

CFS-219S/229S

SERVICE MANUAL

E Model

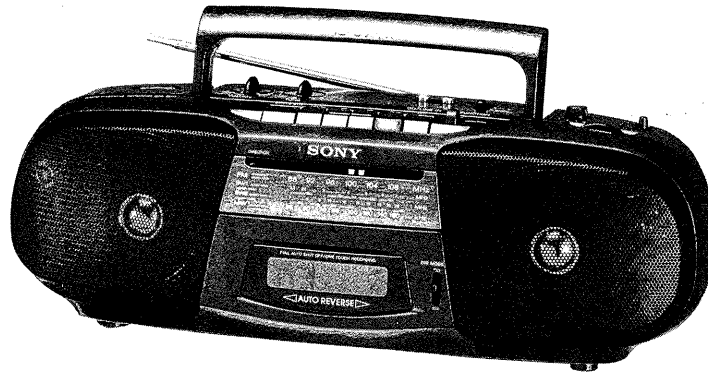


Photo : CFS-219S

Model Name Using Similar Mechanism	CFS-209S
Tape Transport Mechanism Type	MF-209-102

SPECIFICATIONS

Frequency range

Sales area	FM	MW	SW1	SW2
Saudi Arabia model	87.6—107 MHz	530—1,605 kHz	2.3—7MHz	7—22MHz
E, United Arab Emirates model	87.6—108 MHz			

Aerials	FM/SW : Telescopic aerial MW : Built-in ferrite aerial
Recording system	4-track, 2-channel stereo
Frequency response	80—10,000Hz
Speakers	Two way 10 cm dia. full range×2 2 cm dia. tweeter×2
Input	CD/LINE IN jacks (stereo pinjacks) (2) input impedance 47 kilohms. sensitivity 0.44V
Output	Headphones jack (stereo minijack) for 16—68 ohm impedance headphones
Maximum power output	2.6W+2.6W
Power requirements	110—120V, 220—240V AC adjustable, 50/60Hz 9V DC, six R20 (size D) batteries
Power consumption	14W in AC opration

Battery life

Batteries	FM recording	Tape playing
Sony SUM-1 (NS)	Approx. 12 hours	Approx. 7 hours
Sony AM1 alkaline	Approx. 24 hours	Approx. 14 hours

Dimensions Approx. 428×153×147.5 mm (w/h/d)
incl. projecting parts and controls,
not incl. handle

Mass Approx. 2.9 kg incl. batteries
Accessory supplied Mains lead (1)

Design and specifications subject to change without notice.

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.



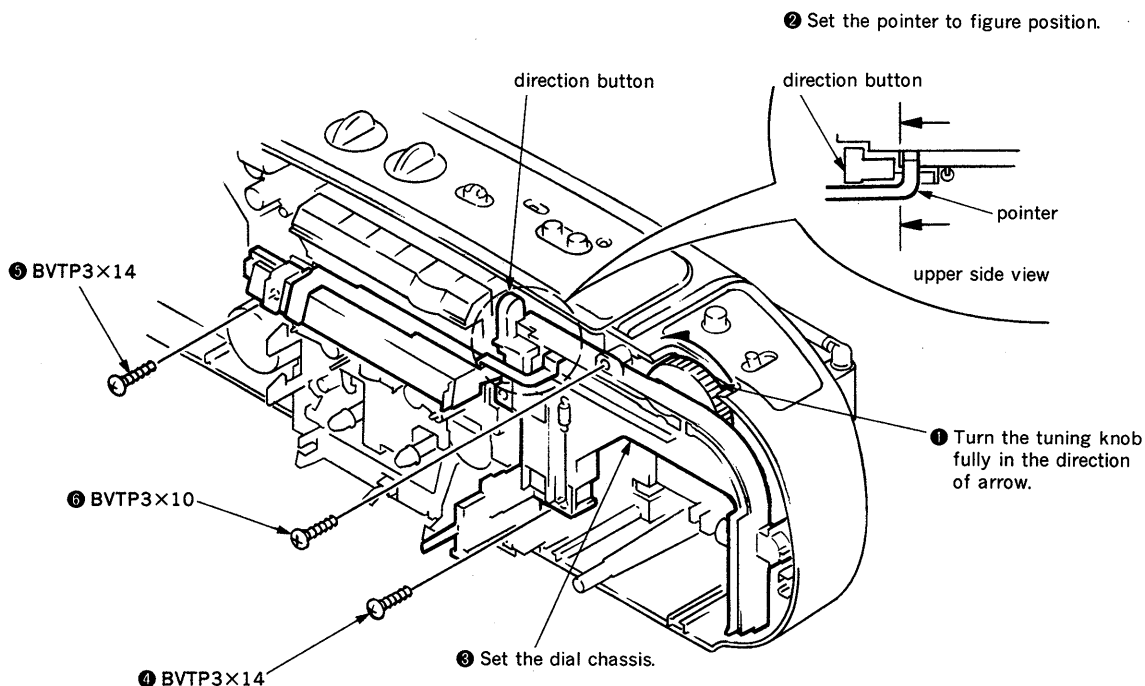
RADIO CASSETTE-CORDER
SONY®

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SECTION 1 DIAL POINTER SETTING

1-1. DIAL POINTER SETTING



SECTION 2 MECHANICAL ADJUSTMENTS

PRECAUTION

- Clean the following parts with a denatured-alcohol-moistened swab :

record/playback head	pinch roller
erase head	rubber belts
capstan	idlers
- Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
- Do not use a magnetized screwdriver for the adjustments.
- After the adjustments, apply suitable locking compound to the parts adjusted.
- The adjustments should be performed with the rated power supply voltage unless otherwise noted.
- Power supply voltage : 9V dc.

Torque Measurement

Torque	Torque Meter	Meter Reading
FWD	CQ-102C	22—55g•cm (0.31—0.76oz•inch)
FWD Back Tension	CQ-102C	2—5g•cm (0.03—0.06oz•inch)
REV	CQ-102RC	22—55g•cm (0.31—0.76oz•inch)
REV Back Tension	CQ-102RC	2—5g•cm (0.03—0.06oz•inch)
FF	CQ-201B	more than 60g•cm (more than 0.84oz•inch)
REW	CQ-201B	more than 55g•cm (more than 0.77oz•inch)

Tape Tension Measurement

Mode	Tension meter	Meter Reading
FWD	CQ-403A	more than 100g (more than 3.53 oz)
REV	CQ-403R	

SECTION 3 ELECTRICAL ADJUSTMENTS

3-1. TAPE RECORDER SECTION 0dB=0.775V

Standard Output Level

Output terminal	SP OUT	HP OUT
load impedance	3.2Ω	32Ω
output signal level	0.775V (0dB)	0.25V (-10dB)

Test Tape

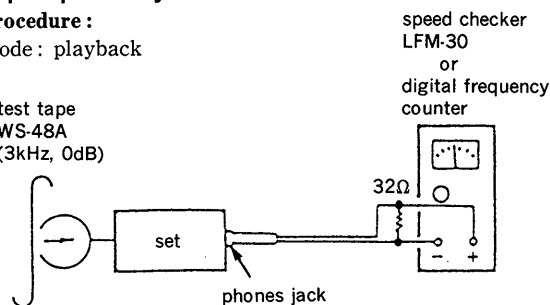
Type	Signal	Used for
WS-48A	3kHz, 0dB	tape speed adjustment

Tape Speed Adjustment

Procedure :

Mode : playback

test tape
WS-48A
(3kHz, 0dB)



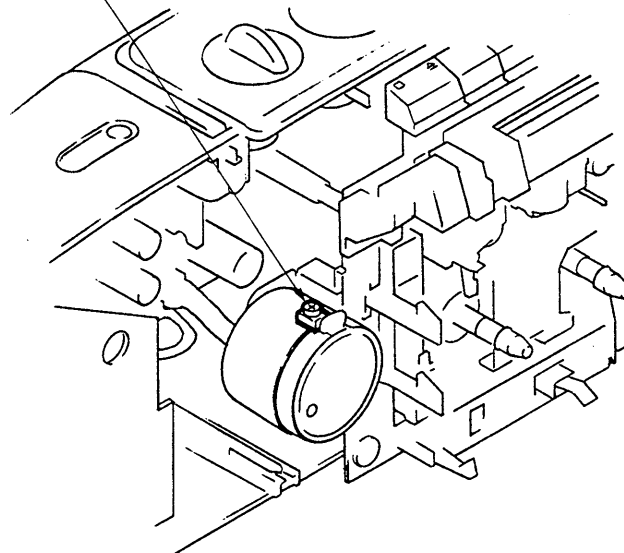
Adjustment Value :

Speed checker	Digital frequency counter
-3% to +3%	2,910 to 3,090Hz

Frequency difference between the beginning and the end of the tape should be within $\pm 1.5\%$ (45Hz).

Adjustment Location :

adjustment resistor RV401
(included motor assy (M901))

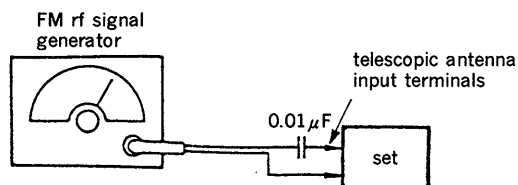


3-2. TUNER SECTION 0dB=1 μ V

• FM Section

Setting :

BAND switch : FM

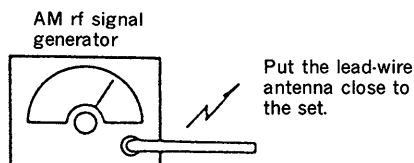


22.5kHz frequency
deviation by 400Hz signal
output level: as low as possible

• MW Section

Setting :

BAND switch : MW



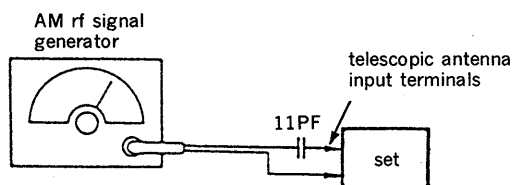
30% amplitude
modulation by
400Hz signal
output level: as low as possible

• SW Section

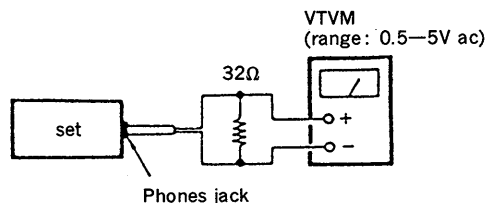
Setting :

BAND switch : SW1 or SW2

FINE TUNE control : mechanical mid



30% amplitude
modulation by
400Hz signal
output level: as low as possible



- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.
- Remove telescopic antenna in FM/SW section adjustments.

FM FREQUENCY COVERAGE ADJUSTMENT

Adjust for a maximum reading on VTVM.

L2	CT2
86.5MHz (87.35MHz)	109.5MHz (107.8MHz)

FM TRACKING ADJUSTMENT

Adjust for a maximum reading on VTVM.

L1	CT1
86.5MHz (87.35MHz)	109.5MHz (107.8MHz)

MW FREQUENCY COVERAGE ADJUSTMENT

Adjust for a maximum reading on VTVM.

L4	CT4
515kHz	1,680kHz

MW TRACKING ADJUSTMENT

Adjust for a maximum reading on VTVM.

L3	CT3
600kHz	1,400kHz

AM IF ADJUSTMENT

Adjust for a maximum reading on VTVM.

T1
455kHz

SW1 FREQUENCY COVERAGE ADJUSTMENT

Adjust for a maximum reading on VTVM.

L6	CT6
2.2MHz	7.3MHz

SW1 TRACKING ADJUSTMENT

Adjust for a maximum reading on VTVM.

L5	CT5
2.2MHz	7.3MHz

SW2 FREQUENCY COVERAGE ADJUSTMENT

Adjust for a maximum reading on VTVM.

