON MELF 270 5% 1/8W

Ref.No.	Part No.	Description
R105	1-249-343-11	CARBON MELF 4.7K 5% 1/8W
R106	1-249-339-11	CARBON MELF 2.2K 5% 1/8W
R107	1-249-343-11	CARBON MELF 4.7K 5% 1/8W
R108	1-249-323-11	CARBON MELF 100 5% 1/8W
R109	1-249-343-11	CARBON MELF 4.7K 5% 1/8W
R110	△ 1-249-405-11	CARBON (SMALL) 100 5% 1/4W F
R111	1-249-341-11	(AEP)...CARBON MELF 3.3K 5% 1/8W
R112	1-249-332-11	(AEP)...CARBON MELF 560 5% 1/8W
R113	1-249-335-11	(AEP)...CARBON MELF 1K 5% 1/8W
R114	1-249-238-11	(AEP)...CARBON MELF 270 5% 1/8W
R115	1-249-351-11	(AEP)...CARBON MELF 22K 5% 1/8W
R116	1-249-339-11	(AEP)...CARBON MELF 2.2K 5% 1/8W
R117	1-249-343-11	(AEP)...CARBON MELF 4.7K 5% 1/8W
R118	1-249-232-11	(AEP)...CARBON MELF 100 5% 1/8W
R501	1-202-725-00	(Canadian)...SOLID 3.3M 10% 1/2W
R502	1-249-437-11	CARBON 47K 5% 1/4W
R503	△ 1-247-752-11	CARBON 1K 5% 1/2W F
R504	1-249-393-11	CARBON 10 5% 1/4W
R505	1-249-441-11	CARBON 100K 5% 1/4W
R701	1-249-405-11	CARBON 100 5% 1/4W
R702	1-249-441-11	CARBON 100K 5% 1/4W
R703	1-249-441-11	CARBON 100K 5% 1/4W
R704	1-249-441-11	CARBON 100K 5% 1/4W
R709	1-249-417-11	CARBON 1K 5% 1/4W
R710	1-249-411-11	CARBON 330 5% 1/4W
R711	1-249-411-11	CARBON 330 5% 1/4W
R712	1-249-429-11	CARBON 10K 5% 1/4W
R713	1-249-429-11	CARBON 10K 5% 1/4W
R714	1-249-429-11	CARBON 10K 5% 1/4W
R715	1-249-429-11	CARBON 10K 5% 1/4W
R716	1-249-429-11	CARBON 10K 5% 1/4W
R717	1-249-429-11	CARBON 10K 5% 1/4W
R718	1-249-429-11	CARBON 10K 5% 1/4W
R719	1-249-429-11	CARBON 10K 5% 1/4W
R720	1-249-441-11	CARBON 100K 5% 1/4W
R721	1-249-441-11	CARBON 100K 5% 1/4W
RV21	1-238-013-11	RES, ADJ, CARBON 2.2K
RV22	1-238-017-11	RES, ADJ, CARBON 22K
RV24	1-238-017-11	RES, ADJ, CARBON 22K
S1	△ 1-554-920-21	SWITCH, PUSH (AC POWER) (1 KEY)
S701	1-554-303-21	SWITCH, KEY BOARD (1)
S702	1-554-303-21	SWITCH, KEY BOARD (2)
S703	1-554-303-21	SWITCH, KEY BOARD (3)
S704	1-554-303-21	SWITCH, KEY BOARD (4)
S705	1-554-303-21	SWITCH, KEY BOARD (5)
S706	1-554-303-21	SWITCH, KEY BOARD (6)
S707	1-554-303-21	SWITCH, KEY BOARD (7)
S708	1-554-303-21	SWITCH, KEY BOARD (8)
S709	1-554-303-21	SWITCH, KEY BOARD (9)
S710	1-554-303-21	SWITCH, KEY BOARD (0)
S711	1-554-303-21	SWITCH, KEY BOARD (AUTO TUNING)
S712	1-554-303-21	SWITCH, KEY BOARD (MEMORY SCAN)
S713	1-554-303-21	SWITCH, KEY BOARD (MEMORY)
S714	1-554-303-21	SWITCH, KEY BOARD (SHIFT)
S715	1-554-303-21	SWITCH, KEY BOARD (BAND FM/AM)
S716	1-554-303-21	SWITCH, KEY BOARD (TUNING +)
S717	1-554-303-21	SWITCH, KEY BOARD (TUNING -)

Note:

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

Note:

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

<u>Ref.No.</u>	<u>Part No.</u>	<u>Description</u>
T21	1-404-807-11	TRANSFORMER, DISCRIMINATOR
TB501	*1-535-139-00	(AEP).....BASE POST 22MM(10MM PITCH)2P
TB501	*1-535-141-00	(Canadian)..BASE POST 22MM(10MM PITCH)4P
TM1	*1-537-138-31	(AEP).....TERMINAL BOARD (ANT)
TM1	1-537-238-21	(Canadian)...TERMINAL BOARD, PUSH 4P
TN1	1-535-416-00	(AEP)...TERMINAL
TN2	1-535-416-00	(AEP)...TERMINAL
TP1	*1-560-060-00	PIN, CONNECTOR 2P
XT81	1-577-126-11	VIBRATOR, CRYSTAL 7.2MHz

ACCESSORY & PACKING MATERIAL

1-501-374-11	(AEP)...ANTENNA, LOOP
1-558-232-11	(AEP)...CORD(WITH CONNECTOR)(SIRCS)4P
1-559-533-11	(AEP)...CORD, CONNECTION
*3-704-343-01	SHEET (STANDARD), PROTECTION
3-751-776-11	(AEP)...MANUAL, INSTRUCTION
3-751-776-41	(AEP)...MANUAL, INSTRUCTION
*4-917-074-01	CUSHION
*4-917-056-31	(AEP)...INDIVIDUAL CARTON