

AIR-7/8

SERVICE MANUAL



AIR-7:
Canadian Model
AEP Model
E Model

AIR-8:
US Model

SPECIFICATIONS

Circuit system	AIR/PSB/AM: Dual conversion superheterodyne FM: Superheterodyne
Frequency range	AIR: 108–136 MHz PSB: 144–174 MHz (Canadian and AEP-2 models of AIR-7, AIR-8) FM: 76.0–108.0 MHz AM: 150–2,194 kHz LW: 150–530 kHz (150–529 kHz*) MW: 531–1602 kHz (530–1600 kHz*) SW: 1602–2194 kHz (1601–2194 kHz*) * MW tuning interval: 10 kHz
Antennas	AIR/PSB/FM: Helical antenna MW/LW/SW: Built-in ferrite bar antenna External antenna jack AIR/PSB/FM: BNC connector AM (LW/MW/SW): minijack
Speaker	Approx. 7 × 3.5 cm (2 7/8 × 1 3/8 inches)
Power output	400 mW (at 10% harmonic distortion)
Output	Earphone jack (minijack)
Power requirements	6 V dc Four IEC designation R6 batteries (size AA) (for radio/computer back-up) BP-23 rechargeable battery pack (optional) DC IN 6 V jack accepts: Appropriate ac power adaptor listed on page 2 for use on house current DCC-127A or DCC-120 car battery cord (optional) for use with 12 V car battery DCC-240 car battery cord (optional) for use with 24 V car battery

Battery life

EBP-6 battery case (optional) using four IEC designation R14 batteries (size C)
 Approx. 9 hours for air band, PSB and AM reception

Approx. 10 hours for FM reception
 When listening for four hours a day at normal volume, using Sony SUM-3(NS) New Super batteries

Dimensions

Approx. 90 × 179 × 50 mm (w/h/d)
 (3 5/8 × 7 1/8 × 2 inches)

Weight

including projecting parts and controls, not including the helical antenna
 Approx. 600 g (1 lb 5 oz)
 including batteries, shoulder strap and the helical antenna

Note: There are two types of AEP model.

These differences are as follows.

AEP-1: 3 bands (AIR, AM and FM)

AEP-2: 4 bands (AIR, PSB, AM and FM)



AIR BAND/FM/AM PLL SYNTHESIZED RECEIVER
PSB/AIR/FM/AM PLL SYNTHESIZED RECEIVER

SONY®

HOUSE CURRENT

Where used	AC power adaptor	Input voltage of adaptor
Canadian	AC-9	120 V ac, 60 Hz
AEP	AC-456C	220 V ac, 50 Hz (110 V ac adjustable, 50/60 Hz)
E	AC-4A	110, 120, 220 or 240 V ac adjustable, 50/60 Hz
US	AC-12	120 V ac, 60 Hz

FEATURES

- The AIR-7 and AIR-8 portable receiver receives the air traffic control frequencies, 108–136MHz, as well as standard FM and AM broadcasts. With Canadian, AEP-2 models of AIR-7 and AIR-8, PSB (144–174MHz) can also be received.
- The quartz controlled PLL (Phase Locked Loop) synthesizer system uses a microcomputer to make pinpoint tuning easy. The tuned frequency is displayed digitally.
- Choice of direct, scan, manual or memory tuning.
- Up to 40 (Canadian, AEP-2 models of AIR-7 and AIR-8) or 30 (AEP-1, E models of AIR-7) stations can be memorized so that they can be tuned in at the press of a key.
- Air band and PSB can be received more easily with the memory scanning, program function, priority function and delay function.
- Squelch control to suppress noise while tuning and during intervals between communications.
- The key protect function operates at the press of a key to lock the keys on the front face so they cannot be operated by accident.
- Helical antenna for high sensitivity and selectivity has BNC connector for attachment to the receiver.
- Four different power sources: batteries, house current, rechargeable battery pack or car battery.

* PSB (Public Service Band)

On the PSB, you can monitor police, fire, forestry conservation, VHF weather, marine, highway maintenance, land mobile, and other public safety radio services. The general frequency allocation is shown on the dial scale.
 NOTICE: In certain localities, it is illegal to listen to police or other governmental transmissions. Check with your local authorities.

MELF (Metal Electrodes Face-Bonding) Components

Warning

If MELF components are forcibly removed from the printed circuit board with pincers or pliers, the circuit board pattern is likely to peel away. Always remove MELF components according to the procedure described on the next page.

MELF components are soldered directly to the surface of the printed circuit board.

MELF resistors and capacitors have the same dimensions and are distinguished by their background colors: light brown for resistors, and pink or light green for capacitors.

The MELF resistor color coding is the same as for conventional resistors, and MELF capacitor color coding is the same as for tube-type ceramic capacitors.

Components larger than resistors and without a color code are cross conductors, which are used instead of jumper wires.

1. Structure

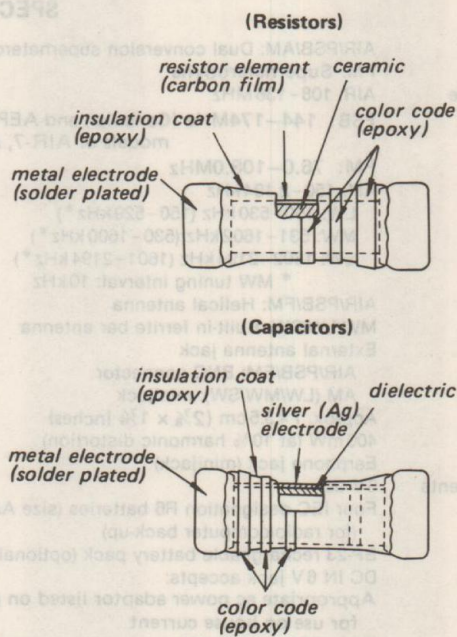


Fig. 1

SERVICE MANUAL

SUPPLEMENT

- File this Supplement with the Service Manual.

AIR-7:
Canadian Model
AEP Model
E Model
AIR-8:
US Model

Subject: CIRCUIT CHANGE and PC BOARD CHANGE
CORRECTION of the voltage value (Refer to page 18.)

Serial No. 14,601 and later

No. 1

January, 1985

CHANGED PARTS

Ref.No.	Former Parts		New Parts		Remarks
	Description		Part No.	Description	
903	PIN, CONNECTOR 3P		.....	.....	DELETED
904	PIN, CONNECTOR 4P		*1-560-468-00	PIN, CONNECTOR 5P	CHANGED
ANT2	ANTENNA, FERRITE-ROD (LW/MM/SW)		1-402-120-12	ANTENNA, FERRITE-ROD (LW/MM/SW)	CHANGED
C29	.....		1-163-177-00	CERAMIC 68PF	ADDED
C72	TANTAL(CHIP)	2.2MF 6.3V	1-131-419-00	TANTAL 2.2MF 10V	CHANGED
C79	TANTAL(CHIP)	2.2MF 6.3V	1-131-419-00	TANTAL 2.2MF 10V	CHANGED
C107	CERAMIC(CHIP)	0.01MF	1-163-033-00	CERAMIC(CHIP) 0.022MF	CHANGED
C109	CERAMIC(CHIP)	0.01MF	.....	.....	DELETED
C225	CERAMIC(CHIP)	20PF	1-163-167-00	CERAMIC 27PF	CHANGED
C285	CERAMIC(CHIP)	56PF	1-163-173-00	CERAMIC 47PF	CHANGED
C286	ELECT	2.2MF 50V	1-123-610-00	ELECT 0.47MF 50V	CHANGED
D313	.....		8-719-911-19	(AEP-1,E).DIODE 1SS119	ADDED
Q220	TRANSISTOR 2SC2603-F		8-729-245-83	TRANSISTOR 2SC2458-GR	CHANGED
R23	CARBON	3.3K 1/6W	1-247-845-00	CARBON 3.9K 1/6W	CHANGED
R26	CARBON	1K 1/6W	.....	.....	DELETED
R27	CARBON	100 1/6W	.....	.....	DELETED
R64	CARBON	3.3K 1/6W	1-247-855-00	CARBON 10K 1/6W	CHANGED
R108	CARBON	150K 1/6W	1-247-869-00	CARBON 39K 1/6W	CHANGED
R143	CARBON	100K 1/6W	.....	.....	DELETED
R244	CARBON	47K 1/6W	1-247-867-00	CARBON 33K 1/6W	CHANGED
R282	CARBON	47K 1/6W	1-247-867-00	CARBON 33K 1/6W	CHANGED
R325	.....		1-247-879-00	CARBON 100K 1/6W	ADDED

Note: There are two types of AEP model.
These differences are as follows.
AEP-1: 3 bands (AIR, AM and FM)
AEP-2: 4 bands (AIR, PSB, AM and FM)

AIR BAND/FM /AM PLL SYNTHESIZED RECEIVER
PSB/AIR/FM/AM PLL SYNTHESIZED RECEIVER

SONY®

TR

Location for MELF and Chip Components on Mounting Diagram

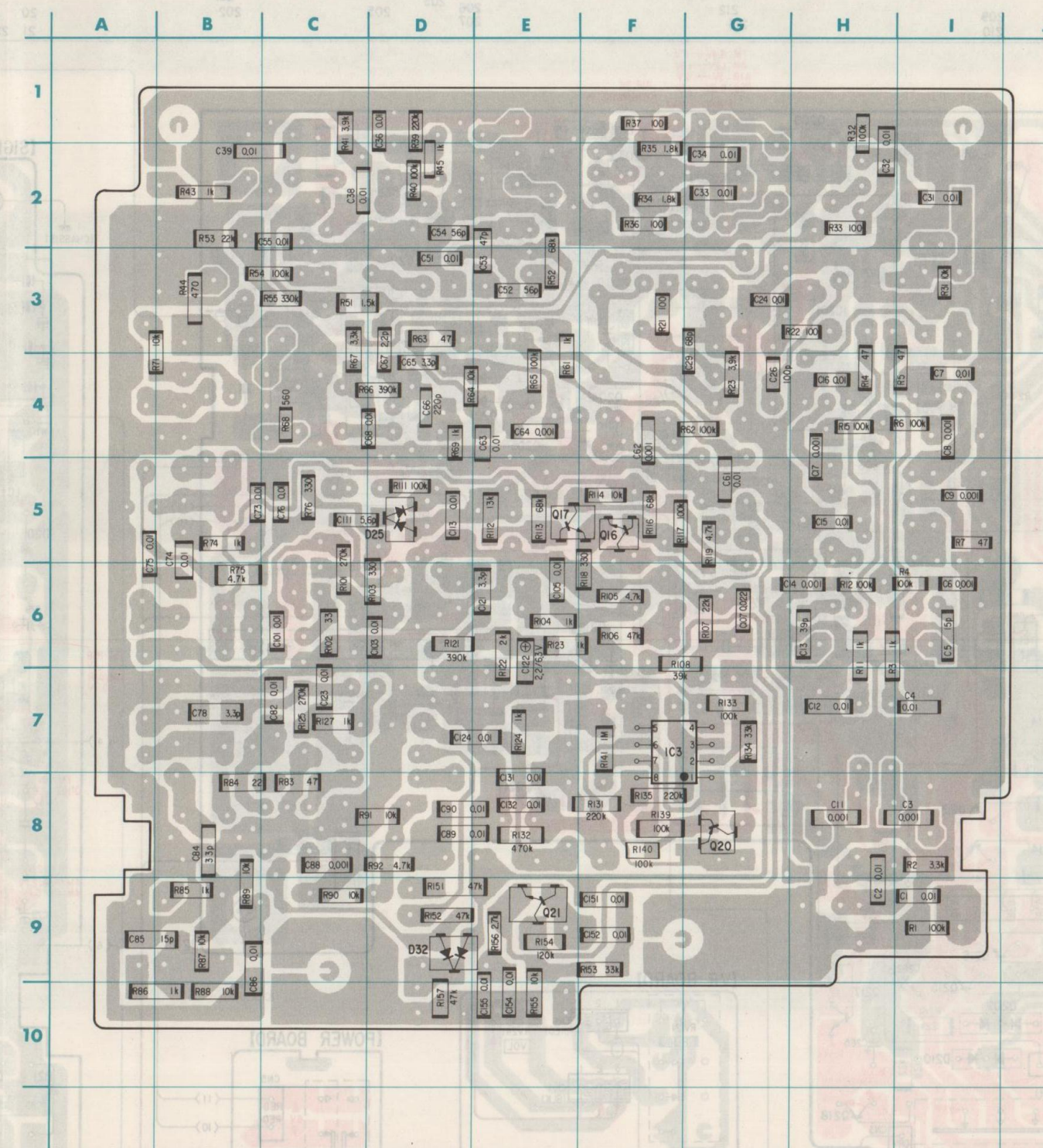
The table below shows the location for MELF and chip components to look for them easily on the mounting diagram.

Note: The parts marked with * are mounted on PC board for 3 band model (AEP-1, E model), but they are not used.

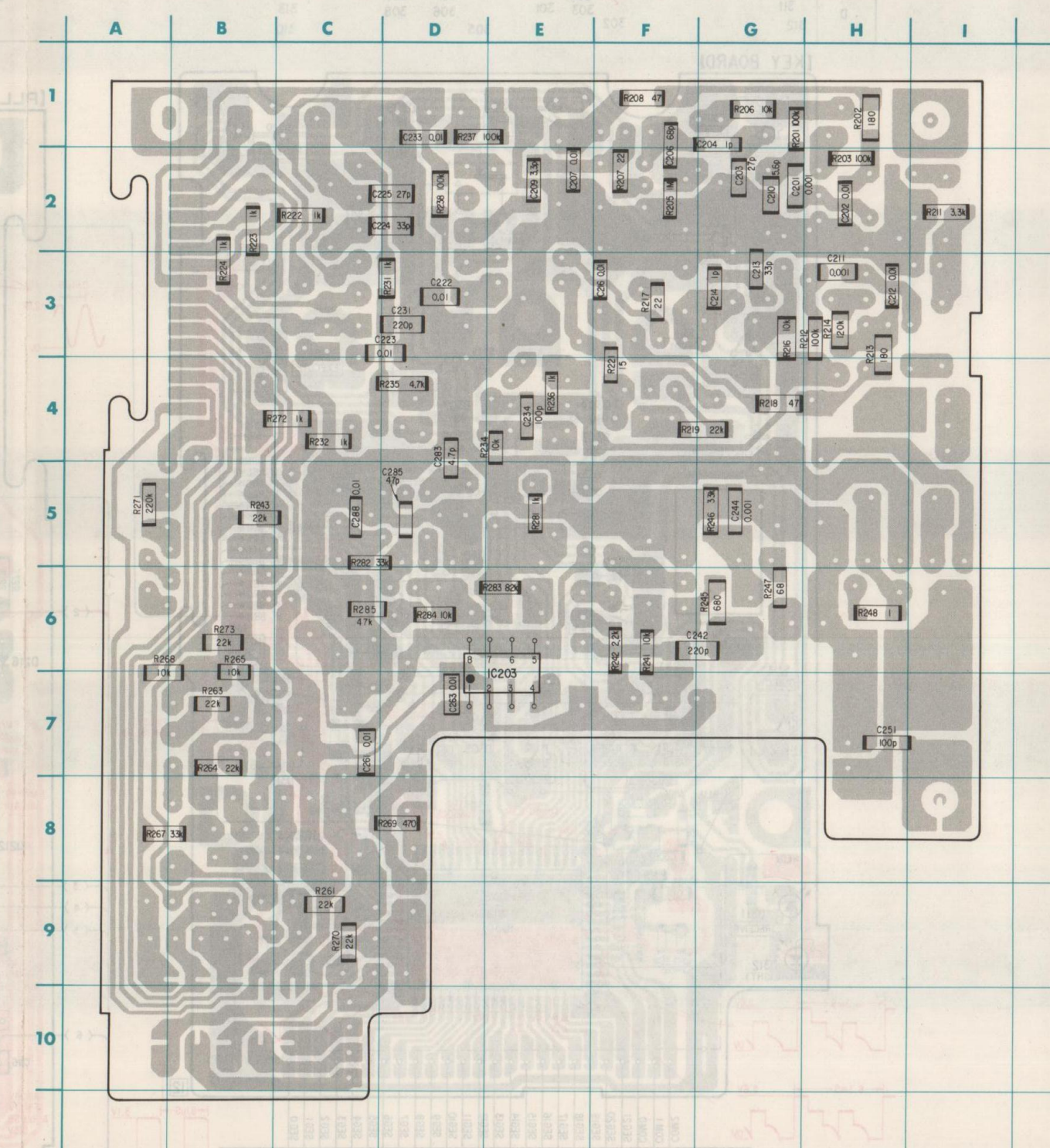
SIGNAL BOARD

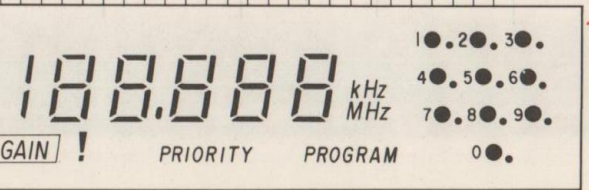
SEMICONDUCTORS		CAPACITORS		RESISTORS				IC		RESISTORS			
Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
IC3	F-7	C1	I-9	C90	D-8	R1	I-9	R87	B-9	IC203	E-7	R201	G-1
		C2	H-9	C101	C-6	R2	I-8	R88	B-10			R202	H-1
Q16	F-5	*C3	I-8	C103	D-6	*R3	H-6	R89	B-9			R203	H-2
Q17	E-5	*C4	I-7	C105	E-6	*R4	I-6	R90	C-9			R205	F-2
Q20	G-8	*C5	I-6	C107	G-6	*R5	I-4	R91	D-8			R206	G-1
Q21	E-9									CAPACITORS			
		*C6	I-6	C111	C-5	*R6	I-4	R92	D-8			R207	F-2
D25	D-5	*C7	I-4	C113	D-5	*R7	I-5	R101	C-6	Ref.	Location	R208	F-1
D32	D-9	*C8	I-4	C121	E-6	R11	H-6	R102	C-6	No.	No.	R211	I-2
		*C9	I-5	C122	E-6	R12	H-6	R103	D-6			R212	H-3
		C11	H-8	C123	C-7	R14	H-4	R104	E-6	C201	G-2	R213	H-3
										C202	H-2		
		C12	H-7	C124	D-7	R15	H-4	R105	F-6	C203	G-2	R214	H-3
		C13	H-6	C131	E-8	R21	F-3	R106	F-6	C204	G-1	R216	G-3
		C14	H-6	C132	E-8	R22	H-3	R107	F-6	C206	F-2	R217	F-3
		C15	H-5	C151	F-9	R23	G-4	R108	F-6			R218	G-4
		C16	H-4	C152	F-9	R31	I-3	R111	D-5	C207	E-2	R219	G-4
										C209	E-2		
		C17	H-5	C154	E-10	R32	H-1	R112	E-5	C210	G-2	R221	F-4
		C24	G-3	C155	E-10	R33	F-2	R113	E-5	C211	H-3	R222	C-2
		C26	G-4			R34	H-2	R114	F-5	C212	H-3	R223	B-2
		C29	G-4			R35	F-2	R116	F-5			R224	B-3
		C31	I-2			R36	F-2	R117	F-5	C213	G-3	R231	D-3
										C214	G-3		
		C32	H-2			R37	F-1	R118	F-6	C216	F-3	R232	C-4
		C33	G-2			R39	D-1	R119	G-5	C222	D-3	R234	E-4
		C34	G-2			R40	D-2	R121	D-6	C223	D-3	R235	D-4
		C36	D-1			R41	C-1	R122	E-6			R236	E-4
		C38	C-2			R43	B-2	R123	E-6	C224	D-2	R237	D-1
										C225	D-2		
		C39	B-2			R44	B-3	R124	E-7	C231	D-3	R238	D-2
		C51	D-3			R45	D-2	R125	C-7	C233	D-1	R241	F-6
		C52	E-3			R51	C-3	R127	C-7	C234	E-4	R242	F-6
		C53	E-3			R52	E-3	R131	F-8			R243	B-5
		C54	D-2			R53	B-2	R132	E-8	C242	G-6	R245	G-6
										C244	G-5		
		C55	C-2			R54	C-3	R133	G-7	C251	H-7	R246	G-5
		C61	G-5			R55	C-3	R134	G-7	C261	C-7	R247	G-6
		C62	F-4			R61	E-4	R135	F-8	C263	D-7	R248	H-6
		C63	E-4			R62	G-4	R139	F-8			R261	C-9
		C64	E-4			R63	D-3	R140	F-8	C283	D-4	R263	B-7
										C285	D-5		
		C65	D-4			R64	D-4	R141	F-7	C288	C-5	R264	B-7
		C66	D-4			R65	E-4	R151	D-9			R265	B-6
		C67	D-3			R66	D-4	R152	D-9			R267	A-8
		C68	D-4			R67	C-3	R153	F-9			R268	A-6
		C73	B-5			R68	C-4	R154	E-9			R269	D-8
		C74	B-5			R69	D-4	R155	E-10			R270	C-9
		C75	A-5			R71	A-3	R156	E-9			R271	A-5
		C76	C-5			R74	B-5	R157	D-10			R272	C-4
		C78	B-7			R75	B-6					R273	B-6
		C82	C-7			R76	C-5					R281	E-5
		C84	B-8			R83	C-8					R282	C-5
		C85	A-9			R84	B-8					R283	F-6
		C86	B-9			R85	B-9					R284	D-6
		C88	C-8			R86	A-10					R285	C-6
		C89	D-8										

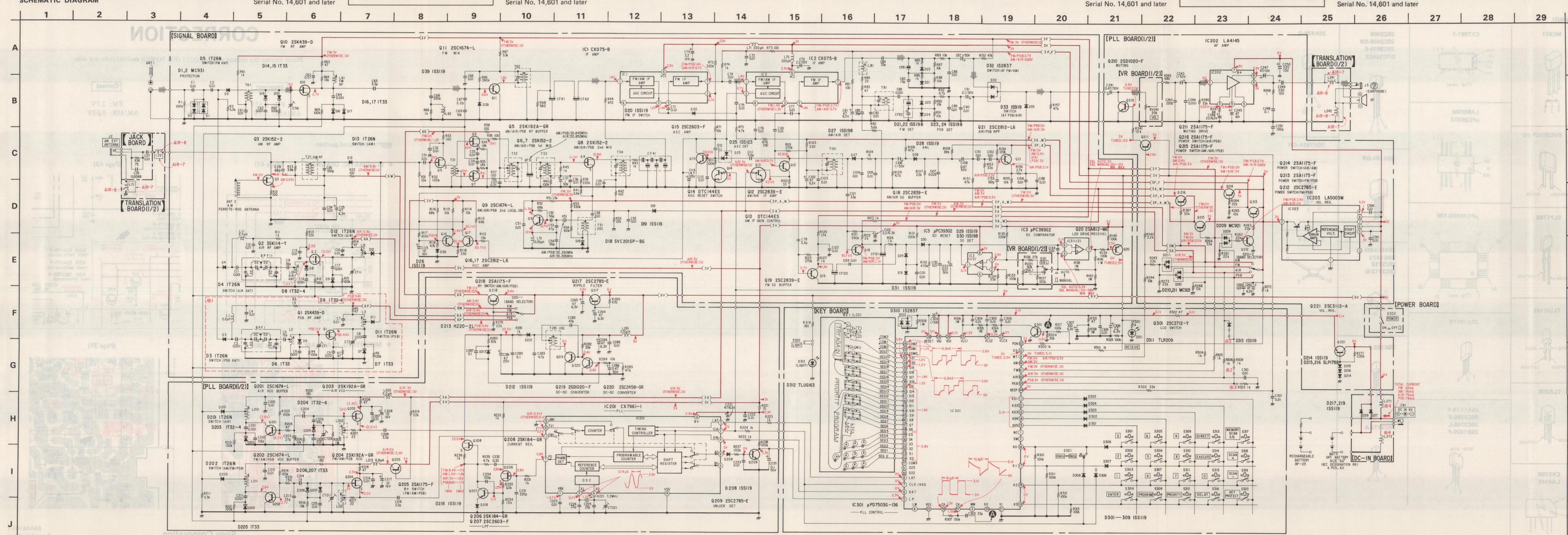
MOUNTING DIAGRAM — Signal Board —



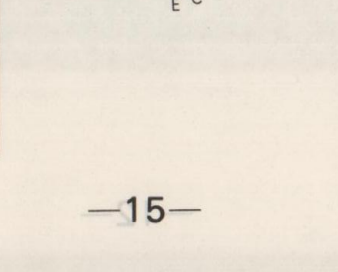
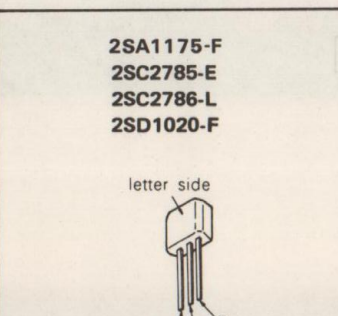
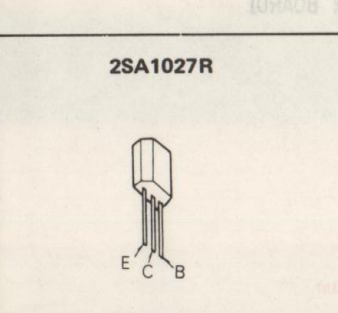
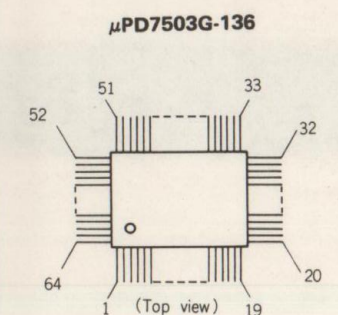
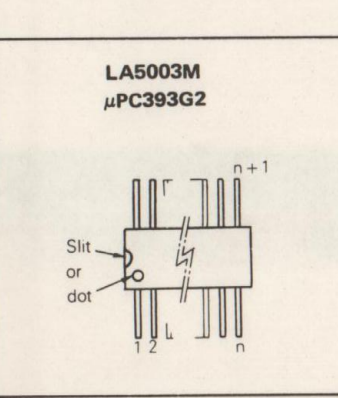
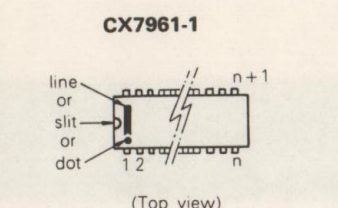
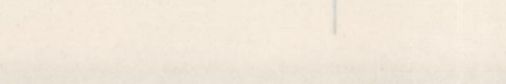
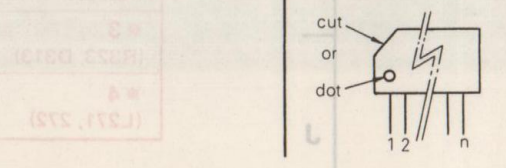
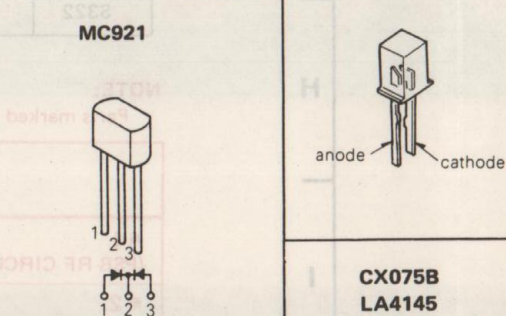
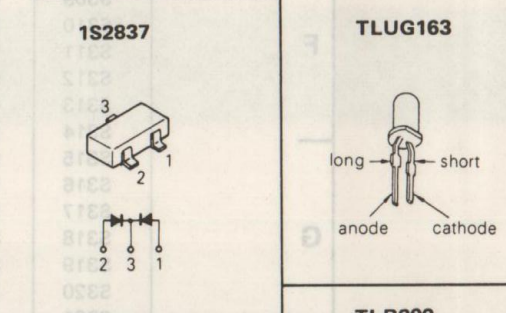
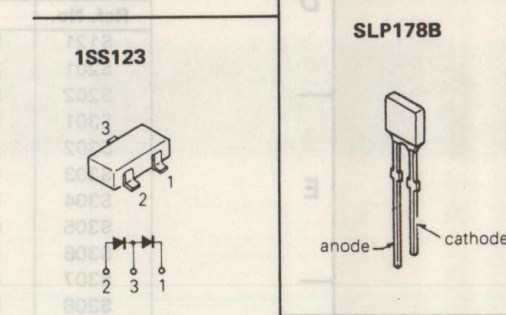
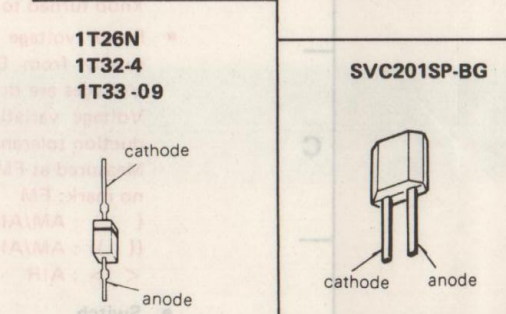
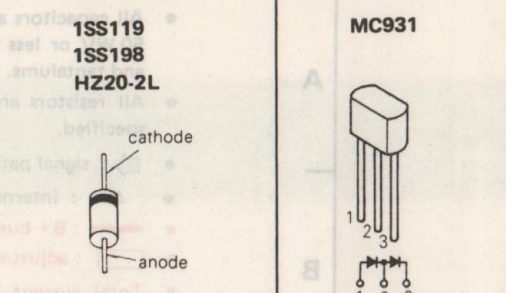
MOUNTING DIAGRAM — PLL Board —







• Semiconductor Lead Layouts



CORRECTION

Please correct the voltage value of Q213 (FM POWER switch) collector side.

