ST-S505ES

SERVICE MANUAL

AEP Model
UK Model

SPECIFICATIONS

FM tuner

Frequency range	87.5 - 108 MHz
Antenna terminals	75 Ω unbalanced
Intermediate frequency	10.7 MHz
Sensitivity	(mono S/N 26 dB) 10.3 dBf, 0.9 µV/75 Ω; (stereo S/N 46 dB); 38.5 dBf, 23 µV/75 Ω
Usable sensitivity	10.3 dBf, 0.9 µV/75 Ω (IHF)
Signal-to-noise ratio	(at 40 kHz deviation) 80 dB (mono) 76 dB (stereo)
Harmonic distortion	WIDE 0.03% (mono) 0.04% (stereo) NARROW 0.05% (mono) 0.07% (stereo)
Frequency response	15 Hz - 15 kHz, (±0.2 dB)
Separation	60 dB (at 1 kHz)
Selectivity	(at 400 kHz) WIDE 80 dB NARROW 90 dB (at 300 kHz) WIDE 45 dB NARROW 70 dB
Output	(at 40 kHz deviation) 600 mV

AM tuner

Frequency range	Italian model MW : 522 -1,611 kHz (9 kHz step) LW : 144 -288 kHz (1 kHz step) Other model MW: 531 - 1,602 kHz (9 kHz step) LW: 153 - 279 kHz (1 kHz step)
Intermediate frequency	450 kHz
Usable sensitivity (with AM loop antenna)	Except UK model MW : 300 µV/m LW : 1mV/m UK model 250 µV/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	0.3% (50 mV/m, 400 Hz)
Selectivity	32 dB

— Continued on page 2 —

FM STEREO / FM-AM TUNER

SONY®

General

Power requirements	220-230V AC, 50/60 Hz (Except UK model) 240 V AC, 50 Hz (UK model)
Power consumption	12 W
Dimensions	Approx. 430 mm (W) x 85 mm (H) x 295 mm (D) (17 x 3 3/8 x 11 3/5 inches)
Mass	Approx. 4.0 kg (8 lb. 13 oz.)
Accessories supplied	Connecting cord (1); AM loop antenna (1); FM antenna (1)

Design and specifications are subject to change without notice.

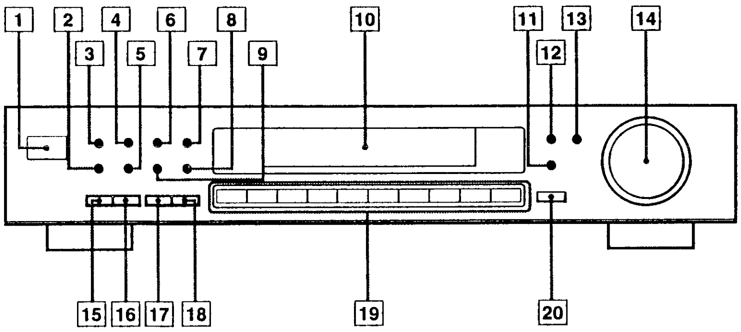
TABLE OF CONTENTS

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.

SECTION 1
GENERAL

Identifying the Controls



1 Power switch
2 ANT ATT button
3 ANT button (Except UK model)
4 CHARACTER button
5 IF BAND button
6 DISPLAY button
7 DISPLAY MODE button
8 FM MODE button
9 MUTING button
10 Display window
11 TUNE MODE button
12 TUNING/PRESET button
13 PTY button
14 TUNING/CHARACTER/PTY SELECT knob
15 TA button
16 NEWS/INFO button
17 MEMORY button
18 BAND button
19 Preset buttons
20 SHIFT button

SECTION 2
ADJUSTMENTS

- Refer to Adjustment Location on page 6.

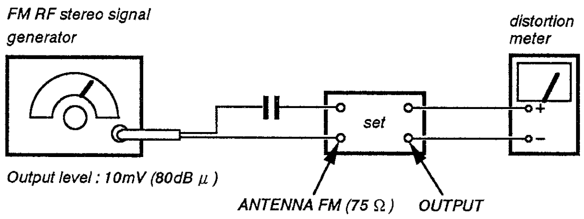
Note : As a front-end (FE101, 421 etc.) is difficult to repair if faulty, replace it with new one.

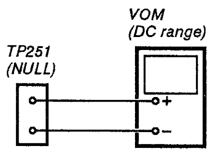
FM SECTION

- Standard Setting of FM Stereo RF Signal Generator.

STEREO STANDARD SIGNAL	MONAURAL STANDARD SIGNAL
Carrier frequency : 98MHz Modulation : Audio 1kHz, 16.25kHz (21.7%) deviation Subchannel 38kHz, 16.25kHz (21.7%) deviation Pilot 19kHz, 7.5kHz deviation (13.3%)	98MHz 1kHz, 40kHz deviation (53%)

FM Discriminator Adjustment (NULL and MONO Distortion)



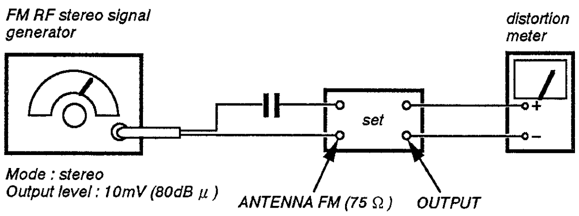


Procedure :

1. Tune the set to 98MHz.
2. Adjust T252 for 0V reading on the VOM. ··················NULL
3. Adjust T253 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.

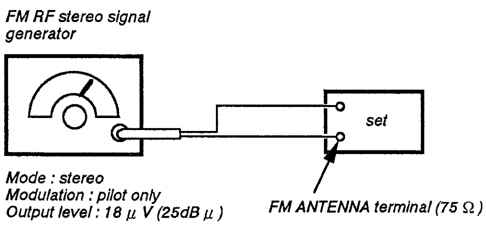
FM Stereo Distortion Adjustment



Procedure :

1. Tune the set to 98MHz.
   Set SSG output level to 80dBμ
2. Adjust IFT in FE101 for a minimum reading on the distortion meter.

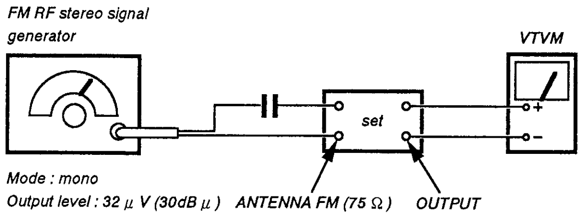
FM Stereo Indication Lighting Level Adjustment



Procedure :

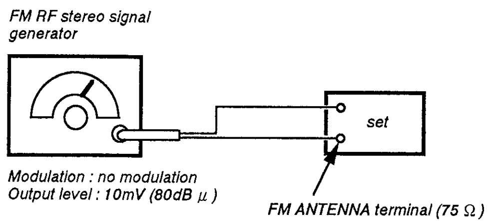
1. Tune the set to 98MHz.
   MUTING “OFF ”, FM MODE “AUTO STEREO”
   Set SSG output level to 25dBμ
2. Adjust RV251 to the place where “STEREO”, “TUNED” indication lights.

FM Muting Level Adjustment



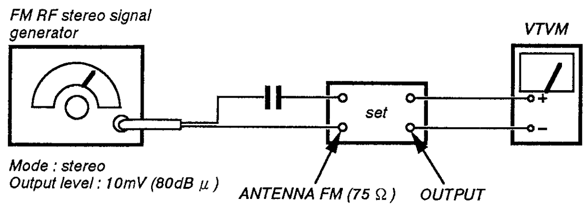
Procedure :
1. Tune the set to 98MHz.
2. Push the MUTING switch and put on the light the "MUTING" indicator in the fluorescent display.
3. Set SSG output level to 32 μ V (30dB μ).
4. Adjust RV252 so that the reading of VTVM becomes within 25 μ V (28dB μ) – 40 μ V (32dB μ).

FM Signal Level Adjustment



Procedure :
1. Tune the set to 98MHz.
2. Push the display button to change the display mode for signal strength indication.
3. Adjust RV221 to the place where level 10 in the signal strength bar indicator lights and "75dB" indication lights on fluorescent tube.

FM Stereo Separation Adjustment



Procedure :

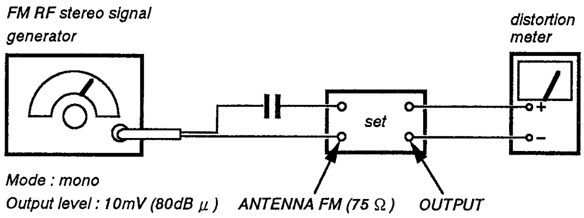
FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV301 minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV 301 for minimum reading.

L-CH Stereo separation : Ⓐ–Ⓑ

R-CH Stereo separation : Ⓒ–Ⓓ

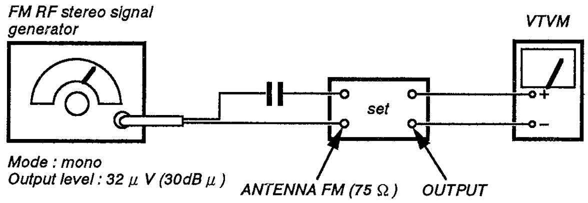
The separation of both channels should be equal.

FM Narrow Distortion Adjustment



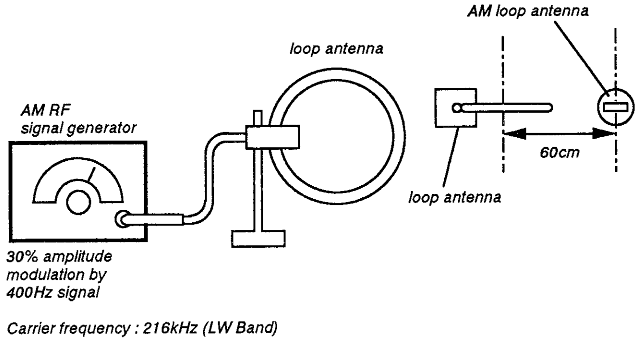
Procedure :
1. Tune the set to 98MHz.
2. Push the IF BAND switch and put on the light the "NARROW" indicator in the fluorescent display.
3. Set SSG output level to 80dBμ.
4. Adjust RV232 for a minimum reading on the distortion meter.