L8	CT10
6.8MHz	22.5MHz

SW2 TRACKING ADJUSTMENT

Adjust for a maximum reading on VTVM.

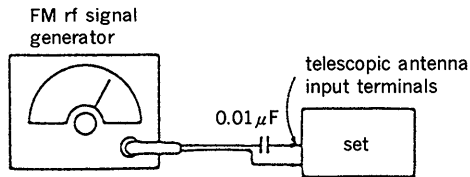
L7	CT9
6.8MHz	22.5MHz

() : Saudi Arabia model

Adjustment Location : tuner board

FM VCO Adjustment

Setting :



Carrier frequency: 98MHz
Modulation: no modulation
Output level: 0.1V (100dB)

Procedure :

1. Connect frequency counter as shown below.
2. Tune the set to 98MHz.
3. Adjust RV1 for 76kHz $\pm$ 500Hz reading on the frequency counter.

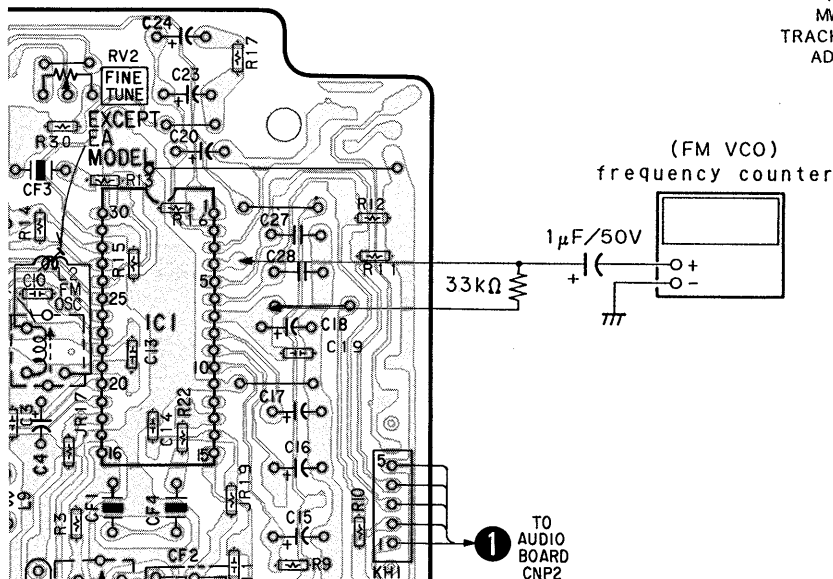
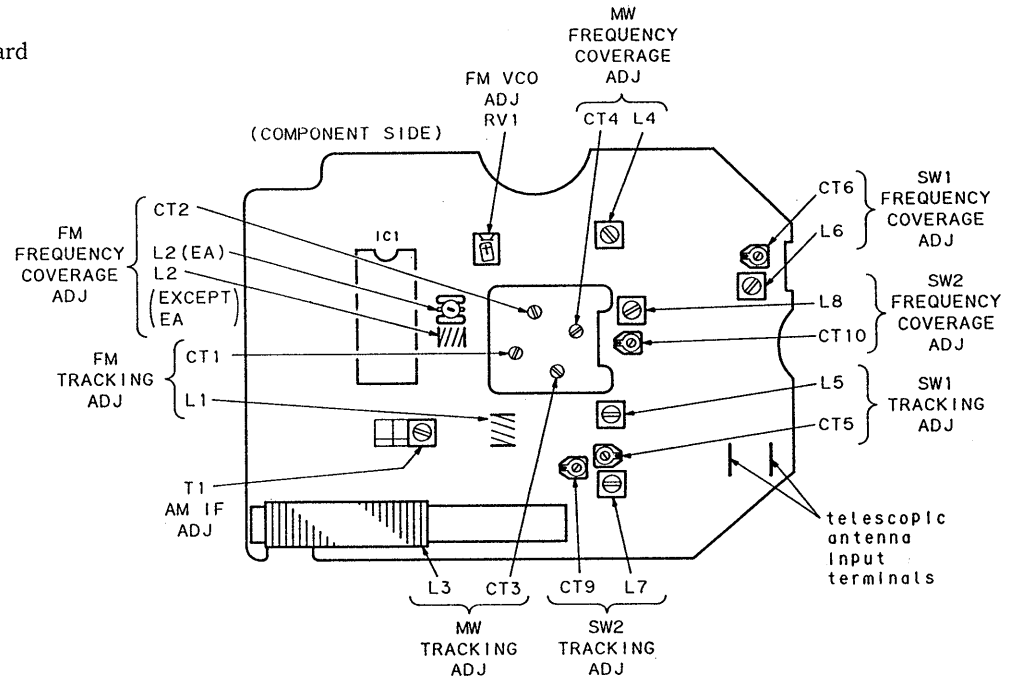
Adjustment Location : tuner board

HOW TO CHANGED THE CERAMIC FILTERS

This model is used three ceramic filters of CF1, 3 and 4. You must used same type of color marked ceramic filters in order to meet same specifications.

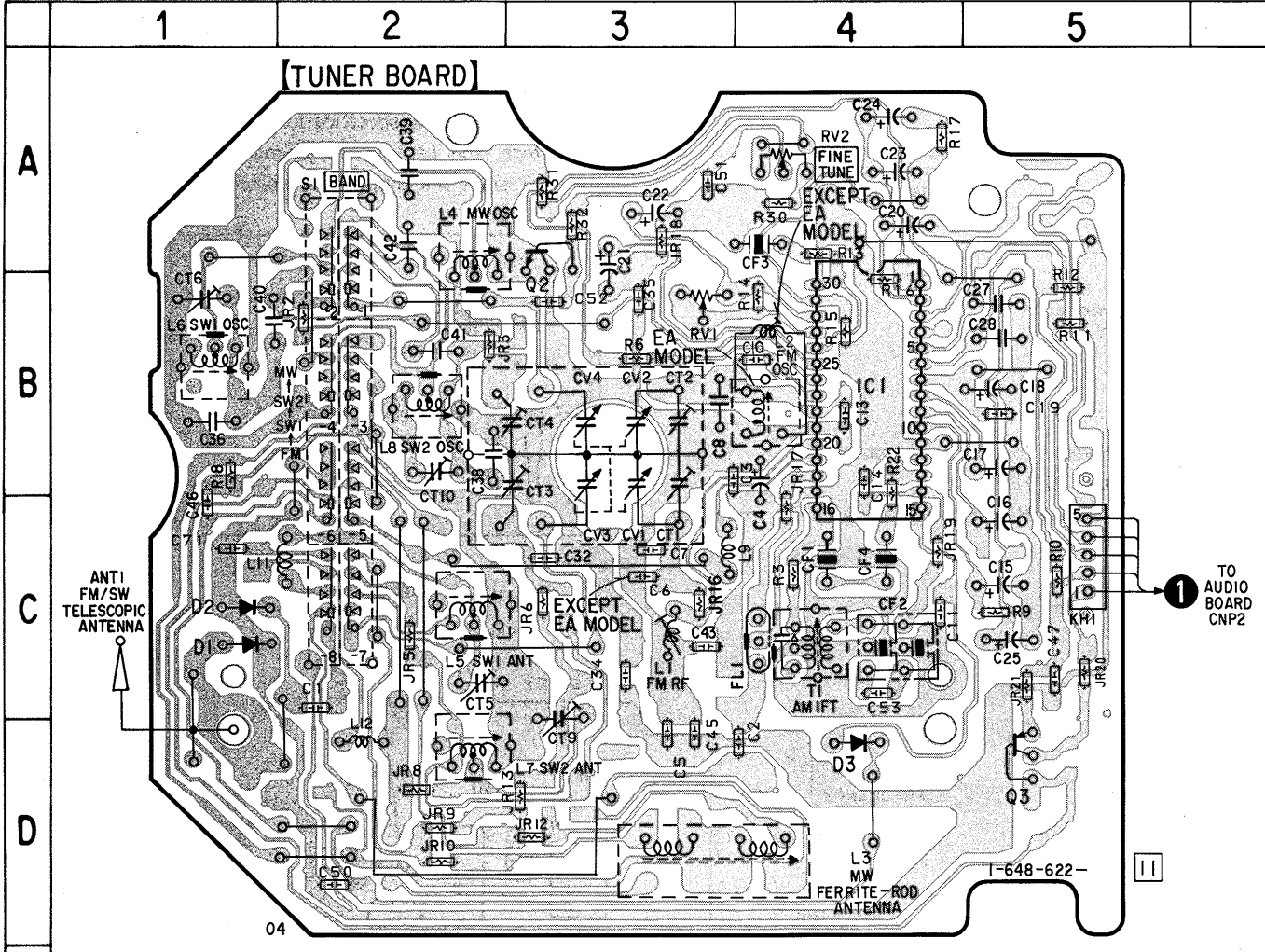
Therefore, the ceramic filter must changed three pieces together since it's supply three pieces in one package as a spare parts.

mark1	mark2	Center Frequency
red	—	10.70MHz
blue	—	10.67MHz
orange	—	10.73MHz
black	—	10.64MHz
white	—	10.76MHz
white	white	10.75MHz
yellow	—	10.79MHz

