

ST-D505/D705

SERVICE MANUAL

*AEP Model
UK Model*





Photo: ST-D505

SPECIFICATIONS

Tuner	
System	FM stereo FM/AM superheterodyne tuner
FM tuner section	
Tuning range	87.5 to 108 MHz
Antenna	75 ohms unbalanced
Intermediate frequency	10.7 MHz
SW1, SW2, MW/LW tuner section	
Tuning range	MW: 522 to 1,611 kHz (Italian model) 531 to 1,602 kHz (AEP, UK, Germany models) LW: 144 to 288 kHz (Italian model) 153 to 279 kHz (AEP, UK, Germany models)
Antenna	AM loop antenna External antenna terminal
Intermediate frequency	450 kHz
Power requirements	240 V AC, 50 Hz (UK model) 220 V AC, 50 Hz (AEP, Germany, Italian models)
Power consumption	10 W
AC outlet	2 switched, total 450 W max.
Weight	Approx. 2.6 kg (5 lbs 12 oz)
Dimensions	Approx. 355 X 95 X 320 mm (w/h/d, including projections) (14 X 3 3/4 X 12 5/8 inches)

SAFETY-RELATED COMPONENT WARNING!!

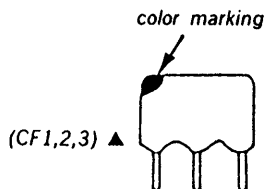
COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

FM STEREO/FM-AM TUNER
SONY[®]

SECTION 1 SERVICING NOTES

Note on Ceramic Filter (CF1,2,3) ▲ Replacement.

This set employs three ceramic filters (CF1,2,3) ▲ which should have the same color marking to identify their center frequency. Therefore FM IF offset adjustment by * D609, * D610 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)	* D609	* D610	
White	10.750	○	×	10.750
Red	10.700	×	×	10.700
Black	10.650	×	○	10.650

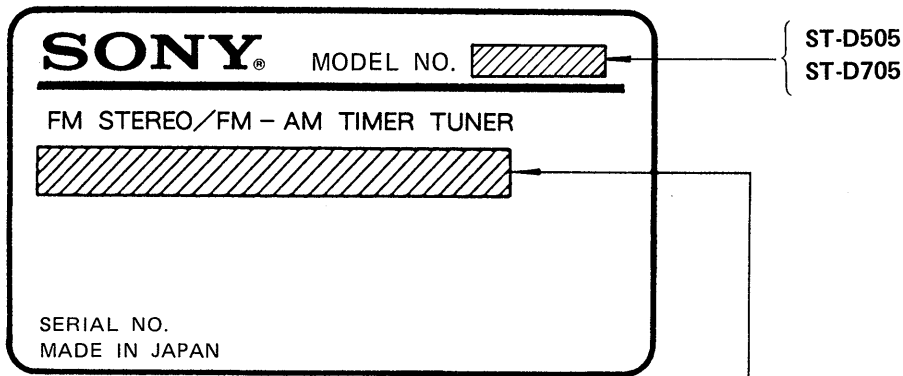
FM intermediate frequency is determined by the three types as shown above, Ceramic filters of same center frequency, i.e., of same color coding should be used for CF1, CF2, and CF3.

When replacing the ceramic filters, perform the FM Discriminator Adjustment.

▲ : AEP, UK Model : CF1, 2
Germany, IT Model: CF1, 2, 3

MODEL IDENTIFICATION

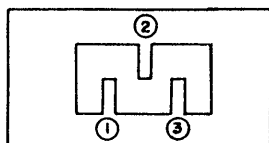
– Specification Label –



AEP, Germany, Italian Model: AC: 220V – 230V ~50/60Hz
UK Model: AC: 240V ~ 50/60Hz

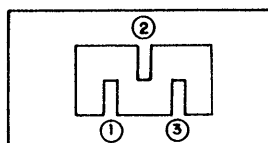
Signal of System Control Connector

CNJ901
SYSTEM CONTROL 1



1	L-CH OUT
2	GND
3	R-CH OUT

CNJ701
SYSTEM CONTROL 2

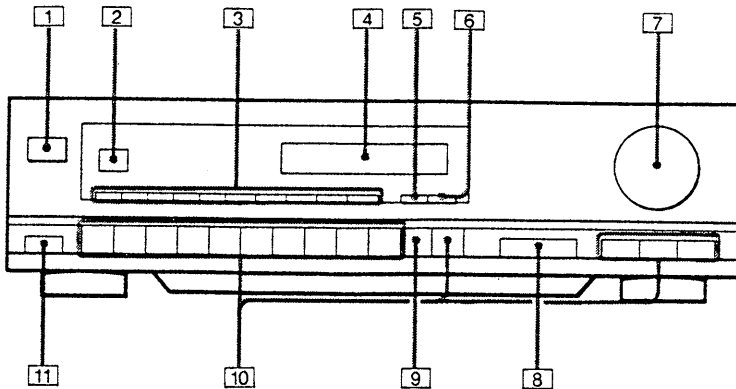


1	AUB
2	GND
3	

SECTION 2 GENERAL

This section is extracted from instruction manual.

LOCATION OF CONTROLS



Refer to the pages indicated in ● for details.

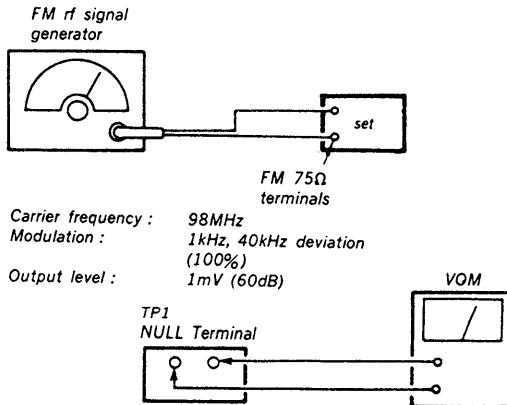
- 1 SYSTEM POWER switch 10
- 2 Remote sensor
- 3 Buttons for setting the clock and timer 54
- 4 Display window
- 5 STEREO/MUTE button 14
- 6 FREQUENCY/TIME button 50
- 7 TUNING control 15
- 8 BAND selector 14
- 9 MEMORY SCAN button 16
- 10 Buttons for storing station frequencies 17
- 11 SLEEP button 53

SECTION 3 ELECTRICAL ADJUSTMENTS

FM SECTION

FM DISCRIMINATOR ADJUSTMENT

Setting:

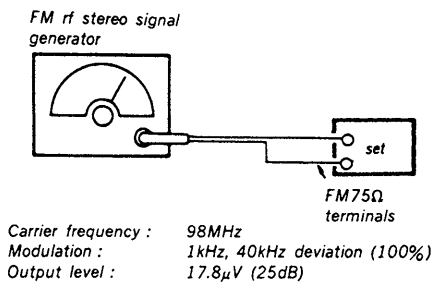


Procedure :

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 :

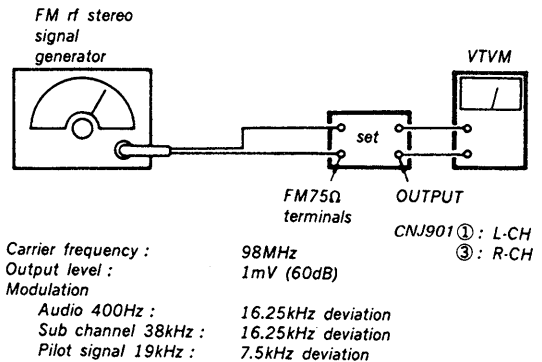


Procedure :

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

FM STEREO SEPARATION ADJUSTMENT

Procedure :



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 : Ⓒ-Ⓓ

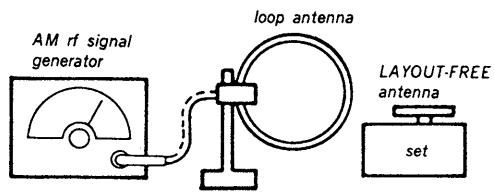
The separations of both channels should be equal.