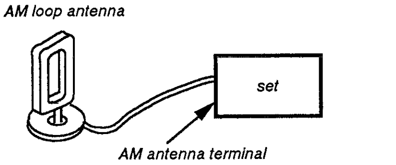
FM Narrow Gain Adjustment



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. Set SSG output level to 32 μ V (30dB μ).
4. Adjust RV231 so that the reading on VTVM becomes within 25 μ V (28dB μ) – 40 μ V (32dB μ).

AM SECTION





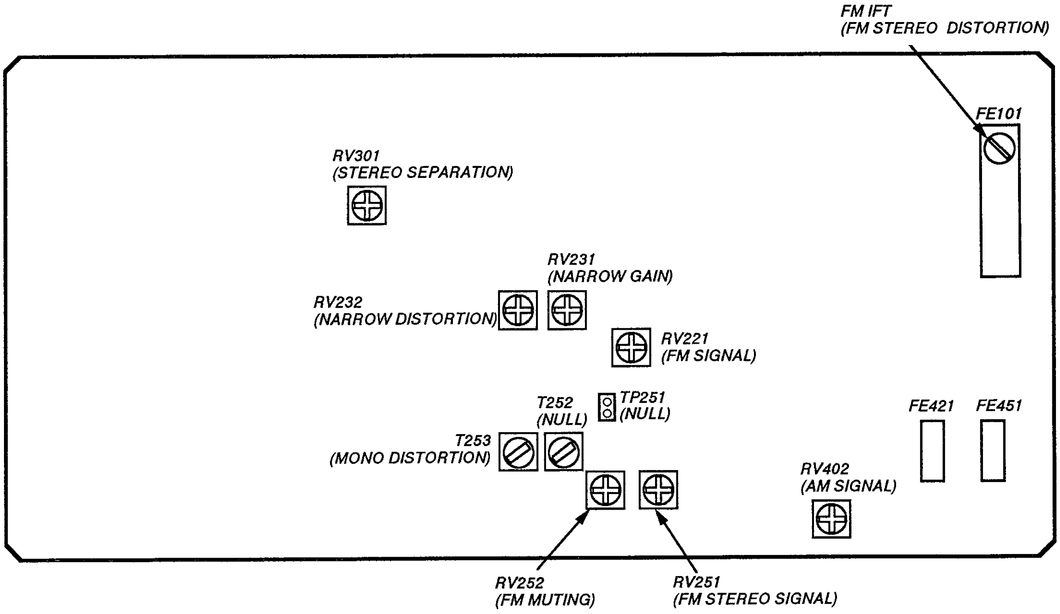
$dB\mu/m$ = (SSG output level) − 26dB

AM Signal Level Adjustment

Procedure :

1. Set SSG output level so that antenna input level of the set becomes 5.0mV (74dBμ /m).
2. Adjust RV402 to the place where level 10 in the signal strength indicator turns from dark to light.

Adjustment Location : TUNER BOARD (Component Side)



SECTION 3
EXPLANATION OF IC TERMINALS

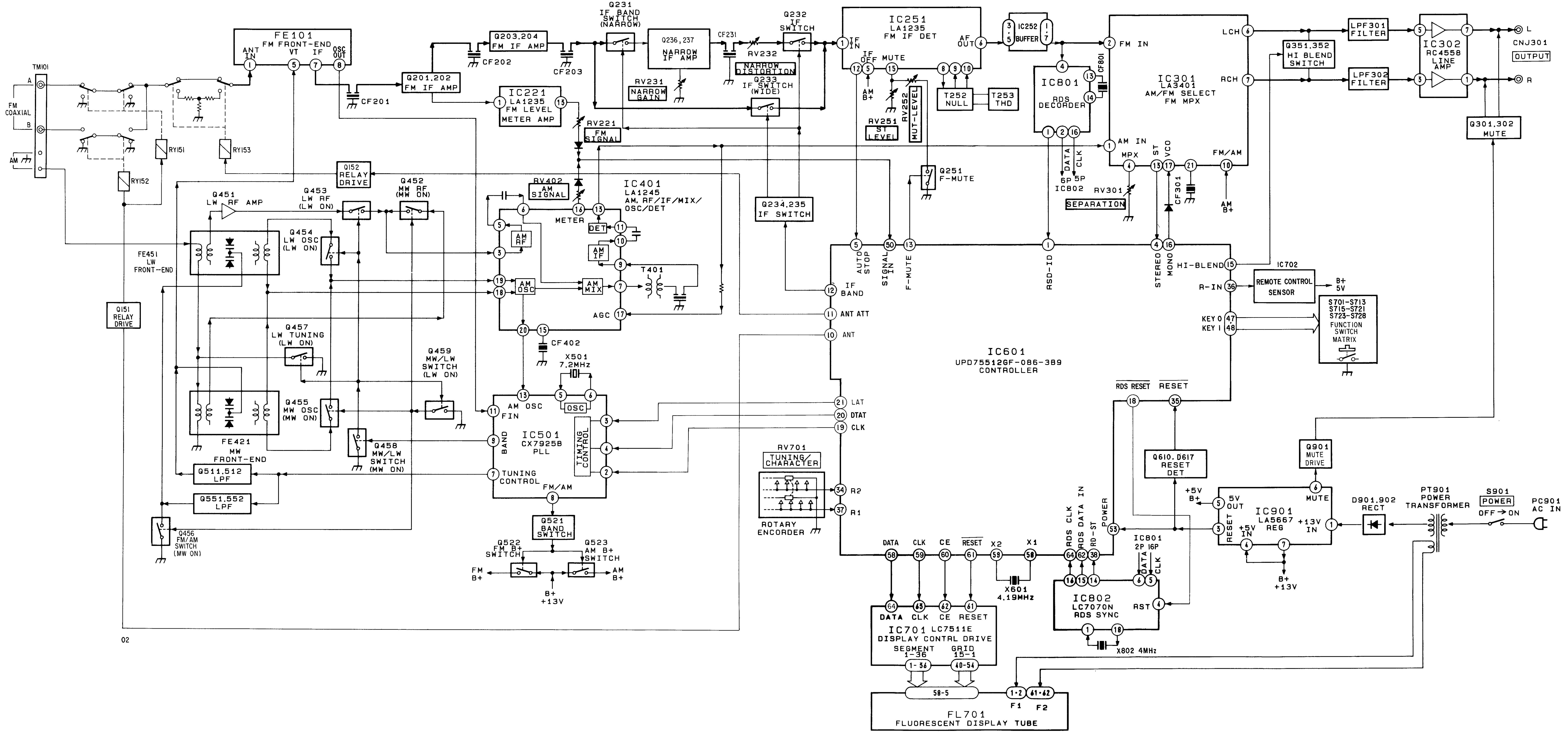
IC601 UPD78013GC-518-AB8

Pin Number		Name	I / O	Operation
1	P30 / TO0	RDS-ID	I	RDS-ID detection input
2	P31 / TO1	G	I	F-MUTE / MODE setting terminal "H"
3	P32 / TO2	ANT SEL	I	ANT system number setting terminal $\overline{2}$ / 1
4	P33 / TI1	$\overline{ST}$	I	STEREO indication detection terminal
5	P34 / TI2	$\overline{AST}$	I	AUTO STOP signal detection terminal
6	P35 / PCL	S1	I	Terminal for destination setting
7	P36 / BUZ	S2	I	Terminal for destination setting
8	P37	S3	I	Terminal for destination setting
9	Vss	GND	–	Ground electric potential
10	P40 / AD0	ANT	O	ANT A / B switching terminal
11	P41 / AD1	ANT ATT	O	ANT ATT ON / OFF switching terminal
12	P42 / AD2	IF BAND	O	IF BAND WIDE / NARROW switching terminal
13	P43 / AD3	F-MUT	O	FM MUTING ON / OFF terminal
14	P44 / AD4	TUN	O	TUNING action detection terminal
15	P45 / AD5	$\overline{HI\text{-}B}$	O	HI-BLEND output terminal
16	P46 / AD6	MONO	O	Forced MONO output terminal
17	P47 / AD7	$\overline{MUTE}$	O	MUTING signal output terminal
18	P50 / A8	$\overline{\text{RDS Reset}}$	O	Reset terminal for LC7073
19	P51 / A9	PLL CLK	O	Clock terminal for CX7925
20	P52 / A10	PLL DATA	O	Data terminal for CX7925
21	P53 / A11	PLL LAT	O	Latch terminal for CX7925
22	P54 / A12	GND	I	Ground electric potential
23	P55 / A13	GND	I	Ground electric potential
24	Vss	GND	–	System ground electric potential
25	P56 / A14	GND	I	Ground electric potential
26	P57 / A15	GND	I	Ground electric potential
27	P60	GND	I	Ground electric potential
28	P61	GND	I	Ground electric potential
29	P62	GND	I	Ground electric potential
30	P63	GND	I	Ground electric potential
31	P64 / $\overline{RD}$	GND	I	Ground electric potential
32	P65 / $\overline{WR}$	GND	I	Ground electric potential
33	P66 / $\overline{WAIT}$	GND	I	Ground electric potential
34	P67 / ASTB	R2	I	ROTARY ENCODER phase difference detection
35	$\overline{RESET}$	$\overline{RESET}$	I	System reset
36	P00 / INTP0 / TI0	$\overline{RIN}$	I	Remote control input terminal
37	P01 / INTP1	R1	I	Number of revolution of ROTARY ENCODER detection
38	P02 / INTP2	$\overline{RD\text{-}ST}$	I	RDS DATA START terminal
39	P03 / INTP3	$\overline{POWER}$	I	Power ON / OFF Monitor terminal
40	VDD	+5V	–	System power source
41	X2	–	–	System power source
42	X1	8.38MHz	I	Main system clock oscillation
43	MODE	GND	I	Single chip mode setting
44	XT2	NC	–	Not connected
45	P04 / XT1	GND	I	Ground electric potential
46	AVss	GND	–	GND of A / D converter
47	P10 / ANI0	KEY0	I	Key input terminal (0)