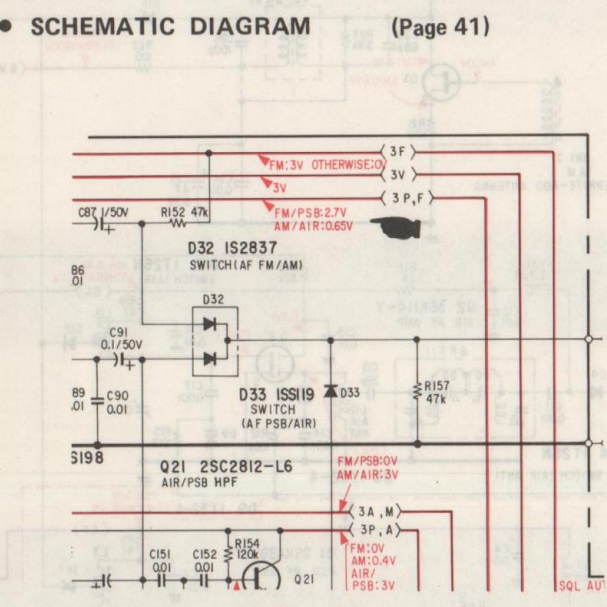
Incorrect

FM: 0.65V
AM/AIR: 2.7V

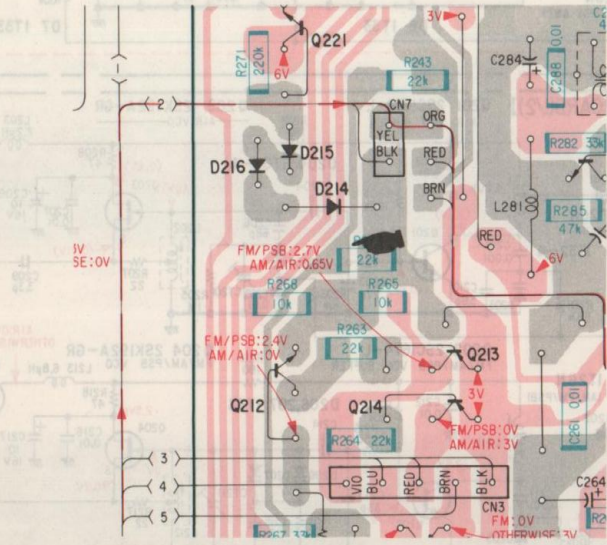
Correct

FM: 2.7V
AM/AIR: 0.65V

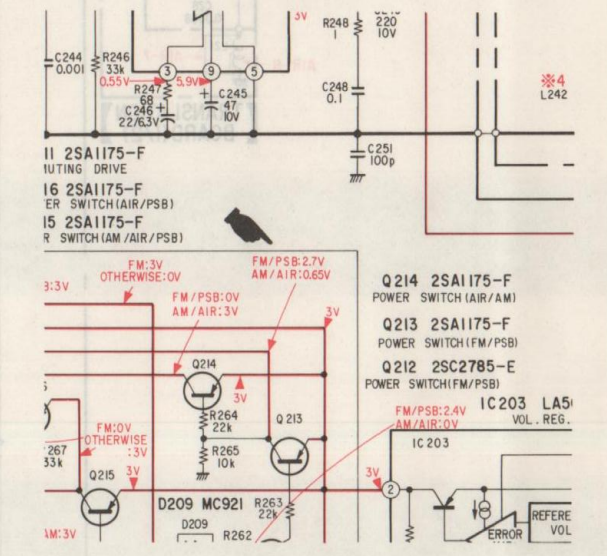
• SCHEMATIC DIAGRAM (Page 41)



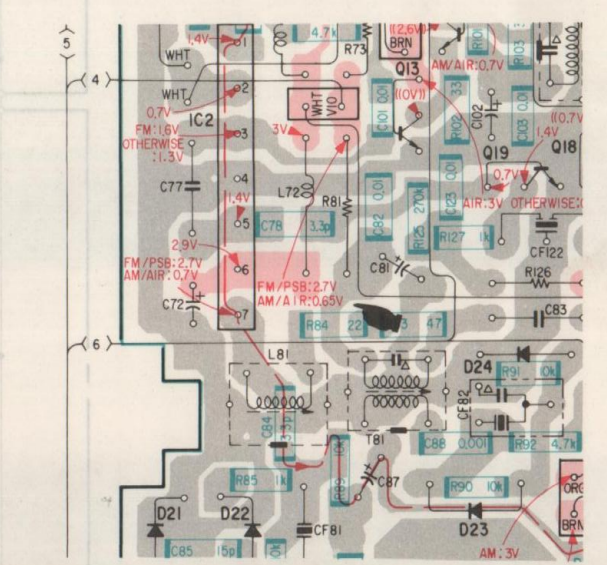
• MOUNTING DIAGRAM (Page 36)



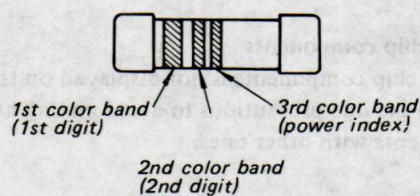
(Page 42)



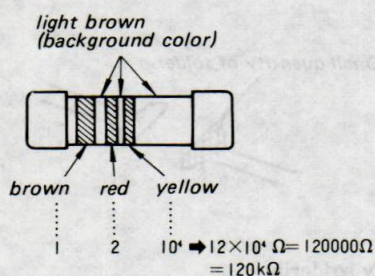
(Page 37)



2. Color Code Reading



(Example of Resistor)



(Example of Capacitor)

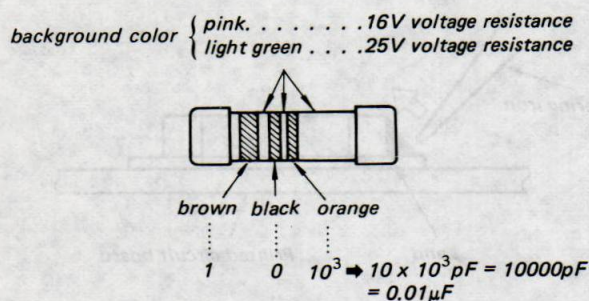


Fig. 2

3. How to Remove MELF Components and Mount Replacements

Use a soldering iron of at least 40W with an iron tip 4 mm in diameter and file the tip down to the angle shown in the diagram.

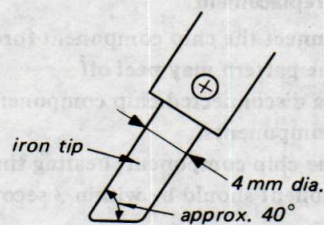


Fig. 3

1. Bring the flat surface of the soldering iron in equal contact with both soldered ends of the component.
2. The solder should melt in about 4 seconds. (The solder will melt more readily if a small amount of solder is attached to the iron tip and the iron tip is placed against the component.)
3. Once the solder has melted, tap the component aside with the tip of the soldering iron, and remove it from the board.

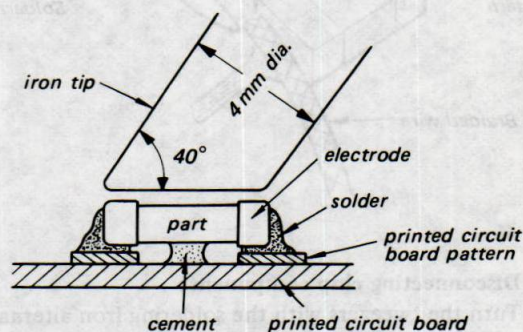


Fig. 4

4. Use lead type resistors to replace the MELF components. This replacement may be mounted with short leads (see Fig. 5).

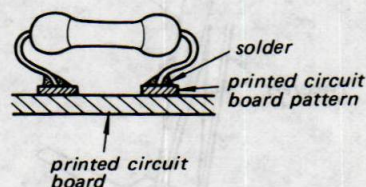


Fig. 5

Note: Use 3216 type chip components to replace the MELF capacitor components.
See page 4 for mounting of chip components.

Replacing chip components

All chip components should be connected and disconnected, using a tapered soldering iron [temperature of the iron tip: less than 280°C (536°F)], a pair of tweezers and braided wire.

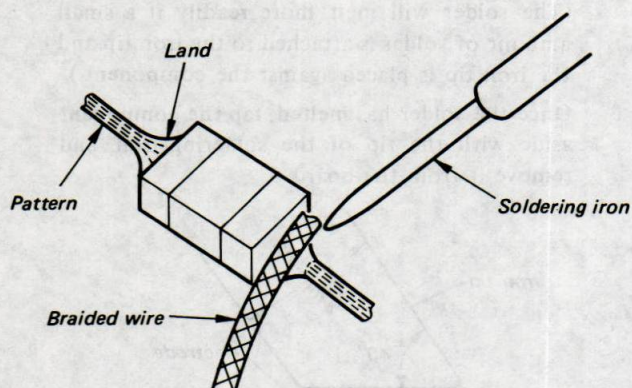
Precautions for replacement

1. Do not disconnect the chip component forcefully. Otherwise, the pattern may peel off.
2. Never re-use a disconnected chip component. Dispose of all old chip components.
3. To protect the chip component, heating time for attaching the component should be within 3 seconds.

○ Removing chip components

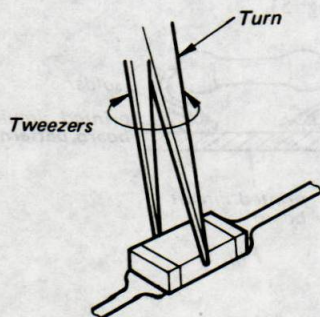
(1) Removing solder at electrode

Remove the solder at the electrode, using a thin braided wire. Do not remove the solder of the part (chip component) attached adjacent to the electrode.



(2) Disconnecting chip components

Turn the tweezers with the soldering iron alternately applied to both electrodes, and the chip component will be disconnected. Take careful precautions while disconnecting, because if the chip component is forcefully removed the land may peel off. Never re-use a disconnected chip component.



(3) Smoothing the soldered surface

After disconnecting the chip component, remove the solder by using a braided wire to smooth the land surface.

○ Connecting chip components

The value of chip components is not displayed on the main body. Take due precautions to avoid mixing new chip components with other ones.

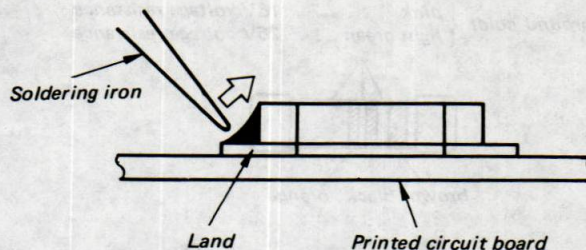
(1) Applying solder to land on one side

Apply a thin layer of solder to the land on one side where the chip component is to be connected. Too much solder may cause bridging.



(2) Speedy soldering

Hold the chip component at the desired position, using tweezers, and apply the soldering iron in the arrow-marked direction. To protect the chip component, heating time should be within 3 seconds.



(3) Speedy soldering of electrode on the other side

Solder the electrode on the other side in the same way as in (2) above.

—SERVICING NOTE—

Note on Parts Replacement

This set uses MELF components. To increase the mounting density of components on PC board, the land where MELF component is to be connected is common to the land where ordinary component is to be connected.

Accordingly, when removing the ordinary components, the MELF component will be also removed. Be sure to solder MELF components when replacing the parts.

Note: The MELF components are secured with locking compound.

Note on Variable Capacitance Diodes Replacement in Antenna Tank Circuit and First Local Oscillator VCO Circuit

Variable capacitance diodes in antenna tank circuit and first local oscillator VCO circuit have the same voltage-capacitance characteristic.

- FM/AM/PSB band
D6, 7, 14, 15, 16, 17, 205, 206, 207: 1T33 (to be same characteristic)

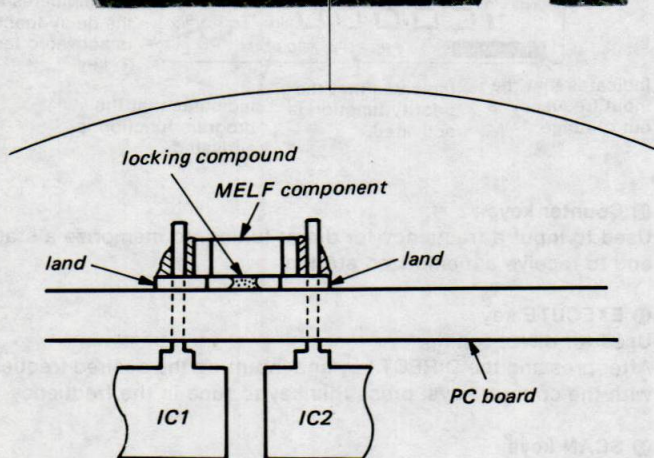
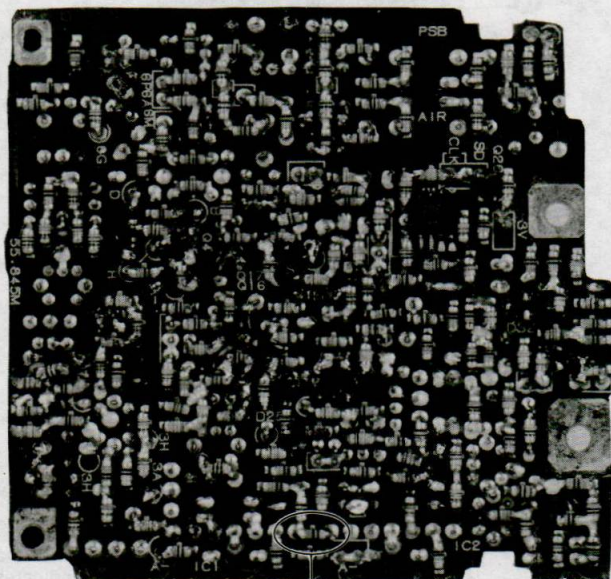
- AIR band
D8, 9, 203, 204: 1T32 (to be same characteristic)

When replacing these variable capacitance diodes, same characteristic diodes should be used.

(If not, tracking error or sensitivity change will be occurred.)

— Replacement parts —

- For FM/AM/PSB band One set (9 diodes)
Part No. 8-713-309-00
- For AIR band One set (4 diodes)
Part No. 8-713-240-00



LOCATION AND FUNCTION OF CONTROLS

Photo : AIR-8

1 POWER switch

Depress to turn on the receiver (▲ ON).
To turn the receiver off, press it again (■ OFF).

2 VOL (volume) control

Turn clockwise for more volume. It can be depressed (▲) to allow the SQL (squelch) control to be adjusted more easily.

3 Helical antenna (supplied)

Used for AIR band, PSB and FM reception.

4 ANT (antenna) connector

Connect the supplied helical antenna or the BNC connector of an optional external antenna for AIR band, PSB and FM reception.

5 SQL (squelch) control

Used for cutting background noise while tuning and during intervals between communications. Normally, depress the control (▲ AUTO). Press it again to set to ■ MANUAL, and adjust the squelch level manually.

When performing auto tuning or memory scan tuning or program scan tuning, set the SQL control at the position where the RECEIVE indicator goes out.

6 (earphone) jack

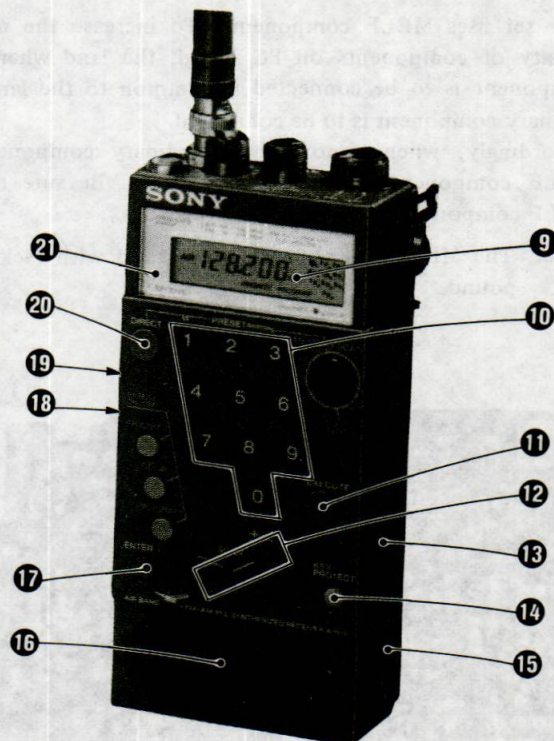
Connect the supplied earphone for private listening.
This jack is also used for connecting an external speaker or recording broadcast on a tape recorder.

7 AM EXT (external) ANTENNA jack

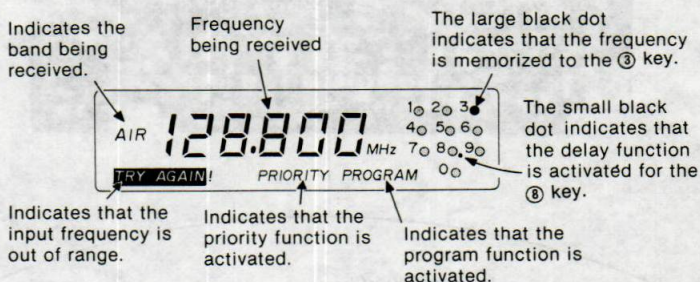
Connect an optional external antenna for AM reception.

8 Band selector

Select the desired band: PSB, AIR, FM or AM

**9 Display (LCD)**

Displayed as follows:

**10 Counter keys**

Used to input a frequency for direct tuning, to memorize a station and to receive a memorized station.

11 EXECUTE key

Used for direct tuning.

After pressing the DIRECT key and inputting the desired frequency with the counter keys, press this key to tune in the frequency.

12 SCAN keys

Used for scan tuning and manual tuning.

When you press the ⊕ (plus) or ⊖ (minus) key, the frequency is increased or decreased by the intervals shown on page 9.

If you keep the key pressed, the frequency changes continuously.

13 LIGHT switch

The display is illuminated when this switch is pressed.

14 KEY PROTECT key

When this key is pressed once, the keys on the front face are locked and no longer function.
To release this key, press it again.

15 DC IN 6V (external power input) jack

For operation from an external power source.

16 Speaker**17 ENTER key**

Used to memorize a frequency.
After inputting the desired frequency, while pressing this key, press the counter keys at which the frequency is to be memorized.

18 Battery compartment (rear)**19 9 kHz/10 kHz selector (inside battery compartment)**

Used to change the MW tuning interval.

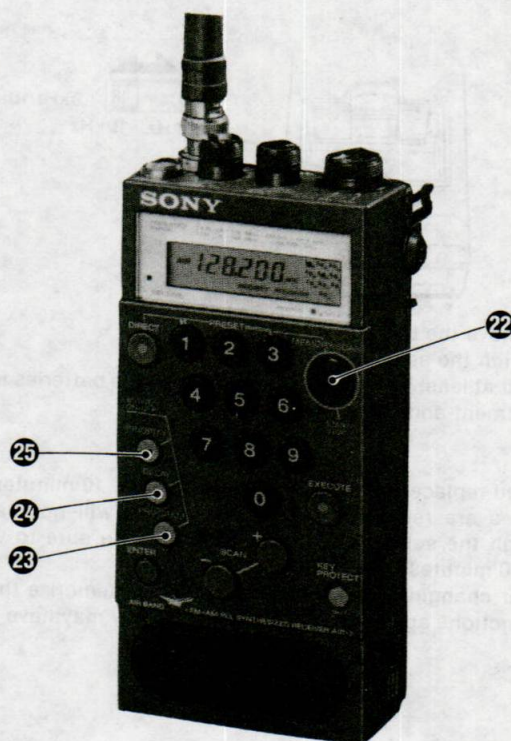
20 DIRECT key

Used for direct tuning.

21 RECEIVE indicator (LED)

When a signal or a noise is received, this indicator lights in red.

KEYS FOR AIR BAND AND PSB RECEPTION (indicated in green)

**22 MEMORY SCAN key**

Used for memory scan tuning.

23 PROGRAM key

Used to initiate the program function. See page 13.

24 DELAY key

Used to initiate the delay function. See page 14.

25 PRIORITY key

Used to initiate the priority function. See page 14.

POWER SOURCES

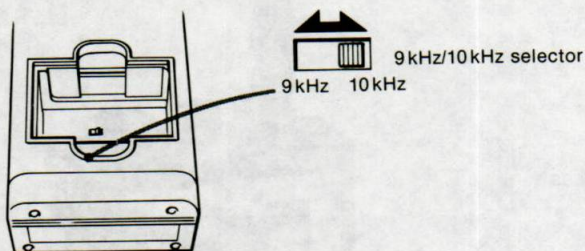
The internal batteries are also used to back up the built-in microcomputer. Be sure to keep the batteries installed even when the receiver is operated on other power sources.

HOW TO CHANGE THE MW TUNING INTERVAL

The MW tuning interval is factory preset to 10kHz or 9kHz to match the local frequency allocation system.

If you use the receiver in an area where the frequency allocation system is based on the other interval, change the position of the 9 kHz/10 kHz selector in the battery compartment as follows.

rear



- 1 Remove the batteries.
- 2 Switch the selector.
- 3 Wait at least 10 minutes, then put back the batteries in the compartment and close the lid.

Notes

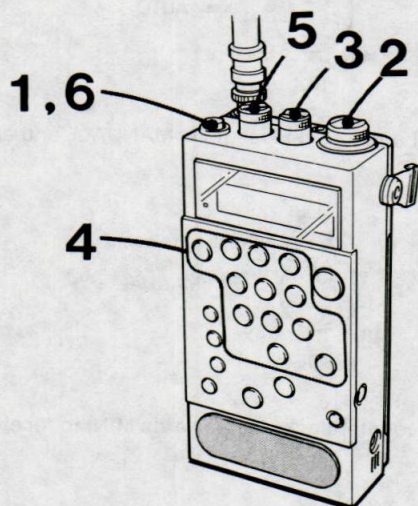
- If you replace the batteries within approx. 10 minutes after the batteries are removed, the tuning interval will not be changed although the selector has been switched. Be sure to wait for at least 10 minutes.
- After changing the MW tuning interval, memorize the stations and functions again, as the previous memory may have been erased.

FM/AM/AIR/PSB reception

DIRECT TUNING

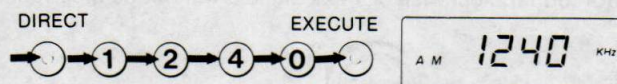
If you know the frequency of a station to be received, you can tune in the station easily by direct tuning.

The numbers in the illustration refer to the sequence of operation.

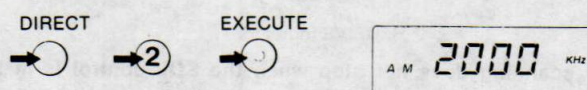


- 1 Depress the POWER switch (▲ ON).
- 2 Set the band selector to the desired band.
- 3 Set the SQL control to MIN with ■ MANUAL set.
- 4 Press the DIRECT key, input the frequency of the station to be received using the counter keys, then press the EXECUTE key. The station will be tuned in.

Example: AM 1240 kHz



AM 2000 kHz



FM 90.10 MHz



For AM reception, the built-in ferrite bar antenna functions. Since this antenna is directional, rotate the set horizontally for optimum reception, if necessary.



Note: After pressing the DIRECT key or a counter key, press the next key within 5 seconds. If you do not, the previous station will return.

The frequency received by this receiver is displayed in steps of the following intervals, depending on the bands.

- AIR: 0.025 MHz
- PSB: 0.005 MHz
- FM: 0.050 MHz
- LW: 1 kHz
- MW: 9kHz or 10kHz *
- SW: 1 kHz

This is because the frequencies are allocated at these intervals. Therefore, if you input a frequency between the interval, the frequency at the interval just below will be tuned in and displayed. For example, if you input AM 1242 kHz with the tuning interval set to 10 kHz, AM 1240 kHz will be tuned in and displayed.

* This tuning interval can be also set to 10kHz or 9kHz by switching the 9kHz/10kHz selector in the battery compartment. See page 8.

If you input a wrong frequency

Press the DIRECT key again and input the correct frequency.

The **TRY AGAIN!** indication

If you input a frequency outside the frequency range (AIR 108-136 MHz, PSB 144-174 MHz, FM 76.0-108.0 MHz, AM 150-2194 kHz), the indication **TRY AGAIN!** will blink in the display. When you input a proper frequency, **TRY AGAIN!** indication will disappear. If you leave **TRY AGAIN!** indication blinking, it will disappear after about 5 seconds, and the tuned station's frequency will reappear.

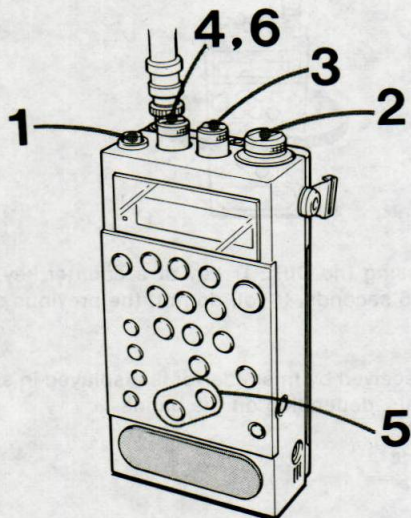
- 5 Adjust the volume with the VOL control.
- 6 After listening, press the POWER switch again to turn the receiver off (■ OFF).

FM/AM/AIR/PSB reception

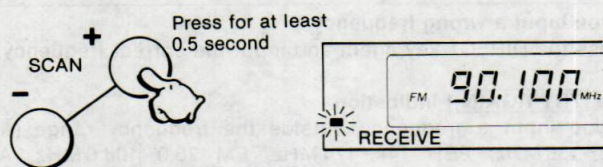
SCAN TUNING

Use scan tuning to automatically scan the stations in the frequency range of the band being received. Scanning stops automatically at each station.

The numbers in the illustration refer to the sequence of operations.



- 1 Depress the POWER switch (■ ON).
- 2 Set the band selector to the desired band.
- 3 Depress the SQL control (■ AUTO).
- 4 Turn the VOL control slightly clockwise.
- 5 Press the SCAN ⊕ or ⊖ key for at least 0.5 second to start scanning, then release the key. The display changes continuously and stops automatically when a station is received. Pressing the ⊕ key, the tuned frequency is increased. Pressing the ⊖ key, the frequency is decreased.



Repeat step 5 until the desired station is received.

- 6 Adjust the volume with the VOL control.

- For AM reception, if necessary rotate the set horizontally for optimum reception.
- To stop scanning, press the ⊕ or ⊖ key momentarily.

After listening, set the POWER switch to ■ OFF.

If stations cannot be tuned in by scan tuning with the SQL control set to ■ AUTO, press the SQL control again (■ MANUAL) and turn the control slowly counterclockwise (towards MIN). Be careful not to turn this control too far counterclockwise.

If scanning stops a little before a station, tune in the frequency more precisely by manual tuning (See page 11.).

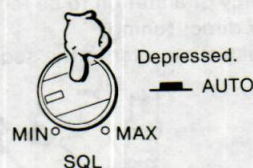
Note on scanning

Scanning is performed in the range of the band being received, at the intervals shown on page 9. When the upper limit of the frequency of that band is reached, the dial is scanned back to the lower limit, and vice versa.

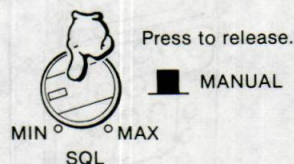
HOW TO USE THE SQL CONTROL

Normally, depress the SQL control (■ AUTO).

Signals and noise below the factory-set level will be suppressed.



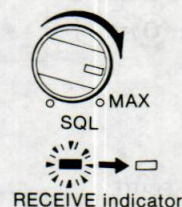
Press this control again to release it (■ MANUAL), and adjust the squelch level.



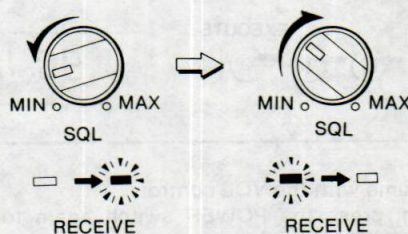
Turn the control counterclockwise (towards MIN) to receive weaker signals.



