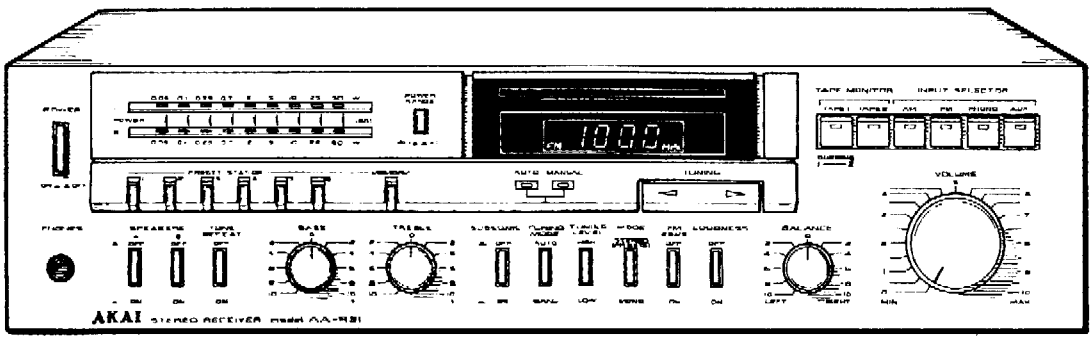
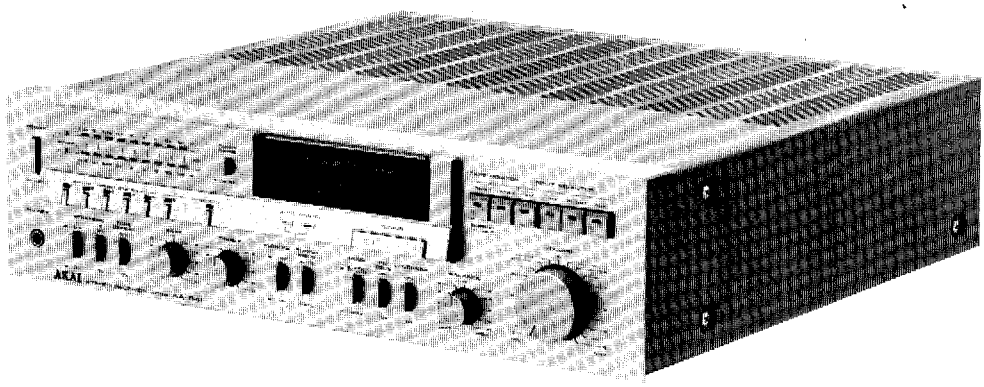
AKAI SERVICE MANUAL

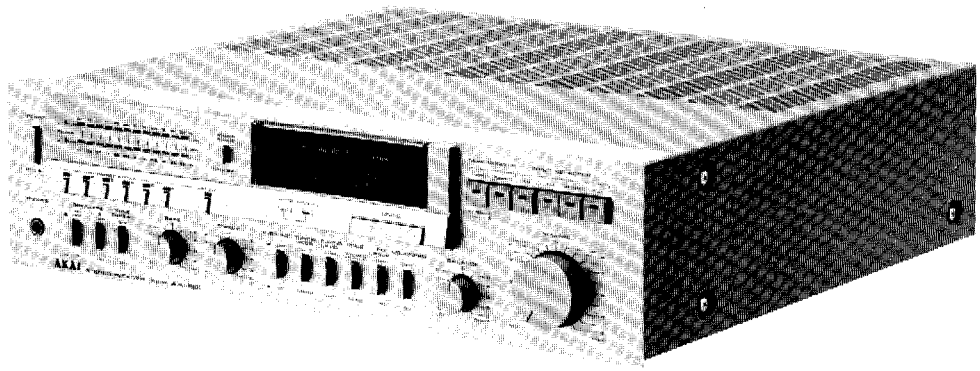


STEREO RECEIVER

AA-R41
MODEL AA-R51



AA-R41



AA-R51

STEREO RECEIVER

AA-R41

MODEL AA-R51

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SECTION 1

SERVICE MANUAL

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For basic adjustments, measuring methods, and operating principles, refer to GENERAL TECHNICAL MANUAL.

I. SPECIFICATIONS

1. MODEL AA-R41

FM TUNER SECTION

FREQUENCY RANGE	87.9 MHz to 107.9 MHz (USA and Canada) 87.5 MHz to 108.0 MHz (Others)
SENSITIVITY (IHF)	1.8 μV
CAPTURE RATIO	More than 1.3 dB
SELECTIVITY (IHF)	More than 70 dB
IMAGE REJECTION	More than 70 dB
IF REJECTION	More than 100 dB
SPURIOUS REJECTION	More than 80 dB
AM SUPPRESSION	50 dB
SIGNAL TO NOISE RATIO (MONO/STEREO)	75 dB/70 dB
HARMONIC DISTORTION	
MONO	Less than 0.15% (100% modulation)
STEREO	Less than 0.25% (100% modulation)
TUNING LEVEL	Switchable to 20 dB (Low)/40 dB (High)
STEREO SEPARATION	More than 43 dB (1 kHz)
PILOT SIGNAL SUPPRESSION	More than 50 dB
SUB CARRIER SUPPRESSION	More than 50 dB
ANTENNA INPUT IMPEDANCE	300 ohms balanced, 75 ohms unbalanced

AM TUNER SECTION

FREQUENCY RANGE	530 kHz to 1620 kHz (USA and Canada) 522 kHz to 1611 kHz (Others)
SENSITIVITY (IHF)	300 μV/m (Bar Antenna), 20 μV (External Antenna)
SELECTIVITY (IHF)	More than 30 dB
IMAGE REJECTION	More than 50 dB
IF REJECTION	More than 40 dB
ANTENNA	Built-in ferrite bar antenna

AMPLIFIER SECTION

RATED POWER OUTPUT (2-CHANNEL DRIVEN)	55 watts per channel, minimum RMS, at 4 ohms from 20 to 20,000 Hz with no more than 0.04% total harmonic distortion. 50 watts per channel, minimum RMS, at 8 ohms from 20 to 20,000 Hz with no more than 0.04% total harmonic distortion. 2 x 60 watts into 4 ohms at 1 kHz, with no more than 0.04% total harmonic distortion. 2 x 55 watts into 8 ohms at 1 kHz, with no more than 0.04% total harmonic distortion.
POWER BANDWIDTH (IHF)	5 Hz to 40 kHz/8 ohms (Total harmonic distortion: 0.04%)
SIGNAL TO NOISE RATIO (IHF)	
PHONO	Better than 75 dB
AUX	Better than 90 dB
RESIDUAL NOISE	Less than 0.6 mV at 8 ohms
CHANNEL SEPARATION (IHF)	
PHONO	Better than 50 dB at 1,000 Hz
AUX	Better than 55 dB at 1,000 Hz
DAMPING FACTOR	More than 40 (1 kHz, 8 ohms)
OUTPUT	
SPEAKERS	A, B (4 to 16 ohms)/A + B (8 to 16 ohms)
HEADPHONES	4 to 16 ohms
INPUT SENSITIVITY/IMPEDANCE	
PHONO	2.5 mV/47 kohms
AUX	150 mV/47 kohms
TUNER	150 mV/47 kohms
TAPE	PIN: 150 mV/47 kohms

	DIN: 30 mV/80 kohms
OUTPUT LEVEL TAPE REC	 PIN: 150 mV/3 kohms DIN: 150 mV
FREQUENCY RESPONSE PHONO AUX	 30 Hz to 15 kHz, +1 dB, –1 dB (RIAA) 5 Hz to 15 kHz, +1 dB, –1 dB
TONE CONTROL BASS TREBLE	 ±10 dB at 100 Hz ±10 dB at 10 kHz
LOUDNESS CONTROL	+10 dB at 100 Hz, +6 dB at 10 kHz
FILTER SUBSONIC	 –3 dB at 100 Hz
POWER REQUIREMENTS	120V, 60 Hz for USA and Canada 110V/120V/220V/240V, 50/60 Hz for other countries.
DIMENSIONS	440(W) x 118(H) x 420(D) mm (17.3 x 4.6 x 16.5 inches)
WEIGHT	11 kg (24.2 lbs)
BACK-UP MEMORY PERIOD	Approx. 2 weeks

* For improvement purposes, specifications and design are subject to change without notice.

2. MODEL AA-R51

FM TUNER SECTION	
FREQUENCY RANGE	87.9 MHz to 107.9 MHz (USA and Canada) 87.5 MHz to 108.0 MHz (Others)
SENSITIVITY (IHF)	1.7 μV
CAPTURE RATIO	More than 1.3 dB
SELECTIVITY (IHF)	More than 70 dB
IMAGE REJECTION	More than 70 dB
IF REJECTION	More than 100 dB
SPURIOUS REJECTION	More than 80 dB
AM SUPPRESSION	50 dB
SIGNAL TO NOISE RATIO (MONO/STEREO)	75 dB/70 dB
HARMONIC DISTORTION	
MONO	Less than 0.15% (100% modulation)
STEREO	Less than 0.25% (100% modulation)
TUNING LEVEL	Switchable to 20 dB (Low)/40 dB (High)
STEREO SEPARATION	More than 43 dB (1 kHz)
PILOT SIGNAL SUPPRESSION	More than 55 dB
SUB CARRIER SUPPRESSION	More than 55 dB
ANTENNA INPUT IMPEDANCE	300 ohms balanced, 75 ohms unbalanced

AM TUNER SECTION	
FREQUENCY RANGE	530 kHz to 1620 kHz (USA and Canada) 522 kHz to 1611 kIz (Others)
SENSITIVITY (IHF)	300 μV/m (Bar Antenna), 20 μV (External Antenna)
SELECTIVITY (IHF)	More than 30 dB
IMAGE REJECTION	More than 55 dB
IF REJECTION	More than 40 dB
ANTENNA	Built-in ferrite bar antenna

AMPLIFIER SECTION	
RATED POWER OUTPUT (2-CHANNEL DRIVEN)	65 watts per channel, minimum RMS, at 4 ohms from 20 to 20,000 Hz with no more than 0.04% total harmonic distortion. 62 watts per channel, minimum RMS, at 8 ohms from 20 to 20,000 Hz with no more than 0.04% total harmonic distortion. 2 x 67 watts into 4 ohms at 1 kHz, with no more than 0.04% total harmonic distortion. 2 x 65 watts into 8 ohms at 1 kHz, with no more than 0.04% total harmonic distortion.
POWER BANDWIDTH (IHF)	5 Hz to 40 kHz/8 ohms (Total harmonic distortion: 0.04%)
SIGNAL TO NOISE RATIO (IHF)	
PHONO	Better than 75 dB
AUX	Better than 90 dB
RESIDUAL NOISE	Less than 0.5 mV at 8 ohms
CHANNEL SEPARATION (IHF)	
PHONO	Better than 50 dB at 1,000 Hz
AUX	Better than 55 dB at 1,000 Hz
DAMPING FACTOR	More than 40 (1 kHz, 8 ohms)
OUTPUT	
SPEAKERS	A, B (4 to 16 ohms)/A + B (8 to 16 ohms)
HEADPHONES	4 to 16 ohms
INPUT SENSITIVITY/IMPEDANCE	
PHONO	2.5 mV/47 kohms
AUX	150 mV/47 kohms
TUNER	150 mV/47 kohms
TAPE	PIN: 150 mV/47 kohms

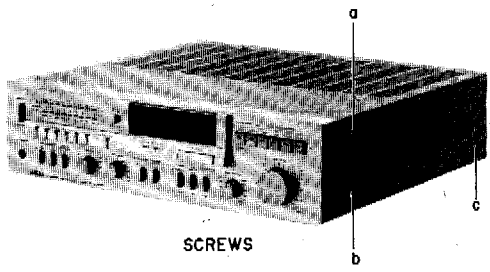
	DIN: 30 mV/80 kohms
OUTPUT LEVEL TAPE REC	 PIN: 150 mV/3 kohms DIN: 150 mV
FREQUENCY RESPONSE PHONO AUX	 30 Hz to 15 kHz, +1 dB, −1 dB (RIAA) 5 Hz to 70 kHz, +1 dB, −2 dB
TONE CONTROL BASS TREBLE	 ±10 dB at 100 Hz ±10 dB at 10 kHz
LOUDNESS CONTROL	+10 dB at 100 Hz, +6 dB at 10 kHz
FILTER SUBSONIC	 −3 dB at 18 Hz
POWER REQUIREMENTS	120V, 60 Hz for USA and Canada 110V/120V/220V/240V, 50/60 Hz for other countries.
DIMENSIONS	440(W) x 118(H) x 420(D) mm (17.3 x 4.6 x 16.5 inches)
WEIGHT	12 kg (26.4 lbs)
BACK-UP MEMORY PERIOD	Approx. 2 weeks

* For improvement purposes, specifications and design are subject to change without notice.

II. DISMANTLING OF UNIT

In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the photographs. Reassemble in reverse order.

1



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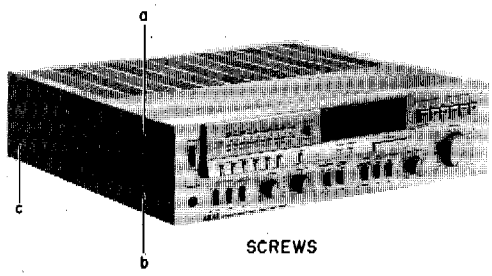

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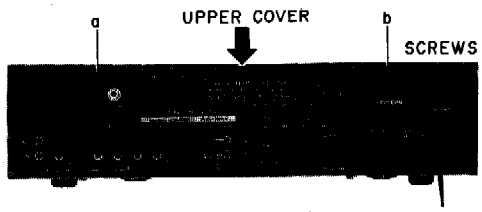

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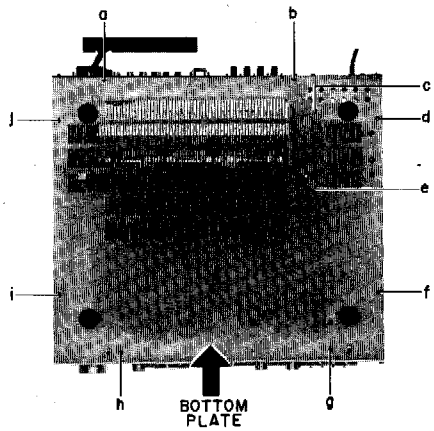

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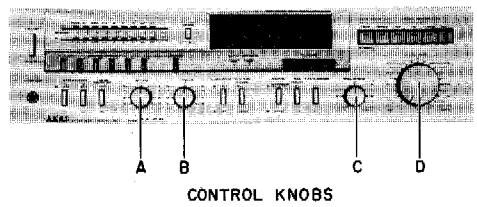

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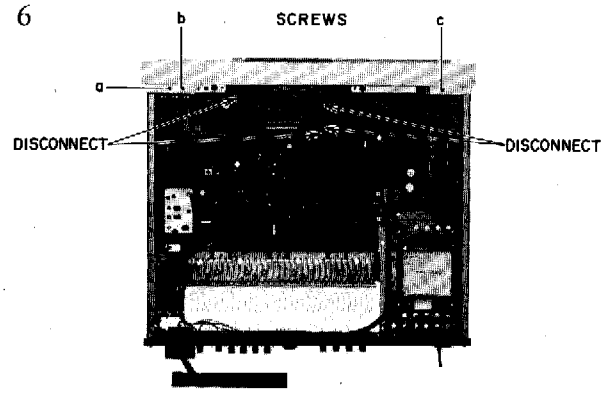

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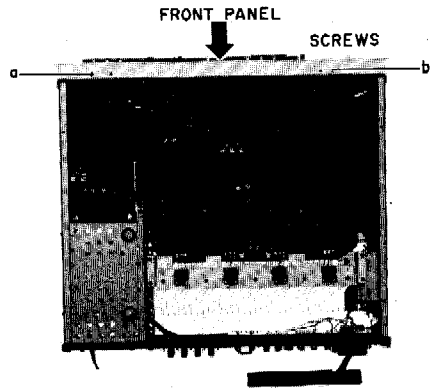

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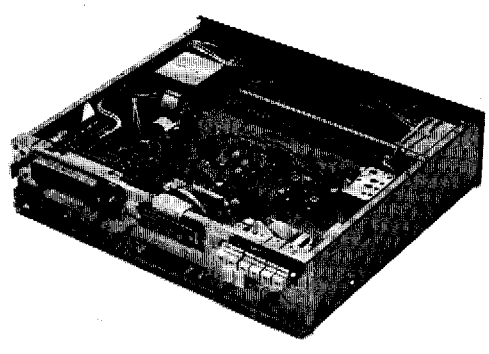


III. CONTROLS

1. MODEL AA-R41

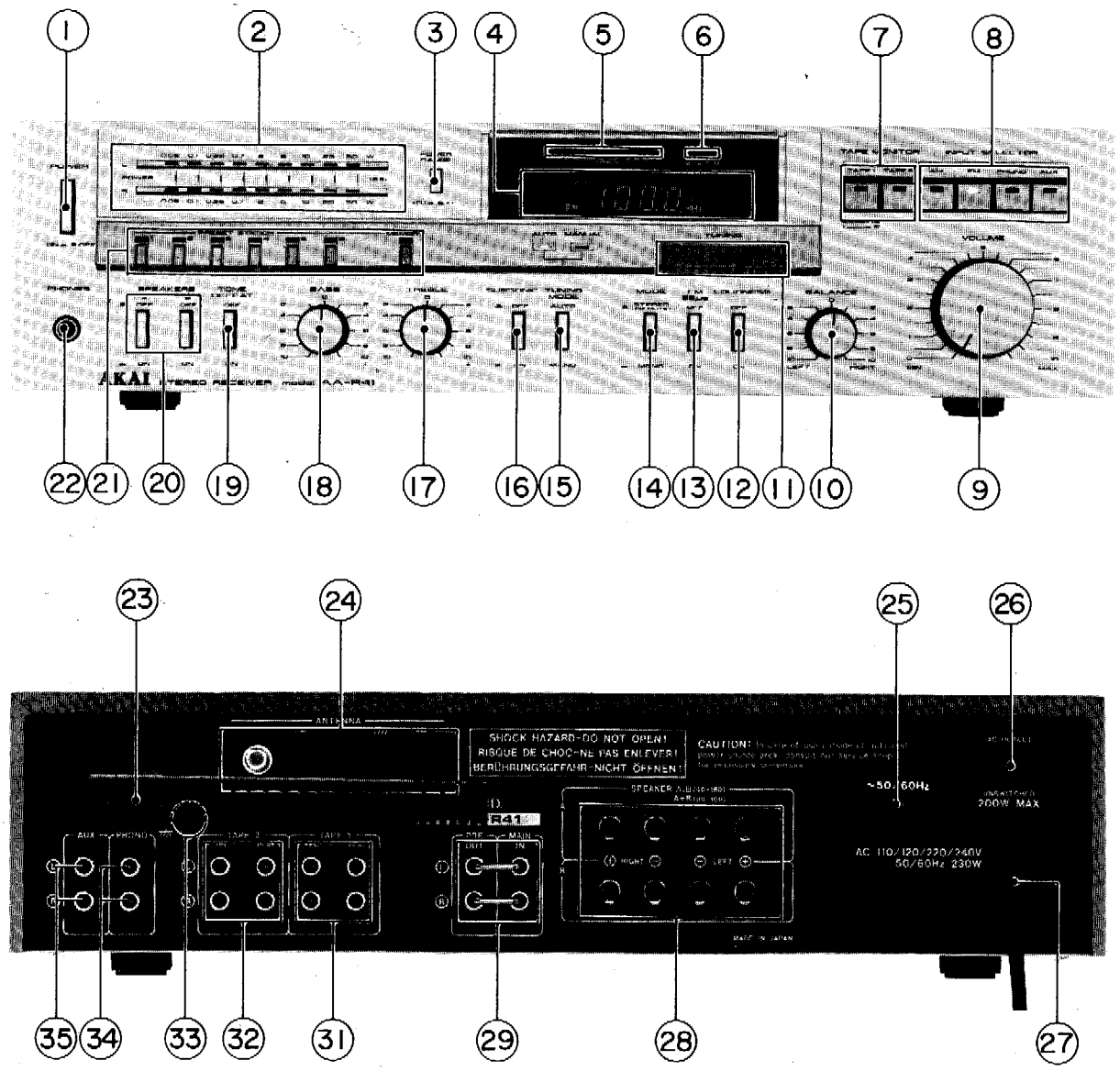


Fig. 1 Controls (AA-R41)

1. POWER SWITCH
2. LED OUTPUT BAR METER (L-left, R-right)
3. POWER RANGE SELECTOR
4. DIGITAL LED DISPLAY
5. LED SIGNAL STRENGTH INDICATOR
6. FM STEREO INDICATOR
7. TAPE MONITOR SWITCHES AND INDICATOR
8. INPUT SELECTOR BUTTONS
9. VOLUME CONTROL
10. STEREO BALANCE CONTROL
11. TUNING BUTTON
12. LOUDNESS SWITCH
13. FM 25μs SWITCH
14. MODE SELECTOR
15. TUNING MODE SELECTOR AND INDICATORS
16. SUBSONIC SWITCH
17. TREBLE CONTROL
18. BASS CONTROL
19. TONE DEFEAT SWITCH
20. SPEAKERS SWITCHES
21. PRESET STATION AND MEMORY BUTTONS AND INDICATORS
22. HEADPHONE (PHONES) JACK
23. AM FERRITE BAR ANTENNA
24. FM AND AM ANTENNA TERMINALS
25. VOLTAGE SELECTOR (U/T MODEL ONLY)
26. AC OUTLET (AAL, CSA AND U/T MODELS ONLY)
27. POWER CORD
28. A AND B SPEAKER TERMINALS
29. PRE OUT AND MAIN IN JACKS
31. TAPE 1 JACKS
32. TAPE 2 JACKS
33. GROUND TERMINAL (⏚)
34. PHONO JACKS
35. AUX JACKS

