

ST-S110

SERVICE MANUAL

Canadian Model
AEP Model
UK Model
E Model



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
 AEP, UK models: 75 ohms unbalanced

Intermediate frequency 10.7 MHz

Sensitivity (at 46 dB quieting)
 18.0 dBf, 4.4 μ V (mono)
 40.0 dBf, 49 μ V (stereo)
 AEP, UK models:
 18.0 dBf, 2.2 μ V (mono)
 40.0 dBf, 24.5 μ V (stereo)

Signal-to-noise ratio (at 40 kHz deviation)
 74 dB (mono)
 69 dB (stereo)

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

Separation 40 dB (at 1 kHz)

Frequency response
 30 Hz–15 kHz $+0.5$ / -2.0 dB
 AEP, UK models:
 40 Hz–12.5 kHz ± 0.5 dB

Selectivity West German and Italian models:
 65 dB (at 300 kHz)
 E model:
 65 dB (at 400 kHz)

Capture ratio 1.0 dB

AM suppression ratio 65 dB

Image response ratio 70 dB

IF response ratio 70 dB

Spurious response ratio

80 dB

Muting threshold 30 dBf

Automatic tuning threshold 30 dBf

775 mV, 4.7 k ohms (at 75 kHz deviation)

Output AEP, UK models: 410 mV, 4.7 k ohms
 (at 40 kHz deviation)

AM tuner

Frequency range Italian model:
 MW: 522–1,611 kHz
 LW: 144–288 kHz

AEP, UK models:
 MW: 531–1,602 kHz
 LW: 153–281 kHz

Canadian model:
 AM: 530–1,710 kHz at 10 kHz step
 (531–1,710 kHz at 9 kHz step)

E model:
 AM: 531–1,602 kHz at 9 kHz step
 (530–1,710 kHz at 10 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

— Continued on next page —

FM STEREO/FM-AM TUNER
SONY®



General

Power requirements

- U.K. model: 240 V AC (or 220 V AC adjustable by authorized Sony personnel), 50/60 Hz
- AEP model: 220 V AC (or 240 V AC adjustable by authorized Sony personnel), 50/60 Hz
- Canadian model: 120 V AC, 60 Hz
- E model: 110–120 V or 220–240 V AC adjustable, 50/60 Hz

Power consumption

10 W

Dimensions Approx. 430 × 80 × 295 mm (w/h/d)
(17 × 3 1/4 × 11 3/8 inches)

Weight Approx. 2.8 kg (6 lb 3 oz)

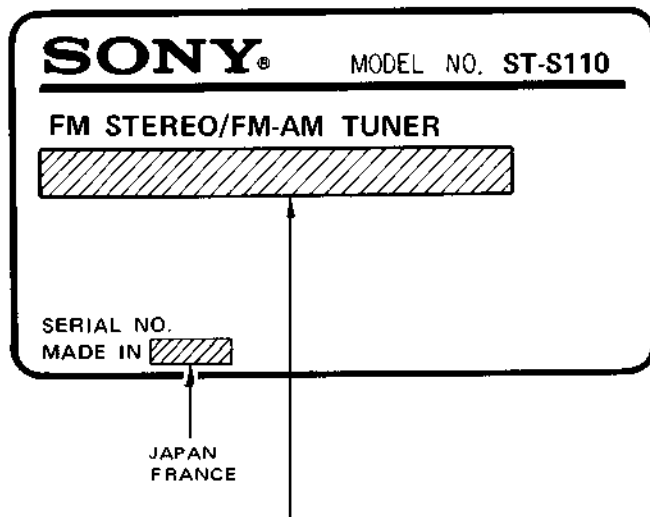
Accessories supplied

- Remote control cord (1)
- Connecting cord (1)
- FM antenna (1) (Except West Germany model)
- AM loop antenna

Design and specifications subject to change without notice.



MODEL IDENTIFICATION

– Specification Label –



- Canadian Model: AC: 120 V 60 Hz 10 W
- AEP Model: AC: 220 V 50/60 Hz 10 W
- UK Model: AC: 240 V 50/60 Hz 10 W
- E Model: AC: 110–120 V/220–240 V 50/60 Hz 10 W

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.


On safety

- Before connecting the unit to the power source, check that the operating voltage of your unit is the same as the local power line voltage.

Where purchased	Operating voltage
Canadian Model	120 V AC, 60 Hz
UK Model	240 V AC, 50/60 Hz
AEP Model	220 V AC, 50/60 Hz (240 V AC, adjustable by authorized Sony personnel)
E Model	110–120 or 220–240 V AC, 50/60 Hz (Adjustable using the voltage selector at the rear)

- Should any solid object or liquid fall into the unit, unplug the unit and have it checked by qualified personnel before operating it any further.
- Unplug the unit from the wall outlet if it is not to be used for an extended period of time. To disconnect the cord, pull it out by grasping the plug. Do not pull the cord itself.

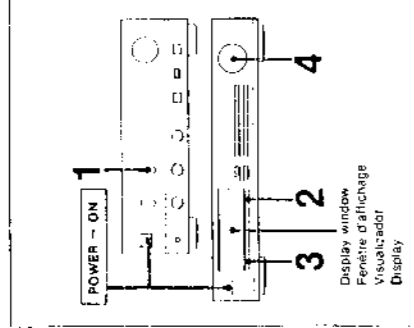
ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

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.

Receiving Broadcasts

Tuning in Automatically

Before reception, be sure to connect the AM and FM antenna.



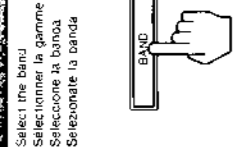
Réception d'une émission

Accord automatique

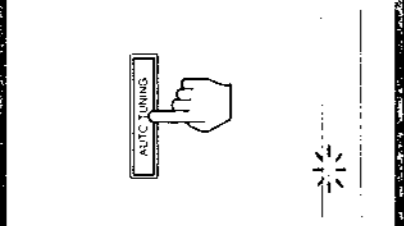
Avant la réception, s'assurer de connecter l'antenne AM et l'antenne FM.



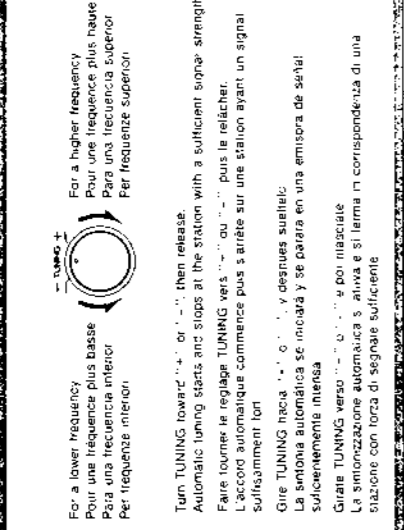
2



3



4



Radiorecepción

Sintonía automática

Antes de la recepción, asegúrese de conectar las antenas de AM y FM suministradas.