MW/LW SECTION

AM TUNING LEVEL ADJUSTMENT

BAND select switch : LW

Setting :



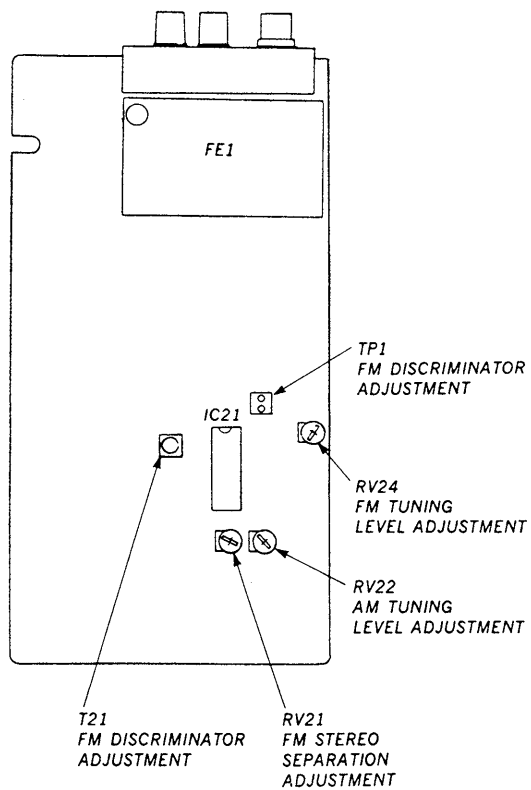
Carrier frequency : 216kHz
Modulation : 400Hz, 30% modulation

Procedure :

1. Set loop antenna so that the LAYOUT-FREE antenna input level becomes 2.5mV/m (68dB).
2. Tune the set to 216kHz.
3. Adjust the RV22 so that the TUNED LED goes on.

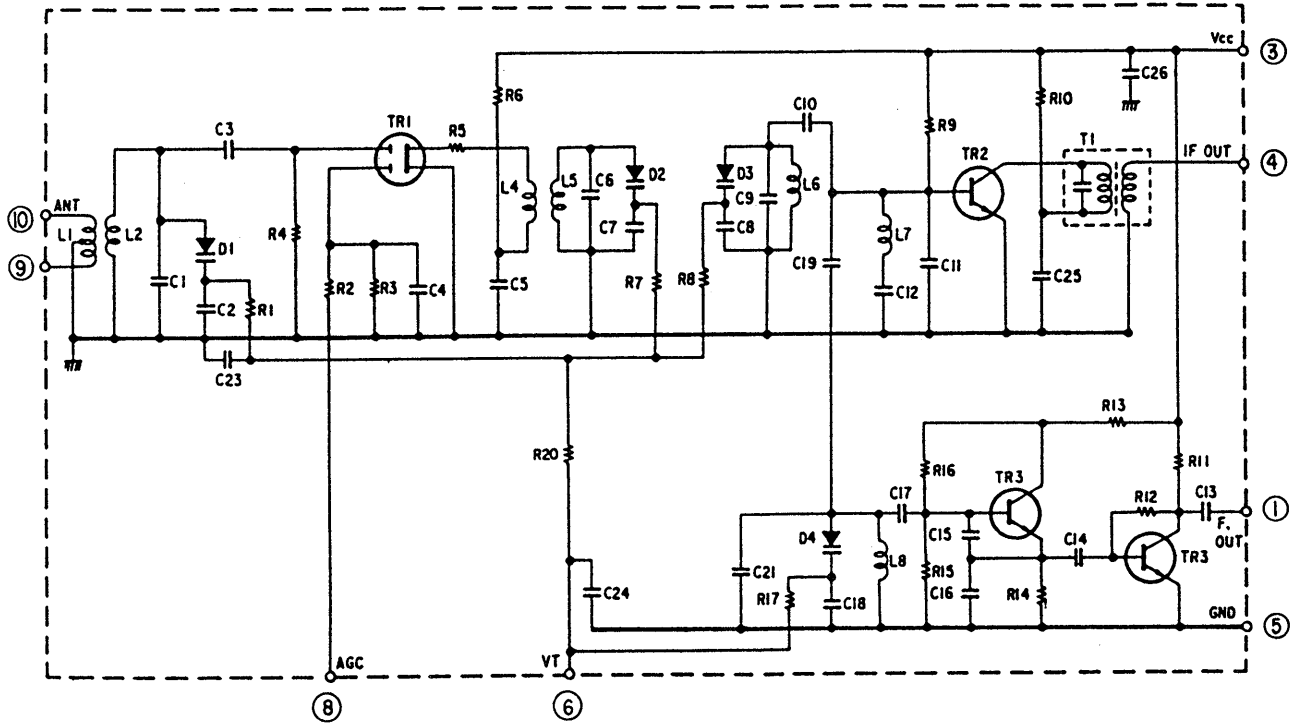
Adjustment Location :

