

ST-S550ES

SERVICE MANUAL

*US Model
Canadian Model
AEP Model
UK Model*

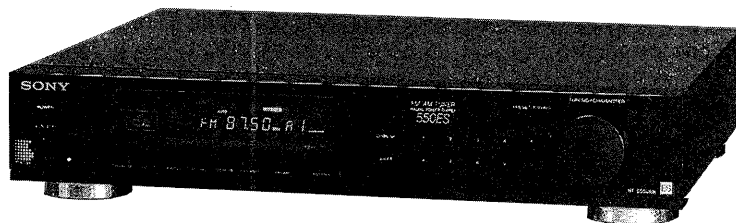


Photo: Except for US model.

SPECIFICATIONS

FM tuner

Tuning range 87.5 – 108 MHz

Intermediate frequency

10.7 MHz

Sensitivity at 46 dB quieting

16.8 dBf 1.8 μ V/75 ohms

for other countries

16.8 dBf 3.6 μ V

for US, Canadian model

38.5 dBf 23 μ V/75 ohms

for other countries

38.5 dBf 46 μ V

for US, Canadian model

Usable sensitivity

10.3 dBf 0.9 μ V/75 ohms

for other countries

10.3 dBf 1.8 μ V

for US, Canadian model

Signal-to-noise ratio

at 75 kHz deviation (US, Canadian model)

82 dB (mono)

78 dB (stereo)

at 40 kHz deviation

(Models for other countries)

76 dB (mono)

72 dB (stereo)

Harmonic distortion

WIDE 0.04% (mono)

0.05% (stereo)

NARROW 0.06% (mono)

0.08% (stereo)

Separation at 1 kHz

65 dB

Selectivity

at 400 kHz

80 dB (WIDE)

90 dB (NARROW)

at 300 kHz

45 dB (WIDE)

70 dB (NARROW) } for other countries

40 dB (WIDE) } for US, Canadian

65 dB (NARROW) } model

Output

at 75 kHz deviation (US, Canadian model)

750 mV

at 40 kHz deviation

400 mV for UK model

600 mV for AEP, West Germany,

Italian Model

AM tuner

Tuning range

AEP, UK, West Germany model :

MW: 531 – 1,602 kHz (9 kHz step)

LW: 153 – 279 kHz (1 kHz step)

Italian model :

MW: 522 – 1,611 kHz (9 kHz step)

LW: 144 – 288 kHz (1 kHz step)

US, Canadian model:

AM: 530 – 1,710 kHz (10 kHz step)

531 – 1,710 kHz (9 kHz step)

Intermediate frequency

450 kHz

— Continued on page 2 —

FM STEREO / FM-AM TUNER
SONY®

Usable sensitivity	MW : AM loop antenna 250 μ V/m External antenna 30 μ V/m LW : AM loop antenna 700 μ V/m External antenna 200 μ V/m
Signal-to-noise ratio	50 dB
Harmonic distortion	0.4%
Selectivity at 9 kHz	50 dB
General	
Power requirements	UK model : 240 V AC, 50/60 Hz AEP, West Germany, Italian model : 220 V AC, (or 240 V AC adjustable by authorized Sony personnel), 50/60 Hz US, Canadian model: 120 V AC, 60 Hz 10 W
Power consumption	
Dimensions	Approx. 430×85×360 mm (w/h/d) (17×3 $\frac{3}{8}$ ×14 $\frac{1}{4}$ inches)
Weight	Approx. 4kg (8 lb 14 oz)
Accessories supplied	Remote control cord (1) Connecting cord (1) AM loop antenna (1)

TABLE OF CONTENTS

Section	Title	Page
Specifications		1
Model Identifications		2
Safety Check-out		3

SECTION 1. GENERAL

1-1. Parts Identification	4
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SECTION 2. ADJUSTMENTS.....5

SECTION 3. DIAGRAMS

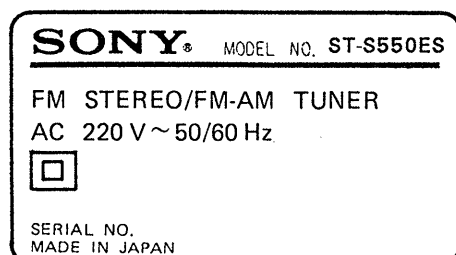
3-1. FM Front End (FE101) Schematic Diagram	8
3-2. Semiconductor Lead Layouts	10
3-3. Printed Wiring Boards	10
3-4. Schematic Diagram	13
3-5. IC Block Diagrams	17