Ricezione radiofonica

Sintonia automatica

Prima di usare la radio, assicuratevi di collegare le antenne AM e FM.

SECTION 1 GENERAL

To receive other stations
When the received station is not the one you want, turn TUNING again.

Indications in the display window
• The STEREO indication appears when an FM stereo program of sufficient signal strength is received.
• The SIGNAL meter indicates the signal strength of a station tuned in.

To change the AM tuning interval (except European and UK models)
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. Press the BAND selector to select AM.
3. Press the POWER switch to turn off the system.
4. While tuning the TUNING knob fully toward "A", press the POWER switch to turn on the system stored in 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.

Reception d'autres stations
Lorsque la station accordée n'est pas celle désirée, appuyez de nouveau sur TUNING.

Indications dans la fenêtre d'affichage
• Le témoin STEREO apparaît lorsqu'un programme stéréo avec un signal suffisamment fort est reçu.
• L'intensité du signal de la station accordée est indiquée par l'indicateur SIGNAL.

Changement de l'intervalle d'accord AM (sauf les modèles pour l'Europe continentale et le Royaume-Uni)
L'intervalle d'accord AM a été réglé en usine sur 10 ou 9 kHz pour concorder avec l'allocation des fréquences dans la région d'utilisation. Pour modifier l'intervalle, procédez comme suit:
1. Appuyez sur le commutateur POWER pour mettre le système sous tension.
2. Appuyez sur le sélecteur FM/AM BAND pour sélectionner AM.
3. Appuyez de nouveau sur le commutateur POWER pour mettre le système hors tension.
4. Tout en tournant le réglage TUNING vers "A", appuyez sur le commutateur POWER pour retourner l'alimentation. Pour retenir l'intervalle, repérez les mêmes diaphragmes.

Remarque
Lorsque l'intervalle est modifié, toutes les stations mémorisées sont effacées.
Après avoir changé l'intervalle, s'assurer de mémoriser les stations.

Para recibir otras emisoras
Cuando la emisora recibida no es la deseada, vuelva a girar TUNING.

Indicaciones en el visualizador
• Cuando recibe un programa de FM estereó de señal suficientemente intensa, aparecerá la indicación STEREO.
• En el indicador SIGNAL, aparecerá la intensidad de señal de la emisora recibida.

Para cambiar el intervalo de sintonía de AM (excepto los modelos para Europa continental y el Reino Unido)
El intervalo de sintonía de AM ha sido ajustado en fábrica a 10 kHz o 9 kHz para ajustarse al sistema de asignación de frecuencias de su país. Para cambiar el intervalo, realice lo siguiente:
1. Presione el interruptor POWER a fin de conectar la alimentación del sistema.
2. Presione el selector BAND para seleccionar AM.
3. Presione el interruptor POWER para desconectar la alimentación del sistema.
4. Mientras el mando TUNING está completamente girado hacia "A", presione el interruptor POWER a fin de conectar la alimentación del sistema. Para restaurar el intervalo, realice los mismos procedimientos.

Nota
Cuando cambie el intervalo, se borrarán todas las emisoras almacenadas.
Después de cambiar el intervalo, vuelva a almacenar las emisoras.

Per ricevere altre stazioni
Se la stazione sintonizzata non è quella desiderata, girare di nuovo TUNING.

Indicazioni sul display
• L'indicazione STEREO appare sul display quando viene ricevuta una trasmissione FM stereo con sufficiente forza di segnale.
• Il misuratore SIGNAL indica la forza di segnale della stazione ricevuta.

Per cambiare l'intervallo di sintonia AM (tranne i modelli per l'Europa e il Regno Unito)
L'intervallo di sintonia AM è stato preimpostato in fabbrica su 10 kHz o 9 kHz in corrispondenza all'allocazione delle frequenze in uso nel vostro paese. Per cambiare l'intervallo procedete come segue:
1. Premete il selettore BAND per selezionare AM.
2. Premete il selettore BAND per selezionare AM.
3. Premete di nuovo POWER per spegnere l'apparecchio.
4. Mentre girate completamente la manopola TUNING verso "A", premete POWER per accendere l'apparecchio.
Per riportare l'intervallo alla regolazione originale seguite lo stesso procedimento.

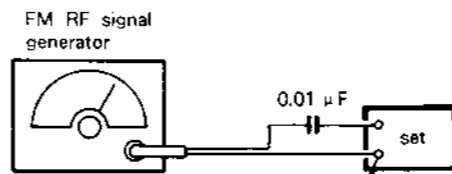
Nota
Quando cambiate l'intervallo, tutte le stazioni memorizzate vengono cancellate dalla memoria.
Assicuratevi di memorizzare di nuovo le stazioni dopo aver cambiato l'intervallo.

SECTION 2 ELECTRICAL ADJUSTMENTS

2-1. FM SECTION FM NULL Adjustment

Setting :
BAND switch : FM

Procedura :

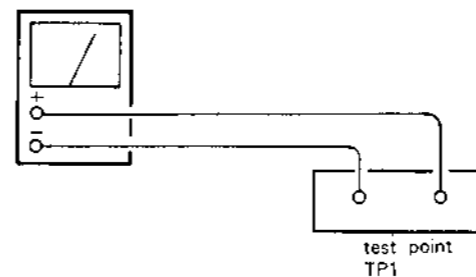


Carrier frequency : 98 MHz
Output level : 1 mV (60 dB)
Modulation : 1 kHz, 40 kHz deviation (100%)
(AEP, UK, West Germany, Italian model)
1 kHz, 75 kHz deviation (100%)
(Canadian, E model)

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

Note : When the ceramic filter is replaced, these adjustments should be made.