Pin Number		Name	I / O	Operation
48	P11 / ANI1	KEY1	I	Key input terminal (1)
49	P12 / ANI2	KEY2	I	Key input terminal (2)
50	P13 / ANI3	SI	I	SIGNAL input terminal
51	P14 / ANI4	GND	I	Ground electric potential
52	P15 / ANI5	GND	I	Ground electric potential
53	P16 / ANI6	GND	I	Ground electric potential
54	P17 / ANI7	GND	I	Ground electric potential
55	AVDD	+5V	–	Analog power source of A / D converter
56	AVREF	+5V	I	Standard voltage input of A / D converter
57	P20 / SI1	GND	I	Ground electric potential
58	P21 / SO1	FL DATA	O	Indication data terminal for LC75711E
59	P22 / $\overline{\text{SCK1}}$	FL CLK	O	Clock terminal for LC75711
60	P23 / STB	FL CE	O	Latch terminal for LC75711
61	P24 / BUSY	$\overline{\text{FL Reset}}$	O	Reset terminal for LC75711
62	P25 / SI0 / SB0	RDS-DATA	I	RDS DATA input terminal
63	P26 / SO0 / SB1	NC	O	Not connected
64	P27 / $\overline{\text{SCK0}}$	RDS-CLK	I	Clock input terminal for RDS DATA

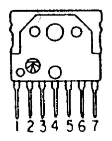
SECTION 4 DIAGRAMS

4-1. BLOCK DIAGRAM

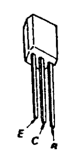


• SEMICONDUCTOR LEAD LAYOUTS

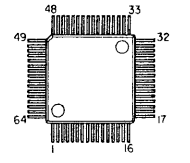
LA5667



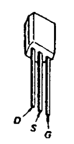
2SC2603-EF
2SC2669-OY
DTA144ES



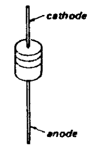
LC75711E



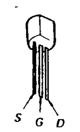
2SK161-YGR



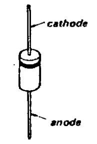
11ES2
HZS27-2L
HZS7B2L



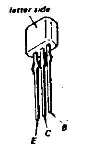
2SK246-GR3



1N4148M



2SA1175-HFE
2SC3623A-LK
DTC114TS
DTC144ES



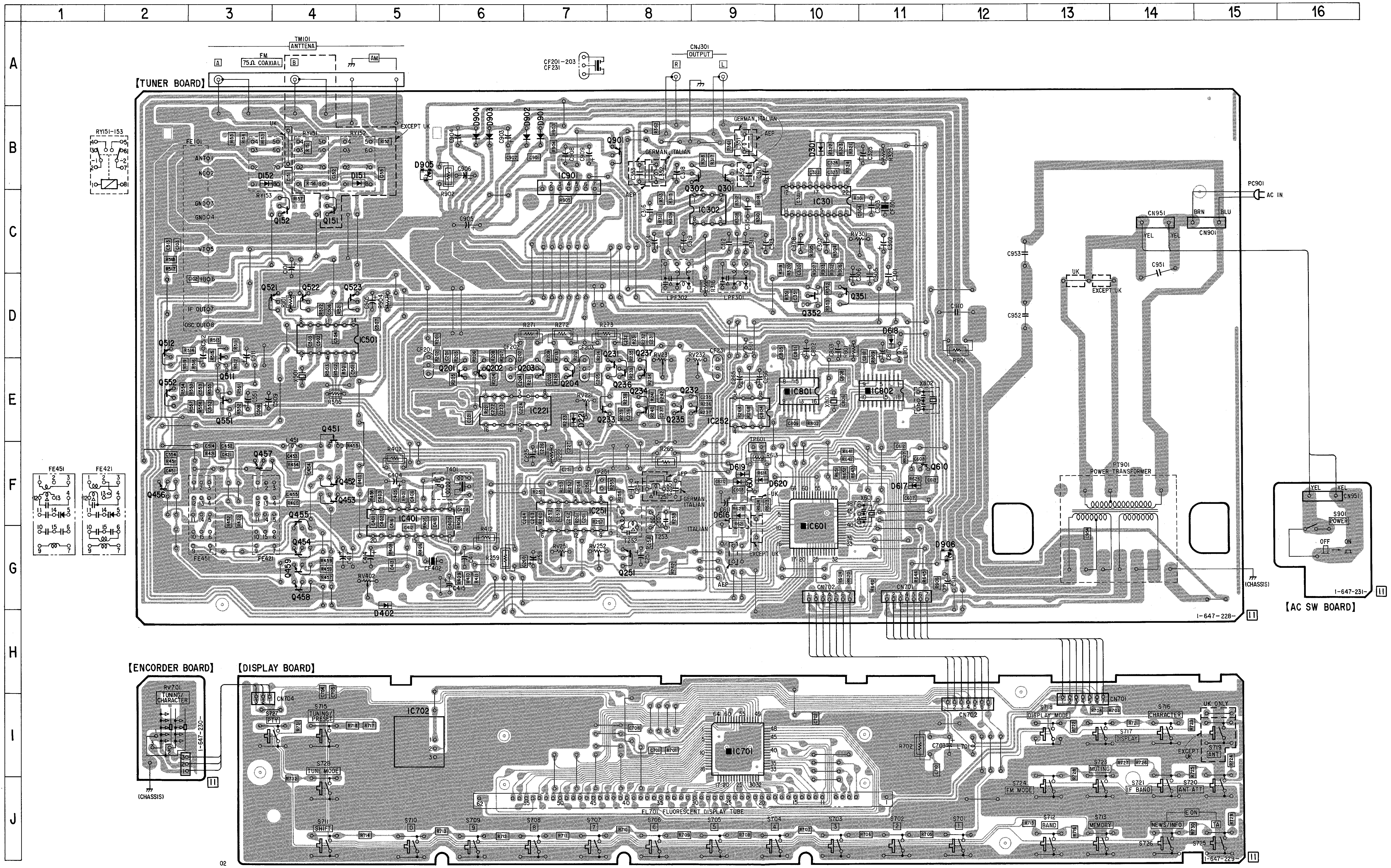
• SEMICONDUCTOR LOCATION

Ref. No.	Location	Ref. No.	Location
D151	B-5	Q201	E-6
D152	B-3	Q202	E-6
D221	E-7	Q203	E-7
D301	B-10	Q204	E-7
D402	G-5	Q231	E-8
D601	F-9	Q232	E-9
D616	F-9	Q233	E-7
D617	F-11	Q234	E-8
D618	D-11	Q235	E-8
D619	F-9	Q236	E-8
D620	F-9	Q237	E-8
D901	B-7	Q251	G-8
D902	B-7	Q301	B-9
D903	B-6	Q302	B-9
D904	B-6	Q351	D-10
D905	B-5	Q352	D-10
D906	G-12	Q451	E-4
		Q452	F-4
		Q453	F-4
IC221	E-6	Q454	G-4
IC251	F-7		
IC252	E-9	Q455	F-4
IC301	C-10	Q456	F-2
IC302	C-9	Q457	F-3
		Q458	G-4
IC401	F-5	Q459	G-4
IC501	D-4		
IC601	G-10	Q511	E-3
IC701	I-9	Q512	D-2
IC702	I-5	Q521	D-3
		Q522	D-4
IC801	E-10	Q523	D-4
IC802	E-11		
IC901	B-7	Q551	E-3
		Q552	E-2
		Q610	F-11
Q151	C-4	Q901	B-8
Q152	C-4		