SECTION 4. EXPLODED VIEW..... 18

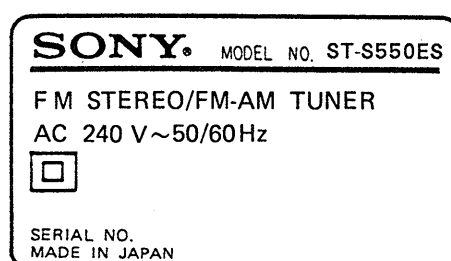
SECTION 5. ELECTRICAL PARTS LIST..... 20

- MODEL IDENTIFICATIONS -

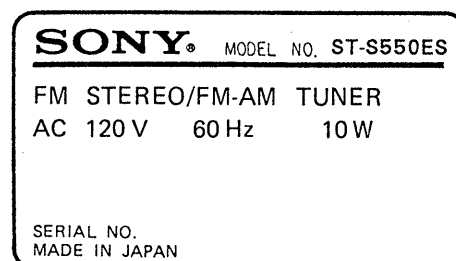
AEP, Italian Model



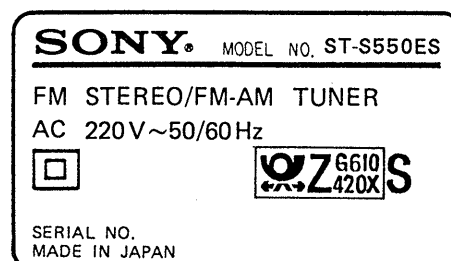
UK Model





US, Canadian Model




West Germany Model



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 microampers). 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)

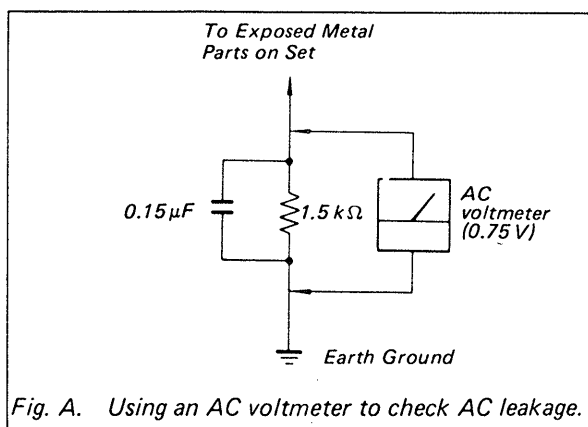
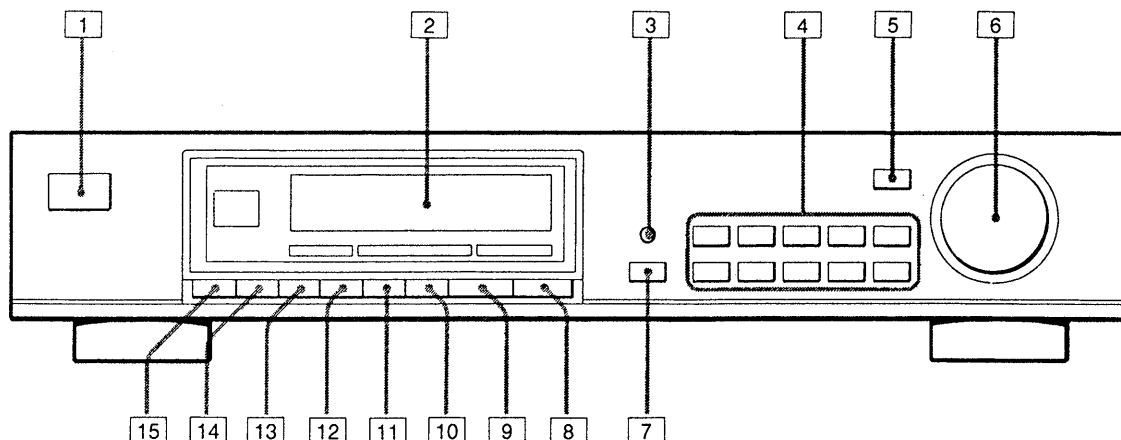


Fig. A. Using an AC voltmeter to check AC leakage.