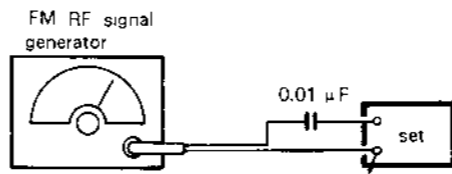
VOM
(range : 2.5 V DC)



STEREO Indication Lighting Level Adjustment

Setting :
STEREO/MUTE switch : OFF
BAND switch : FM

Procedura :



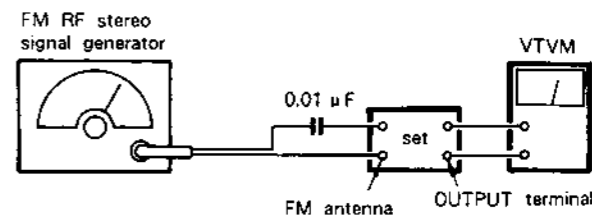
Carrier frequency : 98 MHz
Output level : 17.9 µV (25 dB)
Mode : Stereo
Modulation : Audio (1 kHz) : 33.75 kHz deviation (45%)
Pilot (19 kHz) : 7.5 kHz deviation (10%)
Sub-channel (38 kHz) : 33.75 kHz deviation (45%) } Canadian, E model
Audio (1 kHz) : 16.25 kHz deviation (40.625%)
Pilot (19 kHz) : 7.5 kHz deviation (18.75%) } AEP, UK
Sub-channel (38 kHz) : 16.25 kHz deviation (40.625%) } West Germany, Italian model

1. Tune the set to 98 MHz.
2. Adjust RV24 so that the STEREO indicator goes on.

FM Stereo Separation Adjustment

Setting :
STEREO/MUTE switch : ON (STEREO)
BAND switch : FM

Procedura :



Carrier frequency : 98 MHz
Output level : 1 mV (60 dB)
Mode : Stereo
Modulation : Audio (1 kHz) : 33.75 kHz deviation (45%)
Pilot (19 kHz) : 7.5 kHz deviation (10%) } Canadian, E model
Sub-channel (38 kHz) : 33.75 kHz deviation (45%)
Audio (1 kHz) : 16.25 kHz deviation (40.625%)
Pilot (19 kHz) : 7.5 kHz deviation (18.75%) } AEP, UK
Sub-channel (38 kHz) : 16.25 kHz deviation (40.625%) } West Germany, Italian model

FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	(A)
R-CH	L-CH	Adjust RV21 for minimum reading.
R-CH	R-CH	(C)
L-CH	R-CH	Adjust RV21 for minimum reading.

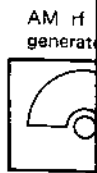
L-CH Stereo separation : (A) - (B)
R-CH Stereo separation : (C) - (D)

The separations of both channels should be equal.

2-2. AM SECTION SIGNAL LEVEL

Setting :
BAND switch : AM

Procedura :



Carrier frequency :

Output level :
Modulation :

1. Tune the set to 98 MHz.
2. Adjust RV21 for minimum reading.

2-3. ADJUSTMENTS

FM NULL Adjustment

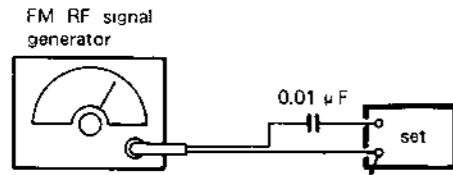
FM Stereo Separation Adjustment

SECTION 2 ELECTRICAL ADJUSTMENTS

2-1. FM SECTION FM NULL Adjustment

Setting :
BAND switch : FM

Procedure :



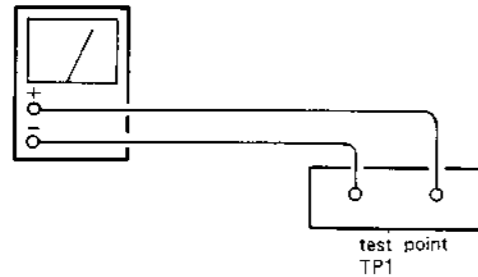
FM antenna terminal
AEP, UK, West Germany,
Italian model : 75 Ω
Canadian, E model : 300 Ω

Carrier frequency : 98 MHz
Output level : 1 mV (60 dB)
Modulation : 1 kHz, 40 kHz deviation (100%)
(AEP, UK, West Germany, Italian model)
1 kHz, 75 kHz deviation (100%)
(Canadian, E model)

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

Note : When the ceramic filter is replaced, these adjustments should be made.

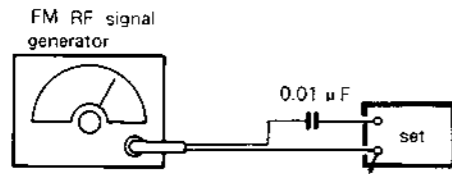
VOM
(range : 2.5 V DC)



STEREO Indication Lighting Level Adjustment

Setting :
STEREO/MUTE switch : OFF
BAND switch : FM

Procedure :



FM antenna terminal
AEP, UK, West Germany,
Italian model : 75 Ω
Canadian, E model : 300 Ω

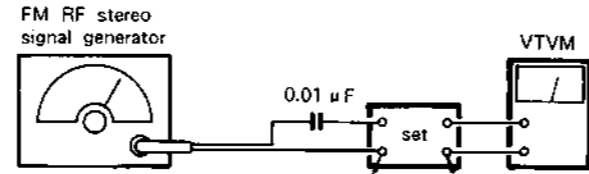
Carrier frequency : 98 MHz
Output level : 17.9 µV (25 dB)
Mode : Stereo
Modulation :
Audio (1 kHz) : 33.75 kHz deviation (45%) } Canadian,
Pilot (19 kHz) : 7.5 kHz deviation (10%) } E model
Sub-channel (38 kHz) : 33.75 kHz deviation (45%) }
Audio (1 kHz) : 16.25 kHz deviation (40.625%) } AEP, UK
Pilot (19 kHz) : 7.5 kHz deviation (18.75%) } West Germany,
Sub-channel (38 kHz) : 16.25 kHz deviation (40.625%) } Italian model

1. Tune the set to 98 MHz.
2. Adjust RV24 so that the STEREO indicator goes on.

FM Stereo Separation Adjustment

Setting :
STEREO/MUTE switch : ON (STEREO)
BAND switch : FM

Procedure :



FM antenna terminal
AEP, UK, West Germany,
Italian model : 75 Ω
Canadian, E model : 300 Ω

Carrier frequency : 98 MHz
Output level : 1 mV (60 dB)
Mode : Stereo
Modulation :
Audio (1 kHz) : 33.75 kHz deviation (45%) } Canadian,
Pilot (19 kHz) : 7.5 kHz deviation (10%) } E model
Sub-channel (38 kHz) : 33.75 kHz deviation (45%) }
Audio (1 kHz) : 16.25 kHz deviation (40.625%) } AEP, UK
Pilot (19 kHz) : 7.5 kHz deviation (18.75%) } West Germany,
Sub-channel (38 kHz) : 16.25 kHz deviation (40.625%) } Italian model

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

L-CH Stereo separation : (A) - (B)
R-CH Stereo separation : (C) - (D)

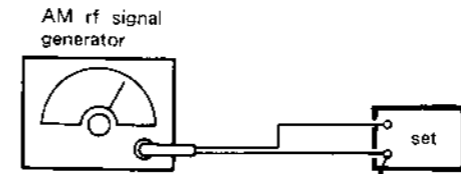
The separations of both channels should be equal.