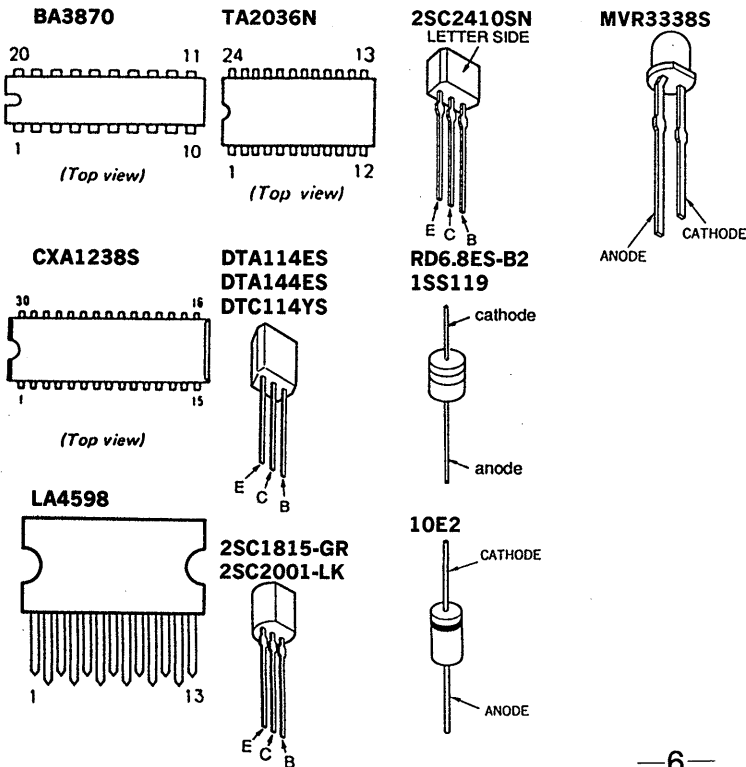


SECTION 4
DIAGRAMS

4-1. PRINTED WIRING BOARD—TUNER SECTION—



4-2. SEMICONDUCTOR LEAD LAYOUTS



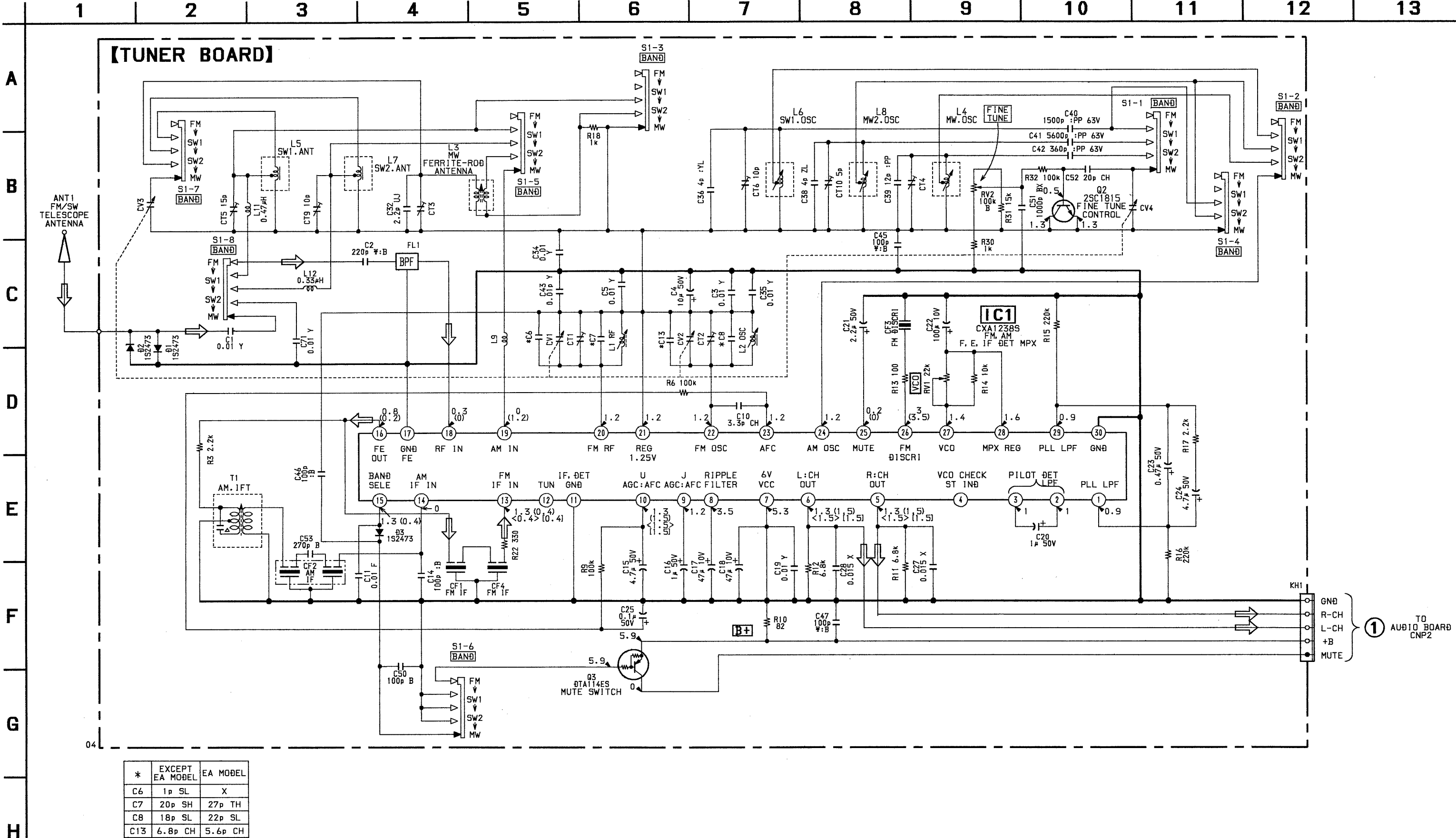
• Semiconductor Location

Ref. No.	Location
D1	C-1
D2	C-1
D3	D-4
IC1	B-4
Q2	A-3
Q3	D-5

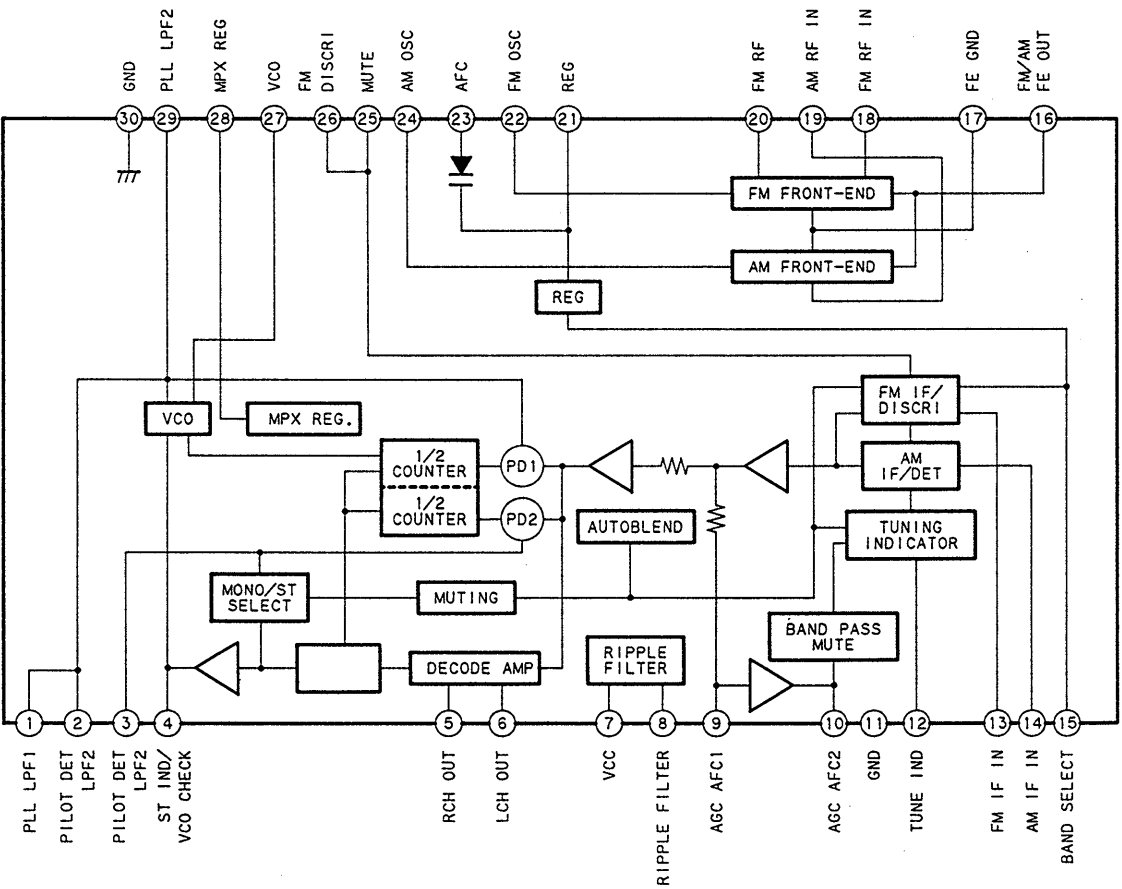
Note :

- : parts extracted from the component side.
- indicates side identified with part number.
- ▨ : Pattern on the side which is seen.
- Abbreviation
EA : Saudi Arabia model

4-3. SCHEMATIC DIAGRAM—TUNER SECTION—



• IC Block Diagram
IC1 CXA1238S



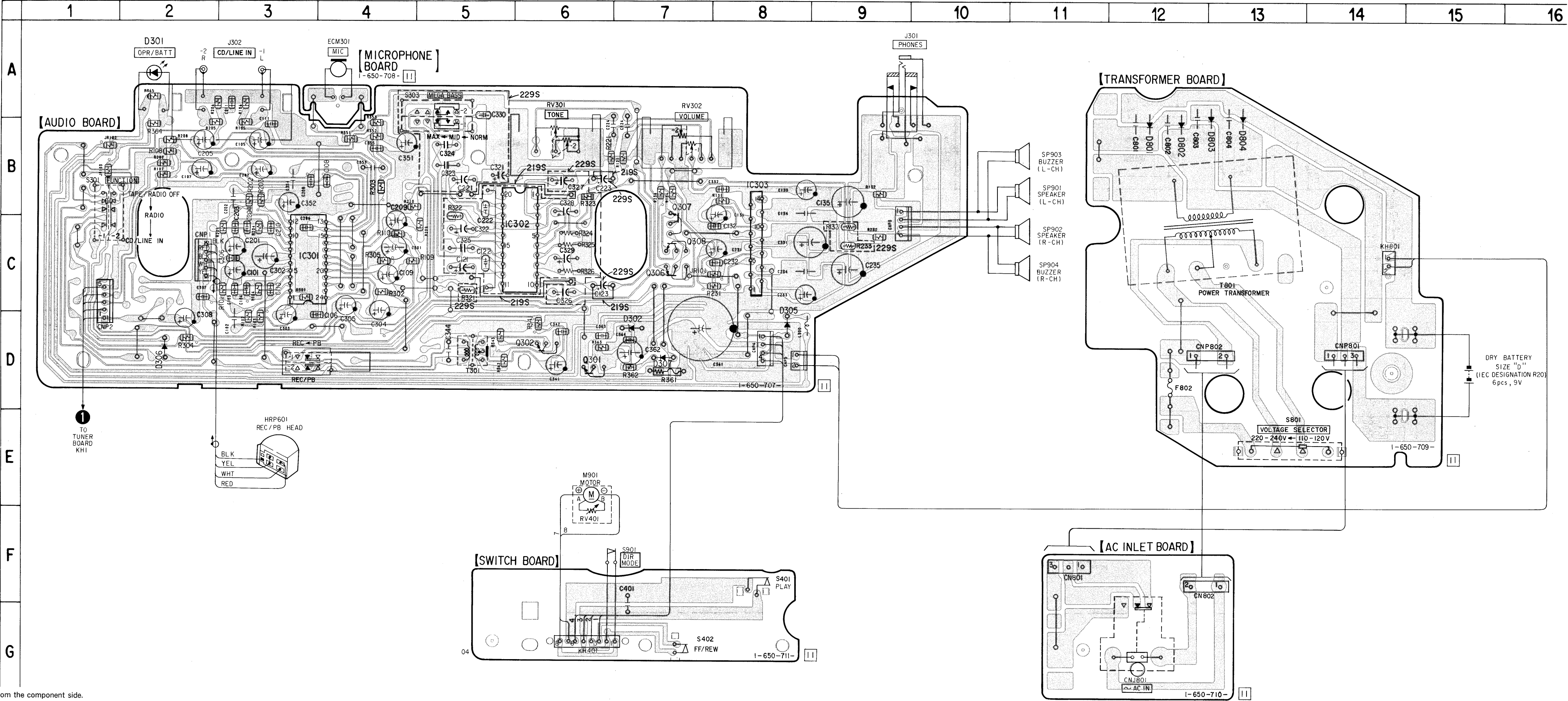
- Note:**
- All capacitors are in μF unless otherwise noted. pF: μF 50WV or less are not indicated except for electrolytics and tantalums.
 - All resistors are in Ω and 1/4 W or less unless otherwise specified.
 - Δ : internal component.
 - B+ : B+ Line
 - $\square$: adjustment for repair.
 - Voltage is dc with respect to ground under no-signal (detuned) conditions.
 - no mark: FM
 - (): SW1
 - < >: SW2
 - []: MW
 - Voltages are taken with a VOM (Input Impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
 - Signal path.
 - $\Rightarrow$: FM
 - Abbreviation
 - EA: Saudi Arabia model

• Semiconductor Location

Ref. No.	Location
D301	A-2
D302	D-7
D305	D-8
D306	D-2
D307	D-7
D801	B-12
D802	B-12
D803	B-12
D804	B-13
IC301	C-3
(IC302)	C-6
IC303	B-8
Q301	D-6
Q302	D-6
Q306	C-7
Q307	C-7
Q308	C-7

(): CFS-229S only

4-4. PRINTED WIRING BOARDS—AUDIO SECTION— • Refer to page 6 for Semiconductor Lead Layouts.