SECTION 1

GENERAL

1-1. PARTS IDENTIFICATION



- | | |
|--|--|
| <p>[1] POWER switch</p> <p>[2] Display window</p> <p>[3] DISPLAY button</p> <p>[4] Preset buttons</p> <p>[5] PRESET/TUNING button</p> <p>[6] TUNING/CHARACTER knob</p> <p>[7] SHIFT button</p> <p>[8] MEMORY button</p> <p>[9] FM/MW/LW button (AEP, UK, West Germany, Italian model)
FM/AM button (US, Canadian model)</p> <p>[10] TUNE MODE button</p> | <p>[11] FM MODE button</p> <p>Auto stereo: Normally, select this mode (by making the HIGH BLEND and MONO indicators disappear from the display window) when you tune in a strong FM broadcast.</p> <p>HI-BLEND: Select this position when the high-frequency sound is noisy in the FM band. The high-frequency noise will be reduced.</p> <p>MONO: Select this position when you tune in a very weak or noisy FM station. Although the sound will come out in monaural, the noise will be greatly reduced.</p> <p>[12] MUTING button</p> <p>[13] IF (intermediate frequency) BAND button</p> <p>[14] ANT ATT (antenna attenuator) button</p> <p>[15] CHARACTER button</p> |
|--|--|

SECTION 2 ADJUSTMENTS

- Refer to Adjustment Location on page 7.

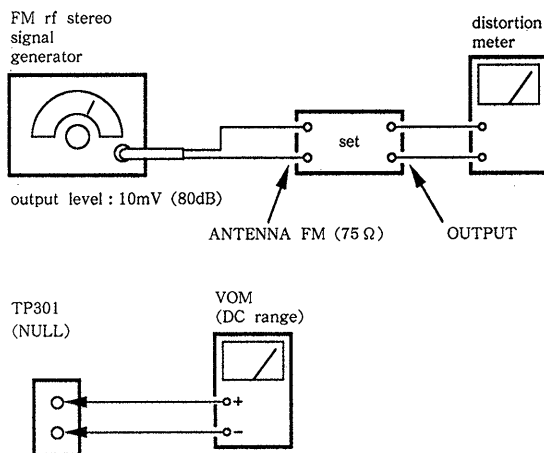
Note : As a front-end (FE101, FE201, etc.) is difficult to repair if faulty, replace it with new one.

FM SECTION

- Standard Setting of FM Stereo RF Signal Generator.

	STEREO STANDARD SIGNAL	MONAURAL STANDARD SIGNAL
US, Canadian	Carrier frequency : 98MHz Modulation : Audio 1kHz, 33.75kHz deviation (45%) Sub-channel 38kHz, 33.75kHz deviation (45%) Pilot 19kHz, 7.5kHz deviation (10%)	98MHz 1kHz, 75kHz deviation (100%)
AEP, UK WG, IT	Carrier frequency : 98MHz Modulation : Audio 1kHz, 16.25kHz deviation (40.6%) Sub-channel 38kHz, 16.25kHz deviation (40.6%) Pilot 19kHz, 7.5kHz deviation (18.8%)	98MHz 1kHz, 40kHz deviation (100%)

FM Discriminator Adjustment (NULL and MONO Distortion)

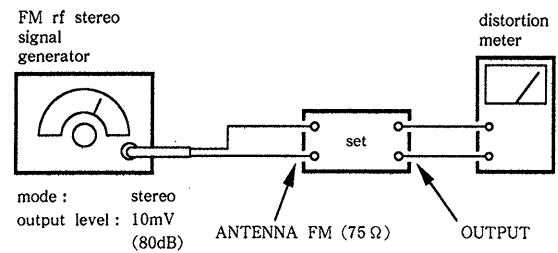


Procedure :

1. Tune the set to 98MHz.
2. Adjust T301 for 0V reading on the VOM,.....NULL
3. Adjust T302 for a minimum reading on the distortion meter,.....MONO Distortion
4. Repeat the adjustments of 2 and 3 several times.

Note : When replacing the ceramic filter, perform this alignment.

