

ST-S390

SERVICE MANUAL

AEP 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 μ V/75 Ω (stereo S/N 46 dB) 38.5 dBf, 23 μ V/75 Ω
Usable sensitivity	10.3 dBf, 0.9 μ V/75 Ω (IHF)
Signal-to-noise ratio	(at 40 kHz deviation) 80 dB (mono) 76 dB (stereo)
Harmonic distortion	WIDE 0.04% (mono); 0.05% (stereo) NARROW 0.06% (mono); 0.08% (stereo)
Frequency response	30 Hz - 15 kHz, (+0.2 dB, -0.5 dB)
Separation	50 dB (at 1 kHz)
Selectivity	(at 400kHz) WIDE 80 dB NARROW 90 dB (at 300kHz) WIDE 45 dB NARROW 70 dB
Output	(at 40 kHz deviation) 600 mV

AM tuner

Frequency range	Italy MW: 522 - 1,611 kHz (9 kHz step) LW: 144 - 288 kHz (1 kHz step) Other 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) MW: 300 μ V/m LW: 1 mV/m
Signal-to-noise ratio	54 dB
Harmonic distortion	0.3%
Selectivity	32 dB

General

Power requirements	220 - 230 V AC, 50/60 Hz (adjustable to 240 V AC by Sony personnel)
Power consumption	14 W
Dimensions	Approx. 430 mm (W) x 85 mm (H) x 295 mm (D) (17 x 3 ³ / ₈ x 11 ³ / ₈ inches)
Weight	Approx. 3.0 kg (6 lb. 10 oz.)
Accessories supplied	Remote control cord (1); Connecting cord (1); AM loop antenna (1)



Design and specifications are subject to change without notice.

FM STEREO / FM-AM TUNER
SONY[®]

TABLE OF CONTENTS

<i>Section</i>	<i>Title</i>	<i>Page</i>
	Specification	1
1. GENERAL	3
2. ADJUSTMENTS	4
3. DIAGRAMS		
3-1. Block Diagram		7
3-2. Printed Wiring Boards		11
3-3. Schematic Diagram		13
3-4. FM Front-end		16
3-5. IC Block Diagrams		17
4. EXPLODED VIEW	19
5. ELECTRICAL PARTS LIST	20

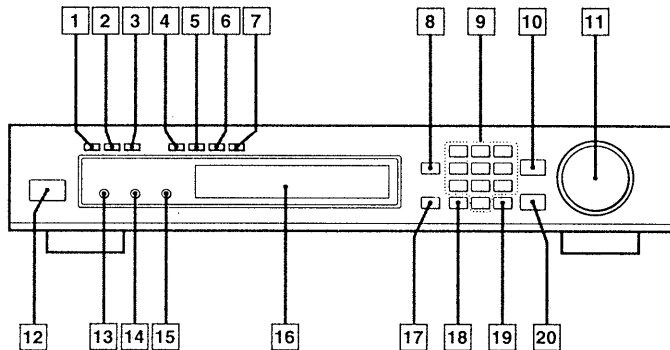
SAFETY-RELATED COMPONENT WARNING!!

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

This section is extracted from instruction manual.

Identifying the Controls



- 1** RDS button (46, 48)
- 2** AF button (46)
- 3** PTY button (48)
- 4** ANT button (10)
- 5** ANT ATT button (24)
- 6** IF BAND button (24)
- 7** STEREO/MUTE button (22)
- 8** MEMORY button (26, 28)
- 9** Preset buttons (12, 26, 30, 36)
- 10** TUNING/PRESET button (16, 18, 32, 34, 44, 52)
- 11** TUNING/CHARACTER/PTY SELECT knob (16, 18, 26, 32-36, 44-52)
- 12** Power switch
- 13** CHARACTER button (36)
- 14** DISPLAY button (30, 44)
- 15** DISPLAY MODE button (12)
- 16** Display window
- 17** TUNE MODE button (16, 18, 28, 32, 34, 44, 48, 52)
- 18** BAND button (16-20)
- 19** SHIFT button (26, 30, 36)
- 20** DIRECT button (20)

(The numbers in parenthesis indicate the page(s) where the control is described.)

SECTION 2 ADJUSTMENTS

- Refer to Adjustment Location on page 6.

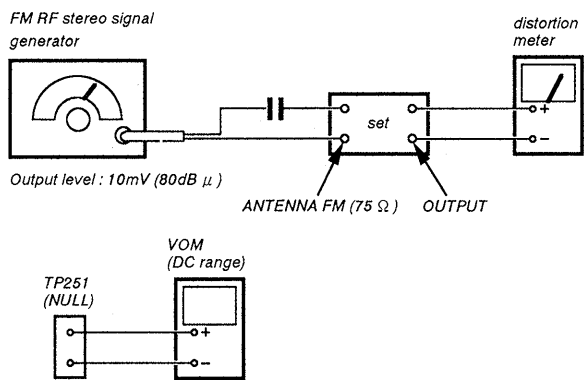
Note : As a front-end (FE101, 421 etc.) is difficult to repair if faulty, replace it with new one.

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)

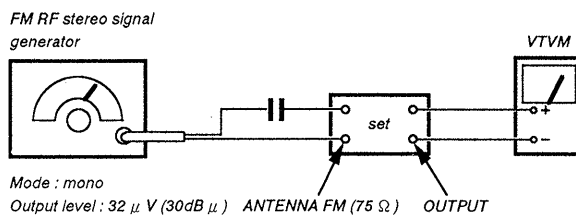


Procedure :

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.

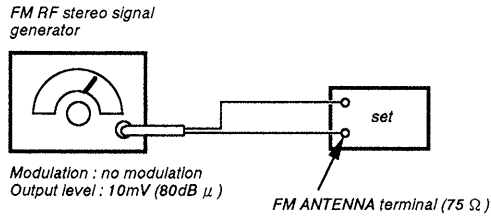
FM Muting Level Adjustment



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 RV251 so that the reading of VTVM becomes within 25 μ V (28dB μ) – 40 μ V (32dB μ).

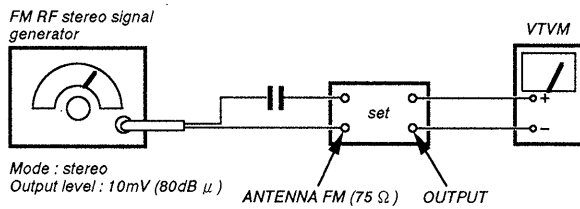
FM Signal Level Adjustment



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 :

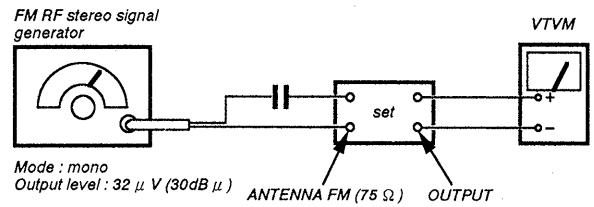
FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	(A)
R-CH	L-CH	(B) Adjust RV301 minimum reading.
R-CH	R-CH	(C)
L-CH	R-CH	(D) Adjust RV 301 for minimum reading.

L-CH Stereo separation : (A) — (B)

R-CH Stereo separation : (C) — (D)

The separation of both channels should be equal.