2-2. AM SECTION

SIGNAL LEVEL METER Lighting Level Adjustment

Setting :
BAND switch : AM (Canadian, E model)
LW (AEP, UK, West Germany, Italian model)

Procedure :

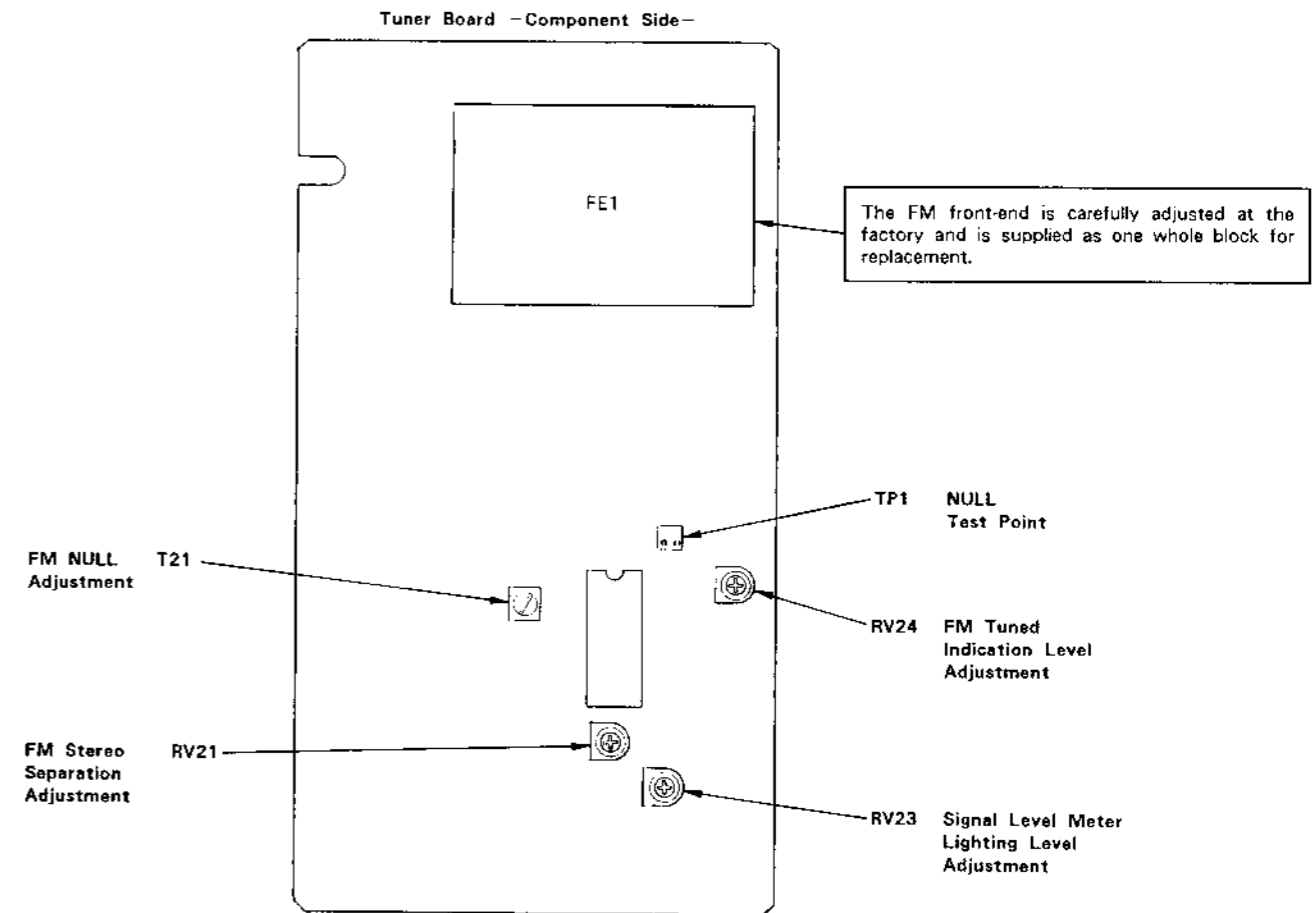


AM antenna terminal (300 Ω)

Carrier frequency : 999 kHz (Canadian, E model)
216 kHz (AEP, UK, West Germany, Italian model)
Output level : 94 dB µV/m
Modulation : 400 Hz, 30% modulation

1. Tune the set to 999 kHz (Canadian, E model) or 216 kHz (AEP, UK, West Germany, Italian model).
2. Adjust RV23 until the scale-5 on SIGNAL METER indicator lights up.

2-3. ADJUSTING PARTS LOCATION



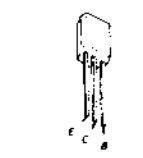
SECTION 3
DIAGRAMS

3-1. PRINTED WIRING BOARDS

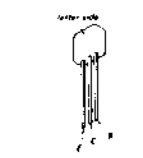
Note:
 • ○ : parts extracted from the component side.
 • ■ : parts mounted on the conductor side.

● Semiconductor Lead Layouts ● Semiconductor Location

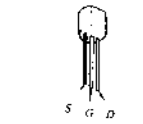
Ref. No.	Location
D21	E-10
D22	E-10
D23	E-10
D24	D-12
D61	D-8 (AEP, UK, WG, IT)
D501	C-17
D502	C-17
D503	D-16
D504	D-16
D505	E-15
D506	D-15
D507	B-14
D701	J-8
D702	I-12
D703	I-13
D704	I-17 (AEP, UK, WG, IT)
D706	I-17 (IT)
D707	I-17 (E2, E3)
D708	I-16
D709	I-16
D710	I-16
D711	I-16
D712	H-15
D713	I-15
D714	J-17
D715	J-18
D716	J-18
D717	I-17
D718	I-17
D719	I-17
D720	I-18
D721	I-6
IC21	D-10
IC81	B-7
IC501	C-16
IC701	I-10
IC702	H-6
Q1	C-7
Q2	C-8
Q3	C-8 (WG, IT)
Q4	C-8 (WG, IT)
Q21	C-11
Q22	D-11
Q23	C-8
Q24	C-8
Q26	E-11
Q27	D-11
Q28	D-11
Q61	E-8 (AEP, UK, WG, IT)
Q62	E-8 (AEP, UK, WG, IT)
Q63	E-8 (AEP, UK, WG, IT)
Q64	D-7
Q65	D-8 (AEP, UK, WG, IT)
Q66	D-8 (AEP, UK, WG, IT)
Q81	C-8
Q82	C-8
Q83	B-6
Q84	B-6
Q85	C-6 (AEP, UK, WG, IT)
Q86	C-5 (AEP, UK, WG, IT)