2. MODEL AA-R51

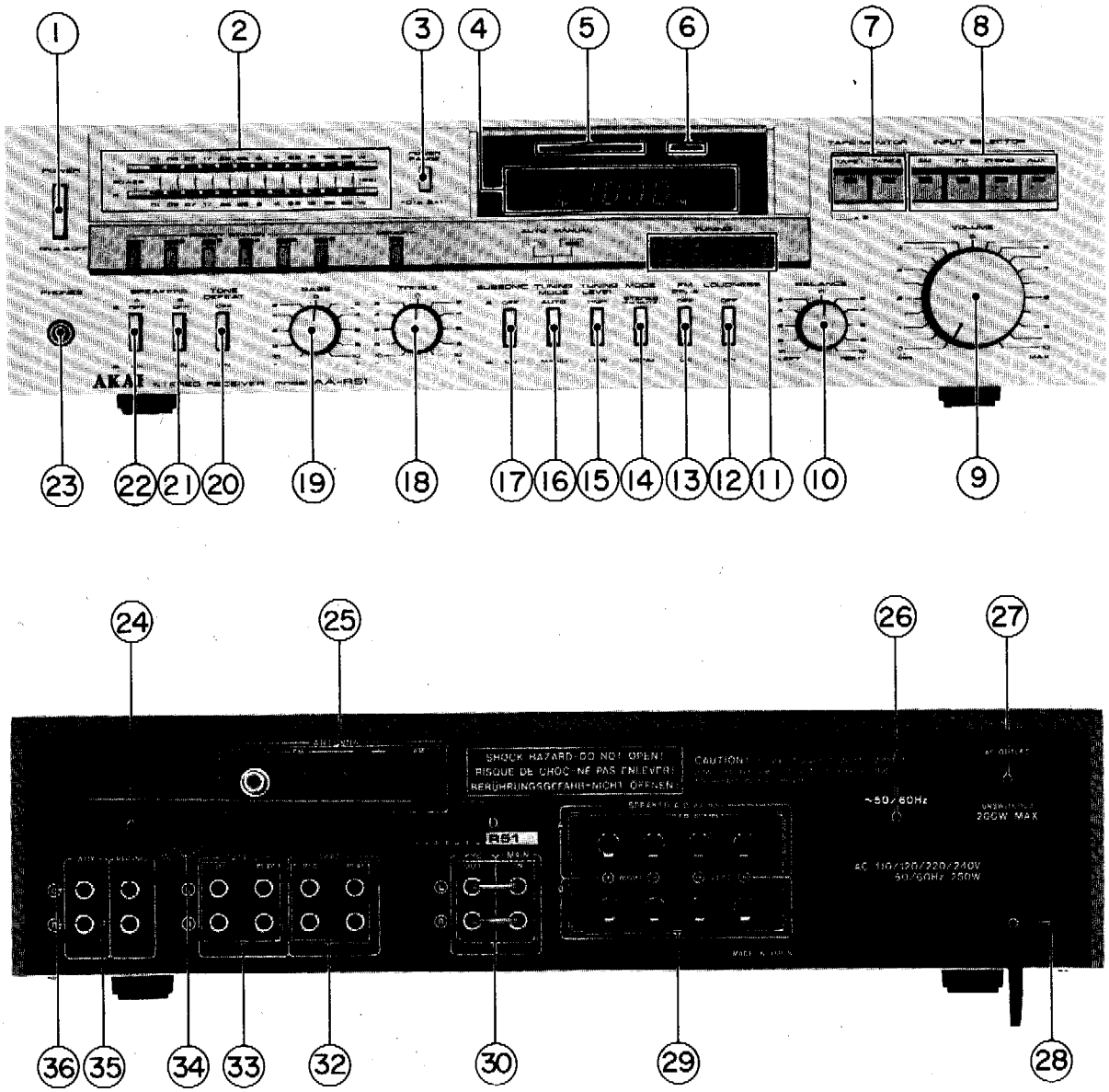


Fig. 2 Controls (AA-R51)

1. POWER SWITCH
2. LED OUTPUT BAR METER (L-left, R-right)
3. POWER RANGE SELECTOR
4. DIGITAL LED DISPLAY
5. LED SIGNAL STRENGTH INDICATOR
6. FM STEREO INDICATOR
7. TAPE MONITOR SWITCHES AND INDICATOR
8. INPUT SELECTOR BUTTONS
9. VOLUME CONTROL
10. STEREO BALANCE CONTROL
11. TUNING BUTTON
12. LOUDNESS SWITCH
13. FM 25μs SWITCH
14. MODE SELECTOR
15. FM TUNING LEVEL SELECTOR
16. TUNING MODE SELECTOR AND INDICATORS
17. SUBSONIC SWITCH
18. TREBLE CONTROL
19. BASS CONTROL
20. TONE DEFEAT SWITCH
21. SPEAKERS SWITCHES
22. PRESET STATION AND MEMORY BUTTONS AND INDICATORS
23. HEADPHONE (PHONES) JACK
24. AM FERRITE BAR ANTENNA
25. FM AND AM ANTENNA TERMINALS
26. VOLTAGE SELECTOR (U/T MODEL ONLY)
27. AC OUTLET (AAL, CSA AND U/T MODELS ONLY)
28. POWER CORD
29. A AND B SPEAKER TERMINALS
30. PRE OUT AND MAIN IN JACKS
32. TAPE 1 JACKS
33. TAPE 2 JACKS
34. GROUND TERMINAL (⏚)
35. PHONO JACKS
36. AUX JACKS

IV. PRINCIPAL PARTS LOCATION

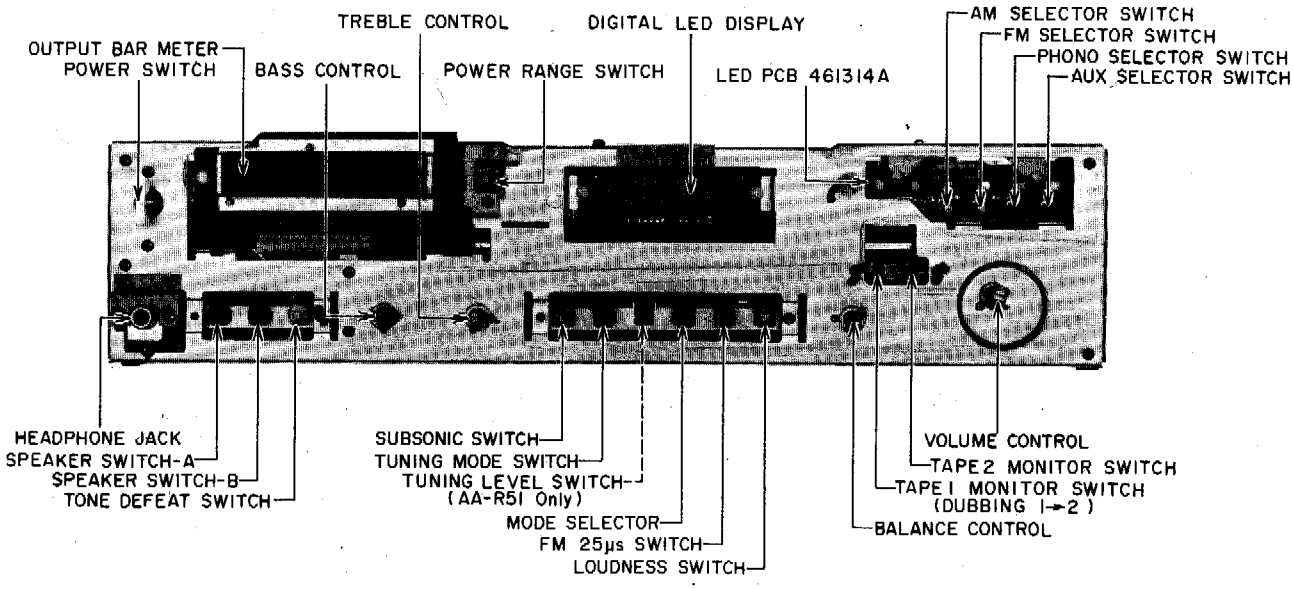


Fig. 3 Front View

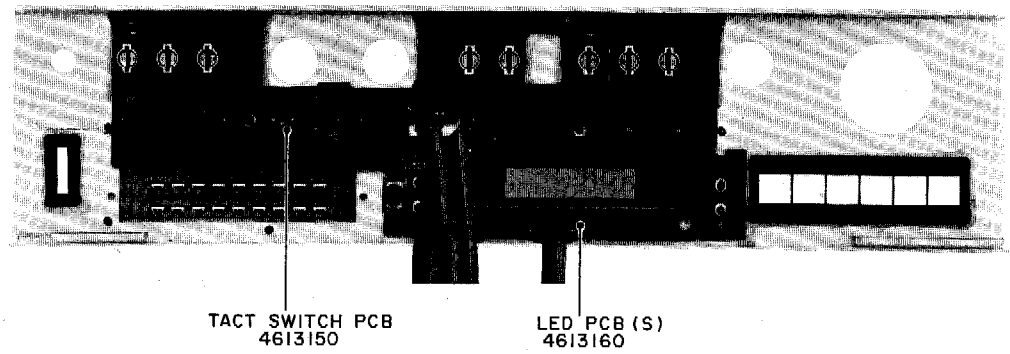


Fig. 4 Back View of Front Panel

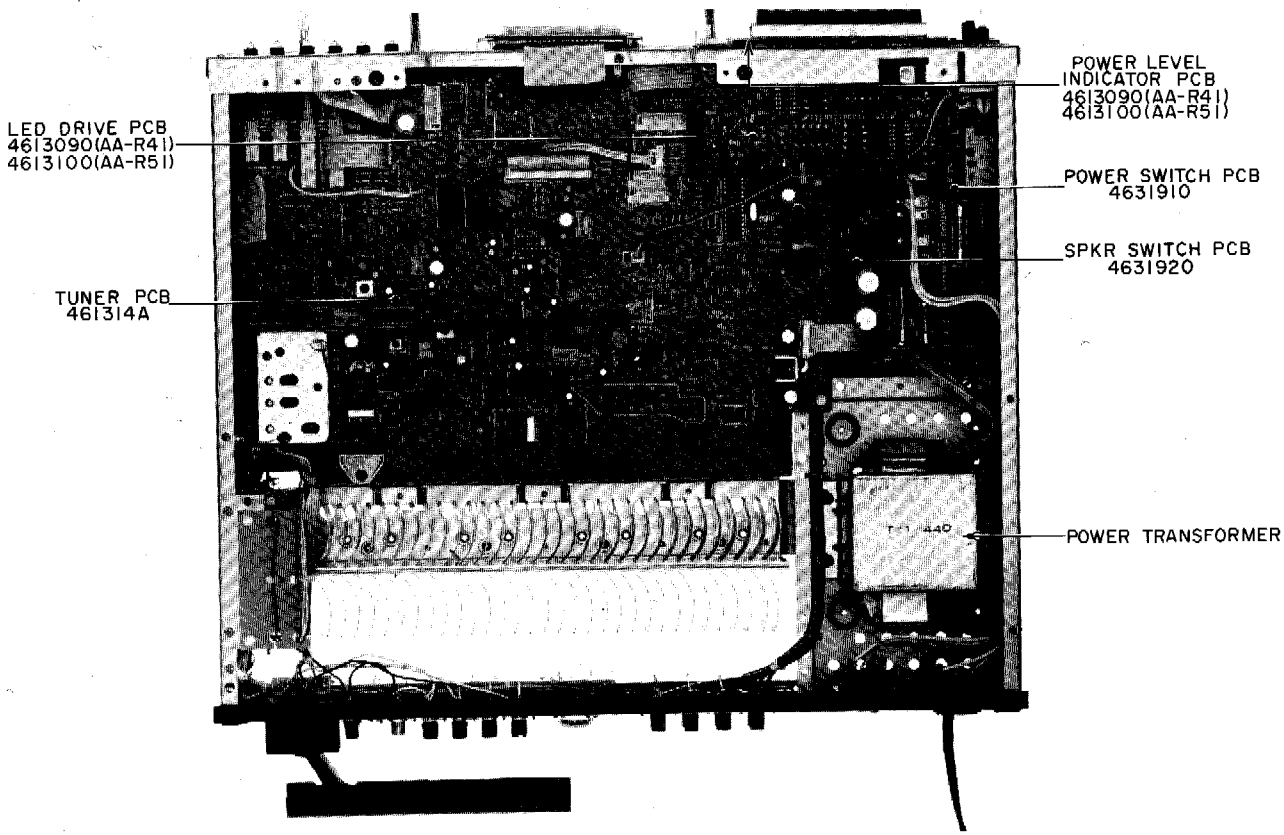


Fig. 5 Top View

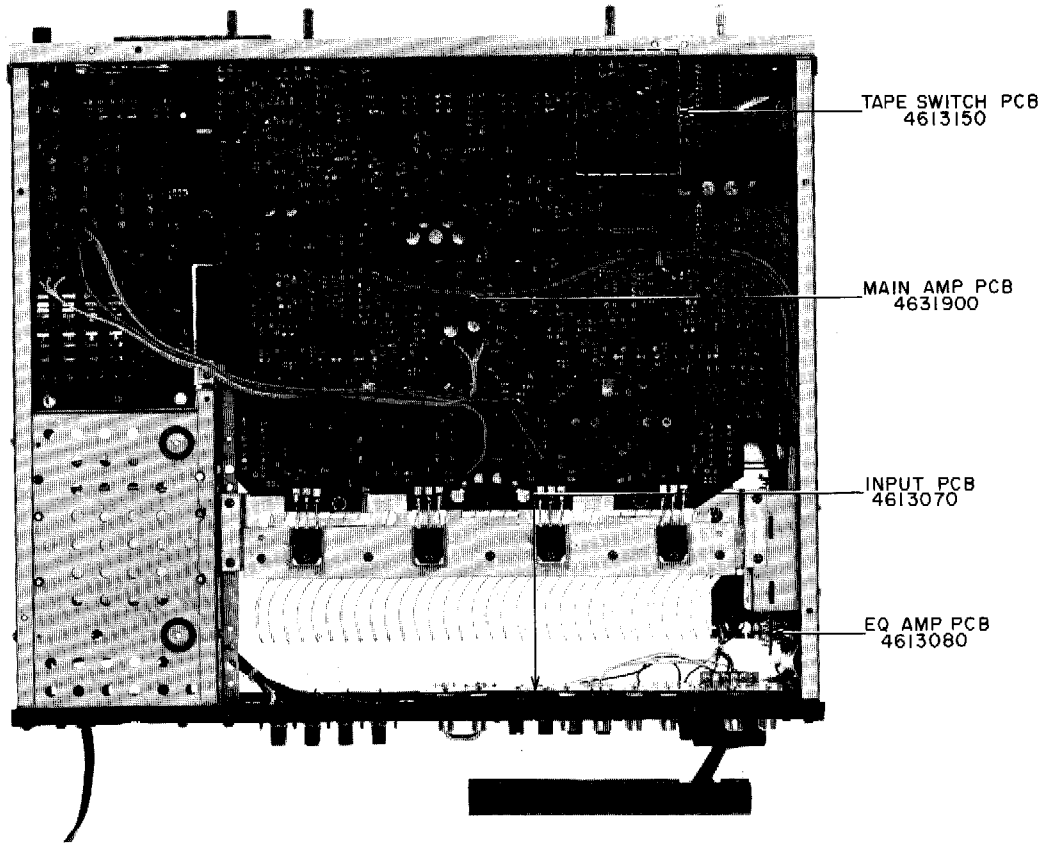


Fig. 6 Bottom View

V. VOLTAGE CONVERSION

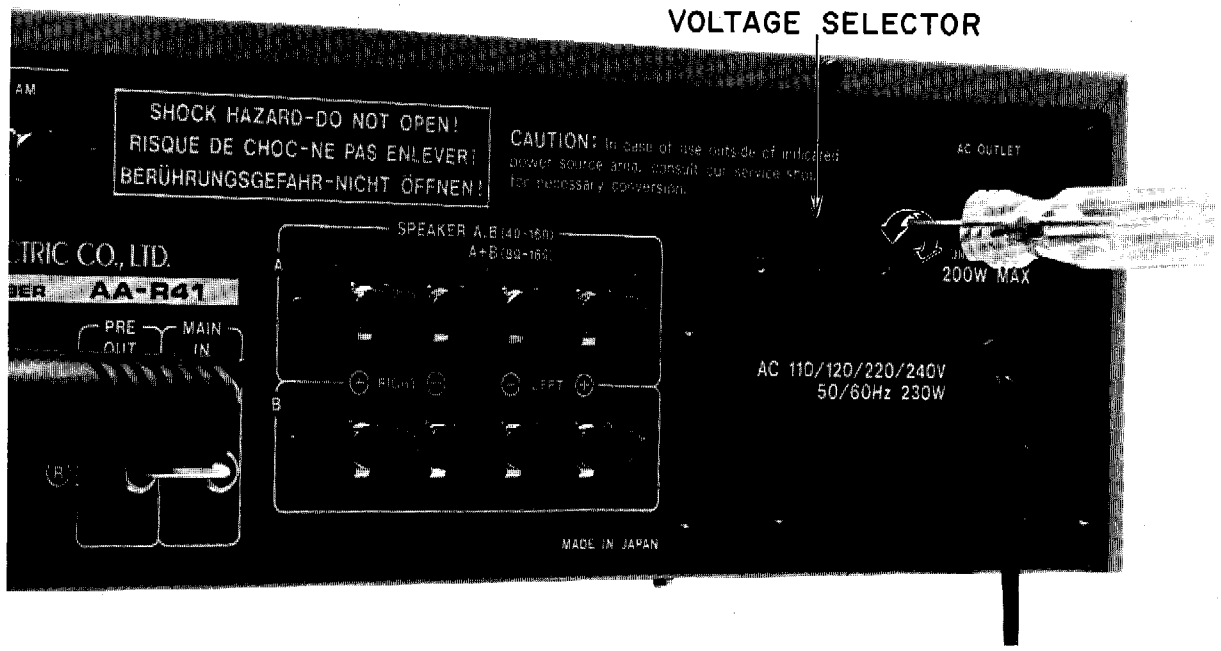


Fig. 7 Voltage Conversion (U/T Model Only)

	F001			
	110V	120V	220V	240V
AA-R41	5A-250V	5A-250V	3A 250V	3A 250V
AA-R51	6A 250V	6A 250V	3A 250V	3A 250V

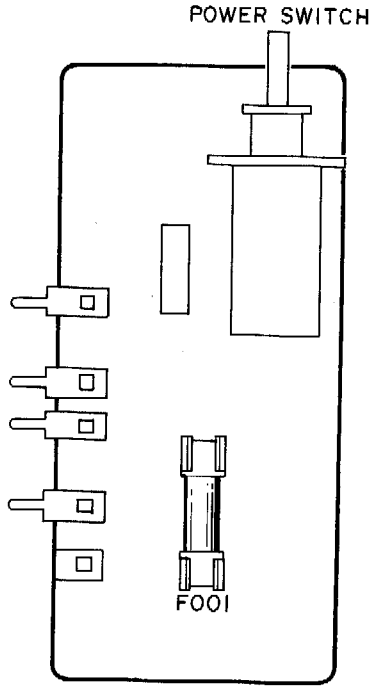


Fig. 8 Power Switch P.C Board

Models for Canada, U.S.A. and Australia are not equipped with this facility. Each machine is preset at the factory according to destination but some machines can be set to 110V, 120V, 220V or 240V as required. If voltage change is necessary, this can be accomplished as follows.