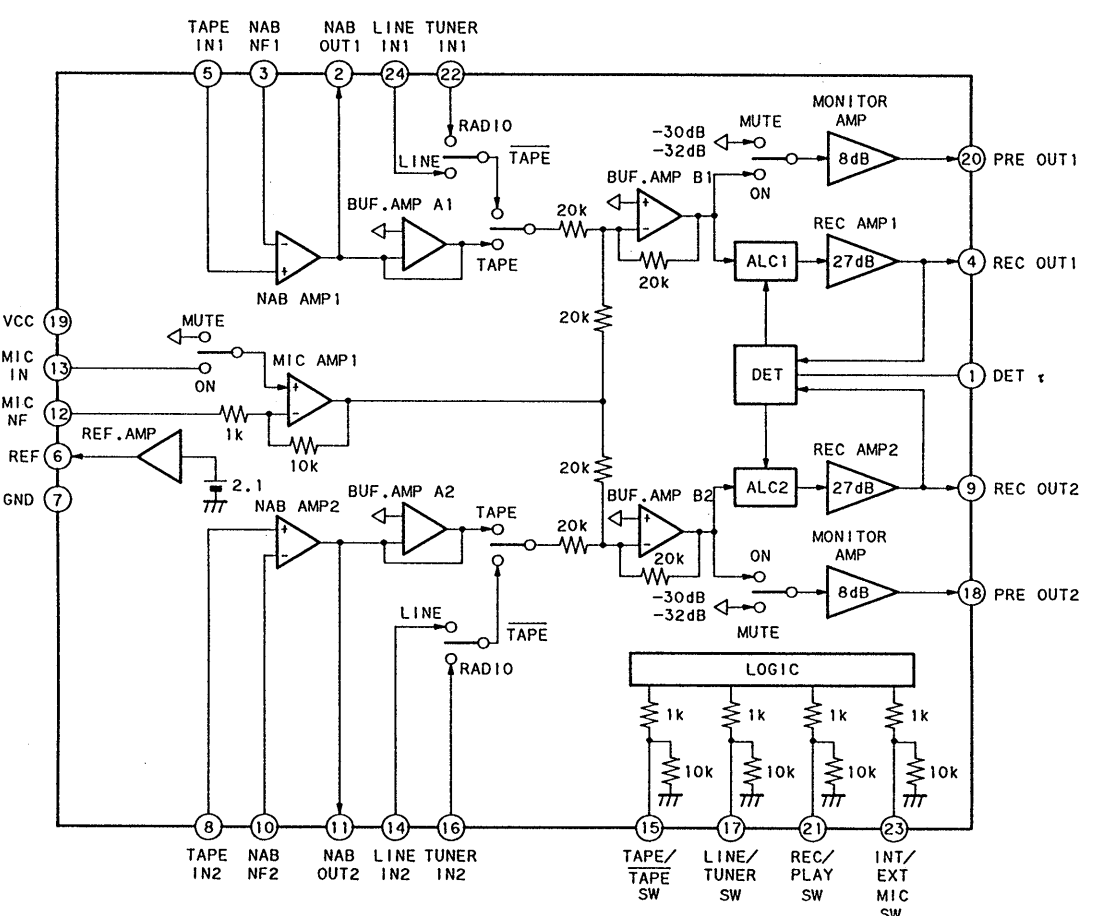
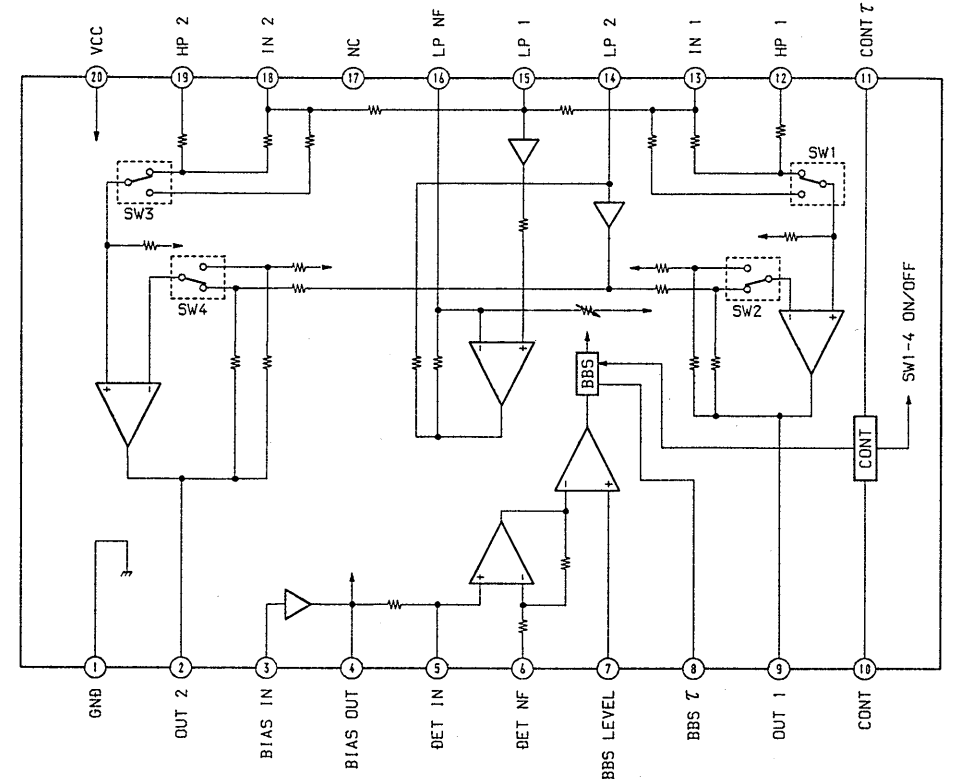




- All capacitors are in μF unless otherwise noted. pF : $\mu\mu\text{F}$ 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.

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

-  : fusible resistor.
-  : B+ Line
-  : adjustment for repair.
- Voltage is dc with respect to ground under no-signal conditions.
- no mark: PB
- (): REC
- Voltages are taken with a VOM (Input Impedance 10M Ω).
Voltage variations may be noted due to normal production tolerances.
- Signal path.
 -  : FM
 -  : PB
 -  : REC

**IC302 BA3870**

SECTION 5 EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- -XX and -X mean standardized parts, so they may have some difference from the original one.

- Color Indication of Appearance Parts

Example :

KNOB, BALANCE (WHITE)... (RED)

↑ ↑
Parts Color Cabinet's Color

- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

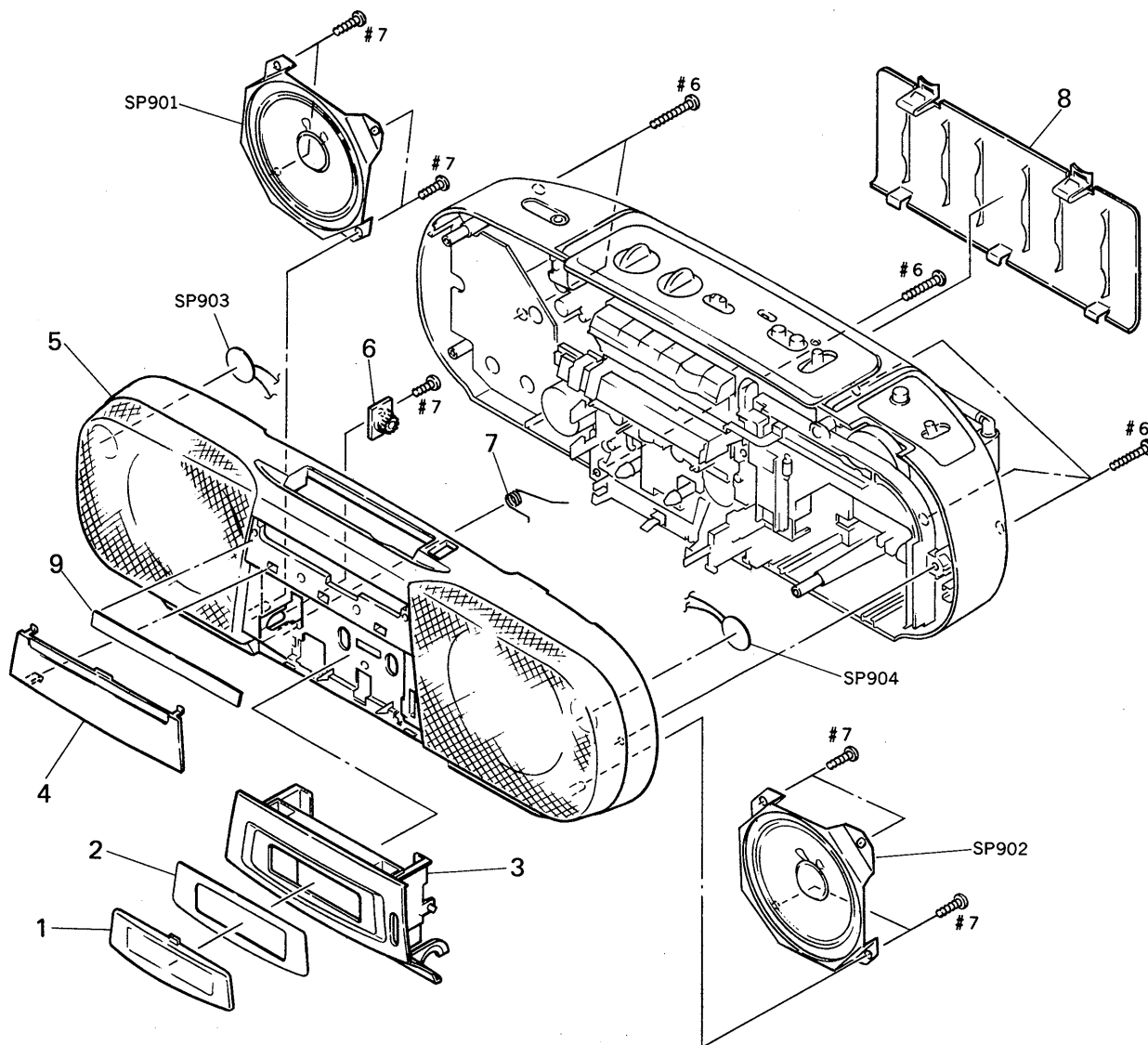
The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