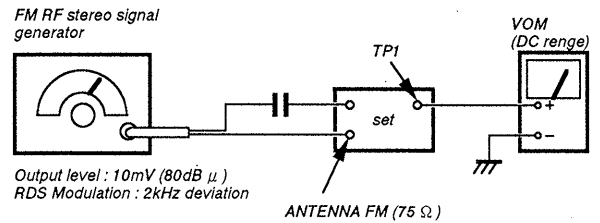
FM Narrow Gain Adjustment



Procedure :

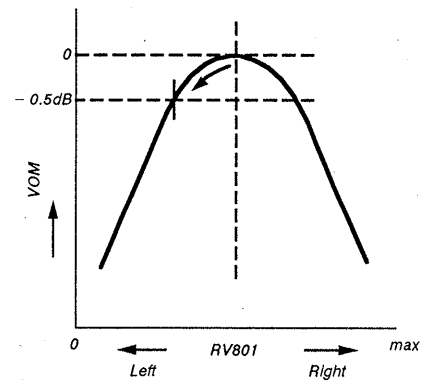
1. Tune the set to 98MHz.
2. Push the IF BAND switch and put on the light the "NARROW" indicator in the fluorescent display.
3. Set SSG output level to 32 μV (30dB μ).
4. Adjust RV231 so that the reading on VTVM becomes within 25 μV (28dB μ) — 40 μV (32dB μ).

RDS, BPF Adjustment

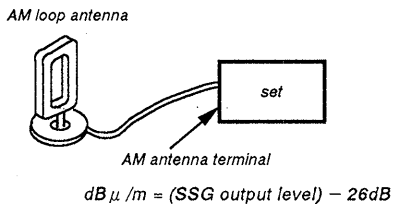
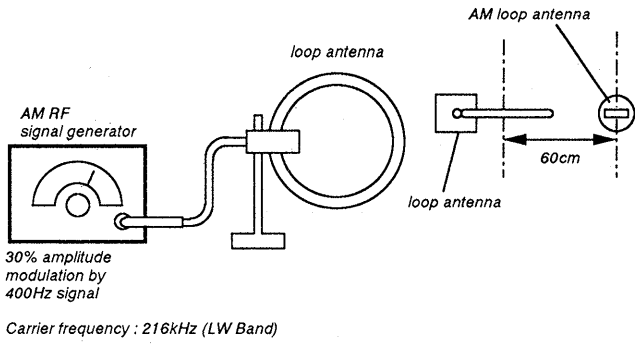


Procedure :

1. Tune RV801 to counterclockwise (left) and set the level below 0.5dB than maximum reading on the VOM. (refer to below drawing.)



AM SECTION

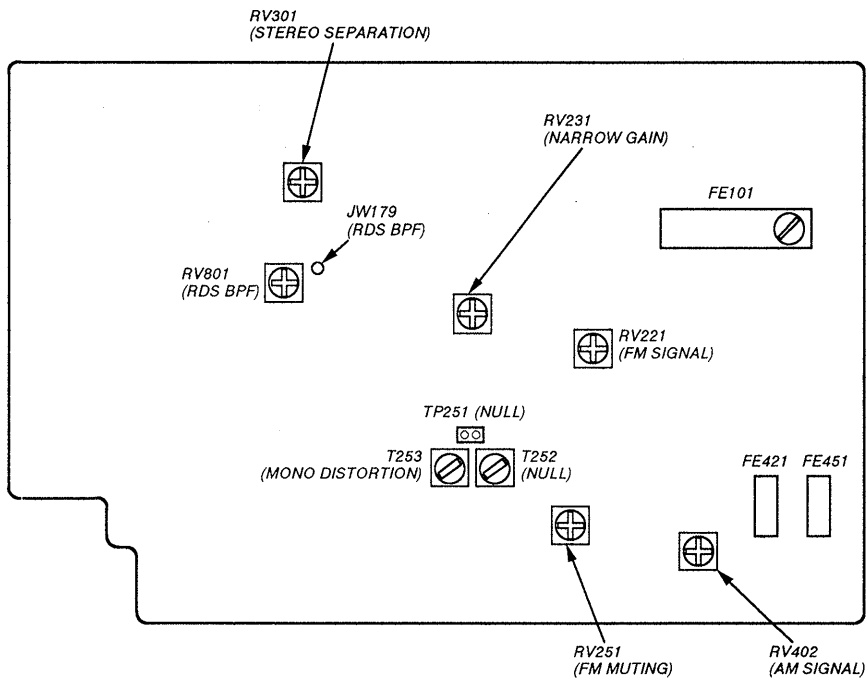


AM Signal Level Adjustment

Procedure :

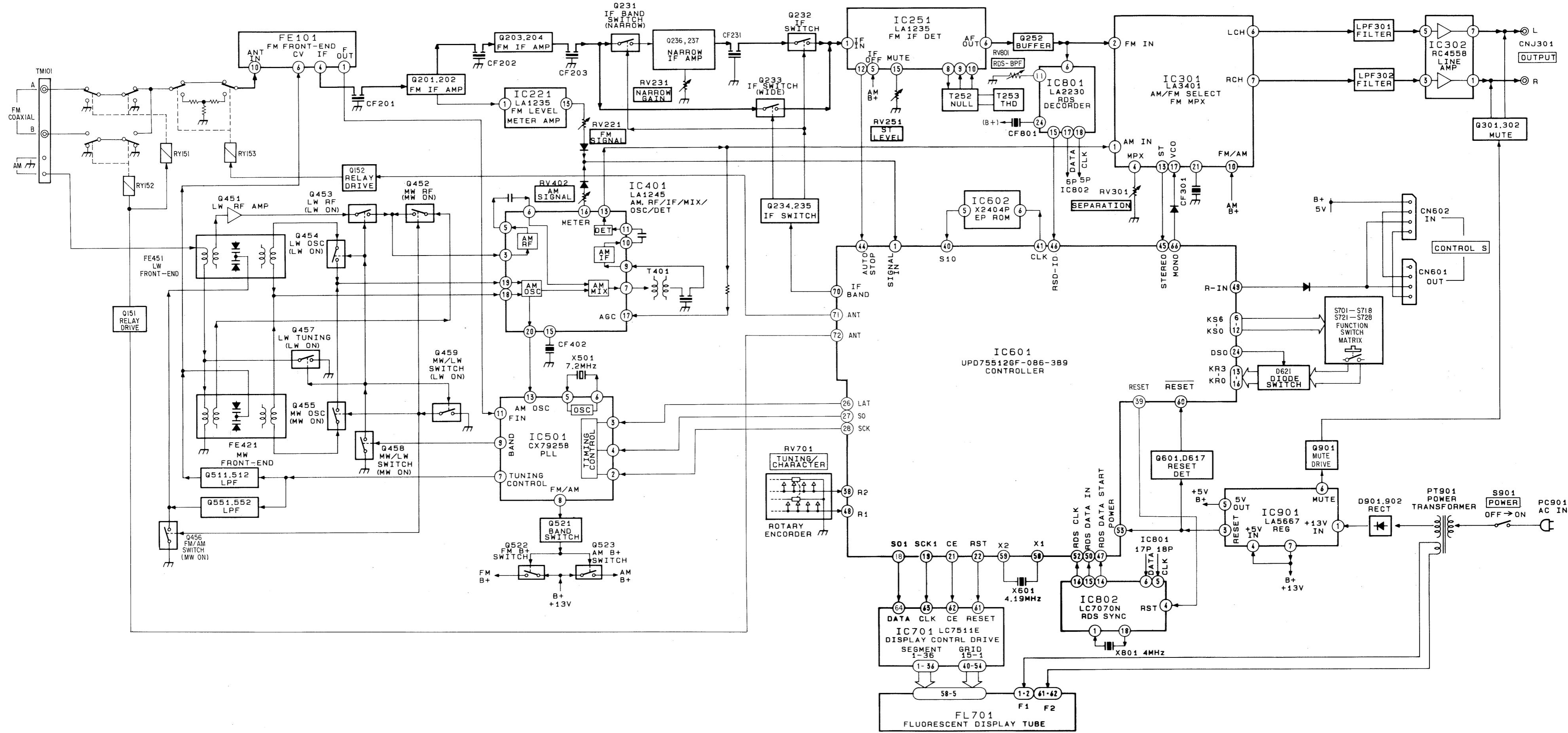
1. Set SSG output level so that antenna input level of the set becomes 5.0mV (74dB μ /m).
2. Adjust RV402 to the place where level 10 in the signal strength indicator turns from dark to light.