1. Disconnect power cord.
2. Loosen holding screws and remove the plate of the Voltage Selector above the voltage indication.
3. Turn with a screwdriver until the correct voltage for your area is shown. (Refer to Fig. 7)
4. Loosen holding screws and remove the upper cover.
5. Change the fuse (F001) located on the Power Switch P.C Board. (Refer to Fig. 5 and Fig. 8)

VI. AMPLIFIER ADJUSTMENT

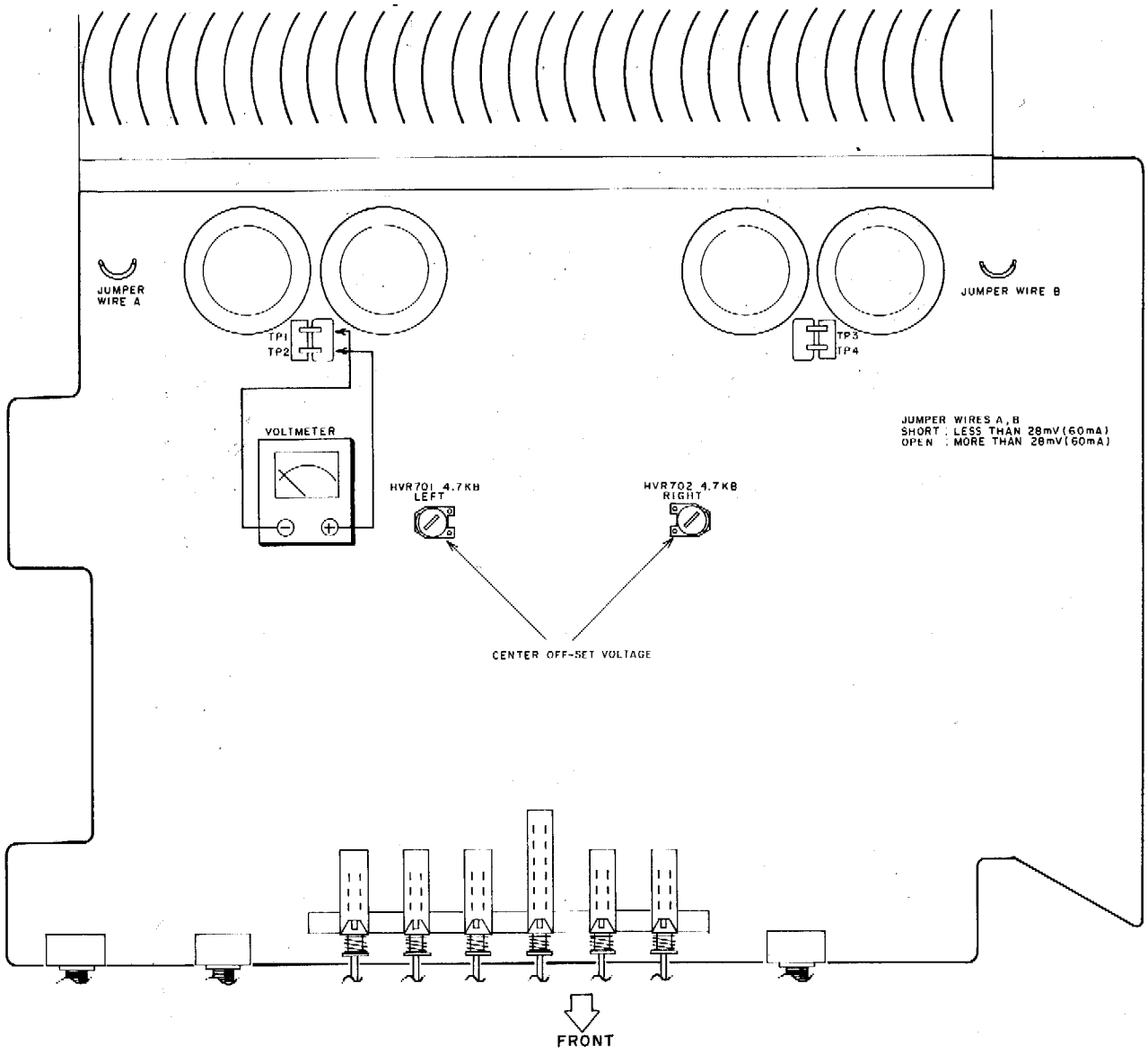


Fig. 9 Main Amp P.C Board 4631900

1. IDLING CURRENT ADJUSTMENT

(Refer to Fig. 9)

Connect a high-sensitivity voltmeter between TP1 and TP2 (left channel) and between TP3 and TP4 (right channel). If the measured voltage is more than 28 mV (60 mA) with no input signal, cut the jumper wires A (left channel) and B (right channel).

If it is less than 28 mV (60 mA), do not cut the jumper wire, and confirm that the voltage lies between 1.5 mV (6 mA) and 28 mV (60 mA).

NOTE: It takes about 5 minutes for the idling current to stabilize.

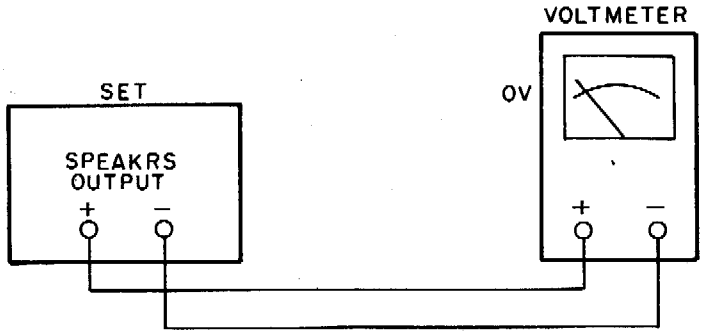


Fig. 10 Instrument Connections

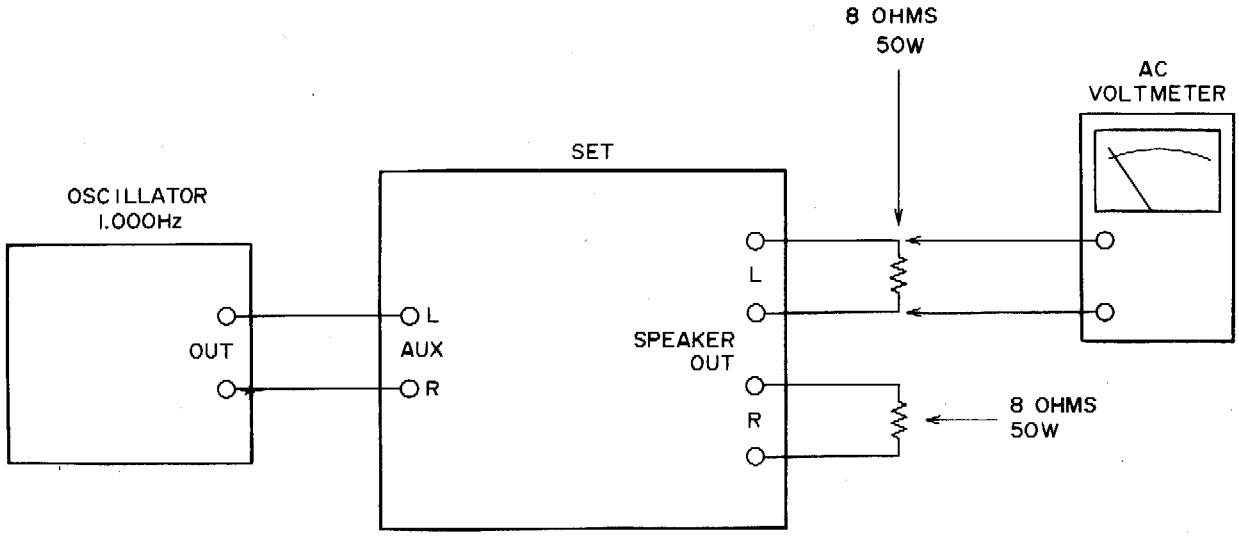


Fig. 11 Instrument Connections

2. CENTER OFF-SET VOLTAGE

(Refer to Figs. 9, 10)

1) Connect a DC Voltmeter to Speaker output terminals.
2) No signal input.
3) Adjust (left channel) HVR701 4.7 KB so that voltmeter reads 0V (±50 mV) and HVR702 (right channel)

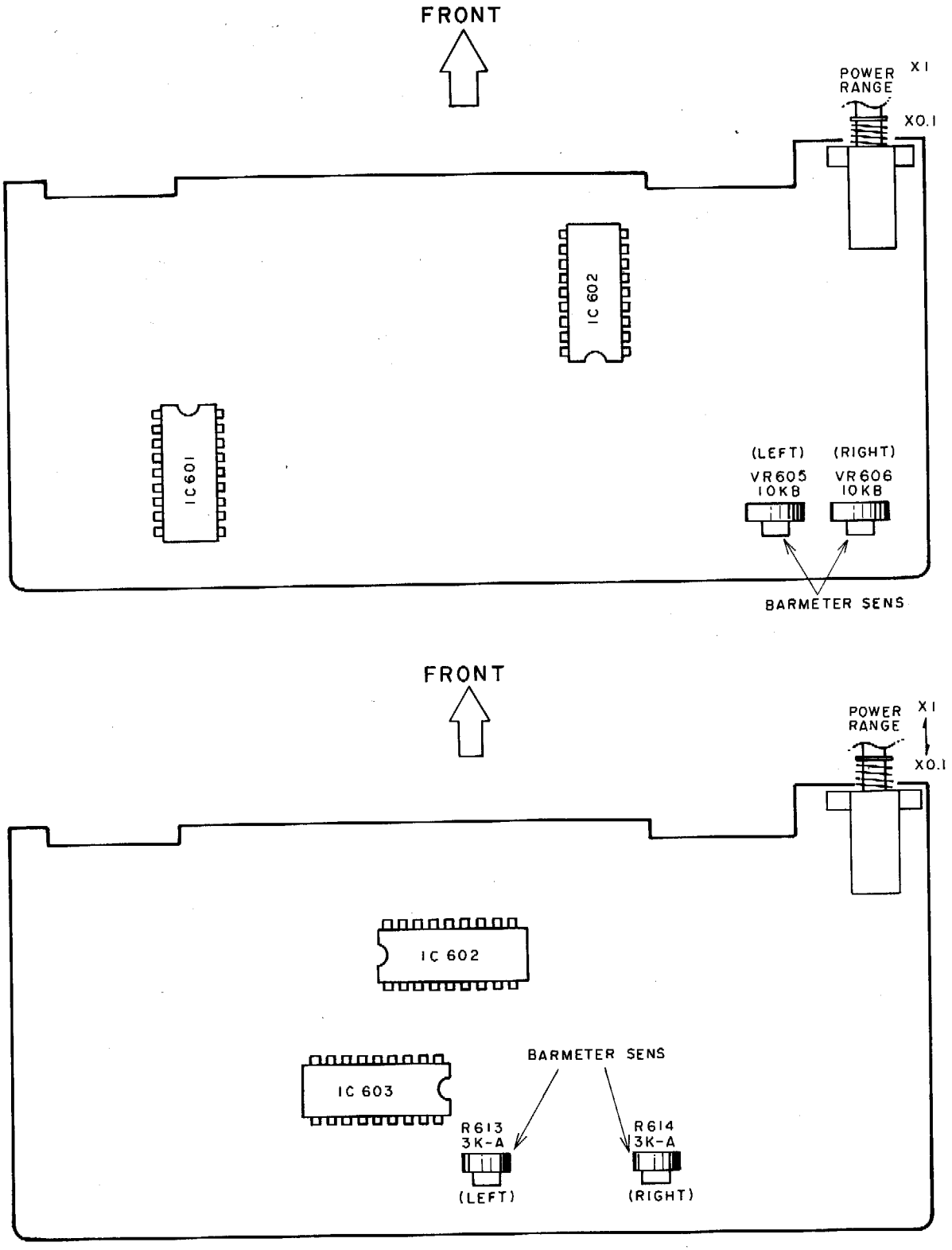


Fig. 12 LED Drive P.C Board 4613090 (AA-R41), 4613100 (AA-R51)

3. OUTPUT BAR METER SENSITIVITY ADJUSTMENT (Refer to Figs. 11, 12)

Set the Power Range switch to "X1", and connect the RL (8 ohms) resistors to Speaker Out. Then apply a 1 kHz signal to the AUX input terminals, adjusting the input level so as to obtain the rated output voltage level at Speaker Out.

[AA-R41; 20.0 V (50 W), AA-R51; 22.3 V (62 W)]

Adjust R613 (left) and R614 (right) on the LED Drive P.C Board so that the 9th (AA-R41), 12th (AA-R51) LED in the output bar meter lights up. Next decrease the input level by 10 dB and check that the 3rd LED remains on. Then switch the Power Range switch to "X0.1", and check that the 8th (AA-R41), 11th (AA-R51) LED light up.

VII. TUNER ADJUSTMENT

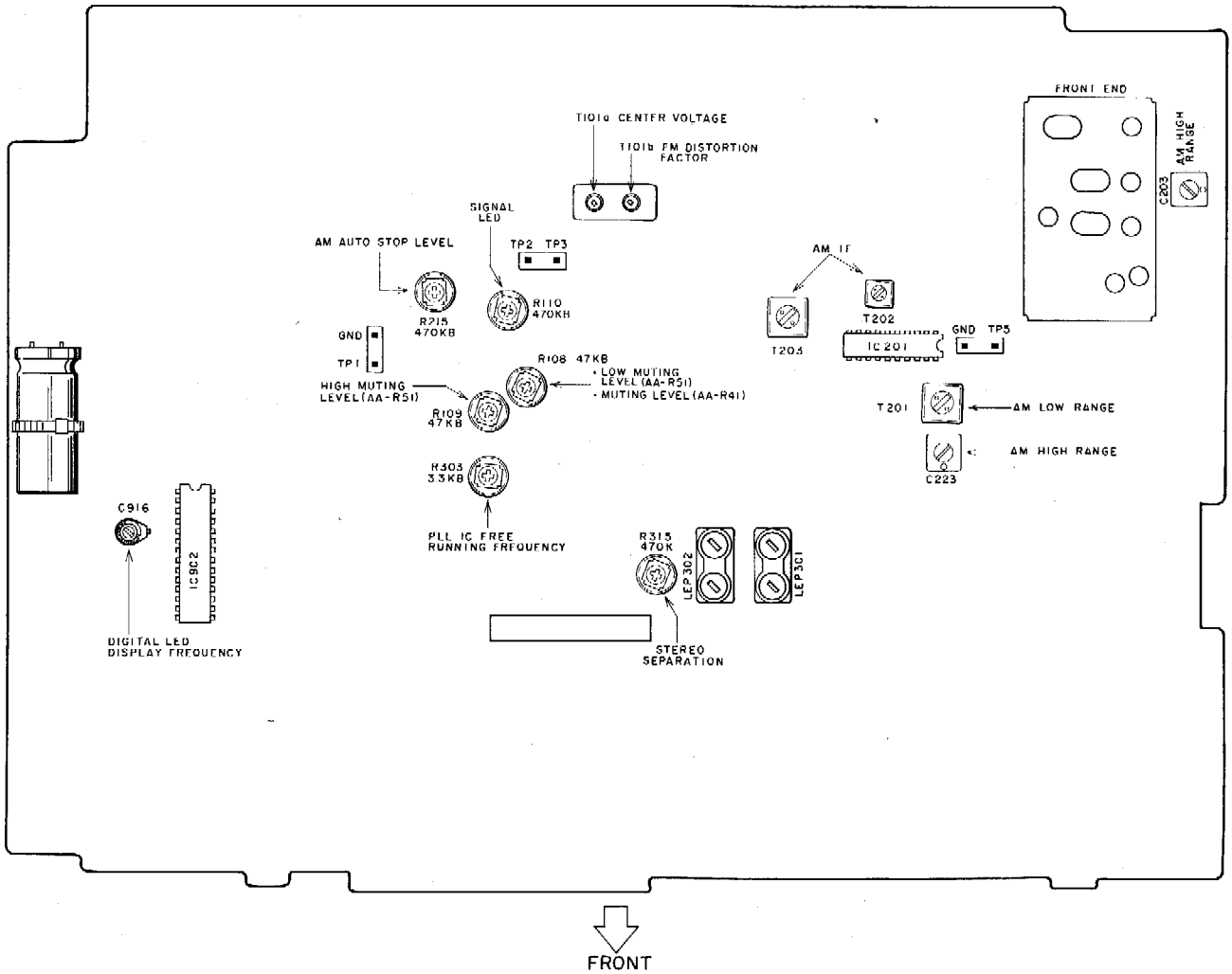


Fig. 13 Tuner P.C Board 461314A

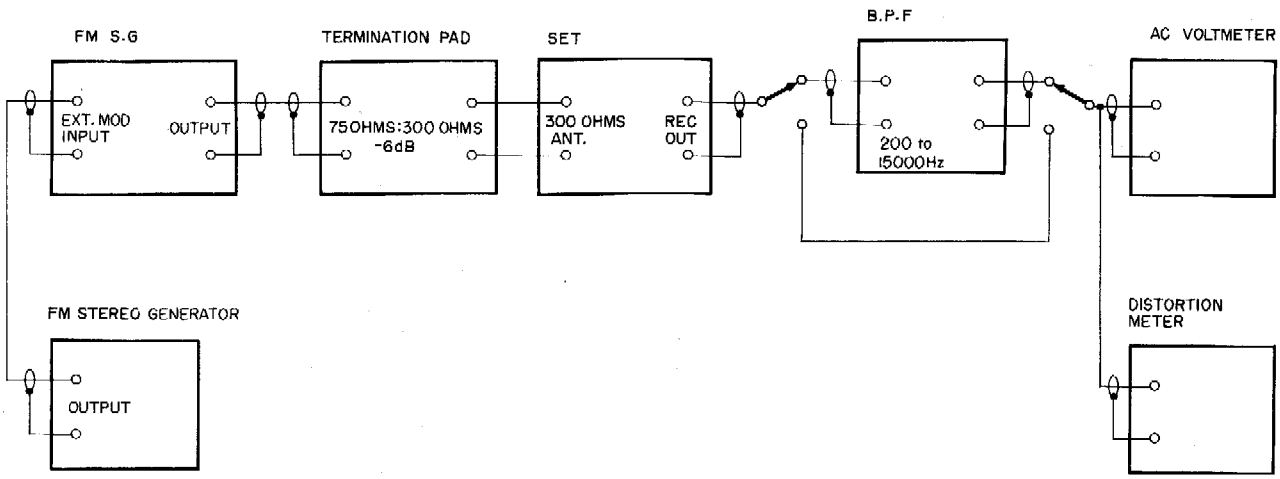


Fig. 14 Instrument Connections

1. FM SECTION ADJUSTMENTS (Refer to Figs. 13, 14)

Unless otherwise specified, use the adjustment points provided on the Tuner-EQ P.C Board (Fig. 13).

Step	Adjustment Item	Adjustment Point	Result	Remarks
1	No adjusting FRONT END.			
2	Center Voltage	T101a	Centered Tuning Meter Indication	Connect a Center Tuning Meter between TP2 and TP3. Turns only noise without interference from broadcasting.
3	Distortion Factor	T101b	Less than 0.15% Distortion Factor	108 MHz, 60 dB, 400 Hz (mono 100%) input. Switch MODE to MONO. Less than 0.15% in both channels.
4				Readjust in Steps 2 and 3.
5	Muting Level	AA-R41 R108 (47 KB)	25 dB±6 dB	Switch MODE to STEREO 108 MHz, 30 dB, 400 Hz (mono 100%) input. Adjust R108 (AA-R51, R108, R109) until the output signal is reduced to zero. Vary the SSG output by ±6 dB and check muting operation.
		AA-R51 R108 (Low) 47 KB R109 (High) 47 KB	Low 25 dB 6 dB High 40 dB 6 dB	
6	Confirmation of Signal LED Sensitivity	R110 470 KB		108 MHz, 55 dB ± 10 dB input. Check that all 5 signal meter LEDs light up.
7	Confirmation of Output Level and Channel Balance		Output Level: 500 mV ±2 dB Channel Balance: Within 1.5 dB	108 MHz, 60 dB, 400 Hz (mono 100%) input.
8	Digital LED Display Frequency	C916	109.2 MHz (±100 Hz)	Connect a Frequency Counter between TP1 and GND. Display 98.5 MHz. 98.5 MHz + 10.7 MHz = 109.2 MHz Frequency Counter 109.2 MHz by adjusting C916.
9	PLL IC Free Running Frequency	R303 (3.3 KB)	76 kHz ± 0.1 kHz	Switch MODE to STEREO. 98 MHz, 60 dB input. Connect a Frequency Counter between TP4 and GND.
10	Stereo Separation	R315 (470 KB)	More than 40 dB	98 MHz, 60 dB 1 kHz (stereo) input. Adjust stereo separation to optimum position.
11	Confirmation of Stereo Indicator Lighting			98 MHz, 60 dB (stereo) input. Stereo Indicator should light up. Check that the stereo indicator turns off when the MODE selector is switched to MONO.
12	Confirmation of Stereo Distortion Factor		Less than 0.3% Distortion Factor	100 MHz, 60 dB, 1 kHz (stereo) input. If distortion exceeds 0.25%, first check according to Steps 2, 3, 14 and 15, and then readjust according to Step 1.

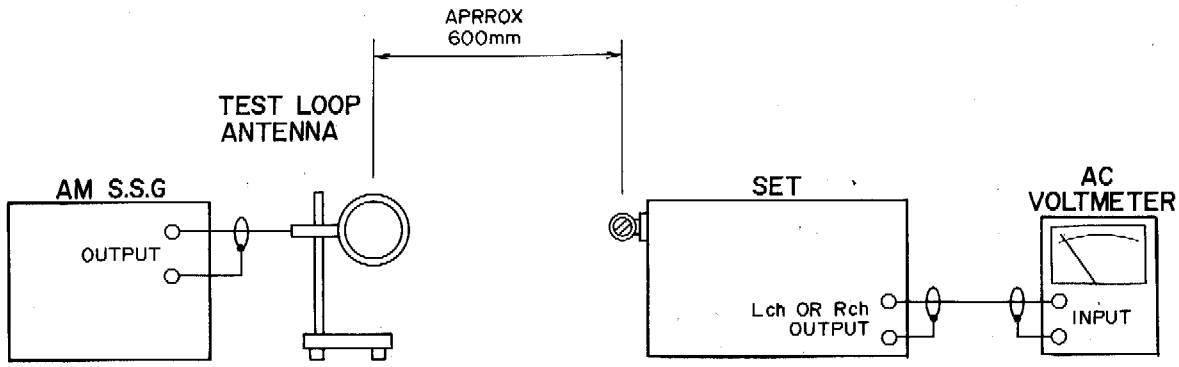


Fig. 15 Instrument Connections

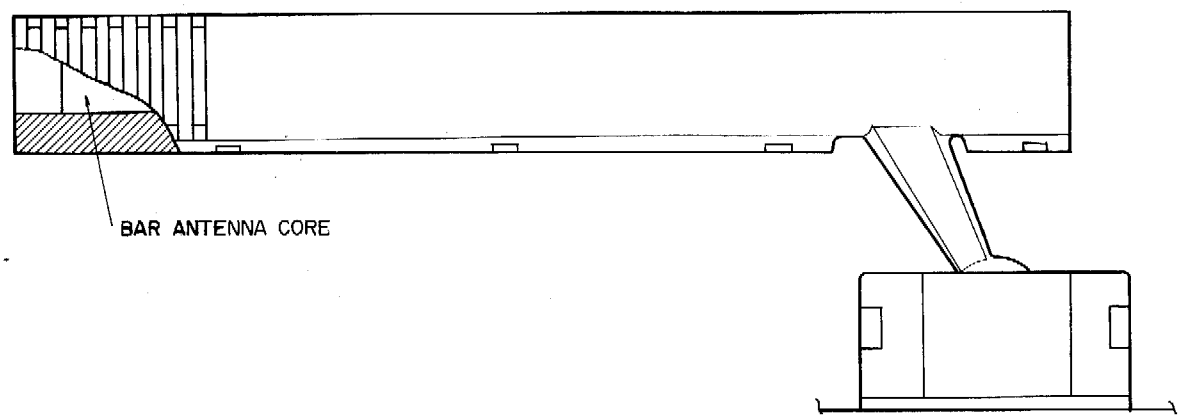


Fig. 16 Bar Antenna

2. AM SECTION ADJUSTMENTS (Refer to Figs. 13, 15, 16)

Unless otherwise specified, use the adjustment points provided on the Tuner-EQ P.C Board (Fig. 13).