- If you attempt to perform scan tuning or memory scan tuning and scanning does not begin when the SQL control is in the ■ AUTO position, set the control to ■ MANUAL and turn the control slowly clockwise (towards MAX). At the level at which the RECEIVE indicator goes out, scanning will begin. Be careful not to turn the control too far clockwise or weak signals will not be received.



- If scanning does not stop when the SQL control is in the ■ AUTO position, turn the control slowly counterclockwise (towards MIN). When the RECEIVE indicator lights up, turn the control clockwise again until the indicator goes out.

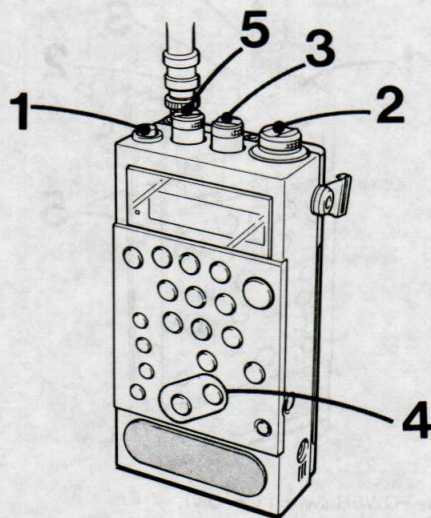


FM/AM/AIR/PSB reception

MANUAL TUNING

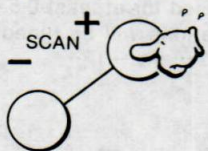
Use manual tuning when you do not know the frequency of the station you want to tune in, or when you want to tune in a station more precisely after scan tuning.

The numbers in the illustration refer to the sequence of operations.

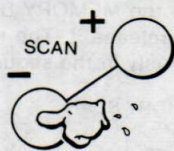


- 1 Depress the POWER switch (▲ ON).
- 2 Set the band selector to the desired band.
- 3 Set the SQL control to MIN.
- 4 ① Keep the SCAN ⊕ or ⊖ key pressed until the desired station is received.

For higher frequencies



For lower frequencies



- ② Press the SCAN key momentarily to tune the station precisely. Each time the key is pressed, the frequency is increased or decreased by the intervals shown on page 9.

- 5 Adjust the volume with the VOL control.

After listening, set the POWER switch to ▲ OFF.

FM/AM/AIR/PSB reception

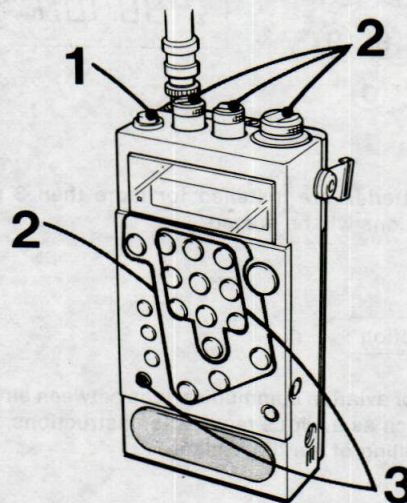
MEMORY TUNING

Once the frequencies of the stations you want to tune in are memorized, all you have to do is to push a key.

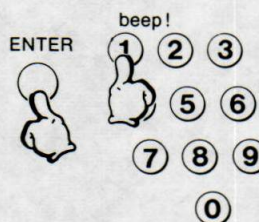
One FM, one AM, one AIR and one PSB station can be memorized to a key, or a total of 40 stations (Canadian, AEP-2 models of AIR-7 and AIR-8) or 30 stations (AEP-1, E models of AIR-7) to all the counter keys.

HOW TO MEMORIZE A STATION

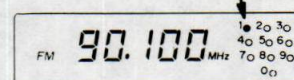
The numbers in the illustration refer to the sequence of operations.



- 1 Depress the POWER switch (▲ ON).
- 2 Tune in the desired station using any tuning method—direct tuning (page 9), scan tuning (page 10) or manual tuning (page 11).
- 3 While pressing the ENTER key, press one of the counter keys. A beep sounds and the corresponding dot appears.



Indicates that the station is memorized to ①.



Notes

- The frequencies memorized to all the counter keys at the factory are as follows:

AIR: 108 MHz
PSB: 144 MHz
FM: 76 MHz

AM: 531 kHz (530kHz in Canadian model of AIR-7 and AIR-8)

- If you memorize another station of the same band to a key on which you have already memorized a station, the previous station will be erased.

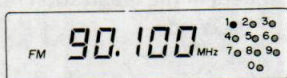
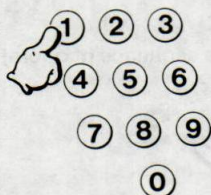
You cannot erase a station without memorizing another station.

To check your memory

After memorizing the stations, press each counter key in turn to check that the desired stations have been memorized correctly. You can recall a station any time by pressing its counter key.

HOW TO RECEIVE A MEMORIZED STATION

Turn the power on, select the band and press the appropriate counter key. The memorized station will be received.



Note: If no batteries are installed for more than 3 minutes, all memorized stations will be erased.

AIR/PSB reception

You can monitor aviation communications between aircraft and airport towers, such as a pilot's request for instructions, report of his position, and filling of his flight plans.

For type 1 and 2 models, you can monitor police, fire, forestry conservation, VHF weather, traffic and other public safety radio services, as well as the air band.

Direct tuning, scan tuning, manual tuning and memory tuning

Tuning procedure is the same as for FM or AM reception. See pages 9 to 12.

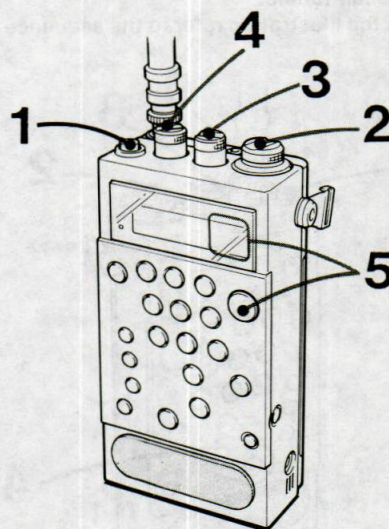
If necessary, set the SQL control to **MANUAL** and adjust it. (See page 10.)

AIR/PSB reception**MEMORY SCAN TUNING**

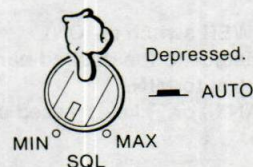
The stations memorized on the counter keys are scanned in sequence at the press of the MEMORY SCAN key and scanning stops automatically when a signal is received.

Memorize frequencies to all counter keys. (See "How to memorize a station" on page 11.)

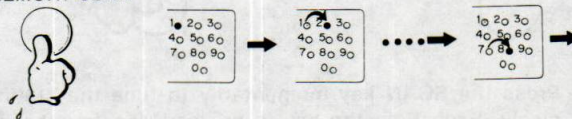
Follow the numbered sequence.



- 1 Depress the POWER switch (**ON**).
- 2 Set the band selector to AIR or PSB.
- 3 Depress the SQL control (**AUTO***).



- 4 Adjust the volume with the VOL control.
- 5 Keep the MEMORY SCAN key pressed for at least 0.5 second, then release it. The memorized stations will be tuned in continuously in the sequence 1→2→3→...→0→1→...*.

MEMORY SCAN

When there is a signal, scanning will stop. If the signal disappears, scanning begins again.

To stop scanning, press the MEMORY SCAN key again.

To start scanning again when memory scanning has automatically stopped, keep the MEMORY SCAN key pressed for at least 0.5 second and release it.

Each time you press the MEMORY SCAN key momentarily, a memorized station is tuned in.

Using the program function, you can change the sequence of memory scanning. (See page 13.)

* When noise is heard while tuning, set the SQL control to **MANUAL** and turn it slowly clockwise.

AIR/PSB reception

PROGRAM FUNCTION

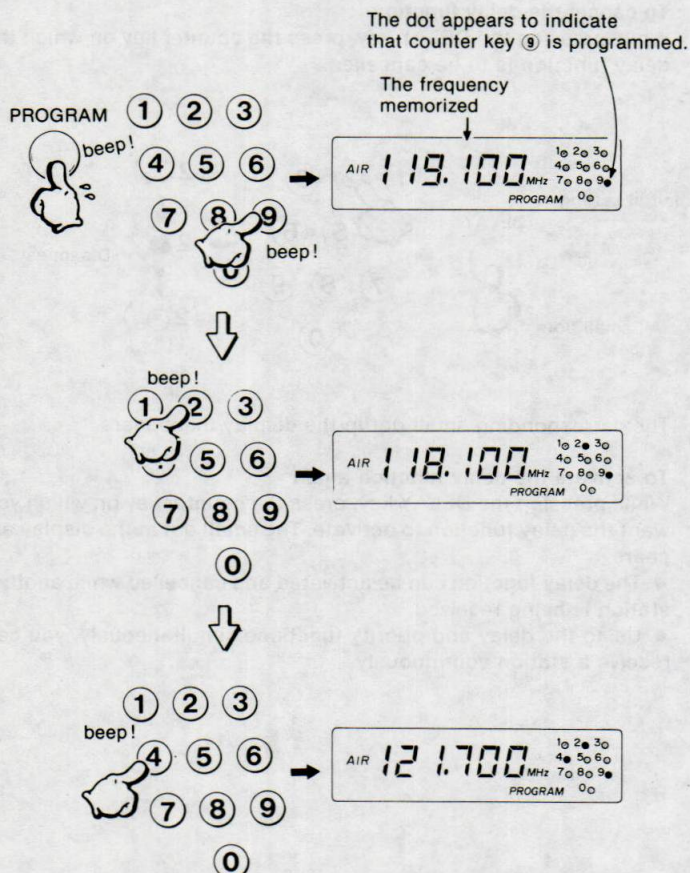
The program function is used to change the sequence of memory scanning or scan only certain keys.

How to activate the program function

Memorize frequencies to all counter keys.

Follow the numbered sequence.

- 1 While pressing the PROGRAM key, press the counter keys in the desired sequence.

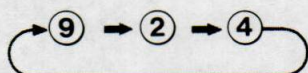


- During programming, the previous station is received.
- You can program the counter keys in any desired sequence of up to 10 scanning points, including programming the same counter key more than once.

- 2 Press the MEMORY SCAN key to start memory scanning.

To scan stations 9, 2 and 4

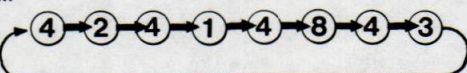
MEMORY SCAN



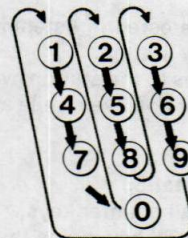
Example of programming

To tune in a certain station memorized to the 4 key

PROGRAM



- The sequence of programmed scanning is factory set as follows.



- Since only 10 keys can be programmed, even if the eleventh key is pressed, it is not programmed.
- The program function can be activated and cancelled while another station is being received.

To cancel the program function

Press the PROGRAM key again. The PROGRAM indication in the display disappears. In this case, the sequence of memory scanning reverts to 1→2→3→...→0→1→...

AIR/PSB reception**PRIORITY FUNCTION**

If you are particularly interested in listening to a certain station, designate it as the priority station.

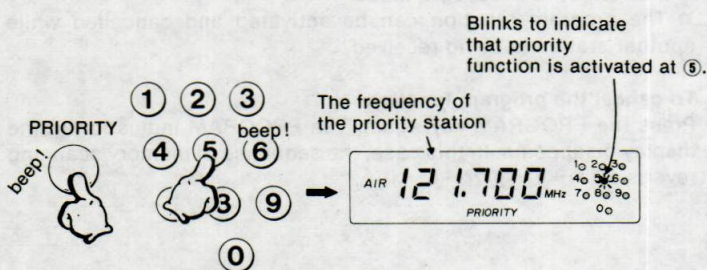
The set automatically tunes to the station every 3 seconds to check whether there is a signal or not, even while another station is being received.

To designate the priority station

Memorize frequencies to all counter keys.

While pressing the PRIORITY key, press the counter key to which the desired frequency is memorized.

If more than two counter keys are pressed, the last key pressed designates the priority station.



- The PRIORITY indication appears in the display. A beep sounds and the corresponding dot blinks.
- When the priority station is tuned in every 3 seconds, the station being received will be interrupted for a fraction of a second.

To cancel the priority station

Press the PRIORITY key again. The PRIORITY indication and the dot in the display disappear.

- The priority function can be activated and cancelled while another station is being received.

AIR/PSB reception**DELAY FUNCTION**

Using the delay function, the station being received will be kept tuned in during memory scanning after the signal stops for approx. 2 seconds, i.e. during the interval between communications. The delay function is activated on all counter keys at the factory.

To cancel the delay function

While pressing the DELAY key, press the counter key on which the delay function is to be cancelled.



The corresponding small dot in the display disappears.

To activate the delay function again

While pressing the DELAY key, press the counter key on which you want the delay function to activate. The small dot in the display appears.

- The delay function can be activated and cancelled while another station is being received.
- Using the delay and priority functions simultaneously, you can receive a station continuously.

● IC301's (PLL CONTROL IC μ PD7503-136) TERMINAL FUNCTIONS

Terminal No.	Terminal Name	Function	Terminal No.	Terminal Name	Function
1	NC	This terminal is not used on this set.	33	S21	Signal output for LCD segment.
2	SW		34	S20	
3	MW		35	S19	
4	LW		36	S18	
5	LP	Signal input for PLL lock detector.	37	S17	
6	DAT	Dividing number (N) serial data output of PLL IC (IC201).	38	S16	
7	CLK/KS0	Signal output for synchronous clock pulse of above serial data or signal output for initial key source.	39	S15	
8	LAT	Signal output for above serial data latch.	40	S14	
9	MT	Signal output for sound muting. muted: L, otherwise: H	41	S13	
10	SD	Signal input for station detector. tuned: H, detuned: L	42	S12	
11	KS1	Signal output for key matrix scanning.	43	S11	
12	KS2		44	S10	
13	KS3		45	S9	
14	KS4		46	S8	
15	KS5	Signal input for key matrix scanning.	47	S7	
16	K0		48	S6	
17	K1		49	S5	
18	K2		50	S4	
19	K3	This terminal is not used on this set.	51	S3	
20	X2		52	S2	
21	X1		53	S1	
22	VSS		54	S0	
23	VLC3	Input for LCD power supply.	55	PSB	Input for PSB band switching. PSB mode: H, otherwise: L For 3 band model, fix to L.
24	VLC2		56	RESET	Reset terminal
25	VLC1		57	CK	System clock pulse oscillation terminal. (Approx. 120kHz)
26	VDD		58	VDD	Power supply terminal.
27	COM3	Common signal output for LCD.	59	CK	System clock pulse oscillation terminal. (Approx. 120kHz)
28	COM2		60	AIR	Input for AIR band switching. AIR mode: H, otherwise: L
29	COM1		61	FM	Input for FM band switching. FM mode: H, otherwise: L
30	COM0		62	AM	Input for AM band switching. AM mode: H, otherwise: L
31	S23	This terminal is not used on this set.	63	PON	Input for power supply switching. POWER ON: H, OFF: L
32	S22		64	BEEP	Signal output for beep sound. (Approx. 2kHz)

● KEY MATRIX TABLE

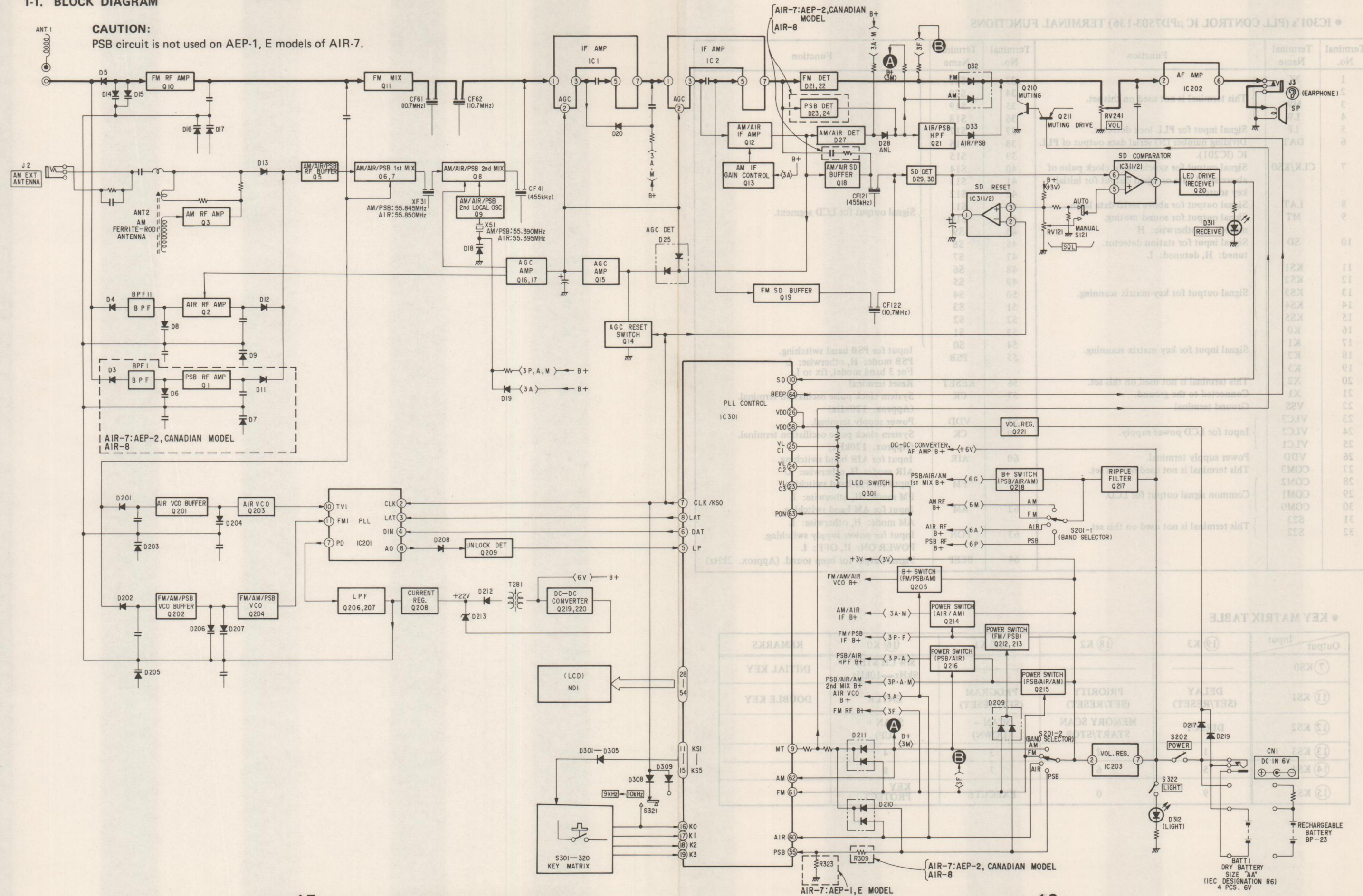
Output	Input	①⑨ K3	①⑧ K2	①⑦ K1	①⑥ K0	REMARKS
⑦ KS0					MW CH STEP 9kHz $\leftrightarrow$ 10kHz	INITIAL KEY
⑪ KS1	DELAY (SET/RESET)		PRIORITY (SET/RESET)	PROGRAM (SET/RESET)	ENTER	DOUBLE KEY
⑫ KS2	DIRECT		MEMORY SCAN START/STOP	SCAN - (DOWN)	SCAN + (UP)	
⑬ KS3		1	2	3	4	
⑭ KS4		5	6	7	8	
⑮ KS5		9	0	EXECUTE	KEY PROTECT	

SECTION 1
OUTLINE

1-1. BLOCK DIAGRAM

CAUTION:

PSB circuit is not used on AEP-1, E models of AIR-7.



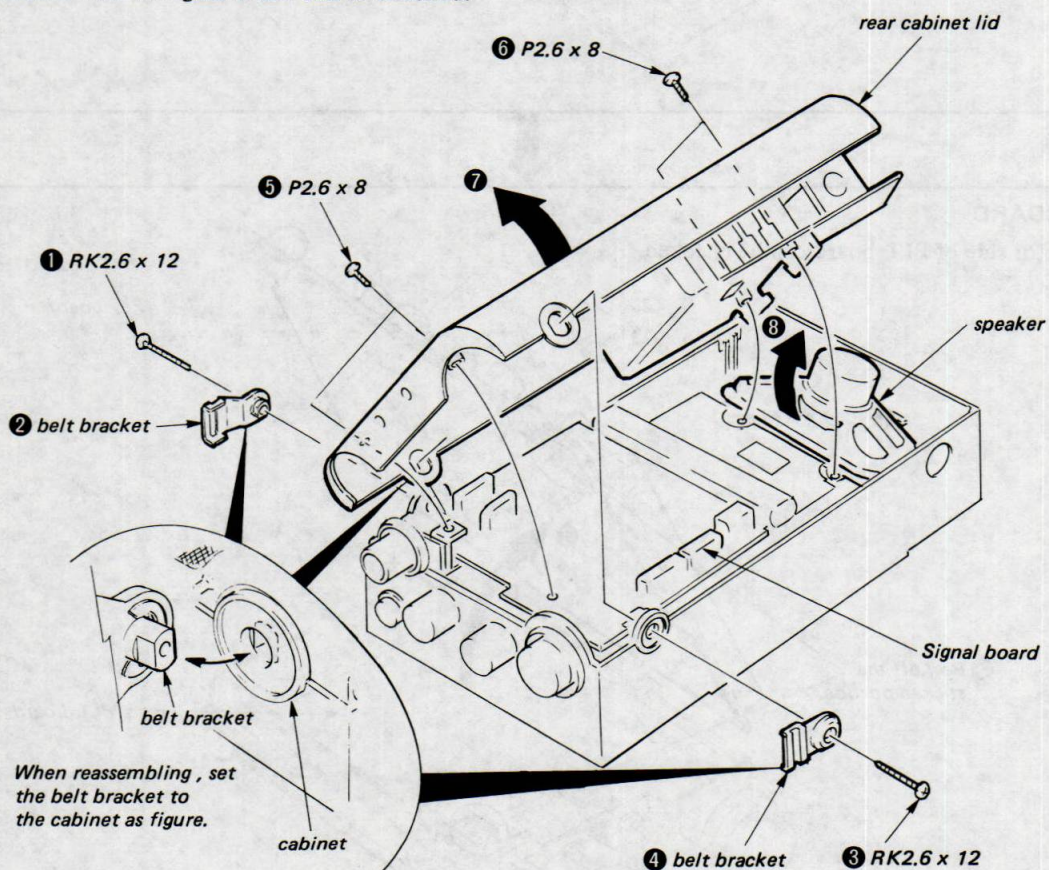
SECTION 2 DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

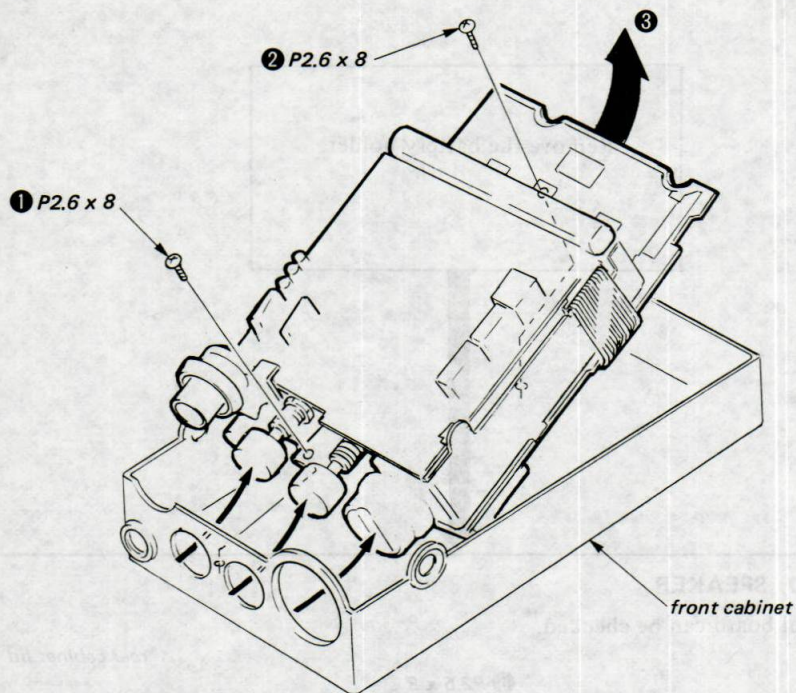
Remove the battery holder.

REAR CABINET LID, SPEAKER

Conductor side of signal board can be checked.

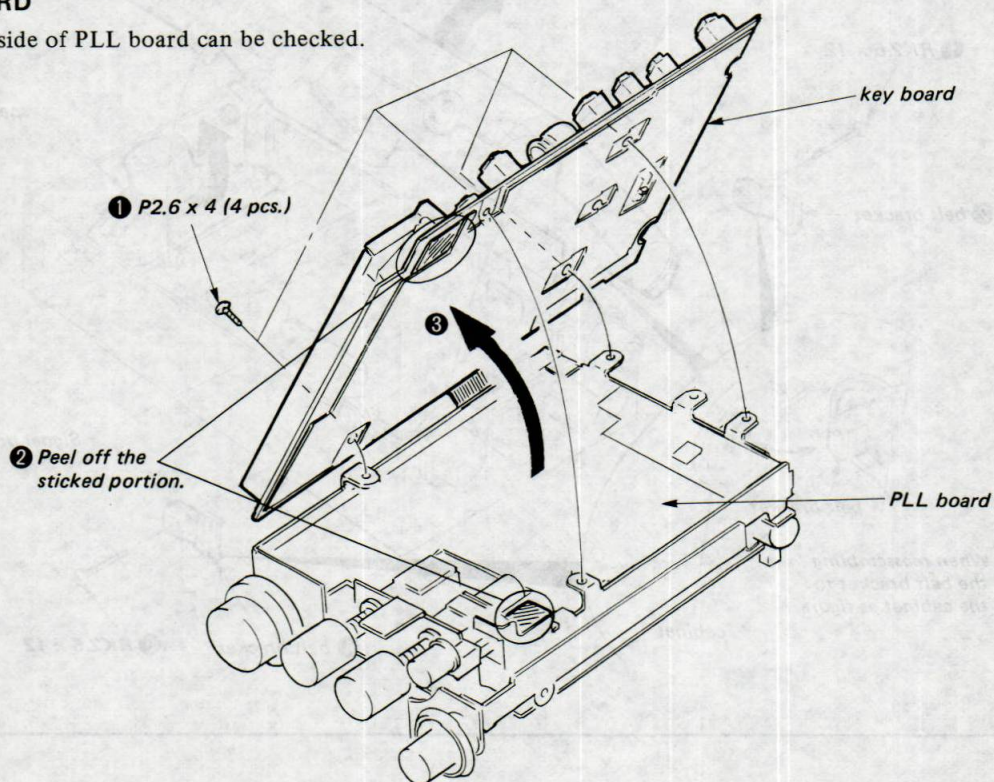


FRONT CABINET



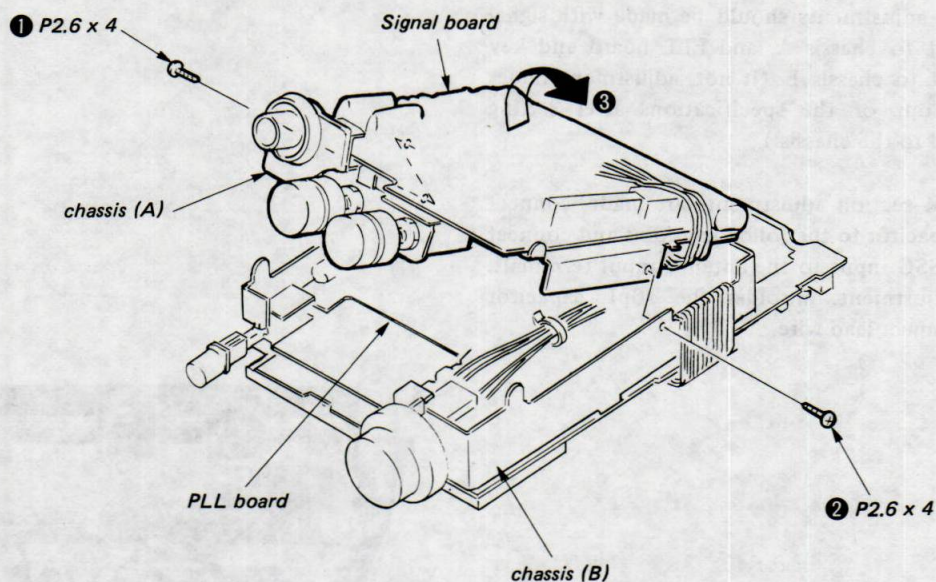
KEY BOARD

Conductor side of PLL board can be checked.