—tuner board—

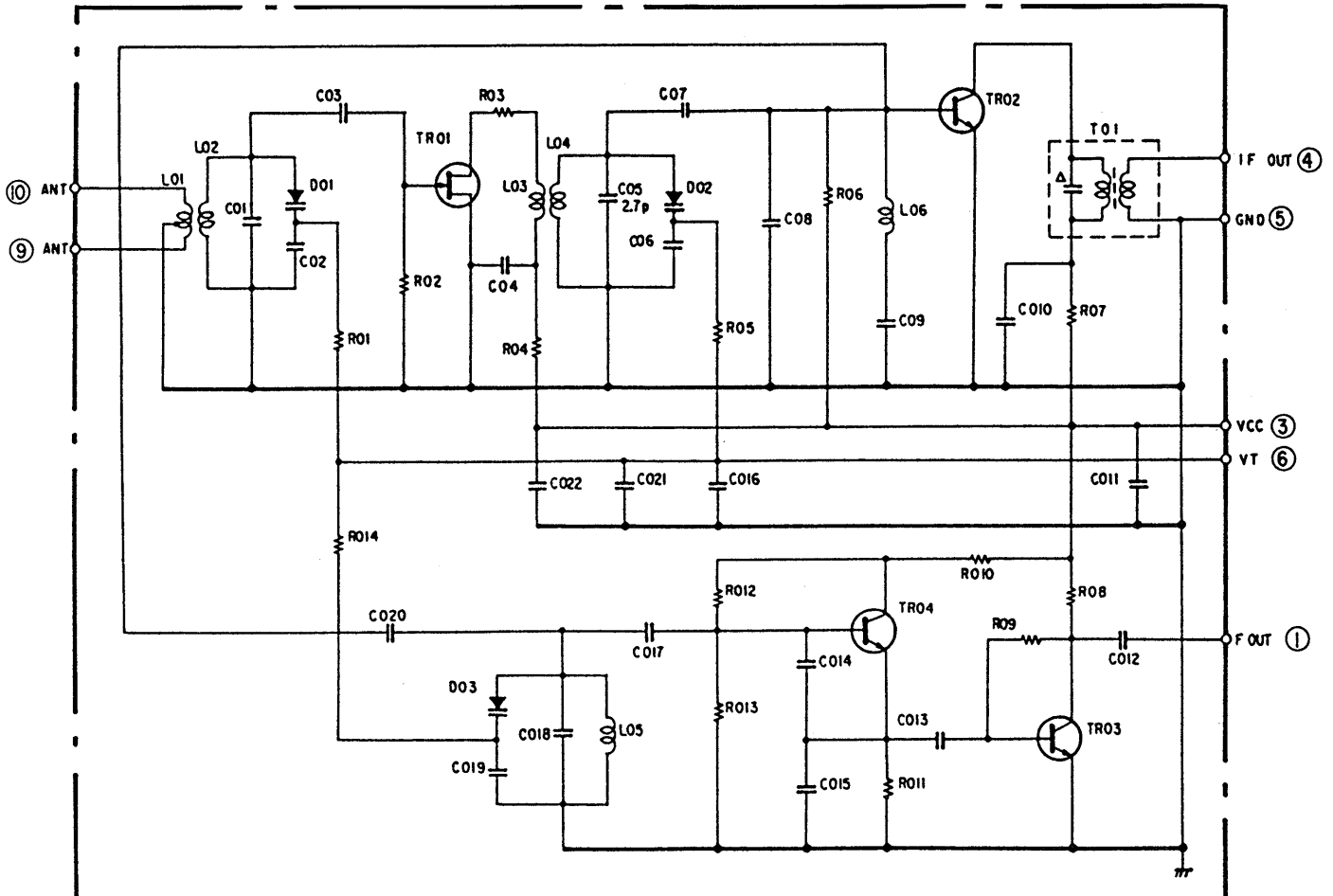


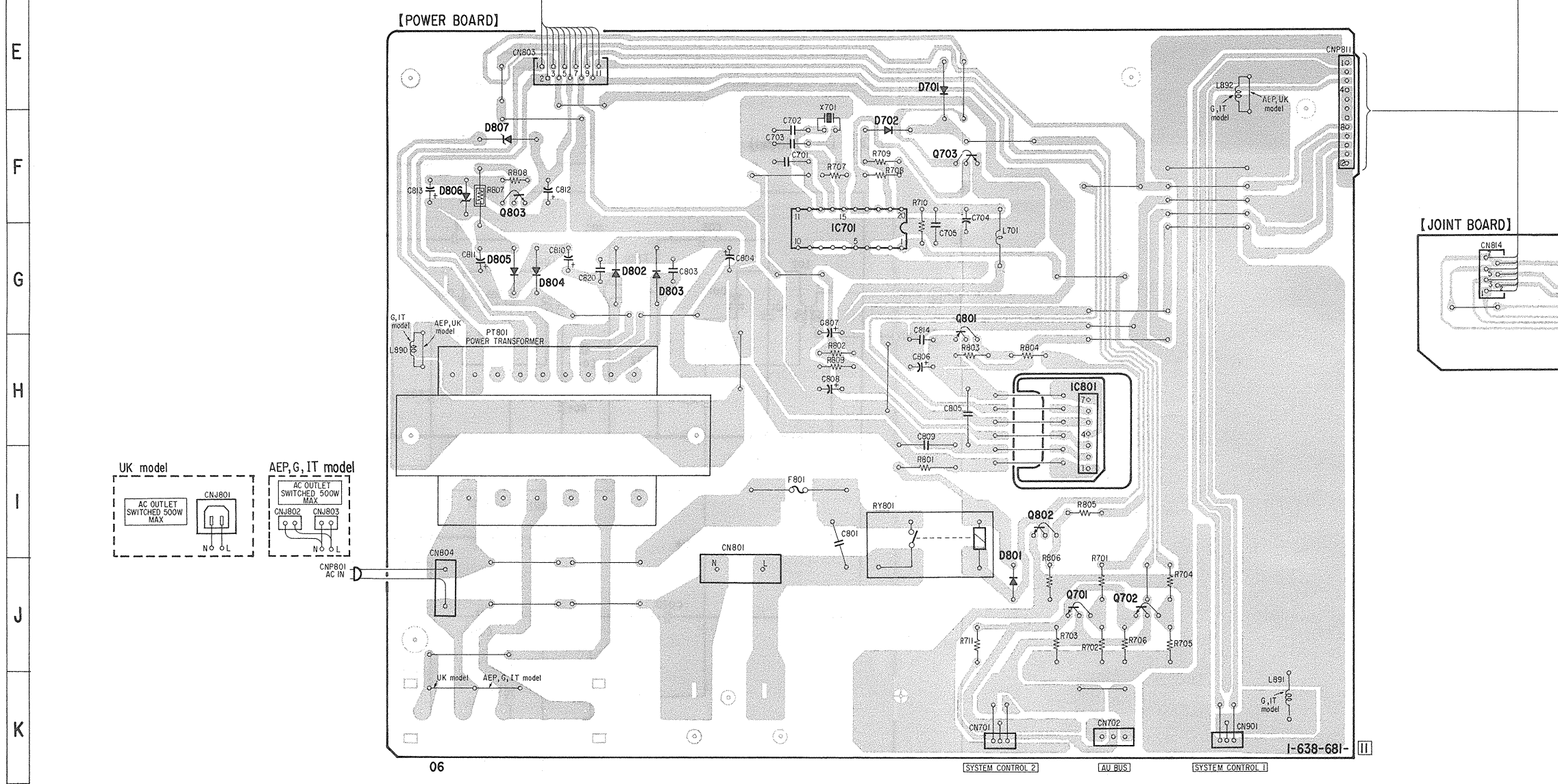
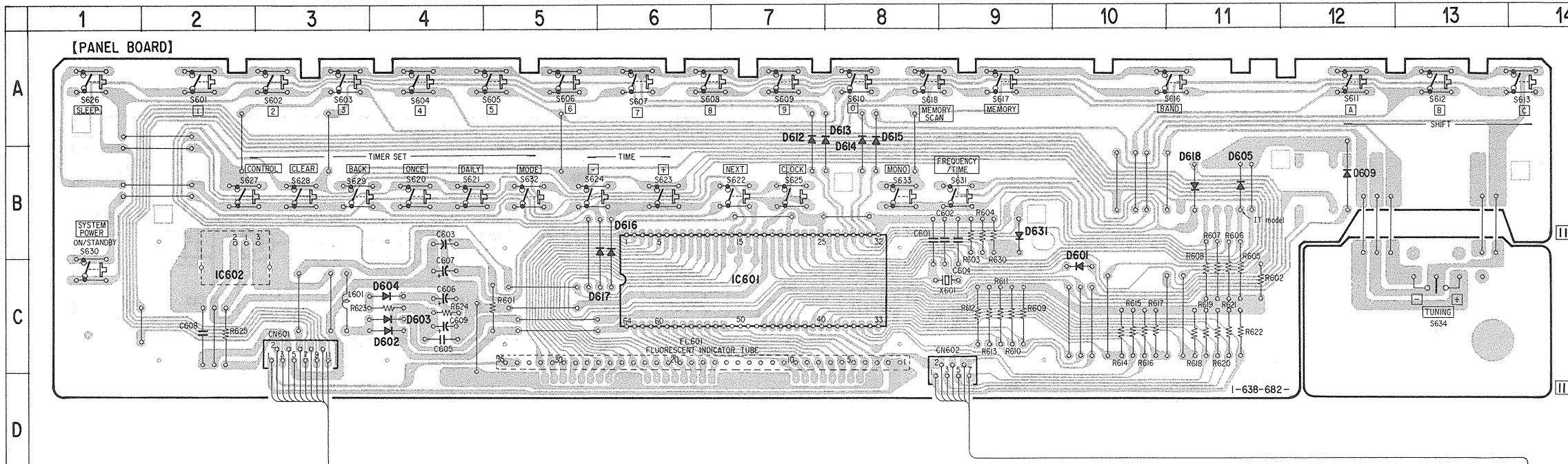
SECTION 4 DIAGRAMS

4-1. FM FRONT-END (FE1) SCHEMATIC DIAGRAMS
(Germany, Italian Model)



(AEP, UK Model)





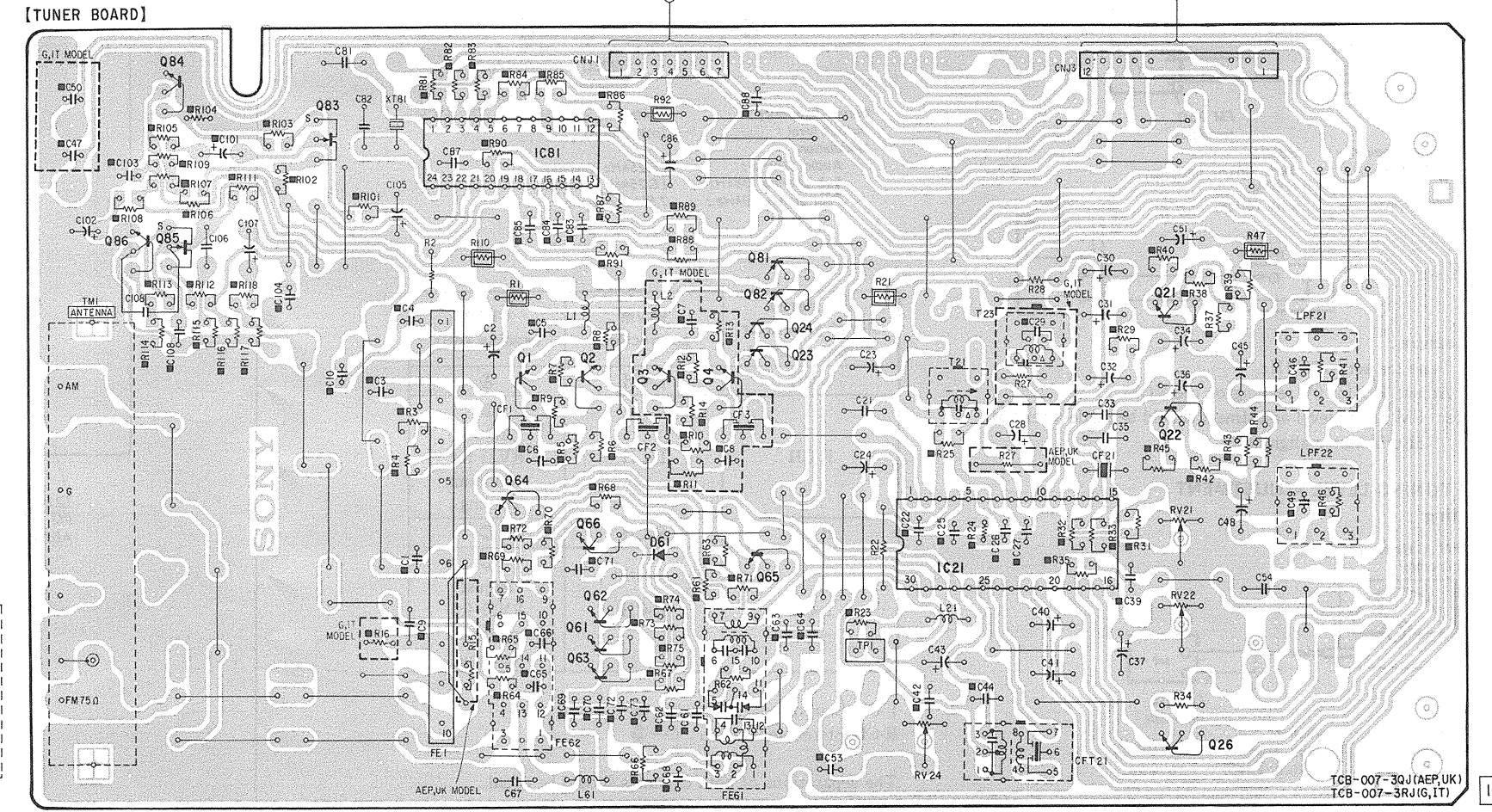
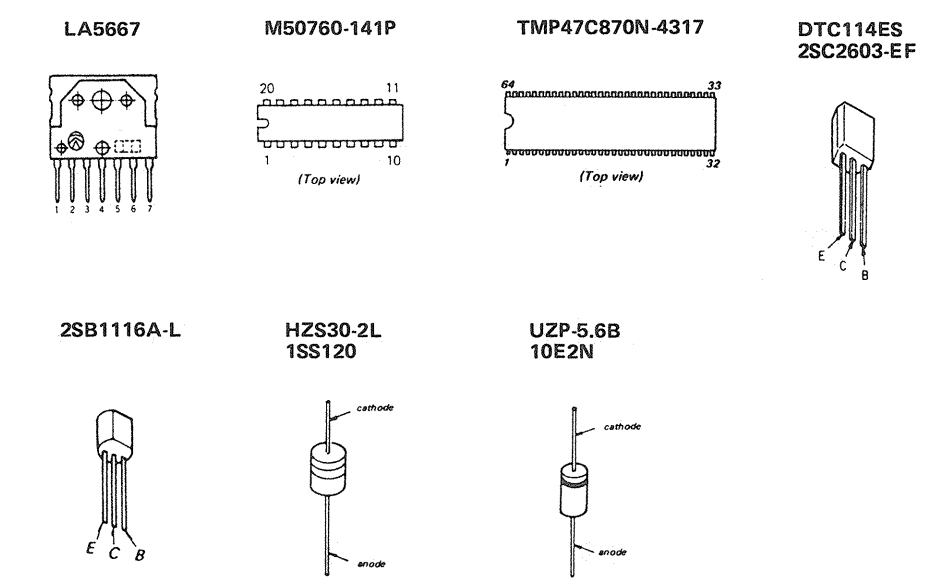
● Semiconductor Location