Adjustment Location : TUNER BOARD (Component Side)



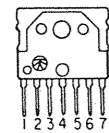
SECTION 3
DIAGRAMS

3-1. BLOCK DIAGRAM



● SEMICONDUCTOR LEAD LAYOUTS

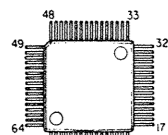
LA5667



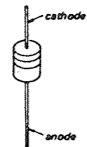
2SK246-GR3



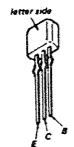
LC75711E



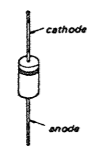
11ES2
HZS27-2L
HZS7B2L



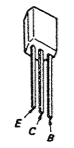
2SA1175-HFE
2SC3623A-LK
DTC114TS
DTC144ES



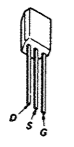
1N4148M



2SC2603-EF
2SC2669-OY
DTA144ES



2SK161-YGR



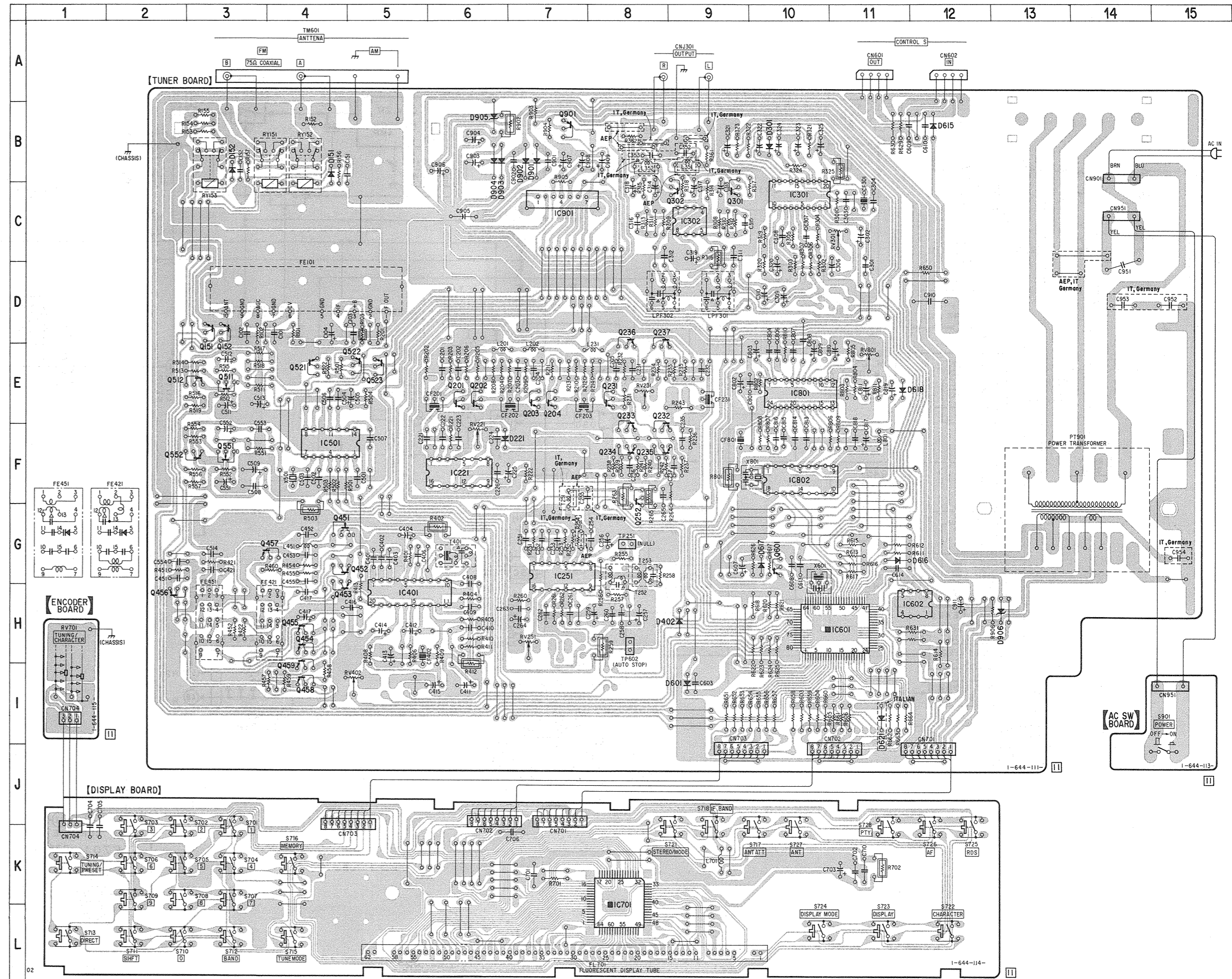
● SEMICONDUCTOR LOCATION

Ref. No.	Location	Ref. No.	Location
D151	B - 4	Q301	C - 9
D152	B - 3	Q302	C - 9
D221	F - 6	Q451	G - 4
D301	B - 10	Q452	G - 4
D402	H - 9	Q453	H - 4
D601	I - 9	Q454	H - 4
D615	B - 12	Q455	H - 4
D616	G - 11	Q456	H - 2
D617	G - 10	Q457	G - 4
D618	E - 11	Q458	I - 4
D621	I - 11	Q459	H - 4
D901	B - 7	Q511	E - 3
D902	B - 7	Q512	E - 3
D903	B - 6	Q521	E - 4
D904	B - 6	Q522	E - 5
D905	B - 6	Q523	E - 5
D906	H - 13	Q551	F - 3
		Q552	F - 3
		Q601	G - 10
		Q901	B - 7
IC221	F - 6		
IC251	G - 7		
IC301	C - 10		
IC302	C - 9		
IC401	H - 5		
IC501	F - 4		
IC601	H - 11		
IC602	H - 12		
IC701	K - 8		
IC801	E - 10		
IC802	F - 10		
IC901	C - 7		
Q151	D - 3		
Q152	E - 6		
Q201	E - 6		
Q202	E - 7		
Q203	E - 7		
Q204	E - 8		
Q231	E - 8		
Q232	E - 8		
Q233	F - 8		
Q234	F - 8		
Q235	D - 8		
Q236	D - 8		
Q237	H - 7		
Q251	F - 8		
Q252	F - 8		

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.