- Abbreviations

EA : Saudi Arabia model

UAE : United Arab Emirates model

5-1. FRONT CABINET SECTION

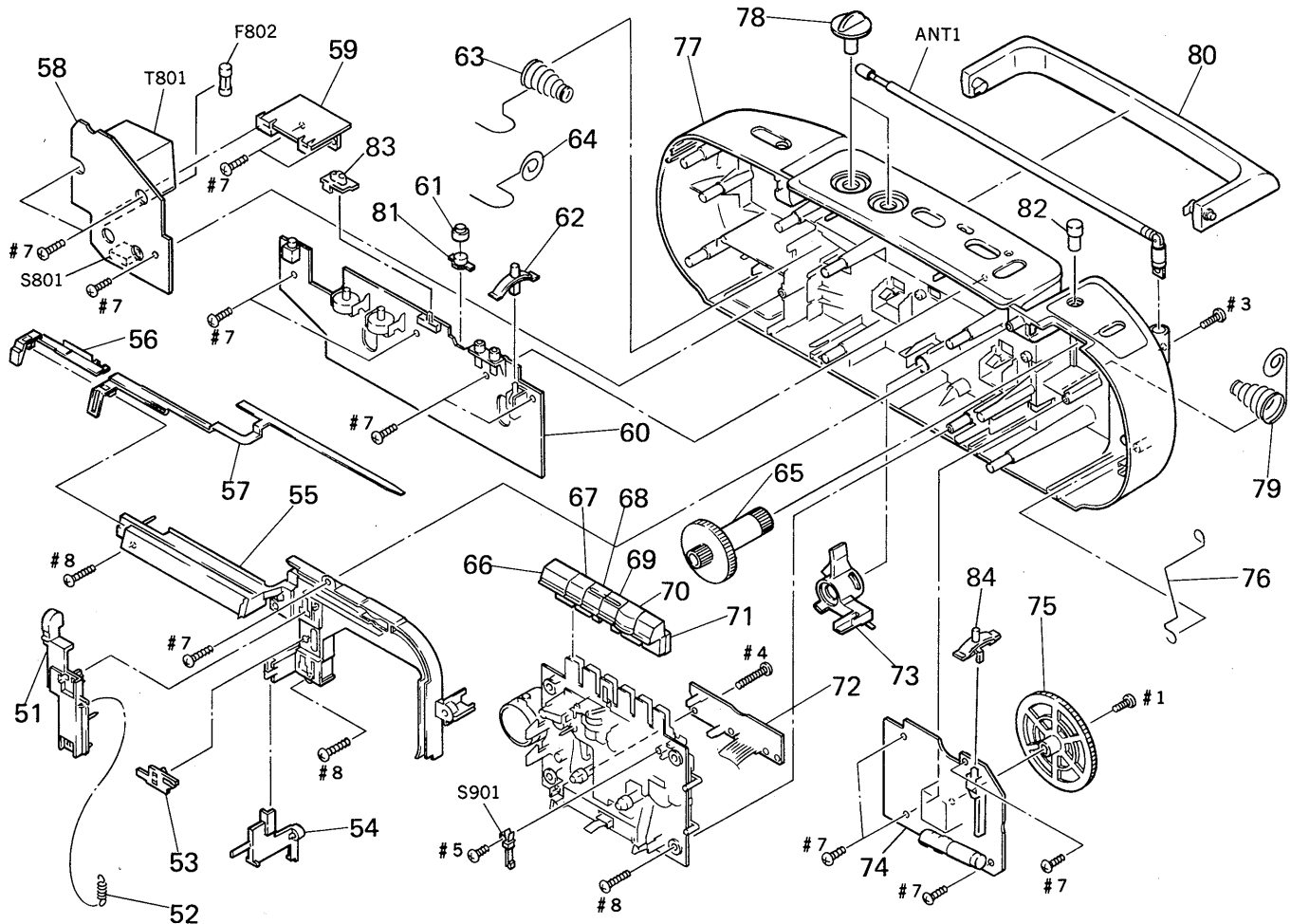


Ref. No.	Part No.	Description	Remark
1	3-908-068-01	WINDOW, CASSETTE	
* 2	3-909-459-01	SHEET, ADHESIVE	
3	3-908-073-01	HOLDER, CASSETTE	
4	3-908-069-31	PLATE, DIAL	
5	X-3367-741-1	CABINET (F) SUB ASSY (CFS-219S)	
5	X-3367-745-1	CABINET (F) SUB ASSY (CFS-229S)	
6	3-351-377-11	DAMPER	
7	3-909-454-01	SPRING, CASSETTE	
8	3-343-064-31	LID, BATTERY CASE (EXCEPT EA)	
8	3-368-522-01	LID, BATTERY CASE (EA)	

Ref. No.	Part No.	Description	Remark
* 9	3-909-458-01	SHEET (DIAL PLATE), ADHESIVE	
SP901	1-504-474-11	SPEAKER (10CM) (EA)	
SP901	1-544-742-11	SPEAKER (10CM) (EXCEPT EA)	
SP902	1-504-474-11	SPEAKER (10CM) (EA)	
SP902	1-544-742-11	SPEAKER (10CM) (EXCEPT EA)	
SP903	1-529-030-81	BUZZER	
SP904	1-529-030-81	BUZZER	

5-2. REAR CABINET SECTION

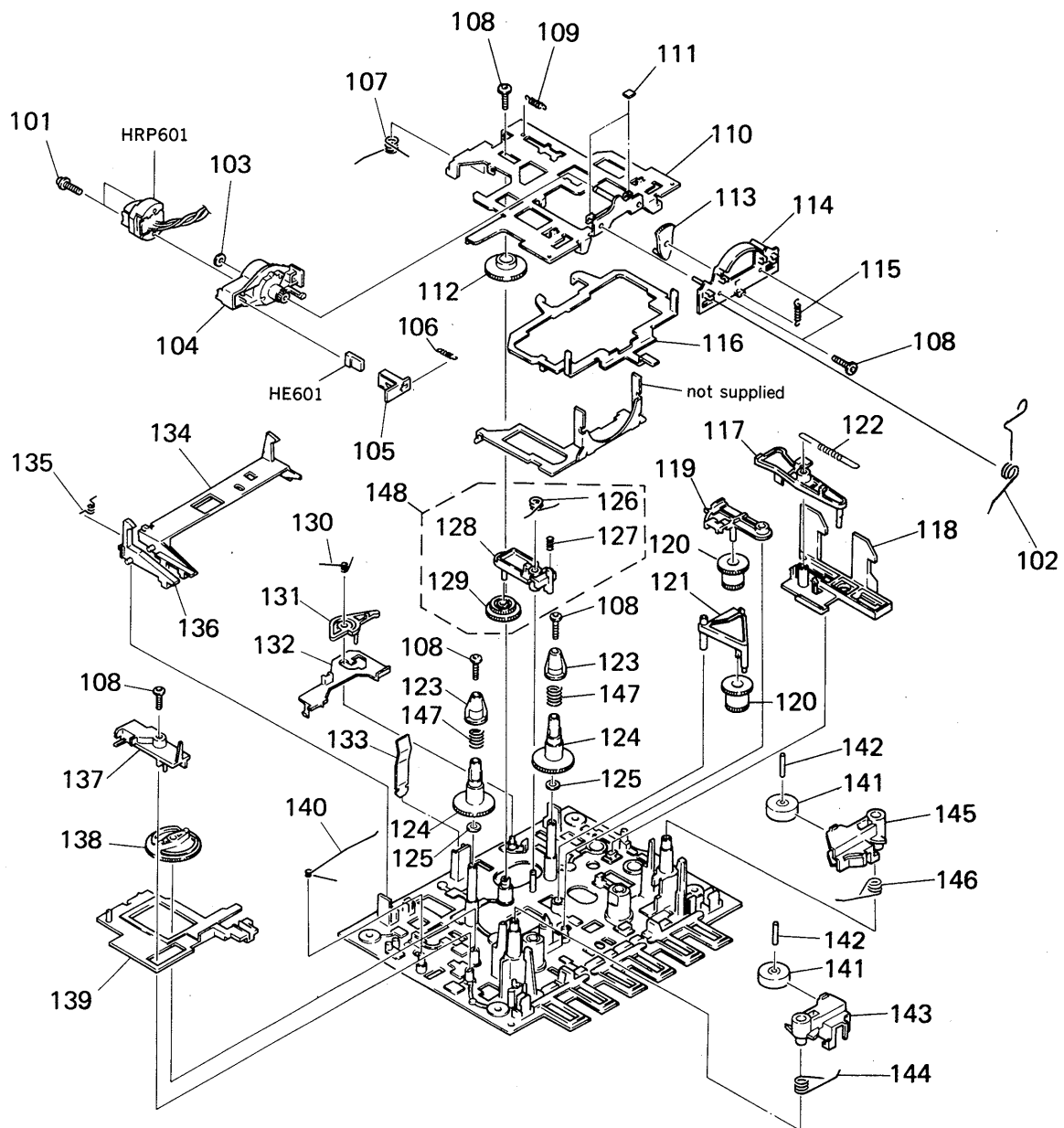
The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.



Ref. No.	Part No.	Description	Remark
51	3-909-480-01	BUTTON, DIRECTION	
52	3-379-754-01	SPRING (DIR.), TENSION	
53	3-909-456-01	LEVER, DIRECTION	
54	3-909-457-01	KNOB, DIRECTION	
55	3-909-481-01	CHASSIS, DIAL	
56	3-909-460-01	INDICATOR	
57	3-908-072-01	POINTER	
* 58	1-650-709-11	TRANSFORMER BOARD	
* 59	1-650-710-11	AC INLET BOARD	
* 60	A-3269-031-A	AUDIO BOARD, COMPLETE (CFS-219S)	
* 60	A-3269-048-A	AUDIO BOARD, COMPLETE (CFS-229S)	
61	3-379-413-01	CUSHION (MICROPHONE)	
62	3-386-953-01	KNOB (LEVER)	
63	3-909-453-01	SPRING (-), BATTERY COIL	
64	3-909-452-01	TERMINAL (+), BATTERY	
65	3-908-066-01	KNOB, TUNING	
66	3-908-062-01	BUTTON (S/E), M. D.	
67	3-908-065-01	BUTTON (PAUSE), M. D.	
68	3-908-063-01	BUTTON (FF), M. D.	
69	3-908-064-01	BUTTON (REW), M. D.	
70	3-908-060-01	BUTTON (PLAY), M. D.	
71	3-908-061-01	BUTTON (REC), M. D.	
* 72	1-650-711-11	SWITCH BOARD	

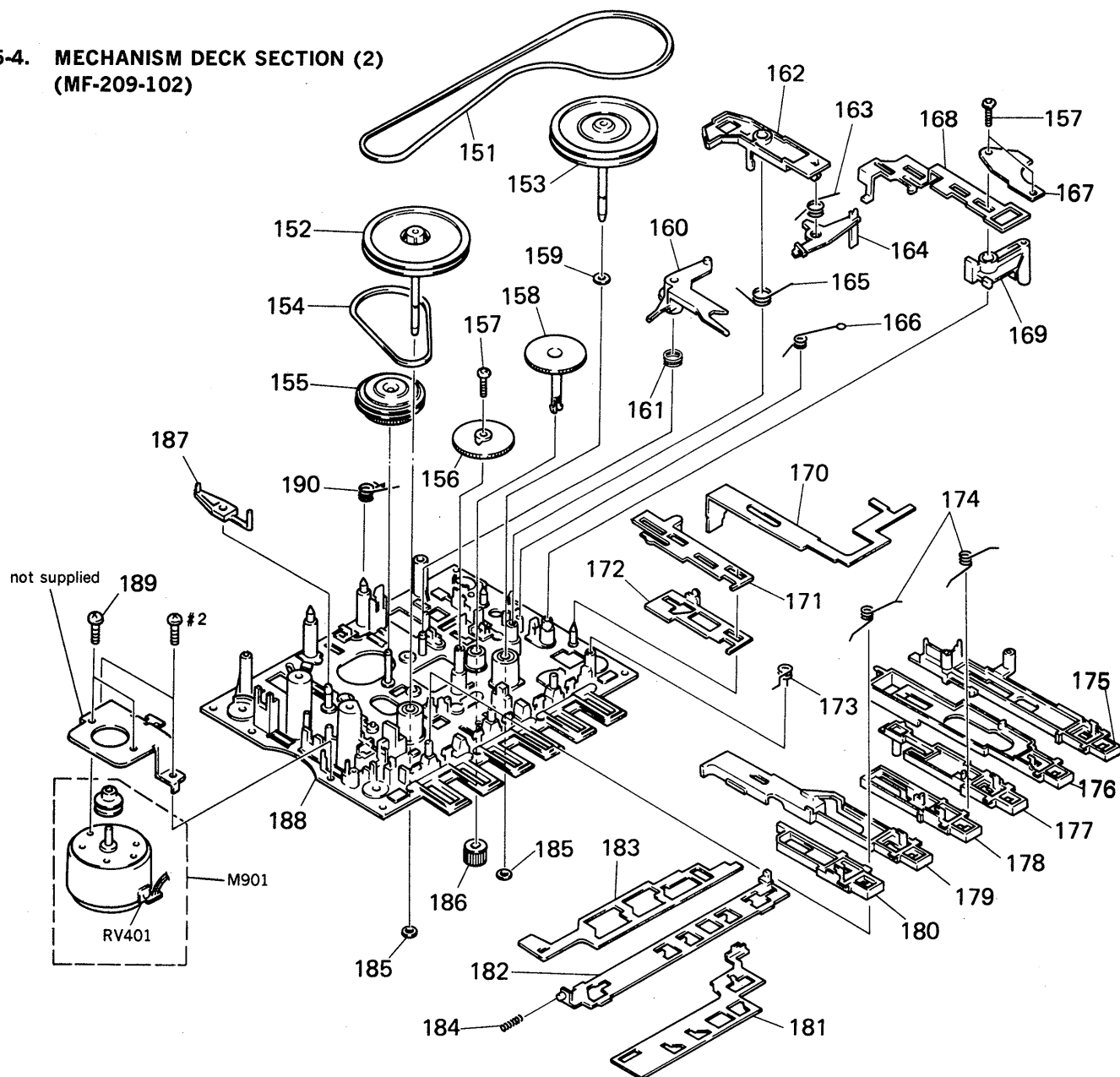
Ref. No.	Part No.	Description	Remark
73	3-909-461-01	LEVER, REC	
* 74	A-3269-033-A	TUNER BOARD, COMPLETE (EXCEPT EA)	
* 74	A-3269-412-A	TUNER BOARD, COMPLETE (EA)	
75	3-907-415-01	DRUM (PVC)	
* 76	3-909-455-01	TERMINAL, ANTENNA	
77	3-908-224-41	CABINET, REAR (CFS-219S:E)	
77	3-908-224-51	CABINET, REAR (UAE)	
77	3-908-224-61	CABINET, REAR (CFS-229S:E)	
77	3-908-224-81	CABINET, REAR (EA)	
78	3-379-771-01	KNOB (ROTARY) (EXCEPT EA)	
78	3-379-771-31	KNOB (ROTARY) (EA)	
79	3-379-412-11	TERMINAL (+ -), BATTERY	
80	X-3367-740-1	HANDLE ASSY	
* 81	1-650-708-11	MICROPHONE BOARD	
82	3-908-225-01	KNOB (FINE TUNE)	
83	3-907-412-01	KNOB (MEGA BASS) (CFS-229S)	
84	3-908-067-01	KNOB, LEVER	
ANT1	1-501-378-11	ANTENNA, TELESCOPIC	
Δ F802	1-532-611-00	FUSE, TIME-LAG (T0.125A)	
Δ S801	1-572-290-11	SWITCH, POWER (VOLTAGE SELECTOR)	
S901	1-570-559-11	SWITCH, LEAF (DIR MODE)	
Δ T801	1-450-015-11	TRANSFORMER, POWER	