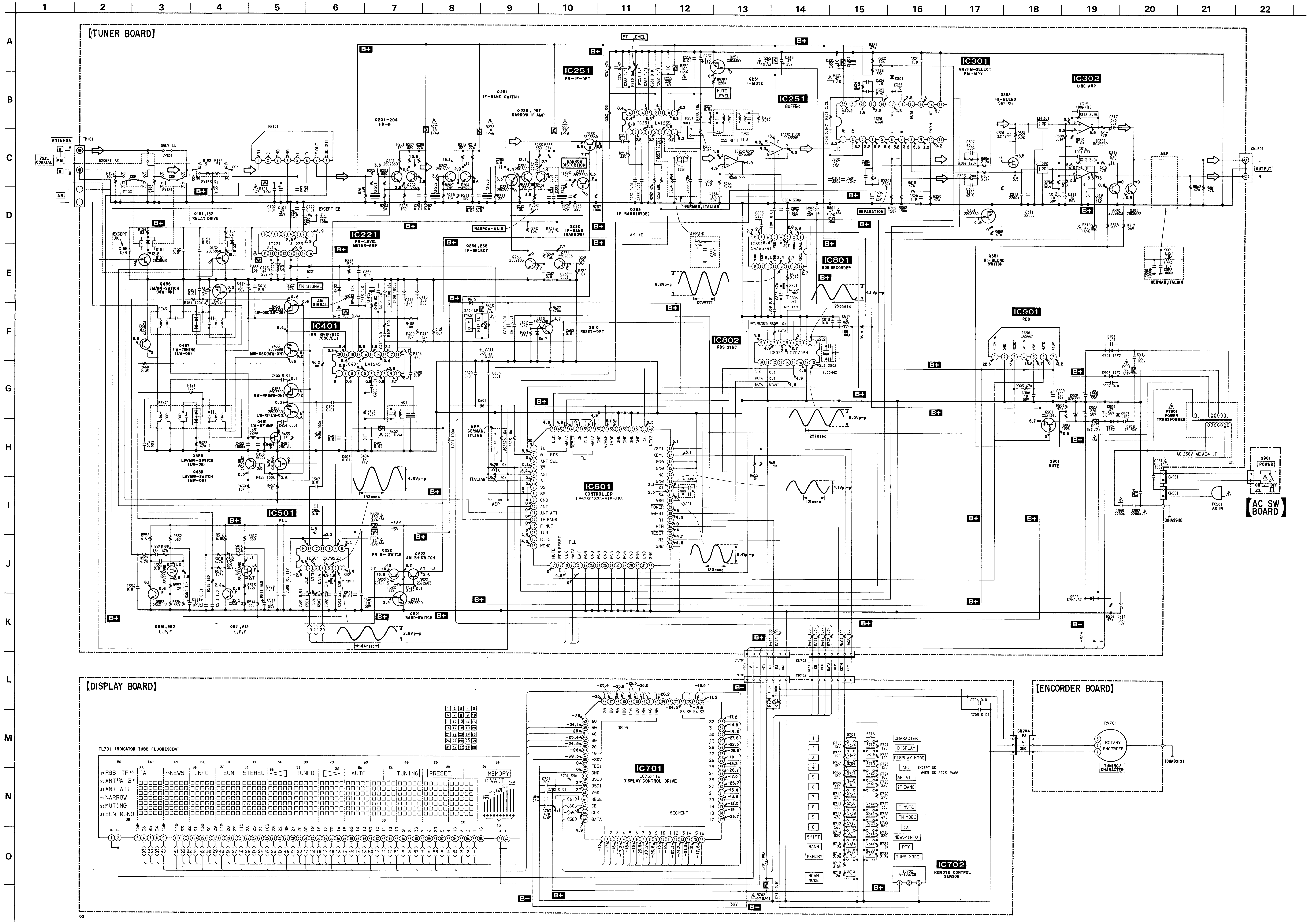
Note:

- ○— : parts extracted from the component side.
- ■ : parts mounted on the conductor side.
- ⌐ ¬ : indicates side identified with part number.
- ░ : Pattern on the side which is seen.

4-2. PRINTED WIRING BOARDS



4-3. SCHEMATIC DIAGRAM



Note :

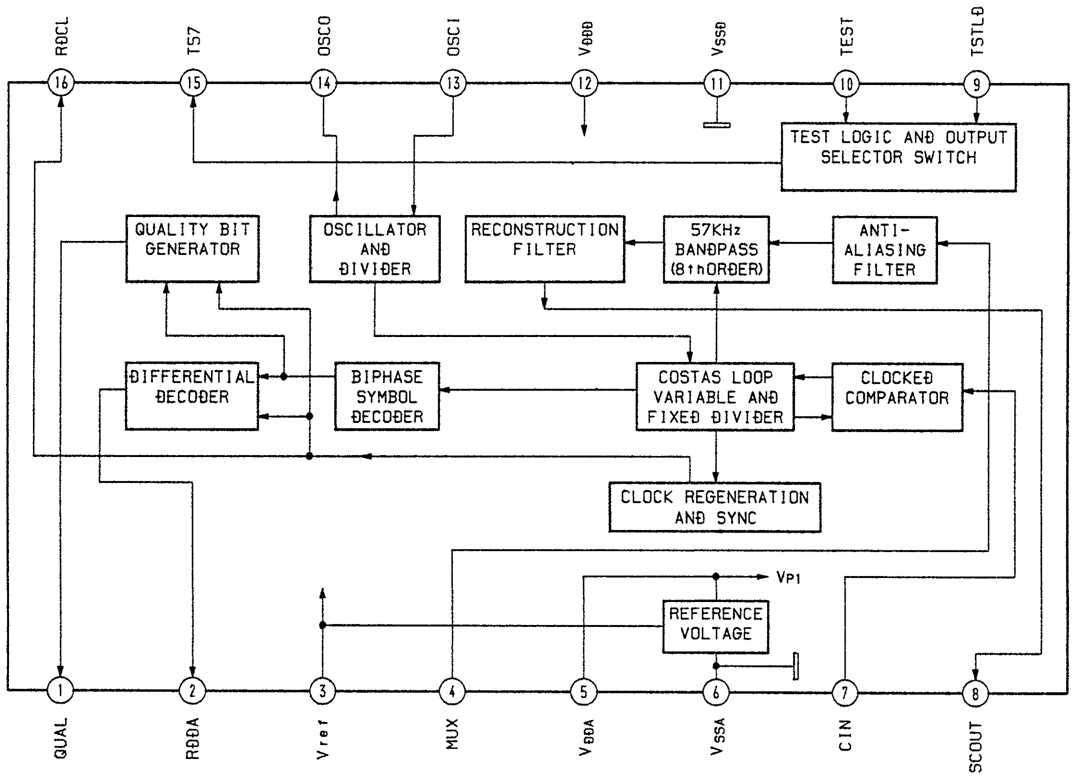
- All capacitors are in μ F unless otherwise noted. pF: μ μ F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- △ : internal component.
- : nonflammable resistor.
- : fusible resistor.

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

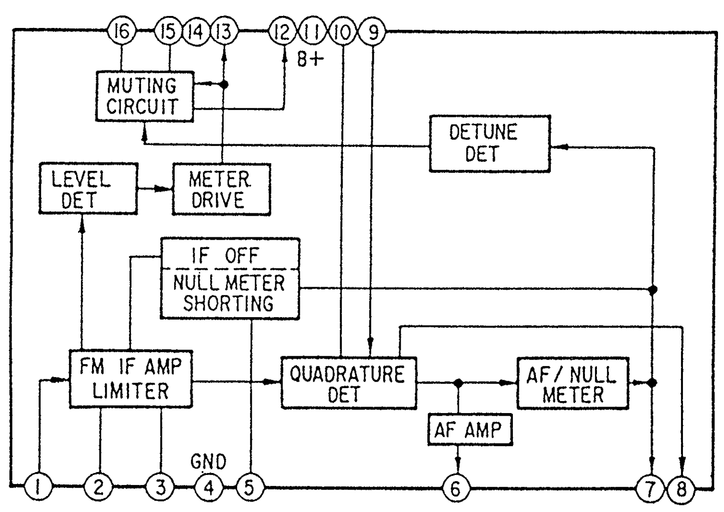
- B+ : B+ Line
- B – : B – Line
- : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
- Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM