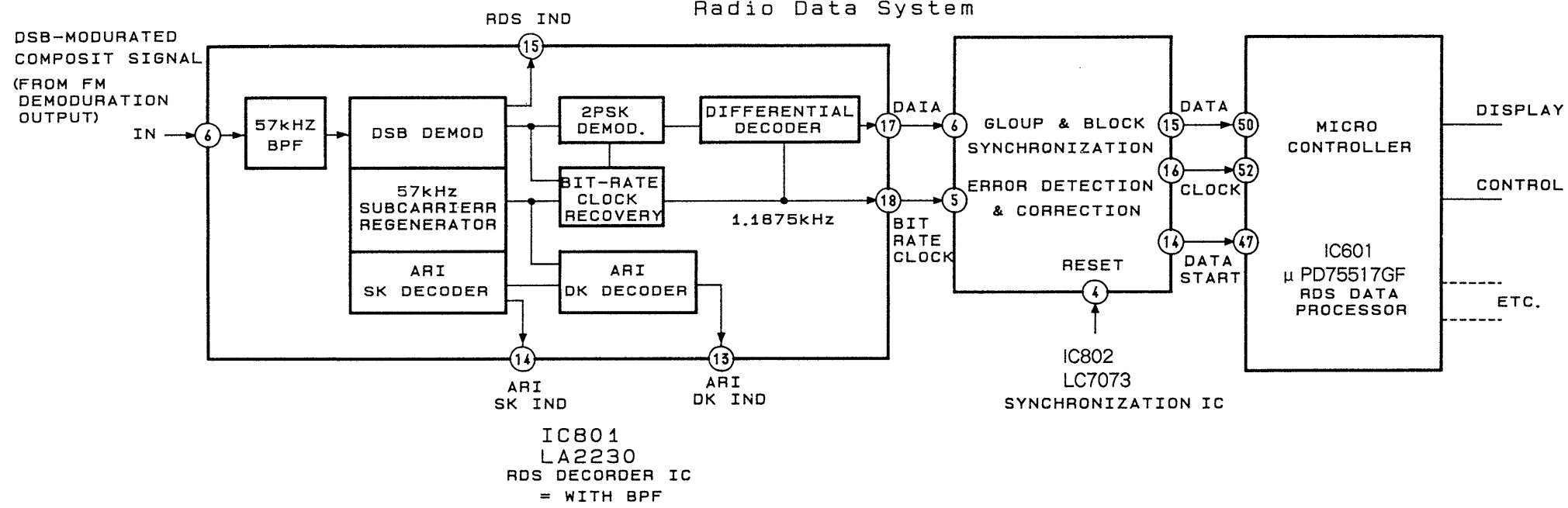
3-2. PRINTED WIRING BOARDS



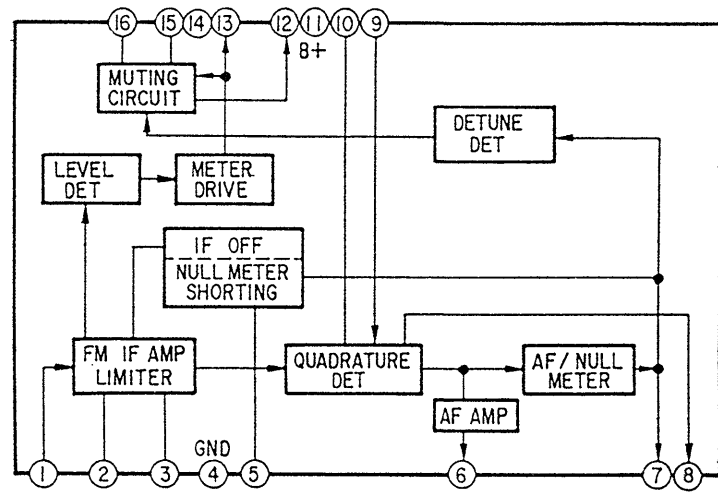
3-5. IC BLOCK DIAGRAMS

IC601 μ PD75517GF
 IC801 LA2230
 IC802 LC7073

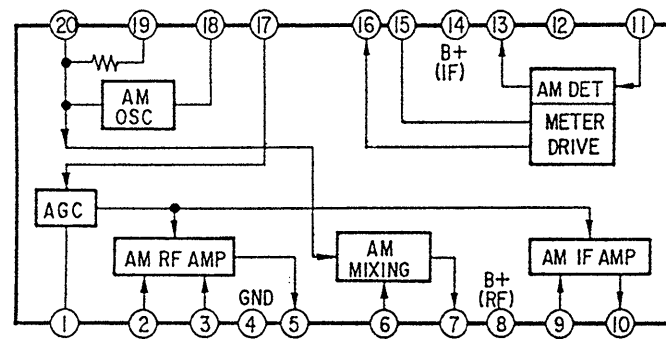
RDS DECODER IC's
 Radio Data System



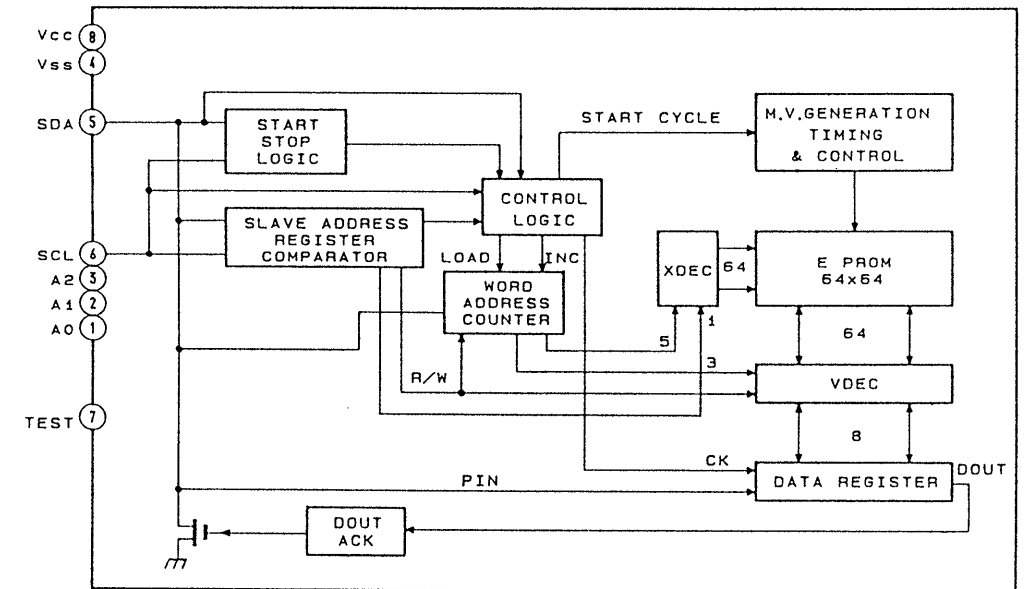
IC221, 251 LA1235



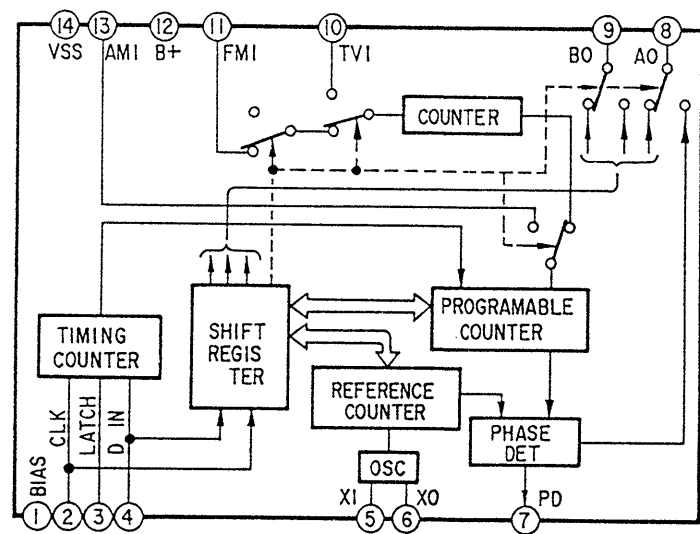
IC401 LA1245



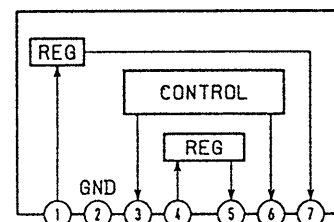
IC602 X24C04P



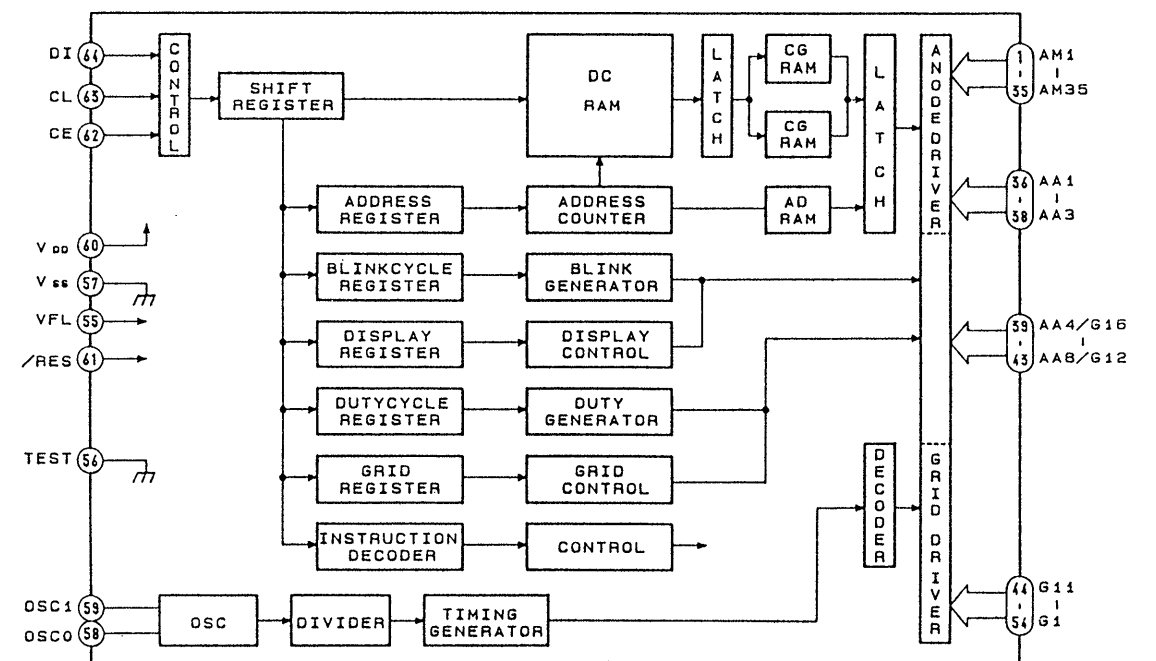
IC501 CX7925B



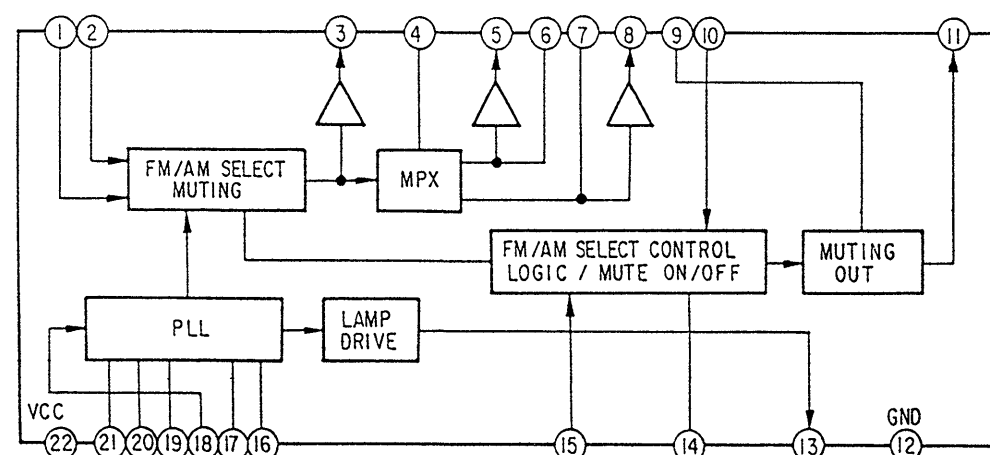
IC901 LA5667



IC701 LC7511E



IC301 LA3401



SECTION 5 ELECTRICAL PARTS LIST

AC SW(B)

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 Δ or dotted line with mark Δ 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
*	1-644-113-11	AC SW (B) BOARD *****	
		< CONNECTOR >	
CN951	1-690-122-41	REED (WITH CONNECTOR) (2 CORE)	
		< SWITCH >	
Δ S901	1-572-267-51	SWITCH, PUSH (AC POWER) (1 KEY) (POWER)	

*	1-644-114-11	DISPLAY BOARD *****	
*	4-932-810-11	CUSHION (FL)	
*	4-945-292-01	HOLDER, INDICATION TUBE	
		< CAPACITOR >	
C701	1-162-210-31	CERAMIC 30PF 5% 50V	
C702	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C703	1-124-472-11	ELECT 470uF 20% 10V	
C704	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C705	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C706	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C710	1-161-379-00	CERAMIC 0.01uF 20% 25V	