Step	Adjustment Item	Adjustment Point	Result	Remarks
1	AM IF Coil	T202 (BLK) T203 (BLK)	Maximum Output	1,000 kHz, 50 dB, 400 Hz (30%) input.
2	Low Range Scale Indication	T201 (BLK)	2.7 V (50 mV)	Turn tuning knob fully counterclockwise. Display 520 kHz by adjusting T201. Connect a DC VOLTMETER between TP5 and GND.
3	High Range Scale Indication	C223	24 V (50 mV)	Turn tuning knob fully clockwise. Display 1,650 kHz by adjusting TC2. Connect a DC VOLTMETER between TP5 and GND.
4				Readjust in Steps 2 and 3.
5	Low Range Sensitivity	Bar Antenna Core	Maximum Output	600 kHz, 50 dB, 40 Hz (30%) input.
6	High Range Sensitivity	C203	Maximum Output	1,400 kHz, 50 dB, 400 Hz (30%) input.
7	AM Auto Stop Level	R215 470KB	4.4 V	Connect a DC VOLTMETER between TP6 and GND. 1,000 kHz, 74 dB, 400 Hz input.
8	Confirmation of Output Level		150 mV ± 2 dB	1,000 kHz, 74 dB, 1 kHz (100%) input.
9	Confirmation of Signal LED Sensitivity	R110 470 KB		1,000 kHz, 74 dB input. Check that at least 5 signal LEDs light up.

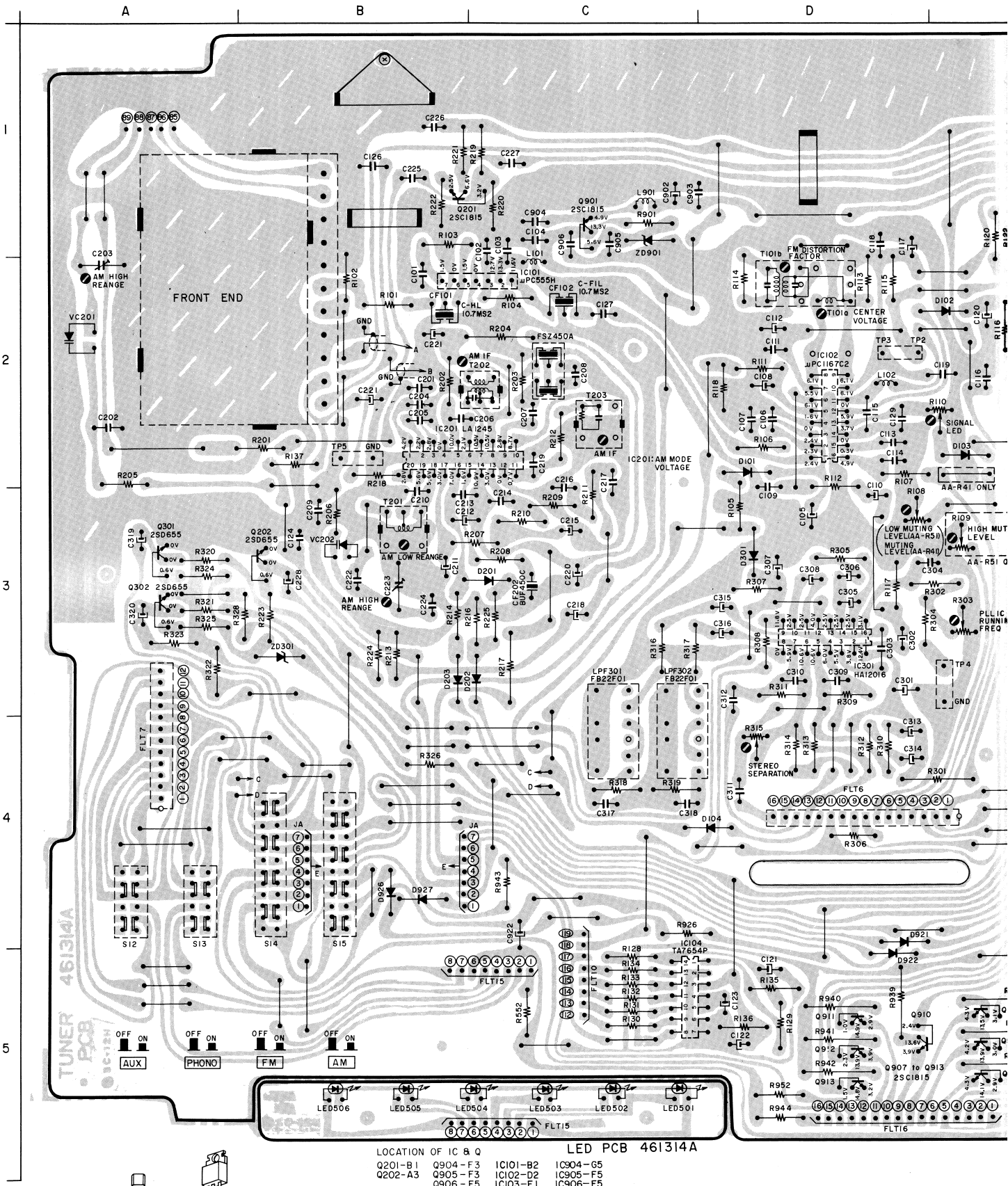
VIII. CLASSIFICATION OF VARIOUS P.C BOARDS

1. P.C BOARD TITLES AND IDENTIFICATION NUMBERS

P.C Board Title	P.C Board Number
Tuner P.C Board	461314A
Main Amp P.C Board	4631900
EQ Amp P.C Board	4613080
SPKR Switch P.C Board	4631920
Power Switch P.C Board	4631910
LED Drive P.C Board	4613090 (AA-R41) 4613100 (AA-R51)
Power Level Indicator P.C Board	4613090 (AA-R41) 4613100 (AA-R51)
Input P.C Board	4613070
Tape Switch P.C Board	4613070
TACT Switch P.C Board	4613150
LED P.C Board	461314A
LED P.C Board (S)	4613160

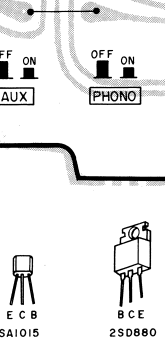
2. COMPOSITION OF VARIOUS P.C BOARDS

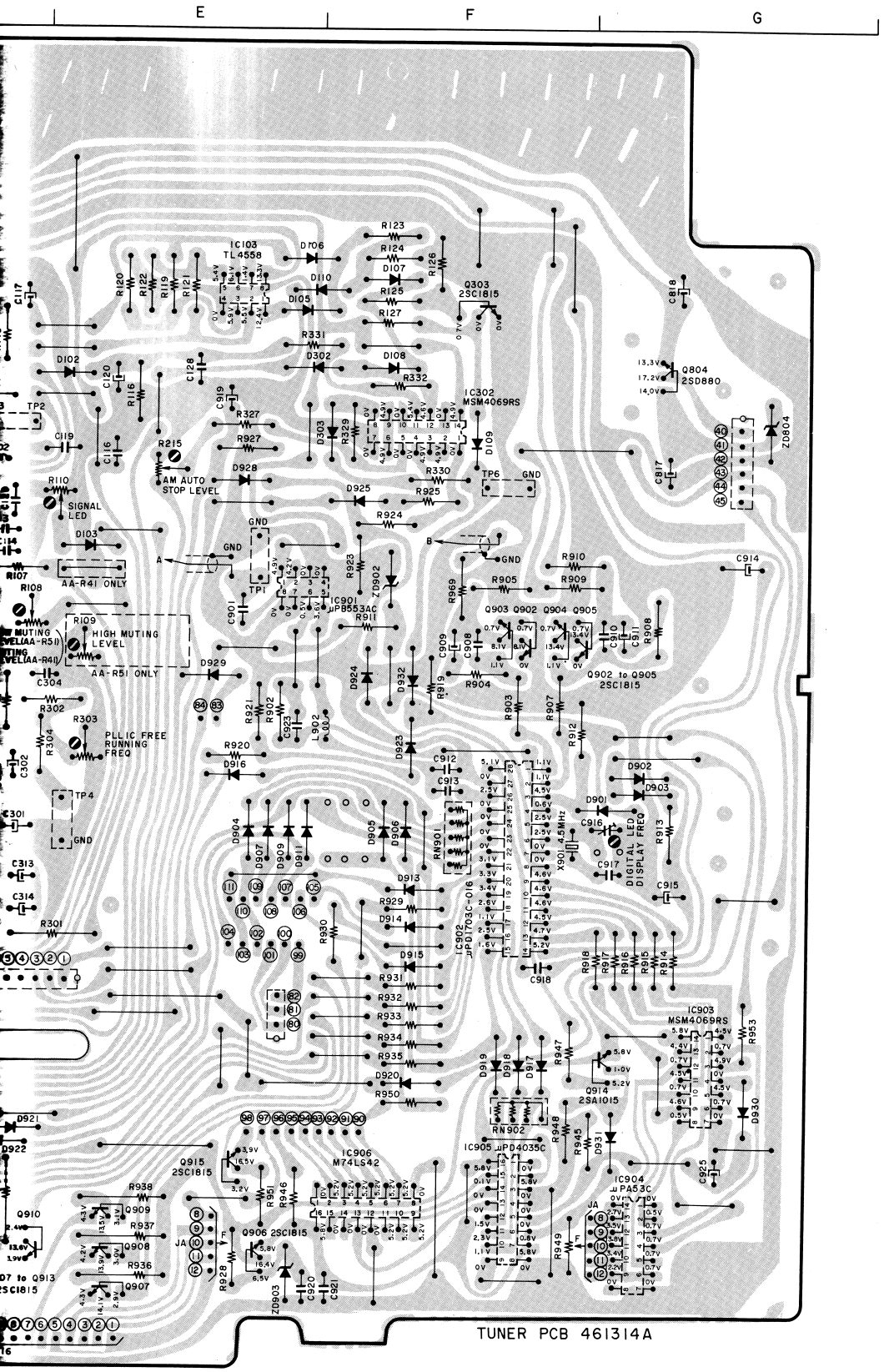
1) TUNER P.C BOARD 461314A and LED P.C BOARD 461314A



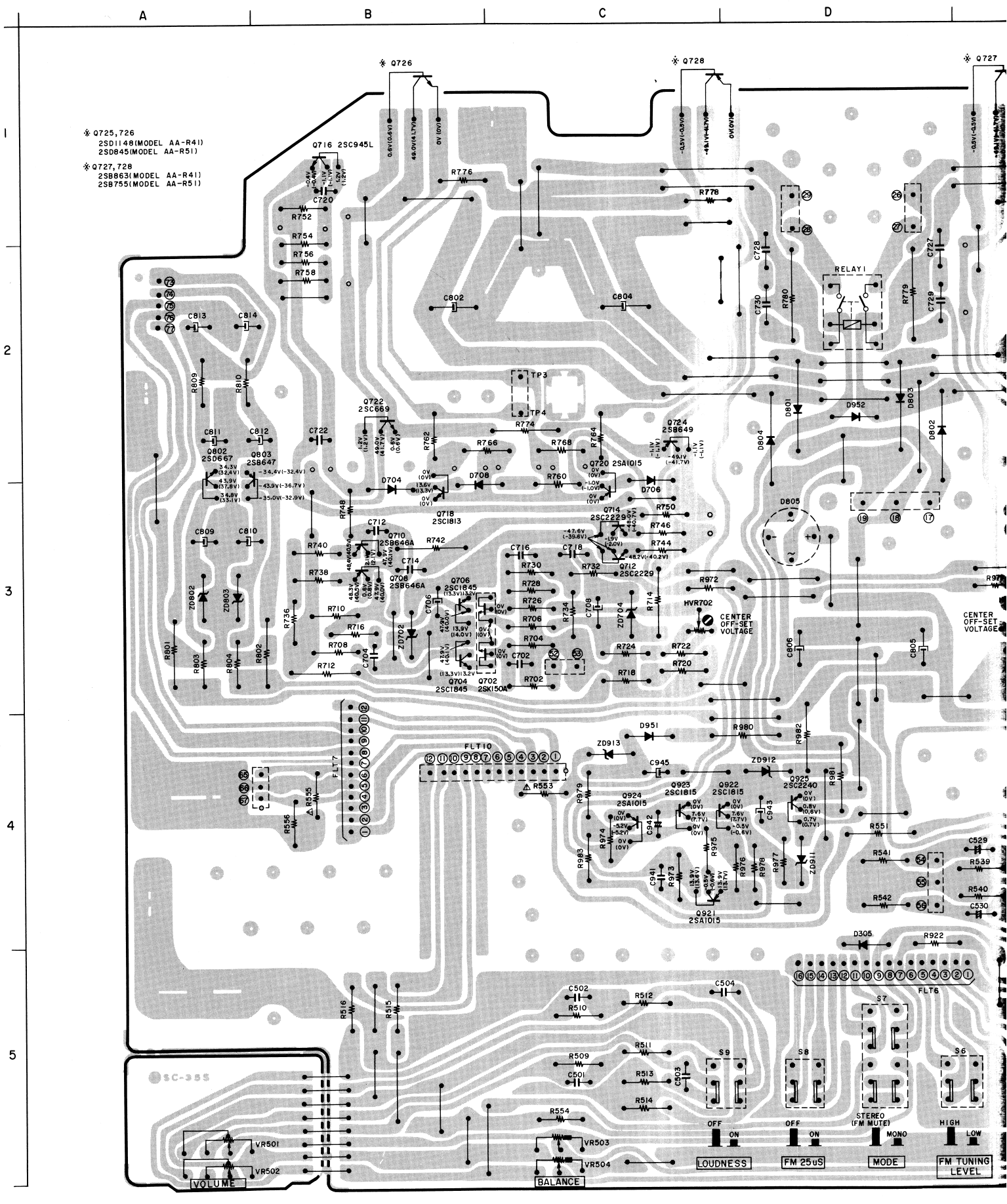
LOCATION OF IC & Q

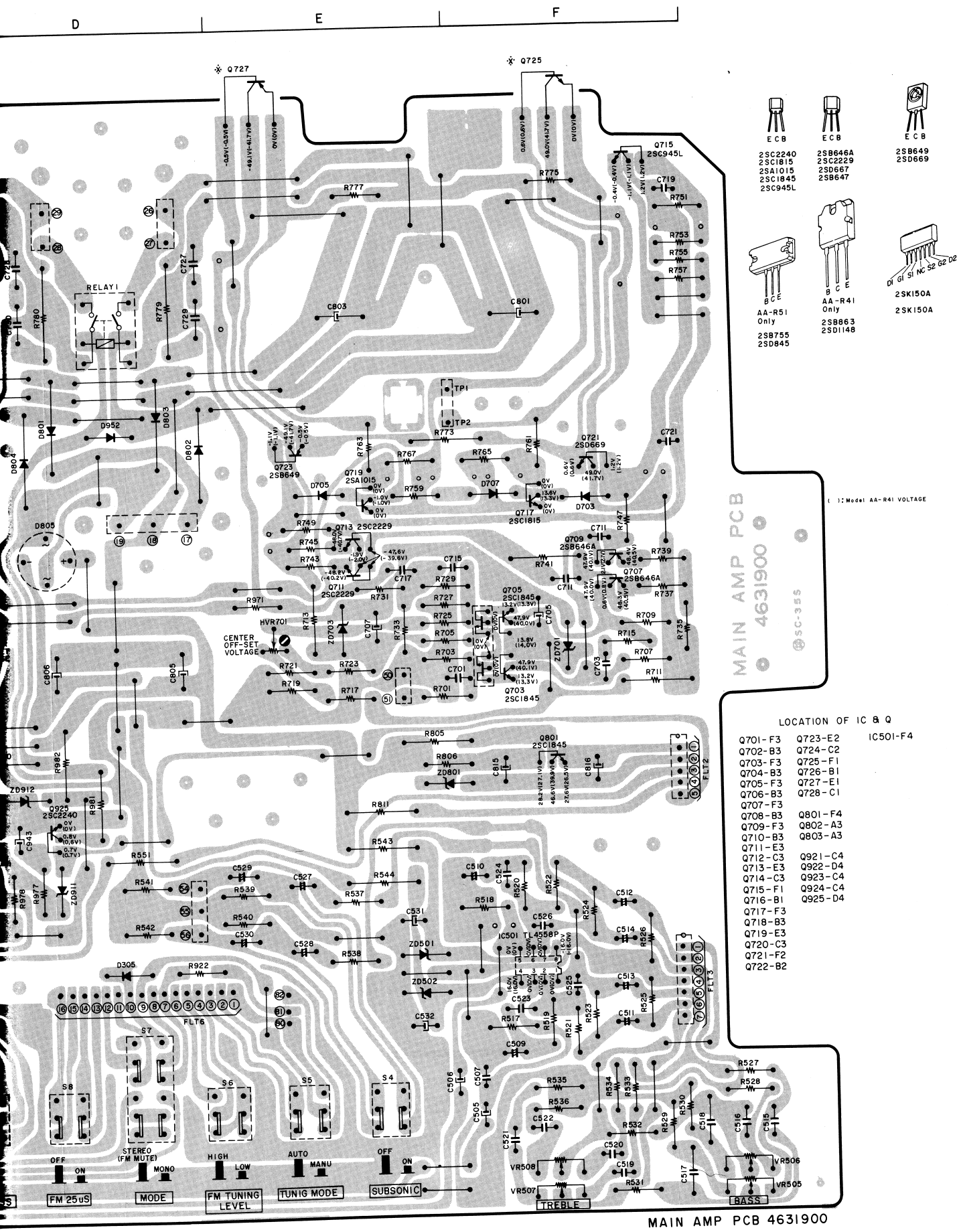
Q201-B1	Q904-F3	IC101-B2	IC904-G5
Q202-A3	Q905-F3	IC102-D2	IC905-F5
	Q906-E5	IC103-E1	IC906-F5
Q301-A3	Q907-E5	IC104-C5	
Q302-A3	Q908-E5		
Q303-F1	Q909-E5	IC201-B2	
	Q910-D5		
Q804-G2	Q911-D5	IC301-D3	
	Q912-D5	IC302-F2	
Q901-C1	Q913-D5		
Q902-F3	Q914-G4	IC901-E2	
Q903-F3	Q915-E5	IC902-F4	
		IC903-G4	




E
F
G
IC103 TL4558
D106
D110
D105
R123
R124
R125
R127
R128
Q303 2SC1815
R331
D302
D108
R332
IC302 MSM4069RS
D303
R329
D109
R327
R927
D928
R330
TP6
GND
D925
R925
R924
Q804 2SD880
13.3V
17.2V
14.0V
C818
C817
ZD804
R215
AM AUTO STOP LEVEL
R110
SIGNAL LED
D103
GND
AA-R41 ONLY
R107
R108
R109
HIGH MUTING LEVEL
AA-R51 ONLY
TP1
IC901 μPB553AC
R923
ZD902
R911
C901
R969
R905
R909
R910
C914
Q903 Q902 Q904 Q905
C909
C908
C910
C911
R908
R904
Q902 to Q905 2SC1815
D924
D932
R919
R903
R907
R912
C304
R302
R303
PLLIC FREE RUNNING FREQ
C302
R304
R921
R902
C923
L902
R920
D916
D923
C912
C913
D902
D903
D901
C916
C917
X901 4.5MHz
DIGITAL LED DISPLAY FREQ
R913
C915
TP4
GND
C301
C313
C314
R301
D904
D907
D909
D911
D905
D906
RM901
IC902 μPD1703C-016
R929
D913
D914
R930
D915
R931
R932
R933
R934
R935
D920
R950
C918
R918
R917
R916
R915
R914
IC903 MSM4069RS
R953
D930
D919
D918
D917
R947
RN902
Q914 2SA1015
D931
R948
R945
IC905 μPD4035C
IC904 μPA53C
C925
D921
D922
Q910
Q909
R938
R937
Q908
R936
Q907
Q915 2SC1815
R951
R946
IC906 M74LS42
R928
Q906 2SC1815
ZD903
C920
C921
R949
TUNER PCB 461314A