5-3. MECHANISM DECK SECTION (1)
(MF-209-102)



Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
101	3-309-597-81	SCREW (1.4), TAPPING		124	3-374-326-01	TABLE, REEL	
102	3-384-551-01	SPRING (R), HEAD WIRE		125	3-377-195-01	WASHER (S)	
103	3-336-319-01	RING, RETAINING		126	3-374-327-01	SPRING (N R), TORSION	
104	3-374-371-01	HOLDER, HEAD		127	3-343-264-81	COLLAR, SPRING	
105	3-374-344-01	GUIDE, ERASE HEAD		128	3-374-363-01	LEVER (FWD)	
106	3-374-345-01	SPRING, TENSION		129	3-374-328-01	GEAR, FWD	
107	3-374-342-01	SPRING (HEAD), TORSION		130	3-374-334-01	SPRING (BRAKE), TORSION	
108	3-344-737-11	SCREW (B1.4X6), TAPPING		131	3-374-333-01	LEVER (PAUSE)	
109	3-380-814-01	SPRING, TENSION		132	3-374-332-01	SLIDER (BRAKE)	
* 110	X-3363-914-1	CHASSIS ASSY, HEAD		133	3-376-135-01	SPRING, CASSETTE	
* 111	3-377-197-01	SHEET (AZ) (T=0.09)		134	3-374-366-01	LEVER (ERASE R)	
* 111	3-377-197-11	SHEET (AZ) (T=0.115)		135	4-930-451-01	SPRING	
* 111	3-377-197-21	SHEET (AZ) (T=0.14)		136	3-374-335-01	LEVER (ERASE N)	
* 111	3-377-197-31	SHEET (AZ) (T=0.165)		137	3-374-330-01	LEVER (DIR A)	
* 111	3-377-197-41	SHEET (AZ) (T=0.23)		138	3-374-365-11	GEAR (NR), CAM	
112	3-374-329-01	GEAR, MIDWAY		139	3-374-364-01	SLIDER (NR)	
113	3-374-343-01	LEVER (FAN TYPE)		140	3-374-331-01	SPRING (DIR), TORSION	
114	3-374-369-01	GEAR (BASE), HEAD		141	3-366-051-11	PINCH ROLLER	
115	3-386-829-01	SPRING, TENSION		142	3-366-052-11	SHAFT, PINCH ROLLER	
* 116	3-374-370-01	SLIDER (HD)		* 143	3-374-373-01	LEVER (PINCH R)	
117	3-374-336-01	LEVER (SW)		144	3-374-347-01	SPRING (R), TORSION	
* 118	3-374-367-01	LEVER (EJECT)		* 145	3-374-372-01	LEVER (PINCH N)	
119	3-374-338-01	LEVER (REW)		146	3-374-346-01	SPRING (N), TORSION	
120	3-374-339-01	GEAR, FR		147	4-931-747-11	SPRING, COMPRESSION	
121	3-374-368-01	LEVER (FF)		148	X-3364-952-1	LEVER (FWD) ASSY	
122	3-377-194-01	SPRING, TENSION		HE601	1-543-719-11	HEAD, MAGNETIC (ERASE)	
123	4-930-408-11	CLAW, REEL		HRP601	1-543-986-11	HEAD, MAGNETIC (RECORD/PLAYBACK)	

5-4. MECHANISM DECK SECTION (2)
(MF-209-102)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
151	3-374-322-01	BELT		* 172	3-374-305-01	SLIDER (MODE A)	
152	X-3365-411-1	FLY ASSY (N2)		173	3-374-309-01	SPRING (REC), TORSION	
153	X-3363-913-1	FLY ASSY (R)		174	3-374-308-01	SPRING (CONTROL), TORSION	
154	3-374-321-01	BELT		175	3-374-356-01	SLIDER (REC)	
155	X-3363-917-1	LIMITER ASSY, FWD		176	3-374-355-01	SLIDER (FWD)	
156	3-374-359-11	GEAR (S OFF), CAM		177	3-374-354-01	SLIDER (REW)	
157	3-344-737-11	SCREW (B1.4X6), TAPPING		178	3-374-353-01	SLIDER (FF)	
158	3-374-318-11	GEAR (A), DECELERATION		179	3-374-352-01	SLIDER (PAUSE)	
159	3-683-454-01	WASHER, POLYETHYLENE		180	3-374-351-01	SLIDER (STOP)	
* 160	3-374-316-01	LEVER (S OFF A)		* 181	3-374-348-01	SLIDER (FR)	
161	3-375-011-01	SPRING, COMPRESSION		182	3-374-350-01	SLIDER (LOCK)	
162	3-374-357-01	LEVER (S OFF C)		* 183	3-374-349-01	SLIDER (SW)	
163	3-374-311-01	SPRING (S OFF C), TORSION		184	4-932-648-01	SPRING, COMPRESSION	
164	3-374-312-01	LEVER (S OFF B)		185	3-374-324-01	RING, RETAINING	
165	3-374-313-01	SPRING (S OFF), TORSION		186	3-374-325-01	GEAR (B), DECELERATION	
166	3-374-307-01	SPRING (MUTUAL), TORSION		187	3-374-304-01	LEVER (PAUSE ROCK)	
* 167	3-374-317-01	REINFORCEMENT		* 188	X-3363-918-1	CHASSIS ASSY, MECHANICAL	
168	3-374-358-01	SLIDER (ERASING)		189	3-343-251-01	SCREW (M2.6X2.5)	
169	3-374-314-01	LEVER (DIR B)		190	3-374-310-01	SPRING (FWD), TORSION	
* 170	3-374-315-01	SLIDER (CR)		M901	A-3253-181-A	MOTOR ASSY	
171	3-374-306-01	SLIDER (MODE B)		RV401	1-230-495-11	RES, ADJ, CARBON 2K	

SECTION 6 ELECTRICAL PARTS LIST

AC INLET

AUDIO

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 and -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.

- Abbreviations
EA : Saudi Arabia model
E23 : 110-120V Area model

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

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	1-650-710-11	AC INLET BOARD ***** < CONNECTOR >		C135	1-124-471-00	ELECT 1000uF 20% 6. 3V	
* CN801	1-764-648-11	HOUSING, CONNECTOR 3P		C201	1-124-126-00	ELECT 47uF 20% 10V	
* CN802	1-764-647-11	HOUSING, CONNECTOR 3P < AC INLET >		C202	1-161-020-11	CERAMIC 0.039uF 10% 16V	
Δ CNJ801	1-526-838-11	INLET, AC 2P ($\sim$ AC IN) *****		C203	1-163-213-00	CERAMIC CHIP 0.0022uF 5% 50V	
*	A-3269-031-A	AUDIO BOARD, COMPLETE (CFS-219S)		C204	1-163-209-00	CERAMIC MELF 0.0015uF 20% 16V	
*	A-3269-048-A	AUDIO BOARD, COMPLETE (CFS-229S) ***** < CAPACITOR >		C205	1-124-902-00	ELECT 0.47uF 20% 50V	
C101	1-124-126-00	ELECT 47uF 20% 10V		C206	1-163-181-00	CERAMIC MELF 100PF 10% 50V	
C102	1-161-020-11	CERAMIC 0.039uF 10% 16V		C207	1-124-902-00	ELECT 0.47uF 20% 50V	
C103	1-163-213-00	CERAMIC CHIP 0.0022uF 5% 50V		C208	1-163-181-00	CERAMIC MELF 100PF 10% 50V	
C104	1-163-209-00	CERAMIC MELF 0.0015uF 20% 16V		C209	1-124-925-11	ELECT 2. 2uF 20% 100V	
C105	1-124-902-00	ELECT 0.47uF 20% 50V		C210	1-163-181-00	CERAMIC MELF 100PF 10% 50V	
C106	1-163-181-00	CERAMIC MELF 100PF 10% 50V		C211	1-163-181-00	CERAMIC MELF 100PF 10% 50V	
C107	1-124-902-00	ELECT 0.47uF 20% 50V		C221	1-124-903-11	ELECT 1uF 20% 50V (CFS-229S)	
C108	1-163-181-00	CERAMIC MELF 100PF 10% 50V		C222	1-163-213-00	CERAMIC CHIP 0.0022uF 5% 50V (CFS-229S)	
C109	1-124-925-11	ELECT 2. 2uF 20% 100V		C223	1-124-925-11	ELECT 2. 2uF 20% 100V (CFS-229S)	
C110	1-163-181-00	CERAMIC MELF 100PF 10% 50V		C224	1-161-057-00	CERAMIC 0.033uF 10% 50V (CFS-229S)	
C111	1-163-181-00	CERAMIC MELF 100PF 10% 50V		C224	1-162-843-11	CERAMIC 0.022uF 10% 16V (CFS-219S)	
C121	1-124-903-11	ELECT 1uF 20% 50V (CFS-229S)		C231	1-124-126-00	ELECT 47uF 20% 10V	
C122	1-163-213-00	CERAMIC CHIP 0.0022uF 5% 50V (CFS-229S)		C232	1-163-209-00	CERAMIC MELF 0.0015uF 20% 16V	
C123	1-124-925-11	ELECT 2. 2uF 20% 100V (CFS-229S)		C233	1-124-443-00	ELECT 100uF 20% 10V	
C124	1-161-057-00	CERAMIC 0.033uF 10% 50V (CFS-229S)		C234	1-130-495-00	MYLAR 0.1uF 5% 50V	
C124	1-162-843-11	CERAMIC 0.022uF 10% 16V (CFS-219S)		C235	1-124-471-00	ELECT 1000uF 20% 6. 3V	
C131	1-124-126-00	ELECT 47uF 20% 10V		C301	1-124-443-00	ELECT 100uF 20% 10V	
C132	1-163-209-00	CERAMIC MELF 0.0015uF 20% 16V		C302	1-126-176-11	ELECT 220uF 20% 10V	
C133	1-124-443-00	ELECT 100uF 20% 10V		C303	1-124-126-00	ELECT 47uF 20% 10V	
C134	1-130-495-00	MYLAR 0.1uF 5% 50V		C304	1-124-907-11	ELECT 10uF 20% 50V	
				C305	1-124-927-11	ELECT 4. 7uF 20% 100V	
				C306	1-163-181-00	CERAMIC MELF 100PF 10% 50V	
				C307	1-163-181-00	CERAMIC MELF 100PF 10% 50V	
				C308	1-124-902-00	ELECT 0.47uF 20% 50V	
				C321	1-124-443-00	ELECT 100uF 20% 10V (CFS-229S)	
				C322	1-124-902-00	ELECT 0.47uF 20% 50V (CFS-229S)	
				C323	1-161-057-00	CERAMIC 0.033uF 10% 50V (CFS-229S)	