4-4. IC BLOCK DIAGRAMS

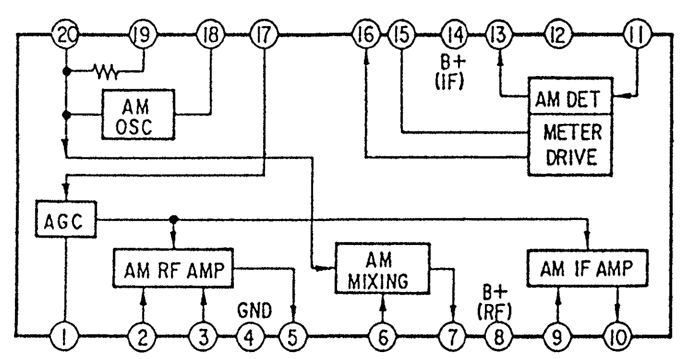
IC801 SAA6579T



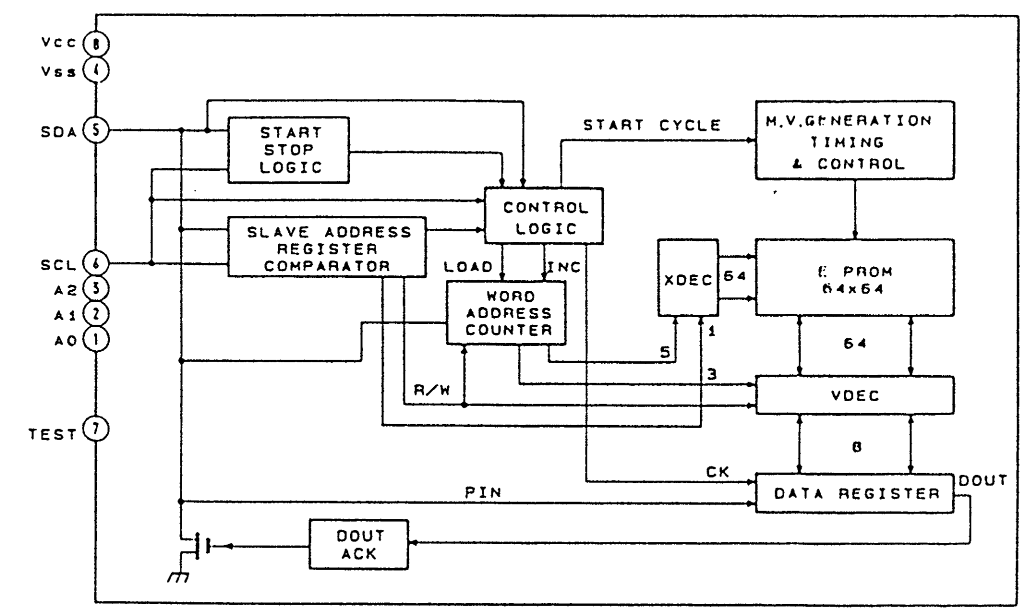
IC221, 251 LA1235



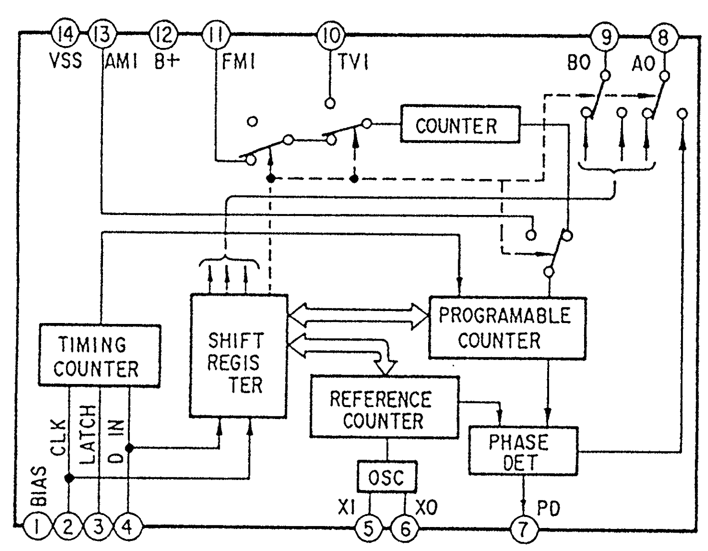
IC401 LA1245



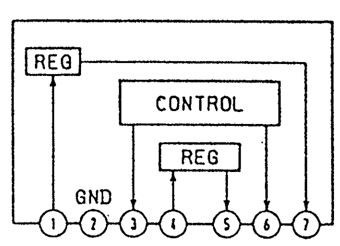
IC602 X24C04P



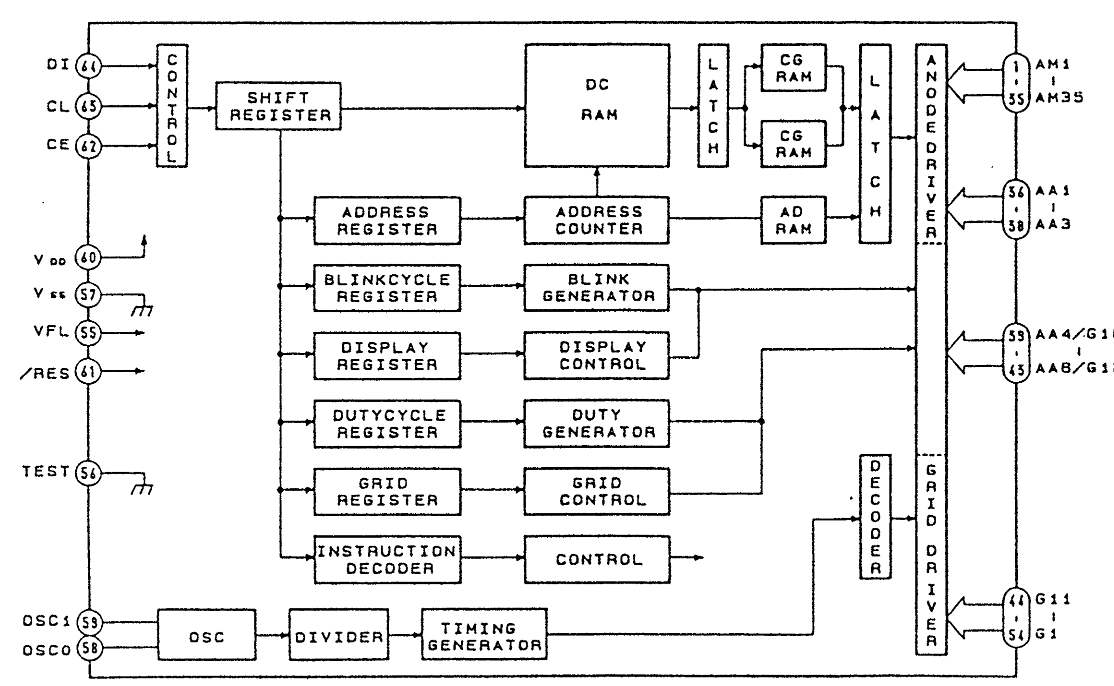
IC501 CX7925B



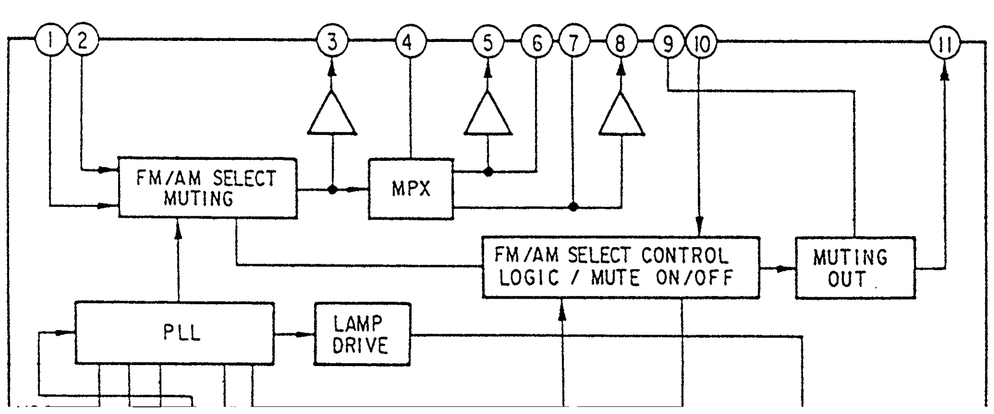
IC901 LA5667



IC701 LC7511E



IC301 LA3401



SECTION 6
ELECTRICAL PARTS LIST

AC SW **DISPLAY**

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.

When indicating parts by reference number, please include the board.

Ref.No.	Part No.	Description			Remark
*	1-647-231-11	AC SW BOARD			
		***********			
		< SWITCH >			
⚠S901	1-572-267-51	SWITCH, PUSH (AC POWER)(1 KEY)(POWER)			
**					
*	A-4360-700-A	DISPLAY BOARD, COMPLETE (AEP,G,IT)			
		**********************************			
*	A-4360-959-A	DISPLAY BOARD, COMPLETE (UK)			
		****************************			
*	4-932-810-11	CUSHION (FL)			
*	4-945-292-01	HOLDER, INDICATION TUBE			
		< CAPACITOR >			
C701	1-163-104-00	CERAMIC CHIP	30PF	5%	50V
C702	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C703	1-128-183-11	ELECT	470uF	20%	6.3V
C704	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C705	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C706	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C710	1-164-232-11	CERAMIC CHIP	0.01uF		50V
		< CONNECTOR >			
* CN701	1-564-341-11	PIN, CONNECTOR 7P			
* CN702	1-564-341-11	PIN, CONNECTOR 7P			
		< INDICATOR TUBE >			
FL701	1-517-177-11	INDICATOR TUBE, FLUORESCENT			
		< IC >			
IC701	8-759-823-57	IC LC75711E			
IC702	8-741-100-48	IC SBX1610-59			

Ref.No.	Part No.	Description				Remark
		< COIL >				
L701	1-410-482-31	INDUCTOR 100uH				
		< RESISTOR >				
R701	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
⚠R702	1-249-401-11	CARBON	47	5%	1/4W	F
R703	1-216-699-11	METAL CHIP	100K	0.5%	1/10W	
R704	1-216-699-11	METAL CHIP	100K	0.5%	1/10W	
R705	1-216-629-11	METAL CHIP	120	0.5%	1/10W	
R706	1-216-629-11	METAL CHIP	120	0.5%	1/10W	
R707	1-216-631-11	METAL CHIP	150	0.5%	1/10W	
R708	1-216-633-11	METAL CHIP	180	0.5%	1/10W	
R709	1-216-635-11	METAL CHIP	220	0.5%	1/10W	
R710	1-216-637-11	METAL CHIP	270	0.5%	1/10W	
R711	1-216-639-11	METAL CHIP	330	0.5%	1/10W	
R712	1-216-643-11	METAL CHIP	470	0.5%	1/10W	
R713	1-216-645-11	METAL CHIP	560	0.5%	1/10W	
R714	1-216-649-11	METAL CHIP	820	0.5%	1/10W	
R715	1-216-653-11	METAL CHIP	1.2K	0.5%	1/10W	
R716	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W	
R717	1-216-665-11	METAL CHIP	3.9K	0.5%	1/10W	
R718	1-216-677-11	METAL CHIP	12K	0.5%	1/10W	
R721	1-216-629-11	METAL CHIP	120	0.5%	1/10W	
R722	1-216-629-11	METAL CHIP	120	0.5%	1/10W	
R723	1-216-631-11	METAL CHIP	150	0.5%	1/10W	
R724	1-216-633-11	METAL CHIP	180	0.5%	1/10W	
R725	1-216-635-11	METAL CHIP	220	0.5%	1/10W	
R726	1-216-637-11	METAL CHIP	270	0.5%	1/10W	
R727	1-216-639-11	METAL CHIP	330	0.5%	1/10W	
R728	1-216-643-11	METAL CHIP	470	0.5%	1/10W	
R729	1-216-645-11	METAL CHIP	560	0.5%	1/10W	
R730	1-216-649-11	METAL CHIP	820	0.5%	1/10W	