2) MAIN AMP P.C BOARD 4631900





E C B
2SC2240
2SC1815
2SA1015
2SC1845
2SC945L

E C B
2SB646A
2SC2229
2SD667
2SB647

E C B
2SB649
2SD669

B C E
AA-R51 Only
2SB755
2SD845

B C E
AA-R41 Only
2SB863
2SD1148

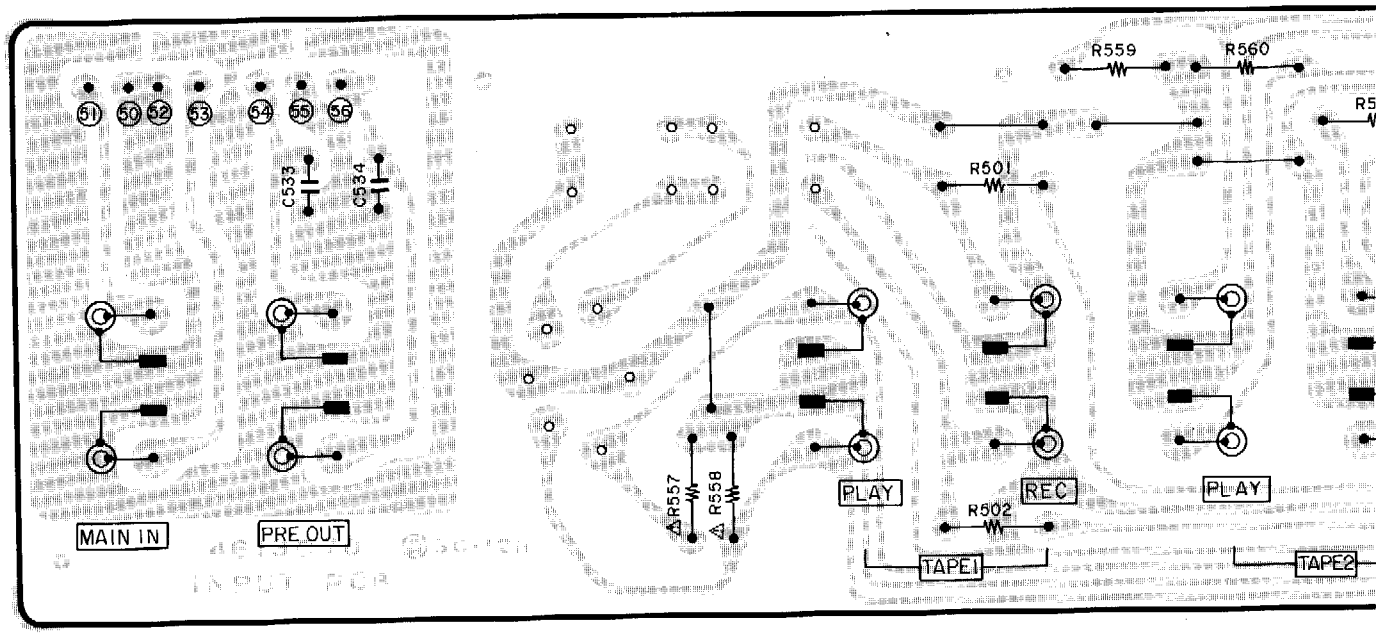
DI GI SI NC S2 G2 D2
2SK150A
2SK150A

LOCATION OF IC & Q

Q701-F3	Q723-E2	IC501-F4
Q702-B3	Q724-C2	
Q703-F3	Q725-F1	
Q704-B3	Q726-B1	
Q705-F3	Q727-E1	
Q706-B3	Q728-C1	
Q707-F3		
Q708-B3	Q801-F4	
Q709-F3	Q802-A3	
Q710-B3	Q803-A3	
Q711-E3		
Q712-C3	Q921-C4	
Q713-E3	Q922-D4	
Q714-C3	Q923-C4	
Q715-F1	Q924-C4	
Q716-B1	Q925-D4	
Q717-F3		
Q718-B3		
Q719-E3		
Q720-C3		
Q721-F2		
Q722-B2		

MAIN AMP PCB 4631900

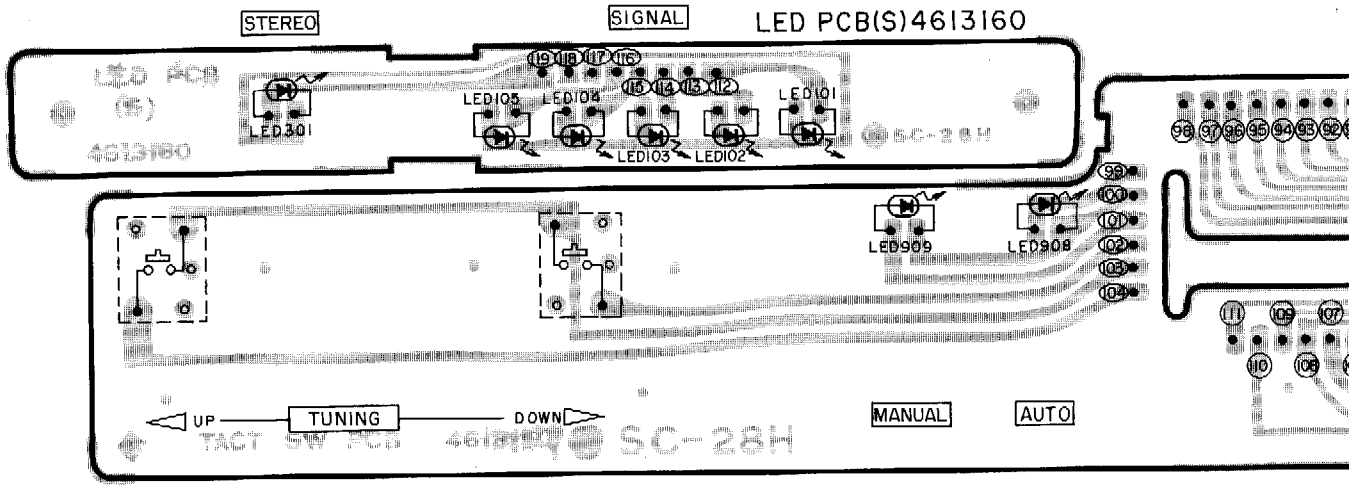
3) INPUT P.C BOARD 4613070 and TAPE SWITCH P.C BOARD 4613070

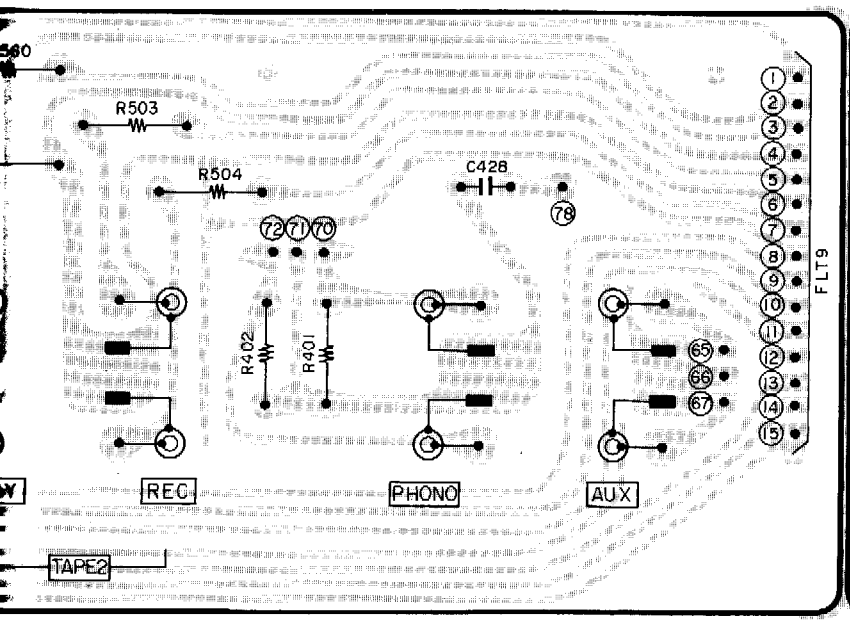


WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

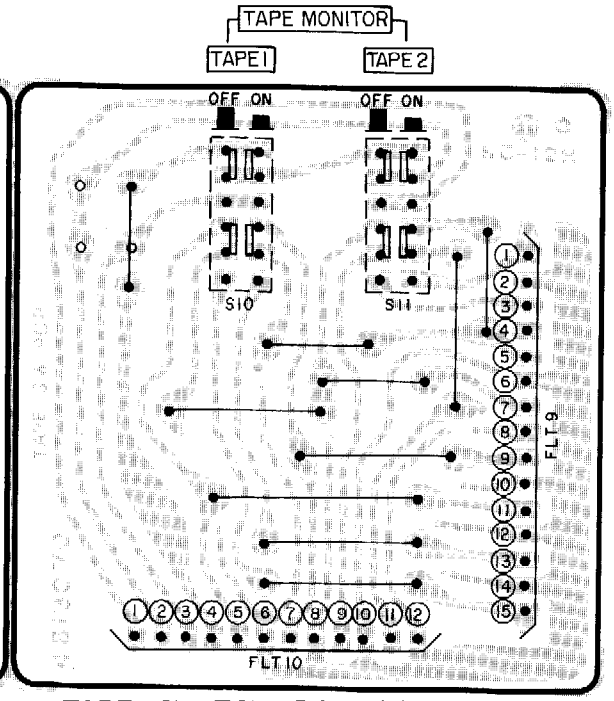
AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SÉCURITÉ QUE PAR DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

4) TACT SWITCH P.C BOARD 4613150 and LED P.C BOARD (S) 4613160

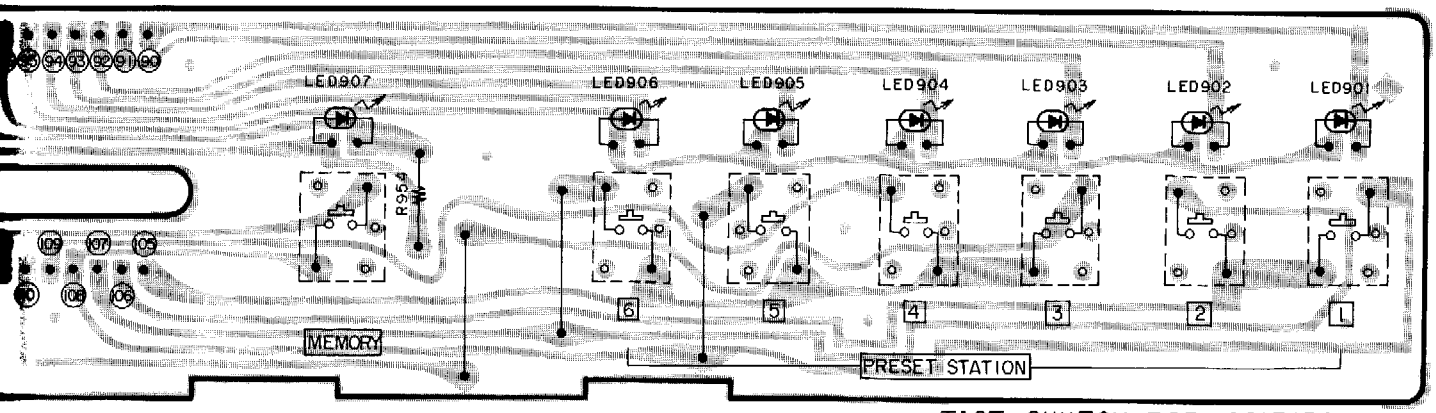




INPUT PCB 4613070

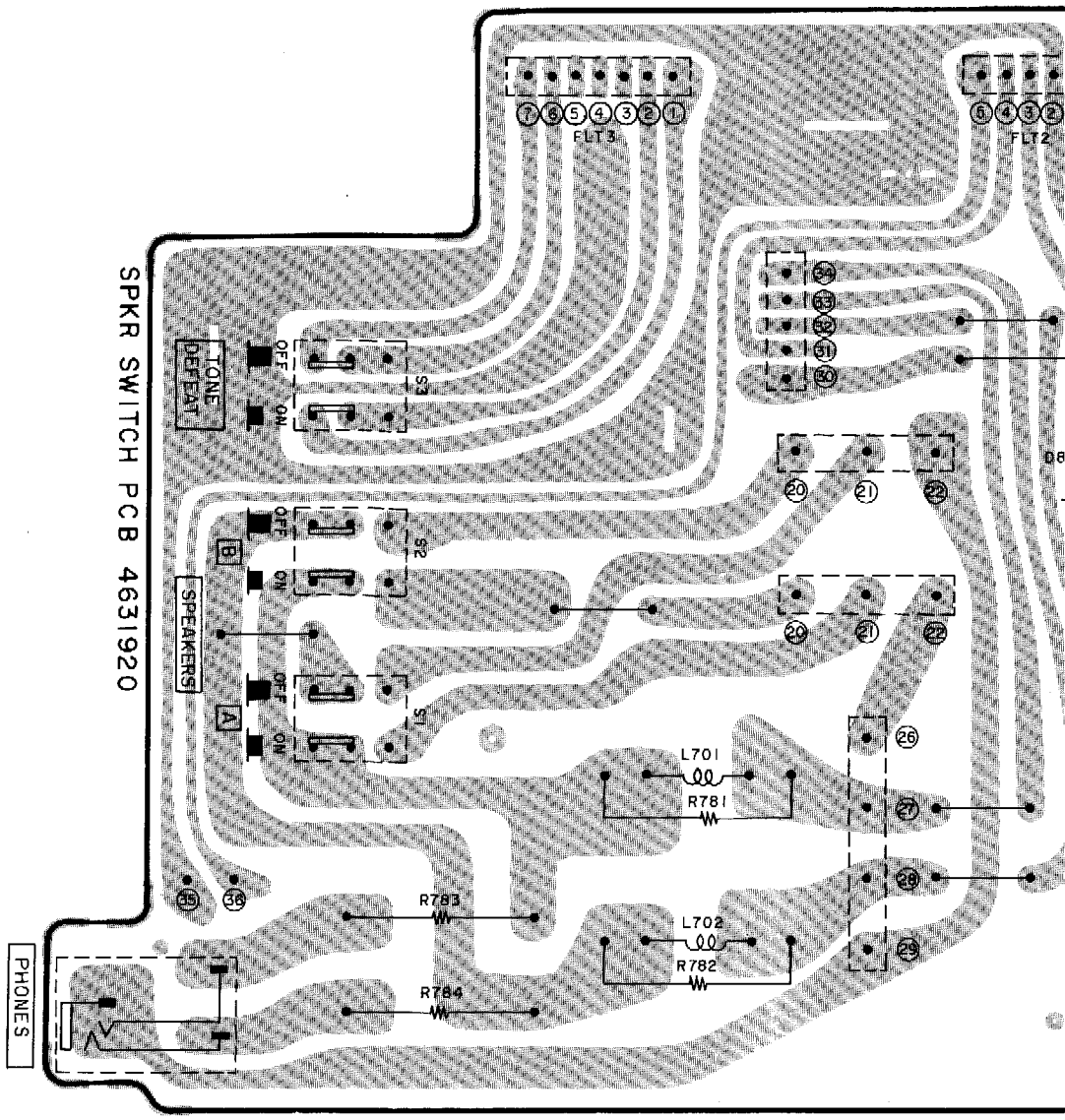


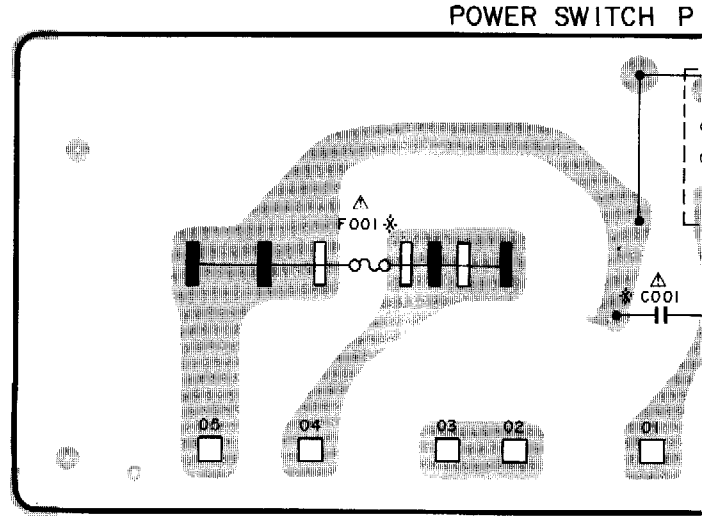
TAPE SWITCH PCB 4613070



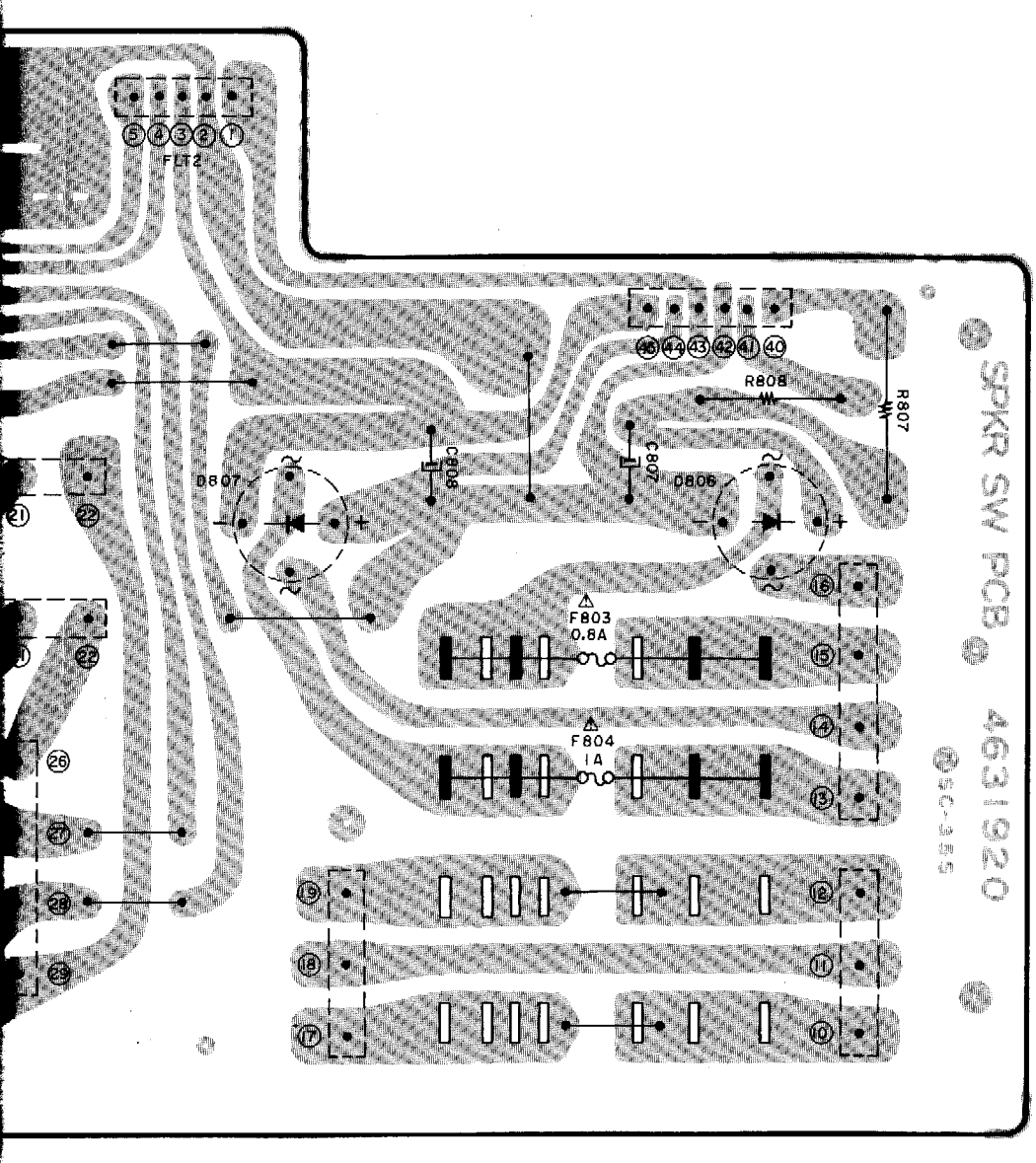
TACT SWITCH PCB 4613150

5) SPKR SWITCH P.C BOARD 4631920 and POWER SWITCH P.C BOARD 4631910

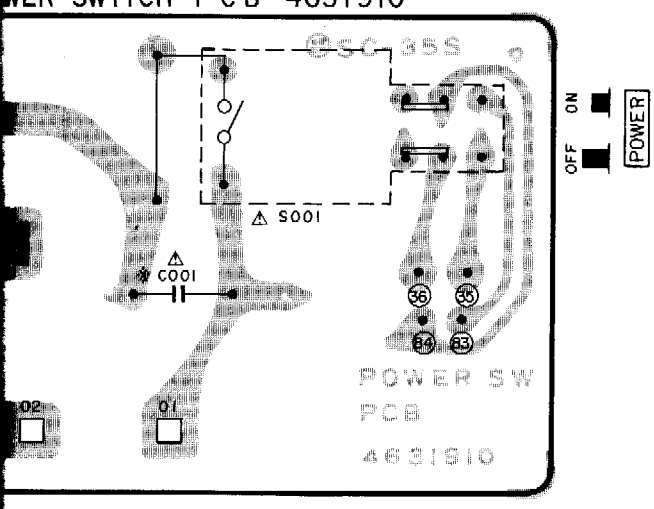




		F001	C001
U/T	100/120V	6A	0.0047/250V
	220/240V	3A	0.0047/250V
AAL, CSA		6A	0.0047/125V



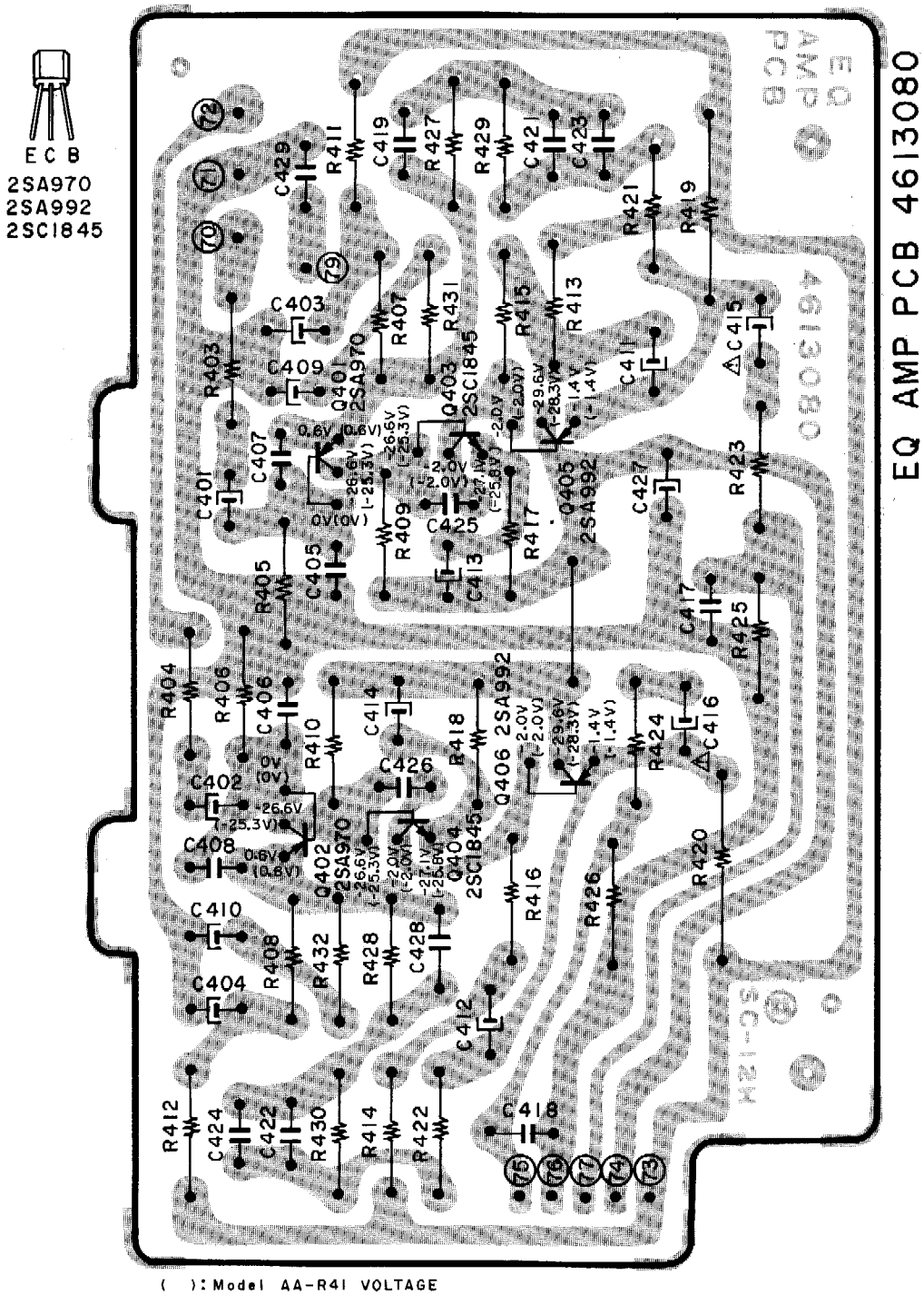
WER SWITCH PCB 4631910



WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQU LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL NE REMPLACER LES CONPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SÉCURITÉ QUE PAR DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