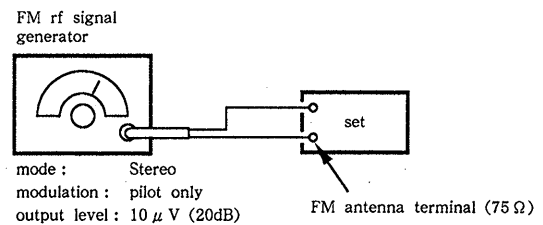
FM Stereo Distortion Adjustment



Procedure :

1. Tune the set to 98MHz.
2. Adjust T1 in FE101 for a minimum reading on the distortion meter.

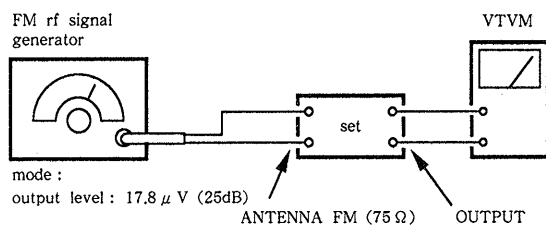
FM Stereo Indication Lighting Level Adjustment



Procedure :

1. Tune the set to 98MHz.
2. Adjust RV301 to the place where STEREO indication lights.

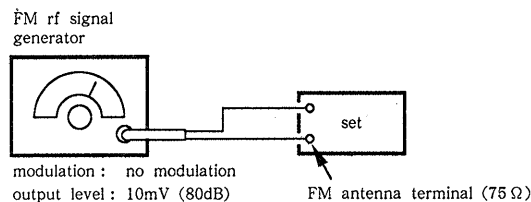
FM Muting Level Adjustment



Procedure :

1. Tune the set to 98MHz.
2. Push the MUTING switch and put on the light the "MUTING" indicator in the fluorescent display.
3. Set SSG output level to 17.8 μ V (25dB).
4. Adjust RV303 so that the reading of VTVM becomes within 14.1 μ V (23dB) — 22.4 μ V (27dB).

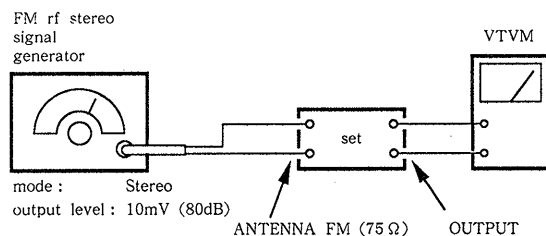
FM Signal Level Adjustment



Procedure :

1. Tune the set to 98MHz.
2. Adjust RV901 to the place where level 10 in the signal strength indicator turns from dark to light.

FM Stereo Separation Adjustment



Procedure :

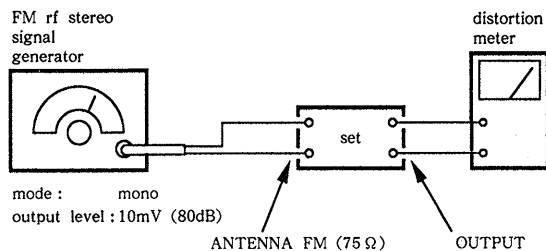
FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV401 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV401 for minimum reading.

L-CH Stereo separation : Ⓐ — Ⓑ

R-CH Stereo separation : Ⓒ — Ⓓ

The separation of both channels should be equal.

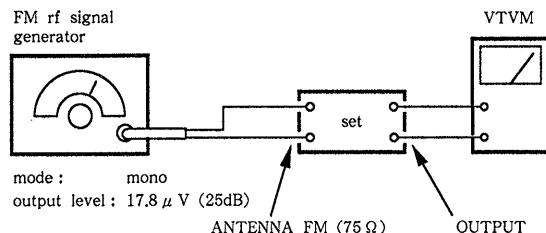
FM Narrow Distortion Adjustment



Procedure :

1. Tune the set to 98MHz.
2. Push the IF BAND switch and put on the light the "NARROW" indicator in the fluorescent display.
3. Adjust RV162 for a minimum reading on the distortion meter.