PANEL and POWER BOARD				TUNER BOARD			
Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D601	C-10	D803	G-6	D61	J-20	Q26	K-24
D602	C-4	D804	G-5	IC21	J-21	Q61	J-20
D603	C-4	D805	G-5	IC81	G-20	Q62	J-20
D604	C-4	D806	F-4			Q63	J-20
D605	B-11	D807	F-5			Q64	I-19
D609	B-12			Q1	H-20	Q65	J-21
D612	A-7	IC601	C-7	Q2	H-20	Q66	J-20
D613	A-7	IC602	C-2	Q3	H-20	Q81	H-21
D614	B-8	IC701	G-8	Q4	H-21	Q82	H-21
D615	A-8	IC801	H-10	Q21	H-24	Q83	G-18
D616	B-6			Q22	I-24	Q84	F-17
D617	C-5	Q701	J-10	Q23	H-21	Q85	G-17
D618	B-11	Q702	J-10	Q24	H-21	Q86	G-17
D631	B-9	Q703	F-9				
D701	E-9	Q801	G-9				
D702	F-8	Q802	I-9				
D801	J-9	Q803	F-5				
D802	G-6						

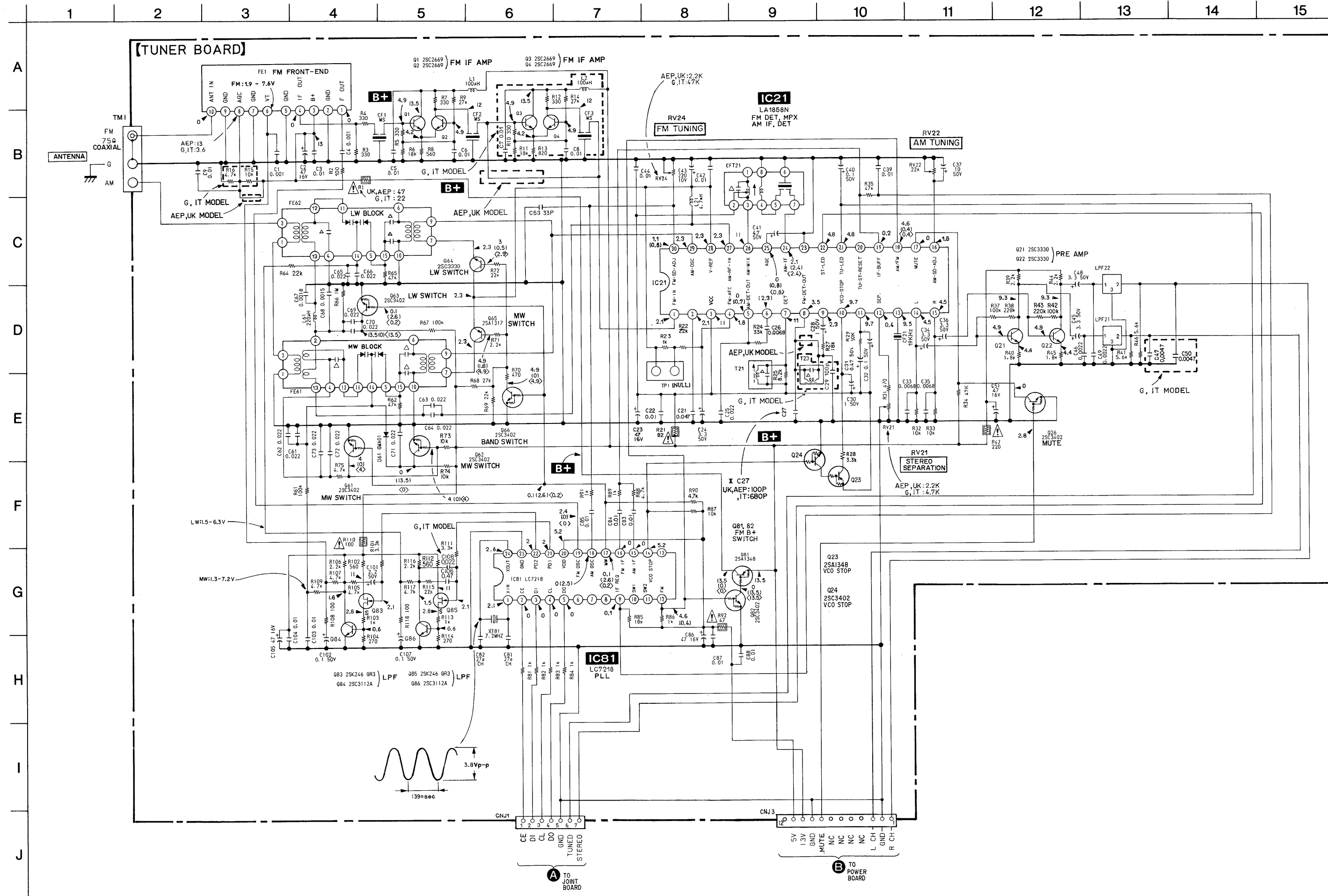
● Note on Printed Wiring Board:

- : parts extracted from the component side.
- : parts mounted on the conductor side.
- : indicates side identified with part number.
- G: Germany model
- IT: Italian model