CHASSIS (A)

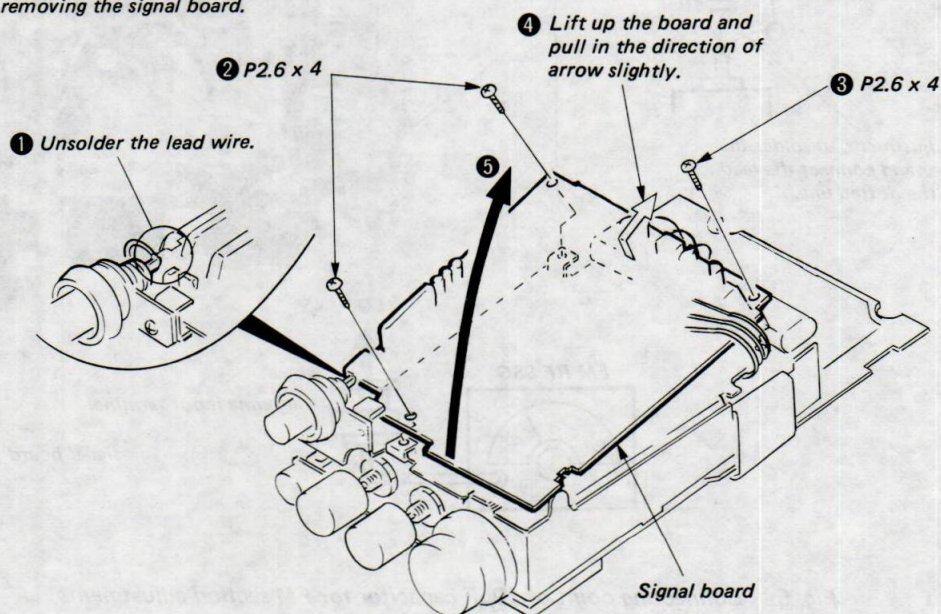
Conductor side of PLL board can be checked.



SIGNAL BOARD

Conductor side of signal board can be checked.

Note: Be careful not to break the lead wire when removing the signal board.



SECTION 3 ADJUSTMENTS

3-1. ELECTRICAL ADJUSTMENTS

Note On Adjustment

1. Adjustments should be made in the order given in this service manual.
2. Tracking adjustments should be made with signal board set to chassis A, and PLL board and key board set to chassis B. (If not, adjustment values will be out of the specifications after setting the board to the chassis.)
3. When FM section adjustments are made, connect 10pF capacitor to the following point and connect FM RF SSG input to the antenna input terminals. After adjustment, unsolder the 10pF capacitor and reconnect lead wire.

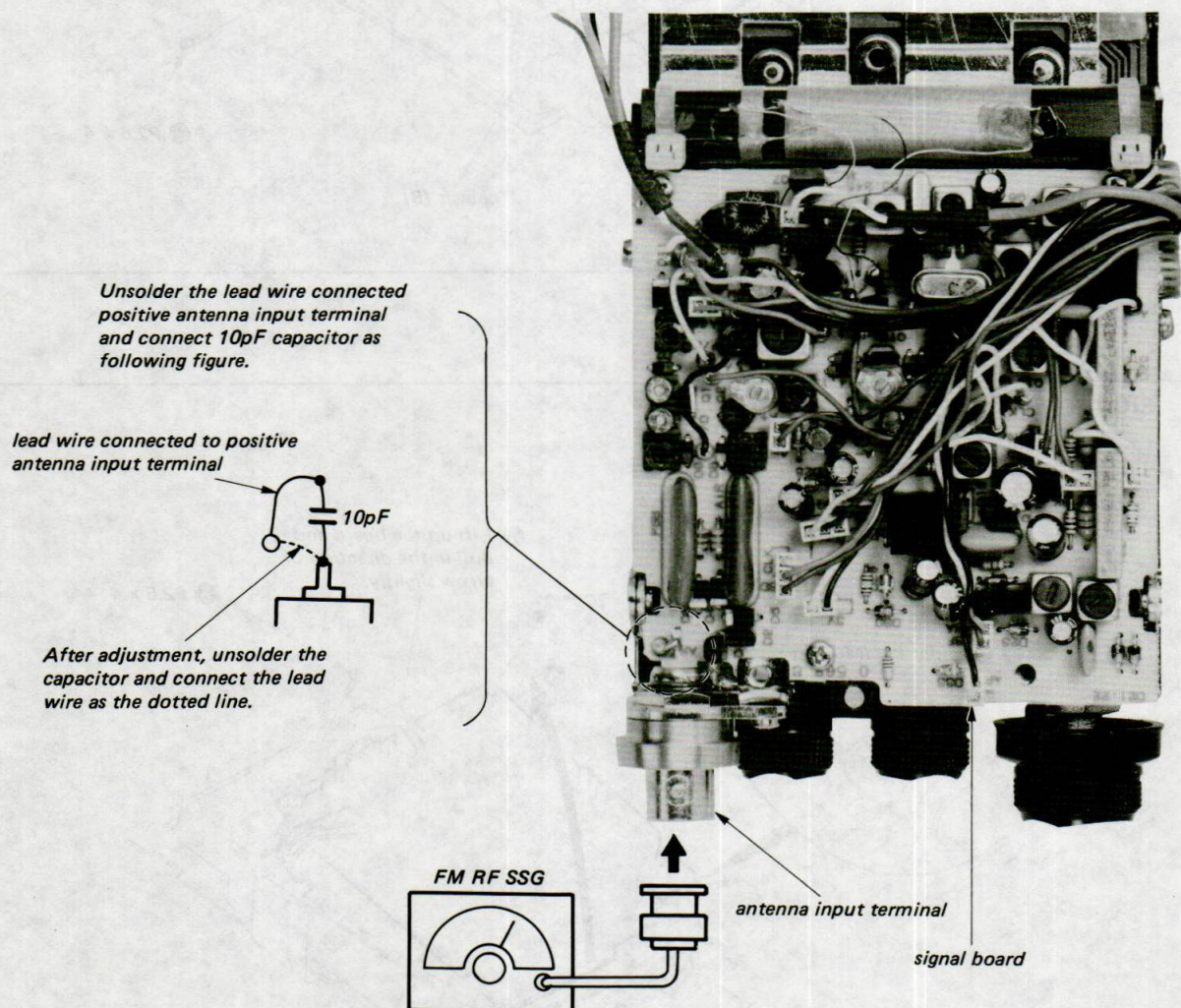


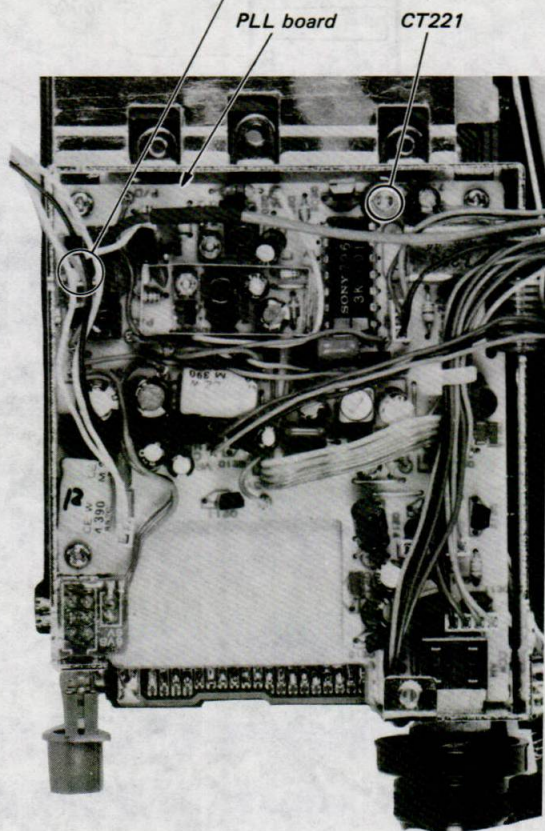
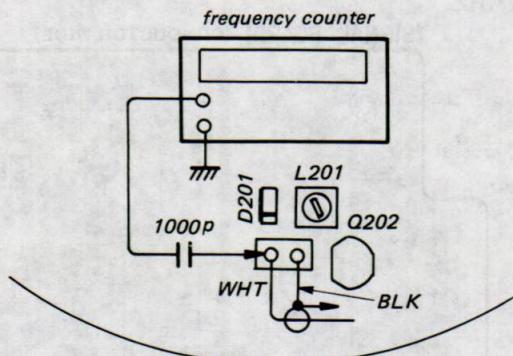
Fig. 6 Connecting point of 10pF capacitor for FM section adjustments

Reference Frequency Adjustment

Setting: Band selector: FM

Procedure:

1. Set the receiving frequency to 76MHz.
2. Adjust CT221 so that the frequency counter reads $86.7 \pm 0.0001\text{MHz}$.



AIR VCO Adjustment

Setting: Band selector: AIR

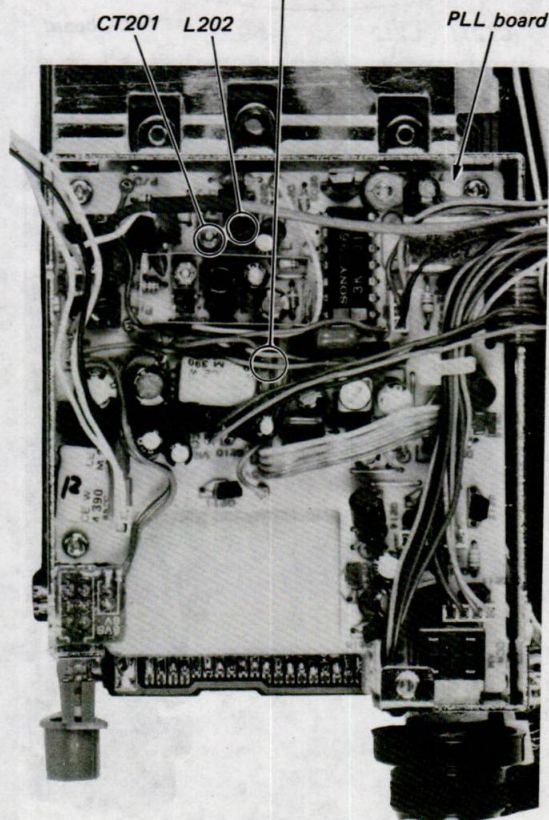
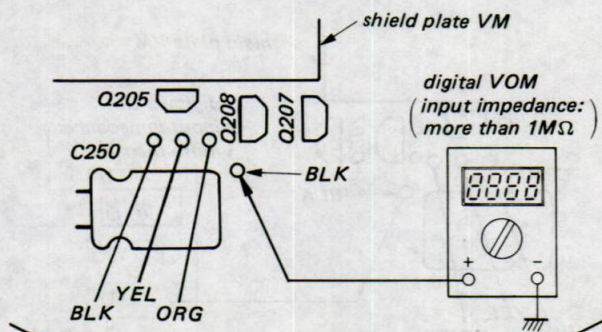
Procedure:

1. Set the receiving frequency to 108MHz.
2. Set CT201 to the mechanical center.



(MECHANICAL
CENTER
POSITION)

3. Adjust L202 so that the digital VOM reads 3.25V.

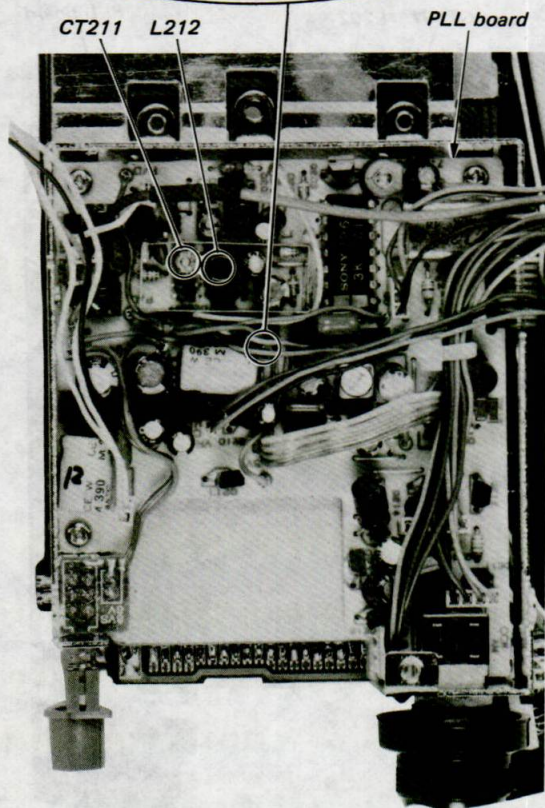
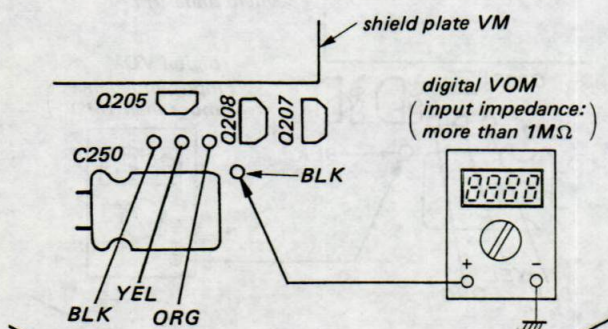


FM/PSB/AM VCO Adjustment**Setting:** Band selector: AM**Procedure:**

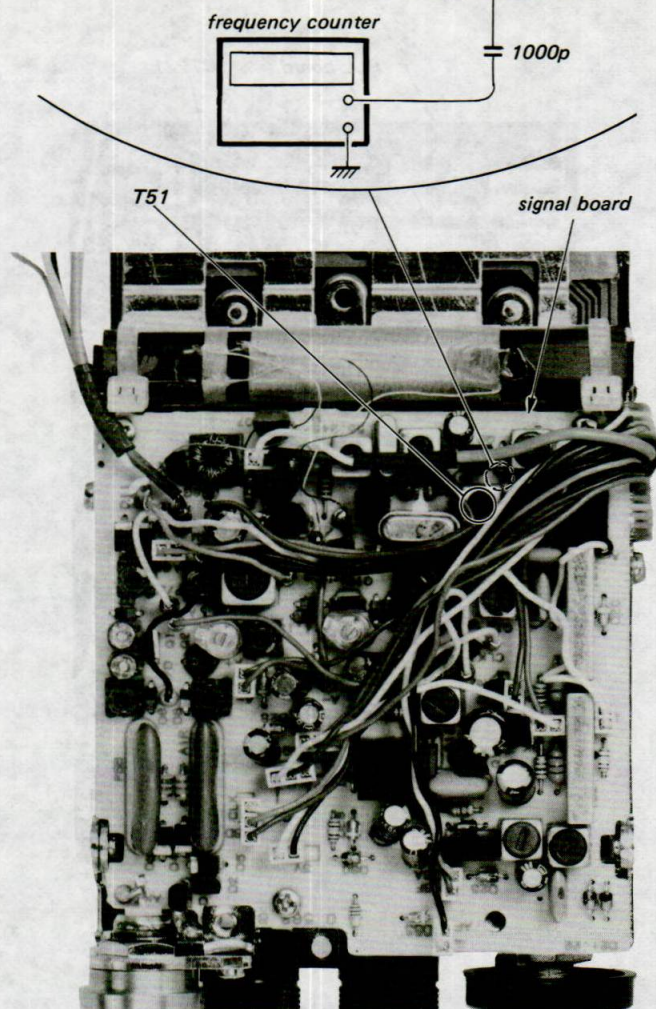
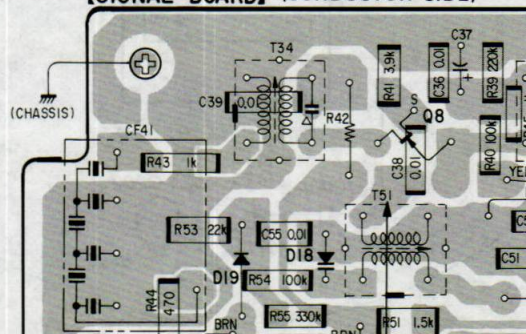
1. Set the receiving frequency to 150kHz.
2. Set CT211 to the mechanical center.



3. Adjust L212 so that the digital VOM reads 1.25V.

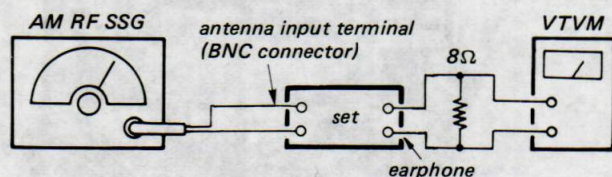
**PSB/AIR/AM Second Local Oscillator VCXO Adjustment****Procedure:**

1. Band selector: AM
Receiving frequency is free.
2. Adjust T51 so that the frequency counter reads $55.390 \pm 0.0001\text{MHz}$.
3. Band selector: AIR
Receiving frequency is free.
4. Confirm that the frequency counter reads $55.395 \pm 0.001\text{MHz}$.

[SIGNAL BOARD] (CONDUCTOR SIDE)

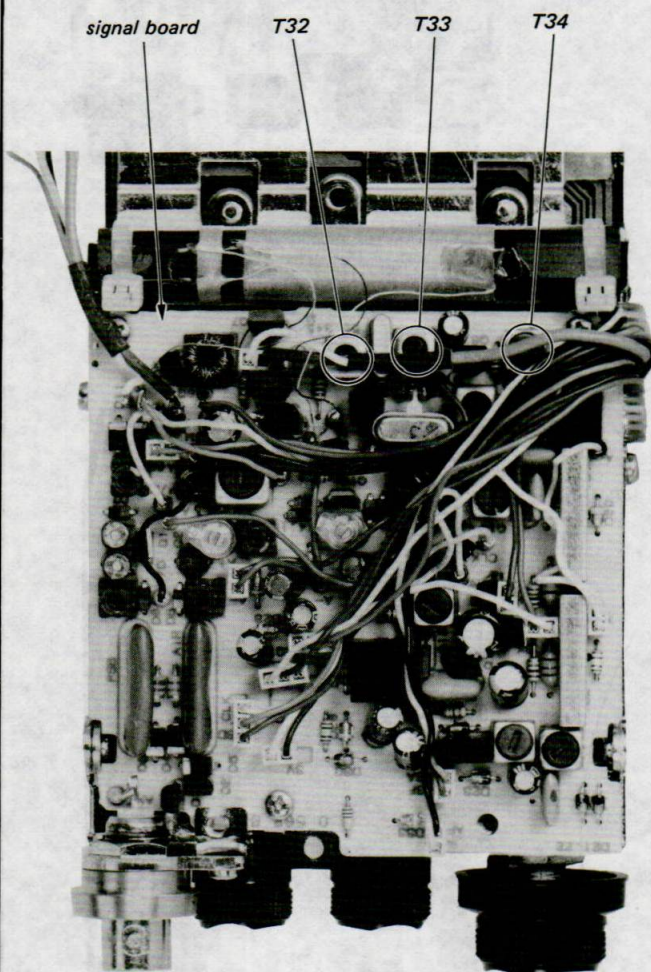
PSB/AIR/AM IF Adjustment

Setting: Band selector: AIR

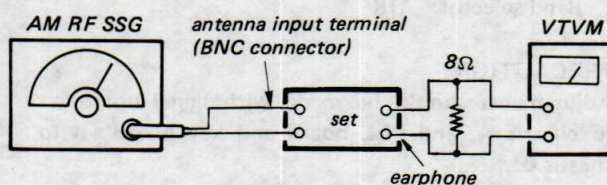
Procedure:

Carrier frequency: 122MHz
Modulation: 30% amplitude modulation by 1kHz signal
Output level: As low as possible around 0dB

1. Tune the set to 122MHz.
2. Adjust T32, T33, T34 for a maximum reading on VTVM.

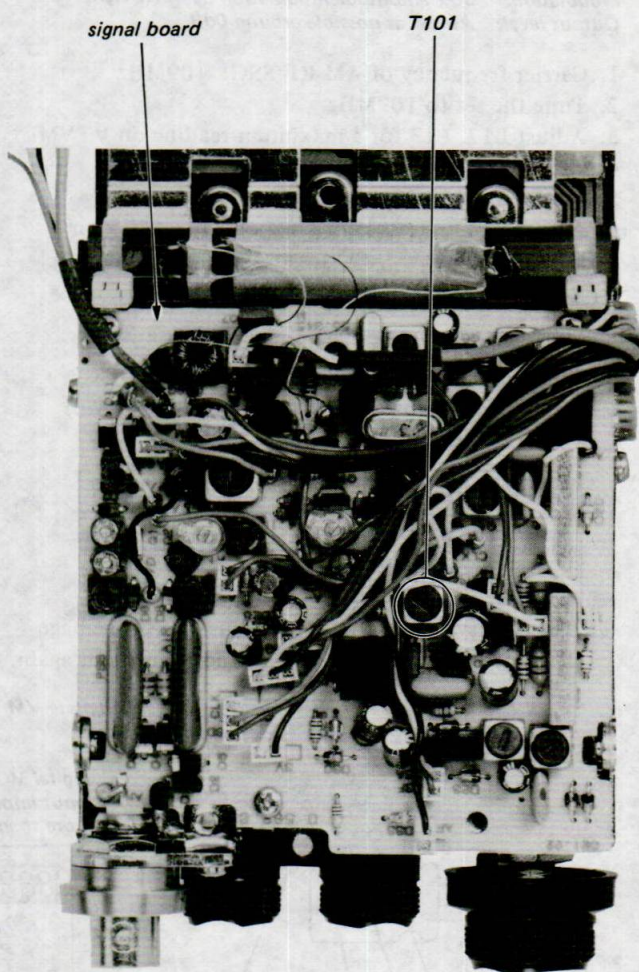
**AIR/AM Detector Adjustment**

Setting: Band selector: AIR

Procedure:

Carrier frequency: 122MHz
Modulation: 30% amplitude modulation by 1kHz signal
Output level: As low as possible around 0dB

1. Tune the set to 122MHz.
2. Adjust T101 for a maximum reading on VTVM.

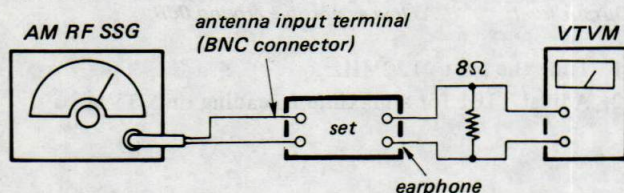


AIR Tracking Adjustment**Setting:**

1. This adjustment should be made after AIR VCO Adjustment (See page 23).
2. Band selector: AIR

PRECAUTION:

Adjustments should be made with signal board set to chassis A, and PLL board and key board set to chassis B.

Procedure:

Modulation: 30% amplitude modulation by 1kHz signal
Output level: As low as possible around 0dB

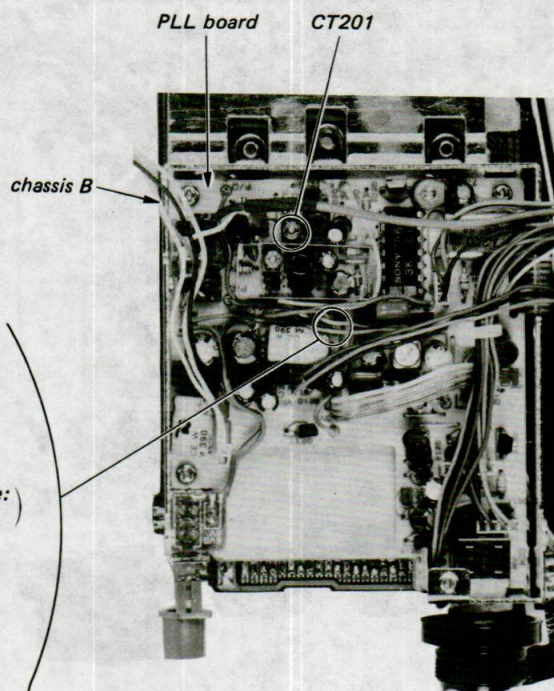
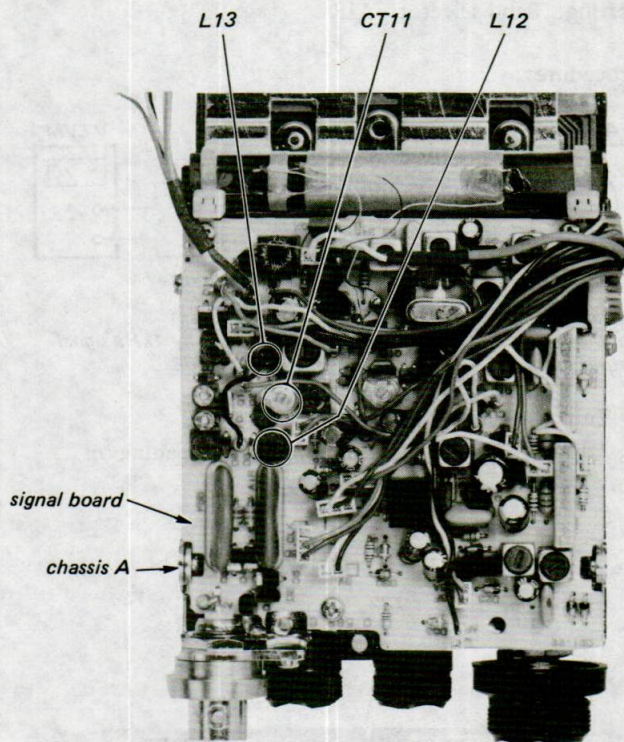
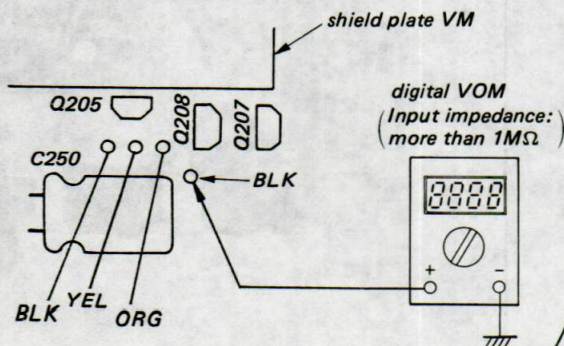
1. Carrier frequency of AM RF SSG: 109MHz
2. Tune the set to 109MHz.
3. Adjust L12, L13 for a maximum reading on VTVM.
4. Carrier frequency of AM RF SSG: 136MHz
5. Tune the set to 136MHz.
6. Adjust CT11, CT201 for a maximum reading on VTVM.
7. Repeat steps 1 – 6 two or three times.

Note: The adjustment should be finally done at step 6.

8. After adjustment, make sure that AIR VCO dc voltage is as follows at the receiving frequency of 108MHz and 136MHz.

receiving frequency	AIR VCO dc voltage
108MHz	3.25 $\pm$ 0.5V
136MHz	13.4 $\begin{smallmatrix} +2 \\ -1.5 \end{smallmatrix}$ V

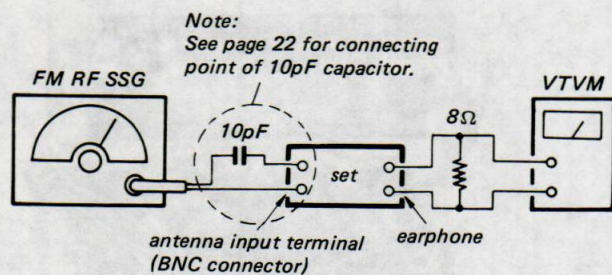
If necessary, make AIR VCO adjustment (See page 23). After that, make AIR tracking adjustment again.