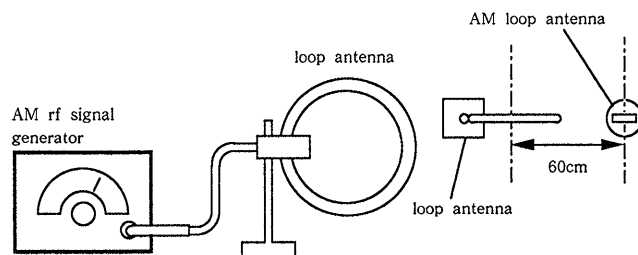
FM Narrow Gain Adjustment



Procedure :

1. Turn the set to 98MHz.
2. Push the IF BAND switch and put on the light the "NARROW" indicator in the fluorescent display.
3. Set SSG output level to 17.8 μ V (25dB).
4. Adjust RV161 so that the reading on VTVM becomes within 14.1 μ V (23dB) — 22.4 μ V (27dB).

AM SECTION



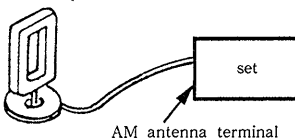
30% amplitude modulation by 400Hz signal

Carrier frequency :

US, Canadian model: 1,000kHz

AEP, UK, WG, IT model : 216kHz (LW Band)

AM loop antenna

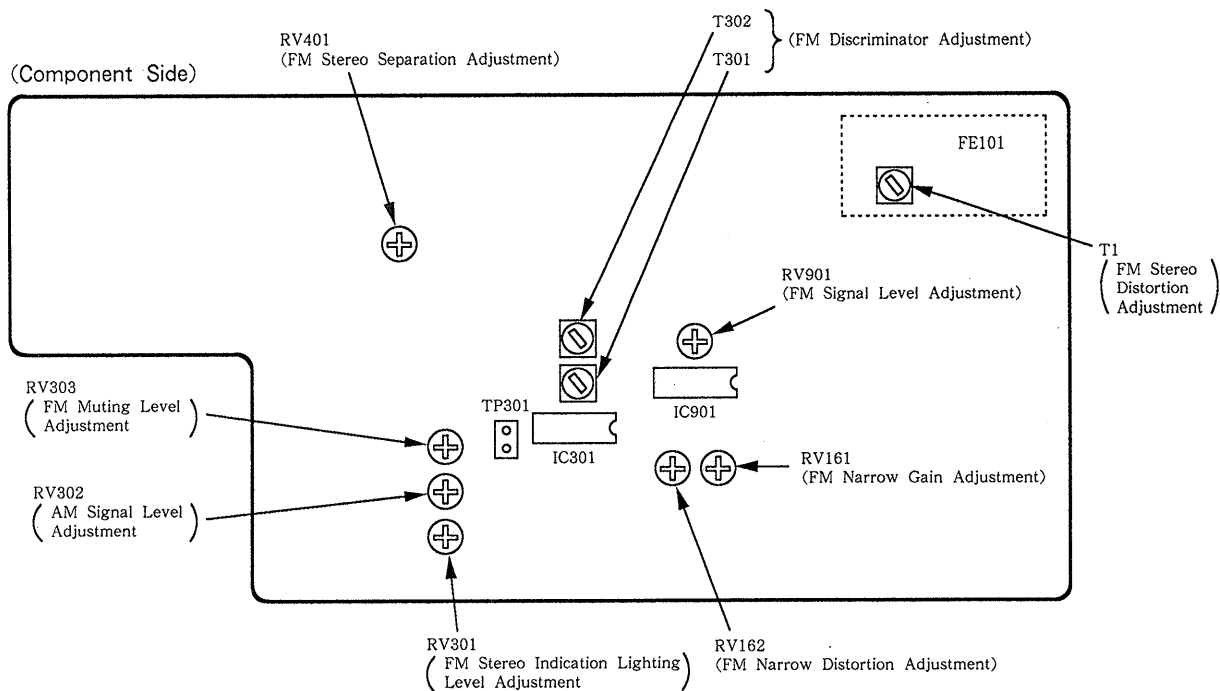
dB μ /m = (SSG output level) — 26dB

AM Signal Level Adjustment

Procedure :