4-3. SEMICONDUCTOR LEAD LAYOUTS

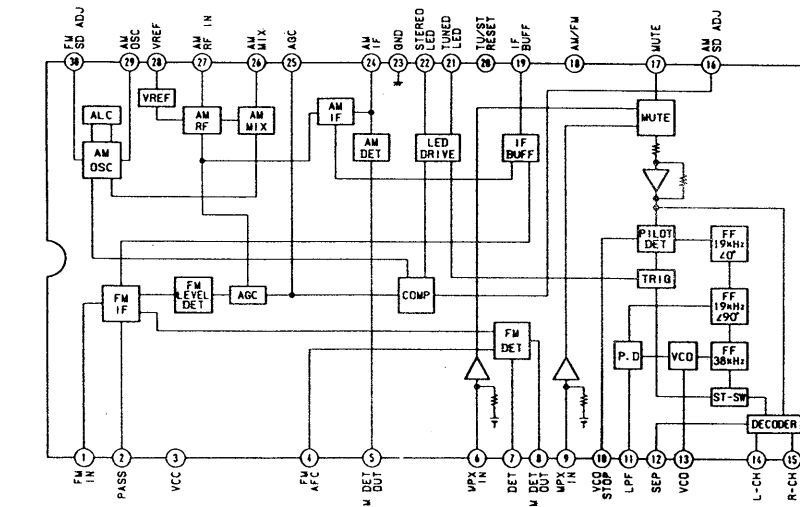


4.4. SCHEMATIC DIAGRAM - TUNER SECTION - See page 11 for note.

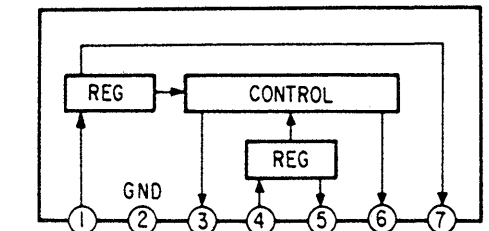


4.5. IC BLOCK DIAGRAMS

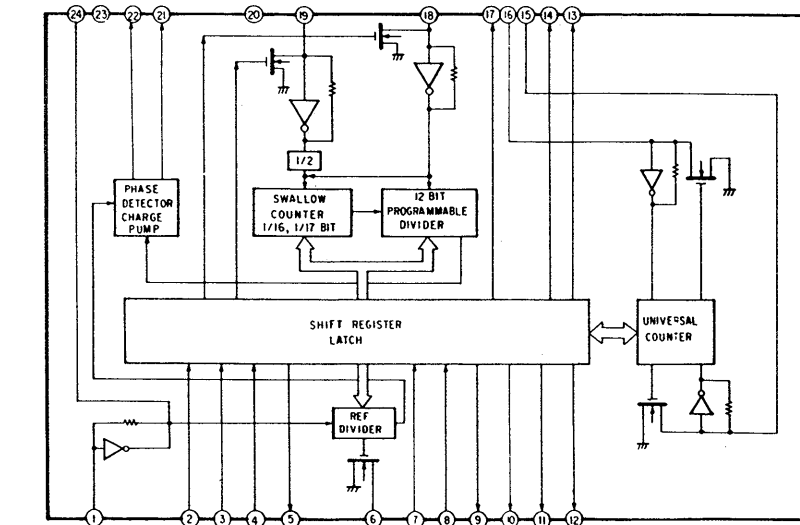
IC21 LA1851N



IC801 LA5667

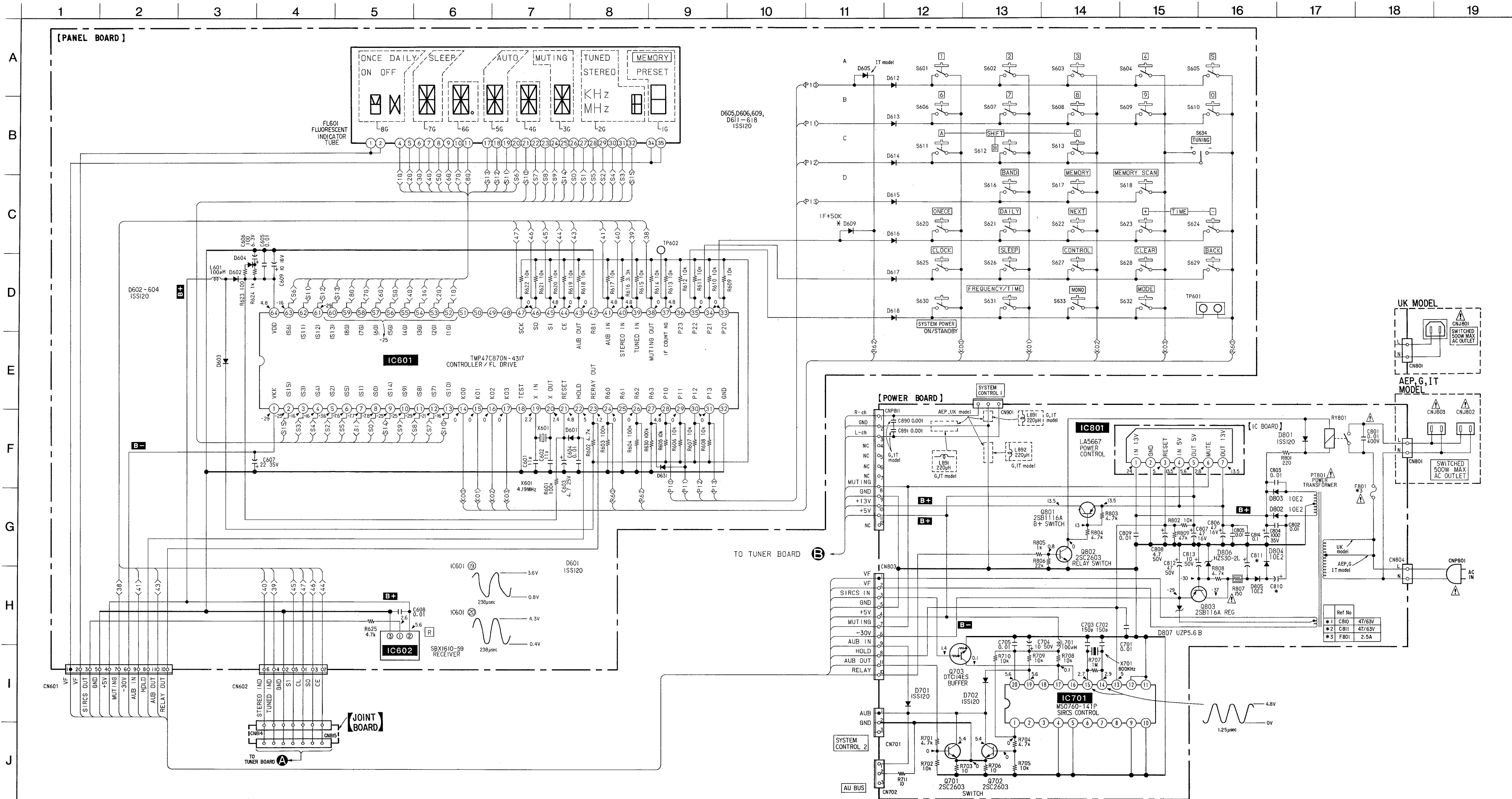


IC81 LC7218



Note on Schematic Diagram:

- *D609, *D610: See page 2 for Note on Ceramic Filter (CF1, 2, 3) Replacement.
- All capacitors are in μF unless otherwise noted. uF: μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △: internal component.
- ◻: nonflammable resistor.
- 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
- < >: LW
- Voltages are taken with a VOM. (Input impedance 10MΩ) Voltage variations may be noted due to normal production tolerances.
- Signal path.
- ◻: FM
- G: Germany model
- IT: Italian model



PANEL**POWER**

SECTION 6 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.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms
METAL: Metal-film resistor
METAL OXIDE: Metal Oxide-film resistor
F: nonflammable

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

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

- G: Germany model
- IT: Italian model

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
	* A-4341-669-A	PANEL BOARD, COMPLETE (AEP)		C806	1-126-022-11	ELECT 47uF 20% 16V	
	* A-4341-673-A	PANEL BOARD, COMPLETE (UK)		C807	1-126-022-11	ELECT 47uF 20% 16V	
	* A-4341-676-A	PANEL BOARD, COMPLETE (G)		C808	1-126-163-11	ELECT 4.7uF 20% 50V	
	* A-4341-677-A	PANEL BOARD, COMPLETE (IT)		C809	1-164-096-11	CERAMIC 0.01uF 50V	
	* A-4341-668-A	POWER BOARD, COMPLETE (AEP)		C810	1-124-918-11	ELECT 47uF 20% 63V	
	* A-4341-670-A	POWER BOARD, COMPLETE (UK)		C811	1-124-918-11	ELECT 47uF 20% 63V	
	* A-4341-675-A	POWER BOARD, COMPLETE (G, IT)		C812	1-124-910-11	ELECT 47uF 20% 50V	
		*****		C813	1-126-059-11	ELECT 10uF 20% 50V	
	* 1-573-068-11	CONNECTOR, BOARD TO BOARD 12P		C814	1-136-165-00	FILM 0.1uF 5% 50V	
	* 4-921-941-31	CUSHION (FL)		C890	1-162-294-31	CERAMIC 0.001uF (G, IT)	
	* 4-923-103-01	HOLDER, FL TUBE		C891	1-162-294-31	CERAMIC 0.001uF (G, IT)	
		< CAPACITOR >				< CONNECTOR >	
C601	1-162-200-31	CERAMIC 11PF 5% 50V		CN601	* 1-568-830-11	SOCKET, CONNECTOR 11P	
C602	1-162-200-31	CERAMIC 11PF 5% 50V		CN602	* 1-568-826-11	SOCKET, CONNECTOR 7P	
C603	1-126-163-11	ELECT 4.7uF 20% 50V		CN701	* 1-569-625-11	SOCKET, CONNECTOR 3P (SYSTEM CONTROL 2)	
C604	1-161-379-00	CERAMIC 0.01uF 20% 25V		CN702	* 1-565-561-11	PIN, CONNECTOR 3P (AU BUS) (EXCEPT UK)	
C605	1-161-379-00	CERAMIC 0.01uF 20% 25V		CN702	* 1-568-545-11	SOCKET, CONNECTOR (PC BOARD) 3P (AU BUS) (UK)	
C606	1-126-177-11	ELECT 100uF 20% 10V		CN801	1-535-139-00	BASE POST 22MM (10MM PITCH) 2P	
C607	1-123-357-00	ELECT 22uF 20% 35V		CN803	* 1-568-830-11	SOCKET, CONNECTOR 11P	
C608	1-161-379-00	CERAMIC 0.01uF 20% 25V		CN804	* 1-564-321-00	PIN, CONNECTOR 2P	
C609	1-126-157-11	ELECT 10uF 20% 16V		CN814	* 1-568-826-11	SOCKET, CONNECTOR 7P	
C701	1-164-096-11	CERAMIC 0.01uF 50V		CN815	* 1-565-346-11	SOCKET, CONNECTOR (PC BOARD) 7P	
C702	1-162-284-31	CERAMIC 150PF 10% 50V		CN901	* 1-569-625-41	SOCKET, CONNECTOR 3P (SYSTEM CONTROL 1)	
C703	1-162-284-31	CERAMIC 150PF 10% 50V					
C704	1-126-059-11	ELECT 10uF 20% 50V					
C705	1-164-096-11	CERAMIC 0.01uF 50V					
C801	1-161-744-00	CERAMIC 0.01uF 400V					
C802	1-101-004-00	CERAMIC 0.01uF 50V					
C803	1-101-004-00	CERAMIC 0.01uF 50V					
C804	1-126-105-11	ELECT 1000uF 20% 35V					
C805	1-161-379-00	CERAMIC 0.01uF 20% 25V					

