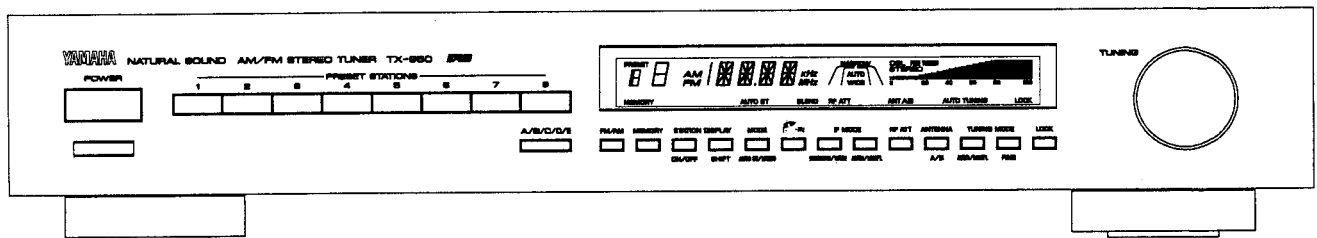


# AM/FM STEREO TUNER

# TX-950

## SERVICE MANUAL

### ■ FRONT PANEL



### IMPORTANT NOTICE

This manual has been provided for the use of authorized Yamaha Retailers and their service personnel. It has been assumed that basic service procedures inherent to the industry, and more specifically Yamaha Products, are already known and understood by the users, and have therefore not been restated.

**WARNING:** Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components and failure of the product to perform as specified. For these reasons, we advise all Yamaha product owners that all service required should be performed by an authorized Yamaha Retailer or the appointed service representative.

**IMPORTANT:** The presentation or sale of this manual to any individual or firm does not constitute authorization, certification, recognition of any applicable technical capabilities, or establish a principle-agent relationship of any form.

The data provided is believed to be accurate and applicable to the unit(s) indicated on the cover. The research, engineering, and service departments of Yamaha are continually striving to improve Yamaha products. Modifications are, therefore, inevitable and specifications are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

**WARNING:** Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground buss in the unit (heavy gauge black wires connect to this buss).

**IMPORTANT:** Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

### ■ CONTENTS

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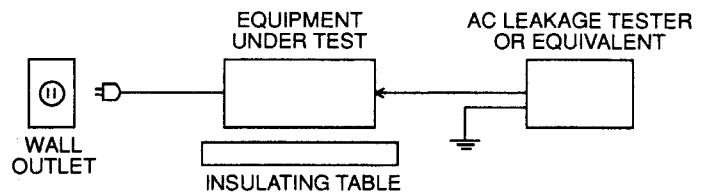
## ■ TO SERVICE PERSONNEL

### 1. Critical Components Information.

Components having special characteristics are  $\Delta$  marked and must be replaced with parts having specifications equal to those originally installed.

### 2. Leakage Current Measurement (For 120 V Model Only). When service has been completed, it is imperative that you verify that all exposed conductive surfaces are properly insulated from supply circuits.

- Meter impedance should be equivalent to 1500 ohm shunted by 0.15  $\mu$ F.
- Leakage current must not exceed 0.5 mA.
- Be sure to test for leakage with the AC plug in both polarities.



### • POLARIZATION

This product is equipped with a polarized alternating current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. **(U,C model only)**

## ■ WARNING: CHEMICAL CONTENT NOTICE!

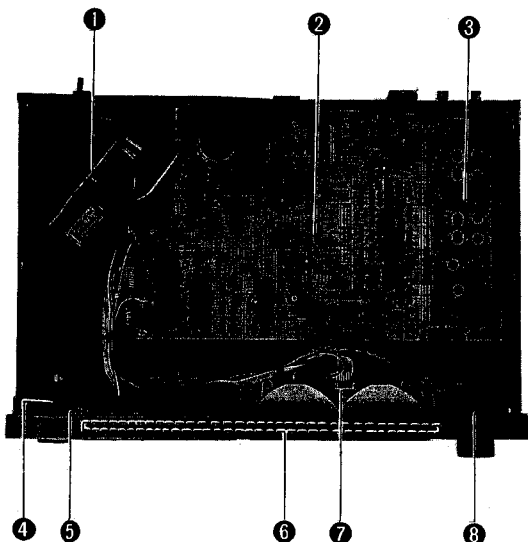
The solder used in the production of this product contains LEAD. In addition, other electrical/electronic and/or plastic (where applicable) components may also contain traces of chemicals found by the California Health and Welfare Agency (and possibly other entities) to cause cancer and/or birth defects or other reproductive harm.

Avoid prolonged, unprotected contact between solder and your skin! When soldering, do not inhale solder fumes or expose eyes to solder/flux vapor!

If you come in contact with solder or components located inside the enclosure of this product, wash your hands before handling food.

**DO NOT PLACE SOLDER. ELECTRICAL/ELECTRONIC OR PLASTIC COMPONENTS IN YOUR MOUTH FOR ANY REASON WHAT SO EVER!**

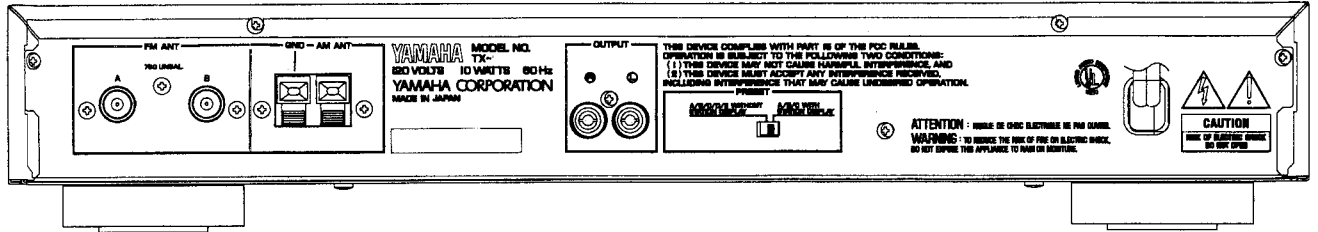
## ■ INTERNAL VIEW



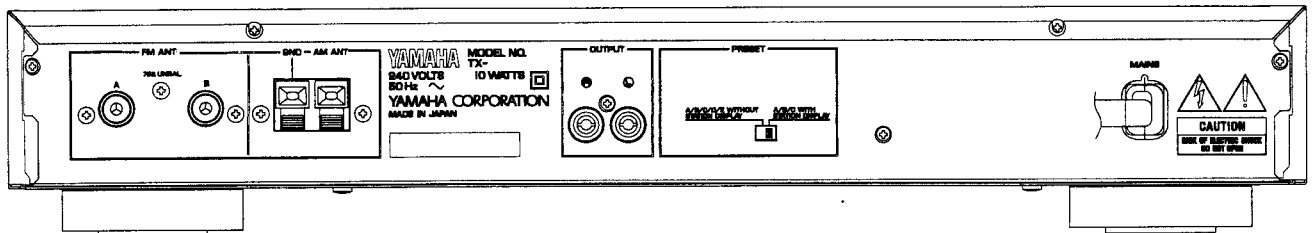
- ① Tuner circuit board (2)
- ② Tuner circuit board (1)
- ③ FM Front-end section
- ④ Tuner circuit board (6)
- ⑤ Tuner circuit board (4)
- ⑥ Tuner circuit board (3)
- ⑦ LCD Unit
- ⑧ Tuner circuit board (5)

## REAR PANELS

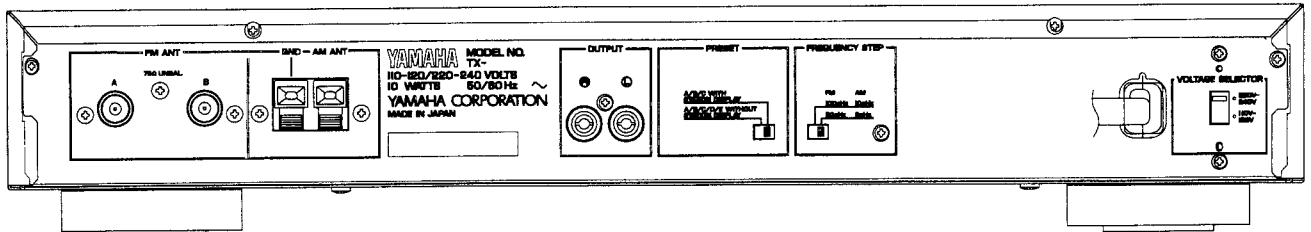
### U.S.A and Canadian Models



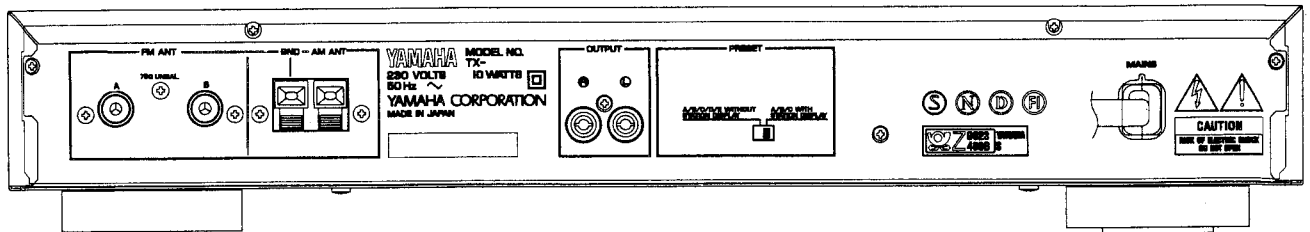
### Australian and British Models



### General Model



### European Model



## SPECIFICATIONS

### FM SECTION

Tuning Range	
[U.S.A., Canada and General models]	87.5 to 108 MHz
[U.K., Australia, Europe and General models]	87.5 to 108 MHz
50 dB Quieting Sensitivity (IHF) [Except Europe model]	
75 ohms Mono	1.55 $\mu$ V (15.1 dBf)
75 ohms Stereo (NARROW)	21 $\mu$ V (37.7 dBf)
Usable Sensitivity [Except Europe model]	
75 ohms, 1 kHz, 100% mod. (30 dB S/N Quieting)	0.8 $\mu$ V (9.3 dBf)
[Europe model] (DIN)	
75 ohms Mono (S/N 26 dB)	0.8 $\mu$ V
75 ohms Stereo (S/N 46 dB)	22 $\mu$ V
Image Response Ratio	90 dB
IF Response Ratio	110 dB
Spurious Response Ratio	110 dB
AM Suppression Ratio	70 dB
Capture Ratio	1.2 dB
Alternate Channel Selectivity [Except Europe model]	85 dB
Selectivity (two signals, 40 kHz Dev., $\pm$ 300 kHz)	
[Europe model]	70 dB

Signal-to-Noise Ratio [Except Europe model] (IHF)	
Mono	96 dB
Stereo	90 dB
[Europe model] (DIN-NOISE RMS)	
Mono (40 kHz Dev.)	84 dB
Stereo (40 kHz Dev.)	78 dB
Harmonic Distortion (1 kHz) [Except Europe model]	
Mono/Stereo	0.02%/0.03%
[Europe model (40 kHz Dev.)]	
Mono/Stereo	0.02%/0.03%
Stereo Separation	1 kHz 60 dB
Frequency Response	
20 Hz to 15 kHz	0 $\pm$ 0.5 dB

### AM SECTION

Tuning Range	
[U.S.A., Canada and General models]	520 to 1,720 kHz
[U.K., Australia and Europe models]	522 to 1,620 kHz
Usable Sensitivity	100 $\mu$ V/m
Selectivity	32 dB
Signal-to-Noise Ratio	52 dB
Image Response Ratio	40 dB
Spurious Response Ratio	50 dB
Harmonic Distortion; 400Hz	0.3%

### AUDIO SECTION

Output Level/Impedance	
FM (100 % mod. 1 kHz)	
[Except Europe model]	500 mV/2 k-ohms
[Europe model]	400 mV/2 k-ohms
AM (30% mod. 400 Hz)	150 mV/2 k-ohms

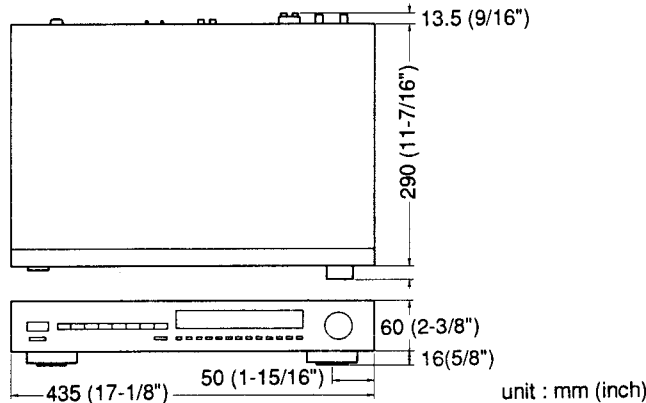
### GENERAL

Power Supply	
U.S.A. and Canada models	120V, 60 Hz
Europe model	230V, 50 Hz
U.K. and Australia models	240V, 50 Hz
General model	110-120/220-240V, 50/60 Hz
Power Consumption	10W
Dimensions (W x H x D)	435 x 76 x 320 mm (17-1/8" x 3" x 12-5/8")
Weight	3.4 kg (7 lbs. 8 oz.)
Accessories	Audio connection cord
	75-ohm/300-ohm antenna adapter
	AM loop antenna/indoor FM antenna

Specifications subject to change without notice.

- U ..... U.S.A. model
- C ..... Canadian model
- A ..... Australian model
- G ..... European model
- B ..... British model
- R ..... General model

## DIMENSIONS



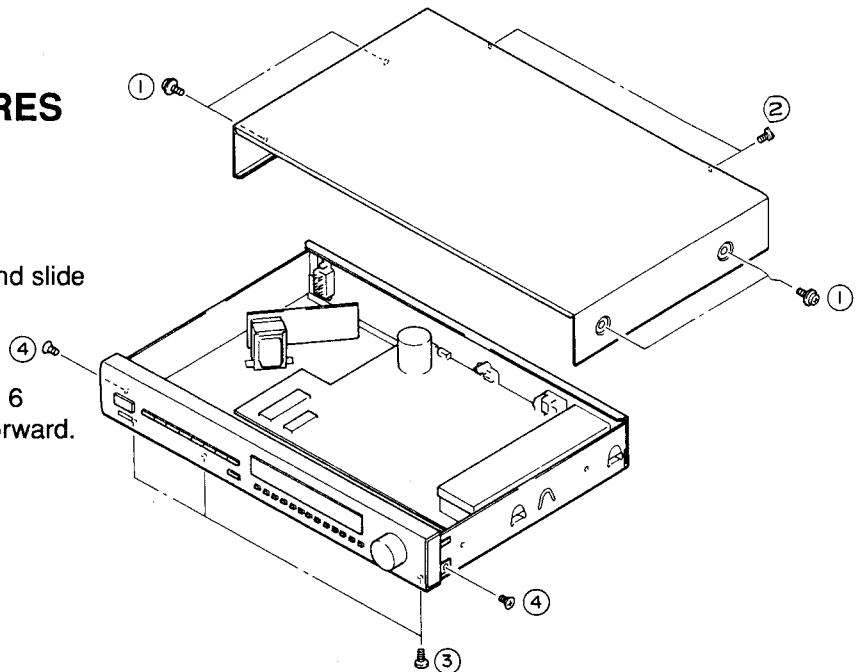
## DISASSEMBLY PROCEDURES

### 1. Removal of Top Cover

Remove 4 screws ① and 2 screws ②, and slide the Top Cover back.