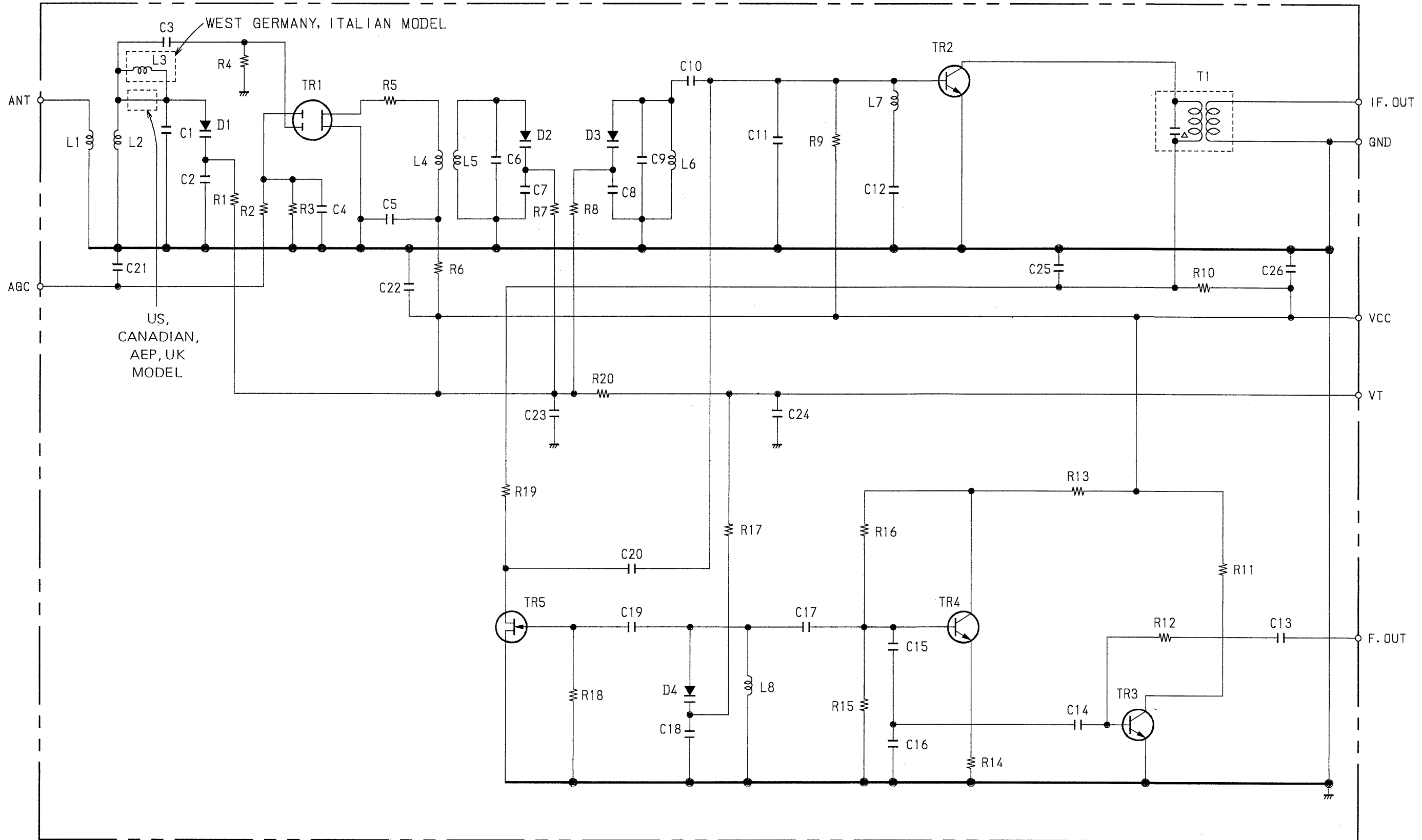
1. Set SSG output level so that antenna input level of the set becomes 5.0mV (74dB).
2. Adjust RV302 to the place where level 5 in the signal strength indicator turns from dark to light.

Adjustment Location : Main Board






SECTION 3 DIAGRAMS

3-1. FM FRONT END (FE101) SCHEMATIC DIAGRAM



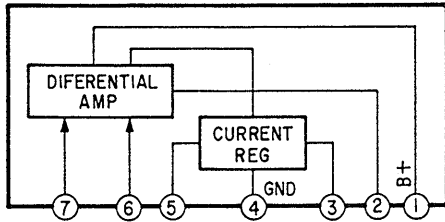


- Note:**
The components identified by mark  or dotted line with mark  are critical for safety.
Replace only with part number specified.