Ref. No.	Part No.	Description			Remark
R731	1-216-653-11	METAL CHIP	1.2K	0.5%	1/10W
⚠R732	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
		< SWITCH >			
S701	1-554-303-21	SWITCH, TACTILE (1)			
S702	1-554-303-21	SWITCH, TACTILE (2)			
S703	1-554-303-21	SWITCH, TACTILE (3)			
S704	1-554-303-21	SWITCH, TACTILE (4)			
S705	1-554-303-21	SWITCH, TACTILE (5)			
S706	1-554-303-21	SWITCH, TACTILE (6)			
S707	1-554-303-21	SWITCH, TACTILE (7)			
S708	1-554-303-21	SWITCH, TACTILE (8)			
S709	1-554-303-21	SWITCH, TACTILE (9)			
S710	1-554-303-21	SWITCH, TACTILE (0)			
S711	1-554-303-21	SWITCH, TACTILE (SHIFT)			
S712	1-554-303-21	SWITCH, TACTILE (BAND)			
S713	1-554-303-21	SWITCH, TACTILE (MEMORY)			
S715	1-554-303-21	SWITCH, TACTILE (TUNING/PRESET)			
S716	1-554-303-21	SWITCH, TACTILE (CHARACTER)			
S717	1-554-303-21	SWITCH, TACTILE (DISPLAY)			
S718	1-554-303-21	SWITCH, TACTILE (DISPLAY MODE)			
S719	1-554-303-21	SWITCH, TACTILE (ANT)(AEP, G, IT)			
S720	1-554-303-21	SWITCH, TACTILE (ANT ATT)			
S721	1-554-303-21	SWITCH, TACTILE (IF BAND)			
S723	1-554-303-21	SWITCH, TACTILE (MUTING)			
S724	1-554-303-21	SWITCH, TACTILE (FM MODE)			
S725	1-554-303-21	SWITCH, TACTILE (EON TA)			
S726	1-554-303-21	SWITCH, TACTILE (EON NEWS/INFO)			
S727	1-554-303-21	SWITCH, TACTILE (PTY)			
S728	1-554-303-21	SWITCH, TACTILE (TUNE MODE)			

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*	1-647-230-11	ENCORDER BOARD	
		**************	
		< VARIABLE RESISTOR >	
RV701	1-466-336-11	ENCODER, ROTARY (TUNING/CHARACTER)	

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*	A-4360-699-A	TUNER BOARD, COMPLETE (AEP)	
		**************************	
*	A-4360-705-A	TUNER BOARD, COMPLETE (G)	
		*************************	
*	A-4360-718-A	TUNER BOARD, COMPLETE (UK)	
		**************************	
*	A-4360-723-A	TUNER BOARD, COMPLETE (IT)	
		**************************	
*	4-911-383-01	HEAT SINK	
	7-682-548-09	SCREW +B 3X8	
	4-957-933-01	PLATE, GROUND (G, IT)	

Ref. No.	Part No.	Description			Remark
		< CAPACITOR >			
C101	1-126-022-11	ELECT	47uF	20%	25V
C102	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C103	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C151	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C152	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C155	1-164-232-11	CERAMIC CHIP	0.01uF		50V (AEP, G, IT)
C201	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C202	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C203	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C204	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C205	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C221	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C222	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C223	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C224	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C225	1-126-022-11	ELECT	47uF	20%	25V
C226	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C227	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C231	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C232	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C235	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C236	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C237	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C251	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C252	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C253	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C254	1-110-335-11	MYLAR	100PF	5%	50V (AEP, UK)
C254	1-110-341-11	MYLAR	330PF	5%	50V (G, IT)
C255	1-130-467-00	MYLAR	470PF	5%	50V (G, IT)
C256	1-164-346-11	CERAMIC CHIP	1uF		16V
C257	1-126-023-11	ELECT	100uF	20%	16V
C258	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C259	1-126-024-11	ELECT	220uF	20%	16V
C260	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C261	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C262	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C263	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C264	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C265	1-126-022-11	ELECT	47uF	20%	25V
C266	1-126-059-11	ELECT	10uF	20%	50V
C301	1-136-161-00	FILM	0.047uF	5%	50V
C302	1-126-022-11	ELECT	47uF	20%	25V

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

TUNER

Ref. No.	Part No.	Description			Remark
C303	1-136-161-00	FILM	0.047uF	5%	50V
C304	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C305	1-110-335-11	MYLAR	100PF	5%	50V
C306	1-126-022-11	ELECT	47uF	20%	25V
C307	1-104-293-11	POLYSTYRENE	430PF	5%	50V
C308	1-104-293-11	POLYSTYRENE	430PF	5%	50V
C311	1-130-475-00	MYLAR	0.0022uF	5%	50V
C312	1-130-475-00	MYLAR	0.0022uF	5%	50V
C313	1-126-059-11	ELECT	10uF	20%	50V
C314	1-126-059-11	ELECT	10uF	20%	50V
C315	1-110-335-11	MYLAR	100PF	5%	50V
C316	1-110-335-11	MYLAR	100PF	5%	50V
C317	1-123-382-00	ELECT	3.3uF	20%	100V
C318	1-123-382-00	ELECT	3.3uF	20%	100V
C319	1-126-023-11	ELECT	100uF	20%	16V
C320	1-164-346-11	CERAMIC CHIP	1uF		16V
C321	1-164-346-11	CERAMIC CHIP	1uF		16V
C322	1-164-346-11	CERAMIC CHIP	1uF		16V
C323	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C324	1-164-346-11	CERAMIC CHIP	1uF		16V
C325	1-126-023-11	ELECT	100uF	20%	16V
C351	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C352	1-130-471-00	MYLAR	0.001uF	5%	50V (G, IT)
C353	1-130-471-00	MYLAR	0.001uF	5%	50V (G, IT)
C401	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C402	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C403	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C404	1-126-022-11	ELECT	47uF	20%	25V
C405	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C406	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C408	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C409	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C410	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C411	1-126-023-11	ELECT	100uF	20%	16V
C412	1-164-346-11	CERAMIC CHIP	1uF		16V
C413	1-164-346-11	CERAMIC CHIP	1uF		16V
C414	1-126-163-11	ELECT	4.7uF	20%	50V
C415	1-123-382-00	ELECT	3.3uF	20%	100V
C416	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C417	1-126-059-11	ELECT	10uF	20%	50V
C421	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C451	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C452	1-164-693-11	CERAMIC CHIP	0.0018uF	5%	50V
C453	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C454	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C455	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C501	1-164-232-11	CERAMIC CHIP	0.01uF		50V

Ref. No.	Part No.	Description			Remark
C502	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C503	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C504	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C505	1-126-059-11	ELECT	10uF	20%	50V
C506	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C507	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C508	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C509	1-126-023-11	ELECT	100uF	20%	16V
C511	1-126-059-11	ELECT	10uF	20%	50V
C512	1-123-382-00	ELECT	3.3uF	20%	100V
C513	1-164-346-11	CERAMIC CHIP	1uF		16V
C514	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C551	1-126-059-11	ELECT	10uF	20%	50V
C552	1-164-346-11	CERAMIC CHIP	1uF		16V
C553	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C554	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C603	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C607	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C608	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C611	1-104-905-11	CAP, DOUBLE LAYERS		0.22F	
C612	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C613	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C620	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C801	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C802	1-126-045-11	ELECT	2.2uF	20%	50V
C803	1-126-022-11	ELECT	47uF	20%	25V
C804	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C805	1-163-135-00	CERAMIC CHIP	560PF	5%	50V
C806	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C808	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C809	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C817	1-126-059-11	ELECT	10uF	20%	50V
C818	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C901	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C902	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C903	1-126-051-11	ELECT	47uF	20%	50V
C904	1-126-051-11	ELECT	47uF	20%	50V
C905	1-124-602-00	ELECT	2200uF	20%	35V
C906	1-126-053-11	ELECT	220uF	20%	50V
C908	1-126-059-11	ELECT	10uF	20%	50V
C909	1-126-023-11	ELECT	100uF	20%	16V
C910	1-130-789-00	FILM	1uF	5%	100V
C911	1-126-049-11	ELECT	22uF	20%	50V
⚠C951	1-161-744-00	CERAMIC	0.01uF		400V
⚠C952	1-161-742-00	CERAMIC	0.0022uF	20%	400V
⚠C953	1-161-742-00	CERAMIC	0.0022uF	20%	400V
C954	1-164-232-11	CERAMIC CHIP	0.01uF		50V