AUDIO

Ref. No.	Part No.	Description	Remark
C324	1-162-847-11	CERAMIC (CFS-229S)	0.047uF 10% 16V
C325	1-161-057-00	CERAMIC (CFS-229S)	0.033uF 10% 50V
C326	1-124-464-11	ELECT (CFS-229S)	0.22uF 20% 50V
C327	1-104-792-51	ELECT (CFS-229S)	33uF 20% 16V
C328	1-124-907-11	ELECT (CFS-229S)	10uF 20% 50V
C329	1-126-233-11	ELECT (CFS-229S)	22uF 20% 50V
C330	1-163-181-00	CERAMIC MELF (CFS-229S)	100PF 10% 50V
C331	1-124-120-11	ELECT	220uF 20% 25V
C332	1-163-181-00	CERAMIC MELF	100PF 10% 50V
C341	1-124-126-00	ELECT	47uF 20% 10V
C342	1-163-213-00	CERAMIC CHIP	0.0022uF 5% 50V
C344	1-130-481-00	MYLAR	0.0068uF 5% 50V
C351	1-126-233-11	ELECT	22uF 20% 50V
C352	1-124-903-11	ELECT	1uF 20% 50V
C353	1-162-847-11	CERAMIC	0.047uF 10% 16V
C354	1-161-057-00	CERAMIC	0.033uF 10% 50V
C355	1-163-181-00	CERAMIC MELF	100PF 10% 50V
C361	1-124-887-00	ELECT	3300uF 20% 16V
C362	1-126-176-11	ELECT	220uF 20% 10V
C363	1-163-063-00	CERAMIC MELF	0.022uF 25V
C364	1-163-063-00	CERAMIC MELF	0.022uF 25V
< CONNECTOR >			
CNP1	1-506-987-11	PIN, CONNECTOR (PC BOARD)	5P
* CNP2	1-568-271-11	SOCKET, CONNECTOR	5P
CNP3	1-506-986-11	PIN, CONNECTOR (PC BOARD)	4P
CNP4	1-506-986-11	PIN, CONNECTOR (PC BOARD)	4P
* CNP5	1-691-573-11	PIN, CONNECTOR (PC BOARD)	2P
< DIODE >			
D301	8-719-980-67	LED MVR3338S (OPR/BATT)	
D302	8-719-109-97	DIODE RD6.8ES-B2	
D305	8-719-911-19	DIODE 1SS119	
D306	8-719-911-19	DIODE 1SS119	
D307	8-719-911-19	DIODE 1SS119	
< IC >			
IC301	8-759-164-45	IC TA2036N	
IC302	8-759-048-60	IC BA3870 (CFS-229S)	
IC303	8-759-060-21	IC LA4598	

Ref. No.	Part No.	Description	Remark
< JACK >			
J301	1-566-891-11	JACK (PHONES)	
J302	1-563-716-11	JACK, PIN (CD/LINE IN)	
< JUMPER RESISTOR >			
JR101-103	1-259-041-11	CARBON MELF	0 5% 1/8W
< COIL >			
L300	1-414-183-41	INDUCTOR	10uH
< TRANSISTOR >			
Q301	8-729-142-46	TRANSISTOR	2SC2001-LK
Q302	8-729-281-53	TRANSISTOR	2SC1815-GR
Q306	8-729-900-65	TRANSISTOR	DTA144ES
Q307	8-729-904-36	TRANSISTOR	DTC114YS
Q308	8-729-904-36	TRANSISTOR	DTC114YS
< RESISTOR >			
R101	1-249-404-00	CARBON	82 5% 1/4W
R102	1-249-440-11	CARBON	82K 5% 1/4W
R103	1-249-423-11	CARBON	3.3K 5% 1/4W
R104	1-249-431-11	CARBON	15K 5% 1/4W
R105	1-249-437-11	CARBON	47K 5% 1/4W
R106	1-249-424-11	CARBON	3.9K 5% 1/4W
R107	1-249-417-11	CARBON	1K 5% 1/4W
R108	1-249-437-11	CARBON	47K 5% 1/4W
R109	1-249-423-11	CARBON	3.3K 5% 1/4W
R110	1-249-430-11	CARBON	12K 5% 1/4W
R121	1-249-423-11	CARBON	3.3K 5% 1/4W
R131	1-249-406-11	CARBON	120 5% 1/4W
R132	1-247-807-11	CARBON	100 5% 1/4W
R133	1-215-493-00	METAL (CFS-229S)	1M 1% 1/6W
R134	1-249-408-11	CARBON	180 5% 1/4W
R201	1-249-404-00	CARBON	82 5% 1/4W
R202	1-249-440-11	CARBON	82K 5% 1/4W
R203	1-249-423-11	CARBON	3.3K 5% 1/4W
R204	1-249-431-11	CARBON	15K 5% 1/4W
R205	1-249-437-11	CARBON	47K 5% 1/4W
R206	1-249-424-11	CARBON	3.9K 5% 1/4W
R207	1-249-417-11	CARBON	1K 5% 1/4W
R208	1-249-437-11	CARBON	47K 5% 1/4W
R209	1-249-423-11	CARBON	3.3K 5% 1/4W
R210	1-249-430-11	CARBON	12K 5% 1/4W
R221	1-249-423-11	CARBON	3.3K 5% 1/4W
R231	1-249-406-11	CARBON	120 5% 1/4W
R232	1-247-807-11	CARBON	100 5% 1/4W

AUDIO

MICROPHONE

SWITCH

TRANSFORMER

Ref. No.	Part No.	Description	Remark		
R233	1-215-493-00	METAL (CFS-229S)	1M	1%	1/6W
R234	1-249-408-11	CARBON	180	5%	1/4W
R301	1-215-493-00	METAL	1M	1%	1/6W
R302-304					
	1-249-429-11	CARBON	10K	5%	1/4W
R305	1-247-807-11	CARBON	100	5%	1/4W
R321	1-249-402-11	CARBON (CFS-229S)	56	5%	1/4W
R322	1-249-427-11	CARBON (CFS-229S)	6.8K	5%	1/4W
R323	1-249-418-11	CARBON (CFS-229S)	1.2K	5%	1/4W
R324	1-249-424-11	CARBON (CFS-229S)	3.9K	5%	1/4W
R325	1-259-090-11	CARBON MELF (CFS-229S)	100K	5%	1/8W
R326	1-215-493-00	METAL (CFS-229S)	1M	1%	1/6W
R341	1-249-406-11	CARBON	120	5%	1/4W
R342	1-249-435-11	CARBON	33K	5%	1/4W
R343	1-249-389-11	CARBON	4.7	5%	1/4W
R351	1-247-807-11	CARBON	100	5%	1/4W
R352	1-249-421-11	CARBON	2.2K	5%	1/4W
R353	1-249-426-11	CARBON	5.6K	5%	1/4W
△R361	1-219-113-11	FUSIBLE	6.8	5%	1/4W F
R362	1-249-411-11	CARBON	330	5%	1/4W
R363	1-247-807-11	CARBON	100	5%	1/4W
R364	1-249-416-11	CARBON	820	5%	1/4W
R365	1-249-411-11	CARBON	330	5%	1/4W
< VARIABLE RESISTOR >					
RV301	1-241-745-11	RES, VAR, CARBON 20K/20K (TONE)			
RV302	1-241-746-11	RES, VAR, CARBON 20K/20K (VOLUME)			
< SWITCH >					
S301	1-572-299-11	SWITCH, LEVER SLIDE (FUNCTION)			
S302	1-570-068-11	SWITCH, PUSH (1 KEY) (REC/PB)			
S303	1-571-307-11	SWITCH, SLIDE (MEGA BASS) (CFS-229S)			
< TRANSFORMER >					
T301	1-433-268-00	TRANSFORMER, BIAS OSCILLATOR			

*	1-650-708-11	MICROPHONE BOARD			

< MICROPHONE >					
ECM301	1-542-178-11	MICROPHONE, ELECTRET CONDENSER (MIC)			

Ref. No.	Part No.	Description	Remark
*	1-650-711-11	SWITCH BOARD *****	
		< CAPACITOR >	
C401	1-101-004-00	CERAMIC	0.01uF 50V
		< CABLE HOLDER >	
* KH401	1-573-288-11	HOLDER, CABLE 8P	
		< SWITCH >	
S401	1-696-515-11	SWITCH, LEAF (PLAY)	
S402	1-696-515-11	SWITCH, LEAF (FF/REW)	

*	1-650-709-11	TRANSFORMER BOARD *****	
	1-533-217-31	HOLDER, FUSE	
		< CAPACITOR >	
C801-804			
	1-101-005-00	CERAMIC	0.022uF 50V
		< CONNECTOR >	
* CNP801	1-560-666-00	PIN, CONNECTOR 3P	
* CNP802	1-764-646-11	PIN, CONNECTOR (PC BOARD) 2P	
		< DIODE >	
D801	8-719-200-02	DIODE 10E2	
D802	8-719-200-02	DIODE 10E2	
D803	8-719-200-02	DIODE 10E2	
D804	8-719-200-02	DIODE 10E2	
		< FUSE >	
△F802	1-532-611-00	FUSE, TIME-LAG (T0.125A)	
		< CABLE HOLDER >	
* KH801	1-573-287-11	HOLDER, CABLE 2P	
		< SWITCH >	
△S801	1-572-290-11	SWITCH, POWER (VOLTAGE SELECTOR)	
		< TRANSFORMER >	
△T801	1-450-015-11	TRANSFORMER, POWER	

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			
*	A-3269-033-A	TUNER BOARD, COMPLETE (EXCEPT EA)				
*	A-3269-412-A	TUNER BOARD, COMPLETE (EA)				