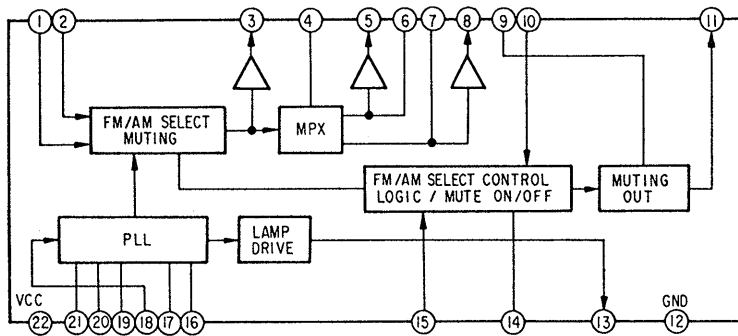
- Note:**
Les composants identifiés par une marque  sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

• IC BLOCK DIAGRAMS

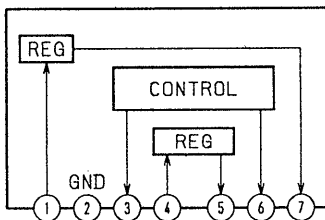
IC161 μ PC1163HA



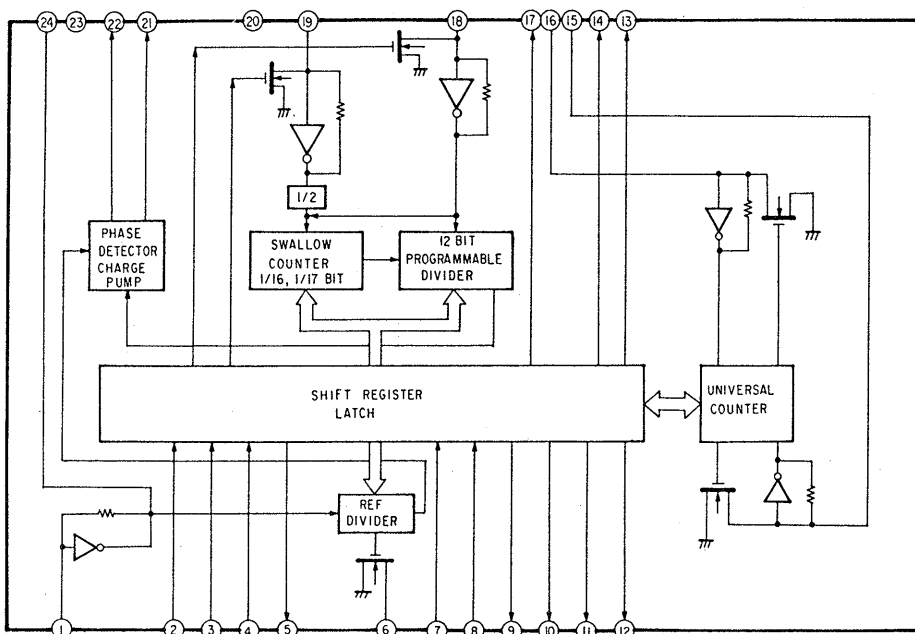
IC401 LA3401



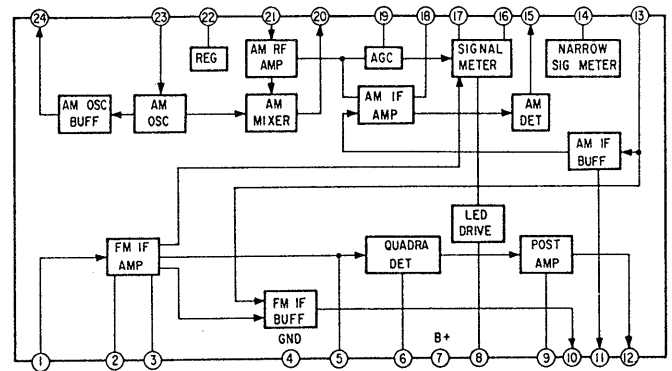
IC501 LA5667



IC601 LC7218



IC301 LA1266



IC901 LA1235