		< CONNECTOR >	
* CN701	1-564-342-11	PIN, CONNECTOR 8P	
* CN702	1-564-342-61	PIN, CONNECTOR 8P	
* CN703	1-564-342-11	PIN, CONNECTOR 8P	
		< FILTER >	
FL701	1-519-719-11	INDICATOR TUBE, FLUORESCENT	

Ref.No.	Part No.	Description	Remark
		< IC >	
IC701	8-759-823-57	IC LC75711E	
		< COIL >	
L701	1-410-977-11	INDUCTOR 100uH	
		< RESISTOR >	
R701	1-249-436-11	CARBON 39K 5% 1/4W	
Δ R702	1-249-401-81	CARBON 47 5% 1/4W F	
		< 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 (DIRECT)	
S714	1-554-303-21	SWITCH, TACTILE (TUNING/PRESET)	
S715	1-554-303-21	SWITCH, TACTILE (TUNING MODE)	
S716	1-554-303-21	SWITCH, TACTILE (MEMORY)	
S717	1-554-303-21	SWITCH, TACTILE (ANT ATT)	
S718	1-554-303-21	SWITCH, TACTILE (IF BAND)	
S721	1-554-303-21	SWITCH, TACTILE (STEREO/MUTE)	
S722	1-554-303-21	SWITCH, TACTILE (CHARACTER)	
S723	1-554-303-21	SWITCH, TACTILE (DISPLAY)	
S724	1-554-303-21	SWITCH, TACTILE (DISPLAY MODE)	
S725	1-554-303-21	SWITCH, TACTILE (RDS)	
S726	1-554-303-21	SWITCH, TACTILE (AF)	

DISPLAY

ENCODER

TUNER

Ref.No.	Part No.	Description	Remark
S727	1-554-303-21	SWITCH, TACTILE (ANT)	
S728	1-554-303-21	SWITCH, TACTILE (PTY)	

*	1-644-115-11	ENCODER BOARD ***** < VARIABLE RESISTOR >	
RV701	1-466-513-11	ENCODER, ROTARY(TUNING/CHARACTER/PTY)	