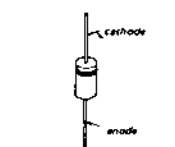
2SA1175HFE
2SC2785HFE



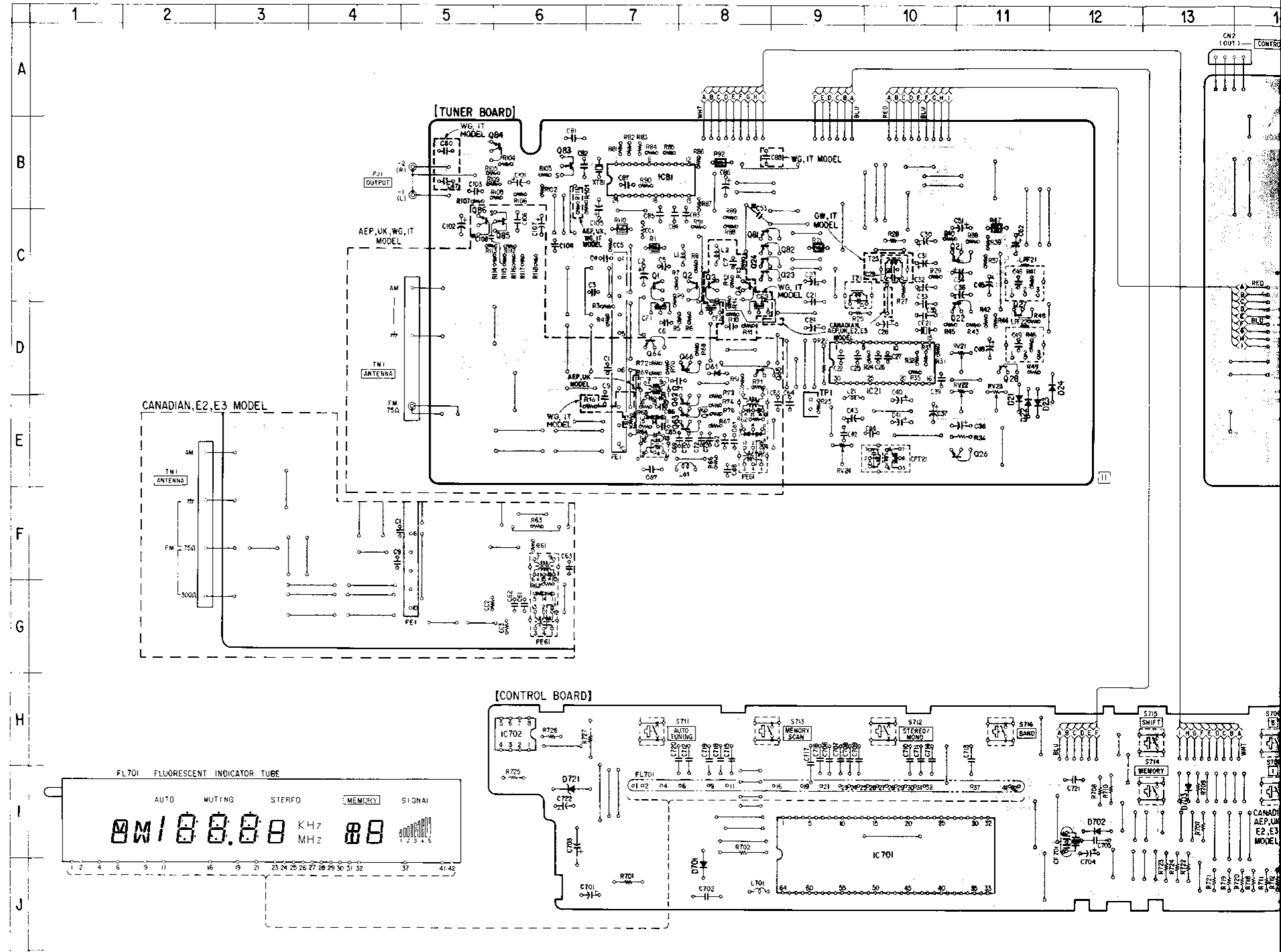
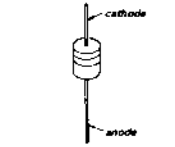
2SK246GR3