Ref. No.	Part No.	Description	Remark
		< FILTER >	
CF201	1-567-389-11	FILTER, CERAMIC	
CF202	1-567-389-11	FILTER, CERAMIC	
CF203	1-567-389-11	FILTER, CERAMIC	
CF231	1-567-107-71	FILTER, CERAMIC	
CF301	1-567-250-11	OSCILLATOR, CERAMIC	
CF402	1-527-981-00	FILTER, CERAMIC	
		< CONNECTOR >	
* CN901	1-564-321-00	PIN, CONNECTOR 2P	
CN951	1-564-321-00	PIN, CONNECTOR 2P	
		< JACK >	
CNJ301	1-568-250-21	JACK, PIN 2P	
		< DIODE >	
D151	8-719-016-74	DIODE 1SS352 (AEP, G, IT)	
D152	8-719-016-74	DIODE 1SS352	
D221	8-719-016-74	DIODE 1SS352	
D301	8-719-016-74	DIODE 1SS352	
D402	8-719-016-74	DIODE 1SS352	
D601	8-719-016-74	DIODE 1SS352	
D616	8-719-016-74	DIODE 1SS352	
D617	8-719-016-74	DIODE 1SS352	
D618	8-719-016-74	DIODE 1SS352	
D619	8-719-016-74	DIODE 1SS352	
D620	8-719-016-74	DIODE 1SS352	
D901	8-719-200-02	DIODE 10E2	
D902	8-719-200-02	DIODE 10E2	
D903	8-719-200-02	DIODE 10E2	
D904	8-719-200-02	DIODE 10E2	
D905	8-719-022-74	DIODE UZM27B	
D906	8-719-021-61	DIODE UZM6.8Z	
		< FRONT END >	
FE101	1-693-212-11	FRONT END (FTZ)	
FE421	1-236-462-11	ENCAPSULATED COMPONENT	
FE451	1-236-463-11	ENCAPSULATED COMPONENT	
		< IC >	
IC221	8-759-812-35	IC LA1235	
IC251	8-759-812-35	IC LA1235	
IC252	8-759-145-58	IC uPC4558C	
IC301	8-759-801-80	IC LA3401	
IC302	8-759-145-58	IC uPC4558C	
IC401	8-759-812-45	IC LA1245	
IC501	8-757-925-20	IC CX7925B	
IC601	8-759-164-12	IC uPD78014GC-3048-ABE	
IC801	8-759-065-98	IC SAA6579T	
IC802	8-759-161-78	IC LC7073M	
IC901	8-759-820-09	IC LA5667	
		< COIL >	
L351	1-410-470-11	INDUCTOR 10uH (G, IT)	
L352	1-410-470-11	INDUCTOR 10uH (G, IT)	
L451	1-408-425-00	INDUCTOR 220uH	
L601	1-410-482-31	INDUCTOR 100uH	
L801	1-410-482-31	INDUCTOR 100uH	
		< FILTER >	
LPF301	1-235-164-00	FILTER, LOW PASS	
LPF302	1-235-164-00	FILTER, LOW PASS	
		< TRANSFORMER >	
⚠PT901	1-423-525-11	TRANSFORMER, POWER	
		< TRANSISTOR >	
Q151	8-729-904-39	TRANSISTOR DTC114TS (AEP, G, IT)	
Q152	8-729-904-39	TRANSISTOR DTC114TS	
Q201	8-729-230-XX	TRANSISTOR 2SC2669-OY	
Q202	8-729-230-XX	TRANSISTOR 2SC2669-OY	
Q203	8-729-230-XX	TRANSISTOR 2SC2669-OY	
Q204	8-729-230-XX	TRANSISTOR 2SC2669-OY	
Q231	8-729-904-39	TRANSISTOR DTC114TS	
Q232	8-729-904-39	TRANSISTOR DTC114TS	
Q233	8-729-904-39	TRANSISTOR DTC114TS	
Q234	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q235	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q236	8-729-230-XX	TRANSISTOR 2SC2669-OY	
Q237	8-729-230-XX	TRANSISTOR 2SC2669-OY	
Q251	8-729-900-89	TRANSISTOR DTC144ES	
Q301	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q302	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q351	8-729-904-39	TRANSISTOR DTC114TS	
Q352	8-729-202-67	TRANSISTOR 2SK246-GR3	
Q451	8-729-231-20	TRANSISTOR 2SK161-YGR	
Q452	8-729-900-89	TRANSISTOR DTC144ES	
Q453	8-729-900-89	TRANSISTOR DTC144ES	
Q454	8-729-900-89	TRANSISTOR DTC144ES	
Q455	8-729-900-89	TRANSISTOR DTC144ES	
Q456	8-729-900-89	TRANSISTOR DTC144ES	
Q457	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q458	8-729-904-39	TRANSISTOR DTC114TS	
Q459	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q511	8-729-202-67	TRANSISTOR 2SK246-GR3	

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

TUNER

Ref. No.	Part No.	Description				Remark
Q512	8-729-201-84	TRANSISTOR	2SC3112-B			
Q521	8-729-900-89	TRANSISTOR	DTC144ES			
Q522	8-729-119-76	TRANSISTOR	2SA1175-HFE			
Q523	8-729-620-05	TRANSISTOR	2SC2603-EF			
Q551	8-729-202-67	TRANSISTOR	2SK246-GR3			
Q552	8-729-201-84	TRANSISTOR	2SC3112-B			
Q610	8-729-620-05	TRANSISTOR	2SC2603-EF			
Q901	8-729-900-65	TRANSISTOR	DTA144ES			
		< RESISTOR >				
⚠R101	1-249-401-11	CARBON	47	5%	1/4W	F
R151	1-216-699-11	METAL CHIP	100K	0.5%	1/10W	(AEP, G, IT)
R152	1-216-699-11	METAL CHIP	100K	0.5%	1/10W	(AEP, G, IT)
R153	1-216-620-11	METAL CHIP	51	0.5%	1/10W	
R154	1-216-620-11	METAL CHIP	51	0.5%	1/10W	
R155	1-216-613-11	METAL CHIP	27	0.5%	1/10W	
R156	1-216-625-11	METAL CHIP	82	0.5%	1/10W	(AEP, G, IT)
R157	1-216-625-11	METAL CHIP	82	0.5%	1/10W	
R201	1-216-639-11	METAL CHIP	330	0.5%	1/10W	
R202	1-216-603-11	METAL CHIP	10	0.5%	1/10W	
R203	1-216-639-11	METAL CHIP	330	0.5%	1/10W	
R204	1-216-679-11	METAL CHIP	15K	0.5%	1/10W	
R205	1-216-631-11	METAL CHIP	150	0.5%	1/10W	
R206	1-216-643-11	METAL CHIP	470	0.5%	1/10W	
R207	1-216-639-11	METAL CHIP	330	0.5%	1/10W	
R208	1-216-685-11	METAL CHIP	27K	0.5%	1/10W	
R209	1-216-639-11	METAL CHIP	330	0.5%	1/10W	
R210	1-216-679-11	METAL CHIP	15K	0.5%	1/10W	
R211	1-216-631-11	METAL CHIP	150	0.5%	1/10W	
R212	1-216-639-11	METAL CHIP	330	0.5%	1/10W	
R213	1-216-685-11	METAL CHIP	27K	0.5%	1/10W	
R214	1-216-639-11	METAL CHIP	330	0.5%	1/10W	
R221	1-216-639-11	METAL CHIP	330	0.5%	1/10W	
⚠R222	1-249-405-11	CARBON	100	5%	1/4W	F
R223	1-218-756-11	METAL CHIP	150K	0.50%	1/10W	
R231	1-216-639-11	METAL CHIP	330	0.5%	1/10W	
R232	1-216-679-11	METAL CHIP	15K	0.5%	1/10W	
R233	1-216-639-11	METAL CHIP	330	0.5%	1/10W	
R234	1-216-607-11	METAL CHIP	15	0.50%	1/10W	
R235	1-216-685-11	METAL CHIP	27K	0.5%	1/10W	
R236	1-216-635-11	METAL CHIP	220	0.5%	1/10W	
R237	1-216-699-11	METAL CHIP	100K	0.5%	1/10W	
R238	1-216-675-11	METAL CHIP	10K	0.5%	1/10W	
R239	1-216-675-11	METAL CHIP	10K	0.5%	1/10W	
R240	1-216-679-11	METAL CHIP	15K	0.5%	1/10W	
R241	1-216-675-11	METAL CHIP	10K	0.5%	1/10W	
R242	1-216-675-11	METAL CHIP	10K	0.5%	1/10W	
R251	1-216-639-11	METAL CHIP	330	0.5%	1/10W	
R252	1-216-691-11	METAL CHIP	47K	0.5%	1/10W	
R253	1-216-695-11	METAL CHIP	68K	0.5%	1/10W	
R254	1-216-603-11	METAL CHIP	10	0.5%	1/10W	(AEP, UK)
R254	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W	(G, IT)
R255	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W	
R256	1-216-681-11	METAL CHIP	18K	0.5%	1/10W	
R257	1-216-665-11	METAL CHIP	3.9K	0.5%	1/10W	
R258	1-216-661-11	METAL CHIP	2.7K	0.5%	1/10W	
⚠R259	1-249-405-11	CARBON	100	5%	1/4W	F
R260	1-216-693-11	METAL CHIP	56K	0.5%	1/10W	
R261	1-216-691-11	METAL CHIP	47K	0.5%	1/10W	
R262	1-216-699-11	METAL CHIP	100K	0.5%	1/10W	
R264	1-216-669-11	METAL CHIP	5.6K	0.5%	1/10W	
⚠R265	1-249-401-11	CARBON	47	5%	1/4W	F
R268	1-216-683-11	METAL CHIP	22K	0.5%	1/10W	
⚠R271	1-249-393-11	CARBON	10	5%	1/4W	F
⚠R272	1-249-393-11	CARBON	10	5%	1/4W	F
⚠R273	1-249-393-11	CARBON	10	5%	1/4W	F
R301	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W	
R302	1-218-756-11	METAL CHIP	150K	0.50%	1/10W	
R303	1-218-756-11	METAL CHIP	150K	0.50%	1/10W	
R304	1-218-754-11	METAL CHIP	120K	0.50%	1/10W	
R305	1-218-754-11	METAL CHIP	120K	0.50%	1/10W	
R306	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W	
R307	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W	
R308	1-216-669-11	METAL CHIP	5.6K	0.5%	1/10W	
R309	1-216-669-11	METAL CHIP	5.6K	0.5%	1/10W	
R310	1-216-669-11	METAL CHIP	5.6K	0.5%	1/10W	
R311	1-216-669-11	METAL CHIP	5.6K	0.5%	1/10W	
R312	1-216-665-11	METAL CHIP	3.9K	0.5%	1/10W	
R313	1-216-665-11	METAL CHIP	3.9K	0.5%	1/10W	
R314	1-216-643-11	METAL CHIP	470	0.5%	1/10W	
R315	1-216-643-11	METAL CHIP	470	0.5%	1/10W	
⚠R316	1-249-401-11	CARBON	47	5%	1/4W	F
R317	1-216-645-11	METAL CHIP	560	0.5%	1/10W	
R318	1-216-645-11	METAL CHIP	560	0.5%	1/10W	
R319	1-216-691-11	METAL CHIP	47K	0.5%	1/10W	
R320	1-216-691-11	METAL CHIP	47K	0.5%	1/10W	
R321	1-216-691-11	METAL CHIP	47K	0.5%	1/10W	
R322	1-216-675-11	METAL CHIP	10K	0.5%	1/10W	
R323	1-216-687-11	METAL CHIP	33K	0.5%	1/10W	
R324	1-216-669-11	METAL CHIP	5.6K	0.5%	1/10W	
⚠R325	1-249-401-11	CARBON	47	5%	1/4W	F
R351	1-216-671-11	METAL CHIP	6.8K	0.5%	1/10W	
R352	1-218-776-11	METAL CHIP	1M	0.50%	1/10W	
R353	1-216-691-11	METAL CHIP	47K	0.5%	1/10W	