### 2. Removal of Front Panel

a. Remove 3 screws ③, 2 screws ④ and 6 connectors, and pull the Front Panel forward.



# ADJUSTMENTS

## 1. Before adjustment

- 1) After the power switch is pushed on, wait for 5 minutes before measuring to be sure of the most stable operation.
- 2) Adjust the OSC coil and IFT with non-ferrous screw driver.
- 3) Set the switches to the following positions.  
TUNING MODE                AUTO
- 4) Make the AM section adjustments after having finished the FM section adjustment.
- 5)  $0\text{dB}\mu = 1\mu\text{V}$     Ex:  $60\text{dB}\mu = 1\text{mV}$   
 $X\text{dB}\mu = (X + 11.2)\text{dBf}$     Ex:  $70\text{dB}\mu = 81.2\text{dBf}$

## 2. Measuring instruments abbreviation

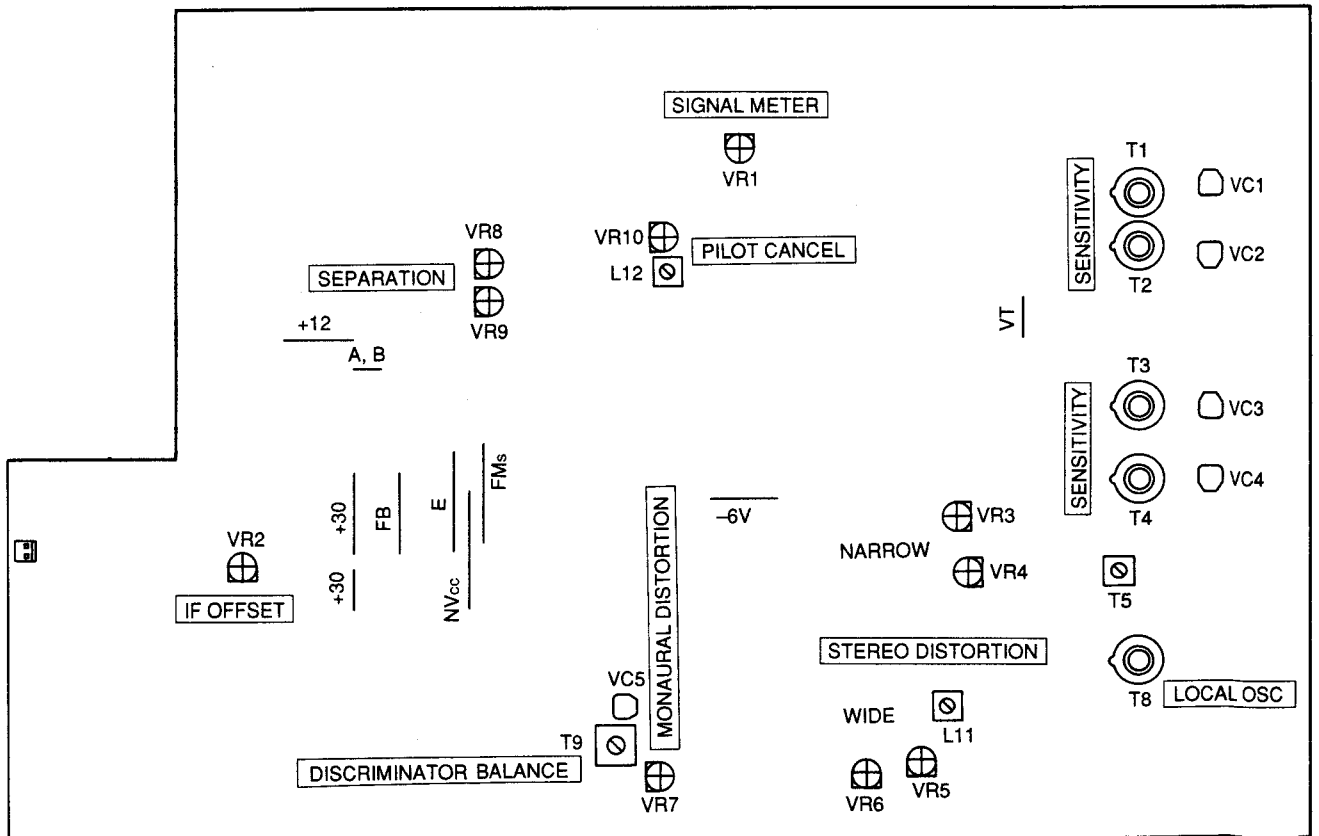
- FM SG : FM signal generator
- SSG : Stereo signal generator
- AM SG : AM signal generator
- DIST. M : Distortion meter
- FC : Frequency counter
- ACVM : AC voltage meter
- DCVM : DC voltage meter

### (POWER SUPPLY CHECK)

Check that the following voltages are obtained respectively across each test point and ground on tuner circuit.

Test Point	Rating or standard	Remark	
+ 12 V (Q55 Emitter)	+ 12.5 V $\pm$ 0.5 V	Make sure that AC line voltage comes within:	Models
+ 6 V (Q56 Emitter)	+ 6.0 V $\pm$ 0.5 V		U, C
+ 30 V (D44 Cathode)	+ 29.0 V $\pm$ 1.0 V		G
- 6V (D43 Anode)	- 6.0 V $\pm$ 0.5 V		A, B
		R	110/120/220/240V $\pm$ 10%

## • TEST POINTS



**Confirmation of preset**

**CAUTION:**

Using a table as shown below, write down the contents of the memory presets in the tuner before setting to the test program mode.

(This is because setting to the test program mode sets the tuner memory content in the state preset by the manufacturer and erases all the memory preset by the user.)

Upon completion of the test program, set to the tuner mode again and enter the preset memory as written in the table.

Preset Group	P1	P2	P3	P4	P5	P6	P7	P8
A								
B								
C								
D								
E								

- Turn the POWER switch on while pressing the preset keys "1", "2" and "3" simultaneously. Confirm that the frequencies described below are changed to the preset values. (Press P8 to reset the test mode. To preset, leave the keys as they are.)

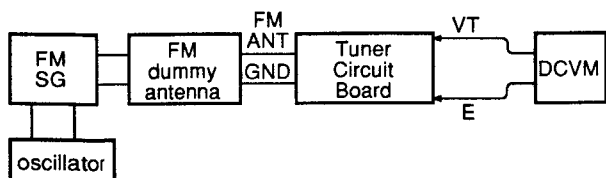
**Confirmation of LCD unit**

**Confirmation of the display**

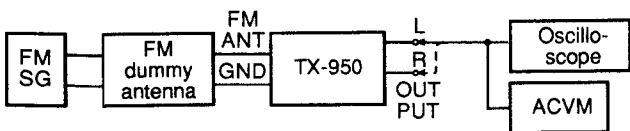
- 1 The test mode is entered and all the segments of the LCD light when the POWER switch is turned on while pressing "P1", "P2" and "P3" simultaneously.
- 2 After 1, the display mode is changed by pressing the following keys.
  - 1 P2 All turned off mode (All the segments are turned off)
  - 2 P3 "8" is lit at the center position.
  - 3 P8 The test mode is switched to normal mode.

● Connection diagram (Measuring instruments)

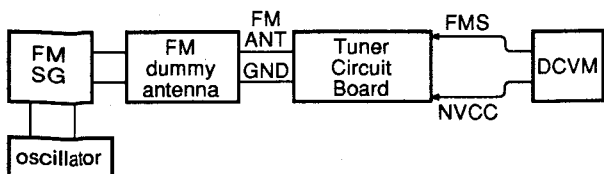
1) Local oscillator coil adjustment



2) Sensitivity adjustment and Verification



3) Discriminator balance adjustment



- \* Total of 40 stations, P1 to P8 for each A to E are reset to the preset value.

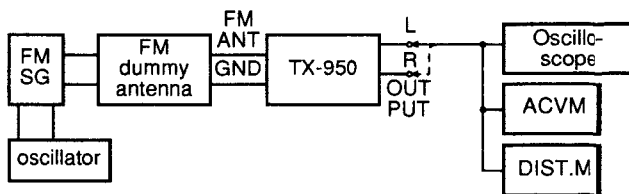
		P1	P2	P3	P4	P5	P6	P7	P8
A/	U, C	87.5M	95.1	98.1	101.5	108.0	88.0	106.0	107.9
C/E	A, B, G, R	87.5M	95.1	98.1	101.5	108.0	88.0	106.0	107.9
B/D	U, C	630k	1080	1440	530	1680	900	1350	1400
	A, B, G, R	630k	1080	1440	531	1680	900	1350	1404
Station name		ABCD	EFGH	IJKL	MNOP	QRST	UVWX	YZ- <del>    </del>	<del>    </del>

- \* For the R model, AM frequency step 9 kHz to (from) 10 kHz, and FM frequency step 100 kHz to (from) 50 kHz can be switched.
- \* Setting of the Function  
The mode is changed to  
BLEND → OFF, IF MODE → AUTO WIDE  
RF ATT → OFF, ANTENNA → A.

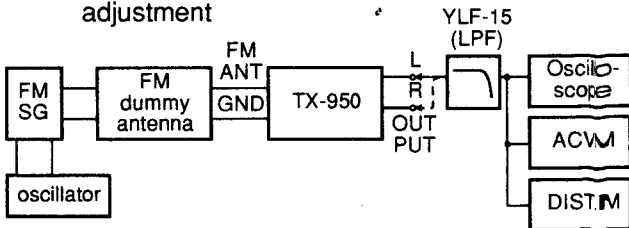
**FM TUNER SECTION**

- Use 15 kHz L.P.F. to measure the output.
- 100% modulation means that the Frequency Deviation is 75 kHz. (R, U, C, A, B)
- For the G model, Frequency Deviation is 40 kHz.
- For the G, B models, install the Matching Transformer and connect FM SG.

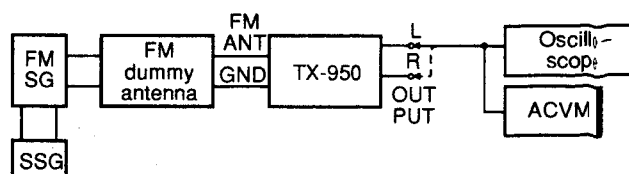
4) Monaural distortion adjustment



5) Stereo distortion adjustment/separation adjustment



6) Pilot cancel adjustment



Step	Item to be Adjusted	Connection terminal	Instrument required	Adjustment locations	Adjustment method	Rating or standard
1	Local oscillator Coil	FM ANT	FM SG 108MHz MONO 100Hz 100% modulation	T8	Adjust T8, so that voltage between VT ↔ E may be 25V ± 0.2V.	VT = 25V ± 0.2V
		VT ↔ E	ACVM			
2	RF Sensitivity	FM ANT A	FM SG 88MHz MONO 100Hz 100% modulation	T1 ~ T4	Adjust T1 ~ T4 at 88MHz and VC1 ~ VC4 at 106MHz to make the output reading maximum.	Less than 4dBμ
		OUTPUT	ACVM			
		FM ANT A	FM SG 106MHz MONO 100Hz 100% modulation	VC1 ~ VC4		
		OUTPUT	ACVM			
3	Discriminator balance	FMs ↔ NVcc	DCVM	T9	Adjust for 0V ± 50 mV at detuned point. (AUTO TUNING mode)	
4	Monaural distortion	FM ANT A	FM SG 98.1MHz 70dBμ MONO 100Hz 100% modulation	VC5, VR7	Reduce distortion to minimum. (WIDE mode)	(Less than -66dB) 0.05%
		OUTPUT L, R	DIST. M			
5	Stereo distortion WIDE	FM ANT A	FM SG, SSG 98.1MHz 70dBμ STEREO L or R 1kHz, 100% modulation	T5, L11, VR5, 6	Same as step 4 (WIDE mode)	(Less than -56dB) 0.16%
	Stereo distortion NARROW			VR 3, 4	Same as step 4 (NARROW mode)	
	OUTPUT L, R			DIST. M		
6	Verification of monaural distortion	FM ANT A	FM SG 98.1MHz 70dBμ MONO 1kHz, 100% modulation			Less than -56dB (WIDE mode) 0.16%
		OUTPUT L, R	DIST. M			
7	Separation	FM ANT A	FM SG, SSG 98.1MHz 70dBμ STEREO L or R 1kHz, 100% modulation	VR8, 9	Reduce output level to minimum.	Separation more than 40dB (WIDE mode)
		OUTPUT L, R				

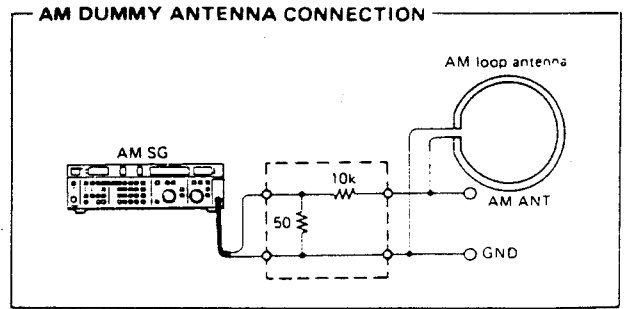
Step	Item to be Adjusted	Connection terminal	Instrument required	Adjustment locations	Adjustment method	Rating or standard
8	Pilot cancel	FM ANT A	FM SG, SSG 98.1MHz 70dB $\mu$ STEREO L or R Pilot signal 9% modulation only	VR10, L12	Observe with oscilloscope and reduce 19kHz carrier leak level to minimum.	Less than -50dB
		OUTPUT L, R	Remove L.P.F Oscilloscope, ACVM			
9	Verification of Discriminator balance	FM ANT A	FM SG 98.1MHz -10dB $\mu$ MONO 1kHz 100% modulation		Verify 0V $\pm$ 50mV at detuned point. (AUTO TUNING mode)	
		FMs $\leftrightarrow$ E	DCVM			
10	Full-scale signal quality meter	FM ANT A	FM SG, SSG 98.1 MHz 80dB $\mu$ STEREO L or R 1kHz, 100% modulation	VR1	Adjust VR1 until all signal quality indicators light up. (WIDE mode)	
11	Verification of Blend	FM ANT A	FM SG, SSG 98.1MHz 70dB $\mu$ STEREO L or R 1kHz, 100% modulation		Check that when blend switch is turned on, separation decreases. (WIDE mode)	
12	IF Offset	FM ANT A	FM SG 98.1MHz 70dB $\mu$ No modulation	VR2 Frequency display	By shorting across terminals D4 and K3, the frequency display shifts 1 digit. Therefore, adjust VR2 until 10kHz digit becomes 0 or 1.	CSL Reception
		D4 $\leftrightarrow$ K3	Short			
13	Verification of auto tuning	FM ANT A	FM SG 98.1MHz 15dB $\mu$ MONO 1kHz 30% modulation	TUNING knob	Automatic reception should be available when the tuning knob is rotated UP and DOWN.	Audio muting should be applied during tuning.
14	Verification of RF ATT	FM ANT A	As above	RF ATT SW	Confirm that reception sensitivity is decreased with RF ATT on.	
15	Verification of Antenna	FM ANT A	FM SG 98.1MHz 20dB $\mu$ MONO 1 kHz 100% modulation	ANTENNA SW	Confirm reception with ANTENNA SW at B position	The ANT B indicator should light.
		FM ANT B			Confirm reception with ANTENNA SW at A position	The ANT A indicator should light.