FM IF Adjustment

Setting: Band selector: FM

Procedure:

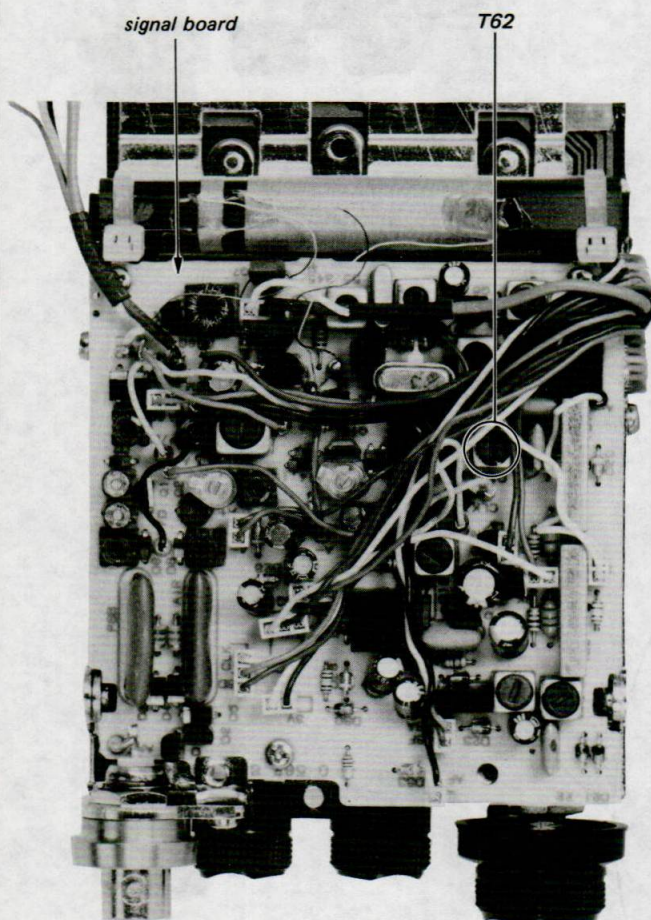


Carrier frequency: 93MHz

Modulation: $\pm 22.5\text{kHz}$ frequency deviation by
400Hz signal (30%)

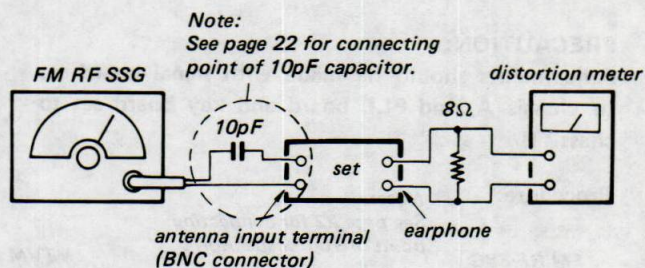
Output level: As low as possible around 10dB

1. Tune the set to 93MHz.
2. Adjust T62 for a maximum reading on VTVM.

**FM Discriminator Adjustment**

Setting: Band selector: FM

Procedure:

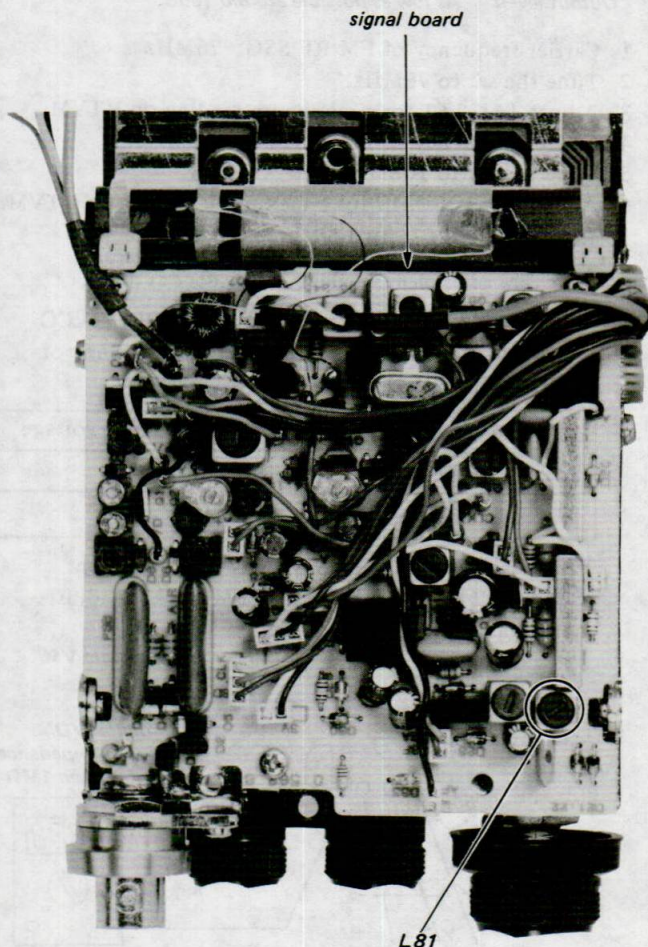


Carrier frequency: 93MHz

Modulation: $\pm 22.5\text{kHz}$ frequency deviation by
400Hz signal (30%)

Output level: 54dB

1. Tune the set to 93MHz.
2. Adjust L81 for a minimum reading on distortion meter.



FM Tracking Adjustment

Setting:

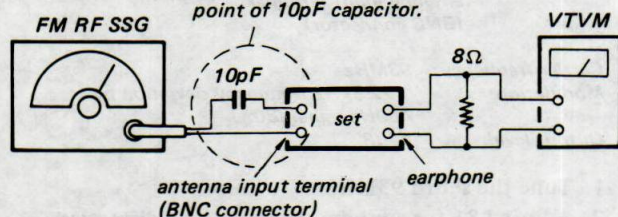
- This adjustment should be made after FM/PSB/AM VCO adjustment (See page 24).
- Band selector: FM

PRECAUTION:

Adjustments should be made with signal board set to chassis A, and PLL board and key board set to chassis B.

Procedure:

Note:
See page 22 for connecting point of 10pF capacitor.



Modulation: $\pm 22.5\text{kHz}$ frequency deviation by 400Hz signal (30%)

Output level: As low as possible around 10dB.

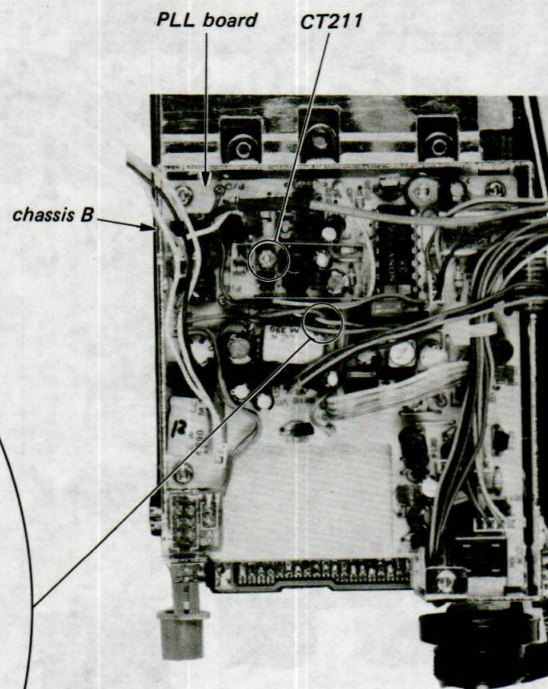
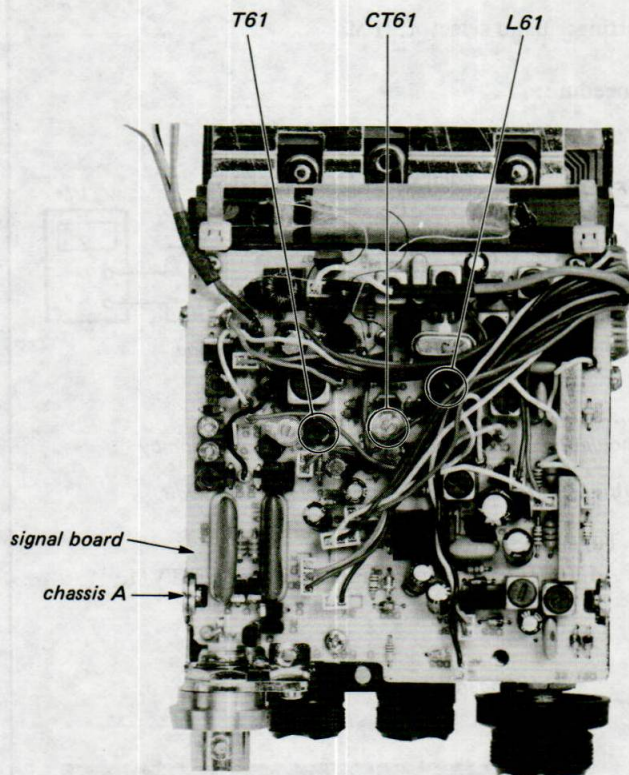
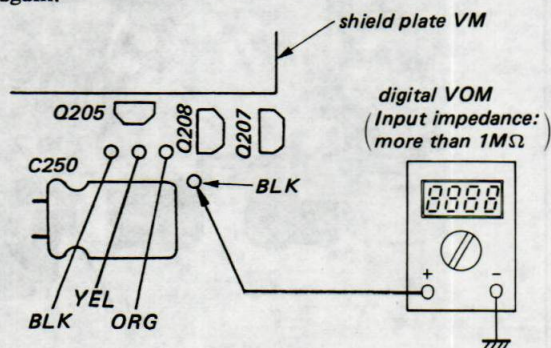
1. Carrier frequency of FM RF SSG: 76MHz
2. Tune the set to 76MHz.
3. Adjust T61, L61 for a maximum reading on VTVM.
4. Carrier frequency of FM RF SSG: 108MHz
5. Tune the set to 108MHz.
6. Adjust CT61, CT211 for a maximum reading on VTVM.
7. Repeat steps 1 – 6 two or three times.

Note: The adjustment should be finally done at step 6.

8. After adjustment, make sure that FM/PSB/AM VCO dc voltage is as follows at the receiving frequency of 76MHz and 108MHz.

receiving frequency	FM/PSB/AM VCO dc voltage
76MHz	$8.5 \pm 0.7\text{V}$
108MHz	$17.4 \pm 1.5\text{V}$

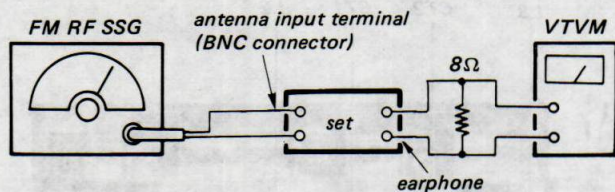
If necessary, make FM/PSB/AM VCO adjustment (See page 24). After that, make FM tracking adjustment again.



PSB Discriminator Adjustment

Setting: Band selector: PSB

Procedure:

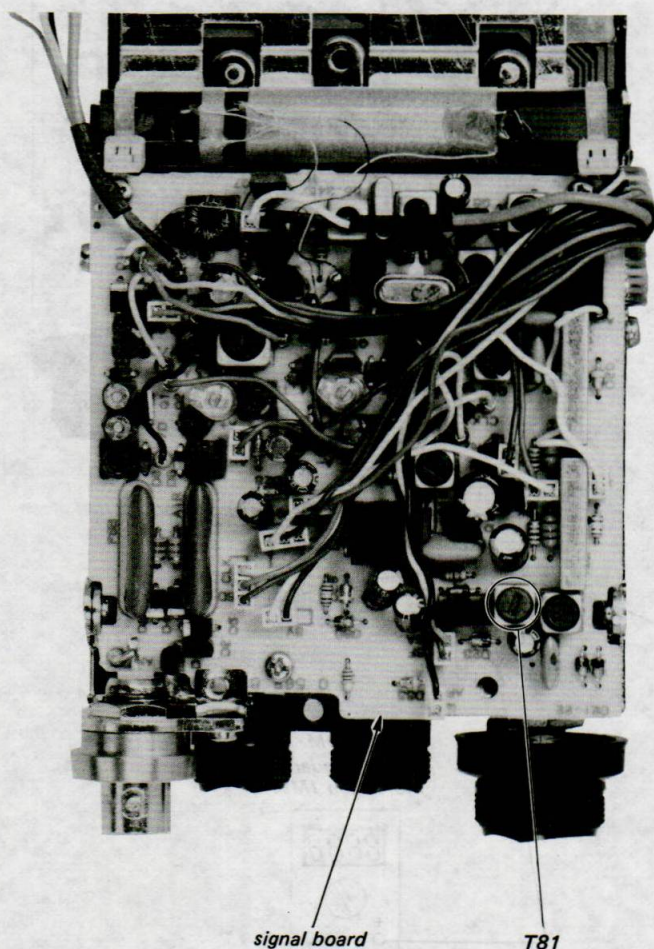


Carrier frequency: 150MHz

Modulation: 3.5kHz frequency deviation by 1kHz signal

Output level: As low as possible around -5dB

1. Tune the set to 150MHz.
2. Adjust T81 for a maximum reading on VTVM.

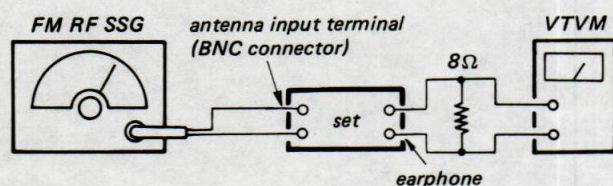


PSB Tracking Adjustment**Setting:**

- This adjustment should be made after FM/PSB/AM VCO adjustment and FM tracking adjustment.
(See page 24 and 28.)
- Band selector: PSB

PRECAUTION:

Adjustments should be made with signal board set to chassis A, and PLL board and key board set to chassis B.

Procedure:

Modulation: 3.5kHz frequency deviation by 1kHz signal

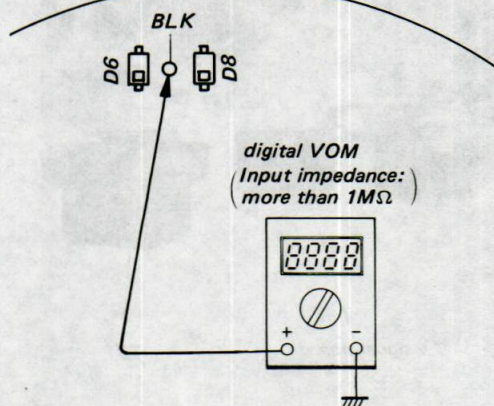
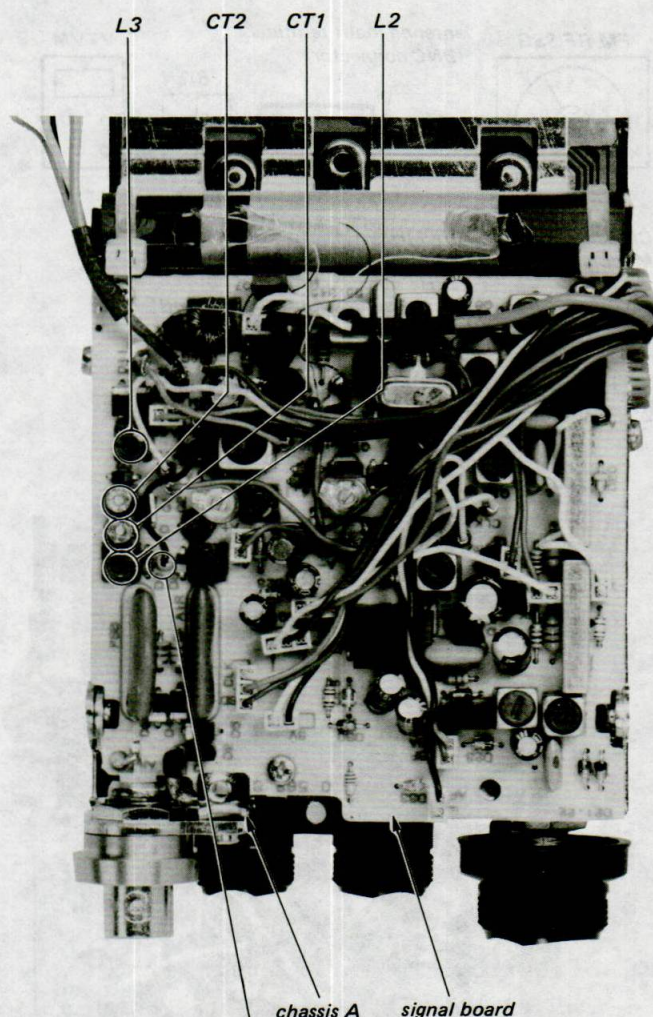
Output level: As low as possible around -5dB

1. Carrier frequency of FM RF SSG: 150MHz
2. Tune the set to 150MHz.
3. Adjust L2, L3 for a maximum reading on VTVM.
4. Carrier frequency of FM RF SSG: 174MHz
5. Tune the set to 174MHz.
6. Adjust CT1, CT2 for a maximum reading on VTVM.
7. Repeat 1 – 6 steps two or three times.

Note: The adjustment should be finally done at step 6.

8. After adjustment, make sure that FM/PSB/AM VCO dc voltage is as follows at the receiving frequency of 144MHz and 174MHz.

receiving frequency	FM/PSB/AM VCO dc voltage
144MHz	8.9 ±0.7V
174MHz	17.1 ±1.5V



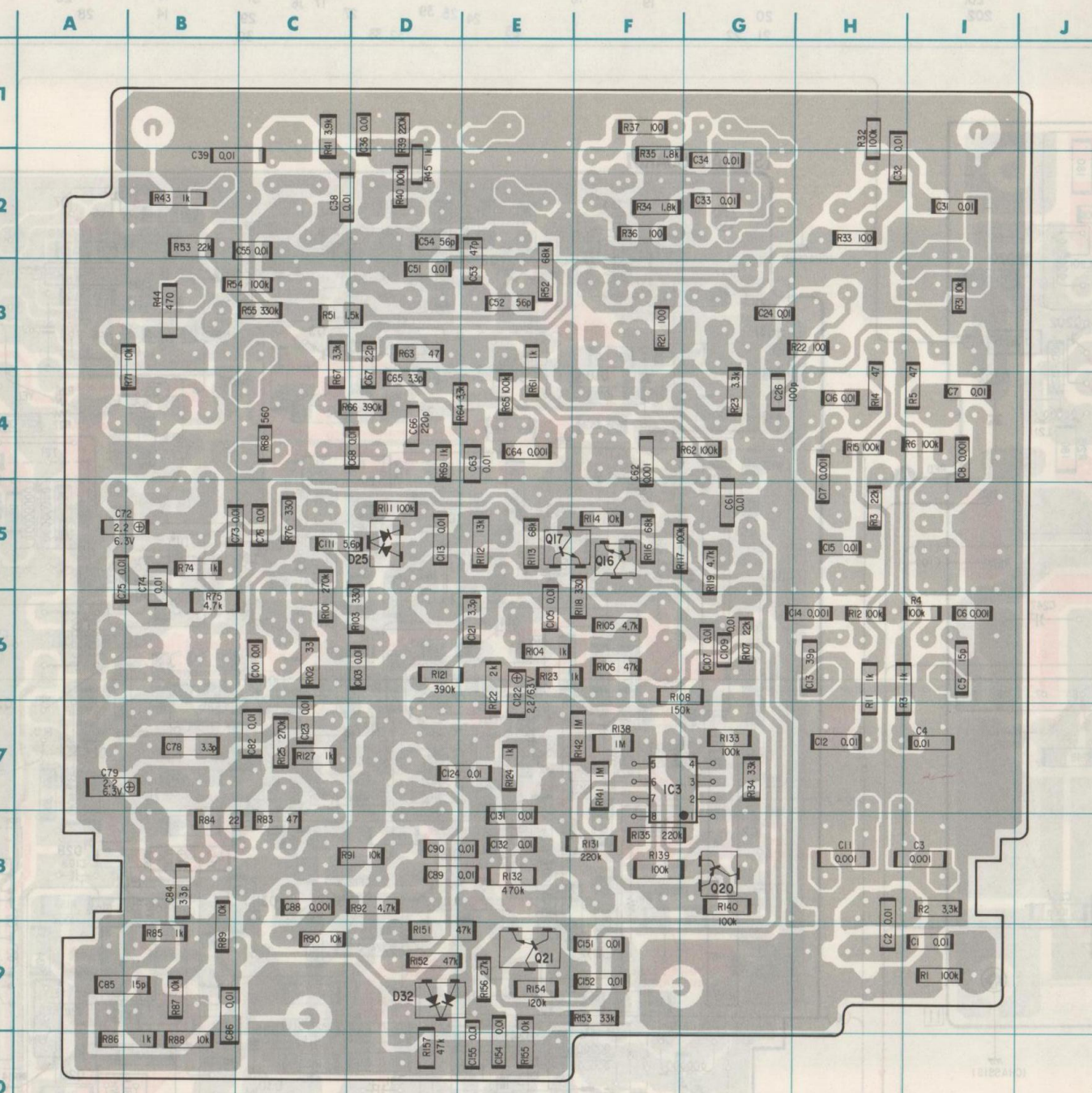
SECTION 4
DIAGRAMSLocation for MELF and Chip Components on
Mounting Diagram

The table below shows the location for MELF and chip components to look for them easily on the mounting diagram.

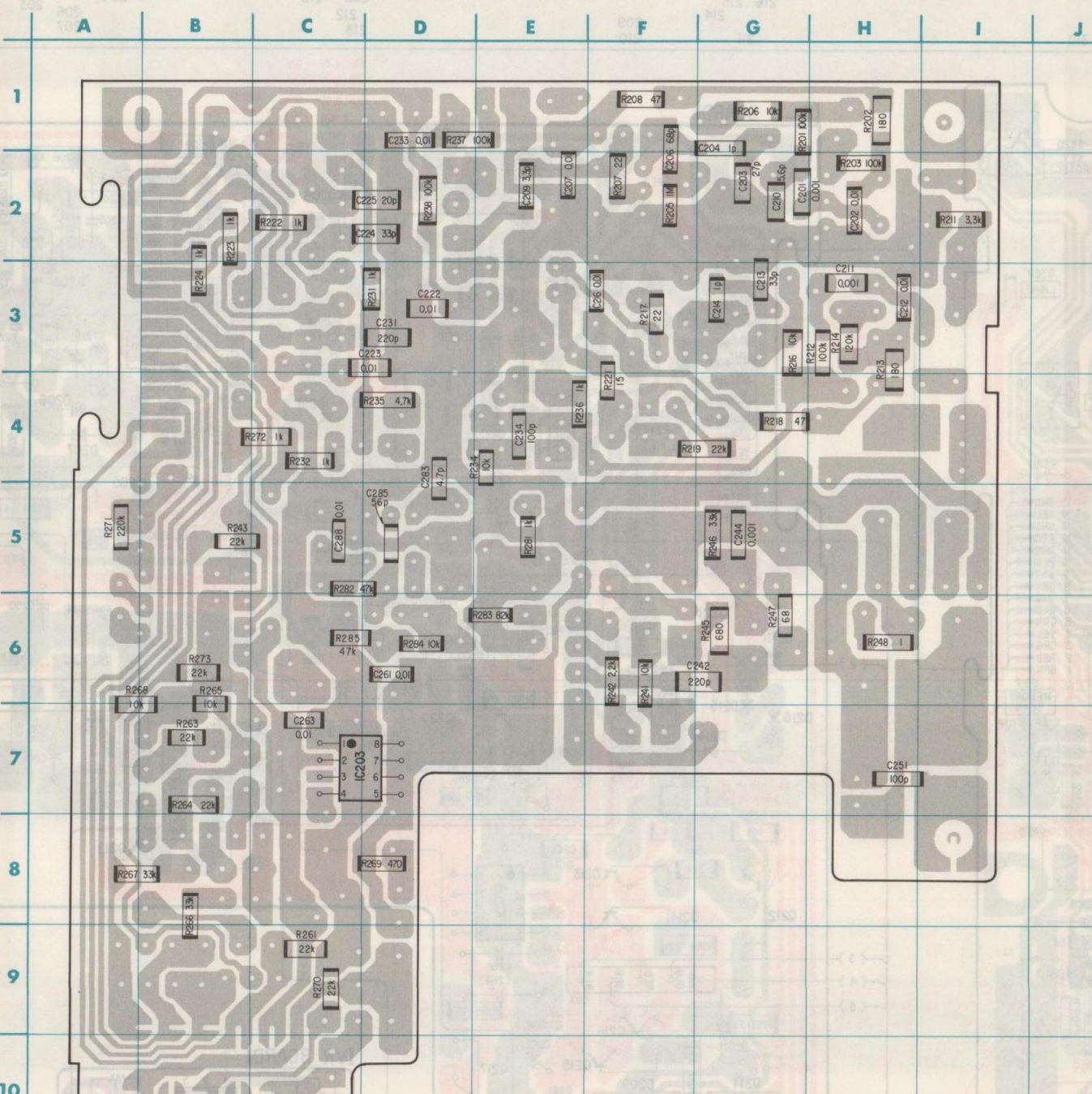
Note: The parts marked with * are mounted on PC board for 3 band model (AEP-1, E model), but they are not used.

SIGNAL BOARD				PLL BOARD			
SEMICONDUCTORS		CAPACITORS		RESISTORS		IC	
Ref. No.	Location No.	Ref. No.	Location No.	Ref. No.	Location No.	Ref. No.	Location No.
IC3	F-7	C1	I-9	C90	D-8	R1	I-9
		C2	H-9	C101	C-6	R2	I-8
Q16	F-5	*C3	I-8	C103	D-6	*R3	H-6
Q17	E-5	*C4	I-7	C105	E-6	*R4	I-6
Q20	G-8	*C5	I-6	C107	G-6	*R5	I-4
Q21	E-9						
		*C6	I-6	C109	G-6	*R6	I-4
D25	D-5	*C7	I-4	C111	C-5	R101	C-6
D32	D-9	*C8	I-4	C113	D-5	R102	C-6
		C11	H-8	C121	E-6	R103	D-6
		C12	H-7	C122	E-6	R104	E-6
						R105	F-6
		C13	H-6	C123	C-7	R106	F-6
		C14	H-6	C124	D-7	R107	G-6
		C15	H-5	C131	E-8	R108	F-6
		C16	H-4	C132	E-8	R110	D-5
		C17	H-5	C151	F-9	R111	E-5
						R112	E-5
		C24	G-3	C152	F-9	R32	H-1
		C26	G-4	C154	E-10	R33	H-2
		C31	I-2	C155	E-10	R34	F-2
		C32	H-2			R35	F-2
		C33	G-2			R36	F-2
		C34	G-2			R37	F-1
		C36	D-1			R39	D-1
		C38	C-2			R40	D-2
		C39	B-2			R41	C-1
		C51	D-3			R43	B-2
		C52	E-3			R44	B-3
		C53	E-3			R45	D-2
		C54	D-2			R51	C-3
		C55	C-2			R52	E-3
		C61	G-5			R53	B-2
		C62	F-4			R54	C-3
		C63	E-4			R55	C-3
		C64	E-4			R61	F-7
		C65	D-4			R62	G-4
		C66	D-4			R63	D-3
		C67	D-3			R64	D-4
		C68	D-4			R65	E-4
		C72	A-5			R66	D-4
		C73	B-5			R67	C-3
		C74	B-5			R68	C-4
		C75	A-5			R69	D-4
		C76	C-5			R71	A-3
		C78	B-7			R74	B-5
		C79	A-7			R75	B-6
		C82	C-7			R76	C-5
		C84	B-8			R83	C-8
		C85	A-9			R84	B-8
		C86	B-9			R85	B-9
		C88	C-8			R86	A-10
		C89	D-8			R87	B-9