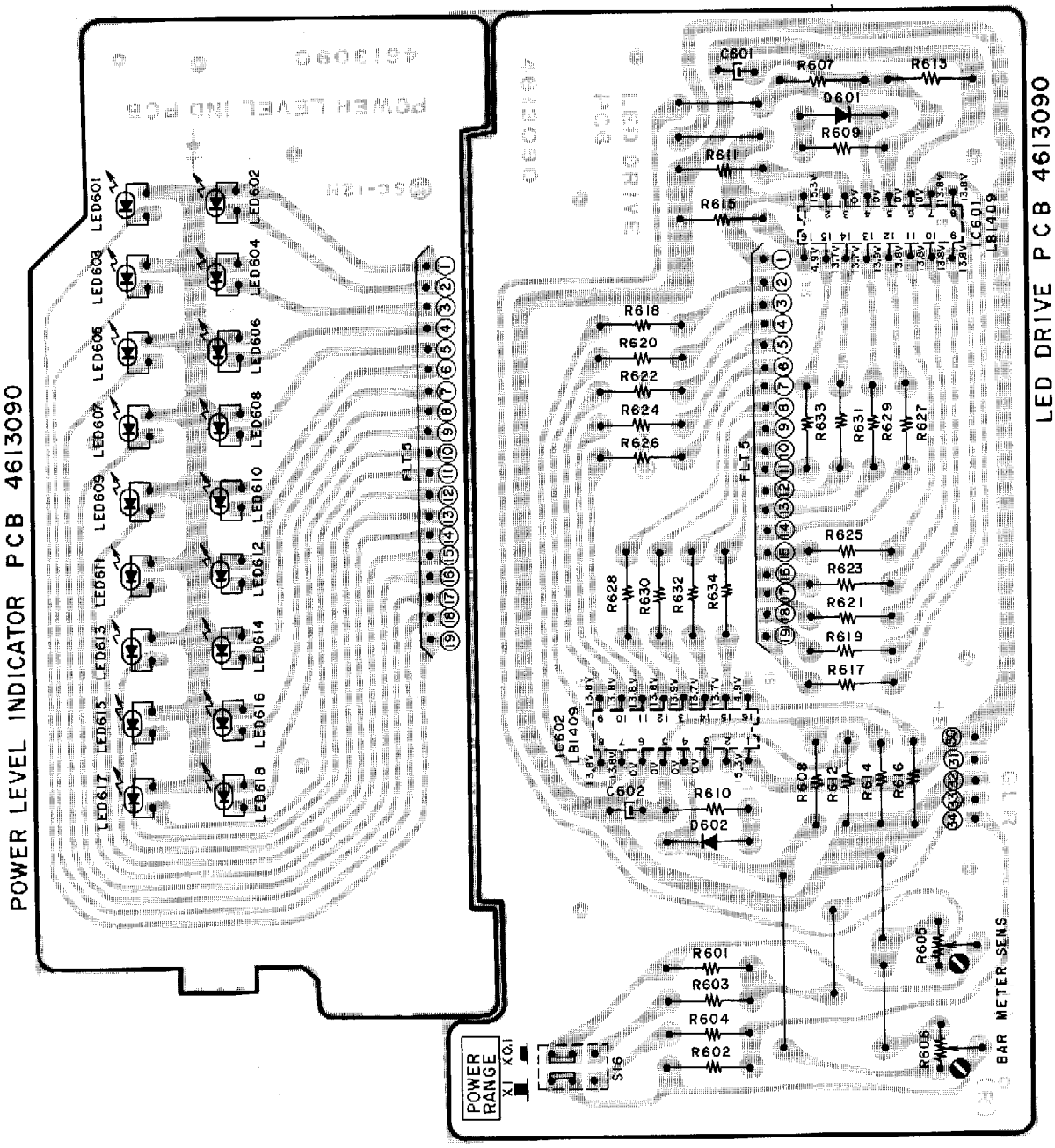
6) EQ AMP P.C BOARD 4613080



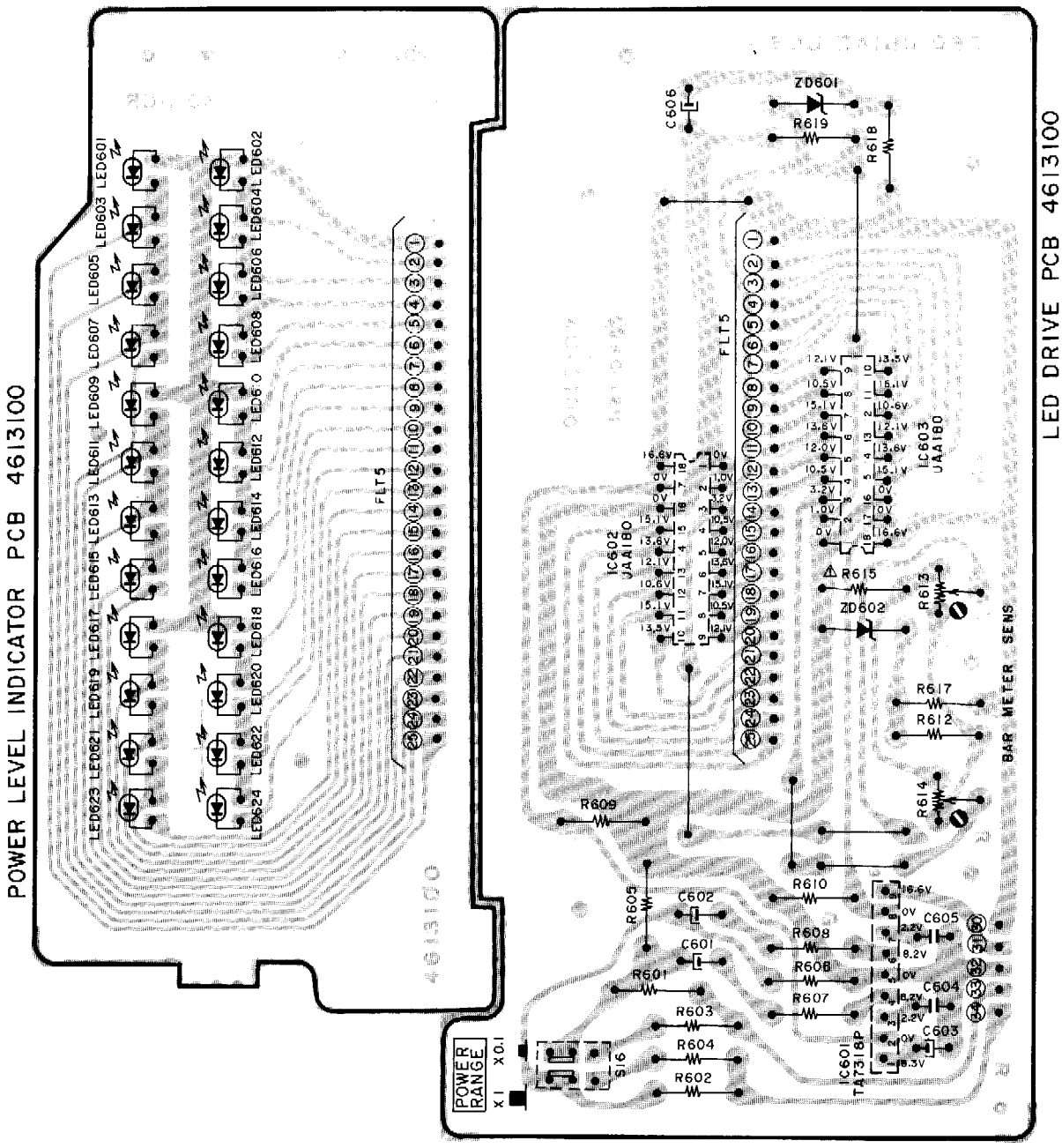
WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SÉCURITÉ QUE PAR DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

7) LED DRIVE P.C BOARD 4613090 (AA-R41) and POWER LEVEL INDICATOR P.C BOARD 4613090 (AA-R41)



8) LED DRIVE P.C BOARD 4613100 (AA-R51) and POWER LEVEL INDICATOR P.C BOARD 4613100 (AA-R51)



WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQU LES COMPOSANTS CRITIQUES DE SÛRETE. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT

SECTION 2

PARTS LIST

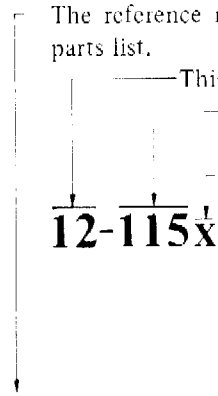
TABLE OF CONTENTS

1. RECOMMENDED SPARE PARTS 33
2. TUNER P.C BOARD BLOCK 34
3. MAIN AMP P.C BOARD BLOCK 34
4. EQ AMP P.C BOARD BLOCK 35
5. SPEAKER SW P.C BOARD BLOCK 35
6. POWER LEVEL IND P.C BOARD BLOCK 35
7. ASSEMBLY BLOCK 36
8. FINAL ASSEMBLY BLOCK 37
INDEX 38

Resistor and Capacitor which is not listed in this parts list, please refer to COMMON LIST FOR SERVICE PARTS.

HOW TO USE THIS PARTS LIST

1. This parts list is compiled by various individual blocks based on assembly process.
2. When ordering parts, please describe parts number, serial number, and model number in detail.
3. How to read list.



The reference number corresponds with illustration or photo number of that particular parts list.

——This number corresponds with the Figure Number.

——This number corresponds with the individual parts' index number in that figure.

——A small "x" indicates the inability to show that particular part in the Photo or Illustration.

Ref. No.	Parts No.	Description
		FLYWHEEL BLOCK #13
12-115x	800425	Flywheel Block Assy. Comp.
12-116	244506	Flywheel Only
12-117x	244754	Felt, Flywheel
12-118	251324	Main Metal Case
12-119	253080	Main Metal

4. The symbol numbers shown on the P.C. Board list can be matched with the Composite Views of components of the Schematic Diagram or Service Manual.
5. The indications of Resistors and Capacitors in the photos of P.C. Board are being eliminated.
6. The shape of the parts and parts name, etc. can be confirmed by comparing them with the parts shown on the Electrical Parts Table of P.C. Board.
7. Both the kind of part and installation position can be determined by the Parts Number. To determine where a parts number is listed, utilize Parts Index at end of Parts List.
   It is necessary first of all to find the Parts Number. This can be accomplished by using the Reference Number listed at right of parts number in the Parts Index. (meaning of ref. no. outlined in Item 3 above).
8. Utilize separate "Price List for Parts" to determine unit price. The most simple method of finding parts Price is to utilize the reference number.

CAUTION:

1. When placing an order for parts, be sure to list the parts no. model no., and description. There are instances in which if any of this information is omitted, parts cannot be shipped or the wrong parts will be delivered.
2. Please be careful not to make a mistake in the parts no. If the parts no. is in error, a part different from the one ordered may be delivered.
3. Because parts number and parts unit supply in the Preliminary Service Manual (Basic Parts List) may be partially changed, please use this parts list for all future reference.

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMEMNDED PARTS.

AVERTISSEMENT: ⚠ IL INDIQU LES COMPOSANTS CRITIQUES DE SURETE. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT.

1. RECOMMENDED SPARE PARTS

Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

REF. NO.	PARTS NO.	DESCRIPTION
1-1	BT706091	⚠ TRANS POWER T-1-439(C,A) (AA-R41)
1-2	BT706092	⚠ TRANS POWER T-1-440(U) (AA-R41)
1-3	BT706176	⚠ TRANS POWER T-1-443(C,A) (AA-R51)
1-4	BT706177	⚠ TRANS POWER T-1-444(U) (AA-R51)
1-5	ED706080	D LED BG5511K GRN
1-6	ED706081	D LED BR5511K RED
1-7	ED706136	D LED EBG5504S
1-8	ED706078	D LED PR5512K RED
1-9	ED704086	D SILICON GP 30D-L
1-10	ED706195	D SILICON GP10-4002
1-11	ED301911	D SILICON H DS448
1-12	ED704088	D SILICON W02
1-13	ED604541	D SILICON 1S2076
1-14	ED703876	D SILICON 1S2076A
1-15	ED706129	D VARACTOR KV1226(Y)
1-16	ED200967	D ZENER H RD5.6E B2
1-17	ED704089	D ZENER RD13E B3
1-18	ED706156	D ZENER RD16E B3
1-19	ED706141	D ZENER RD27E B3
1-20	ED701744	D ZENER RD3.9EB1
1-21	ED704087	D ZENER RD33E B3
1-22	ED706116	D ZENER RD5.1E B2
1-23	ED706184	D ZENER RD6.2E B2
1-24	ED706115	D ZENER RD6.8E B1
1-25	ED704104	D ZENER RD7.5E B1
1-26	ED706185	D ZENER RD8.2E B1
1-27	ED706106	IND LE SL-2724
1-28	EE706097	ANT BAR
1-29	EE706104	FRONT END FD222U15
1-30	EF706093	⚠ FUSE 250V 0.80A
1-31	EF704083	⚠ FUSE 250V 1A U/L
1-32	EF703830	⚠ FUSE 250V 3A U/L
1-33	EF704019	⚠ FUSE 250V 5A U/L
1-34	EF706178	⚠ FUSE 250V 6A
1-35	EI701742	IC HA12016
1-36	EI202218	IC LA1245
1-37	EI329612	IC LB1409
1-38	EI706110	IC MPA53C
1-39	EI706108	IC MPB553AC
1-40	EI706121	IC MPC1167C2
1-41	EI706107	IC MPD1703C-016
1-42	EI706111	IC MPD4035C
1-43	EI706109	IC MSM4069RS
1-44	EI706112	IC M74LS42P
1-45	EI308865	IC TA7318P-2
1-46	EI701770	IC TA7654P
1-47	EI706122	IC TL4558
1-48	EI706155	IC TL4558P
1-49	EI704102	IC UAA180
1-50	EI704026	IC μPC555H
1-51	EI706113	OSC X'TAL 4.5MHz
1-52	EJ700279	⚠ SW SELECTOR (U)
1-53	EP701729	RELAY FBR323D024
1-54	ER706133	FILTER CE BFU450C4N
1-55	ER706123	FILTER CE SFE10.7MS2GY
1-56	ER706132	FILTER CE SFZ450A
1-57	ER701745	FILTER LC FB22F01
1-58	ES706172	⚠ SW PUSH SDU3P-R (C,A)
1-59	ES706173	⚠ SW PUSH SDU3PE (U)
1-60	ES706170	SW PUSH ESB-6292
1-61	ES706166	SW PUSH ESB-62
1-62	ES706103	SW PUSH ESB62
1-63	ES701711	SW PUSH SUF33
1-64	ES706162	SW PUSH SUF53
1-65	ES706163	SW PUSH SUF63
1-66	ES706079	SW TACT EVQ-QJR02K
1-67	ET302405	TR FET 2SK150 GR
1-68	ET325501	TR 2SA1015 O,Y
1-69	ET305463	TR 2SA970 GR, BL
1-70	ET704041	TR 2SA992
1-71	ET704056	TR 2SB646A
1-72	ET704084	TR 2SB647
1-73	ET706146	TR 2SB649 B, C
1-74	ET704047	TR 2SB755
1-75	ET706143	TR 2SB863 O,R
1-76	ET307234	TR 2SC1815 Y,GR
1-77	ET704042	TR 2SC1845
1-78	ET703881	TR 2SC2229
1-79	ET307195	TR 2SC2240 GR,BL
1-80	ET703854	TR 2SC945 L
1-81	ET706144	TR 2SD1148
1-82	ET701743	TR 2SD655 E,F
1-83	ET704085	TR 2SD667
1-84	ET706145	TR 2SD669 B,C
1-85	ET704048	TR 2SD845
1-86	ET703894	TR 2SD880
1-87	EV703880	VR ROTARY 104C
1-88	EV706164	VR ROTARY 16P20x0A B254
1-89	EV703841	VR ROTARY 254MN

2. TUNER P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
2-1	BA706100	PC TUNER BLK AA-R41 (U)
2-2	BA706099	PC TUNER BLK AA-R41 (C)
2-3	BA706102	PC TUNER BLK AA-R51(U)
2-4	BA706101	PC TUNER BLK AA-R51(C)
2-5	EE706104	FRONT END FD222U15
2-IC101	EI704026	IC μPC5551I
2-IC102	EI706121	IC MPC1167C2
2-IC103	EI706122	IC TL4558
2-IC104	EI701770	IC TA7654P
2-IC201	EI202218	IC LA1245
2-IC301	EI701742	IC HA12016
2-IC302	EI706109	IC MSM4069RS
2-IC901	EI706108	IC MPB553AC
2-IC902	EI706107	IC MPD1703C-016
2-IC903	EI706109	IC MSM4069RS
2-IC904	EI706110	IC MPA53C
2-IC905	EI706111	IC MPD4035C
2-IC906	EI706112	IC M74LS42P
2-Q201	ET307234	TR 2SC1815 Y,GR
2-Q202	ET701743	TR 2SD655 E, F
2-Q301,302	ET701743	TR 2SD655 E,F
2-Q303	ET307234	TR 2SC1815 Y, GR
2-Q901 to 913	ET307234	TR 2SC1815 Y, GR
2-Q914	ET325501	TR 2SA1015 O, Y
2-Q915	ET307234	TR 2SC1815 Y, GR
2-Q804	ET703894	TR 2SD880
2-D101 to 104	ED301911	D SILICON H DS448
2-D105 to 107	ED301911	D SILICON H DS448 (U)
2-D108,109	ED301911	D SILICON H DS448
2-D201 to 203	ED301911	D SILICON H DS448
2-D301 to 303	ED301911	D SILICON H DS448
2-D901 to 904	ED301911	D SILICON H DS448
2-D905 to 907	ED301911	D SILICON H DS448 (U)
2-D909	ED301911	D SILICON H DS448
2-D911	ED301911	D SILICON H DS448
2-D913 to 932	ED301911	D SILICON H DS448
2-ZD301	ED701744	D ZENER RD3.9EB1
2-ZD804	ED704089	D ZENER RD13E B3
2-ZD901	ED200967	D ZENER H RD5.6E B2
2-ZD90	ED706116	D ZENER RD5.1E B2
2-ZD903	ED706115	D ZENER RD6.8E B1
2-LED501 to 506	ED706136	D LED EBG5504S
2-LED910	ED706106	IND LE SL-2724
2-SW12-16	ES706103	SW PUSH ESB62
2-X901	EI706113	OSC X'TAL 4.5MHz
2-CF101,102	ER706123	FILTER CE SFE10.7MS2GY
2-CF201	ER706132	FILTER CE SFZ450A
2-CF202	ER706133	FILTER CE BFU450C4N
2-LF301,302	ER701745	FILTER LC FB22F01
2-VC201,202	ED706129	D VARACTOR KV1226(Y)
2-T101	EO706124	COIL DET 67C2N01
2-T201	EO706130	COIL OSC 2 147 μH
2-T202	EO703932	AM IFT COIL
2-T203	EO706131	COIL DET 450KHz
2-L101,102	EO703849	COIL RC-855 2.2μH M
2-L901	EO703849	COIL RC-855 2.2μH M
2-L902	EO703848	COIL 22μH
2-R108,109	EV483377	R S-FIX H SR19R 3P 0.15W 473
2-R110	EV706114	R S-FIX SR19R 0.15W 474
2-R204	ER704039	R CB 1/2W 470
2-R215	EV706114	R S-FIX SR19R 0.15W 474
2-R217	ER306805	R CB H SNP RDS 1/2W 101J
2-R301	ER704039	R CB 1/2W 470
2-R303	EV701746	R S-FIX H1021A010 B332
2-R315	EV706114	R S-FIX SR19R 0.15W 474
2-C203	EC701754	C S-FIX CTY122D
2-C222	EC311867	C STY V F05 500 391J 50DC
2-C223	EC701754	C S-FIX CTY122D
2-C228	EC706134	C TT CS15E R10 35DC
2-C304	EC704036	C STY 102J 50DC
2-C311,312	EC435690	C STY V 561J 50DC
2-C909	EC703860	C TT 1R0 35DC