056-Y1

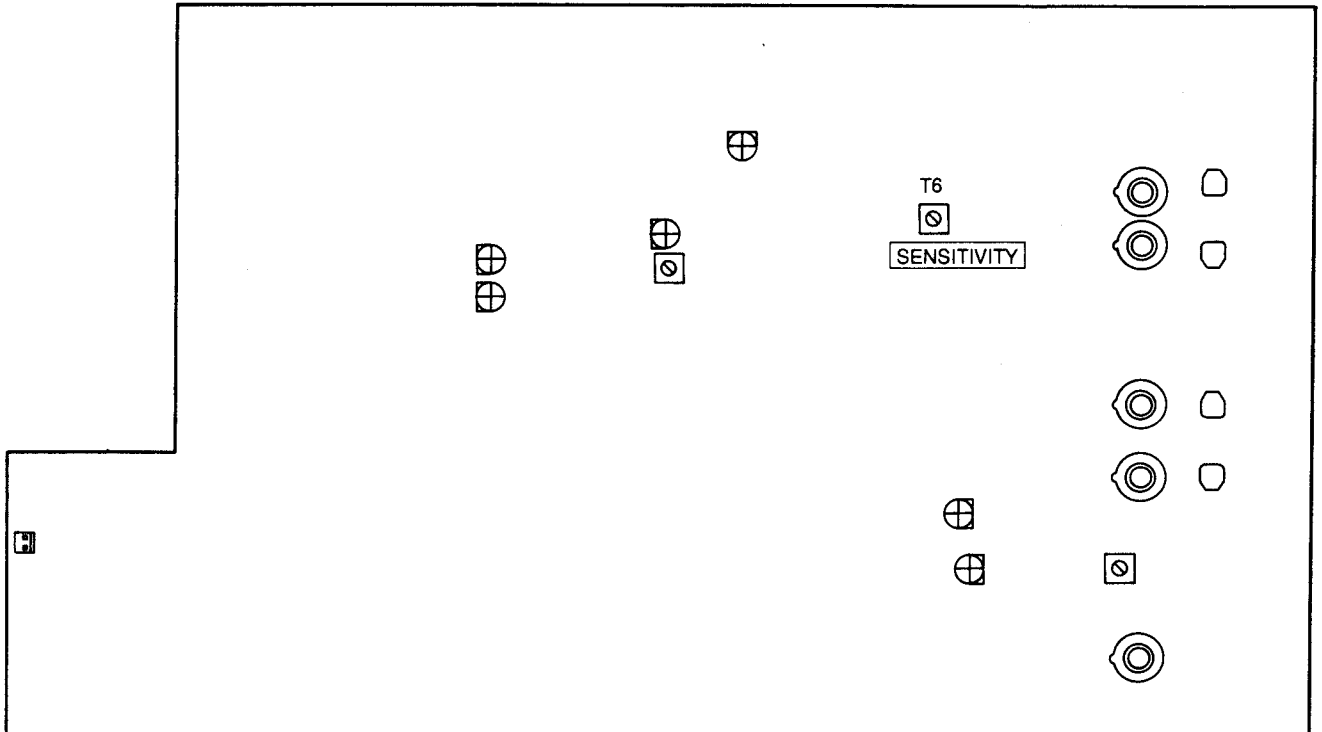


**<AM TUNER SECTION>**

- Connect the AM loop antenna to the AM ANT terminal.
- Connect the AM dummy antenna for adjustment to AM SG.
- Check that the AM SG precision is within  $\pm 0.1\text{kHz}$ .



**• TEST POINTS**



Step	Item to be adjusted	Connection terminal	Instrument required	Adjustment locations	Adjustment method	Rating or standard
1	Sensitivity		AM dummy antenna AM SG 630kHz 1080kHz 1440kHz 58dB $\mu$ 400Hz 30% MOD.	T6	Adjust T6 at 630kHz, 1080kHz, 1440kHz to make the output reading maximum when the preset CH B-1, B-2 and B-3 are received accordingly.	
		OUTPUT	ACVM			
2	Verification of Signal meter	AM ANT	AM dummy antenna AM SG 1080kHz 100dB $\mu$ 400Hz, 30% MOD.		All signal quality indicators light up.	
3	Verification of auto-search	AM ANT	AM dummy antenna AM SG 1080kHz 60dB $\mu$ 400Hz, 30% MOD.		Check that auto search reception is possible with the TUNING knob.	Tuning MODE → AUTO

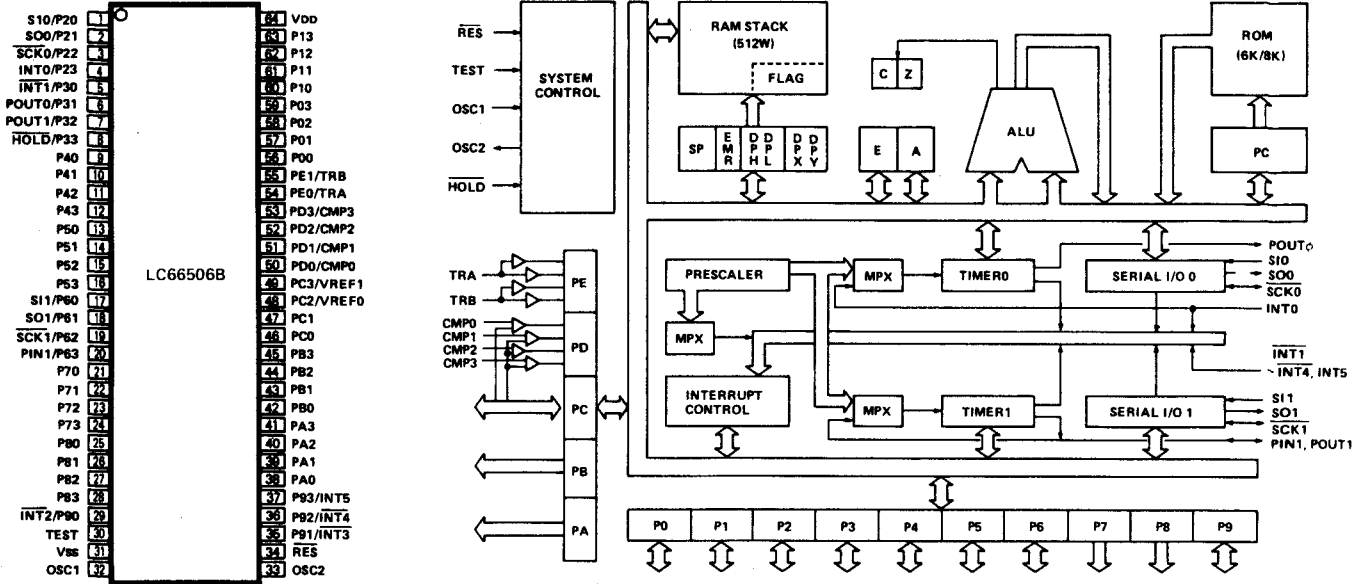
〈DIGITAL CONTROL SECTION〉

Step	Confirmation Item	Connection terminal	Instrument required	Operation key	Confirmation method
1	Preset memory	300Ω/75Ω FM ANT	FM SG, SSG 98.1MHz 70dBμ STEREO L, R 1kHz. 100% modulation	FM, AM TUNING MEMORY PRESET STATION P1-P8 A/B/C/D/E MODE → AUTO ST BLEND → OFF IF MODE → AUTO RF ATT → OFF ANTENNA → A STATION DISPLAY → OFF TUNING MODE → AUTO	1. Receive FM 98.1MHz by means of auto search. 2. Press MEMORY key → MEMORY indicator flashes about 5 seconds. 3. Select A with A/B/C/D/E SW. → "A" lights. 4. Press P1 → "1" lights and MEMORY indicator goes off. MEMORY indicator goes OFF A1 indicator lights. 5. Receive AM 1080kHz. 6. Press MEMORY key → MEMORY indicator flashes about 5 seconds. 7. Select B with A/B/C/D/E SW. → "B" lights. 8. Press P1 and B1 indicator lights.* 9. Press A1 and B1 and check that Content is read out properly. → A1 and B1 light.
		AM ANT	AM SG AM dummy antenna 1080kHz 80dBμ 400Hz, 30% modulation		
2	Tuning modes	Same as step 1	Same as step 1	FM TUNING MODE TUNING	Tune to FM 98.1MHz and check that during MAN'L/MONO reception FM is forced monaural. → AUTO ST indicator goes off. STEREO indicator goes off.
3	Lock confirmation				Confirm that the frequency does not change by turning the TUNING knob when the LOCK SW is pressed during STATION DISPLAY SW OFF mode. → LOCK indicator lights.
4	IF mode confirmation				Confirm that the IF mode switches to MAN'L automatically when the NARROW/WIDE SW is pressed after the preset button 1 is selected and AUTO is selected with the AUTO/MAN'L SW. Confirm that each display changes according to the changed condition. Also, confirm that the mode changes to NARROW when the antenna input is turned down slowly from the AUTO WIDE tuning mode.

<DIGITAL CONTROL SECTION>

Step	Confirmation Item	Connection terminal	Instrument required	Operation key	Confirmation method												
5	FINE TUNING confirmation				<p>Confirm that the FINE TUNING indicator lights when FINE SW is pressed when the preset button 1 or 2 is selected.* Also, confirm that the frequency changes at 10 kHz in FM and 1 kHz in AM.</p> <p>* When the FINE TUNING indicator lights, 0 is displayed on the column for the 10 kHz in FM mode (except for A, B and G).</p>												
6	STATION DISPLAY confirmation				<p>"----" is displayed on the display window when the ON/OFF SW of the STATION DISPLAY is tuned ON. After "----" is displayed, first column flashes and "A" is displayed when the SHIFT SW is pressed (during AUTO or MAN'L tuning). The display changes A, B, C, ... by turning the TUNING knob clockwise, and A, 0, 9, 8, ... by turning the knob counterclockwise. After desired number or character is selected, the second column flashes and "A" is displayed when the SHIFT SW is pressed. Select desired character or number for all four columns and program into the memory. Confirm that the programmed characters and/or numbers are displayed when they are selected.</p> <p>(When the rear panel SW is A, B, or C)</p>												
7	Last station memory			PRESET STATION P1 A/B/C/D/E	<ol style="list-style-type: none"> <li>Press A1 → FM 98.1MHz is shown.</li> <li>Turn POWER key OFF.</li> <li>After 5 seconds, turn POWER key on.</li> <li>Check that A1 content is read out. → A1 indicator lights. FM 98.1MHz is displayed.</li> </ol> <table border="1"> <tbody> <tr> <td>FM</td> <td>87.5~107.9 MHz</td> <td>U, C, R</td> </tr> <tr> <td></td> <td>87.50~108.00 MHz</td> <td>A, B, G, R</td> </tr> <tr> <td>AM</td> <td>530~1710 kHz</td> <td>U, C, R</td> </tr> <tr> <td></td> <td>531~1611 kHz</td> <td>A, B, G, R</td> </tr> </tbody> </table>	FM	87.5~107.9 MHz	U, C, R		87.50~108.00 MHz	A, B, G, R	AM	530~1710 kHz	U, C, R		531~1611 kHz	A, B, G, R
FM	87.5~107.9 MHz	U, C, R															
	87.50~108.00 MHz	A, B, G, R															
AM	530~1710 kHz	U, C, R															
	531~1611 kHz	A, B, G, R															
8	Remote control function confirmation				<p>Confirm that the A/B/C/D/E can be switched and 1 - 8 of the preset station keys can be selected directly with the optional remote control.</p> <p>Confirm that the A/B/C/D/E can be switched and 1 - 8 can be selected (up and down station selection) with the RS remote control (custom code 7A and 7E).</p> <p>Operating distance: more than 7 m (without obstacle).</p>												

μ-COM DATA (LC66506B-4724:IC1)