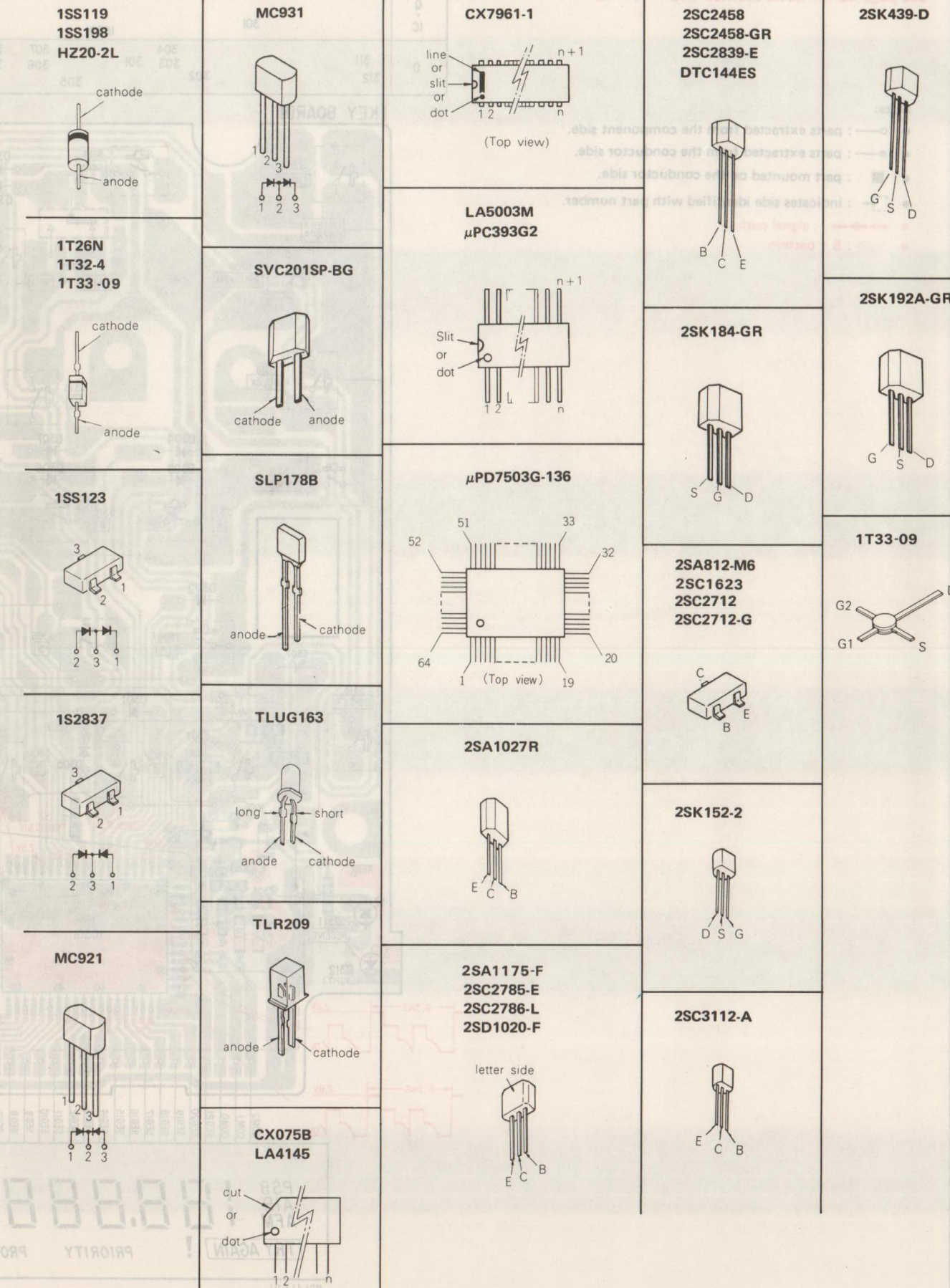
4-1. MOUNTING DIAGRAM — Signal Board —



4-2. MOUNTING DIAGRAM — PLL Board —



Semiconductor Lead Layouts

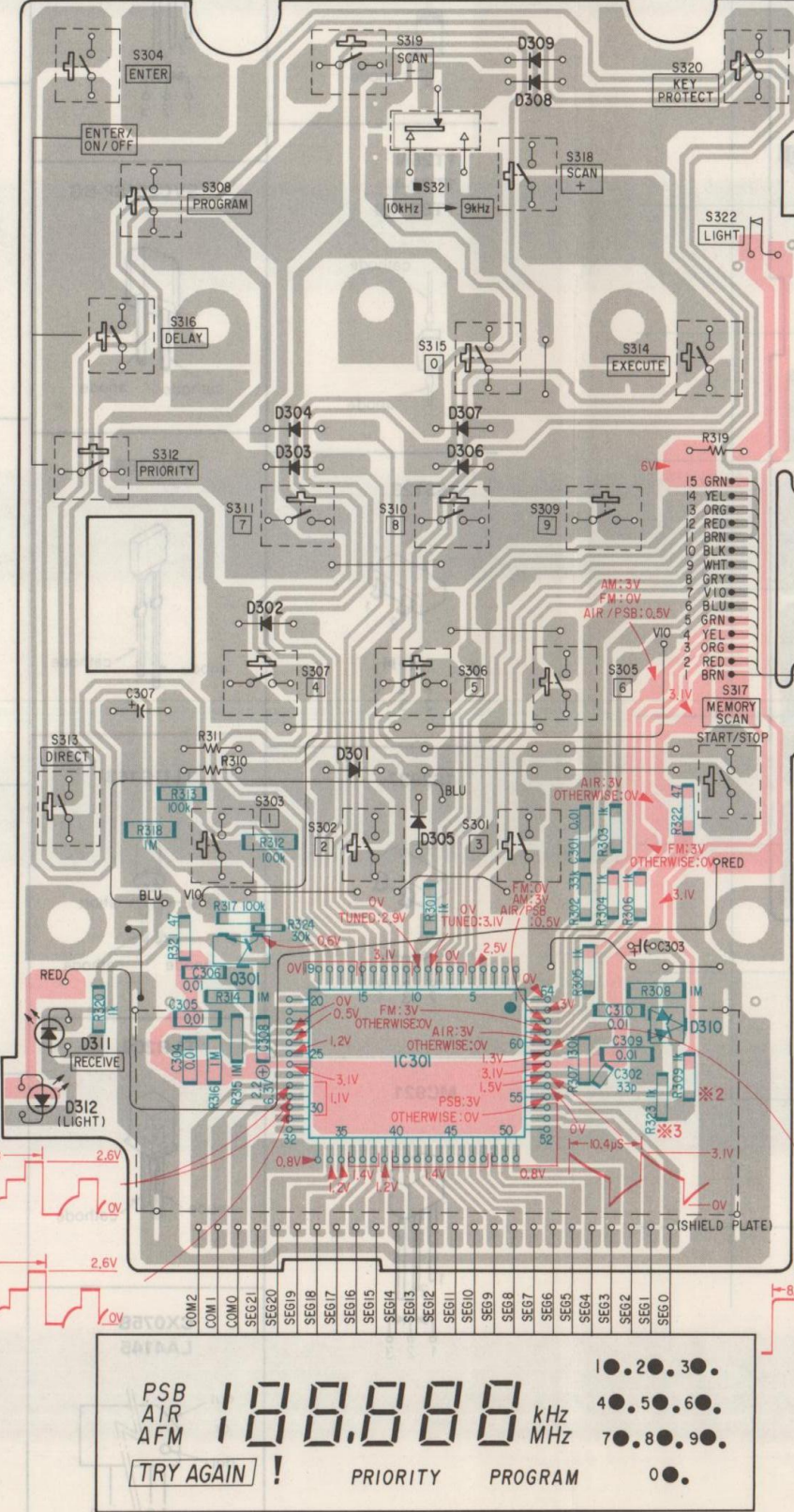


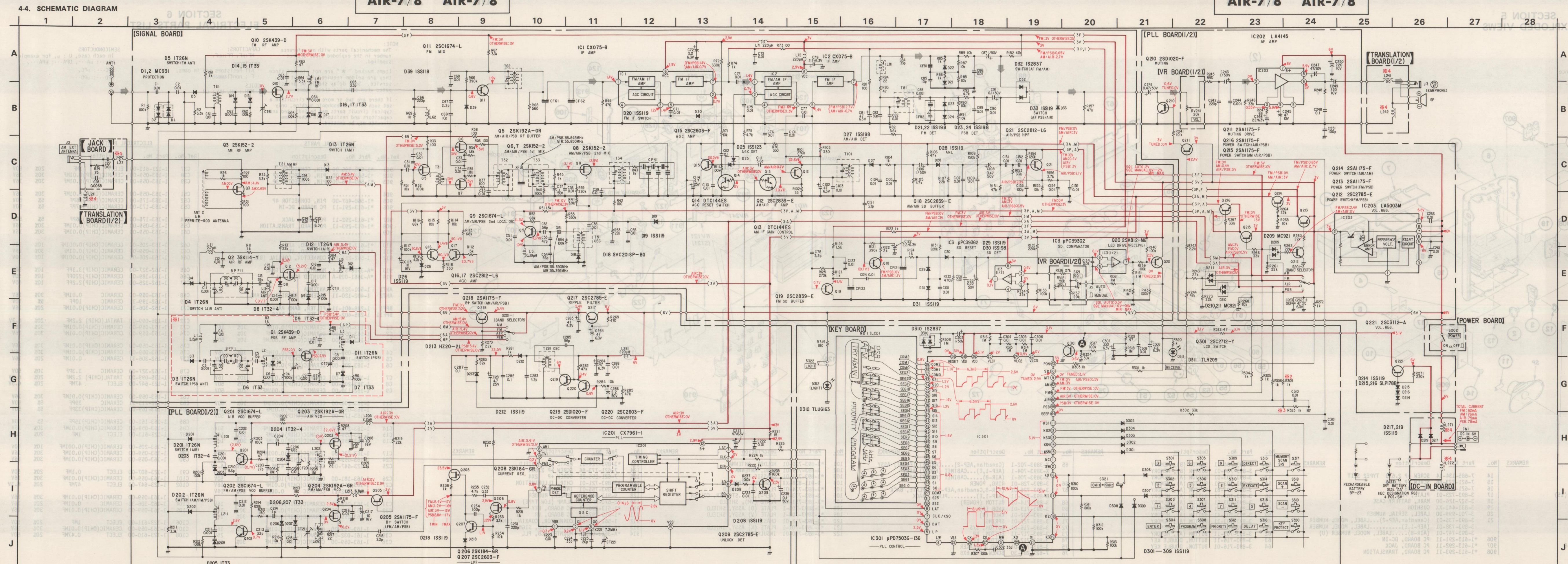
4.3. MOUNTING DIAGRAM

See page 43 for notes marked with * 1 - 4.

- Note:
- : parts extracted from the component side.
 - : parts extracted from the conductor side.
 - : part mounted on the conductor side.
 - : indicates side identified with part number.
 - : signal path
 - : B + pattern

[KEY BOARD]





Note:

- All capacitors are in μF unless otherwise noted. pF: μF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- Signal path.
- Internal component.
- B+ bus.
- Adjustment for repair.
- Total current is measured at detuned mode with VOL knob turned to the counterclockwise (MIN).
- Power voltage is 6V and fed with regulated dc power supply from DC IN 6V (external power input) jack. Voltages are dc with respect to ground in detuned mode. Voltage variations may be noted due to normal production tolerances. Measured at FM 76.00MHz on LCD. no mark: FM () : AM/AIR/PSB () : AM/AIR < > : AIR

Switch

Ref. No.	Switch	Position
S121	SQL	MANUAL
S201	BAND SELECTOR	FM
S202	POWER	OFF
S301	3	OFF
S302	2	OFF
S303	1	OFF
S304	ENTER	OFF
S305	6	OFF
S306	5	OFF
S307	4	OFF
S308	PROGRAM	OFF
S309	9	OFF
S310	8	OFF
S311	7	OFF
S312	PRIORITY	OFF
S313	DIRECT	OFF
S314	EXECUTE	OFF
S315	0	OFF
S316	DELAY	OFF
S317	MEMORY SCAN S/S	STOP
S318	SCAN +	OFF
S319	SCAN -	OFF
S320	KEY PROTECT	OFF
S321	10kHz/9kHz SELECT	10kHz
S322	LIGHT	OFF

NOTE:

Parts marked * 1 to 4 differ from each model.

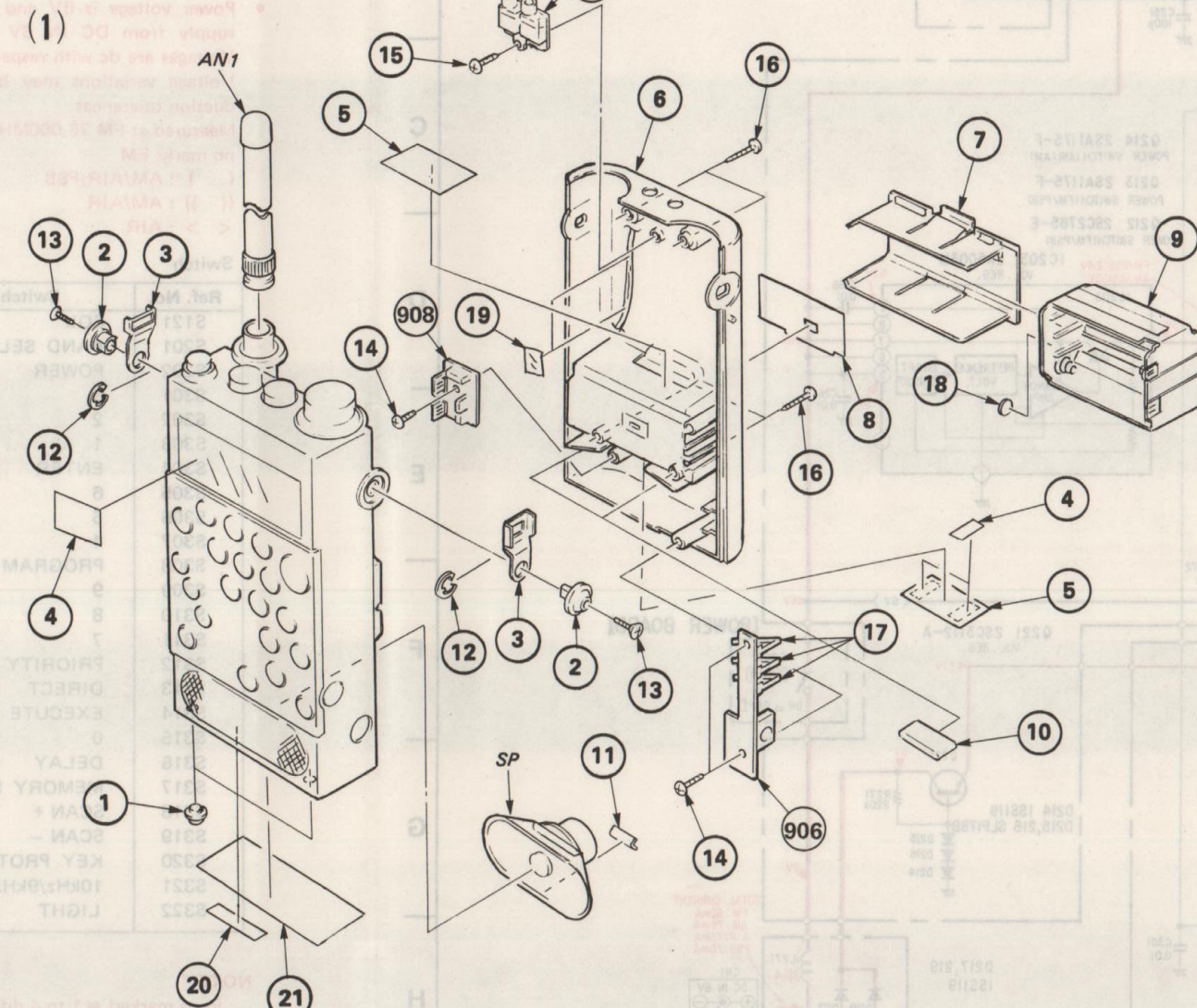
	AIR-7	AIR-8
* 12 00-500-050-0 (PSB RF CIRCUIT)	mounted on PC board, but not used	used
* 22 10-801-601-0 (R309) 10-551-608-0	not mounted	mounted
* 33 10-201-568-0 (R323) 10-311-608-0	mounted	not mounted
* 44 00-500-050-0 (L21, 22, 241, 242, 271, 272)	shorted	mounted

SECTION 5

EXPLODED VIEWS

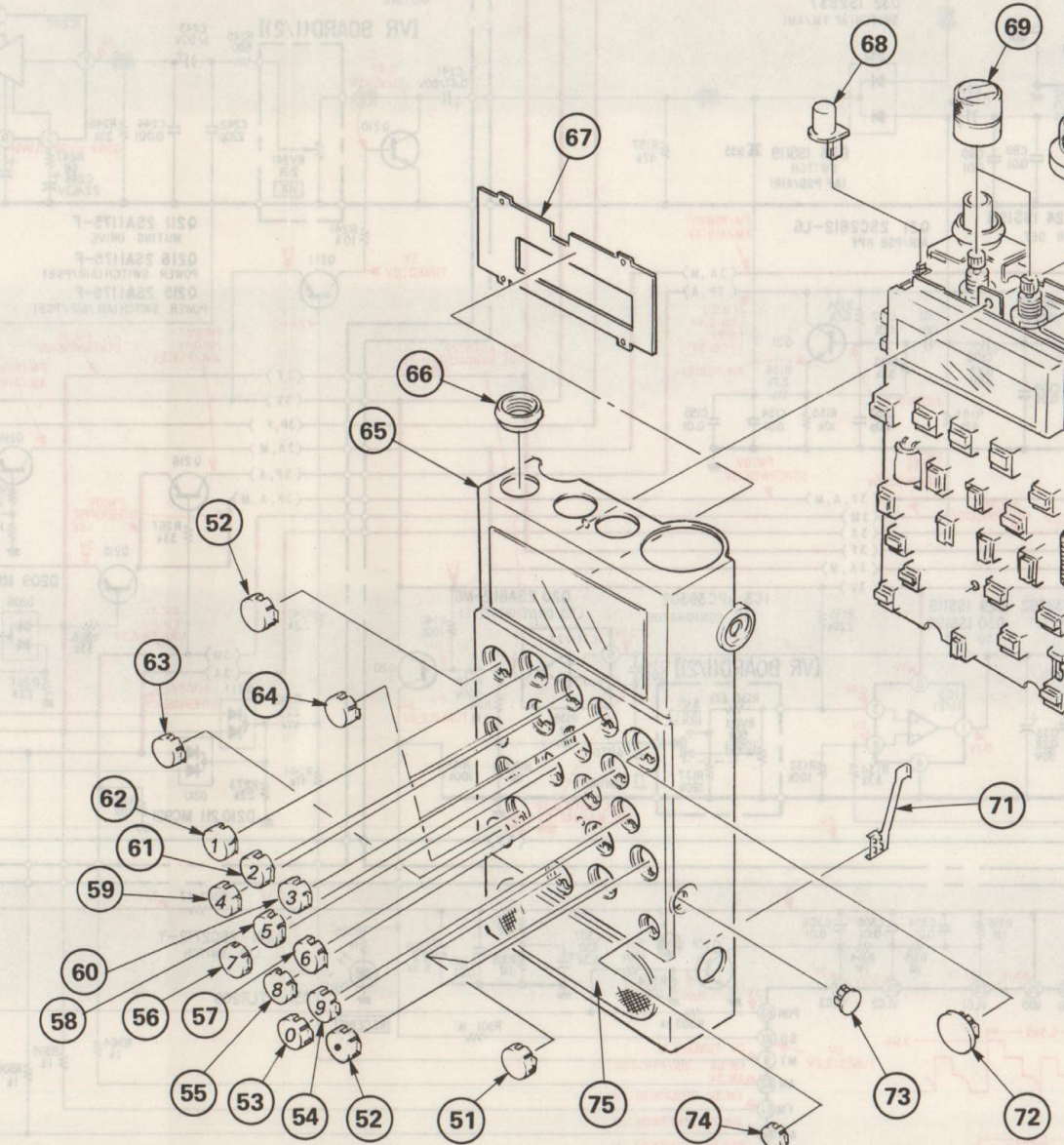
NOTE

- 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.
- The construction parts of an assembled part are indicated with a collation number on the remark column.



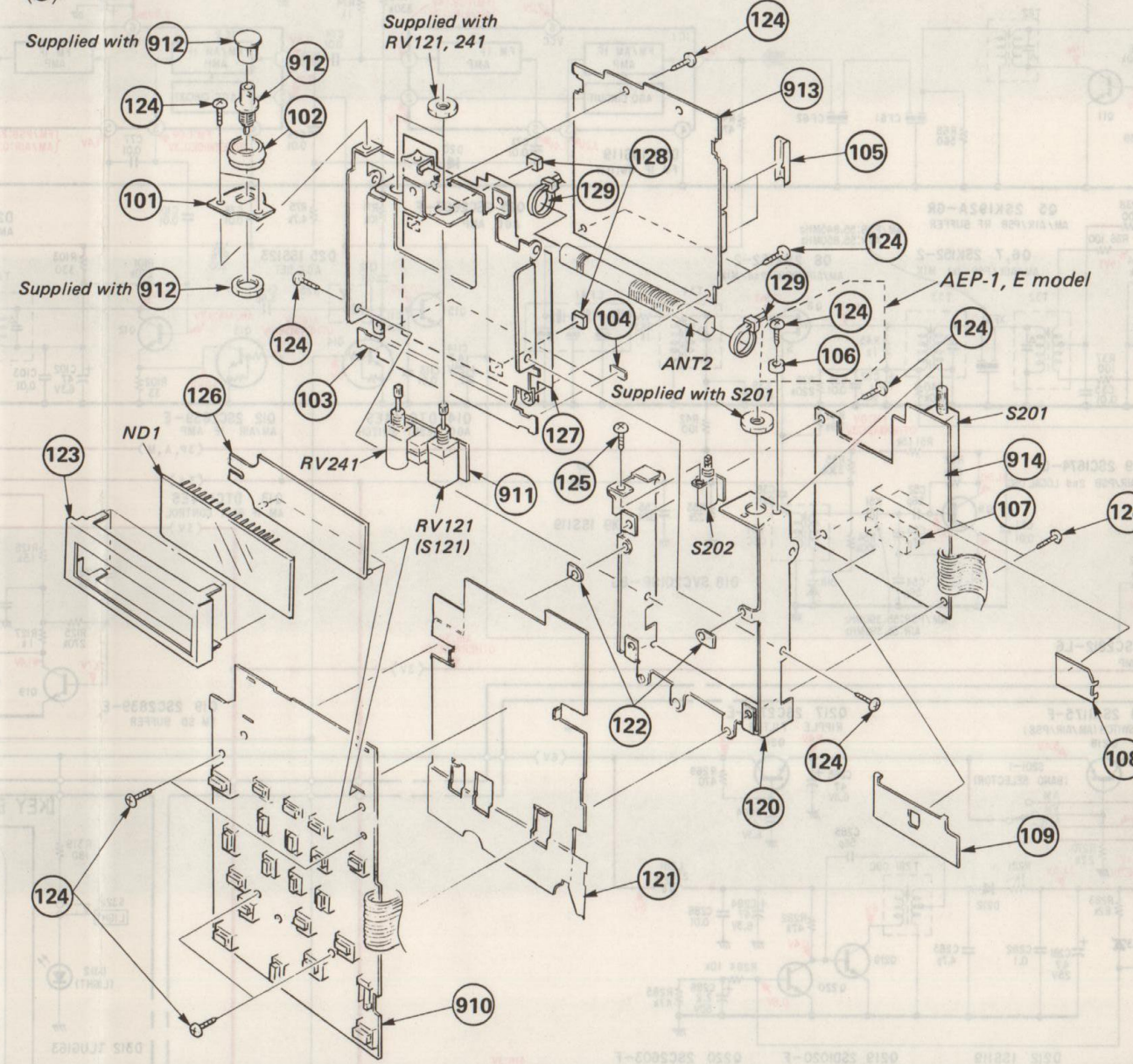
No.	Part No.	Description	REMARKS	No.	Part No.	Description	REMARKS
1	3-427-542-00	STOPER		14	7-685-134-14	SCREW +P 2.6X8 TYPE2 SLIT	
2	3-893-726-01	COLLAR, BELT		15	7-621-773-86	SCREW +P 2.6X4	
3	3-893-730-01	BRACKET, BELT		16	7-621-284-30	SP 2.6X8	
4	*3-703-709-01	STICKER, SONY SYMBOL (15)		17	3-893-723-01	PLATE, POLE	
5	3-893-722-01	PLATE, BLIND		18	3-527-126-00	MARK, BATTERY CASE	
6	3-893-710-01	LID, REAR, CABINET		19	3-831-441-XX	CUSHION	
7	3-893-706-01	HOLDER, BATTERY		20	3-701-999-00	LABEL, SERIAL NUMBER	
8	3-893-735-01	LABEL, STEP, MM CH		21	3-893-735-01	(Canadian, AEP-2)...LABEL, MODEL NUMBER	
9	X-3564-820-01	HOLD DOWN BATTERY		3	3-893-738-01	(AEP-1,E)...LABEL, MODEL NUMBER	
10	3-881-931-00	CUSHION, SPEAKER		4	893-747-01	(AIR-8)...LABEL, MODEL NUMBER (U)	
11	9-911-838-XX	CUSHION, SPEAKER		906	*1-613-291-11	PC BOARD, DC-IN	
12	7-624-109-04	STOP RING 5.0, TYPE -E		907	*1-613-292-11	PC BOARD, JACK	
13	7-621-662-80	SCREW +RNG S 2.6X12		908	*1-613-293-11	PC BOARD, TRANSLATION	

(2)



No.	Part No.	Description	REMARKS	No.	Part No.	Description	REMARKS
51	3-893-704-11	BUTTON (B), MEMORY		65	X-3893-702-1	(Canadian, AEP-2)....CABINET (FRONT) ASSY	
52	3-893-704-01	BUTTON (B), MEMORY			X-3893-704-1	(AEP-1,E).....CABINET (FRONT) ASSY	
53	3-893-703-01	BUTTON (A), MEMORY			X-3893-706-1	(AIR-B).....CABINET (FRONT) ASSY	
54	3-893-703-91	BUTTON (A), MEMORY		66	3-893-728-01	RING, POWER	
55	3-893-703-81	BUTTON (A), MEMORY		67	3-893-725-01	(AIR-B, Canadian, AEP-2)...PLATE, BACK	
56	3-893-703-71	BUTTON (A), MEMORY			3-893-725-11	(AEP-1,E).....PLATE, BACK	
57	3-893-703-61	BUTTON (A), MEMORY		68	3-893-714-01	BUTTON (POWER)	
58	3-893-703-51	BUTTON (A), MEMORY		69	3-893-713-01	KNOB (A)	
59	3-893-703-41	BUTTON (A), MEMORY		70	3-893-702-01	KNOB (B)	
60	3-893-703-31	BUTTON (A), MEMORY		71	3-893-727-01	SPRING	
61	3-893-703-21	BUTTON (A), MEMORY		72	3-893-715-01	BUTTON, S/S	
62	3-893-703-11	BUTTON (A), MEMORY		73	3-893-711-11	BUTTON, KP	
63	3-893-716-11	BUTTON, DOUBLE KEY		74	3-893-717-01	BUTTON, KP	
64	3-893-716-01	BUTTON, DOUBLE KEY		75	3-893-718-01	PANEL, SPEAKER	
				76	7-621-284-30	SCREW, 2.6XR	

(3)



No.	Part No.	Description	REMARKS	No.	Part No.	Description	REMARKS
101	*3-893-720-01	HOLDER, ANTENNA		123	*3-893-724-01	PLATE (L), SHIELD	
102	3-893-719-01	RING, ANTENNA		124	7-621-773-86	SCREW +P 2.6X4	
103	*3-893-711-01	CHASSIS (A)		125	7-621-255-25	SCREW +P 2X4	
104	9-911-838-X	CUSHION, SPEAKER		126	*3-893-721-01	CHIP, ILLUMINATION	
105	*3-893-734-01	PLATE (I), SHIELD		127	*3-893-755-01	INSULATOR (C)	
106	*3-893-733-01	(AEP-1,E)...STOPPER, COLLER		128	9-911-840-XX	SPACER, RUBBER	
107	*3-893-751-01	PLATE (VM), SHIELD		129	*3-671-893-00	CLAMP (LOW TYPE)	
108	*X-3893-705-1	PLATE (D) ASSY, SHIELD		910	*1-613-296-11	PC BOARD, KEY	
109	*X-3893-703-1	PLATE (V) ASSY, SHIELD		911	*1-613-297-11	PC BOARD, VR	
120	*3-893-712-01	CHASSIS (B)		912	1-562-261-21	CONNECTOR, COAXIAL (BNC)	
121	*X-3893-701-1	PLATE (K) ASSY, SHIELD		913	*A-3660-519-A	MOUNTED PCB, SIGNAL	
122	*3-893-750-01	INSULATOR (K)		914	*A-3661-009-A	MOUNTED PCB, PLL	

SECTION 6

ELECTRICAL PARTS LIST

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.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μ F, PF: μ μ F.