REF. NO.	PARTS NO.	DESCRIPTION
2-C911	EC706117	C TT CS15E 3R3 35DC
2-C914	EC706118	C.EC 103 6.3DC
2-C916	EC701790	C S-FIX ECV1ZW 200
2-RN901	ER706120	COMP R 104x4
2-RN902	ER706119	COMP R 104x3

3. MAIN AMP P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
3-1	BA706137	PC MAIN AMP BLK AA-R41
3-2	BA706138	PC MAIN AMP BLK AA-R51
3-IC501	EI706155	IC TL4558P
3-Q701,702	ET302405	TR FET 2SK150 GR
3-Q703 to 706	ET704042	TR 2SC1845
3-Q707 to 710	ET704056	TR 2SB646A
3-Q711 to 714	ET703881	TR 2SC2229
3-Q715,716	ET703854	TR 2SC945 L
3-Q717,718	ET307234	TR 2SC1815 Y,GR
3-Q719,720	ET325501	TR 2SA1015 O,Y
3-Q721,722	ET706145	TR 2SD669 B,C
3-Q723,724	ET706146	TR 2SB649 B,C
3-Q725,726	ET706144	TR 2SD1148 (AA-R41)
3-Q725,726	ET704048	TR 2SD845 (AA-R51)
3-Q727,728	ET706143	TR 2SB863 O,R (AA-R41)
3-Q727,728	ET704047	TR 2SB755 (AA-R51)
3-Q801	ET704042	TR 2SC1845
3-Q802	ET704085	TR 2SD667
3-Q803	ET704084	TR 2SB647
3-Q921	ET325501	TR 2SA1015 O,Y
3-Q922,923	ET307234	TR 2SC1815 Y, GR
3-Q924	ET325501	TR 2SA1015 O, Y
3-Q925	ET307195	TR 2SC2240 GR, BL
3-D305	ED604541	D SILICON 1S2076
3-D703 to 708	ED703876	D SILICON 1S2076A
3-D801 to 804	ED704086	D SILICON GP 30D-L
3-D805	ED704088	D SILICON W02
3-D951	ED706195	D SILICON GP10-4002
3-D952	ED703876	D SILICON 1S2076A
3-ZD501,502	ED706156	D ZENER RD16E B3
3-ZD701 to 704	ED704089	D ZENER RD13E B3
3-ZD801	ED706141	D ZENER RD27E B3
3-ZD802,803	ED704087	D ZENER RD33E B3
3-ZD911	ED704104	D ZENER RD7.5E B1
3-ZD912,913	ED704089	D ZENER RD13E B3
3-SW	ES706162	SW PUSH SUF53 (AA-R41)
3-SW	ES706163	SW PUSH SUF63 (AA-R51)
3-RL1	EP701729	RELAY FBR323D024
3-VR501	EV706164	VR ROTARY 16P20x0A B254
3-VR503	EV703841	VR ROTARY 254MN
3-VR505	EV703880	VR ROTARY 104C
3-VR507	EV703880	VR ROTARY 104C
3-VR701,702	EV427858	R S-FIX H SR19R 3P 0.15W 472
3-R543,544	ER331187	R OMF H FS 1W 272J
3-R711 to 714	ER331187	R OMF H FS 1W 272J
3-R741,742	ER706150	R OMF FS 1W 123J
3-R773,774	ER329279	R OMF H FS 1W 271J
3-R775 to 778	ER703893	R CT 5W R27
3-R779, 780	ER704074	R OMF 2W 100
3-R811	ER312488	R OMF H FS 2W 222J
3-R980	ER706153	R OMF FS 1W 682J
3-R981	ER703899	R OMF 1W 102
3-R982	ER313774	R OMF H FS 1W 472J
3-C509,510	EC315774	C EC V F05 SM 100M 25DC
3-C511 to 514	EC315769	C EC V F05 SM 100M 16.0DC
3-C527,528	EC315774	C EC V F05 SM 100M 25DC
3-C529,530	EC316155	C EC V F05 SM 1R0M 25.0DC
3-C801 to 804	EC706139	C EC 472 63DC
3-C942	EC200945	C EC V F05 SM 101M 6.3DC

4. EQ AMP P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
4-1	BA706165	PC EQ AMP BLK AA-R41
4-Q401,402	ET305463	TR 2SA970 GR, BL
4-Q403,404	ET704042	TR 2SC1845
4-Q405,406	ET704041	TR 2SA992

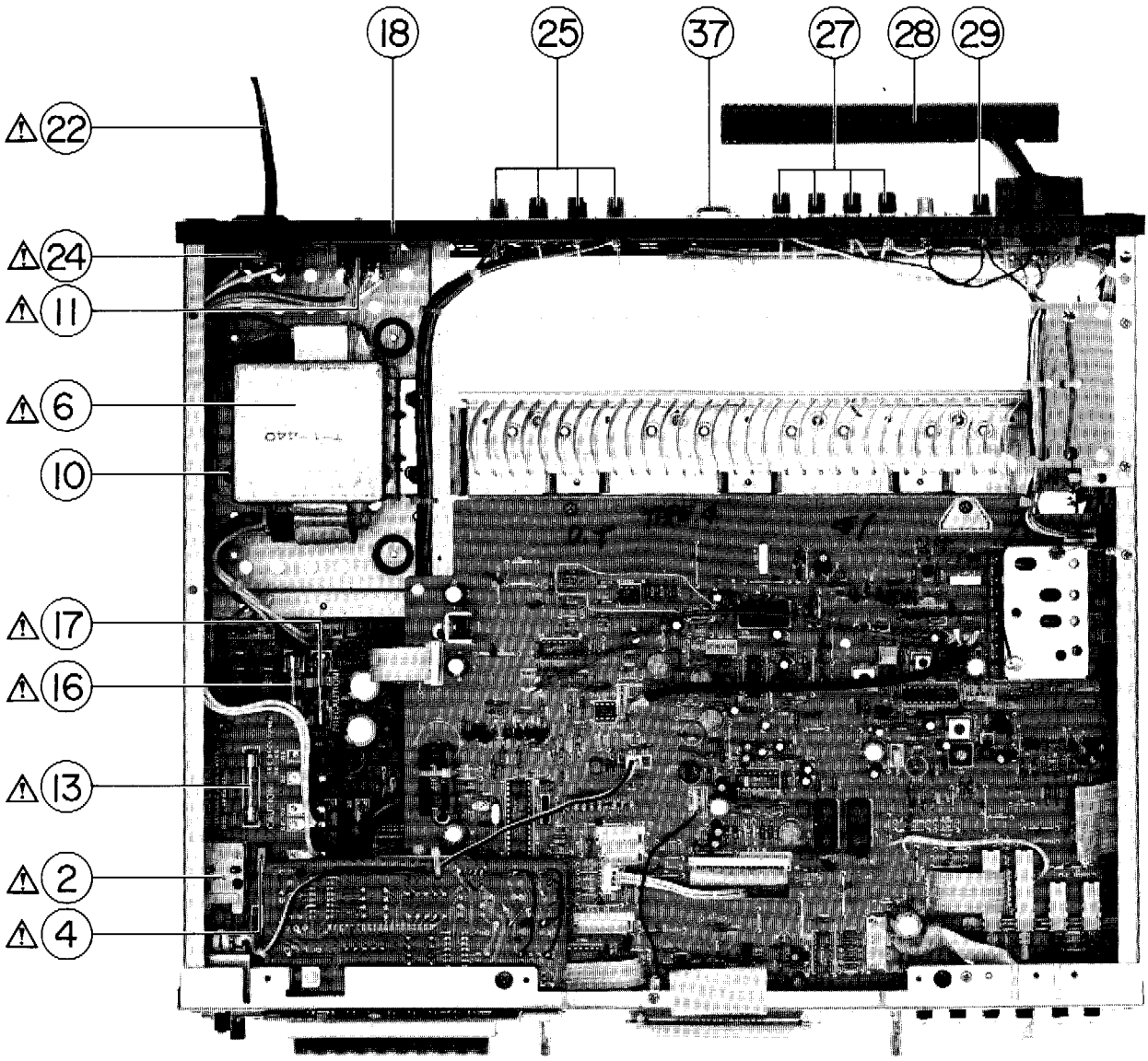
5. SPEAKER SW P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
5-1	EJ703868	PHONE J
5-D806,807	ED706195	D SILICON GP10-4002
5-S1-3	ES701711	SW PUSH SUF33
5-L701,702	EO701714	COIL CH 1μH
5-R781,782	ER704074	R OMF 2W 100
5-R783,784	ER306961	R OMF H SNP FS 2W 151J
5-R807	ER313588	R MF H FS 2W 270J

6. POWER LEVEL IND P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
6-1	BZ706169	POWER LEVEL IND BLK AA-R41
6-2	BZ706192	POWER LEVEL IND BLK AA-R51
6-IC601,602	EI329612	IC LB1409 (AA-R41)
6-IC601	EI308865	IC TA7318P-2 (AA-R51)
6-IC602,603	EI704102	IC μAA180 (AA-R51)
6-D601,602	ED604541	D SILICON 1S2076 (AA-R41)
6-ZD601	ED706185	D ZENER RD8.2E B1 (AA-R51)
6-ZD602	ED706184	D ZENER RD6.2E B2 (AA-R51)
6-S16	ES706170	SW PUSH ESB-6292
6-LED601 to 618	ED701791	D LED SLP 164B (AA-R41)
6-LED601 to 624	ED701791	D LED SLP 164B (AA-R51)
6-R605,606	EV706171	R S-FIX TM8K 103 (AA-R41)
6-R613,614	EV706182	R S-FIX TM8K 302 (AA-R51)

ASSEMBLY BLOCK

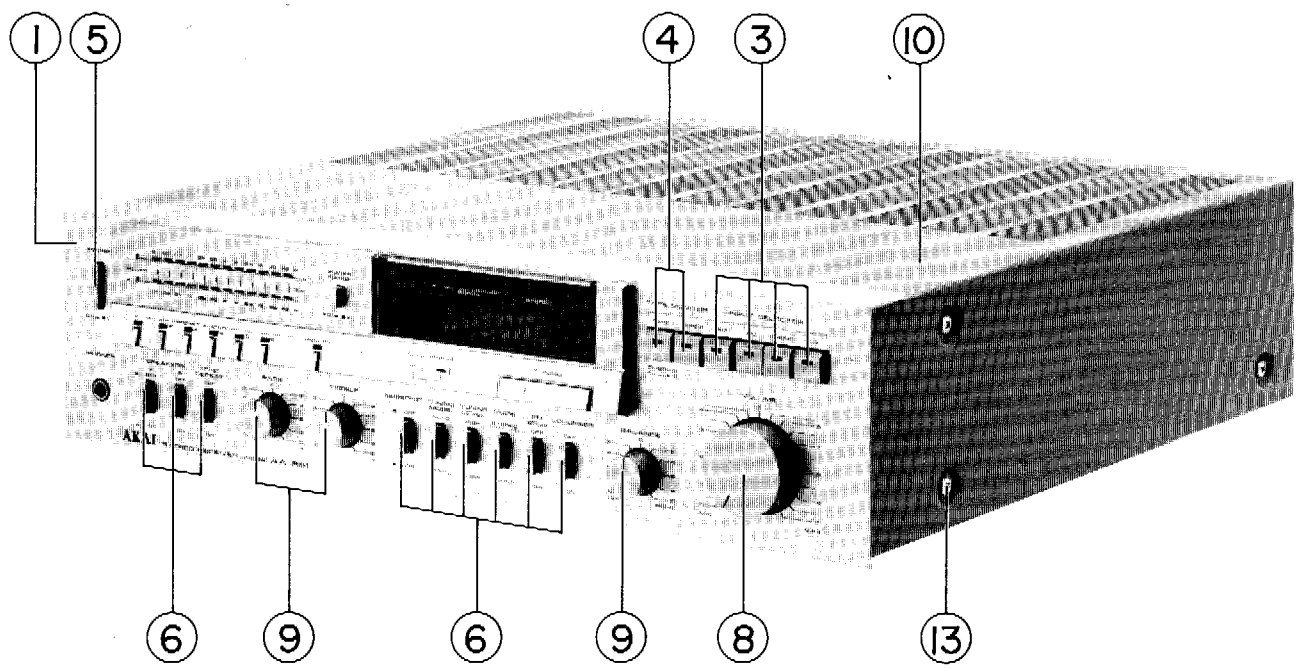


7. ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
		INPUT P.C BOARD BLOCK
7-1x	ES706166	SW PUSH ESB-62
		POWER SW P.C BOARD BLOCK
7-2	ES706173	⚠ SW PUSH SDU3PE (U)
7-3x	ES706172	⚠ SW PUSH SDU3P-R (C, A)
7-4	EC701725	⚠ C MMY 472 125DC (U)
7-5x	EC701724	⚠ C MMY 472 250DC (C,A)
		CHASSIS BLOCK
7-6	BT706177	⚠ TRANS POWER T-1-444 (U) (AA-R51)
7-7x	BT706176	⚠ TRANS POWER T-1-443(C,A)(AA-R51)
7-8x	BT706092	⚠ TRANS POWER T-1-440 (U) (AA-R41)
7-9x	BT706091	⚠ TRANS POWER T-1-439 (C,A)(AA-R41)
7-10	ZS609006	T2BR40x10STL CMT
7-11	0J700279	⚠ SW SELECTOR (U)
7-12x	ZS609208	T2PAN30x08 STL BNI
7-13	EF703830	⚠ FUSE 250V 3A U/L (F001)(U)
7-14x	EF704019	⚠ FUSE 250V 5A U/L(F001)(C,A) (AA-R41)
7-15x	EF706178	⚠ FUSE 250V 6A (F001)(C,A)(AA-R51)
7-16	EF706093	⚠ FUSE 250V 0.80A (F803)
7-17	EF704083	⚠ FUSE 250V 1A U/L (F804)

REF. NO.	PARTS NO.	DESCRIPTION
		REAR PANEL BLOCK
7-18	SP706180	PANEL REAR AA-R51(U)
7-19x	SP706179	PANEL REAR AA-R51 (C,A)
7-20x	SP706096	PANEL REAR AA-R41 (U)
7-21x	SP706095	PANEL REAR AA-R41 (C,A)
7-22	EW703828	⚠ AC CORD
7-23x	EZ703829	STRAIN RELIEF SR-3P-4
7-24	EJ701835	⚠ SOCKET OUTLET
7-25	EJ703832	SPEAKER TERMINAL
7-26	ZS609208	T2PAN30x08STL BNI
7-27	EJ706187	TERMINAL W/SCREW TT5540 5P
7-28	EE706097	ANT BAR
7-29	ZS701839	GND NUT 1P
		ASSEMBLY BLOCK
7-30x	ED706078	D LED PR5512K RED
7-31x	ES706079	SW TACT EVQ-QJR02K
7-32x	ED706080	D LED BG5511K GRN
7-33x	ED706081	D LED BR5511K RED
7-34x	ED706078	D LED PR5512K RED
7-35x	SA703922	FOOT
7-36x	ZS565942	T2PAN40x08STL CMT
7-37	EJ326185	PLUG SHORT PIN UZ-0120

FINAL ASSEMBLY BLOCK



8. FINAL ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
8-1	BD706175	PANEL FRONT BLK AA-R51
8-2x	BD706189	PANEL FRONT BLK AA-R41
8-3	SK706084	KNOB SEL PART
8-4	SK706085	KNOB TAPE PART
8-5	SB703794	BUTTON (A)
8-6	SK706086	KNOB FUNCTION
8-7	ZG706087	SP C-8002
8-8	SK706088	KNOB VOLUME
8-9	SK701759	KNOB RSL-18D
8-10	SP706090	COVER UPPER (U,C)
8-11x	SP706089	COVER UPPER (A)
8-12	ZS609208	T2PAN30x08STL BNI
8-13	ZS322580	ST BID40x08STL BNI (U,C)
8-14x	ZS322570	ST BID40x08STL NI3 (A)

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PARTS NO.	REF. NO.
BA706099	2-2
BA706100	2-1
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BA706137	3-1
BA706138	3-2
BA706165	4-1
BD706175	8-1
BD706189	8-2x
BT706091	7-9x
BT706092	7-8x
BT706176	7-7x
BT706177	7-6
BZ706169	6-1
BZ706192	6-2
EC200945	3-C942
EC311867	2-C222
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EC316155	3-C529,530
EC435690	2-C311,312
EC701724	7-5x
EC701725	7-4
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EC701790	2-C916
EC703860	2-C909
EC704036	2-C304
EC706117	2-C911
EC706118	2-C914
EC706134	2-C228
EC706139	2-C801 to 804
ED200967	2-ZD901
ED301911	2-D901 to 904
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ED706081	7-33x
ED706106	2-LED910
ED706115	2-ZD903
ED706116	2-ZD90
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EI706108	2-IC901
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ES706163	3-SW
ES706166	7-1x
ES706170	6-S16
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SK706086	8-6
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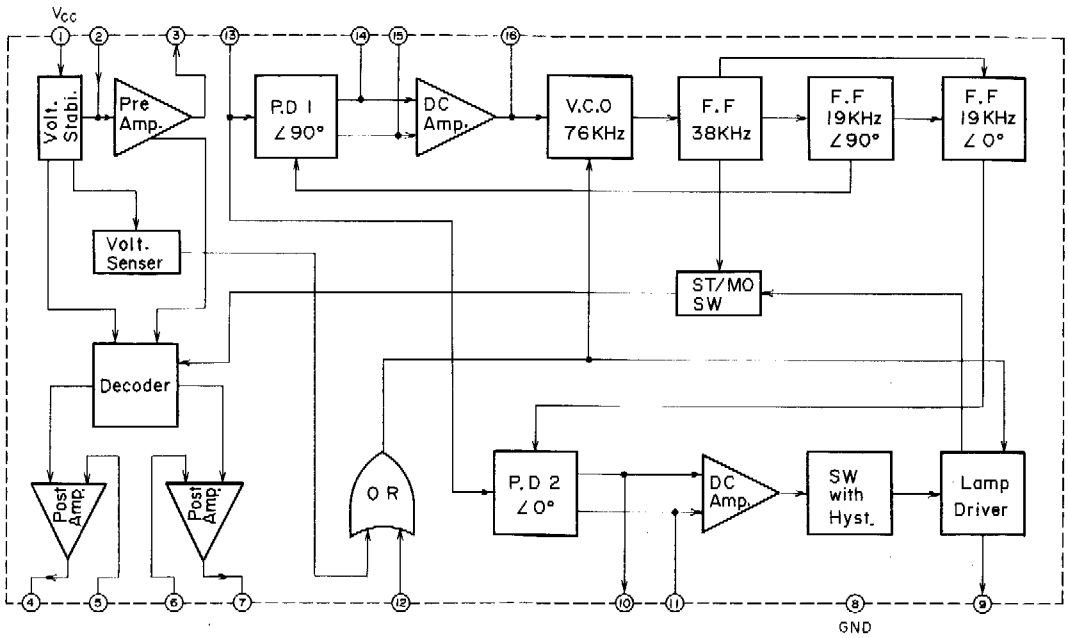
SECTION 3

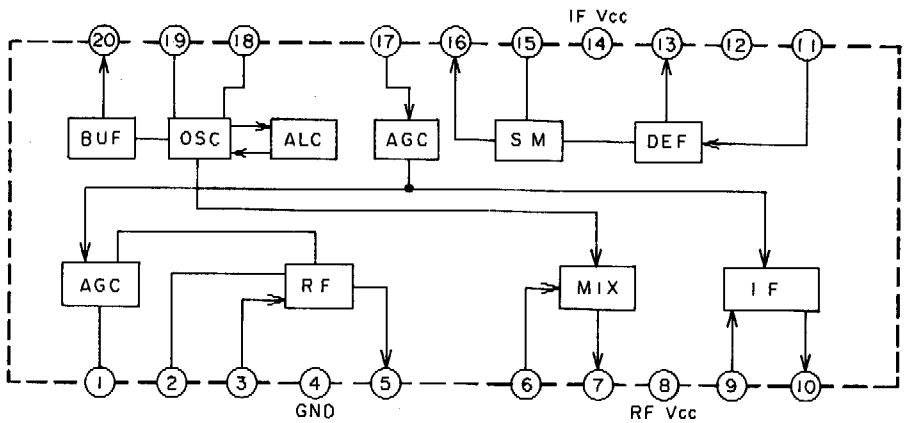
SCHEMATIC DIAGRAM

1. SCHEMATIC DIAGRAM OF ICs
2. AA-R41 No. 2-1 1621832A TUNER SCHEMATIC DIAGRAM
3. AA-R41 No. 2-2 1621833A MAIN AMP SCHEMATIC DIAGRAM
4. AA-R51 No. 2-1 1621834A TUNER SCHEMATIC DIAGRAM
5. AA-R51 No. 2-2 1621835A MAIN AMP SCHEMATIC DIAGRAM