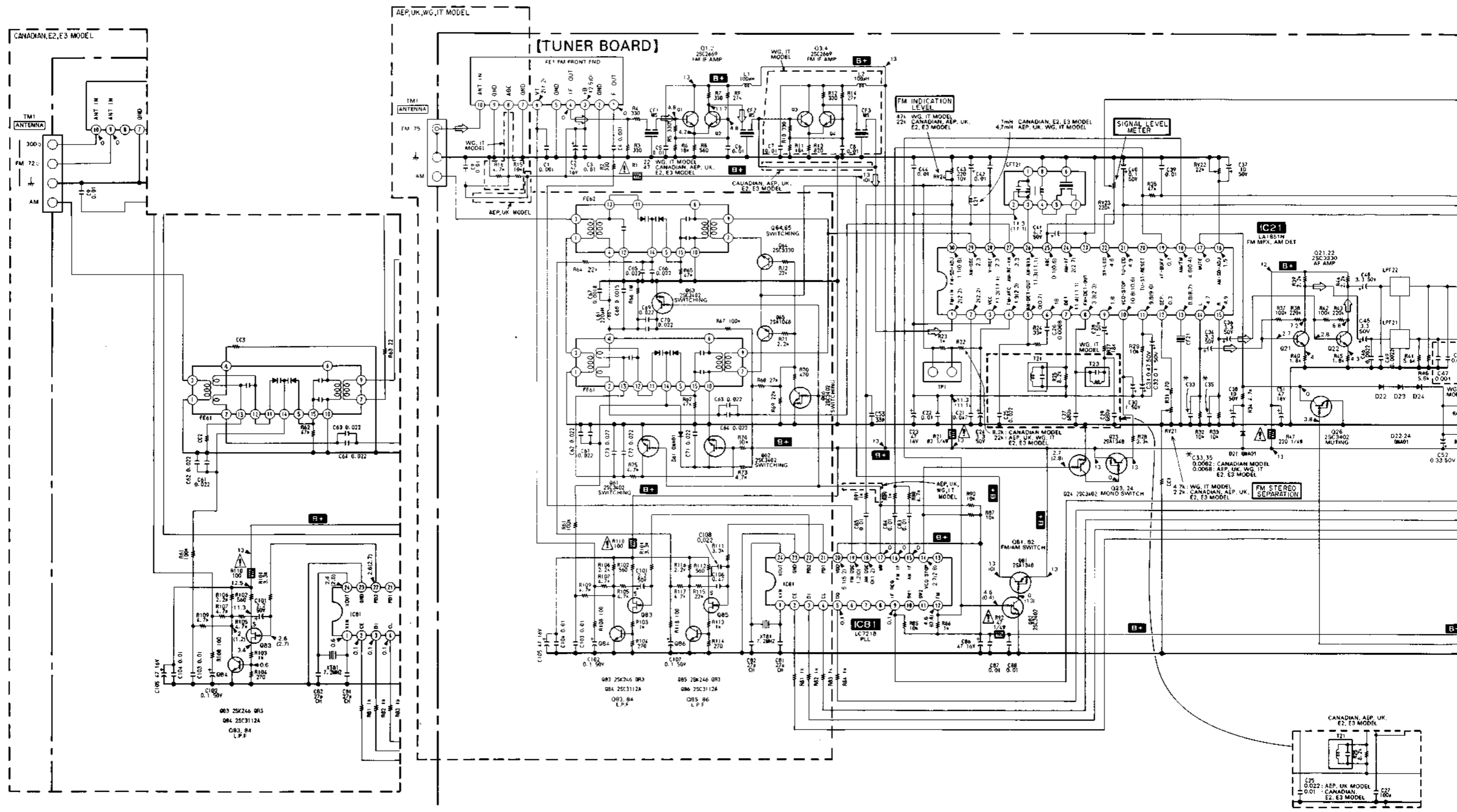


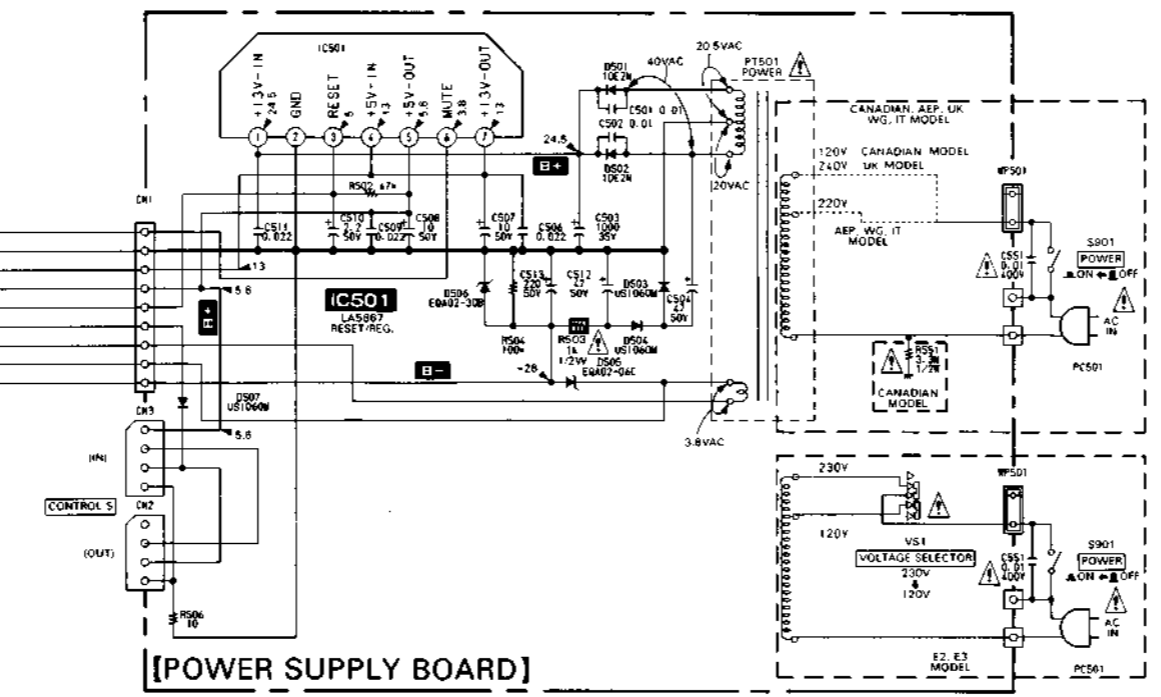
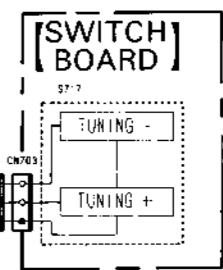
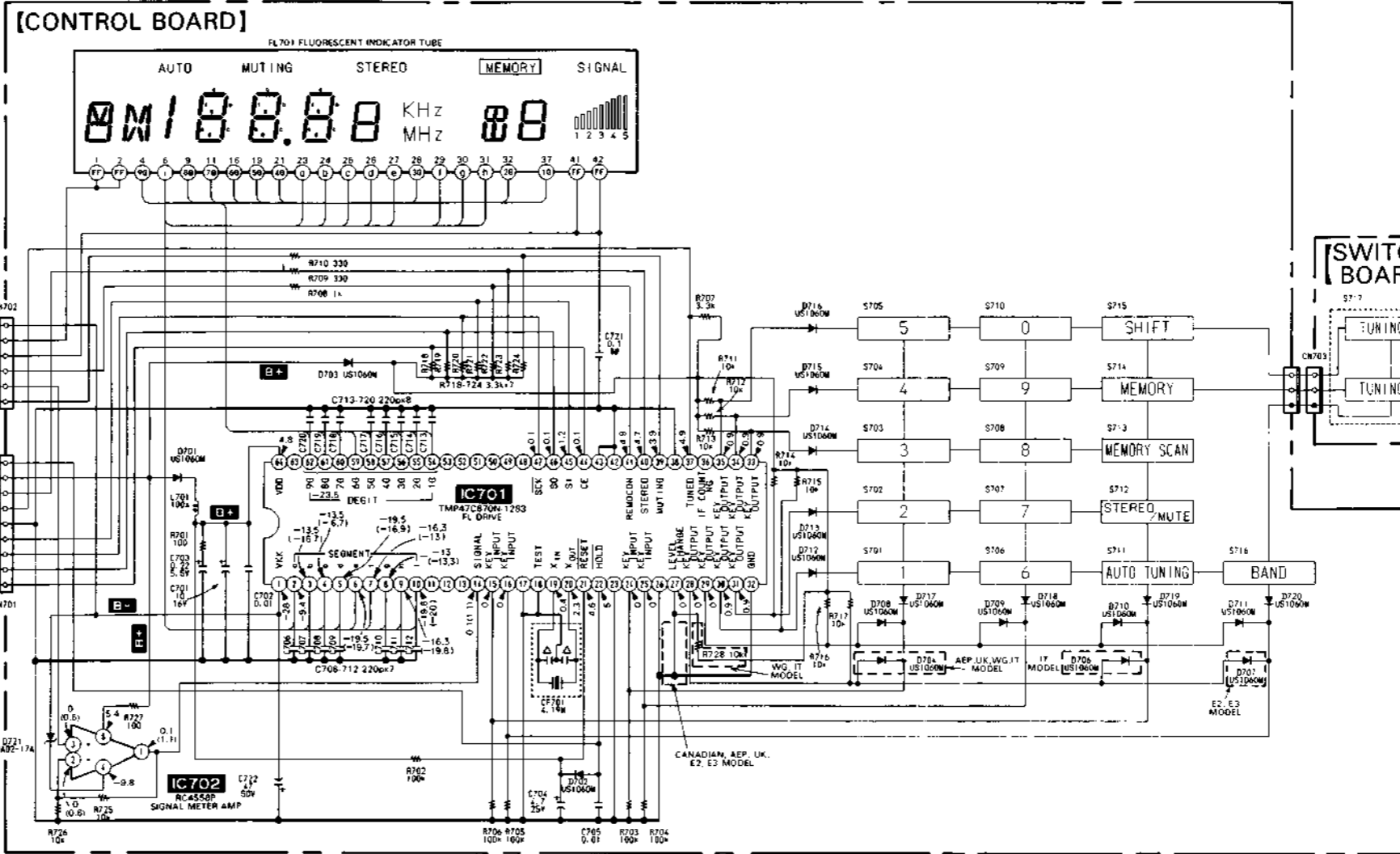
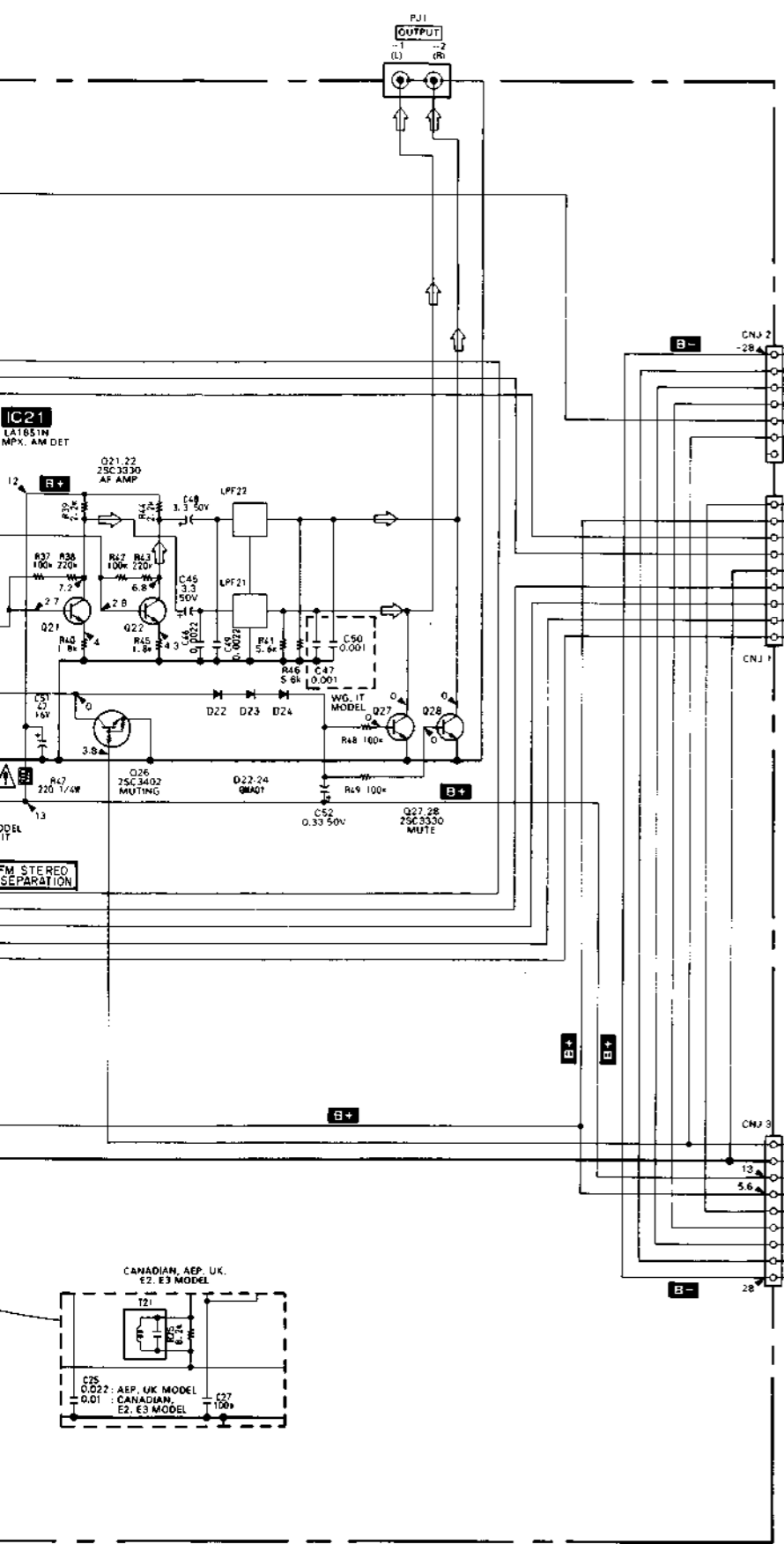
EQA02-17A
EQA02-30B
US1060M
10E2N



RD5.6ES-B2
1SS120







* WG: WEST GERMANY
IT: ITALIAN



- Note :**
- All capacitors are in μF unless otherwise noted. pF : μF 50 WV 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.
 - \square : nonflammable resistor.
 - \square : adjustment for repair.
 - Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
no mark : FM
() : AM
 - Voltages are taken with a VOM (50 $\text{k}\Omega/\text{V}$). Voltage variations may be noted due to normal production tolerances.
 - Signal path.
 \rightarrow : FM