PANEL

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Ref. No.	Part No.	Description	Remark
< DIODE >			
D601	8-719-912-20	DIODE 1SS120	
D602	8-719-912-20	DIODE 1SS120	
D603	8-719-912-20	DIODE 1SS120	
D604	8-719-912-20	DIODE 1SS120	
D605	8-719-912-20	DIODE 1SS120 (IT)	
D609	8-719-912-20	DIODE 1SS120	
D612	8-719-912-20	DIODE 1SS120	
D613	8-719-912-20	DIODE 1SS120	
D614	8-719-912-20	DIODE 1SS120	
D615	8-719-912-20	DIODE 1SS120	
D616	8-719-912-20	DIODE 1SS120	
D617	8-719-912-20	DIODE 1SS120	
D618	8-719-912-20	DIODE 1SS120	
D631	8-719-912-20	DIODE 1SS120	
D701	8-719-912-20	DIODE 1SS120	
D702	8-719-912-20	DIODE 1SS120	
D801	8-719-912-20	DIODE 1SS120	
D802	8-719-200-77	DIODE 10E2N	
D803	8-719-200-77	DIODE 10E2N	
D804	8-719-200-77	DIODE 10E2N	
D805	8-719-200-77	DIODE 10E2N	
D806	8-719-934-22	DIODE HZS30-2L	
D807	8-719-014-66	DIODE UZP-5.6B	
< HOLDER >			
FH801	* 1-533-213-31	HOLDER, FUSE	
FH802	* 1-533-213-31	HOLDER, FUSE	
< INDICATOR TUBE >			
FL601	1-519-595-21	INDICATOR TUBE, FLUORESCENT	
< IC >			
IC601	8-759-246-20	IC TMP47C870N-4317	
IC602	8-741-100-48	IC SBX1610-59	
IC701	8-759-634-73	IC M50760-141P	
IC801	8-759-820-09	IC LA5667	
< COIL >			
L601	1-410-521-11	INDUCTOR 100uH	
L701	1-410-521-11	INDUCTOR 100uH	
L890	1-410-525-11	INDUCTOR 220uH (G, IT)	
L891	1-410-525-11	INDUCTOR 220uH (G, IT)	
L892	1-410-525-11	INDUCTOR 220uH (G, IT)	
< TRANSFORMER >			
PT801	▲ 1-449-979-11	TRANSFORMER, POWER	

Ref. No.	Part No.	Description	Remark
< TRANSISTOR >			
Q701	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q702	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q703	8-729-900-80	TRANSISTOR DTC114ES	
Q801	8-729-140-04	TRANSISTOR 2SB1116A-LK	
Q802	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q803	8-729-140-04	TRANSISTOR 2SB1116A-LK	
< RESISTOR >			
R601	1-249-441-11	CARBON 100K 5% 1/4W	
R602	1-249-425-11	CARBON 4.7K 5% 1/4W	
R603	1-249-441-11	CARBON 100K 5% 1/4W	
R604	1-249-441-11	CARBON 100K 5% 1/4W	
R605	1-249-429-11	CARBON 10K 5% 1/4W	
R606	1-249-429-11	CARBON 10K 5% 1/4W	
R607	1-249-429-11	CARBON 10K 5% 1/4W	
R608	1-249-429-11	CARBON 10K 5% 1/4W	
R609	1-249-429-11	CARBON 10K 5% 1/4W	
R610	1-249-429-11	CARBON 10K 5% 1/4W	
R611	1-249-429-11	CARBON 10K 5% 1/4W	
R612	1-249-429-11	CARBON 10K 5% 1/4W	
R613	1-249-429-11	CARBON 10K 5% 1/4W	
R614	1-249-429-11	CARBON 10K 5% 1/4W	
R615	1-249-429-11	CARBON 10K 5% 1/4W	
R616	1-249-423-11	CARBON 3.3K 5% 1/4W	
R617	1-249-429-11	CARBON 10K 5% 1/4W	
R618	1-249-429-11	CARBON 10K 5% 1/4W	
R619	1-249-429-11	CARBON 10K 5% 1/4W	
R620	1-249-429-11	CARBON 10K 5% 1/4W	
R621	1-249-429-11	CARBON 10K 5% 1/4W	
R622	1-249-429-11	CARBON 10K 5% 1/4W	
R623	1-249-405-11	CARBON 100 5% 1/4W	
R624	1-249-417-11	CARBON 1K 5% 1/4W	
R625	1-249-425-11	CARBON 4.7K 5% 1/4W	
R701	1-249-425-11	CARBON 4.7K 5% 1/4W	
R702	1-249-429-11	CARBON 10K 5% 1/4W	
R703	1-249-393-11	CARBON 10 5% 1/4W	
R704	1-249-425-11	CARBON 4.7K 5% 1/4W	
R705	1-249-429-11	CARBON 10K 5% 1/4W	
R706	1-249-393-11	CARBON 10 5% 1/4W	
R707	1-247-903-00	CARBON 1M 5% 1/4W	
R708	1-249-429-11	CARBON 10K 5% 1/4W	
R709	1-249-429-11	CARBON 10K 5% 1/4W	
R710	1-249-429-11	CARBON 10K 5% 1/4W	
R711	1-249-393-11	CARBON 10 5% 1/4W	
R801	1-247-743-11	CARBON 220 5% 1/2W	
R802	1-249-429-11	CARBON 10K 5% 1/4W	
R803	1-249-425-11	CARBON 4.7K 5% 1/4W	
R804	1-249-425-11	CARBON 4.7K 5% 1/4W	

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

PANEL

POWER

Ref. No.	Part No.	Description	Remark
R805	1-249-417-11	CARBON 1K	5% 1/4W
R806	1-249-433-11	CARBON 22K	5% 1/4W
R807	Δ 1-247-702-11	CARBON 150	5% 1/4W
R808	1-249-425-11	CARBON 4.7K	5% 1/4W
R809	1-249-437-11	CARBON 47K	5% 1/4W
RY801	1-515-617-11	RELAY	
		< SWITCH >	
S601	1-554-303-21	SWITCH, TACTILE (1)	
S602	1-554-303-21	SWITCH, TACTILE (2)	
S603	1-554-303-21	SWITCH, TACTILE (3)	
S604	1-554-303-21	SWITCH, TACTILE (4)	
S605	1-554-303-21	SWITCH, TACTILE (5)	
S606	1-554-303-21	SWITCH, TACTILE (6)	
S607	1-554-303-21	SWITCH, TACTILE (7)	
S608	1-554-303-21	SWITCH, TACTILE (8)	
S609	1-554-303-21	SWITCH, TACTILE (9)	
S610	1-554-303-21	SWITCH, TACTILE (0)	
S611	1-554-303-21	SWITCH, TACTILE (SHIFT A)	
S612	1-554-303-21	SWITCH, TACTILE (SHIFT B)	
S613	1-554-303-21	SWITCH, TACTILE (SHIFT C)	
S616	1-554-303-21	SWITCH, TACTILE (BAND)	
S617	1-554-303-21	SWITCH, TACTILE (MEMORY)	

Ref. No.	Part No.	Description	Remark
S618	1-554-303-21	SWITCH, TACTILE (MEMORY SCAN)	
S620	1-554-303-21	SWITCH, TACTILE (ONCE)	
S621	1-554-303-21	SWITCH, TACTILE (DAILY)	
S622	1-554-303-21	SWITCH, TACTILE (NEXT)	
S623	1-554-303-21	SWITCH, TACTILE (TIME +)	
S624	1-554-303-21	SWITCH, TACTILE (TIME -)	
S625	1-554-303-21	SWITCH, TACTILE (CLOCK)	
S626	1-554-303-21	SWITCH, TACTILE (SLEEP)	
S627	1-554-303-21	SWITCH, TACTILE (CONTROL)	
S628	1-554-303-21	SWITCH, TACTILE (CLEAR)	
S629	1-554-303-21	SWITCH, TACTILE (BACK)	
S630	1-554-303-21	SWITCH, TACTILE (SYSTEM POWER)	
S631	1-554-303-21	SWITCH, TACTILE (FREQUENCY/TIME)	
S632	1-554-303-21	SWITCH, TACTILE (MODE)	
S633	1-554-303-21	SWITCH, TACTILE (MONO)	
S634	1-571-955-11	SWITCH, ROTARY (TUNING)	
		< CRYSTAL >	
X601	1-567-821-21	VIBRATOR, CRYSTAL (4.19MHz)	
X701	1-578-699-11	OSCILLATOR, CERAMIC (800KHz)	

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

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 MF.