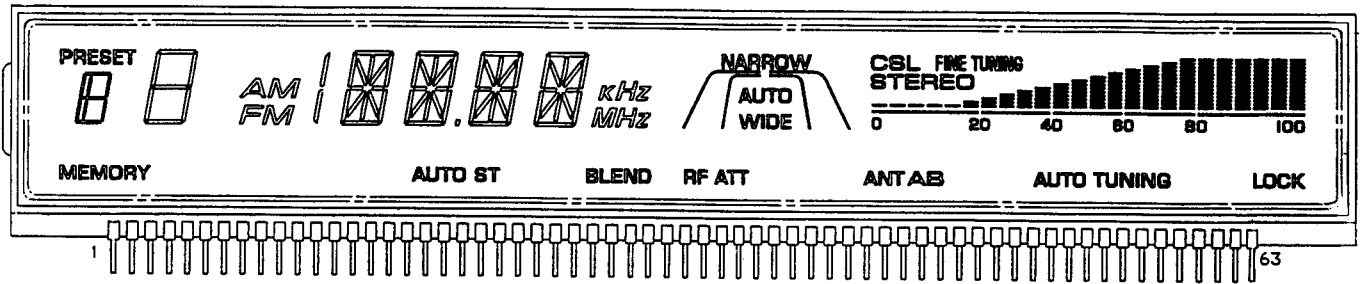


Pin No.	Description	Data	I/O	Option		Pin No.	Description	Data	I/O	Option	
				PU/OD (PD/OD)	RESET H/L					PU/OD (PD/OD)	RESET H/L
1	P20/SI0	C <sub>0</sub>	O	OD		33	OSC2				
2	P21/SO0	C <sub>1</sub>	O	OD		34	RES	RESET	I	-	
3	P22/SCK0	C <sub>2</sub>	O	OD		35	P91/INT3				
4	P23/INT0	C <sub>3</sub>	O	OD		36	P92/INT4				
5	P30/INT1					37	P93/INT5				
6	P32/POUT0					38	PA0	D1	O	OD	
7	P32/POUT1	STEREO IN	I	OD		39	PA1	D2	O	OD	
8	P33/HOLD	HOLD	I	-		40	PA2	D3	O	OD	
9	P40	D <sub>0</sub>	I/O	PU		41	PA3	D4	O	OD	
10	P41	D <sub>1</sub>	I/O	PU		42	PB0	D5	O	OD	
11	P42	D <sub>2</sub>	I/O	PU		43	PB1	D6	O	OD	
12	P43	D <sub>3</sub>	I/O	PU		44	PB2				
13	P50	STB	O	OD		45	PB3				
14	P51	I/O	O	OD		46	PC0	K1	I	OD	
15	P52	24 Preset/40 Preset				47	PC1	K2	I	OD	
16	P53					48	PC2/VREF0	K3	I	OD	
17	P60/SI1	BLEND	O	OD		49	PC3/VREF1	K4	I	OD	
18	P61/SO1	WIDE/NARROW	O	OD		50	PD0/CMP0				
19	P62/SCK1	RF	O	OD		51	PD1/CMP1				
20	P63/PIN1	ANT A/B	O	OD		52	PD2/CMP2	REM0	I	OD	
21	P70	A/D	O	PU		53	PD3/CMP3	REM1	I	OD	
22	P71	MUTE	O	OD		54	PE0/TRA	UP	I	OD	
23	P72	METER MUTE	O	OD		55	PE1/TRB	DOWN	I	OD	
24	P73	MONO	O	OD		56	P00	A0	I	PU	
25	P80					57	P01	A1	I	PU	"L"
26	P81				"H"	58	P02	CE(LC7582)	O	PU	
27	P82					59	P03	CE(LC7583)	O	PU	
28	P83					60	P10	CLK	O	PU	
29	P90/INT2					61	P11	DATA	O	PU	"L"
30	TEST					62	P12	INH	O	PU	
31	Vss					63	P13				
32	OSC1					64	VDD				

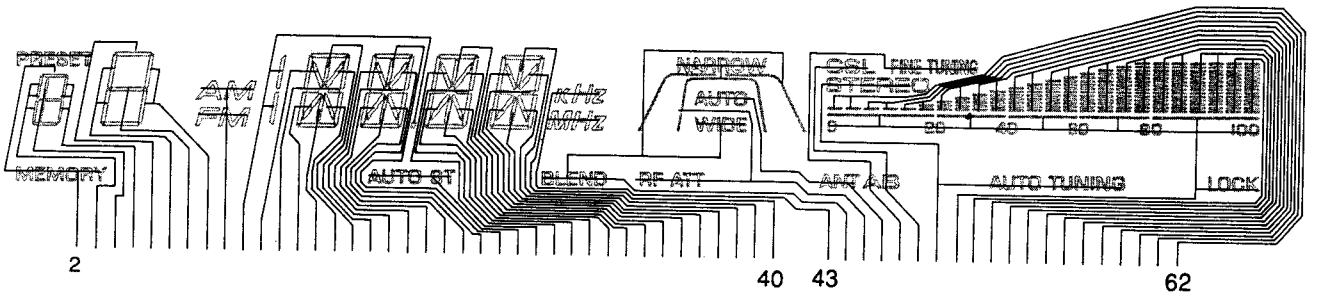
LC66506B

# ■ DISPLAY PIN CONNECTIONS

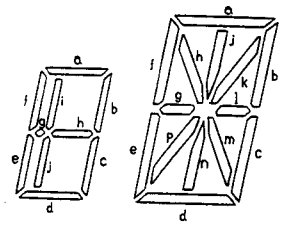
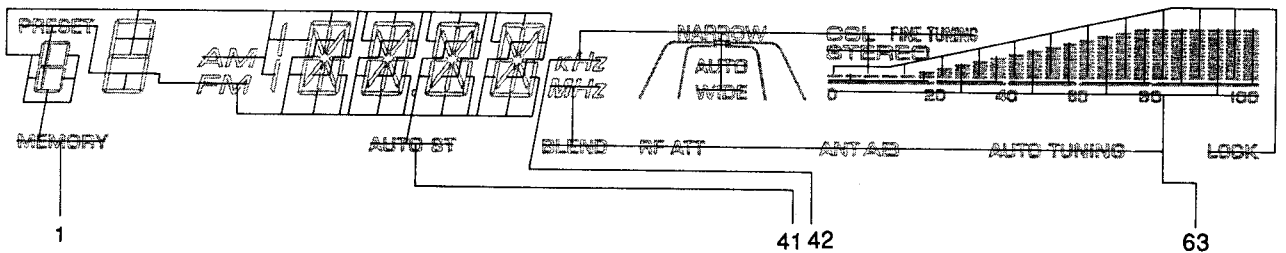
• LCD-8193



## SEGMENT



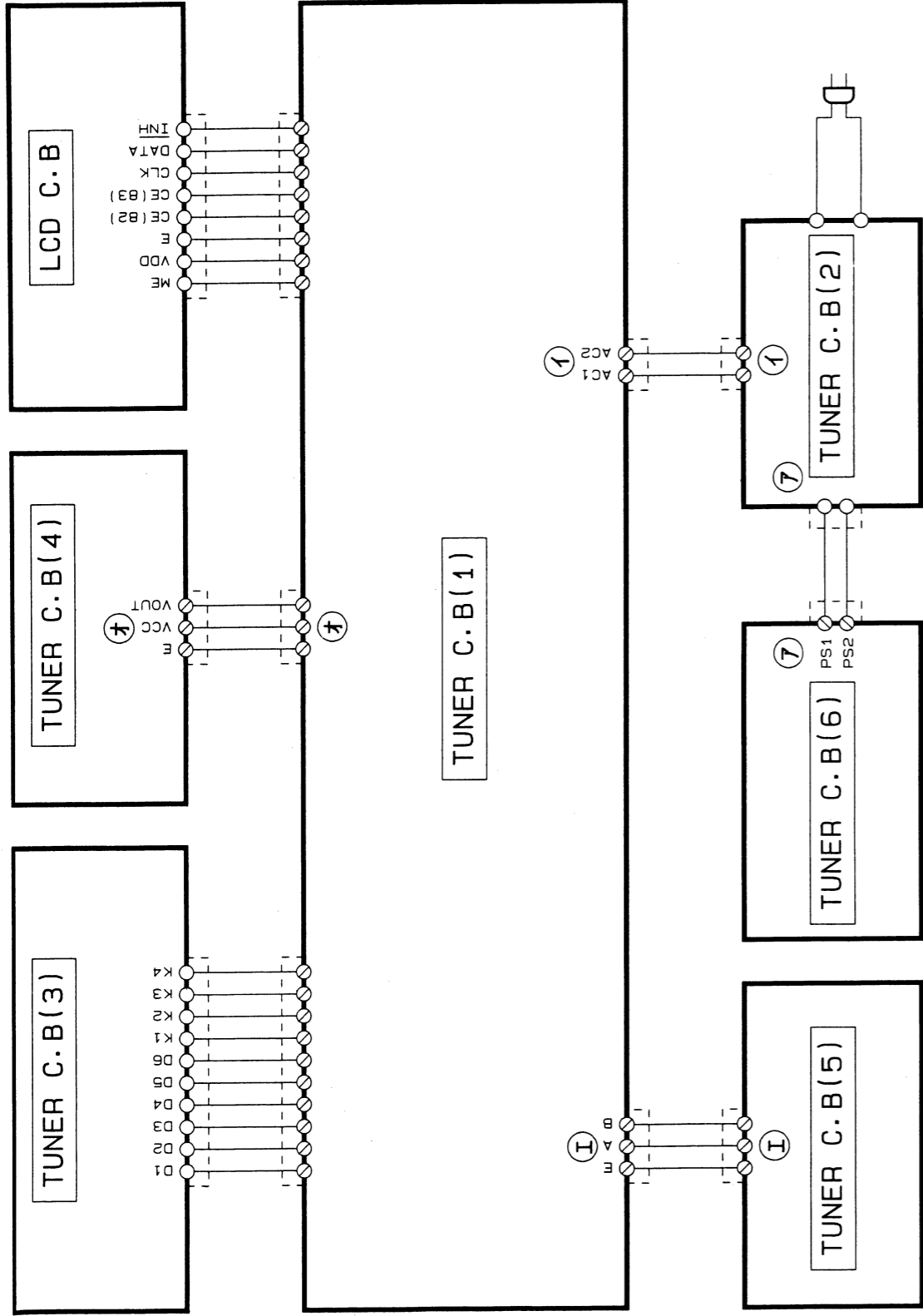
## COMMON



NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
COM1	COM	MEMORY	1ef	1d	1bc	2a	2f	2g	2b	AM	K3	4f	4l	4p	4n	4m	4b	4a	5f
COM2	—	1a	1g	1ij	1h	PRESET	2e	2d	2c	FM	COL	4h	4g	4e	4d	4c	4k	4j	5h
NO	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
COM1	5l	5p	5n	5m	5b	5a	—	6f	6l	6p	6n	6m	6b	6a	7f	7l	7p	7n	7m
COM2	5g	5e	5d	5c	5k	5j	AUTO ST	6h	6g	6e	6d	6c	6k	6j	7h	7g	7e	7d	7c
NO	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57
COM1	7b	7a	—	COM	kHz	WIDE	NARROW	AUTO	FINE TUNING	CSL	STEREO	LOCK	SM23	SM21	SM19	SM17	SM15	SM13	SM11
COM2	7k	7j	COM	—	MHz	BLEND	RF	ANT	A	B	AUTO TUNING	0-100	SM24	SM22	SM20	SM18	SM16	SM14	SM12
NO	58	59	60	61	62	63													
COM3	SM9	SM7	SM5	SM3	SM1	—													
COM4	SM10	SM8	SM6	SM4	SM2	COM													