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

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

Ref.No.	Part No.	Description
R63	1-249-315-11	(Canadian.E) ...CARBON MELF 22 5% 1/8W
R64	1-249-351-11	(AEP.UK.WG.IT) ...CARBON MELF 22K 5% 1/8W
R65	1-249-355-11	(AEP.UK.WG.IT) ...CARBON MELF 47K 5% 1/8W
R66	1-215-493-00	(AEP.UK.WG.IT) ...CARBON MELF 1M 5% 1/5W
R67	1-249-359-11	(AEP.UK.WG.IT) ...CARBON MELF 100K 5% 1/8W
R68	1-249-352-11	(AEP.UK.WG.IT) ...CARBON MELF 27K 5% 1/8W
R69	1-249-351-11	(AEP.UK.WG.IT) ...CARBON MELF 22K 5% 1/8W
R70	1-249-331-11	(AEP.UK.WG.IT) ...CARBON MELF 470 5% 1/8W
R71	1-249-339-11	(AEP.UK.WG.IT) ...CARBON MELF 2.2K 5% 1/8W
R72	1-249-351-11	(AEP.UK.WG.IT) ...CARBON MELF 22K 5% 1/8W
R73	1-249-343-11	(AEP.UK.WG.IT) ...CARBON MELF 4.7K 5% 1/8W
R74	1-249-347-11	(AEP.UK.WG.IT) ...CARBON MELF 10K 5% 1/8W
R75	1-249-343-11	(AEP.UK.WG.IT) ...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	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	1-249-347-11	CARBON MELF 10K 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
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.UK.WG.IT) ...CARBON MELF 3.3K 5% 1/8W
R112	1-249-332-11	(AEP.UK.WG.IT) ...CARBON MELF 560 5% 1/8W
R113	1-249-335-11	(AEP.UK.WG.IT) ...CARBON MELF 1K 5% 1/8W
R114	1-249-328-11	(AEP.UK.WG.IT) ...CARBON MELF 270 5% 1/8W
R115	1-249-351-11	(AEP.UK.WG.IT) ...CARBON MELF 22K 5% 1/8W
R116	1-249-339-11	(AEP.UK.WG.IT) ...CARBON MELF 2.2K 5% 1/8W

Ref.No.	Part No.	Description
R117	1-249-343-11	(AEP.UK.WG.IT) CARBON MELF 4.7K 5% 1/8W
R118	1-249-323-11	(AEP.UK.WG.IT) CARBON MELF 100 5% 1/8W
R502	1-249-437-11	CARBON 47K 5% 1/4W
R503	△.1-247-752-11	CARBON 1K 5% 1/2W F
R504	1-249-441-11	CARBON 100K 5% 1/4W
R506	1-249-393-11	CARBON 10 5% 1/4W
R551	1-202-725-00	(Canadian)...SOLID 100 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
R705	1-249-441-11	CARBON 100K 5% 1/4W
R706	1-249-441-11	CARBON 100K 5% 1/4W
R707	1-249-423-11	CARBON 3.3K 5% 1/4W
R708	1-249-417-11	CARBON 1K 5% 1/4W
R709	1-249-411-11	CARBON 330 5% 1/4W
R710	1-249-411-11	CARBON 330 5% 1/4W
R711	1-249-429-11	CARBON 10K 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	1-249-423-11	CARBON 3.3K 5% 1/4W
P719	1-249-423-11	CARBON 3.3K 5% 1/4W
R720	1-249-423-11	CARBON 3.3K 5% 1/4W
R721	1-249-423-11	CARBON 3.3K 5% 1/4W
R722	1-249-423-11	CARBON 3.3K 5% 1/4W
R723	1-249-423-11	CARBON 3.3K 5% 1/4W
R724	1-249-423-11	CARBON 3.3K 5% 1/4W
R725	1-249-429-11	CARBON 10K 5% 1/4W
R726	1-249-429-11	CARBON 10K 5% 1/4W
R727	1-249-405-11	CARBON 100 5% 1/4W
R728	1-249-429-11	(WG,IT)...CARBON 10K 5% 1/4W
RV21	1-238-013-11	(Canadian.E,AEP,UK) ...RES. ADJ. CARBON 2.2K
RV21	1-238-015-11	(WG,IT).....RES. ADJ. CARBON 4.7K
RV22	1-238-017-11	RES. ADJ. CARBON 22K
RV23	1-238-021-11	RES. ADJ. CARBON 220K
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 (STEREO/MUTING)
S713	1-554-303-21	SWITCH. KEY BOARD (MEMORY SCAN)
S714	1-554-303-21	SWITCH. KEY BOARD (MEMORY)
S715	1-554-303-21	SWITCH. KEY BOARD (SHIFT)

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

Note:
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Ref.No.	Part No.	Description
S716	1-554-303-21	SWITCH, KEY BOARD (BAND)
S717	1-571-327-21	SWITCH, ROTARY (TUNING)
S901	△,1-554-920-21	SWITCH, PUSH (AC POWER)(1 KEY)
T21	1-404-807-11	TRANSFORMER, DISCRIMINATOR
T23	1-236-465-11	(WG,IT)...ENCAPSULATED COMPONENT
TB2	1-535-416-00	TERMINAL
TB3	1-535-416-00	TERMINAL
TM1	*1-536-708-00	(Canadian,E)...TERMINAL BOARD, PUSH 4P
TM1	*1-537-138-21	(AEP,UK)...TERMINAL BOARD (ANT)
TM1	*1-537-138-31	(WG,IT)...TERMINAL BOARD (ANT)
TP1	*1-560-060-00	PIN, CONNECTOR 2P (NULL)
VS1	△,1-571-722-11	(E)...SWITCH, VOLTAGE SELECTION
WP501	*1-535-139-00	BASE POST 22MM (10MM PITCH) 2P
XT81	1-577-126-11	VIBRATOR, CRYSTAL

ACCESSORY & PACKING MATERIAL

1-501-369-11	(AEP,UK,IT)...ANTENNA
1-501-351-21	(Canadian,E)...ANTENNA, FEEDER
1-501-374-11	ANTENNA, LOOP
△,1-526-565-12	(E)...AC PLUG ADAPTOR
1-558-233-11	CORD (WITH CONNECTOR)(STRCS)4P
1-558-543-11	CORD, CONNECTION
3-701-630-00	BAG, POLYETHYLENE
3-750-238-11	(Canadian,UK,E,IT)...MANUAL, INSTRUCTION (ENGLISH,FRENCH,SPANISH,ITALIAN)
3-750-238-41	(AEP,WG)...MANUAL, INSTRUCTION (GERMAN,DUTCH,SWEDISH,PORTUGUESE)
3-750-238-51	(AEP,IT//F)...MANUAL, INSTRUCTION (ENGLISH,FRENCH,SPANISH,ITALIAN)
3-750-238-61	(AEP//F)...MANUAL, INSTRUCTION (GERMAN,DUTCH,SWEDISH,PORTUGUESE)
*3-704-343-01	SHEET (STANDARD), PROTECTION
4-915-426-01	CUSHION
*4-923-467-01	(AEP,IT//F)...CUSHION
*4-917-056-01	INDIVIDUAL CARTON
*4-923-466-01	(AEP,IT//F)...INDIVIDUAL CARTON

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

Note:
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