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.

- G: Germany model
- IT: Italian model

TUNER SECTION

Ref.No.	Part No.	Description	Ref.No.	Part No.	Description
C1	1-162-294-31	CERAMIC CHIP 0.001MF 20% 25V	C67	1-102-120-00	CERAMIC 0.0018MF 10% 50V
C2	1-126-101-11	ELECT 100MF 20% 16V	C68	1-163-111-11	CERAMIC CHIP 0.0015MF 20% 25V
C3	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V	C69	1-163-063-00	CERAMIC MELF 0.022MF 25V
C4	1-162-294-31	CERAMIC CHIP 0.001MF 20% 25V	C70	1-163-063-00	CERAMIC MELF 0.022MF 25V
C5	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V	C71	1-163-063-00	CERAMIC MELF 0.022MF 25V
C6	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V	C72	1-163-063-00	CERAMIC MELF 0.022MF 25V
C7	1-163-059-00	(G,IT)....CERAMIC MELF 0.01MF 20% 16V	C73	1-163-063-00	CERAMIC MELF 0.022MF 25V
C8	1-163-059-00	(G,IT)....CERAMIC MELF 0.01MF 20% 16V	C81	1-102-961-00	CERAMIC 27PF 5% 50V
C9	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V	C82	1-102-961-00	CERAMIC 27PF 5% 50V
C11	1-101-005-00	(G,IT)....CERAMIC 0.022MF 50V	C83	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V
C21	1-101-006-00	CERAMIC 0.047MF 50V	C84	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V
C22	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V	C85	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V
C23	1-124-477-11	ELECT 47MF 20% 16V	C86	1-124-477-11	ELECT 47MF 20% 16V
C24	1-123-382-00	ELECT 3.3MF 20% 50V	C87	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V
C25	1-163-063-00	CERAMIC MELF 0.022MF 25V	C88	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V
C26	1-163-019-00	CERAMIC CHIP 0.0068 20% 12V	C101	1-124-925-11	ELECT 2.2MF 20% 50V
C27	1-162-516-11	(AEP,UK)..CERAMIC CHIP 100PF 10% 50V	C102	1-124-463-00	ELECT 0.1MF 20% 50V
C27	1-163-007-11	(G,IT)....CERAMIC CHIP 680PF 20% 50V	C103	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V
C28	1-124-791-11	ELECT 1.0MF 20% 50V	C104	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V
C29	1-162-516-11	(G,IT)....CERAMIC CHIP 100PF 10% 50V	C105	1-124-477-11	ELECT 47MF 20% 16V
C30	1-124-791-11	ELECT 1.0MF 20% 50V	C106	1-136-173-00	MYLAR 0.47MF 5% 50V
C31	1-124-902-00	ELECT 0.47MF 20% 50V	C107	1-124-463-00	ELECT 0.1MF 20% 50V
C32	1-124-463-00	ELECT 0.1MF 20% 50V	C108	1-163-063-00	(G,IT)....CERAMIC MELF 0.022MF 25V
C33	1-130-481-00	FILM 0.0068MF 5% 50V	CF1	1-567-389-11	FILTER, CERAMIC
C34	1-123-382-00	ELECT 3.3MF 20% 50V	CF2	1-567-389-11	FILTER, CERAMIC
C35	1-130-481-00	FILM 0.0068MF 5% 50V	CF3	1-567-389-11	(G,IT)....FILTER, CERAMIC
C36	1-123-382-00	ELECT 3.3MF 20% 50V	CF21	1-577-075-11	OSCILLATOR, CERAMIC (19kHz)
C37	1-123-875-11	ELECT 10MF 20% 50V	CFT21	1-404-853-11	TRANSFORMER, IF (CERAMIC FILTER)
C39	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V	CNJ1	*1-565-343-11	PIN, CONNECTOR 7P
C40	1-124-463-00	ELECT 0.1MF 20% 50V	CNJ3	*1-573-067-11	CONNECTOR, BOARD TO BOARD 8P
C41	1-124-927-11	ELECT 4.7MF 20% 50V	D61	8-719-912-20	DIODE 1SS120
C42	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V	FE1	1-463-857-11	(G,IT)....FRONT END (FM)
C43	1-126-176-11	ELECT 220MF 20% 10V	FE1	1-463-862-21	(AEP,UK)...FRONT END (FM)
C44	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V	FE61	1-236-462-11	ENCAPSULATED COMPONENT (MW RF BLOCK)
C45	1-123-382-00	ELECT 3.3MF 20% 50V	FE62	1-236-463-11	ENCAPSULATED COMPONENT (LW RF BLOCK)
C46	1-161-375-00	CERAMIC CHIP 0.0022MF 20% 25V	IC21	8-759-821-45	IC LA1851N
C47	1-163-170-00	(G,IT)....CERAMIC CHIP 0.0047MF 20% 25V	IC81	8-759-820-91	IC LC7218
C48	1-123-382-00	ELECT 3.3MF 20% 50V	L1	1-410-645-31	MICRO INDUCTOR 100UH
C49	1-161-375-00	CERAMIC CHIP 0.0022MF 20% 25V	L2	1-410-645-31	(G,IT)...MICRO INDUCTOR 100UH
C50	1-163-170-00	(G,IT)....CERAMIC CHIP 0.0047MF 20% 25V	L21	1-407-500-00	MICRO INDUCTOR 4.7UH
C51	1-124-477-11	ELECT 47MF 20% 16V	L61	1-410-525-11	MICRO INDUCTOR 220UH
C53	1-163-105-00	CERAMIC CHIP 33PF 5% 50V	LPF21	1-235-164-00	FILTER, LOW PASS
C54	1-101-005-00	(G,IT)....CERAMIC 0.022MF 50V	LPF22	1-235-164-00	FILTER, LOW PASS
C61	1-163-063-00	CERAMIC MELF 0.022MF 25V			
C62	1-163-063-00	CERAMIC MELF 0.022MF 25V			
C63	1-163-063-00	CERAMIC MELF 0.022MF 25V			
C64	1-163-063-00	CERAMIC MELF 0.022MF 25V			
C65	1-163-063-00	CERAMIC MELF 0.022MF 25V			
C66	1-163-063-00	CERAMIC MELF 0.022MF 25V			