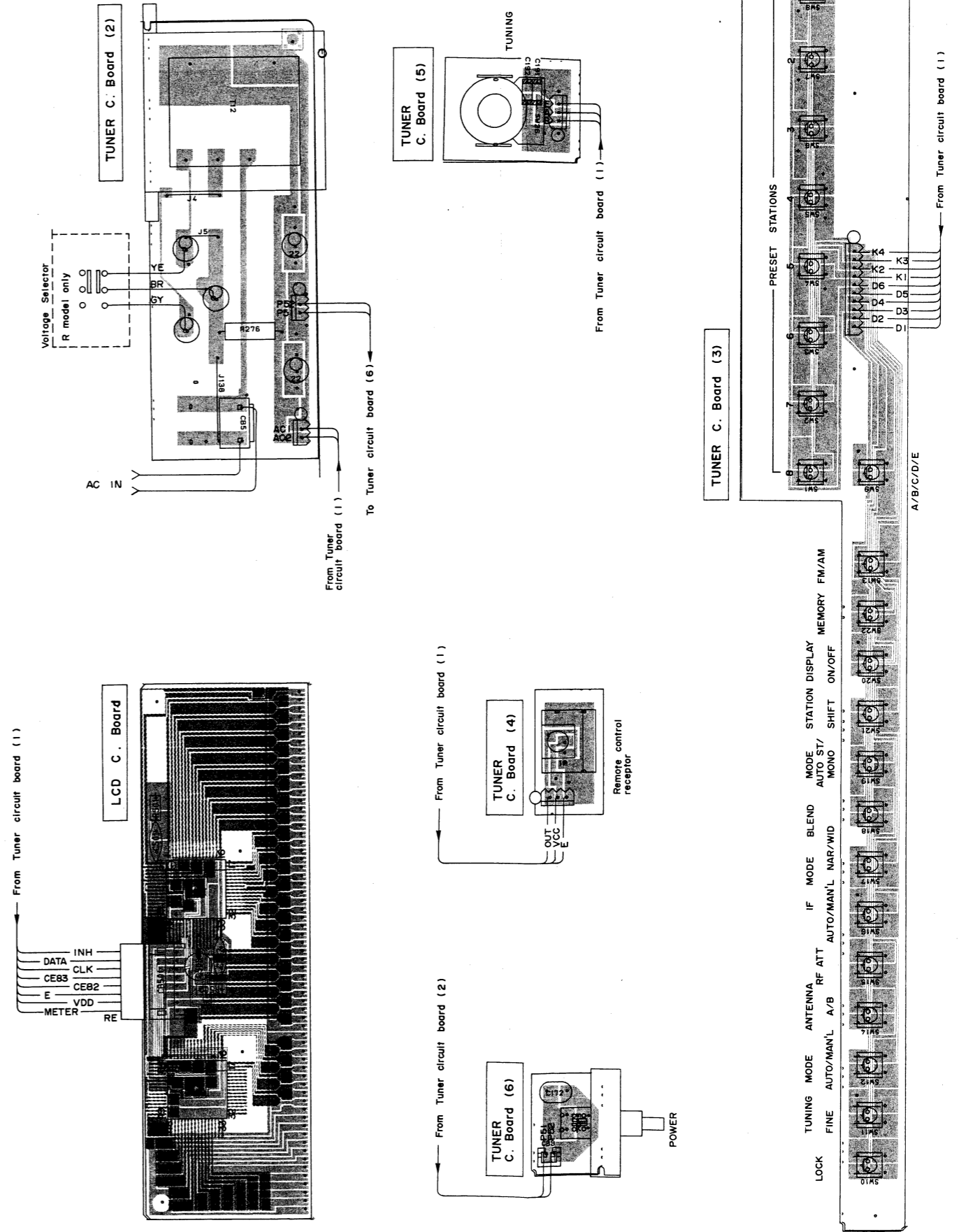


■ WIRING



TX-950

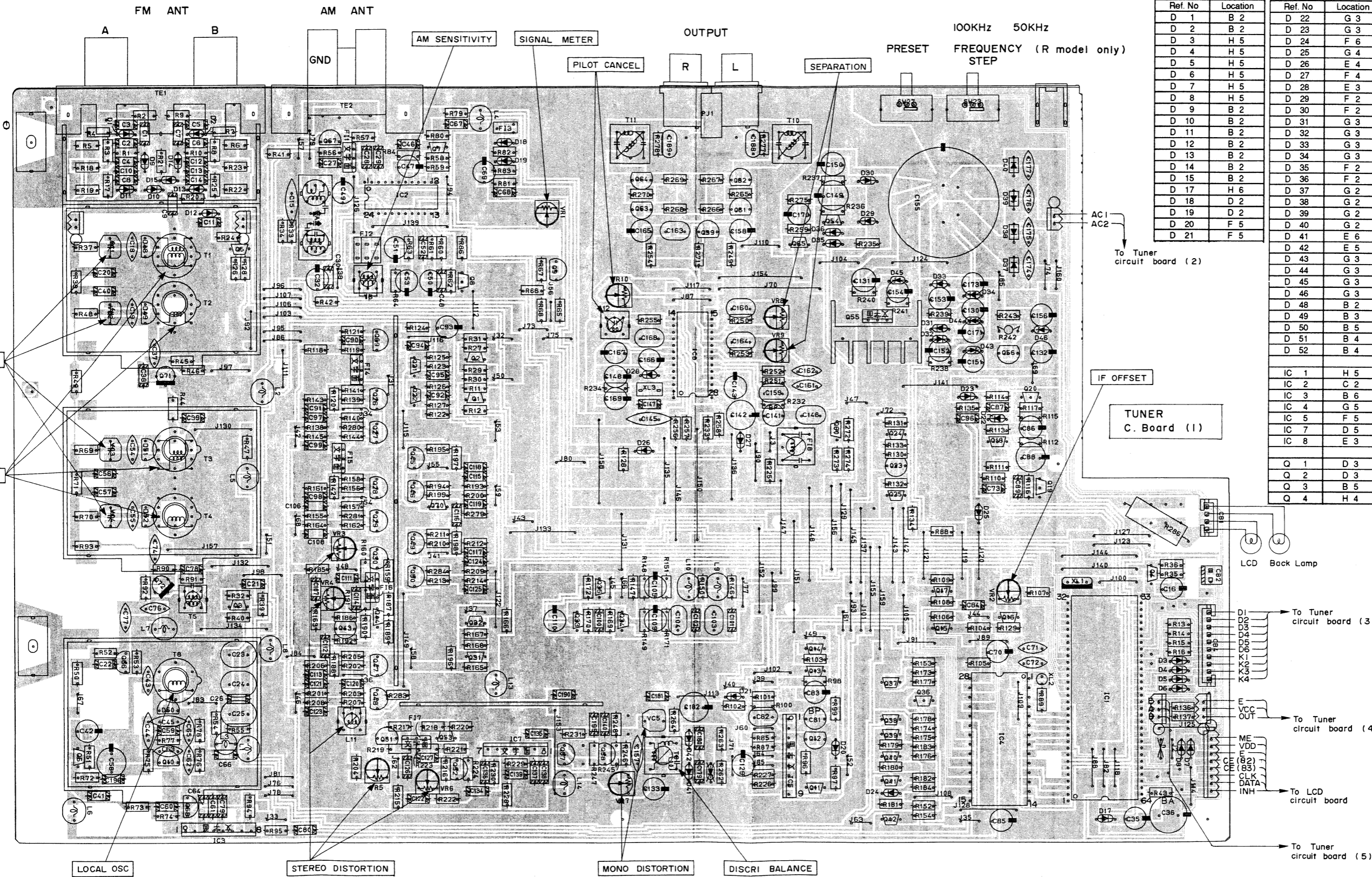
■ PRINTED CIRCUIT BOARD



TX-950



**TX-950**  
**PRINTED CIRCUIT BOARD**



●Semiconductors Location		●Semiconductors Location		●Semiconductors Location	
Ref. No	Location	Ref. No	Location	Ref. No	Location
D 1	B 2	D 22	G 3	Q 5	B 2
D 2	B 2	D 23	G 3	Q 6	A 5
D 3	H 5	D 24	F 6	Q 7	D 2
D 4	H 5	D 25	G 4	Q 8	D 3
D 5	H 5	D 26	E 4	Q 9	D 2
D 6	H 5	D 27	F 4	Q 10	B 5
D 7	H 5	D 28	E 3	Q 11	F 6
D 8	H 5	D 29	F 2	Q 12	F 5
D 9	B 2	D 30	F 2	Q 13	F 5
D 10	B 2	D 31	G 3	Q 14	F 5
D 11	B 2	D 32	G 3	Q 15	G 5
D 12	B 2	D 33	G 3	Q 16	G 5
D 13	B 2	D 34	G 3	D 17	G 4
D 14	B 2	D 35	F 2	D 18	G 4
D 15	B 2	D 36	F 2	D 19	G 4
D 17	H 6	D 37	G 2	D 20	G 3
D 18	D 2	D 38	G 2	D 21	D 3
D 19	D 2	D 39	G 2	D 22	D 3
D 20	F 5	D 40	G 2	D 23	G 4
D 21	F 5	D 41	E 6	D 24	G 4
		D 42	E 5	D 25	G 4
		D 43	G 3	Q 26	C 3
		D 44	G 3	Q 27	C 3
		D 45	G 3	Q 28	C 4
		D 46	G 3	Q 29	C 4
		D 48	B 2	Q 30	C 4
		D 49	B 3	Q 31	D 5
		D 50	B 5	Q 32	D 5
		D 51	B 4	Q 33	E 5
		D 52	B 4	Q 34	E 5
				Q 35	E 4
				Q 36	G 5
				Q 37	F 5
				Q 38	F 5
				Q 39	F 5
				Q 40	F 5
				Q 41	F 6
				Q 42	F 6
				Q 43	C 5
				Q 44	C 5
				Q 45	D 4
				Q 46	D 4
				Q 47	C 5
				Q 48	C 5
				Q 49	D 4
				Q 50	D 4
				Q 51	C 5
				Q 52	D 6
				Q 53	D 5
				Q 54	F 2
				Q 55	F 3
				Q 56	G 3
				Q 57	D 5
				Q 58	E 5
				Q 59	E 2
				Q 60	F 3
				Q 61	F 2
				Q 62	F 2
				Q 63	E 2
				Q 64	E 2
				Q 65	F 2
				Q 66	B 5
				Q 67	C 2
				Q 68	B 6
				Q 69	C 3
				Q 70	D 4
				Q 71	B 3
				Q 72	B 4
				VR 1	D 2
				VR 2	G 4
				VR 3	C 4
				VR 4	C 4
				VR 5	C 6
				VR 6	D 6
				VR 7	E 6
				VR 8	F 3
				VR 9	F 3
				VR 10	E 3



\*Note: If any FM CERAMIC FILTER becomes defective, replace all 5 FM IF-FILTERS with this kit. (Be careful to install the SFE10.7MS3G as F11.)

1

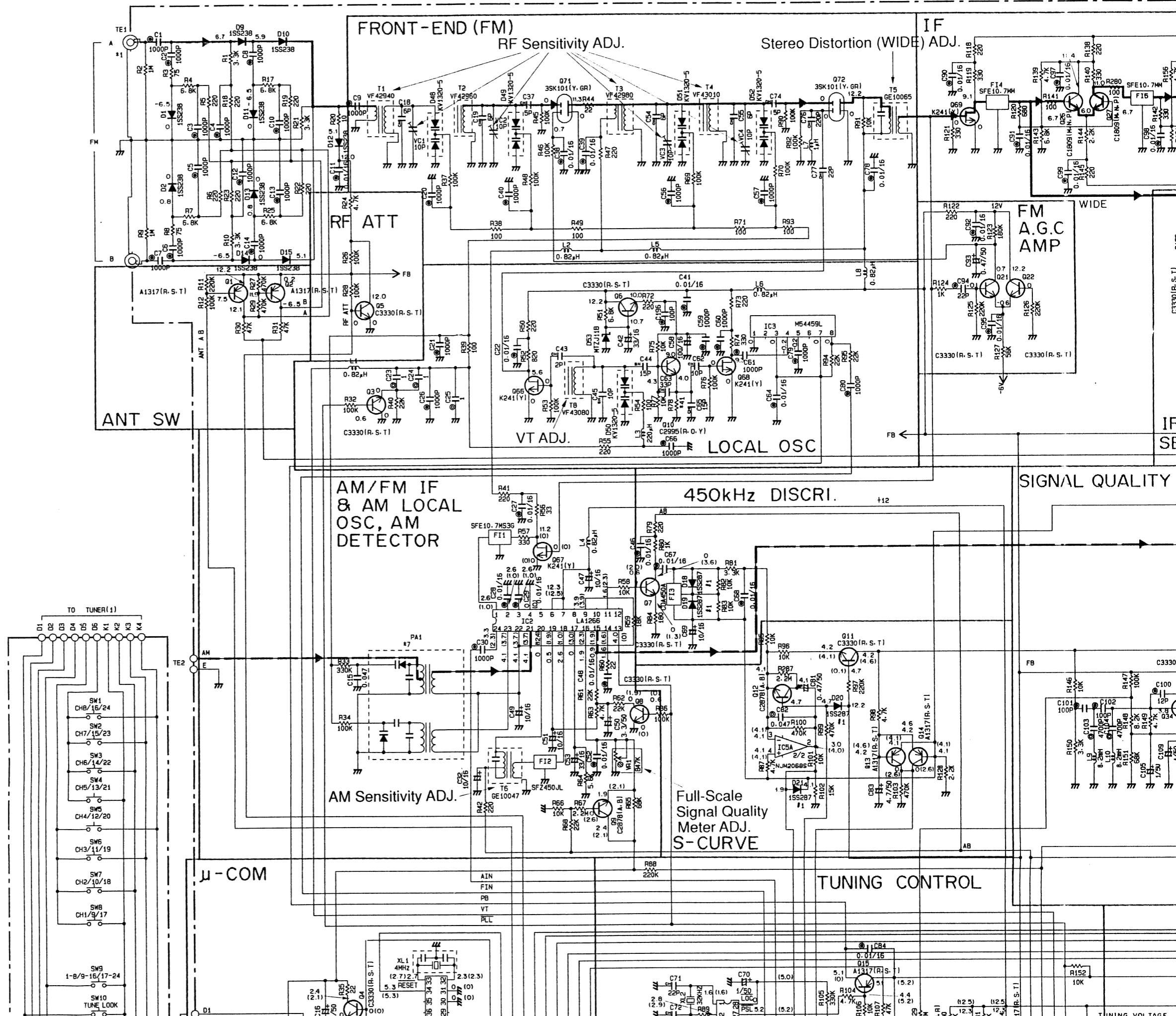
2

3

4

5

6



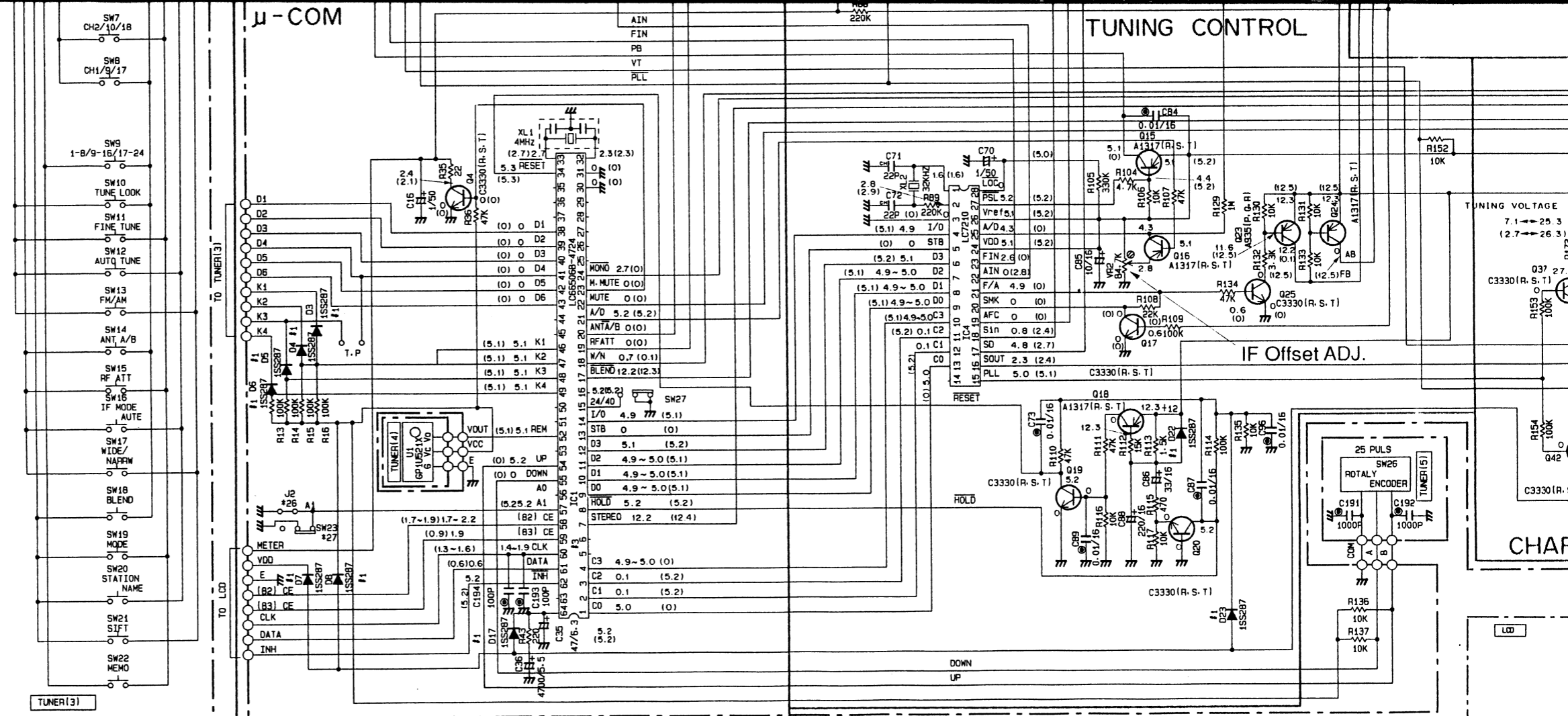
6

7

8

9

10



REMARKS	PARTS NAME	REMARKS
NO MARK	ELECTROLYTIC CAPACITOR	NO MARK
⊗	TANTALUM CAPACITOR	⊗
NO MARK	CERAMIC CAPACITOR	△
⊙	AXIAL LEAD CERAMIC CAPACITOR	▲
⊖	POLYESTER FILM CAPACITOR	⊗
○	POLYSTYRENE FILM CAPACITOR	⊠
Ⓧ	MICA CAPACITOR	⊡
Ⓢ	POLYPROPYLENE FILM CAPACITOR	⊞
●	SEMICONDUCTIVE CERAMIC CAPACITOR	■