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
R361	1-216-691-11	METAL CHIP 47K 0.5% 1/10W	
R362	1-216-691-11	METAL CHIP 47K 0.5% 1/10W	
R401	1-216-659-11	METAL CHIP 2.2K 0.5% 1/10W	
⚠R402	1-249-409-11	CARBON 220 5% 1/4W	F
R404	1-216-643-11	METAL CHIP 470 0.5% 1/10W	
R405	1-216-627-11	METAL CHIP 100 0.5% 1/10W	
R406	1-216-625-11	METAL CHIP 82 0.5% 1/10W	
R408	1-216-675-11	METAL CHIP 10K 0.5% 1/10W	
R409	1-216-675-11	METAL CHIP 10K 0.5% 1/10W	
R410	1-216-677-11	METAL CHIP 12K 0.5% 1/10W	
R411	1-216-671-11	METAL CHIP 6.8K 0.5% 1/10W	
⚠R412	1-249-407-11	CARBON 150 5% 1/4W	F
R413	1-216-675-11	METAL CHIP 10K 0.5% 1/10W	
R421	1-216-699-11	METAL CHIP 100K 0.5% 1/10W	
R422	1-216-691-11	METAL CHIP 47K 0.5% 1/10W	
R451	1-216-699-11	METAL CHIP 100K 0.5% 1/10W	
R452	1-216-691-11	METAL CHIP 47K 0.5% 1/10W	
R454	1-218-776-11	METAL CHIP 1M 0.50% 1/10W	
R455	1-216-651-11	METAL CHIP 1K 0.5% 1/10W	
R456	1-216-699-11	METAL CHIP 100K 0.5% 1/10W	
R457	1-216-651-11	METAL CHIP 1K 0.5% 1/10W	
R458	1-216-699-11	METAL CHIP 100K 0.5% 1/10W	
R459	1-216-675-11	METAL CHIP 10K 0.5% 1/10W	
R460	1-216-663-11	METAL CHIP 3.3K 0.5% 1/10W	
R501	1-216-675-11	METAL CHIP 10K 0.5% 1/10W	
R502	1-216-675-11	METAL CHIP 10K 0.5% 1/10W	
R503	1-216-675-11	METAL CHIP 10K 0.5% 1/10W	
⚠R504	1-249-400-11	CARBON 39 5% 1/4W	F
⚠R505	1-249-408-11	CARBON 180 5% 1/4W	F
R511	1-216-645-11	METAL CHIP 560 0.5% 1/10W	
R512	1-216-645-11	METAL CHIP 560 0.5% 1/10W	
R513	1-216-653-11	METAL CHIP 1.2K 0.5% 1/10W	
R514	1-216-639-11	METAL CHIP 330 0.5% 1/10W	
R515	1-216-657-11	METAL CHIP 1.8K 0.5% 1/10W	
R516	1-216-671-11	METAL CHIP 6.8K 0.5% 1/10W	
R517	1-216-667-11	METAL CHIP 4.7K 0.5% 1/10W	
R518	1-216-647-11	METAL CHIP 680 0.5% 1/10W	
R519	1-216-667-11	METAL CHIP 4.7K 0.5% 1/10W	
R521	1-216-663-11	METAL CHIP 3.3K 0.5% 1/10W	
R522	1-216-683-11	METAL CHIP 22K 0.5% 1/10W	
R551	1-216-675-11	METAL CHIP 10K 0.5% 1/10W	
R552	1-216-645-11	METAL CHIP 560 0.5% 1/10W	
R553	1-216-653-11	METAL CHIP 1.2K 0.5% 1/10W	
R554	1-216-639-11	METAL CHIP 330 0.5% 1/10W	
R555	1-216-691-11	METAL CHIP 47K 0.5% 1/10W	
R556	1-216-671-11	METAL CHIP 6.8K 0.5% 1/10W	
R557	1-216-667-11	METAL CHIP 4.7K 0.5% 1/10W	
R604	1-216-627-11	METAL CHIP 100 0.5% 1/10W	
⚠R613	1-249-401-11	CARBON 47 5% 1/4W	F

Ref. No.	Part No.	Description	Remark
R614	1-216-651-11	METAL CHIP 1K 0.5% 1/10W	
R620	1-216-627-11	METAL CHIP 100 0.5% 1/10W	
R621	1-216-675-11	METAL CHIP 10K 0.5% 1/10W	(IT)
R623	1-216-675-11	METAL CHIP 10K 0.5% 1/10W	
R624	1-216-675-11	METAL CHIP 10K 0.5% 1/10W	(UK)
R626	1-216-683-11	METAL CHIP 22K 0.5% 1/10W	
R627	1-218-768-11	METAL CHIP 470K 0.50% 1/10W	
R628	1-216-675-11	METAL CHIP 10K 0.5% 1/10W	
R640	1-216-627-11	METAL CHIP 100 0.5% 1/10W	
R641	1-216-659-11	METAL CHIP 2.2K 0.5% 1/10W	
R642	1-216-667-11	METAL CHIP 4.7K 0.5% 1/10W	
R643	1-216-667-11	METAL CHIP 4.7K 0.5% 1/10W	
R644	1-216-627-11	METAL CHIP 100 0.5% 1/10W	
R645	1-216-627-11	METAL CHIP 100 0.5% 1/10W	
R651	1-216-655-11	METAL CHIP 1.5K 0.5% 1/10W	
R652	1-216-655-11	METAL CHIP 1.5K 0.5% 1/10W	
⚠R801	1-249-401-11	CARBON 47 5% 1/4W	F
R802	1-216-659-11	METAL CHIP 2.2K 0.5% 1/10W	
R809	1-216-675-11	METAL CHIP 10K 0.5% 1/10W	
⚠R901	1-249-397-11	CARBON 22 5% 1/4W	F
⚠R902	1-247-752-11	CARBON 1K 5% 1/2W	F
R903	1-216-699-11	METAL CHIP 100K 0.5% 1/10W	
R904	1-216-691-11	METAL CHIP 47K 0.5% 1/10W	
R905	1-216-691-11	METAL CHIP 47K 0.5% 1/10W	
R906	1-216-691-11	METAL CHIP 47K 0.5% 1/10W	
		< VARIABLE RESISTOR >	
RV221	1-238-601-11	RES, ADJ, CARBON 22K (FM SIGNAL)	
RV231	1-238-599-11	RES, ADJ, CARBON 4.7K (NARROW GAIN)	
RV232	1-238-596-11	RES, ADJ, CAREBON 470 (NARROW)	
RV251	1-238-600-11	RES, ADJ, CARBON 10K (ST LEVEL)	
RV252	1-238-604-11	RES, ADJ, CARBON 220K (MUTE LEVEL)	
RV301	1-238-604-11	RES, ADJ, CARBON 220K (SEPARATION)	
RV402	1-238-600-11	RES, ADJ, CARBON 10K (AM SIGNAL)	
		< RELAY >	
RY151	1-515-614-11	RELAY (AEP, G, IT)	
RY152	1-515-614-11	RELAY (AEP, G, IT)	
RY153	1-515-614-11	RELAY	
		< TRANSFORMER >	
T251	1-235-126-00	ENCAPSULATED COMPONENT (G, IT)	
T252	1-404-845-11	COIL, DISCRI (PRIMARY)	
T253	1-404-846-11	COIL, DISCRI (SECONDARY)	
T401	1-404-713-11	TRANSFORMER, IF	
		< TERMINAL >	
* TM101	1-537-406-11	TERMINAL BOARD (ANT) (AEP, G, IT)	
TM101	1-537-406-21	TERMINAL BOARD (ANT) (UK)	

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

TUNER

Ref. No.	Part No.	Description	Remark
		< TEST PIN >	
* TP251	1-565-513-11	PIN, CONNECTOR 2P (NULL)	
* TP601	1-565-513-11	PIN, CONNECTOR 2P (BACK UP)	
		< CRYSTAL >	
X501	1-567-826-21	VIBRATOR, CRYSTAL (7.2MHz)	
X601	1-579-599-21	VIBRATOR, CERAMIC (8.38MHz)	
X801	1-579-900-21	VIBRATOR, CRYSTAL (4.332MHz)	
X802	1-577-358-21	VIBRATOR, CERAMIC (4.00MHz)	

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MISCELLANEOUS
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⚠15	1-574-383-11	CORD, POWER (AEP)(AEP, G, IT)	
⚠15	1-696-585-21	CORD, POWER (UK)	
24	1-696-073-51	LEAD (WITH CONNECTOR) (2 CORE)	

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ACCESSORIES & PACKING MATERIALS
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	1-501-374-11	ANTENNA, LOOP	
	1-501-594-11	ANTENNA (FM)	
	1-696-170-11	CORD, CONNECTION	
	3-756-648-81	MANUAL, INSTRUCTION (ENGLISH)	
	3-756-692-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE, CHINESE)	
	3-756-692-41	MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN)	
	3-756-692-51	MANUAL, INSTRUCTION (GERMAN)	
	3-756-692-61	MANUAL, INSTRUCTION (ENGLISH, GERMAN, RUSSIAN, POLISH)	
*	4-930-835-01	CUSHION	
	4-935-823-41	INDIVIDUAL CARTON	

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****
HARDWARE LIST
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#1	7-682-549-09	SCREW +BVTT 3X10 (S)	
#2	7-682-547-09	SCREW +BVTT 3X6 (S)	
#3	7-682-550-04	SCREW +BVTT 3X12 (S)	
#4	7-682-548-09	SCREW +B 3X8	
#5	7-621-849-00	SCREW (BV/RING)	

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9-957-888-11

Sony Corporation
Audio Group

English
93E02Y09561
Printed in Germany
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Published by Audio Sector Quality Assurance Dept.