RESISTORS
· All resistors are 1% tolerance
· F : nonflammable

COILS
· MMH : mH, UH : μ H

SEMICONDUCTORS

In each case, $U = \mu$, for example:

$UA \dots: \mu A \dots$, $UPA \dots: \mu PA \dots$,

$UPC \dots: \mu PC$,

$UPD \dots: \mu PD \dots$

ELECTRICAL PARTS

Ref. No.	Part No.	Description
901	*1-508-995-00	PIN, CONNECTOR
902	*1-560-456-00	PIN, CONNECTOR 2P
903	*1-560-466-00	PIN, CONNECTOR 3P
904	.....	
905	*1-560-467-00	PIN, CONNECTOR 4P
906	*1-613-291-11	PC BOARD, DC-IN
907	*1-613-292-11	PC BOARD, JACK
908	*1-613-293-11	PC BOARD, TRANSLATION
909	.....	
910	*1-613-296-11	PC BOARD, KEY
911	*1-613-297-11	PC BOARD, VR
912	1-562-261-21	CONNECTOR, COAXIAL (BNC)
913	*A-3660-519-A	MOUNTED PCB, SIGNAL
914	*A-3661-009-A	MOUNTED PCB, PLL
ANT1	1-501-322-11	ANTENNA
ANT2	1-402-120-11	ANTENNA, FERRITE-ROD(AM)
BPF1	1-235-401-11	FILTER, BAND PASS
BPF11	1-235-402-11	FILTER, BAND PASS
C1	1-163-059-00	CERAMIC(CHIP)0.01MF
C2	1-163-059-00	CERAMIC(CHIP)0.01MF
C3	1-163-205-00	CERAMIC(CHIP)0.001MF
C4	1-163-059-00	CERAMIC(CHIP)0.01MF
C5	1-163-161-00	CERAMIC(CHIP)15PF
C6	1-163-205-00	CERAMIC(CHIP)0.001MF
C7	1-163-059-00	CERAMIC(CHIP)0.01MF
C8	1-163-205-00	CERAMIC(CHIP)0.001MF
C9	1-162-110-00	CERAMIC 0.001MF
C11	1-163-205-00	CERAMIC(CHIP)0.001MF
C12	1-163-059-00	CERAMIC(CHIP)0.01MF
C13	1-163-171-00	CERAMIC(CHIP)39PF
C14	1-163-205-00	CERAMIC(CHIP)0.001MF
C15	1-163-059-00	CERAMIC(CHIP)0.01MF
C16	1-163-059-00	CERAMIC(CHIP)0.01MF
C17	1-163-205-00	CERAMIC(CHIP)0.001MF
C24	1-163-059-00	CERAMIC(CHIP)0.01MF
C25	1-123-647-00	ELECT 47MF
C26	1-163-181-00	CERAMIC(CHIP)100PF
C27	1-163-059-00	CERAMIC(CHIP)0.01MF
C28	1-162-402-11	CERAMIC 0.0068MF
C31	1-163-059-00	CERAMIC(CHIP)0.01MF
C32	1-163-059-00	CERAMIC(CHIP)0.01MF
C33	1-163-059-00	CERAMIC(CHIP)0.01MF
C34	1-163-059-00	CERAMIC(CHIP)0.01MF
C35	1-161-032-00	CERAMIC(CHIP)0.01MF
C36	1-163-059-00	CERAMIC(CHIP)0.01MF

ELECTRICAL PARTS

Ref.No.	Part No.	Description		
C37	1-123-611-00	ELECT	1MF	20% 50V
C38	1-163-059-00	CERAMIC (CHIP) 0.01MF	30%	16V
C39	1-163-059-00	CERAMIC (CHIP) 0.01MF	30%	16V
C51	1-163-059-00	CERAMIC (CHIP) 0.01MF	30%	16V
C52	1-163-175-00	CERAMIC (CHIP) 56PF	5%	50V
C53	1-163-173-00	CERAMIC (CHIP) 47PF	5%	50V
C54	1-163-175-00	CERAMIC (CHIP) 56PF	5%	50V
C55	1-163-059-00	CERAMIC (CHIP) 0.01MF	30%	16V
C61	1-163-059-00	CERAMIC (CHIP) 0.01MF	30%	16V
C62	1-163-205-00	CERAMIC (CHIP) 0.001MF	10%	50V
C63	1-163-059-00	CERAMIC (CHIP) 0.01MF	30%	16V
C64	1-163-205-00	CERAMIC (CHIP) 0.001MF	10%	50V
C65	1-162-327-00	CERAMIC (CHIP) 3.3PF	10%	50V
C66	1-162-189-00	CERAMIC (CHIP) 220PF	10%	50V
C67	1-162-325-00	CERAMIC (CHIP) 2.2PF	10%	50V
C68	1-163-059-00	CERAMIC	0.01MF	30% 16V
C69	1-162-199-31	CERAMIC	10PF	5% 50V
C71	1-162-306-31	CERAMIC (CHIP) 0.01MF	20%	16V
C72	1-135-099-00	TANTAL (CHIP) 2.2MF	20%	6.3V
C73	1-163-059-00	CERAMIC (CHIP) 0.01MF	30%	16V
C74	1-163-059-00	CERAMIC (CHIP) 0.01MF	30%	16V
C75	1-163-059-00	CERAMIC (CHIP) 0.01MF	30%	16V
C76	1-163-059-00	CERAMIC (CHIP) 0.01MF	30%	16V
C77	1-162-306-31	CERAMIC	0.01MF	20% 16V
C78	1-162-327-00	CERAMIC	3.3PF	10% 50V
C79	1-135-099-00	TANTAL (CHIP) 2.2MF	20%	6.3V
C81	1-123-647-00	ELECT	47MF	20% 6.3V
C82	1-163-059-00	CERAMIC (CHIP) 0.01MF	30%	16V
C83	1-162-213-31	CERAMIC	39PF	5% 50V
C84	1-163-169-00	CERAMIC (CHIP) 33PF	5%	50V
C85	1-163-161-00	CERAMIC (CHIP) 15PF	5%	50V
C86	1-163-059-00	CERAMIC (CHIP) 0.01MF	30%	16V
C87	1-123-611-00	ELECT	1MF	20% 50V
C88	1-163-205-00	CERAMIC (CHIP) 0.001MF	10%	50V
C89	1-163-059-00	CERAMIC (CHIP) 0.01MF	30%	16V
C90	1-163-059-00	CERAMIC (CHIP) 0.01MF	30%	16V
C91	1-123-607-00	ELECT	0.1MF	20% 50V
C101	1-163-059-00	CERAMIC (CHIP) 0.01MF	30%	16V
C102	1-123-647-00	ELECT	47MF	20% 6.3V
C103	1-163-059-00	CERAMIC (CHIP) 0.01MF	30%	16V
C104	1-162-306-31	CERAMIC	0.01MF	20% 16V
C105	1-163-059-00	CERAMIC (CHIP) 0.01MF	30%	16V
C106	1-123-611-00	ELECT	1MF	20% 50V
C107	1-163-059-00	CERAMIC (CHIP) 0.01MF	30%	16V
C108	1-123-610-00	ELECT	0.47MF	20% 50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description	Ref.No.	Part No.	Description
C109	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V	
C111	1-162-330-00	CERAMIC	5.6PF	10%	50V
C112	1-136-165-00	FILM	0.1MF	5%	50V
C113	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V	
C114	1-123-616-00	ELECT	4.7MF	20%	25V
C115	1-123-617-00	ELECT	10MF	20%	16V
C121	1-162-327-00	CERAMIC	3.3PF	10%	50V
C122	1-135-099-00	TANTAL(CHIP)	2.2MF	20%	6.3V
C123	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V	
C124	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V	
C131	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V	
C132	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V	
C133	1-123-608-00	ELECT	0.22MF	20%	50V
C134	1-162-306-31	CERAMIC	0.01MF	20%	16V
C151	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V	
C152	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V	
C153	1-162-282-31	CERAMIC	100PF	10%	50V
C154	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V	
C155	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V	
C201	1-163-205-00	CERAMIC(CHIP)0.001MF	10%	50V	
C202	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V	
C203	1-163-167-00	CERAMIC(CHIP)27PF	5%	50V	
C204	1-163-147-00	CERAMIC(CHIP)1PF	20%	50V	
C205	1-161-013-00	CERAMIC	0.01MF	10%	25V
C206	1-162-190-31	CERAMIC	68PF	5%	50V
C207	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V	
C208	1-123-617-00	ELECT	10MF	20%	16V
C209	1-162-327-00	CERAMIC	3.3PF	10%	50V
C210	1-162-330-00	CERAMIC	5.6PF	10%	50V
C211	1-163-205-00	CERAMIC(CHIP)0.001MF	10%	50V	
C212	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V	
C213	1-163-169-00	CERAMIC(CHIP)33PF	5%	50V	
C214	1-163-147-00	CERAMIC(CHIP)1PF	20%	50V	
C215	1-161-013-00	CERAMIC	0.01MF	10%	25V
C216	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V	
C217	1-123-617-00	ELECT	10MF	20%	16V
C218	1-162-191-31	CERAMIC	2.2PF	10%	50V
C221	1-123-647-00	ELECT	47MF	20%	6.3V
C222	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V	
C223	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V	
C224	1-163-169-00	CERAMIC(CHIP)33PF	5%	50V	
C225	1-163-164-00	CERAMIC	20PF	5%	50V
C231	1-163-189-00	CERAMIC(CHIP)220PF	10%	50V	
C232	1-136-171-00	FILM	0.33MF	5%	50V
C233	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V	

ELECTRICAL PARTS

Ref.No.	Part No.	Description	Ref.No.	Part No.	Description
C234	1-163-181-00	CERAMIC(CHIP)100PF	10%	50V	
C235	1-123-607-00	ELECT	0.1MF	20%	50V
C241	1-123-610-00	ELECT	0.47MF	20%	50V
C242	1-163-189-00	CERAMIC(CHIP)220PF	10%	50V	
C243	1-123-611-00	ELECT	1MF	20%	50V
C244	1-163-205-00	CERAMIC(CHIP)0.001MF	10%	50V	
C245	1-123-822-00	ELECT	47MF	20%	10V
C246	1-123-618-00	ELECT	22MF	20%	6.3V
C247	1-123-822-00	ELECT	47MF	20%	10V
C248	1-136-165-00	FILM	0.1MF	5%	50V
C249	1-123-308-00	ELECT	220MF	20%	10V
C250	1-123-308-00	ELECT	220MF	20%	10V
C251	1-163-181-00	CERAMIC(CHIP)100PF	10%	50V	
C261	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V	
C262	1-123-647-00	ELECT	47MF	20%	6.3V
C263	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V	
C264	1-123-647-00	ELECT	47MF	20%	6.3V
C265	1-123-647-00	ELECT	47MF	20%	6.3V
C266	1-162-306-31	CERAMIC	0.01MF	20%	16V
C281	1-123-616-00	ELECT	4.7MF	20%	25V
C282	1-136-165-00	FILM	0.1MF	5%	50V
C283	1-162-329-00	CERAMIC	4.7PF	10%	50V
C284	1-123-647-00	ELECT	47MF	20%	6.3V
C285	1-163-175-00	CERAMIC	56PF	5%	50V
C286	1-123-612-00	ELECT	2.2MF	20%	50V
C287	1-136-165-00	FILM	0.1MF	5%	50V
C288	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V	
C301	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V	
C302	1-163-169-00	CERAMIC(CHIP)33PF	5%	50V	
C303	1-123-611-00	ELECT	1MF	20%	50V
C304	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V	
C305	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V	
C306	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V	
C307	1-123-297-00	ELECT	330MF	20%	6.3V
C308	1-135-099-00	TANTAL. CHIP	2.2MF	20%	6.3V
C309	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V	
C310	1-163-059-00	CERAMIC(CHIP)0.01MF	30%	16V	
CF41	1-527-392-00	FILTER, CERAMIC			
CF61	1-527-795-71	FILTER, CERAMIC			
CF62	1-527-795-71	FILTER, CERAMIC			
CF81	1-567-050-00	FILTER, CERAMIC			
CF82	1-567-308-11	FILTER, CERAMIC			
CF121	1-527-290-00	FILTER, CERAMIC			
CF122	1-527-483-00	FILTER, CERAMIC			
CN1	1-507-459-00	JACK, DC IN 6V			

ELECTRICAL PARTS

Ref.No.	Part No.	Description	Ref.No.	Part No.	Description
CT1	1-141-272-00	CAP, TRIMMER	8-713-309-00	DIODE	1T33-09
CT2	1-141-272-00	CAP, TRIMMER	8-713-309-00	DIODE	1T33-09
CT11	1-141-257-00	CAP, TRIMMER	8-713-309-00	DIODE	1T33-09
CT61	1-141-257-00	CAP, TRIMMER	8-713-309-00	DIODE	1T33-09
CT201	1-141-272-00	CAP, TRIMMER	8-713-309-00	DIODE	1T33-09
CT211	1-141-293-11	CAP, TRIMMER	8-713-309-00	DIODE	1T33-09
CT221	1-141-227-00	TRIMMER, CERAMIC	8-713-309-00	DIODE	1T33-09
D1	8-719-000-12	DIODE MC931	8-719-000-12	DIODE MC931	
D2	8-719-000-12	DIODE MC931	8-719-000-12	DIODE MC931	
D3	8-719-104-15	DIODE 1T26N	8-719-104-15	DIODE 1T26N	
D4	8-719-104-15	DIODE 1T26N	8-719-104-15	DIODE 1T26N	
D5	8-719-104-15	DIODE 1T26N	8-719-104-15	DIODE 1T26N	
D6	8-713-309-00	DIODE 1T33-09	8-713-309-00	DIODE 1T33-09	
D7	8-713-309-00	DIODE 1T33-09	8-713-309-00	DIODE 1T33-09	
D8	8-713-240-00	DIODE 1T32-4	8-713-240-00	DIODE 1T32-4	
D9	8-713-240-00	DIODE 1T32-4	8-713-240-00	DIODE 1T32-4	
D11	8-719-104-15	DIODE 1T26N	8-719-104-15	DIODE 1T26N	
D12	8-719-104-15	DIODE 1T26N	8-719-104-15	DIODE 1T26N	
D13	8-719-104-15	DIODE 1T26N	8-719-104-15	DIODE 1T26N	
D14	8-713-309-00	DIODE 1T33-09	8-713-309-00	DIODE 1T33-09	
D15	8-713-309-00	DIODE 1T33-09	8-713-309-00	DIODE 1T33-09	
D16	8-713-309-00	DIODE 1T33-09	8-713-309-00	DIODE 1T33-09	
D17	8-713-309-00	DIODE 1T33-09	8-713-309-00	DIODE 1T33-09	
D18	8-719-912-03	DIODE SVC201SP-BG	8-719-912-03	DIODE SVC201SP-BG	
D19	8-719-911-19	DIODE 1SS119	8-719-911-19	DIODE 1SS119	
D20	8-719-911-19	DIODE 1SS119	8-719-911-19	DIODE 1SS119	
D21	8-719-918-88	DIODE 1SS198	8-719-918-88	DIODE 1SS198	
D22	8-719-918-88	DIODE 1SS198	8-719-918-88	DIODE 1SS198	
D23	8-719-918-88	DIODE 1SS198	8-719-918-88	DIODE 1SS198	
D24	8-719-918-88	DIODE 1SS198	8-719-918-88	DIODE 1SS198	
D25	8-719-101-23	DIODE 1SS123	8-719-101-23	DIODE 1SS123	
D26	8-719-911-19	DIODE 1SS119	8-719-911-19	DIODE 1SS119	
D27	8-719-918-88	DIODE 1SS198	8-719-918-88	DIODE 1SS198	
D28	8-719-911-19	DIODE 1SS119	8-719-911-19	DIODE 1SS119	
D29	8-719-911-19	DIODE 1SS119	8-719-911-19	DIODE 1SS119	
D30	8-719-918-88	DIODE 1SS198	8-719-918-88	DIODE 1SS198	
D31	8-719-911-19	DIODE 1SS119	8-719-911-19	DIODE 1SS119	
D32	8-719-100-05	DIODE 1S2837	8-719-100-05	DIODE 1S2837	
D33	8-719-911-19	DIODE 1SS119	8-719-911-19	DIODE 1SS119	
D39	8-719-911-19	DIODE 1SS119	8-719-911-19	DIODE 1SS119	
D201	8-719-104-15	DIODE 1T26N	8-719-104-15	DIODE 1T26N	
D202	8-719-104-15	DIODE 1T26N	8-719-104-15	DIODE 1T26N	
D203	8-713-240-00	DIODE 1T32-4	8-713-240-00	DIODE 1T32-4	
D204	8-713-240-00	DIODE 1T32-4	8-713-240-00	DIODE 1T32-4	
D205	8-713-309-00	DIODE 1T33-09	8-713-309-00	DIODE 1T33-09	
D206	8-713-309-00	DIODE 1T33-09	8-713-309-00	DIODE 1T33-09	

ELECTRICAL PARTS

Ref.No.	Part No.	Description	Ref.No.	Part No.	Description
D207	8-713-309-00	DIODE 1T33-09	8-713-309-00	DIODE 1T33-09	
D208	8-719-911-19	DIODE 1SS119	8-719-911-19	DIODE 1SS119	
D209	8-719-000-06	DIODE MC921	8-719-000-06	DIODE MC921	
D210	8-719-000-06	DIODE MC921	8-719-000-06	DIODE MC921	
D211	8-719-000-06	DIODE MC921	8-719-000-06	DIODE MC921	
D212	8-719-911-19	DIODE 1SS119	8-719-911-19	DIODE 1SS119	
D213	8-719-910-03	DIODE HZ20-3L	8-719-910-03	DIODE HZ20-3L	
D214	8-719-911-19	DIODE 1SS119	8-719-911-19	DIODE 1SS119	
D215	8-719-912-43	DIODE SLP178B	8-719-912-43	DIODE SLP178B	
D216	8-719-912-43	DIODE SLP178B	8-719-912-43	DIODE SLP178B	
D217	8-719-911-19	DIODE 1SS119	8-719-911-19	DIODE 1SS119	
D218	8-719-911-19	DIODE 1SS119	8-719-911-19	DIODE 1SS119	
D219	9-719-911-19	DIODE 1SS119	9-719-911-19	DIODE 1SS119	
D301	8-719-911-19	DIODE 1SS119	8-719-911-19	DIODE 1SS119	
D302	8-719-911-19	DIODE 1SS119	8-719-911-19	DIODE 1SS119	
D303	8-719-911-19	DIODE 1SS119	8-719-911-19	DIODE 1SS119	
D304	8-719-911-19	DIODE 1SS119	8-719-911-19	DIODE 1SS119	
D305	8-719-911-19	DIODE 1SS119	8-719-911-19	DIODE 1SS119	
D306	8-719-911-19	DIODE 1SS119	8-719-911-19	DIODE 1SS119	
D307	8-719-911-19	DIODE 1SS119	8-719-911-19	DIODE 1SS119	
D308	8-719-911-19	DIODE 1SS119	8-719-911-19	DIODE 1SS119	
D309	8-719-911-19	DIODE 1SS119	8-719-911-19	DIODE 1SS119	
D310	8-719-100-05	DIODE 1S2837	8-719-100-05	DIODE 1S2837	
D311	8-719-800-67	DIODE TLR209	8-719-800-67	DIODE TLR209	
D312	8-719-800-14	DIODE TLUG163	8-719-800-14	DIODE TLUG163	
IC1	8-759-600-75	IC CX-075B	8-759-600-75	IC CX-075B	
IC2	8-759-600-75	IC CX-075B	8-759-600-75	IC CX-075B	
IC3	8-759-100-93	IC UPC393G2	8-759-100-93	IC UPC393G2	
IC201	8-757-961-01	IC CX-7961-1	8-757-961-01	IC CX-7961-1	
IC202	8-759-801-65	IC LA4145	8-759-801-65	IC LA4145	
IC203	8-759-801-15	IC LA5003M	8-759-801-15	IC LA5003M	
IC301	8-759-102-04	IC UPD7503G-136	8-759-102-04	IC UPD7503G-136	
J2	1-507-917-00	JACK, AM EXT ANTENNA	1-507-917-00	JACK, AM EXT ANTENNA	
J3	1-507-921-00	JACK, EARPHONE	1-507-921-00	JACK, EARPHONE	

ELECTRICAL PARTS

Ref.No.	Part No.	Description
L72	1-408-579-31	MICRO INDUCTOR 220UH
L81	1-404-567-11	TRANSFORMER, 1F
L201	1-459-553-11	COIL (WITH CORE)
L202	1-459-552-11	COIL (WITH CORE)
L203	1-408-555-00	MICRO INDUCTOR 2.2UH
L211	1-459-554-11	COIL (WITH CORE)
L212	1-459-550-11	COIL
L213	1-408-561-11	MICRO INDUCTOR 6.8UH
L241	1-407-882-00	(AIR-8)...COIL
L242	1-407-882-00	(AIR-8)...COIL
L271	1-407-882-00	(AIR-8)...COIL
L272	1-407-882-00	(AIR-8)...COIL
L281	1-408-579-31	MICRO INDUCTOR 220UH
ND1	1-806-918-11	DISPLAY PANEL, LIQUID CRYSTAL
Q1	8-729-301-27	TRANSISTOR 2SK439-D
Q2	8-729-203-19	TRANSISTOR 3SK114-Y
Q3	8-729-800-42	TRANSISTOR 2SK152-2
Q5	8-729-200-66	TRANSISTOR 2SK192A-GR
Q6	8-729-800-42	TRANSISTOR 2SK152-2
Q7	8-729-800-42	TRANSISTOR 2SK152-2
Q8	8-729-800-42	TRANSISTOR 2SK152-2
Q9	8-729-178-62	TRANSISTOR 2SC2786-L
Q10	8-729-301-27	TRANSISTOR 2SK439-D
Q11	8-729-178-62	TRANSISTOR 2SC2786-L
Q12	8-729-883-92	TRANSISTOR 2SC2839-E
Q13	8-729-900-89	TRANSISTOR DTC144ES
Q14	8-729-900-89	TRANSISTOR DTC144ES
Q15	8-729-606-33	TRANSISTOR 2SC2603-F
Q16	8-729-100-66	TRANSISTOR 2SC1623
Q17	8-729-100-66	TRANSISTOR 2SC1623
Q18	8-729-883-92	TRANSISTOR 2SC2839-E
Q19	8-729-883-92	TRANSISTOR 2SC2839-E
Q20	8-729-100-76	TRANSISTOR 2SA812-M6
Q21	8-729-100-66	TRANSISTOR 2SC1623
Q201	8-729-178-62	TRANSISTOR 2SC2786-L
Q202	8-729-178-62	TRANSISTOR 2SC2786-L
Q203	8-729-200-66	TRANSISTOR 2SK192A-GR
Q204	8-729-200-66	TRANSISTOR 2SK192A-GR
Q205	8-729-117-54	TRANSISTOR 2SA1175-F
Q206	8-729-218-43	TRANSISTOR 2SK184-GR
Q207	8-729-606-33	TRANSISTOR 2SC2603-F
Q208	8-729-218-43	TRANSISTOR 2SK184-GR
Q209	8-729-178-55	TRANSISTOR 2SC2785-E
Q210	8-729-102-03	TRANSISTOR 2SD1020-F

ELECTRICAL PARTS

Ref.No.	Part No.	Description
Q211	8-729-612-77	TRANSISTOR 2SA1027R
Q212	8-729-178-55	TRANSISTOR 2SC2785-E
Q213	8-729-612-77	TRANSISTOR 2SA1027R
Q214	8-729-612-77	TRANSISTOR 2SA1027R
Q215	8-729-612-77	TRANSISTOR 2SA1027R
Q216	8-729-612-77	TRANSISTOR 2SA1027R
Q217	8-729-178-55	TRANSISTOR 2SC2785-E
Q218	8-729-612-77	TRANSISTOR 2SA1027R
Q219	8-729-102-03	TRANSISTOR 2SD1020-F
Q220	8-729-606-33	TRANSISTOR 2SC2603-F
Q221	8-729-201-83	TRANSISTOR 2SC3112-A
Q301	8-729-271-22	TRANSISTOR 2SC2712-G
R1	1-247-879-00	CARBON 100K 5% 1/6W
R2	1-247-843-00	CARBON 3.3K 5% 1/6W
R3	1-247-831-00	CARBON 1K 5% 1/6W
R4	1-247-879-00	CARBON 100K 5% 1/6W
R5	1-247-799-00	CARBON 47 5% 1/6W
R6	1-247-879-00	CARBON 100K 5% 1/6W
R7	1-247-799-00	CARBON 47 5% 1/6W
R11	1-247-831-00	CARBON 1K 5% 1/6W
R12	1-247-879-00	CARBON 100K 5% 1/6W
R13	1-247-863-00	CARBON 22K 5% 1/6W
R14	1-247-799-00	CARBON 47 5% 1/6W
R15	1-247-879-00	CARBON 100K 5% 1/6W
R21	1-247-807-00	CARBON 100 5% 1/6W
R22	1-247-807-00	CARBON 100 5% 1/6W
R23	1-247-843-00	CARBON 3.3K 5% 1/6W
R24	1-247-804-00	CARBON 75 5% 1/6W
R26	1-247-831-00	CARBON 1K 5% 1/6W
R27	1-247-807-00	CARBON 100 5% 1/6W
R31	1-247-855-00	CARBON 10K 5% 1/6W
R32	1-247-879-00	CARBON 100K 5% 1/6W
R33	1-247-807-00	CARBON 100 5% 1/6W
R34	1-247-837-00	CARBON 1.8K 5% 1/6W
R35	1-247-837-00	CARBON 1.8K 5% 1/6W
R36	1-247-807-00	CARBON 100 5% 1/6W
R37	1-247-807-00	CARBON 100 5% 1/6W
R38	1-247-807-00	CARBON 100 5% 1/6W
R39	1-247-887-00	CARBON 220K 5% 1/6W
R40	1-247-879-00	CARBON 100K 5% 1/6W
R41	1-247-845-00	CARBON 3.9K 5% 1/6W
R42	1-247-807-00	CARBON 100 5% 1/6W
R43	1-247-831-00	CARBON 1K 5% 1/6W
R44	1-247-823-00	CARBON 470 5% 1/6W
R45	1-247-831-00	CARBON 1K 5% 1/6W
R51	1-247-835-00	CARBON 1.5K 5% 1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description
R52	1-247-875-00	CARBON 68K 5% 1/6W
R53	1-247-863-00	CARBON 22K 5% 1/6W
R54	1-247-879-00	CARBON 100K 5% 1/6W
R55	1-247-891-00	CARBON 330K 5% 1/6W
R61	1-247-831-00	CARBON 1K 5% 1/6W
R62	1-247-879-00	CARBON 100K 5% 1/6W
R63	1-247-799-00	CARBON 47 5% 1/6W
R64	1-247-843-00	CARBON 3.3K 5% 1/6W
R65	1-247-879-00	CARBON 100K 5% 1/6W
R66	1-247-893-00	CARBON 390K 5% 1/6W
R67	1-247-843-00	CARBON 3.3K 5% 1/6W
R68	1-247-825-00	CARBON 560 5% 1/6W
R69	1-247-831-00	CARBON 1K 5% 1/6W
R71	1-247-855-00	CARBON 10K 5% 1/6W
R72	1-247-891-00	CARBON 330K 5% 1/6W
R73	1-247-807-00	CARBON 100 5% 1/6W
R74	1-247-831-00	CARBON 1K 5% 1/6W
R75	1-247-847-00	CARBON 4.7K 5% 1/6W
R76	1-247-819-00	CARBON 330 5% 1/6W
R81	1-247-807-00	CARBON 100 5% 1/6W
R82	1-247-849-00	CARBON 5.6K 5% 1/6W
R83	1-247-799-00	CARBON 47 5% 1/6W
R84	1-247-791-00	CARBON 22 5% 1/6W
R85	1-247-831-00	CARBON 1K 5% 1/6W
R86	1-247-831-00	CARBON 1K 5% 1/6W
R87	1-247-855-00	CARBON 10K 5% 1/6W
R88	1-247-855-00	CARBON 10K 5% 1/6W
R89	1-247-855-00	CARBON 10K 5% 1/6W
R90	1-247-855-00	CARBON 10K 5% 1/6W
R91	1-247-855-00	CARBON 10K 5% 1/6W
R92	1-247-847-00	CARBON 4.7K 5% 1/6W
R101	1-247-889-00	CARBON 270K 5% 1/6W
R102	1-247-795-00	CARBON 33 5% 1/6W
R103	1-247-819-00	CARBON 330 5% 1/6W
R104	1-247-831-00	CARBON 1K 5% 1/6W
R105	1-247-847-00	CARBON 4.7K 5% 1/6W
R106	1-247-871-00	CARBON 47K 5% 1/6W
R107	1-247-863-00	CARBON 22K 5% 1/6W
R108	1-247-883-00	CARBON 150K 5% 1/6W
R111	1-247-879-00	CARBON 100K 5% 1/6W
R112	1-247-858-00	CARBON 13K 5% 1/6W
R113	1-247-875-00	CARBON 68K 5% 1/6W
R114	1-247-855-00	CARBON 10K 5% 1/6W
R115	1-247-855-00	CARBON 10K 5% 1/6W
R116	1-247-875-00	CARBON 68K 5% 1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description
R117	1-247-879-00	CARBON 100K 5% 1/6W
R118	1-247-819-00	CARBON 330 5% 1/6W
R119	1-247-847-00	CARBON 4.7K 5% 1/6W
R121	1-247-893-00	CARBON 390K 5% 1/6W
R122	1-247-838-00	CARBON 2K 5% 1/6W
R123	1-247-831-00	CARBON 1K 5% 1/6W
R124	1-247-831-00	CARBON 1K 5% 1/6W
R125	1-247-889-00	CARBON 270K 5% 1/6W
R126	1-247-835-00	CARBON 1.5K 5% 1/6W
R127	1-247-831-00	CARBON 1K 5% 1/6W
R131	1-247-887-00	CARBON 220K 5% 1/6W
R132	1-247-895-00	CARBON 470K 5% 1/6W
R133	1-247-879-00	CARBON 100K 5% 1/6W
R134	1-247-867-00	CARBON 33K 5% 1/6W
R135	1-247-887-00	CARBON 220K 5% 1/6W
R136	1-247-865-00	CARBON 27K 5% 1/6W
R137	1-247-881-00	CARBON 120K 5% 1/6W
R138	1-247-903-00	CARBON 1M 5% 1/6W
R139	1-247-879-00	CARBON 100K 5% 1/6W
R140	1-247-879-00	CARBON 100K 5% 1/6W
R141	1-247-903-00	CARBON 1M 5% 1/6W
R142	1-247-903-00	CARBON 1M 5% 1/6W
R143	1-247-879-00	CARBON 100K 5% 1/6W
R151	1-247-871-00	CARBON 47K 5% 1/6W
R152	1-247-871-00	CARBON 47K 5% 1/6W
R153	1-247-867-00	CARBON 33K 5% 1/6W
R154	1-247-881-00	CARBON 120K 5% 1/6W
R155	1-247-855-00	CARBON 10K 5% 1/6W
R156	1-247-841-00	CARBON 2.7K 5% 1/6W
R157	1-247-871-00	CARBON 47K 5% 1/6W
R201	1-247-879-00	CARBON 100K 5% 1/6W
R202	1-247-813-00	CARBON 180 5% 1/6W
R203	1-247-879-00	CARBON 100K 5% 1/6W
R204	1-247-799-00	CARBON 47 5% 1/6W
R205	1-247-903-00	CARBON 1M 5% 1/6W
R206	1-247-855-00	CARBON 10K 5% 1/6W
R207	1-247-791-00	CARBON 22 5% 1/6W
R208	1-247-799-00	CARBON 47 5% 1/6W
R211	1-247-843-00	CARBON 3.3K 5% 1/6W
R212	1-247-879-00	CARBON 100K 5% 1/6W
R213	1-247-813-00	CARBON 180 5% 1/6W
R214	1-247-881-00	CARBON 120K 5% 1/6W
R215	1-247-811-00	CARBON 150 5% 1/6W
R216	1-247-855-00	CARBON 10K 5% 1/6W
R217	1-247-791-00	CARBON 22 5% 1/6W
R218	1-247-799-00	CARBON 47 5% 1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description	Ref.No.
R219	1-247-863-00	CARBON 22K 5% 1/6W	181
R221	1-247-787-00	CARBON 15 5% 1/6W	182
R222	1-247-831-00	CARBON 1K 5% 1/6W	183
R223	1-247-831-00	CARBON 1K 5% 1/6W	184
R224	1-247-831-00	CARBON 1K 5% 1/6W	185
R231	1-247-831-00	CARBON 1K 5% 1/6W	186
R232	1-247-831-00	CARBON 1K 5% 1/6W	187
R233	1-247-843-00	CARBON 3.3K 5% 1/6W	188
R234	1-247-855-00	CARBON 10K 5% 1/6W	189
R235	1-247-847-00	CARBON 4.7K 5% 1/6W	190
R236	1-247-831-00	CARBON 1K 5% 1/6W	191
R237	1-247-879-00	CARBON 100K 5% 1/6W	192
R238	1-247-879-00	CARBON 100K 5% 1/6W	193
R241	1-247-855-00	CARBON 10K 5% 1/6W	194
R242	1-247-839-00	CARBON 2.2K 5% 1/6W	195
R243	1-247-863-00	CARBON 22K 5% 1/6W	196
R244	1-247-871-00	CARBON 47K 5% 1/6W	197
R245	1-247-827-00	CARBON 680 5% 1/6W	198
R246	1-247-867-00	CARBON 33K 5% 1/6W	199
R247	1-247-803-00	CARBON 68 5% 1/6W	200
R248	1-249-001-00	CARBON 1 5% 1/6W	201
R261	1-247-863-00	CARBON 22K 5% 1/6W	202
R262	1-247-863-00	CARBON 22K 5% 1/6W	203
R263	1-247-863-00	CARBON 22K 5% 1/6W	204
R264	1-247-863-00	CARBON 22K 5% 1/6W	205
R265	1-247-855-00	CARBON 10K 5% 1/6W	206
R266	1-247-867-00	CARBON 33K 5% 1/6W	207
R267	1-247-867-00	CARBON 33K 5% 1/6W	208
R268	1-247-855-00	CARBON 10K 5% 1/6W	209
R269	1-247-823-00	CARBON 470 5% 1/6W	210
R270	1-247-863-00	CARBON 22K 5% 1/6W	211
R271	1-247-887-00	CARBON 220K 5% 1/6W	212
R272	1-247-831-00	CARBON 1K 5% 1/6W	213
R273	1-247-863-00	CARBON 22K 5% 1/6W	214
R281	1-247-831-00	CARBON 1K 5% 1/6W	215
R282	1-247-871-00	CARBON 47K 5% 1/6W	216
R283	1-247-877-00	CARBON 82K 5% 1/6W	217
R284	1-247-855-00	CARBON 10K 5% 1/6W	218
R285	1-247-871-00	CARBON 47K 5% 1/6W	219
R301	1-247-831-00	CARBON 1K 5% 1/6W	220
R302	1-247-867-00	CARBON 33K 5% 1/6W	221
R303	1-247-831-00	CARBON 1K 5% 1/6W	222
R304	1-247-831-00	CARBON 1K 5% 1/6W	223
R305	1-247-831-00	CARBON 1K 5% 1/6W	224
R306	1-247-831-00	CARBON 1K 5% 1/6W	225
R307	1-247-882-00	CARBON 130K 5% 1/6W	226