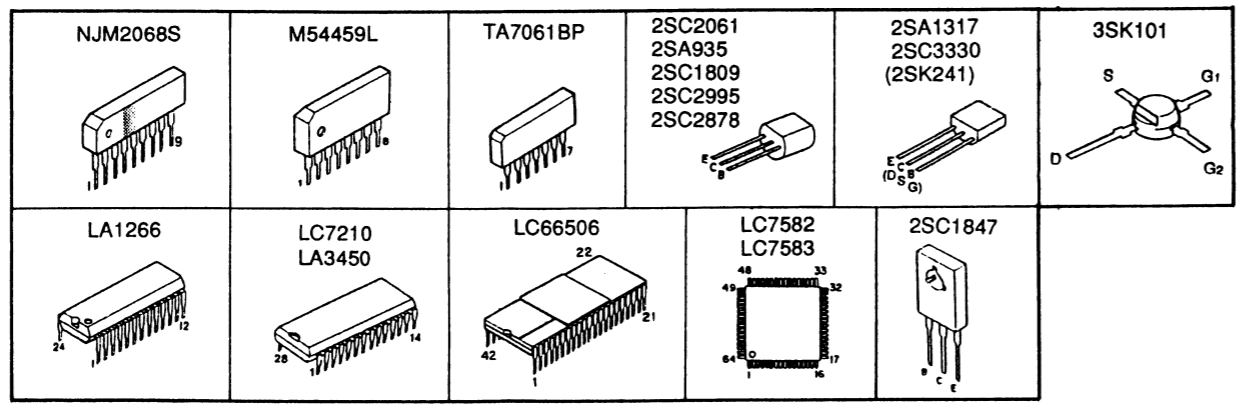
REMARKS	PARTS NAME	REMARKS
NO MARK	CARBON FILM RESISTOR (1/6W)	NO MARK
□	CARBON FILM RESISTOR (1/4W)	□
△	METAL OXIDE FILM RESISTOR	▲
▲	METAL FILM RESISTOR	⊗
⊗	METAL PLATE RESISTOR	⊠
⊠	FIRE PROOF CARBON FILM RESISTOR	⊡
⊡	CEMENT MOLDED RESISTOR	⊞
⊞	SEMI VARIABLE RESISTOR	■
■	CHIP RESISTOR	

Interchangeable Parts at Manufacture-Stage

Mark	Reference Parts Number	Parts Name
#1	03-B-17-36, 41, 42	1SS287 1SS176
#2	D44	MTZJ30B MTZJ30C
#3	IC1	LC66506B-4724 LC66P516

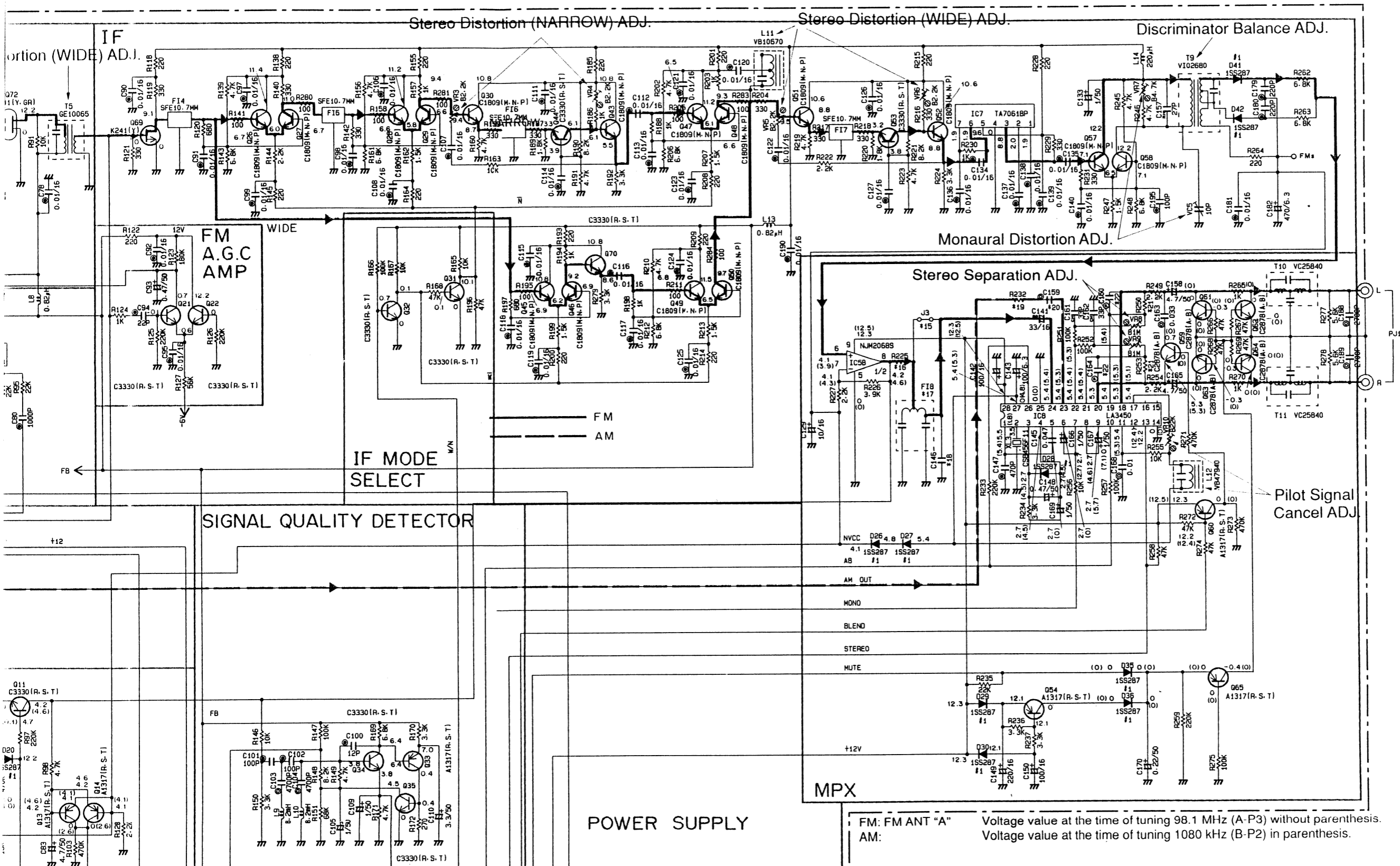
NOTICE

(J)..... Japanese model  
 (U)..... U. S. A model  
 (C)..... Canadian model  
 (A)..... Australian model  
 (G)..... European model  
 (B)..... British model  
 (R)..... General model  
 (P)..... RP model



18

kit.(Be

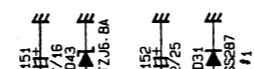


TUNING CONTROL

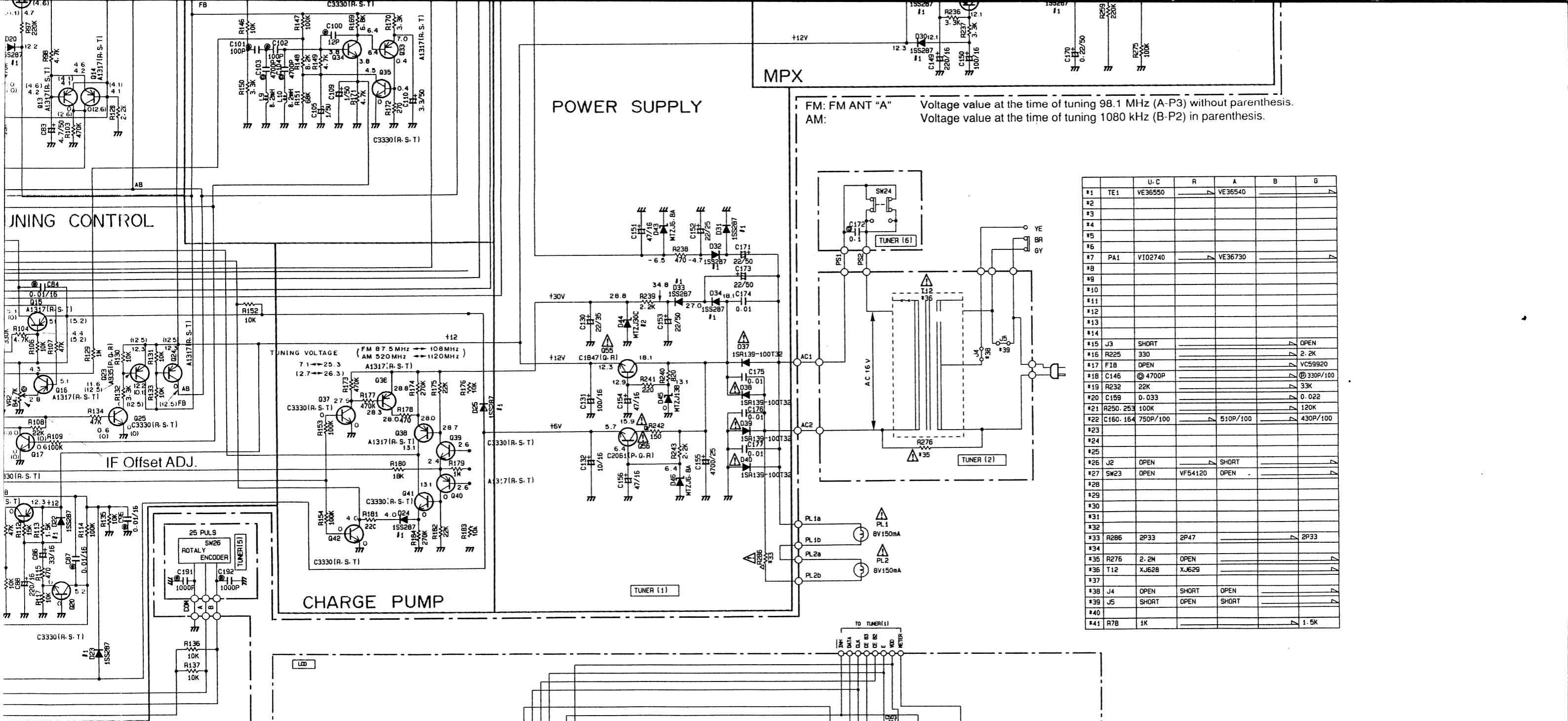
POWER SUPPLY

MPX

FM: FM ANT "A" Voltage value at the time of tuning 98.1 MHz (A-P3) without parenthesis.  
 AM: Voltage value at the time of tuning 1080 kHz (B-P2) in parenthesis.



	U.C	R	A	B	G
#1	TE1	VE36550	7	VE36540	7
#2					
#3					
#4					
#5					

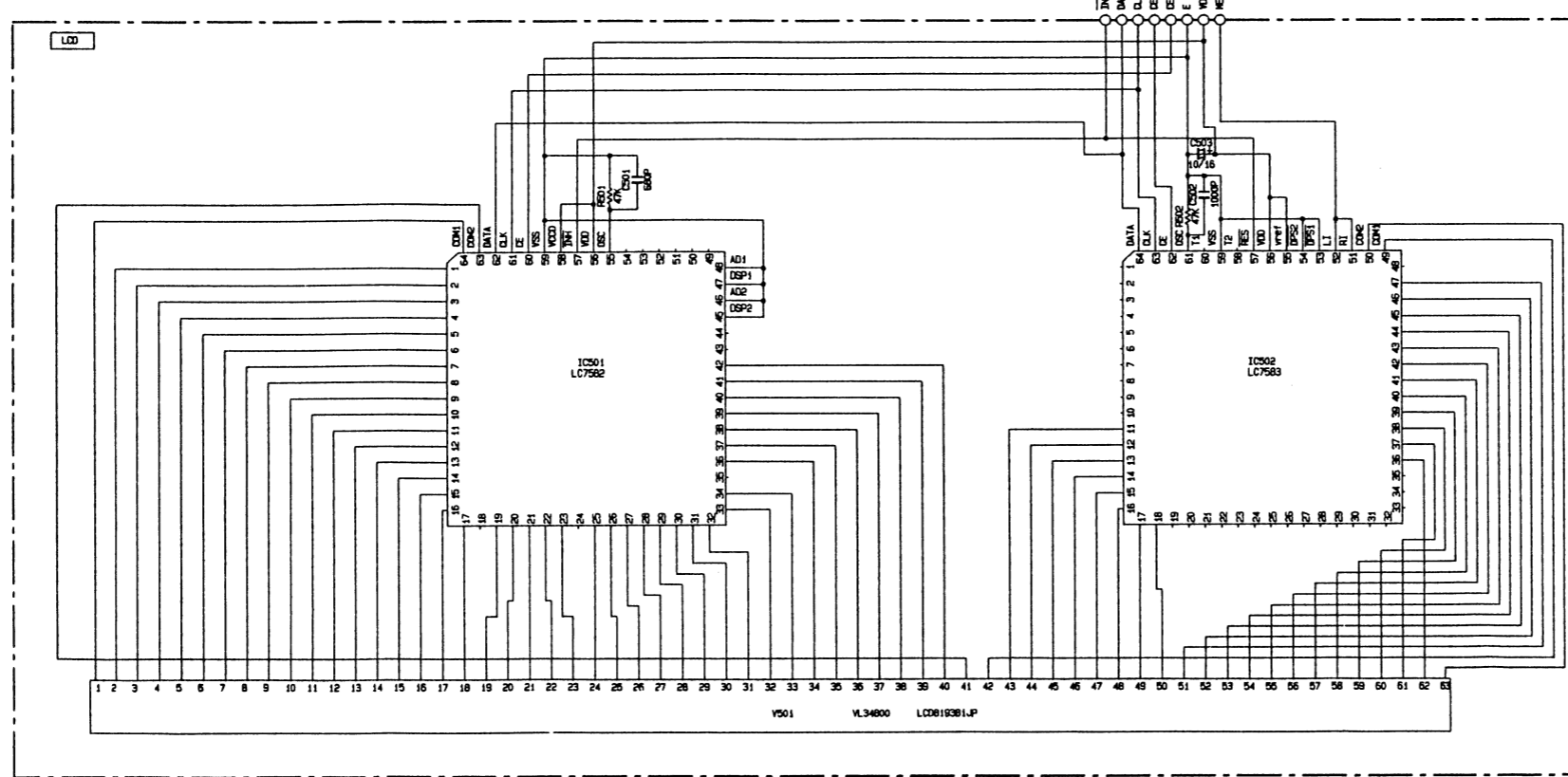


#	U.C	R	A	B	G
*1	TE1	VE36550	VE36540		
*2					
*3					
*4					
*5					
*6					
*7	PA1	VI02740	VE36730		
*8					
*9					
*10					
*11					
*12					
*13					
*14					
*15	J3	SHORT			OPEN
*16	R225	330			2.2K
*17	F18	OPEN			VC59920
*18	C146	4700P			330P/100
*19	R232	22K			33K
*20	C159	0.033			0.022
*21	R250, 253	100K			120K
*22	C160, 164	750P/100		510P/100	430P/100
*23					
*24					
*25					
*26	J2	OPEN		SHORT	
*27	SW23	OPEN	VF54120	OPEN	
*28					
*29					
*30					
*31					
*32					
*33	R286	2P33	2P47		2P33
*34					
*35	R276	2.2N	OPEN		
*36	T12	XJ628	XJ629		
*37					
*38	J4	OPEN	SHORT	OPEN	
*39	J5	SHORT	OPEN	SHORT	
*40					
*41	R7B	1K			1.5K

Interchangeable Parts at Manufacture-Stage

Mark	Reference Parts Number	Parts Name
#1	03-B, 17-36, 41, 42	1SS287 1SS176
#2	D44	MTZJ308 MTZJ30C
#3	IC1	LC66506B-4724 LC66P516

NOTICE  
 (J)..... Japanese model  
 (U)..... U.S.A model  
 (C)..... Canadian model  
 (A)..... Australian model  
 (G)..... European model  
 (B)..... British model  
 (R)..... General model  
 (P)..... RP model



**WARNING**

Components having special characteristics are marked  $\Delta$  and must be replaced with parts having specifications equal to those originally installed.