TUNER SECTION

Ref.No.	Part No.	Description	Ref.No.	Part No.	Description
Q1	8-729-230-99	TRANSISTOR 2SC2669-0Y	R45	1-249-338-11	CARBON MELF 1.8K 5% 1/8W
Q2	8-729-230-99	TRANSISTOR 2SC2669-0Y	R46	1-249-344-11	CARBON MELF 5.6K 5% 1/8W
Q3	8-729-230-99	(G,IT)....TRANSISTOR 2SC2669-0Y	R47	△.1-249-409-11	CARBON (SMALL)220 5% 1/4W F
Q4	8-729-230-99	(G,IT)....TRANSISTOR 2SC2669-0Y	R61	1-249-359-11	CARBON MELF 100K 5% 1/8W
Q21	8-729-119-78	TRANSISTOR 2SC2785-HFE	R62	1-249-355-11	CARBON MELF 47K 5% 1/8W
Q22	8-729-119-78	TRANSISTOR 2SC2785-HFE	R64	1-249-351-11	CARBON MELF 22K 5% 1/8W
Q23	8-729-900-61	TRANSISTOR DTA114ES	R65	1-249-355-11	CARBON MELF 47K 5% 1/8W
Q24	8-729-900-80	TRANSISTOR DTC114ES	R66	1-215-493-00	CARBON MELF 1M 5% 1/5W
Q26	8-729-900-80	TRANSISTOR DTC114ES	R67	1-249-359-11	CARBON MELF 100K 5% 1/8W
Q61	8-729-900-80	TRANSISTOR DTC114ES	R68	1-249-352-11	CARBON MELF 27K 5% 1/8W
Q62	8-729-900-80	TRANSISTOR DTC114ES	R69	1-249-351-11	CARBON MELF 22K 5% 1/8W
Q63	8-729-900-80	TRANSISTOR DTC114ES	R70	1-249-331-11	CARBON MELF 470 5% 1/8W
Q64	8-729-820-24	TRANSISTOR 2SC3330-T	R71	1-249-339-11	CARBON MELF 2.2K 5% 1/8W
Q65	8-729-821-04	TRANSISTOR 2SA1317-STU	R72	1-249-351-11	CARBON MELF 22K 5% 1/8W
Q66	8-729-900-80	TRANSISTOR DTC114ES	R73	1-249-347-11	CARBON MELF 10K 5% 1/8W
Q81	8-729-900-61	TRANSISTOR DTA114ES	R74	1-249-347-11	CARBON MELF 10K 5% 1/8W
Q82	8-729-900-80	TRANSISTOR DTC114ES	R75	1-249-343-11	CARBON MELF 4.7K 5% 1/8W
Q83	8-729-202-67	TRANSISTOR 2SK246-GR3	R81	1-249-335-11	CARBON MELF 1K 5% 1/8W
Q84	8-729-107-84	TRANSISTOR 2SC3113A	R82	1-249-335-11	CARBON MELF 1K 5% 1/8W
Q85	8-729-202-67	TRANSISTOR 2SK246-GR3	R83	1-249-335-11	CARBON MELF 1K 5% 1/8W
Q86	8-729-107-84	TRANSISTOR 2SC3113A	R84	1-249-335-11	CARBON MELF 1K 5% 1/8W
R1	△.1-249-397-11	(G,IT)....CARBON (SMALL)22 5% 1/4W F	R85	1-249-347-11	CARBON MELF 10K 5% 1/8W
R1	△.1-249-401-11	(AEP,UK)...CARBON (SMALL)47 5% 1/4W F	R86	1-249-335-11	CARBON MELF 1K 5% 1/8W
R3	1-249-329-11	CARBON MELF 330 5% 1/8W	R87	1-249-347-11	CARBON MELF 10K 5% 1/8W
R4	1-249-329-11	CARBON MELF 330 5% 1/8W	R88	1-249-343-11	CARBON MELF 4.7K 5% 1/8W
R5	1-249-329-11	CARBON MELF 330 5% 1/8W	R89	1-249-335-11	CARBON MELF 1K 5% 1/8W
R6	1-249-350-11	CARBON MELF 18K 5% 1/8W	R90	1-249-343-11	CARBON MELF 4.7K 5% 1/8W
R7	1-249-329-11	CARBON MELF 330 5% 1/8W	R91	1-249-335-11	CARBON MELF 1K 5% 1/8W
R8	1-249-332-11	CARBON MELF 560 5% 1/8W	R92	△.1-249-401-11	CARBON (SMALL)47 5% 1/4W F
R9	1-249-352-11	CARBON MELF 27K 5% 1/8W	R101	1-249-341-11	CARBON MELF 3.3K 5% 1/8W
R10	1-249-329-11	(G,IT)....CARBON MELF 330 5% 1/8W	R102	1-249-332-11	CARBON MELF 560 5% 1/8W
R11	1-249-350-11	(G,IT)....CARBON MELF 18K 5% 1/8W	R103	1-249-335-11	CARBON MELF 1K 5% 1/8W
R12	1-249-329-11	(G,IT)....CARBON MELF 330 5% 1/8W	R104	1-249-328-11	CARBON MELF 270 5% 1/8W
R13	1-249-334-11	(G,IT)....CARBON MELF 820 5% 1/8W	R105	1-249-343-11	CARBON MELF 4.7K 5% 1/8W
R14	1-249-352-11	(G,IT)....CARBON MELF 27K 5% 1/8W	R106	1-249-339-11	CARBON MELF 2.2K 5% 1/8W
R15	1-249-347-11	(G,IT)....CARBON MELF 10K 5% 1/8W	R107	1-249-343-11	CARBON MELF 4.7K 5% 1/8W
R16	1-249-343-11	(G,IT)....CARBON MELF 4.7K 5% 1/8W	R108	1-249-323-11	CARBON MELF 100 5% 1/8W
R21	△.1-249-404-00	CARBON (SMALL)82 5% 1/4W F	R109	1-249-343-11	CARBON MELF 4.7K 5% 1/8W
R22	△.1-249-430-11	CARBON (SMALL)12K 5% 1/4W F	R110	△.1-249-405-11	CARBON (SMALL)100 5% 1/4W F
R23	1-249-335-11	CARBON MELF 1K 5% 1/8W	R111	1-249-341-11	CARBON MELF 3.3K 5% 1/8W
R24	1-249-353-11	CARBON MELF 33K 5% 1/8W	R112	1-249-332-11	CARBON MELF 560 5% 1/8W
R25	1-249-346-11	CARBON MELF 8.2K 5% 1/8W	R113	1-249-335-11	CARBON MELF 1K 5% 1/8W
R26	1-249-340-11	(G,IT)....CARBON MELF 2.7K 5% 1/8W	R114	1-249-328-11	CARBON MELF 270 5% 1/8W
R27	△.1-249-432-11	CARBON (SMALL)18K 5% 1/4W F	R115	1-249-351-11	CARBON MELF 22K 5% 1/8W
R28	1-249-423-11	CARBON (SMALL)3.3K 5% 1/4W	R116	1-249-339-11	CARBON MELF 2.2K 5% 1/8W
R29	1-249-347-11	CARBON MELF 10K 5% 1/8W	R117	1-249-343-11	CARBON MELF 4.7K 5% 1/8W
R31	1-249-331-11	CARBON MELF 470 5% 1/8W	R118	1-249-323-11	CARBON MELF 100 5% 1/8W
R32	1-249-347-11	CARBON MELF 10K 5% 1/8W	RV21	1-238-013-11	(AEP,UK)...RES, ADJ, CARBON 2.2K
R33	1-249-347-11	CARBON MELF 10K 5% 1/8W	RV21	1-238-015-11	(G,IT)....RES, ADJ, CARBON 4.7K
R34	△.1-249-437-11	CARBON (SMALL)47K 5% 1/4W F	RV22	1-238-017-11	RES, ADJ, CARBON 22K
R35	1-249-355-11	CARBON MELF 47K 5% 1/8W	RV24	1-238-017-11	(AEP,UK)...RES, ADJ, CARBON 22K
R37	1-249-359-11	CARBON MELF 100K 5% 1/8W	RV24	1-238-019-11	(G,IT)....RES, ADJ, CARBON 47K
R38	1-249-363-11	CARBON MELF 220K 5% 1/8W	T21	1-404-807-11	TRANSFORMER, DISCRIMINATOR
R39	1-249-339-11	CARBON MELF 2.2K 5% 1/8W	T23	1-236-465-11	(G,IT)....ENCAPSULATED COMPONENT
R40	1-249-338-11	CARBON MELF 1.8K 5% 1/8W	TM1	*1-537-138-31	TERMINAL BOARD (ANT)(ANTENNA)
R41	1-249-344-11	CARBON MELF 5.6K 5% 1/8W	TP1	*1-560-060-00	PIN, CONNECTOR 2P
R42	1-249-359-11	CARBON MELF 100K 5% 1/8W	XT81	1-577-126-11	VIBRATOR, CRYSTAL (7.2MHz)
R43	1-249-363-11	CARBON MELF 220K 5% 1/8W			
R44	1-249-339-11	CARBON MELF 2.2K 5% 1/8W			

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

Ref. No.	Part No.	Description	Remark
MISCELLANEOUS *****			
5	1-575-666-11	WIRE, FLAT TYPE (11 CORE)	
6	* 1-575-851-11	WIRE, FLAT TYPE (7 CORE)	
11	* 1-573-066-11	CONNECTOR, BOARD TO BOARD 12P	
17	1-589-204-11	PC BOARD, MOUNTED (AEP, UK)	
17	1-589-210-11	PC BOARD, MOUNTED (G. IT)	
△CNJ801	1-526-751-11	OUTLET, AC (UK)	
△CNJ802	1-526-794-11	OUTLET, AC (AEP, G. IT)	
△CNJ803	1-526-794-11	OUTLET, AC (AEP, G. IT)	
△CNP801	1-575-651-11	CORD, POWER (AEP, G. IT)	
△CNP801	1-575-652-11	CORD, POWER (UK)	
F801	△ 1-532-286-00	FUSE, TIME-LAG (2.5A)	

ACCESSORY & PACKING MATERIAL

- 3-312-970-00 SHEET, PROTECTION
- * 4-929-563-01 CUSHION

HARDWARE LIST

- #1 7-685-646-79 SCREW +BVTP 3X8 TYPE2 N-S
- #2 7-685-647-79 SCREW +BVTP 3X10 TYPE2 N-S
- #3 7-682-548-04 SCREW +BVTT 3X8 (S)
- #4 7-621-773-93 SCREW (PANEL 2.6 TP2)

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