*	A-4347-328-A	TUNER BOARD, COMPLETE(Germany) *****	
*	A-4347-537-A	TUNER BOARD, COMPLETE(AEP) *****	
*	A-4347-538-A	TUNER BOARD, COMPLETE(ITALIAN) *****	
	7-682-548-04	SCREW +BVTT 3X8 (S) < CAPACITOR >	
C101	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C102	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C103	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C104	1-124-477-11	ELECT 47uF 20% 25V	
C151	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C152	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C153	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C201	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C202	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C203	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C204	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C205	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C221	1-162-282-31	CERAMIC 100PF 10% 50V	
C222	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C223	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C224	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C225	1-124-477-11	ELECT 47uF 20% 25V	
C226	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C231	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C232	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C235	1-162-215-31	CERAMIC 47PF 5% 50V	
C236	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C237	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C251	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C252	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C253	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C254	1-162-282-31	CERAMIC 100PF 10% 50V(AEP)	

Ref.No.	Part No.	Description	Remark
C254	1-162-288-31	CERAMIC 330PF 10% 50V (Germany, ITALIAN)	
C255	1-162-290-31	CERAMIC 470PF 10% 50V (Germany, ITALIAN)	
C256	1-124-903-11	ELECT 1uF 20% 50V	
C257	1-124-477-11	ELECT 47uF 20% 25V	
C258	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C259	1-124-477-11	ELECT 47uF 20% 25V	
C260	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C261	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C262	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C263	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C264	1-124-902-00	ELECT 0.47uF 20% 50V	
C265	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C301	1-164-098-11	CERAMIC 0.047uF 12V	
C302	1-124-477-11	ELECT 47uF 20% 25V	
C303	1-164-098-11	CERAMIC 0.047uF 12V	
C304	1-162-288-31	CERAMIC 330PF 10% 50V	
C306	1-124-477-11	ELECT 47uF 20% 25V	
C307	1-130-467-00	MYLAR 470PF 5% 50V	
C308	1-130-467-00	MYLAR 470PF 5% 50V	
C309	1-123-382-00	ELECT 3.3uF 20% 100V	
C310	1-123-382-00	ELECT 3.3uF 20% 100V	
C311	1-161-375-00	CERAMIC 0.0022uF 20% 50V	
C312	1-161-375-00	CERAMIC 0.0022uF 20% 50V	
C313	1-124-907-11	ELECT 10uF 20% 50V	
C314	1-124-907-11	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	1-124-477-11	ELECT 47uF 20% 25V	
C320	1-124-903-11	ELECT 1uF 20% 50V	
C321	1-124-903-11	ELECT 1uF 20% 50V	
C322	1-124-903-11	ELECT 1uF 20% 50V	
C323	1-124-902-00	ELECT 0.47uF 20% 50V	
C324	1-124-903-11	ELECT 1uF 20% 50V	
C325	1-124-477-11	ELECT 47uF 20% 25V	
C352	1-162-294-31	CERAMIC 0.001uF 10% 50V (Germany, ITALIAN)	
C353	1-162-294-31	CERAMIC 0.001uF 10% 50V (Germany, ITALIAN)	
C401	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C402	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C403	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C404	1-124-477-11	ELECT 47uF 20% 25V	
C405	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C406	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C408	1-161-379-00	CERAMIC 0.01uF 20% 25V	

TUNER

Ref. No.	Part No.	Description	Remark		
C409	1-162-294-31	CERAMIC	0.001uF	10%	50V
C410	1-161-379-00	CERAMIC	0.01uF	20%	25V
C411	1-124-477-11	ELECT	47uF	20%	25V
C412	1-124-903-11	ELECT	1uF	20%	50V
C413	1-124-903-11	ELECT	1uF	20%	50V
C414	1-124-927-11	ELECT	4.7uF	20%	100V
C415	1-123-382-00	ELECT	3.3uF	20%	100V
C416	1-161-379-00	CERAMIC	0.01uF	20%	25V
C417	1-124-907-11	ELECT	10uF	20%	50V
C421	1-161-379-00	CERAMIC	0.01uF	20%	25V
C451	1-161-379-00	CERAMIC	0.01uF	20%	25V
C452	1-161-374-11	CERAMIC	0.0015uF	20%	50V
C453	1-161-374-11	CERAMIC	0.0015uF	20%	50V
C454	1-161-379-00	CERAMIC	0.01uF	20%	25V
C455	1-161-379-00	CERAMIC	0.01uF	20%	25V
C501	1-161-379-00	CERAMIC	0.01uF	20%	25V
C502	1-102-959-00	CERAMIC	22PF	5%	50V
C503	1-102-959-00	CERAMIC	22PF	5%	50V
C504	1-161-379-00	CERAMIC	0.01uF	20%	25V
C505	1-124-907-11	ELECT	10uF	20%	50V
C506	1-161-379-00	CERAMIC	0.01uF	20%	25V
C507	1-161-379-00	CERAMIC	0.01uF	20%	25V
C508	1-161-379-00	CERAMIC	0.01uF	20%	25V
C509	1-124-477-11	ELECT	47uF	20%	25V
C511	1-124-907-11	ELECT	10uF	20%	50V
C512	1-123-382-00	ELECT	3.3uF	20%	100V
C513	1-124-903-11	ELECT	1uF	20%	50V
C514	1-161-379-00	CERAMIC	0.01uF	20%	25V
C551	1-124-907-11	ELECT	10uF	20%	50V
C552	1-124-903-11	ELECT	1uF	20%	50V
C553	1-161-379-00	CERAMIC	0.01uF	20%	25V
C554	1-161-379-00	CERAMIC	0.01uF	20%	25V
C602	1-124-472-11	ELECT	470uF	20%	10V
C603	1-161-379-00	CERAMIC	0.01uF	20%	25V
C607	1-124-902-00	ELECT	0.47uF	20%	50V
C608	1-161-379-00	CERAMIC	0.01uF	20%	25V
C609	1-162-282-31	CERAMIC	100PF	10%	50V
C610	1-162-282-31	CERAMIC	100PF	10%	50V
C613	1-161-379-00	CERAMIC	0.01uF	20%	25V
C614	1-161-379-00	CERAMIC	0.01uF	20%	25V
C801	1-161-379-00	CERAMIC	0.01uF	20%	25V
C802	1-124-477-11	ELECT	47uF	20%	25V
C803	1-126-233-11	ELECT	22uF	20%	50V
C804	1-161-327-00	CERAMIC	0.0033uF	30%	16V
C806	1-161-327-00	CERAMIC	0.0033uF	30%	16V
C807	1-161-379-00	CERAMIC	0.01uF	20%	25V
C808	1-161-379-00	CERAMIC	0.01uF	20%	25V
C809	1-124-907-11	ELECT	10uF	20%	50V
C810	1-124-927-11	ELECT	4.7uF	20%	100V

Ref. No.	Part No.	Description	Remark		
C811	1-124-907-11	ELECT	10uF	20%	50V
C813	1-164-097-11	CERAMIC	0.022uF		50V
C814	1-136-159-00	FILM	0.033uF	5%	50V
C815	1-136-159-00	FILM	0.033uF	5%	50V
C816	1-161-329-00	CERAMIC	0.0068uF	30%	16V
C817	1-124-907-11	ELECT	10uF	20%	50V
C818	1-161-379-00	CERAMIC	0.01uF	20%	25V
C819	1-124-927-11	ELECT	4.7uF	20%	100V
C901	1-101-004-00	CERAMIC	0.01uF		50V
C902	1-101-004-00	CERAMIC	0.01uF		50V
C903	1-124-910-11	ELECT	47uF	20%	50V
C904	1-124-910-11	ELECT	47uF	20%	50V
C905	1-124-618-11	ELECT	2200uF	20%	35V
C906	1-124-911-11	ELECT	220uF	20%	50V
C907	1-124-903-11	ELECT	1uF	20%	50V
C908	1-124-907-11	ELECT	10uF	20%	50V
C909	1-124-477-11	ELECT	47uF	20%	25V
C911	1-126-233-11	ELECT	22uF	20%	50V
△ C951	1-161-744-00	CERAMIC	0.01uF		400V
C952	1-161-742-00	CERAMIC	0.0022uF	20%	400V (Germany, ITALIAN)
C953	1-161-742-00	CERAMIC	0.0022uF	20%	400V (Germany, ITALIAN)
C954	1-101-004-00	CERAMIC	0.01uF		50V (Germany, ITALIAN)
< 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			
CF801	1-577-075-11	OSCILLATOR, CERAMIC			
< CONNECTOR >					
CN601	1-564-980-11	PIN, CONNECTOR 4P(CONTROL-S IN)			
CN602	1-564-980-11	PIN, CONNECTOR 4P(CONTROL-S OUT)			
* CN701	1-564-342-11	PIN, CONNECTOR 8P			
* CN702	1-564-342-61	PIN, CONNECTOR 8P			
* CN703	1-564-342-11	PIN, CONNECTOR 8P			
* CN901	1-564-321-00	PIN, CONNECTOR 2P			
CN951	1-564-321-00	PIN, CONNECTOR 2P			
< JACK >					
CNJ301	1-568-250-11	JACK, PIN 2P(OUTPUT)			