- Carbon resistors (1/6W or 1/4W) are not included in the ELECTRICAL PARTS list. For the parts No. of the carbon resistor, refer to last page.

**PARTS LIST**

**ELECTRICAL PARTS**

Ref. NO.	PART NO.	Description			部 品 名	Remarks	Markets	ランク
	VL493800	TUNER CIRCUIT BOARD			チューナーシート		UC	
	VL493900	TUNER CIRCUIT BOARD			チューナーシート		R	
	VL494000	TUNER CIRCUIT BOARD			チューナーシート		AB	
	VL494200	TUNER CIRCUIT BOARD			チューナーシート		G	
	FA153270	MYLAR FILM CAP	2700pF	50V	マイラーコン	C188, 189		
	FA153470	MYLAR FILM CAP	4700pF	50V	マイラーコン	C103, 104		
	FA153470	MYLAR FILM CAP	4700pF	50V	マイラーコン	C146	UCRAB	
	UT452330	POLYPROPYLENE FILM CAP	330pF	100V	PPコン	C146	G	
	FA154100	MYLAR FILM CAP	0.01uF	50V	マイラーコン	C168		
	FA154330	MYLAR FILM CAP	0.33uF	50V	マイラーコン	C159	UCRAB	
	FA154220	MYLAR FILM CAP	0.022uF	50V	マイラーコン	C159	G	
	FA154330	MYLAR FILM CAP	0.33uF	50V	マイラーコン	C163		
	FA154470	MYLAR FILM CAP	0.047uF	50V	マイラーコン	C82		
	FA155100	MYLAR FILM CAP	0.1uF	50V	マイラーコン	C172		
	FA156100	MYLAR FILM CAP	1uF	50V	マイラーコン	C23-25		
	UT452750	POLYPROPYLENE FILM CAP	750pF	100V	PPコン	C160, 164	UCR	
	UT452510	POLYPROPYLENE FILM CAP	510pF	100V	PPコン	C160, 164	AB	
	UT452430	POLYPROPYLENE FILM CAP	430pF	100V	PPコン	C160, 164	G	
	FG211100	CERAMIC CAP	10pF	50V (SH)	セラコン	C45		
	F1461150	CERAMIC CAP	15pF	50V (SH)	セラコン	C44		
	FG244100	CERAMIC CAP	0.01uF	50V	セラコン	C174-177		
	FG244470	CERAMIC CAP	0.047uF	50V	セラコン	C15, 145		
	VI026900	CERAMIC CAP	27pF	50V (RH)	セラコン	C157		
	VA759900	CERAMIC CAP	2pF	50V (CH)	セラコン	C43		
	VA760200	CERAMIC CAP	5pF	50V (CH)	セラコン	C37, 74		
	VA760300	CERAMIC CAP	6pF	50V (CH)	セラコン	C18, 19, 54, 55		
	VA760600	CERAMIC CAP	10pF	50V (CH)	セラコン	C62		
	VA760800	CERAMIC CAP	15pF	50V (CH)	セラコン	C65		
	VA761000	CERAMIC CAP	22pF	50V (CH)	セラコン	C71, 72, 77		
	VA761200	CERAMIC CAP	33pF	50V (CH)	セラコン	C63, 161, 162		
	VA777700	CERAMIC CAP	220pF	50V (CH)	セラコン	C76		
	VG276000	CERAMIC CAP	12pF	50V	円筒セラコン	C100		
	VG276600	CERAMIC CAP	22pF	50V	円筒セラコン	C94		
	VF466800	CERAMIC CAP	100pF	50V	円筒セラコン	C101, 102, 195, 196		
	VF466800	CERAMIC CAP	100pF	50V	円筒セラコン	C193, 194		
	VG278400	CERAMIC CAP	220pF	50V	円筒セラコン	C179, 180		
	VF466900	CERAMIC CAP	470pF	50V	円筒セラコン	C147		
	VF467000	CERAMIC CAP	1000pF	50V	円筒セラコン	C1-10, 12-14, 20, 21, 26, 30, 40, 56, 57, 59-61, 66, 70, 80, 101, 192		
	VF467300	CERAMIC CAP	0.01uF	16V	円筒セラコン	C11, 22, 27-29, 38, 39, 41, 46, 48, 52, 64, 67, 68, 73, 78, 84, 87, 89-92, 95-99, 106-108, 111-127, 134-140, 181, 190		
	UJ817470	ELECTROLYTIC CAP	47uF	6.3V	ケミコン	C35		
	UJ818100	ELECTROLYTIC CAP	100uF	6.3V	ケミコン	C143		
	UJ818470	ELECTROLYTIC CAP	470uF	6.3V	ケミコン	C182		
	UJ837100	ELECTROLYTIC CAP	10uF	16V	ケミコン	C32, 47, 49, 51, 69, 85, 129, 132		

\* : New Parts (新規部品)

ランク : Japan only

Ref. NO.	PART NO.	Description	部 品 名		Remarks	Markets	ランク
	UJ737330	ELECTROLYTIC CAP	33uF	16V	ケミコン	C42,53,86	
	UJ837470	ELECTROLYTIC CAP	47uF	16V	ケミコン	C151,154,156	
	UJ738100	ELECTROLYTIC CAP	100uF	16V	ケミコン	C58,131,142,150	
	UJ738220	ELECTROLYTIC CAP	220uF	16V	ケミコン	C88,149	
	UJ847220	ELECTROLYTIC CAP	22uF	25V	ケミコン	C152	
	UJ857220	ELECTROLYTIC CAP	22uF	35V	ケミコン	C130	
	UJ865220	ELECTROLYTIC CAP	0.22uF	50V	ケミコン	C170	
	UJ865470	ELECTROLYTIC CAP	0.47uF	50V	ケミコン	C93,148	
	UJ766100	ELECTROLYTIC CAP	1uF	50V	ケミコン	C16,70,105,109,133,166,167,169	
	UJ866330	ELECTROLYTIC CAP	3.3uF	50V	ケミコン	C50,110	
	UJ866470	ELECTROLYTIC CAP	4.7uF	50V	ケミコン	C83,158,165	
	UJ867220	ELECTROLYTIC CAP	22uF	50V	ケミコン	C153,171,173	
	VB099500	ELECTROLYTIC CAP	4700uF	25V	ブロックケミコン	C155	
	UK737330	ELECTROLYTIC CAP	33uF	16V	B Pケミコン	C141	
	UK165470	ELECTROLYTIC CAP	0.47uF	50V	B Pケミコン	C81	
	VB170100	ELECTROLYTIC CAP	4.7mF	5.5V	バックアップケミコン	C36	
	VF431300	TRIMMER CAP	VCT51A712A	10P	トリマーコンデンサ	VC1-5	
	XJ628A00	POWER TRANSFORMER			電源トランス	T12	UC
	XJ629A00	POWER TRANSFORMER			電源トランス	T12	RABG
	GE100470	AM COIL	450KHz		AM I F Tコイル	T6	
	GE100650	FM COIL			FM I F Tコイル	T5	
	VI026800	COIL	10.7MHz		FMディスクリコイル	T9	
	VF429400	COIL, FM ANTENNA	FE-12C		FMアンテナコイル	T1	
	VF429600	COIL, FM RF	FE-12C		FM R Fコイル A	T2	
	VF429800	COIL, FM RF	FE-12C		FM R Fコイル B	T3	
	VF430100	COIL, FM RF	FE-12C		FM R Fコイル C	T4	
	VF430800	COIL, FM OSC	FE-12C		FM O S Cコイル	T8	
	VB056900	COIL	220uH		コイル	L3	
	VB100300	COIL	8.2mH	EL0607	コイル	L9,10	
	VB109600	COIL	220uH	EL0606RA	固定コイル	L14	
	VB170300	COIL	1uH	EL0606RA	固定コイル	L7	
	VF963900	COIL	0.82uH	EL0405	コイル	L1,2,4-6,8,13	
	VB106700	FM COIL	10.7MHz		FM I F Tコイル	L11	
	HV455150	FLAME PROOF CARBON RESISTOR	150 Ω	1/4W	不燃化カーボン抵抗	R242	
	HL324330	METAL OXIDE RESISTOR	33 Ω	2W	酸化金属被膜抵抗	R286	UCG
	HL324470	METAL OXIDE RESISTOR	47 Ω	2W	酸化金属被膜抵抗	R286	RAB
	IG041410	IC	M54459		IC	IC3	
	IG049100	IC	LC7210		IC	IC4	
	XA956A00	IC	NJH2068S		IC	IC5	
	XB760A00	IC	LA1266		IC	IC2	
	XB761001	IC	LA3450		IC	IC8	
	XG682A00	IC	TA7061BP		IC	IC7	
	XJ531A00	IC	LC66506B-4724		IC	IC1	
	VG990800	LIGHT DETECTING MODULE	GP1U521X		リモコン受光ユニット	U1	
	VF541200	SLIDE SWITCH	SSSF11		スライド SW	SW27	
	VF541200	SLIDE SWITCH	SSSF11		スライド SW	SW23	R
	VF541300	PUSH SWITCH	SPUP12		プッシュ SW	SW24	
	KA906380	PUSH SWITCH			プッシュ SW	SW1-22	
	VI027100	ROTARY ENCODER	EVQ-VQV F20 24B		ロータリーエンコーダ	SW26	

\* : New Parts (新規部品)

ランク : Japan only



Ref. NO.	PART NO.	Description	部 品 名	Remarks	Markets	ラック
	VE365600	TERMINAL, PUSH	2P	ブッシュターミナル	TE2	
	VE365500	SOCKET	2P F-TYPE	ソケット	TE1	UCR
	VE365400	PLUG	PAL	PALプラグ	TE1	ABG
	VE366700	PIN JACK	2P	ピンジャック	PJ1	
	LB201390	BASE PIN	NH 2P TE	ベースポスト	CB2	
	VD004500	BASE PIN	PH i-TYPE 2P TE	ベースピン	CB3	
	VD004700	BASE PIN	PH i-TYPE 4P TE	ベースピン	CB1	
	VD005300	BASE PIN	PH i-TYPE 10P TE	ベースピン	CB4	
	VG879900	BASE PIN	VH 2P TE	ベースピン	CB5	
	VI027400	AM COIL PACK		AMコイルパック	PA1	UCR
	VE367300	AM COIL PACK		AMコイルパック	PA1	ABG
	VB479400	FILTER	19KHz FB-7SG	L.Cフィルター	L12	
	VC258400	FILTER, MPX	FB-10D	MPXフィルター	T10,11	
	VC599200	FILTER	190KHz FB-10B	L.Cフィルター	F18	G
	VC219000	CERAMIC FILTER	SFZ450JL3	セラミックフィルター	Fi2	
	GG000420	CERAMIC DISCRIMINATOR, AM	CDA450A	AMセラミックディスクリ	Fi3	
	VI027200	CERAMIC FILTER KIT, FM	SFE10.7MMx4	セラミックフィルタキット	Fi4-7(5p in a pack)	* Note
		CERAMIC FILTER KIT, FM	SFE10.7MS3G	セラミックフィルタキット	Fi1	* Note
	QU003900	CRYSTAL RESONATOR	32KHz	水晶振動子	XL2	
	GG000750	CERAMIC RESONATOR	18.95MHz CSB456F11	セラミック振動子	XL3	
	VE906000	CERAMIC RESONATOR	4MHz CST4.00MGW	セラミック振動子	XL1	
	VA787700	PRE-SET POTENTIOMETER	B2.2KΩ	半固定VR	VR3-6	
	VA787900	PRE-SET POTENTIOMETER	B4.7KΩ	半固定VR	VR2,7	
	VA788800	PRE-SET POTENTIOMETER	B1HΩ	半固定VR	VR8,9	
	VB861600	PRE-SET POTENTIOMETER	B22KΩ	半固定VR	VR10	
	VB861800	PRE-SET POTENTIOMETER	B47KΩ	半固定VR	VR1	
	IA093510	TRANSISTOR	2SA935 P,Q,R	トランジスタ	Q23	
	VC218700	TRANSISTOR	2SA1317 R,S,T	トランジスタ	Q1,2,13-16,18,24,33,36 .38,40,54,60,65	
	IC206110	TRANSISTOR	2SC2061 P,Q,R	トランジスタ	Q56	△
	IC287820	TRANSISTOR	2SC2878 A,B	トランジスタ	Q9,12,59,61-64	
	VB433300	TRANSISTOR	2SC1809 M,N,P	トランジスタ	Q26-30,43,45-52,57,58	
	VC218900	TRANSISTOR	2SC3330 R,S,T	トランジスタ	Q3-8,11,17,19-22,25,31 .32,34,35,37,39,41,42, 44,53,70	
	VB106200	TRANSISTOR	2SC2995 R,O,Y	トランジスタ	Q10	
	VC218800	TRANSISTOR	2SC1847 Q,R	トランジスタ	Q55	△
	VB100600	FET	2SK241 Y	FET	Q66-69	
	VB105700	FET	3SK101 Y,GR	FET	Q71,72	
	VI531000	DIODE	1SS238	ダイオード	D1,2,9-15	
	VB236300	DIODE	1SS176	ダイオード	D3-8,17-36,41,42	
	VH770800	DIODE	1SR139-100 T-32	ダイオード	D37-40	△
	VG438200	ZENER DIODE	HTZJ6.8A	ツェナーダイオード	D43,46	
	VG439900	ZENER DIODE	HTZJ11B	ツェナーダイオード	D53	
	VG440500	ZENER DIODE	HTZJ13B	ツェナーダイオード	D45	
	VG443300	ZENER DIODE	HTZJ30B	ツェナーダイオード	D44	
	VH747700	VARACTOR DIODE	KV1320-5	バラクターダイオード	D48-52(PACK)	
	VL494300	SWITCH ASS'y		SW ASSY		R
	BB071360	SCREW TERMINAL	8.3x13	ネジ端子		
	VG266500	RADIATOR	OSH2425S-SP	放熱器		

\* : New Parts (新規部品)

ラック : Japan only

\* Note: If any FM CERAMIC FILTER becomes defective, replace all 5 FM IF-FILTERS with this kit. (Be careful to install the SFE10.7MS3G as Fi1.)