	3-907-415-01	DRUM (PVC)				
	7-621-770-87	SCREW +P 2. 6X5				
		< CAPACITOR >				
C1	1-163-059-00	CERAMIC CHIP	0.01uF	10%	50V	
C2	1-163-189-00	CERAMIC MELF	220PF	10%	50V	
C3	1-163-059-00	CERAMIC CHIP	0.01uF	10%	50V	
C4	1-124-907-11	ELECT	10uF	20%	50V	
C5	1-163-059-00	CERAMIC CHIP	0.01uF	10%	50V	
C6	1-162-321-11	CERAMIC MELF (EXCEPT EA)	1PF	20%	50V	
C7	1-163-164-00	CERAMIC MELF (EXCEPT EA)	20PF	5%	50V	
C7	1-163-167-00	CERAMIC MELF (EA)	27PF	5%	50V	
C8	1-102-953-00	CERAMIC (EXCEPT EA)	18PF	5%	50V	
C8	1-102-959-00	CERAMIC (EA)	22PF	5%	50V	
C10	1-163-150-00	CERAMIC MELF	3. 3PF	10%	50V	
C11	1-163-059-00	CERAMIC CHIP	0.01uF	10%	50V	
C13	1-162-353-11	CERAMIC MELF (EA)	5. 6PF	10%	50V	
C13	1-163-154-00	CERAMIC MELF (EXCEPT EA)	6. 8PF	10%	50V	
C14	1-163-181-00	CERAMIC MELF	100PF	10%	50V	
C15	1-124-927-11	ELECT	4. 7uF	20%	100V	
C16	1-124-903-11	ELECT	1uF	20%	50V	
C17	1-124-126-00	ELECT	47uF	20%	10V	
C18	1-124-126-00	ELECT	47uF	20%	10V	
C19	1-163-059-00	CERAMIC CHIP	0.01uF	10%	50V	
C20	1-124-903-11	ELECT	1uF	20%	50V	
C21	1-124-925-11	ELECT	2. 2uF	20%	100V	
C22	1-124-443-00	ELECT	100uF	20%	10V	
C23	1-124-902-00	ELECT	0. 47uF	20%	50V	
C24	1-124-927-11	ELECT	4. 7uF	20%	100V	
C25	1-124-463-00	ELECT	0. 1uF	20%	50V	
C27	1-161-053-00	CERAMIC	0.015uF	10%	50V	
C28	1-161-053-00	CERAMIC	0.015uF	10%	50V	
C32	1-163-149-00	CERAMIC MELF	2. 2PF	10%	50V	
C34	1-163-059-00	CERAMIC CHIP	0.01uF	10%	50V	
C35	1-163-059-00	CERAMIC CHIP	0.01uF	10%	50V	
C36	1-164-616-11	CERAMIC	4PF	5%	50V	
C38	1-164-617-11	CERAMIC	4PF	5%	50V	
C39	1-102-949-00	CERAMIC	12PF	5%	50V	
C40	1-130-726-00	FILM	0.0015uF	5%	63V	

Ref.No.	Part No.	Description	Remark			
C41	1-136-683-11	FILM	0.0056uF	5%	63V	
C42	1-136-987-11	FILM	360PF	5%	63V	
C43	1-163-059-00	CERAMIC CHIP	0.01uF	10%	50V	
C45-47	1-163-181-00	CERAMIC MELF	100PF	10%	50V	
C50	1-163-181-00	CERAMIC MELF	100PF	10%	50V	
C51	1-162-397-11	CERAMIC MELF	0.001uF	10%	50V	
C52	1-162-417-11	CERAMIC MELF	20PF	5%	50V	
C53	1-163-191-00	CERAMIC MELF	270PF	10%	50V	
C71	1-163-059-00	CERAMIC CHIP	0.01uF	10%	50V	
		< FILTER >				
CF1	1-577-327-81	FILTER, CERAMIC				
CF2	1-567-670-11	FILTER, CERAMIC				
CF3	1-577-327-81	FILTER, CERAMIC				
CF4	1-577-327-81	FILTER, CERAMIC				
		< VARIABLE CAPACITOR >				
CT1-4	1-151-693-11	CAP, VAR (TUNING)				
CV1-4						
		< TRIMMER >				
CT5	1-141-361-41	CAP, VAR FILM TRIMMER				
CT6	1-141-486-11	CAP, ADJ				
CT9	1-141-486-11	CAP, ADJ				
CT10	1-141-485-11	CAP, ADJ				
		< DIODE >				
D1	8-719-911-19	DIODE 1SS119				
D2	8-719-911-19	DIODE 1SS119				
D3	8-719-911-19	DIODE 1SS119				
		< FILTER >				
FL1	1-236-711-21	FILTER, BAND PASS				
		< IC >				
IC1	8-752-050-20	IC CXA1238S				
		< JUMPER RESISTOR >				
JR2	1-259-041-11	CARBON MELF	0	5%	1/8W	
JR3	1-259-041-11	CARBON MELF	0	5%	1/8W	
JR5	1-259-041-11	CARBON MELF	0	5%	1/8W	
JR6	1-259-041-11	CARBON MELF	0	5%	1/8W	
JR8-10	1-259-041-11	CARBON MELF	0	5%	1/8W	
JR12	1-259-041-11	CARBON MELF	0	5%	1/8W	
JR13	1-259-041-11	CARBON MELF	0	5%	1/8W	
JR16-21	1-259-041-11	CARBON MELF	0	5%	1/8W	

TUNER

Ref. No.	Part No.	Description	Remark
< COIL >			
L1	1-406-998-11	COIL, AIR-CORE (EXCEPT EA)	
L1	1-406-999-11	COIL, AIR-CORE (EA)	
L2	1-406-868-11	COIL, AIR-CORE (EXCEPT EA)	
L2	1-406-956-11	COIL (WITH CORE) (EA)	
L3	1-402-593-11	ANTENNA, FERRITE-ROD (MW)	
L4	1-406-253-11	COIL (OSC)	
L5	1-402-597-31	COIL (ANT)	
L6	1-406-247-11	COIL (OSC)	
L7	1-402-595-31	COIL (ANT)	
L8	1-406-246-11	COIL (OSC)	
L9	1-414-174-11	INDUCTOR	0.33uH
L11	1-414-175-11	INDUCTOR	0.47uH
L12	1-414-174-11	INDUCTOR	0.33uH
< TRANSISTOR >			
Q2	8-729-922-66	TRANSISTOR	2SC2410SN
Q3	8-729-900-61	TRANSISTOR	DTA114ES
< RESISTOR >			
R3	1-249-421-11	CARBON	2.2K 5% 1/4W
R6	1-259-090-11	CARBON MELF	100K 5% 1/8W
R9	1-259-090-11	CARBON MELF	100K 5% 1/8W
R10	1-249-404-00	CARBON	82 5% 1/4W
R11	1-249-427-11	CARBON	6.8K 5% 1/4W
R12	1-249-427-11	CARBON	6.8K 5% 1/4W
R13	1-247-807-11	CARBON	100 5% 1/4W
R14	1-249-429-11	CARBON	10K 5% 1/4W
R15	1-215-477-00	METAL	220K 1% 1/6W
R16	1-215-477-00	METAL	220K 1% 1/6W
R17	1-249-421-11	CARBON	2.2K 5% 1/4W
R18	1-249-417-11	CARBON	1K 5% 1/4W
R22	1-249-411-11	CARBON	330 5% 1/4W
R30	1-249-417-11	CARBON	1K 5% 1/4W
R31	1-249-431-11	CARBON	15K 5% 1/4W
R32	1-259-090-11	CARBON MELF	100K 5% 1/8W
< VARIABLE RESISTOR >			
RV1	1-238-601-11	RES, ADJ, CARBON 22K	
RV2	1-223-384-11	RES, VAR, CARBON 100K (FINE TUNE)	
< SWITCH >			
S1	1-571-147-11	SWITCH, LEVER SLIDE (BAND)	
< TRANSFORMER >			
T1	1-406-952-11	TRANSFORMER, IF	

Ref. No.	Part No.	Description	Remark
MISCELLANEOUS			

ANT1	1-501-378-11	ANTENNA, TELESCOPIC	
AF802	1-532-611-00	FUSE, TIME-LAG (T0.125A)	
HE601	1-543-719-11	HEAD, MAGNETIC (ERASE)	
HRP601	1-543-986-11	HEAD, MAGNETIC (RECORD/PLAYBACK)	
M901	A-3253-181-A	MOTOR ASSY	
RV401	1-230-495-11	RES, ADJ, CARBON 2K	
S901	1-570-559-11	SWITCH, LEAF (DIR MODE)	
SP901	1-504-474-11	SPEAKER (10CM) (EA)	
SP901	1-544-742-11	SPEAKER (10CM) (EXCEPT EA)	
SP902	1-504-474-11	SPEAKER (10CM) (EA)	
SP902	1-544-742-11	SPEAKER (10CM) (EXCEPT EA)	
SP903	1-529-030-81	BUZZER	
SP904	1-529-030-81	BUZZER	

HARDWARE LIST

#1	7-621-770-87	SCREW +P 2.6X5
#2	7-621-775-20	SCREW +PTT 2.6X5 (S)
#3	7-682-548-09	SCREW +B 3X8
#4	7-682-553-04	SCREW +BVTT 3X20 (S)
#5	7-685-133-19	SCREW +P 2.6X6 TYPE2
#6	7-685-153-19	SCREW +P 3X30 TYPE2 NON-SLIT
#7	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S
#8	7-685-649-79	SCREW +BVTP 3X14 TYPE2 N-S

ACCESSORIES & PACKING MATERIALS

△	1-551-983-00	CORD, POWER (E23)
△	1-555-234-00	CORD, POWER (EXCEPT E23)
△	1-569-007-11	ADAPTOR, CONVERSION 2P (E23)
△	1-569-008-11	ADAPTOR, CONVERSION 2P (EA)
	3-758-128-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, GERMAN, SPANISH)
	3-758-461-01	MANUAL, INSTRUCTION (ARABIC) (EA)
*	3-909-589-01	INDIVIDUAL CARTON (CFS-229S)
*	3-909-590-01	INDIVIDUAL CARTON (CFS-219S)
*	3-912-042-01	CUSHION (LEFT)
*	3-912-043-01	CUSHION (RIGHT)

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

CFS-219S/229S

SONY[®] SERVICE MANUAL

E Model

CORRECTION-1

Correct your service manual as shown below.

 : indicates corrected portion.

Page	INCORRECT			CORRECT	
	<u>No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Description</u>
16	3	3-908-073-01	HOLDER, CASSETTE	3-908-073-01	HOLDER, CASSETTE (CFS-219S)
	3		_____	3-908-073-11	HOLDER, CASSETTE (CFS-229S)
	4	3-908-069-31	PLATE, DIAL	3-908-069-31	PLATE, DIAL (EXCEPT EA)
	4		_____	3-908-069-41	PLATE, DIAL (EA)
	8	3-343-064-31	LID, BATTERY CASE (EXCEPT EA)	3-343-064-31	LID, BATTERY CASE _____
	8	3-368-522-01	LID, BATTERY CASE (EA)	_____	
	SP901	1-504-474-11	SPEAKER (10CM) (EA)	1-504-474-11	SPEAKER (10CM) _____
	SP901	1-544-742-11	SPEAKER (10CM) (EXCEPT EA)	_____	
	SP902	1-504-474-11	SPEAKER (10CM) (EA)	1-504-474-11	SPEAKER (10CM) _____
	SP902	1-544-742-11	SPEAKER (10CM) (EXCEPT EA)	_____	
17	* 60	A-3269-048-A	AUDIO BOARD, COMPLETE (CFS-229S)	* A-3269-048-A	AUDIO BOARD, COMPLETE (CFS-229S: EA)
	60	_____		* A-3269-533-A	AUDIO BOARD, COMPLETE (CFS-229S: E12)
	78	3-379-771-01	KNOB (ROTARY) (EXCEPT EA)	_____	
	78	3-379-771-31	KNOB (ROTARY) (EA)	3-379-771-31	KNOB (ROTARY) _____
21	*	A-3269-048-A	AUDIO BOARD, COMPLETE (CFS-229S)	* A-3269-048-A	AUDIO BOARD, COMPLETE (CFS-229S: EA)
		_____		* A-3269-533-A	AUDIO BOARD, COMPLETE (CFS-229S: E12)
25	SP901	1-504-474-11	SPEAKER (10CM) (EA)	1-504-474-11	SPEAKER (10CM) _____
	SP901	1-544-742-11	SPEAKER (10CM) (EXCEPT EA)	_____	
	SP902	1-504-474-11	SPEAKER (10CM) (EA)	1-504-474-11	SPEAKER (10CM) _____
	SP902	1-544-742-11	SPEAKER (10CM) (EXCEPT EA)	_____	

- Items marked "*" are not stocked since they are seldom required for routine service.
Some delay should be anticipated when ordering these items.