ELECTRICAL PARTS

Ref.No.	Part No.	Description	Ref.No.
R308	1-247-903-00	CARBON 1M 5% 1/6W	227
R309	1-247-831-00	(AIR-8,Canadian,AEP-2)...CARBON 1K 5% 1/6W	228
R310	1-247-879-00	CARBON 100K 5% 1/6W	229
R311	1-247-879-00	CARBON 100K 5% 1/6W	230
R312	1-247-879-00	CARBON 100K 5% 1/6W	231
R313	1-247-879-00	CARBON 100K 5% 1/6W	232
R314	1-247-903-00	CARBON 1M 5% 1/6W	233
R315	1-247-903-00	CARBON 1M 5% 1/6W	234
R316	1-247-903-00	CARBON 1M 5% 1/6W	235
R317	1-247-879-00	CARBON 100K 5% 1/6W	236
R318	1-247-903-00	CARBON 1M 5% 1/6W	237
R319	1-247-813-00	CARBON 180 5% 1/6W	238
R320	1-247-831-00	CARBON 1K 5% 1/6W	239
R321	1-247-799-00	CARBON 47 5% 1/6W	240
R322	1-247-799-00	CARBON 47 5% 1/6W	241
R323	1-247-831-00	(AEP-1,E)....CARBON 1K 5% 1/6W	242
R324	1-247-866-00	CARBON 30K 5% 1/6W	243
RV121	1-230-538-11	RES, VAR, CARBON (WITH SW) 50K, SQL	244
RV241	1-230-537-11	RES, VAR, CARBON (WITH SW) 20K, VOL	245
S121	1-230-538-11	RES, VAR, CARBON (WITH SW) 50K, SQL	246
S201	1-554-955-11	SWITCH, ROTARY, BAND SELECT	247
S202	1-554-957-11	SWITCH, PUSH (1 KEY)	248
S301	1-553-349-00	SWITCH, PUSH, 3	249
S302	1-553-349-00	SWITCH, PUSH, 2	250
S303	1-553-349-00	SWITCH, PUSH, 1	251
S304	1-553-349-00	SWITCH, PUSH, ENTER	252
S305	1-553-349-00	SWITCH, PUSH, 6	253
S306	1-553-349-00	SWITCH, PUSH, 5	254
S307	1-553-349-00	SWITCH, PUSH, 4	255
S308	1-553-349-00	SWITCH, PUSH, PROGRAM	256
S309	1-553-349-00	SWITCH, PUSH, 9	257
S310	1-553-349-00	SWITCH, PUSH, 8	258
S311	1-553-349-00	SWITCH, PUSH, 7	259
S312	1-553-349-00	SWITCH, PUSH, PRIORITY	260
S313	1-553-349-00	SWITCH, PUSH, DIRECT	261
S314	1-553-349-00	SWITCH, PUSH, EXECUTE	262
S315	1-553-349-00	SWITCH, PUSH, 0	263
S316	1-553-349-00	SWITCH, PUSH, DELAY	264
S317	1-553-349-00	SWITCH, PUSH, MEMORY SCAN S/S	265
S318	1-553-349-00	SWITCH, PUSH, SCAN +	266
S319	1-553-349-00	SWITCH, PUSH, SCAN -	267
S320	1-553-349-00	SWITCH, PUSH, KEY PROTECT	268
S321	1-553-977-31	SWITCH, SLIDE, 10kHz/9kHz SELECT	269
S322	1-554-956-11	SWITCH, LEAF, LIGHT	270
SP	1-503-374-11	SPEAKER	271

ELECTRICAL PARTS

Ref.No.	Part No.	Description
T21	1-426-194-11	TRANSFORMER, HIGH-FREQUENCY
T31	1-426-193-11	TRANSFORMER, HIGH-FREQUENCY
T32	1-404-448-00	TRANSFORMER, IF
T33	1-404-568-11	TRANSFORMER, IF
T34	1-404-191-00	TRANSFORMER, IF
T51	1-406-052-00	COIL (OSC)
T61	1-459-557-11	COIL (WITH CORE)
T62	1-404-126-00	IFT (SMALL TYPE)
T81	1-404-191-00	TRANSFORMER, IF
T101	1-404-127-00	IFT (SMALL TYPE)
T281	1-406-112-11	COIL (OSC)
X51	1-567-302-11	VIBRATOR, CRYSTAL, 55.400MHZ
X221	1-567-310-11	VIBRATOR, CRYSTAL, 7.2MHZ
XF31	1-527-372-00	FILTER, CRYSTAL, 55.845MHZ

ACCESSORY & PACKING MATERIAL

No.	Part No.	Description	REMARKS
151	1-504-059-11	MAGNETIC EARPHONE(ME-20H)	
152	3-701-295-00	BAG, POLYETHYLENE (FOR PRINTED MATTER)	
153	3-890-830-00	BAG, POLYETHYLENE (FOR SET)	
154	3-893-708-01	BELT, CARRYING	
155	3-893-736-01	LABEL, STEP, MW CH	
156	3-893-740-01	CASE, ACCESSORY	
157	3-893-745-01	CUSHION (UPPER)	
158	3-893-742-01	(Canadian,AEP-2)...INDIVIDUAL CARTON	
	3-893-743-01	(AEP-1,E).....INDIVIDUAL CARTON	
	3-893-748-01	(AIR-8).....INDIVIDUAL CARTON	
159	*3-893-744-01	CUSHION (LOWER)	
160	3-990-002-12	(Canadian,AEP,E)...MANUAL, INSTRUCTION	
	3-990-002-21	(AIR-8)...MANUAL, INSTRUCTION	
	3-990-002-41	(AEP).....MANUAL, INSTRUCTION	

AIR-7/8

AIR-7/8

AIR-7/8

AIR-7/8

SONY SERVICE MANUAL

US Model

AIR-8

Canadian Model

AEP Model

UK Model

E Model

AIR-7

SUPPLEMENT-2

File this supplement with the Service Manual.

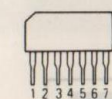
Subject: PC BOARD CHANGE
(Except Canadian Model)

MELF components used as resistors, capacitors, and diode have been changed to chip components on the production.

Because of this, pc board have been changed.

1. SEMICONDUCTOR LEAD LAYOUTS

CX075B



2SA1175
2SC2785
2SC2786
2SC2786-L
2SD1020-F



2SK192A



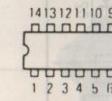
SVC201SP-BG



SLP281C-50



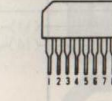
CX7961A-1



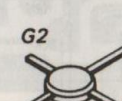
2SA812
2SC1623



LA4145



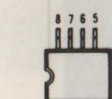
3SK114-Y



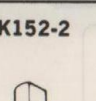
1SS279



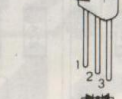
LA5003M
μPC393G2



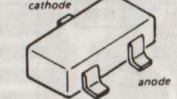
2SC3112



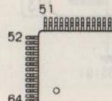
MC921



1S2837



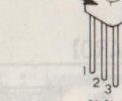
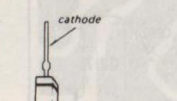
μPD7503G-136



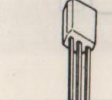
2SK152-2



MC931

1T32-4
1T33-09

DTC144ES
2SA1048-GR
2SC2839
2SC634SP



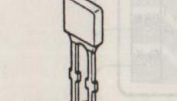
2SK184-GR



RD20ES-B2
1SS119
1SS198



SLP178B



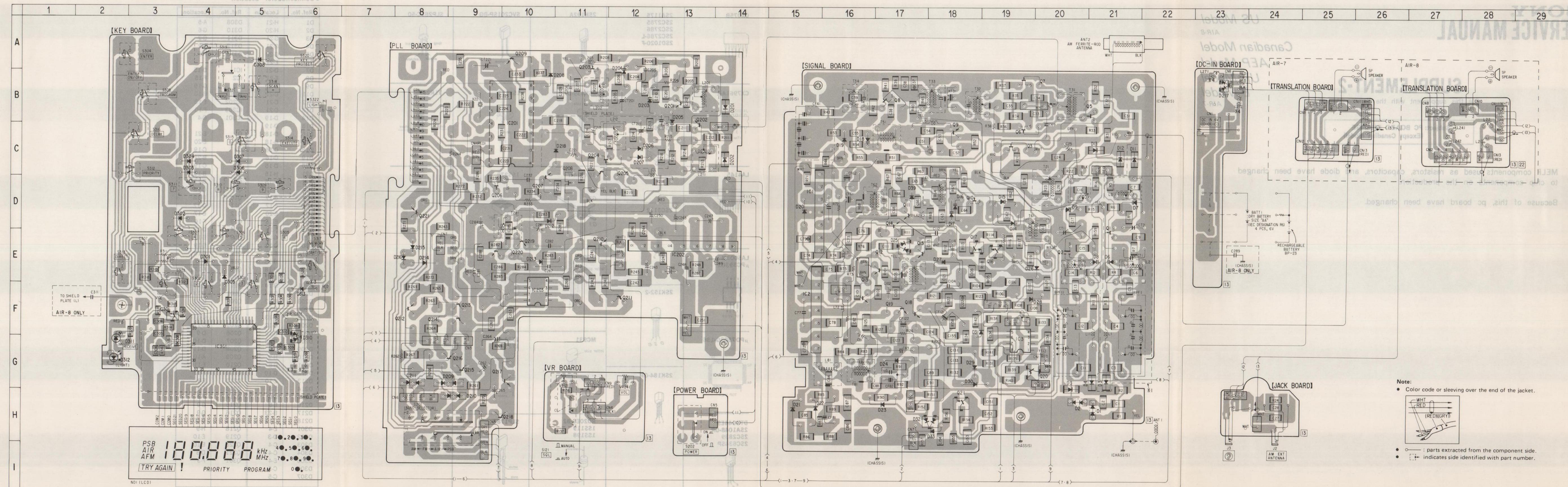
• Semiconductor Location

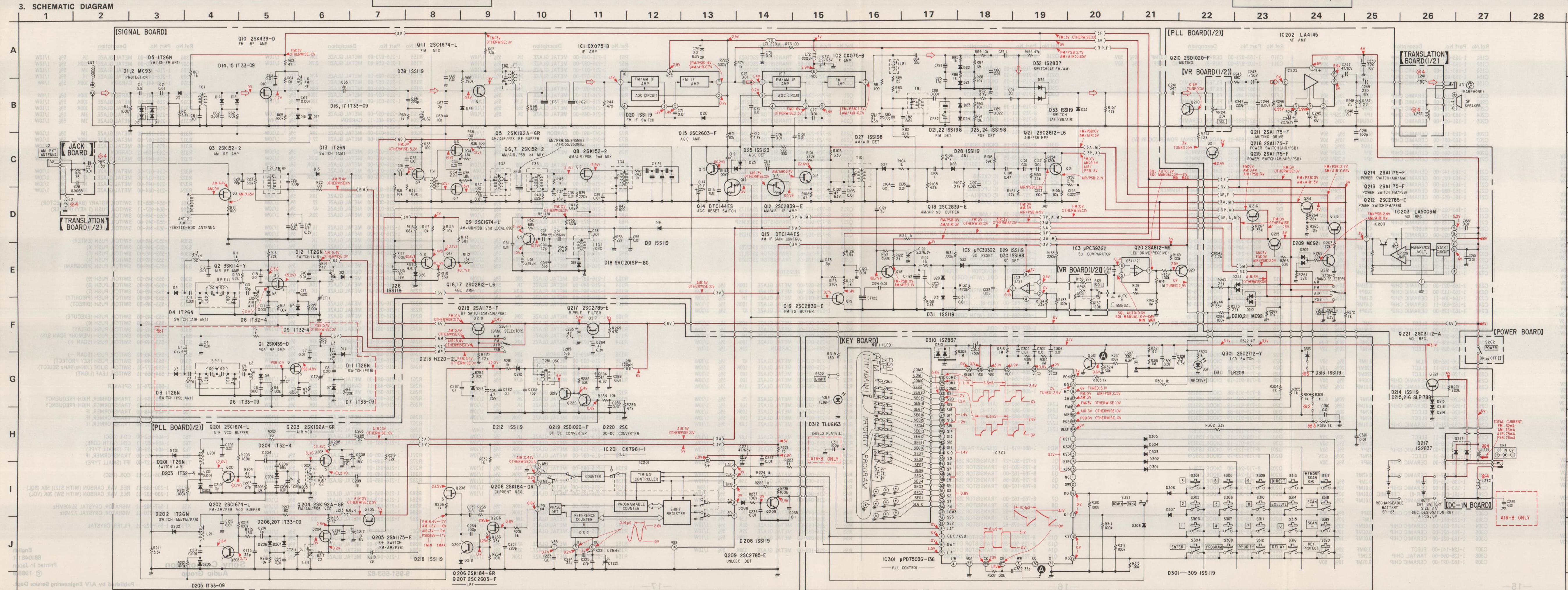
Ref. No.	Location	Ref. No.	Location
D1	H-21	D308	A-5
D2	H-20	D310	G-6
D3	G-21	D311	G-2
D4	G-21	D312	G-2
D5	G-20	D313	F-6
D6	E-21		
D7	D-21	IC1	D-15
D8	E-21	IC2	F-15
D9	D-20	IC3	G-19
D11	C-21	IC201	B-10
D12	C-21	IC202	E-13
D13	C-21	IC203	F-10
D14	D-19	IC301	G-4
D15	D-19		
D16	D-18	Q1	E-21
D17	D-18	Q2	E-20
D18	C-16	Q3	C-19
D19	C-16	Q5	B-21
D20	D-15	Q6	C-19
D21	H-15	Q7	B-19
D22	H-15	Q8	B-17
D23	H-17	Q9	C-18
D24	G-17	Q10	D-18
D25	E-17	Q11	D-17
D26	E-20	Q12	E-17
D27	E-18	Q13	F-16
D28	F-19	Q14	D-17
D29	G-18	Q15	E-17
D30	G-18	Q16	E-19
D31	F-18	Q17	E-18
D32	H-18	Q18	F-17
D33	H-18	Q19	F-17
D39	D-17	Q20	G-20
D201	B-14	Q21	H-18
D202	C-14	Q201	B-13
D203	B-12	Q202	C-13
D204	B-12	Q203	A-11
D205	B-13	Q204	C-11
D206	C-12	Q205	C-12
D207	C-12	Q206	D-9
D208	B-10	Q207	D-10
D209	G-9	Q208	D-11
D210	H-9	Q209	A-10
D211	G-8	Q210	E-11
D212	D-10	Q211	F-12
D213	E-10	Q212	F-8
D214	E-8	Q213	F-9
D215	E-8	Q214	F-9
D216	E-8	Q215	G-9
D217	B-23	Q216	G-9
D218	C-11	Q217	G-10
D301	E-4	Q218	H-9
D302	D-3	Q219	E-10
D303	C-4	Q220	E-10
D304	C-4	Q221	D-8
D305	E-4	Q301	F-3
D306	C-5		
D307	C-5		

2. PRINTED WIRING BOARDS

- Refer to page 3 for semiconductor lead layouts.
- Refer to page 4 for semiconductor location.

SEMICONDUCTOR LEAD LAYOUTS





Note:

- All capacitors are in μF unless otherwise noted. $\text{pF} = \mu\text{F} \times 10^{-6}$
- 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- $\triangle$: internal component.
- $\text{B} +$: Line
- Total current is measured at detuned mode with VOL knob turned to the counterclockwise (MIN).
- Power voltage is 6V and fed with regulated dc power supply from external power voltage jack.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- Measured at FM 76.000MHz on LCD.
- no mark : FM
- () : AM/AIR/PSB
- () : AM/AIR
- () : AIR
- Voltages are taken with a VOM (50 kHz/V).
- 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.
- $\Rightarrow$: FM

• Switch

Ref. No.	SQL	Switch	Position
S121	S201	BAND SELECTOR	FM
S202	S202	POWER	OFF
S301	S301	3	OFF
S302	S302	2	OFF
S303	S303	1	OFF
S304	S304	ENTER	OFF
S305	S305	6	OFF
S306	S306	5	OFF
S307	S307	4	OFF
S308	S308	PROGRAM	OFF
S309	S309	9	OFF
S310	S310	8	OFF
S311	S311	7	OFF
S312	S312	PRIORITY	OFF
S313	S313	DIRECT	OFF
S314	S314	EXECUTE	OFF
S315	S315	0	OFF
S316	S316	DELAY	OFF
S317	S317	MEMORY SCAN S/S	STOP
S318	S318	SCAN+	OFF
S319	S319	SCAN-	OFF
S320	S320	KEY PROTECT	OFF
S321	S321	10kHz/9kHz SELECT	10kHz
S322	S322	LIGHT	OFF

NOTE:

Parts marked * 1 to 4 differ from each model.

	AEP-1, E model	AEP-2, UK model	AIR-8
* 1 (PSB RF CIRCUIT)	mounted on PC board, but not used	used	
* 2 (R309)	mounted on PC board, but not used	used	
* 3 (R323, D313)	used		mounted on PC board, but not used
* 4 (L21, 22, 241, 242, 271, 272)		shorted	mounted

4. ELECTRICAL PARTS LIST

- NOTE:**
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
 - Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
 - If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.
- CAPACITORS:**
MF: μ F, PF: μ F.
- RESISTORS:**
• All resistors are in ohms.
• F: nonflammable
- COILS:**
• MMH: mH, UH: μ H
- SEMICONDUCTORS:**
In each case, U: μ , for example:
UA...: μ A..., UPA...: μ PA...,
UPC...: μ PC, UPD...: μ PD...

Ref.No	Part No.	Description	Ref.No	Part No.	Description
901	*1-508-995-00	PIN, CONNECTOR	C52	1-163-111-00	CERAMIC CHIP
902	*1-560-456-00	PIN, CONNECTOR 2P	C53	1-163-109-00	CERAMIC CHIP
903	*1-560-466-00	PIN, CONNECTOR 3P	C54	1-163-111-00	CERAMIC CHIP
905	*1-560-468-00	PIN, CONNECTOR 5P	C55	1-163-021-00	CERAMIC CHIP
906	*1-613-291-11	PC BOARD, DC-IN	C61	1-163-021-00	CERAMIC CHIP
907	*1-613-292-11	PC BOARD, JACK	C62	1-163-141-00	CERAMIC CHIP
908	1-613-293-11 (AIR-7)... PC BOARD, TRANSLATION		C63	1-163-021-00	CERAMIC CHIP
908	1-613-293-21 (AIR-8)... PC BOARD, TRANSLATION		C64	1-163-141-00	CERAMIC CHIP
910	*1-613-296-11	PC BOARD, KEY	C65	1-163-086-00	CERAMIC CHIP
911	*1-613-297-11	PC BOARD, VR	C66	1-163-125-00	CERAMIC CHIP
912	1-562-261-21	CONNECTOR, COAXIAL (BNC)	C67	1-163-085-00	CERAMIC CHIP
913	A-3660-519-A	MOUNTED PCB, SIGNAL	C68	1-163-021-00	CERAMIC CHIP
914	A-3661-009-A	MOUNTED PCB, PLL	C69	1-162-199-31	CERAMIC
ANT1	1-501-322-11	ANTENNA	C71	1-161-379-00	CERAMIC
ANT2	1-402-120-12	ANTENNA, FERRITE-ROD (LW/MM/SW)	C72	1-135-099-00	TANTAL CHIP
BPF1	1-235-401-11	FILTER, BAND PASS	C73	1-163-021-00	CERAMIC CHIP
BPF11	1-235-402-11	FILTER, BAND PASS	C74	1-163-021-00	CERAMIC CHIP
CAPACITOR			C75	1-163-021-00	CERAMIC CHIP
C1	1-163-021-00	CERAMIC CHIP	C76	1-163-021-00	CERAMIC CHIP
C2	1-163-021-00	CERAMIC CHIP	C77	1-161-379-00	CERAMIC
C3	1-163-141-00	CERAMIC CHIP	C78	1-163-086-00	CERAMIC CHIP
C4	1-163-021-00	CERAMIC CHIP	C79	1-135-099-00	TANTAL CHIP
C5	1-163-097-00	CERAMIC CHIP	C81	1-126-154-11	ELECT
C6	1-163-141-00	CERAMIC CHIP	C82	1-163-021-00	CERAMIC CHIP
C7	1-163-021-00	CERAMIC CHIP	C83	1-162-219-31	CERAMIC
C8	1-163-141-00	CERAMIC CHIP	C84	1-163-105-00	CERAMIC CHIP
C9	1-163-141-00	CERAMIC CHIP	C85	1-163-097-00	CERAMIC CHIP
C11	1-163-141-00	CERAMIC CHIP	C86	1-163-021-00	CERAMIC CHIP
C12	1-163-021-00	CERAMIC CHIP	C87	1-162-638-11	CERAMIC CHIP
C13	1-163-107-00	CERAMIC CHIP	C88	1-163-141-00	CERAMIC CHIP
C14	1-163-141-00	CERAMIC CHIP	C89	1-163-037-11	CERAMIC CHIP
C15	1-163-021-00	CERAMIC CHIP	C91	1-164-004-11	CERAMIC CHIP
C16	1-163-021-00	CERAMIC CHIP	C101	1-163-021-00	CERAMIC CHIP
C17	1-163-141-00	CERAMIC CHIP	C102	1-126-154-11	ELECT
C24	1-163-021-00	CERAMIC CHIP	C103	1-163-021-00	CERAMIC CHIP
C25	1-126-154-11	ELECT	C104	1-161-379-00	CERAMIC
C26	1-163-117-00	CERAMIC CHIP	C105	1-163-021-00	CERAMIC CHIP
C27	1-163-021-00	CERAMIC CHIP	C106	1-162-638-11	CERAMIC CHIP
C28	1-163-019-00	CERAMIC CHIP	C107	1-163-037-11	CERAMIC CHIP
C29	1-163-113-00	CERAMIC CHIP	C108	1-162-637-11	CERAMIC CHIP
C31	1-163-021-00	CERAMIC CHIP	C111	1-163-105-00	CERAMIC CHIP
C32	1-163-021-00	CERAMIC CHIP	C112	1-136-165-00	FILM
C33	1-163-021-00	CERAMIC CHIP	C113	1-163-021-00	CERAMIC CHIP
C38	1-163-021-00	CERAMIC CHIP	C114	1-126-094-11	ELECT
C39	1-163-021-00	CERAMIC CHIP	C115	1-126-157-11	ELECT
C51	1-163-021-00	CERAMIC CHIP	C121	1-163-086-00	CERAMIC CHIP
C52	1-163-021-00	CERAMIC CHIP	C122	1-135-099-00	TANTAL CHIP
C53	1-163-109-00	PIN, CONNECTOR 2P	C123	1-163-021-00	CERAMIC CHIP
C54	1-163-111-00	PIN, CONNECTOR 3P	C124	1-163-021-00	CERAMIC CHIP
C55	1-163-021-00	CERAMIC CHIP	C131	1-163-021-00	CERAMIC CHIP
C56	1-163-021-00	CERAMIC CHIP	C133	1-162-993-11	CERAMIC CHIP
C57	1-163-021-00	CERAMIC CHIP	C134	1-163-021-00	CERAMIC CHIP
C58	1-163-021-00	CERAMIC CHIP	C307	1-124-141-00	ELECT
C59	1-163-021-00	CERAMIC CHIP	C308	1-135-099-00	TANTAL CHIP
C60	1-163-021-00	CERAMIC CHIP	C309	1-163-021-00	CERAMIC CHIP

		C207	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
		C208	1-126-157-11	ELECT	10MF	20%	16V
		C209	1-163-086-00	CERAMIC CHIP	3PF	0.25PF	50V
		C210	1-163-088-00	CERAMIC CHIP	5PF	0.25PF	50V
5%	50V						
5%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
0.25PF	50V						
0.25PF	50V						
10%	50V						
10%	50V						
20%	16V						
20%	6.3V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	16V						
0.25PF	50V						
20%	6.3V						
20%	6.3V						
20%	6.3V						
5%	50V						
5%	50V						
10%	50V						
10%	16V						
10%	50V						
10%	25V						
10%	25V						
10%	50V						
10%	50V						
20%	6.3V						
20%	50V						
20%	16V						
10%	50V						
10%	16V						
10%	25V						
10%	16V						
5%	50V						
5%	50V						
10%	50V						
10%	25V						
20%	16V						
0.25PF	50V						
20%	6.3V						
10%	50V						
10%	50V						
10%	50V						
10%	16V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						
10%	50V						