Ref. NO.	PART NO.	Description	部 品 名		Remarks	Markets	ランク
	VF208300	SHIELD CASE	A		シールドケース		
	VF208400	SHIELD CASE	B		シールドケース		
	VH072000	SHIELD PLATE			プレート シールド		
	BB069510	GROUND METAL			ランド金具		
	BB070410	BUS BAR	L=55		バスバー		
	BB070420	BUS BAR	L=100		バスバー		
	ED330066	BIND HEAD SCREW	3x6	FCRM3-BL	バインド小ネジ	PACK	
	VL493700	LCD CIRCUIT BOARD			LCDシート		
	FG212680	CERAMIC CAP	680pF	50V	セラコン	C501	
	FG213100	CERAMIC CAP	1000pF	50V	セラコン	C502	
	UJ837100	ELECTROLYTIC CAP	10uF	16V	ケミコン	C503	
	XB417A00	IC	LC7582		IC	IC501	
	XB764A00	IC	LC7583		IC	IC502	
	VB858700	BASE PIN	PH	8P SE	ベースピン	CB501	

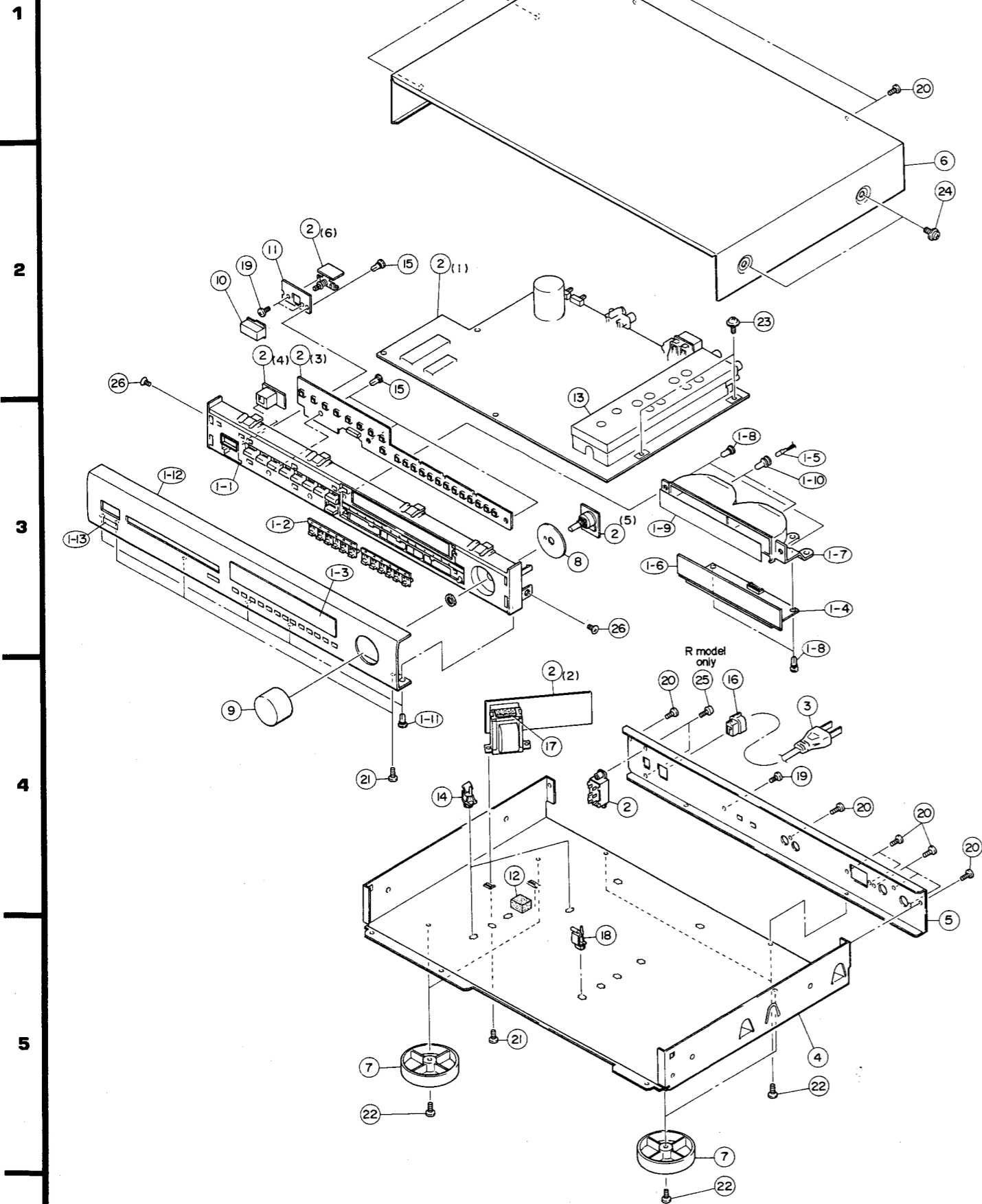
\* : New Parts (新規部品)

ランク : Japan only

TX-950



EXPLODED VIEW



MECHANISM PARTS

Ref. NO.	PART NO.	Description	部 品 名	Remarks	Markets	注
1- 1	VH901900	SUB CHASSIS	サブシャーシ	BL		
1- 1	VH902000	SUB CHASSIS	サブシャーシ	T		
1- 2	VH901200	BUTTON	ボタン	BL		
1- 2	VH901300	BUTTON	ボタン	T		
*	1- 3	VL373800	WINDOW PANEL	ウインドウ		
*	1- 4	VL493700	LCD CIRCUIT BOARD	LCDシート		
*	1- 5	VL775300	LAMP	150mA 8V ランプ		
*	1- 6	VL348000	LCD	LCD-8193B1JP LCD表示器		
1- 7	VF206800	REFLECTOR	リフレクター			
1- 8	CB605620	PLASTIC RIVET	プラスチックリベット			
1- 9	VF211000	SHEET	DIFFUSION シート			
1-10	VF444500	LAMP CAP	AG-4015 ランプキャップ			
1-11	CB609260	PLASTIC RIVET	プラスチックリベット			
*	1-12	VL373400	FRONT PANEL	フロントパネル	BL	
*	1-12	VL373500	FRONT PANEL	フロントパネル	T	
1-13	VH897500	LENS	レンズ			
*	2	VL493800	TUNER CIRCUIT BOARD	チューナーシート		UC
*	2	VL493900	TUNER CIRCUIT BOARD	チューナーシート		R
*	2	VL494000	TUNER CIRCUIT BOARD	チューナーシート		AB
*	2	VL494200	TUNER CIRCUIT BOARD	チューナーシート		G
3	VL012900	POWER CORD ASS'y	パワーコードASSY			UC
3	VL238100	POWER CORD ASS'y	パワーコードASSY			R
3	VL238400	POWER CORD ASS'y	パワーコードASSY			A
3	VL238600	POWER CORD ASS'y	パワーコードASSY			B
3	VL238900	POWER CORD ASS'y	パワーコードASSY			G
4	VH898600	CHASSIS	シャーシ			
*	5	VL373000	REAR PANEL	リヤパネル		UC
*	5	VL373100	REAR PANEL	リヤパネル		R
*	5	VL373200	REAR PANEL	リヤパネル		AB
*	5	VL373300	REAR PANEL	リヤパネル		G
6	VH898400	TOP COVER	トップカバー	BL		
6	VH898500	TOP COVER	トップカバー	T		
7	VI615300	LEG	レッグ			
8	VH900300	SHIELD PLATE	RE SHIELD プレート			
9	VH877400	KNOB	TUNING ノブ	BL		
9	VH877500	KNOB	TUNING ノブ	T		
10	VH841900	BUTTON	POWER ボタン	BL		
10	VH842000	BUTTON	POWER ボタン	T		
11	VI031500	SUPPORT	SW サポート			
12	VF274900	DAMPER	15x15x8 ダンパー			
13	VI031400	SHIELD CASE	CB シールドケース			
14	VA772900	P.C.B SUPPORT	基板サポート			
15	CB605620	PLASTIC RIVET	プラスチックリベット			
16	VD778200	CORD STOPPER	コードストッパー			UC
16	VD375900	CORD STOPPER	コードストッパー			RABG
17	VH105200	DAMPER	ダンパー			ABG
*	18	VL791900	HOLDER, P.C.B.	P.C.Bホルダー		A
19	ED330066	BIND HEAD SCREW	3x6 FCRM3-BL バインド小ネジ	PACK		
20	EH301010	BIND HEAD BONDING TAP. SCREW	3x8 FCRM3-BL ボンディングBタイトネジ			
21	E1330086	BIND HEAD B-TITE SCREW	3x8 FCRM3-BL バインドBタイトネジ	PACK		

\* : New Parts (新規部品)

ランク : Japan only

### Parts List for Carbon Resistors

Ref. NO.	PART NO.	Description	部品名		Remarks	Markets	ランク
22	E1330066	BLIND HEAD B-TITE SCREW	3x6	FCRM3-BL	バインドBタイトネジ	PACK	
23	EK365080	BW HEAD TAPPING SCREW	3x8	ZMC2-BL	BWヘッドタッピングネジ		
24	EK365090	BW HEAD SCREW	4x8	ZMC2-BL	BWヘッド小ネジ	BL	
24	EX601150	BW HEAD S-TITE SCREW	4x8-10	FNH3-BL	BWヘッドSタイトネジ	T	
25	EJ326086	PAN HEAD TAPPING SCREW	2.6x8	ZMC2-BL	ナベタッピングネジ	PACK	R
26	E0330066	FLAT HEAD B-TITE SCREW	3x6	FCRM3-BL	皿Bタイトネジ	PACK	
	CB069250	BINDING TIE	BK-1		束線止め		
		<b>ACCESSORIES</b>			<b>付属品</b>		
*	VL499300	LOOP ANTENNA	FH/AM	1.4m	ループアンテナ		UCR
*	VL499200	LOOP ANTENNA	FH/AM	1.4m	ループアンテナ		ARG
	VG718700	PIN-PLUG CORD	2P	1.0m	ピンプラグコード		
	VE192200	ANTENNA ADAPTER		75-300Ω	整合器		URC
	VE364900	ANTENNA ADAPTER	PAL	75-300Ω	整合器		ARG

\* : New Parts (新規部品)

ランク : Japan only

Value	1/4W Type Part No.	1/6W Type Part No.	Value	1/4W Type Part No.	1/6W Type Part No.
1.0 Ω	HJ35 3100	HF853100	12 KΩ	HJ35 7120	HF85 7120
1.8 Ω	HJ35 3180	*	15 KΩ	HJ35 7150	HF85 7150
2.2 Ω	HJ35 3220	HF853220	18 KΩ	HJ35 7180	HF85 7180
3.3 Ω	HJ35 3330	HF853330	22 KΩ	HJ35 7220	HF85 7220
4.7 Ω	HJ35 3470	HF853470	27 KΩ	HJ35 7270	HF85 7270
5.6 Ω	HJ35 3560	HF853560	33 KΩ	HJ35 7330	HF85 7330
10 Ω	HJ35 4100	HF85 4100	39 KΩ	HJ35 7390	HF85 7390
15 Ω	HJ35 4150	HF85 4150	47 KΩ	HJ35 7470	HF85 7470
22 Ω	HJ35 4220	HF85 4220	56 KΩ	HJ35 7560	HF85 7560
27 Ω	HJ35 4270	HF85 4270	68 KΩ	HJ35 7680	HF85 7680
33 Ω	HJ35 4330	HF85 4330	82 KΩ	HJ35 7820	HF85 7820
39 Ω	HJ35 4390	HF85 4390	91 KΩ	HJ35 7910	HF85 7910
47 Ω	HJ35 4470	HF85 4470	100 KΩ	HJ35 8100	HF85 8100
56 Ω	HJ35 4560	HF85 4560	120 KΩ	HJ35 8120	HF85 8120
68 Ω	HJ35 4680	HF85 4680	150 KΩ	HJ35 8150	HF85 8150
82 Ω	HJ35 4820	HF85 4820	180 KΩ	HJ35 8180	HF85 8180
100 Ω	HJ35 5100	HF85 5100	220 KΩ	HJ35 8220	HF85 8220
110 Ω	HJ35 5110	HF85 5110	270 KΩ	HJ35 8270	HF85 8270
120 Ω	HJ35 5120	HF85 5120	330 KΩ	HJ35 8330	HF85 8330
150 Ω	HJ35 5150	HF85 5150	390 KΩ	HJ35 8390	HF85 8390
160 Ω	HJ35 5160	*	470 KΩ	HJ35 8470	HF85 8470
180 Ω	HJ35 5180	HF85 5180	560 KΩ	HJ35 8560	HF85 8560
220 Ω	HJ35 5220	HF85 5220	680 KΩ	HJ35 8680	HF85 8680
270 Ω	HJ35 5270	HF85 5270	820 KΩ	HJ35 8820	HF85 8820
330 Ω	HJ35 5330	HF85 5330	1.0 MΩ	HJ35 9100	HF85 9100
390 Ω	HJ35 5390	HF85 5390	1.2 MΩ	HJ35 9120	*
470 Ω	HJ35 5470	HF85 5470	1.5 MΩ	HJ35 9150	HF85 9150
510 Ω	*	HF85 5510	1.8 MΩ	HJ35 9180	HF85 9180
560 Ω	HJ35 5560	HF85 5560	2.2 MΩ	HJ35 9220	HF85 9220
680 Ω	HJ35 5680	HF85 5680	3.3 MΩ	HJ35 9330	HF85 9330
820 Ω	HJ35 5820	HF85 5820	3.9 MΩ	HJ35 9390	*
910 Ω	HJ35 5910	HF85 5910	4.7 MΩ	HJ35 9470	HF85 9470
1.0 KΩ	HJ35 6100	HF85 6100			
1.2 KΩ	HJ35 6120	HF85 6120			
1.5 KΩ	HJ35 6150	HF85 6150			
1.8 KΩ	HJ35 6180	HF85 6180			
2.0 KΩ	HJ35 6200	HF85 6200			
2.2 KΩ	HJ35 6220	HF85 6220			
2.4 KΩ	HJ35 6240	HF85 6240			
2.7 KΩ	HJ35 6270	HF85 6270			
3.0 KΩ	HJ35 6300	HF85 6300			
3.3 KΩ	HJ35 6330	HF85 6330			
3.6 KΩ	HJ35 6360	HF85 6360			
3.9 KΩ	HJ35 6390	HF85 6390			
4.7 KΩ	HJ35 6470	HF85 6470			
5.1 KΩ	HJ35 6510	HF85 6510			
5.6 KΩ	HJ35 6560	HF85 6560			
6.8 KΩ	HJ35 6680	HF85 6680			
8.2 KΩ	HJ35 6820	HF85 6820			
9.1 KΩ	HJ35 6910	HF85 6910			
10 KΩ	HJ35 7100	HF85 7100			