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

TUNER

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
		< DIODE >				< FILTER >	
D151	8-719-987-63	DIODE 1N4148M		LPF301	1-235-164-00	FILTER, LOW PASS	
D152	8-719-987-63	DIODE 1N4148M		LPF302	1-235-164-00	FILTER, LOW PASS	
D221	8-719-987-63	DIODE 1N4148M				< TRANSFORMER >	
D301	8-719-987-63	DIODE 1N4148M					
D402	8-719-987-63	DIODE 1N4148M					
				△PT901	1-450-408-12	TRANSFORMER, POWER	
D601	8-719-987-63	DIODE 1N4148M				< TRANSISTOR >	
D615	8-719-987-63	DIODE 1N4148M		Q151	8-729-904-39	TRANSISTOR DTC114TS	
D616	8-719-987-63	DIODE 1N4148M		Q152	8-729-904-39	TRANSISTOR DTC114TS	
D617	8-719-987-63	DIODE 1N4148M		Q201	8-729-230-XX	TRANSISTOR 2SC2669-OY	
D618	8-719-987-63	DIODE 1N4148M		Q202	8-729-230-XX	TRANSISTOR 2SC2669-OY	
				Q203	8-729-230-XX	TRANSISTOR 2SC2669-OY	
D621	8-719-987-63	DIODE 1N4148M(ITALIAN)		Q204	8-729-230-XX	TRANSISTOR 2SC2669-OY	
D901	8-719-200-82	DIODE 11ES2		Q231	8-729-904-39	TRANSISTOR DTC114TS	
D902	8-719-200-82	DIODE 11ES2		Q232	8-729-904-39	TRANSISTOR DTC114TS	
D903	8-719-987-63	DIODE 1N4148M		Q233	8-729-904-39	TRANSISTOR DTC114TS	
D904	8-719-987-63	DIODE 1N4148M		Q234	8-729-620-05	TRANSISTOR 2SC2603-EF	
				Q235	8-729-620-05	TRANSISTOR 2SC2603-EF	
D905	8-719-934-18	LED HZS27-2L		Q236	8-729-230-XX	TRANSISTOR 2SC2669-OY	
D906	8-719-933-47	DIODE HZS7B2L		Q237	8-729-230-XX	TRANSISTOR 2SC2669-OY	
				Q252	8-729-620-05	TRANSISTOR 2SC2603-EF	
		< FRONT END >		Q301	8-729-141-30	TRANSISTOR 2SC3623A-LK	
FE101	1-465-219-11	FRONT END(AEP)		Q302	8-729-141-30	TRANSISTOR 2SC3623A-LK	
FE101	1-463-857-11	FRONT END (FM)(Germany, ITALIAN)		Q451	8-729-231-20	TRANSISTOR 2SK161-VGR	
FE421	1-236-462-11	ENCAPSULATED COMPONENT(MW)		Q452	8-729-900-89	TRANSISTOR DTC144ES	
FE451	1-236-463-11	ENCAPSULATED COMPONENT(LW)		Q453	8-729-900-89	TRANSISTOR DTC144ES	
				Q454	8-729-900-89	TRANSISTOR DTC144ES	
		< IC >		Q455	8-729-900-89	TRANSISTOR DTC144ES	
IC221	8-759-812-35	IC LA1235		Q456	8-729-900-89	TRANSISTOR DTC144ES	
IC251	8-759-812-35	IC LA1235		Q457	8-729-141-30	TRANSISTOR 2SC3623A-LK	
IC301	8-759-801-80	IC LA3401		Q458	8-729-904-39	TRANSISTOR DTC114TS	
IC302	8-759-945-58	IC RC4558P		Q459	8-729-620-05	TRANSISTOR 2SC2603-EF	
IC401	8-759-812-45	IC LA1245		Q511	8-729-202-67	TRANSISTOR 2SK246-GR3	
				Q512	8-729-201-84	TRANSISTOR 2SC3112-B	
IC501	8-757-925-20	IC CX7925B		Q521	8-729-900-89	TRANSISTOR DTC144ES	
IC601	8-759-087-64	IC uPD75517GF-153-3B9		Q522	8-729-119-76	TRANSISTOR 2SA1175-HFE	
IC602	8-759-720-89	IC X24C04P		Q523	8-729-620-05	TRANSISTOR 2SC2603-EF	
IC801	8-759-823-61	IC LA2230		Q551	8-729-202-67	TRANSISTOR 2SK246-GR3	
IC802	8-759-062-26	IC LC7073		Q552	8-729-201-84	TRANSISTOR 2SC3112-B	
				Q601	8-729-620-05	TRANSISTOR 2SC2603-EF	
IC901	8-759-820-09	IC LA5667		Q901	8-729-900-65	TRANSISTOR DTA144ES	
						< RESISTOR >	
		< COIL >		R101	1-249-437-11	CARBON 47K 5% 1/4W	
L201	1-410-977-11	INDUCTOR 100uH		R102	1-249-433-11	CARBON 22K 5% 1/4W	
L202	1-410-977-11	INDUCTOR 100uH		△R103	1-249-401-11	CARBON 47 5% 1/4W	
L231	1-410-977-11	INDUCTOR 100uH		R151	1-249-441-11	CARBON 100K 5% 1/4W	
L351	1-410-971-11	INDUCTOR 10uH(Germany, ITALIAN)					
L352	1-410-971-11	INDUCTOR 10uH(Germany, ITALIAN)					
L451	1-410-979-11	INDUCTOR 220uH					
L801	1-410-977-11	INDUCTOR 100uH					

Note: 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			Ref. No.	Part No.	Description	Remark		
R152	1-249-441-11	CARBON	100K	5%	1/4W	R264	1-249-421-11	CARBON	2.2K	5%	1/4W
R153	1-247-800-11	CARBON	51	5%	1/4W	△R265	1-249-393-11	CARBON	10	5%	1/4W
R154	1-247-800-11	CARBON	51	5%	1/4W	R301	1-249-421-11	CARBON	2.2K	5%	1/4W
R155	1-249-398-11	CARBON	27	5%	1/4W	R302	1-247-883-00	CARBON	150K	5%	1/4W
R156	1-249-404-00	CARBON	82	5%	1/4W	R303	1-247-883-00	CARBON	150K	5%	1/4W
R157	1-249-404-00	CARBON	82	5%	1/4W	R304	1-247-881-00	CARBON	120K	5%	1/4W
R201	1-249-409-11	CARBON	220	5%	1/4W	R305	1-247-881-00	CARBON	120K	5%	1/4W
R202	1-249-408-11	CARBON	180	5%	1/4W	R306	1-249-421-11	CARBON	2.2K	5%	1/4W
R203	1-249-411-11	CARBON	330	5%	1/4W	R307	1-249-421-11	CARBON	2.2K	5%	1/4W
R204	1-249-431-11	CARBON	15K	5%	1/4W	R308	1-249-426-11	CARBON	5.6K	5%	1/4W
R205	1-249-410-11	CARBON	270	5%	1/4W	R309	1-249-426-11	CARBON	5.6K	5%	1/4W
R206	1-249-413-11	CARBON	470	5%	1/4W	R310	1-249-426-11	CARBON	5.6K	5%	1/4W
R207	1-249-411-11	CARBON	330	5%	1/4W	R311	1-249-426-11	CARBON	5.6K	5%	1/4W
R208	1-249-434-11	CARBON	27K	5%	1/4W	R312	1-249-423-11	CARBON	3.3K	5%	1/4W
R209	1-249-411-11	CARBON	330	5%	1/4W	R313	1-249-423-11	CARBON	3.3K	5%	1/4W
R210	1-249-431-11	CARBON	15K	5%	1/4W	R314	1-249-413-11	CARBON	470	5%	1/4W
R211	1-249-410-11	CARBON	270	5%	1/4W	R315	1-249-413-11	CARBON	470	5%	1/4W
R212	1-249-411-11	CARBON	330	5%	1/4W	R316	1-249-401-11	CARBON	47	5%	1/4W
R213	1-249-434-11	CARBON	27K	5%	1/4W	R317	1-249-414-11	CARBON	560	5%	1/4W
R214	1-249-411-11	CARBON	330	5%	1/4W	R318	1-249-414-11	CARBON	560	5%	1/4W
R221	1-249-411-11	CARBON	330	5%	1/4W	R319	1-249-437-11	CARBON	47K	5%	1/4W
△R222	1-249-405-11	CARBON	100	5%	1/4W	R320	1-249-437-11	CARBON	47K	5%	1/4W
R231	1-249-411-11	CARBON	330	5%	1/4W	R321	1-249-437-11	CARBON	47K	5%	1/4W
R232	1-249-434-11	CARBON	15K	5%	1/4W	R322	1-249-429-11	CARBON	10K	5%	1/4W
R233	1-249-411-11	CARBON	330	5%	1/4W	R323	1-249-435-11	CARBON	33K	5%	1/4W
R234	1-249-395-11	CARBON	15	5%	1/4W	R324	1-249-426-11	CARBON	5.6K	5%	1/4W
R235	1-249-434-11	CARBON	27K	5%	1/4W	△R325	1-249-401-11	CARBON	47	5%	1/4W
R236	1-249-409-11	CARBON	220	5%	1/4W	R361	1-249-437-11	CARBON	47K	5%	1/4W
R237	1-249-441-11	CARBON	100K	5%	1/4W	R362	1-249-437-11	CARBON	47K	5%	1/4W
R238	1-249-429-11	CARBON	10K	5%	1/4W	R401	1-249-421-11	CARBON	2.2K	5%	1/4W
R239	1-249-429-11	CARBON	10K	5%	1/4W	△R402	1-249-409-11	CARBON	220	5%	1/4W
R240	1-249-431-11	CARBON	15K	5%	1/4W	R404	1-249-413-11	CARBON	470	5%	1/4W
R241	1-249-429-11	CARBON	10K	5%	1/4W	R405	1-249-405-11	CARBON	100	5%	1/4W
R242	1-249-429-11	CARBON	10K	5%	1/4W	R406	1-249-404-00	CARBON	82	5%	1/4W
R243	1-249-405-11	CARBON	100	5%	1/4W	R408	1-249-429-11	CARBON	10K	5%	1/4W
R251	1-249-411-11	CARBON	330	5%	1/4W	R409	1-249-429-11	CARBON	10K	5%	1/4W
R252	1-249-437-11	CARBON	47K	5%	1/4W	R410	1-249-430-11	CARBON	12K	5%	1/4W
R253	1-249-439-11	CARBON	68K	5%	1/4W	R411	1-249-429-11	CARBON	10K	5%	1/4W
R254	1-249-421-11	CARBON	2.2K	5%	1/4W	△R412	1-249-407-11	CARBON	150	5%	1/4W
					(Germany, ITALIAN)	R413	1-249-429-11	CARBON	10K	5%	1/4W
R255	1-249-421-11	CARBON	2.2K	5%	1/4W	R421	1-249-441-11	CARBON	100K	5%	1/4W
R256	1-249-432-11	CARBON	18K	5%	1/4W	R422	1-249-437-11	CARBON	47K	5%	1/4W
R257	1-249-424-11	CARBON	3.9K	5%	1/4W	R451	1-249-441-11	CARBON	100K	5%	1/4W
R258	1-249-422-11	CARBON	2.7K	5%	1/4W	R452	1-249-437-11	CARBON	47K	5%	1/4W
△R259	1-249-405-11	CARBON	100	5%	1/4W	R454	1-247-903-00	CARBON	1M	5%	1/4W
R260	1-249-438-11	CARBON	56K	5%	1/4W	R455	1-249-417-11	CARBON	1K	5%	1/4W
R261	1-249-437-11	CARBON	47K	5%	1/4W	R456	1-249-441-11	CARBON	100K	5%	1/4W
R262	1-249-441-11	CARBON	100K	5%	1/4W	R457	1-249-417-11	CARBON	1K	5%	1/4W
R263	1-249-429-11	CARBON	10K	5%	1/4W	R458	1-249-441-11	CARBON	100K	5%	1/4W

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TUNER

Ref.No.	Part No.	Description	Remark
T253	1-404-846-11	COIL, DISCRI (SECONDARY)	
T401	1-404-713-11	TRANSFORMER, IF	

< TERMINAL >

* TM101 1-537-406-11 TERMINAL BOARD (ANT)

< TEST PIN >

* TP251 1-565-513-11 PIN, CONNECTOR 2P (NULL)

< VIBRATOR >

X501 1-567-826-21 VIBRATOR, CRYSTAL (7.2MHz)

X601 1-577-359-21 VIBRATOR, CERAMIC (4.19MHz)

X801 1-577-358-21 VIBRATOR, CERAMIC (4.00MHz)

MISCELLANEOUS

△PC901 1-575-651-11 CORD, POWER

ACCESSORIES & PACKING MATERIALS

1-501-374-11 ANTENNA, LOOP

1-558-233-11 CORD (WITH CONNECTOR)(SIRCS)4P

1-558-271-11 CORD, CONNECTION

1-559-533-11 CORD, CONNECTION

3-755-055-11 MANUAL, INSTRUCTION

(ENGLISH, FRENCH, SPANISH, PORTUGUESE) (AEP)

3-755-055-41 MANUAL, INSTRUCTION

(GERMAN, DUTCH, SWEDISH, ITALIAN) (AEP, ITALIAN)

3-755-055-51 MANUAL, INSTRUCTION (GERMAN) (Germany)

* 4-930-835-01 CUSHION

* 4-944-049-41 INDIVIDUAL CARTON

HARDWARE LIST

#1 7-682-547-09 SCREW +BV 3X6, S TIGHT



#2 7-685-646-79 SCREW +BVTP 3X8 TYPE2 N-S

#3 7-682-548-04 SCREW +BVTT 3X8 (S)

#4 7-682-550-04 SCREW +BVTT 3X12 (S)

#5 7-682-548-09 SCREW +BVTT 3X8 (S)

#6 7-621-849-00 SCREW (BV/RING)

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