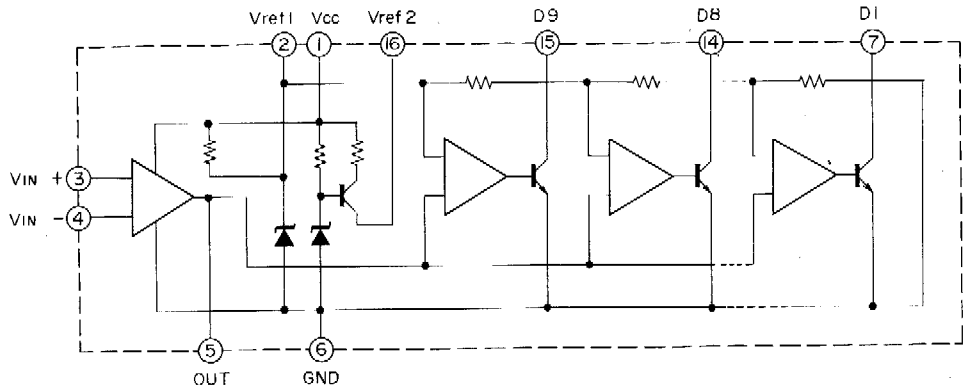
HA12016



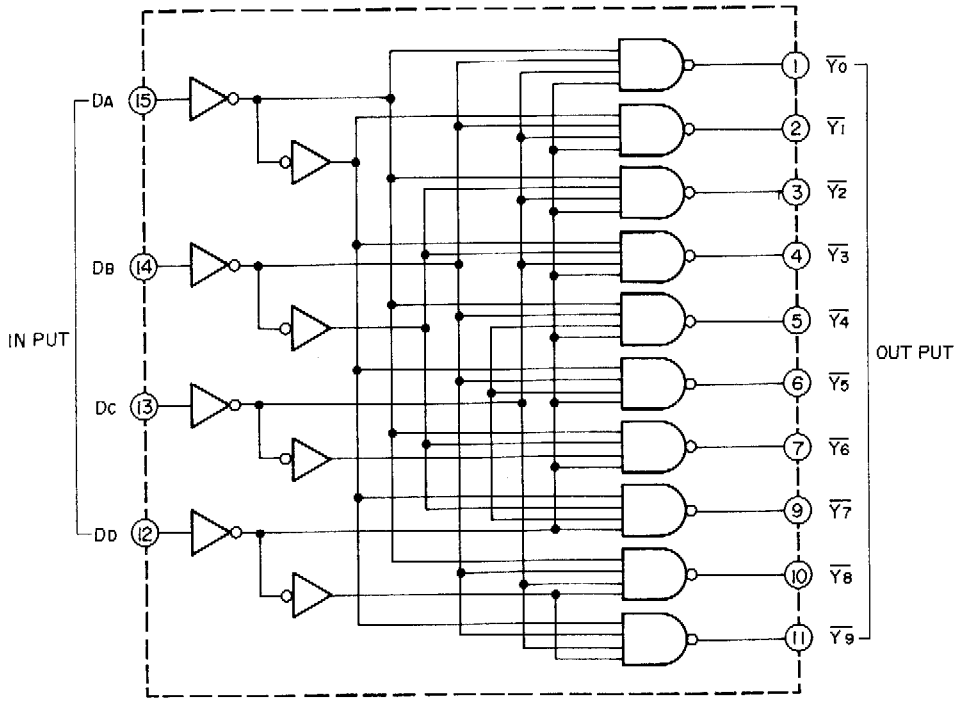
LA1245



LB1409

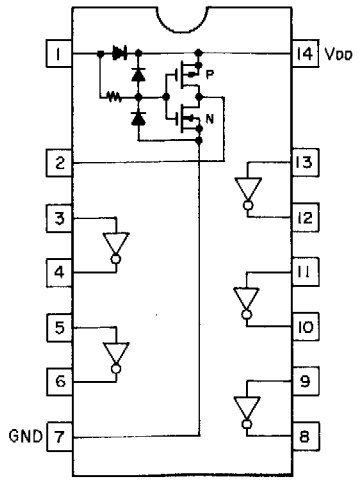


M74LS42

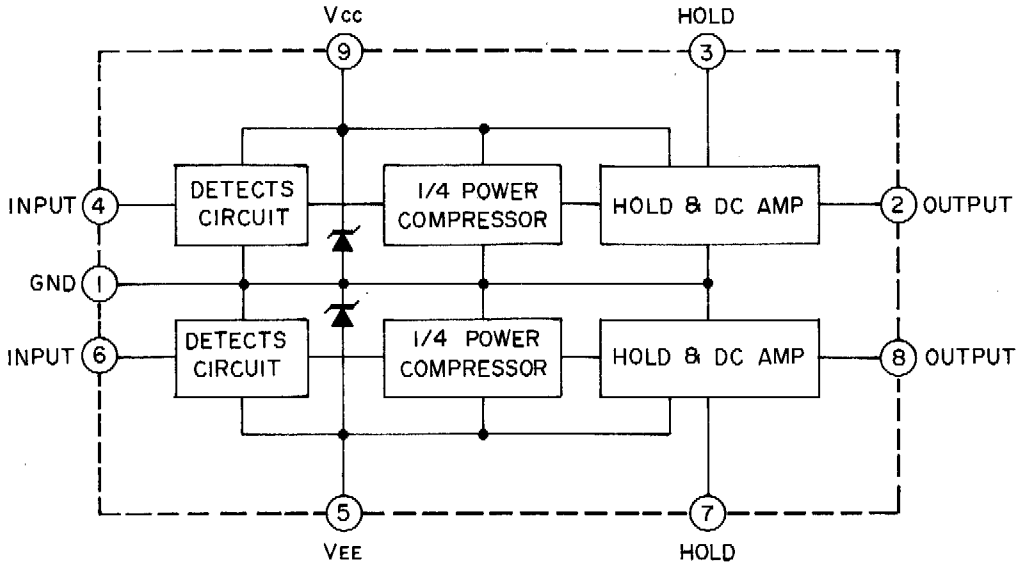


INPUT				OUTPUT									
D_D	D_C	D_B	D_A	Y_0	Y_1	Y_2	Y_3	$\overline{Y_4}$	Y_5	Y_6	Y_7	Y_8	$\overline{Y_9}$
L	L	L	L	L	H	H	H	H	H	H	H	H	H
L	L	L	H	H	L	H	H	H	H	H	H	H	H
L	L	H	L	H	H	L	H	H	H	H	H	H	H
L	L	H	H	H	H	H	L	H	H	H	H	H	H
L	H	L	L	H	H	H	H	L	H	H	H	H	H
L	H	L	H	H	H	H	H	H	L	H	H	H	H
L	H	H	L	H	H	H	H	H	H	L	H	H	H
L	H	H	H	H	H	H	H	H	H	H	L	H	H
H	L	L	L	H	H	H	H	H	H	H	H	L	H
H	L	L	H	H	H	H	H	H	H	H	H	H	L
H	L	H	L	H	H	H	H	H	H	H	H	H	H
H	L	H	H	H	H	H	H	H	H	H	H	H	H
H	H	L	L	H	H	H	H	H	H	H	H	H	H
H	H	L	H	H	H	H	H	H	H	H	H	H	H
H	H	H	L	H	H	H	H	H	H	H	H	H	H
H	H	H	H	H	H	H	H	H	H	H	H	H	H

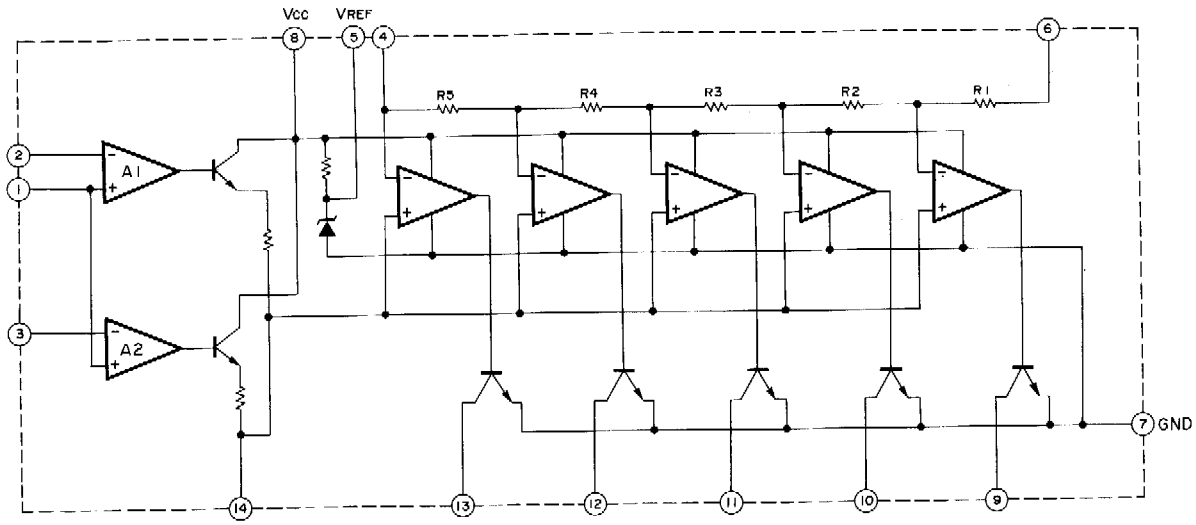
MSM4069RS



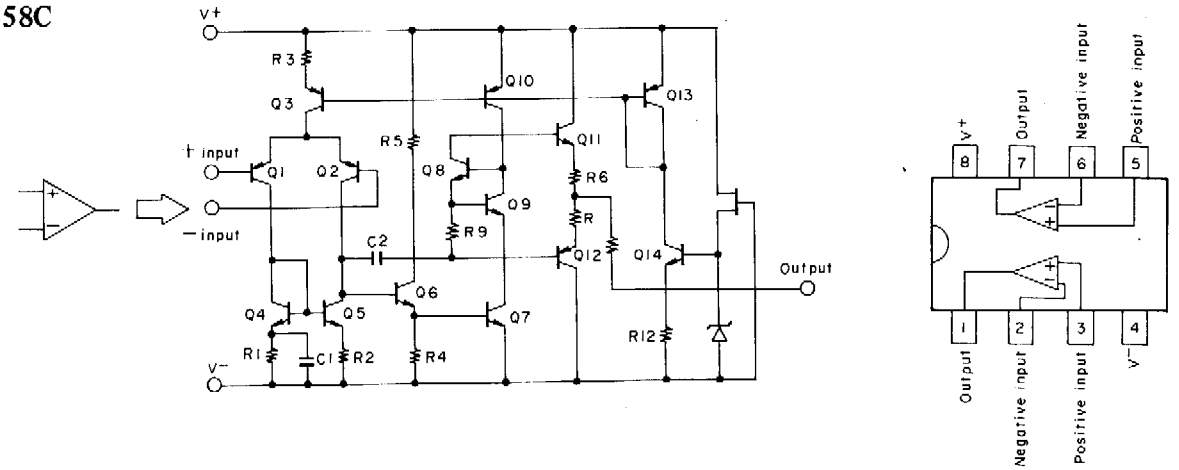
TA7318P



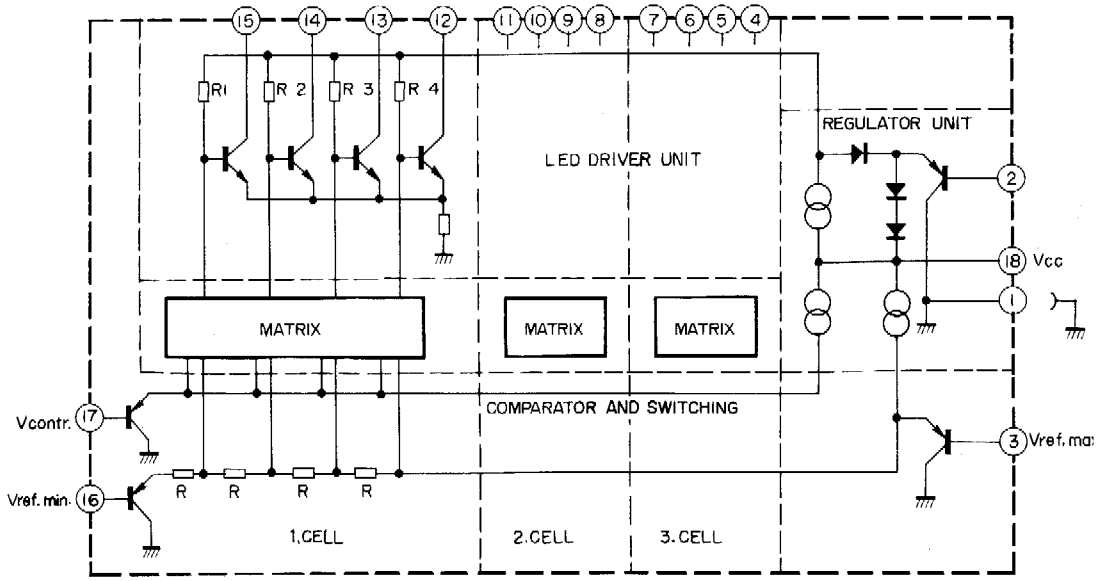
TA7654P



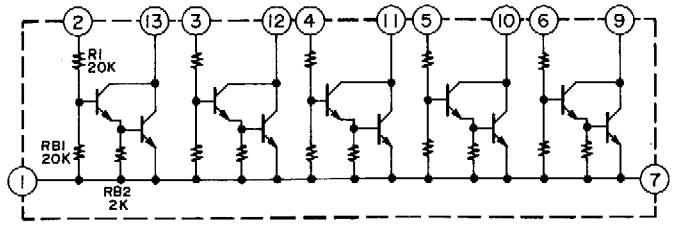
TL4558C



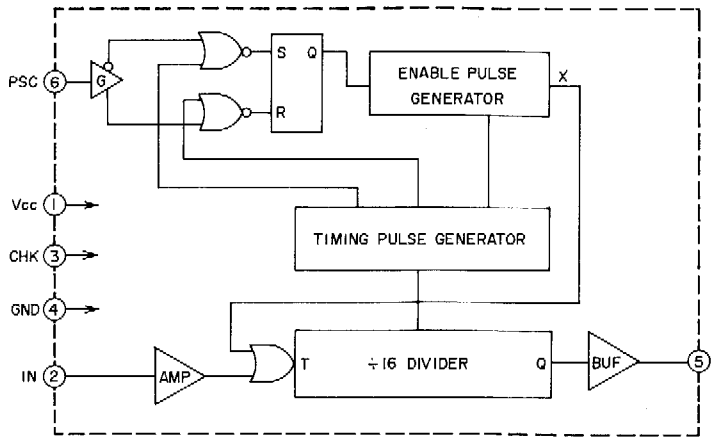
UAA180



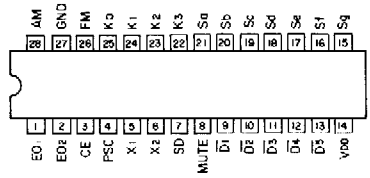
μPA53C

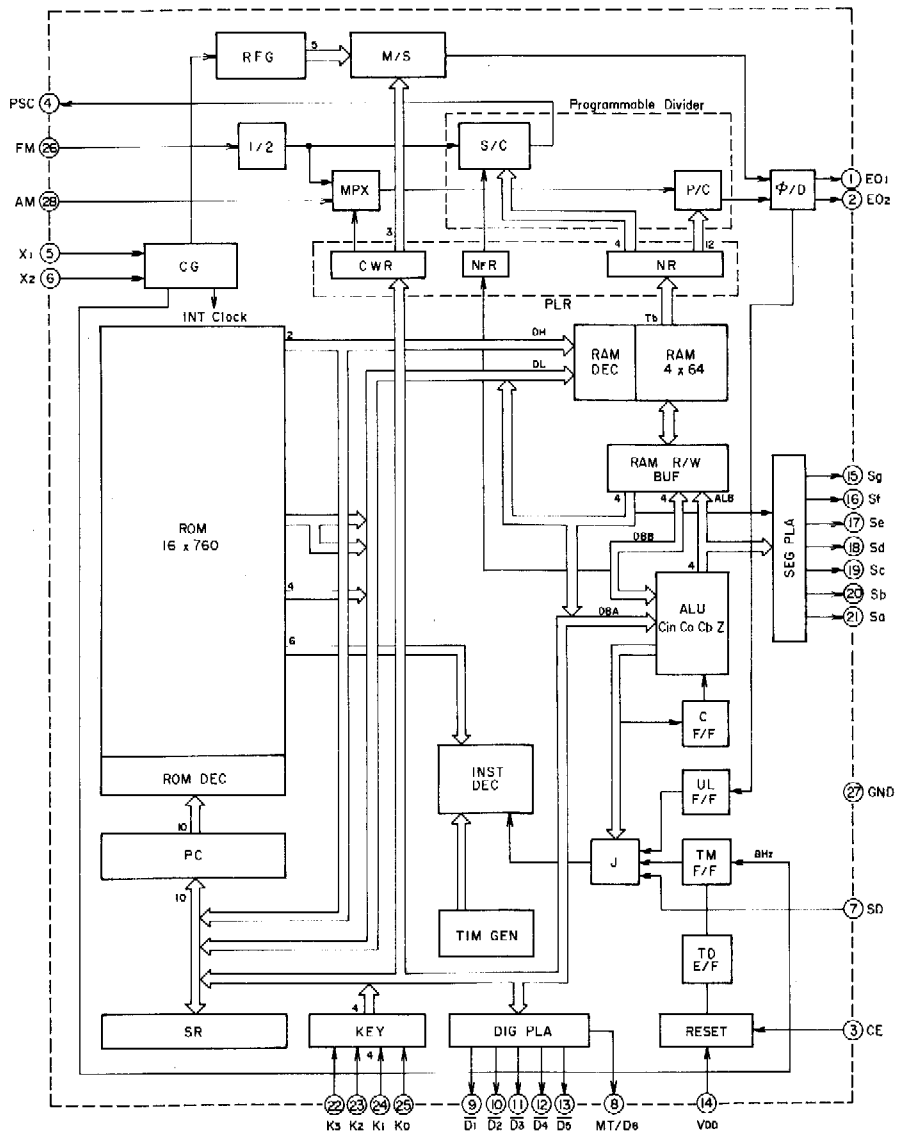


μPB553AC



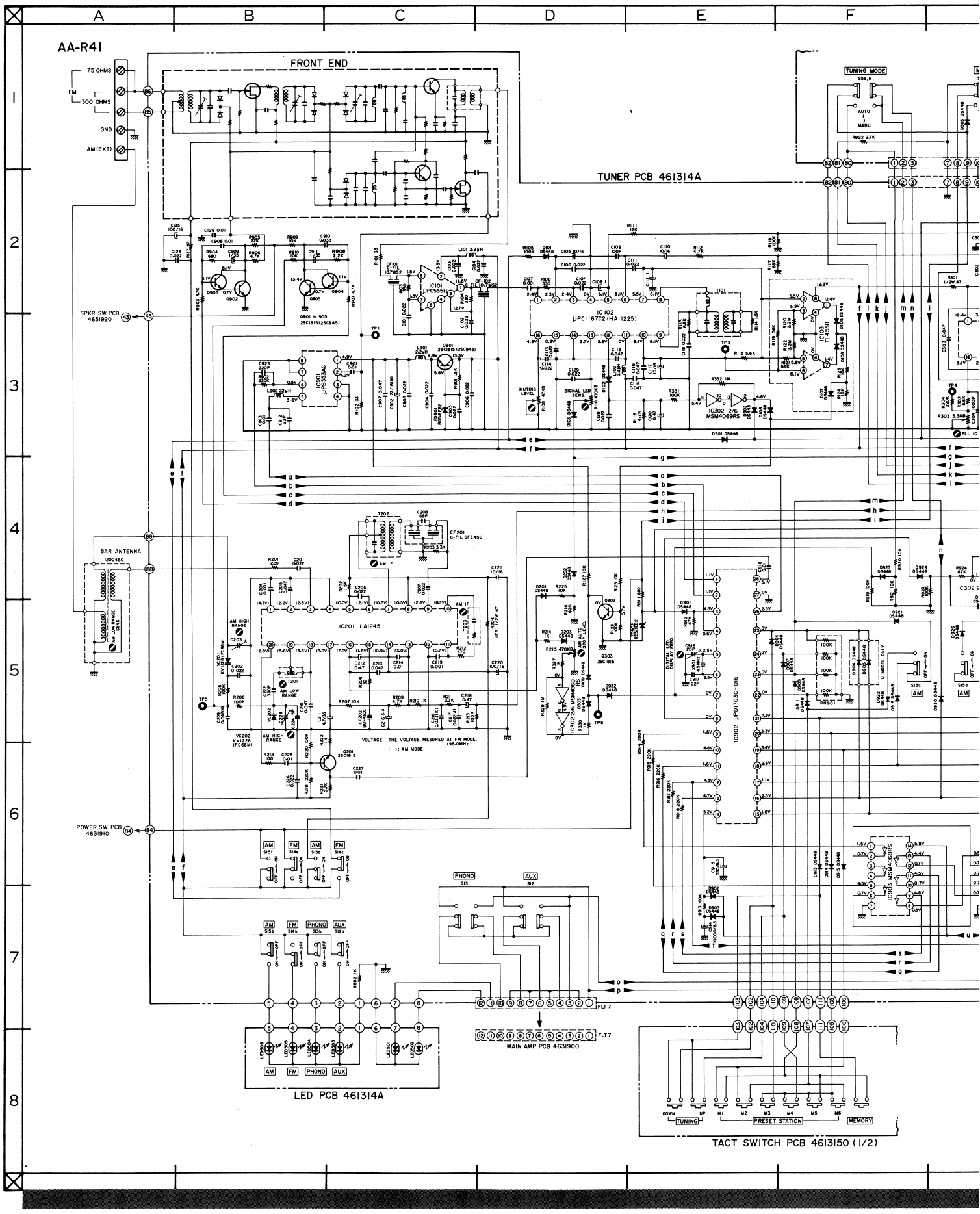
μPD1703C-016

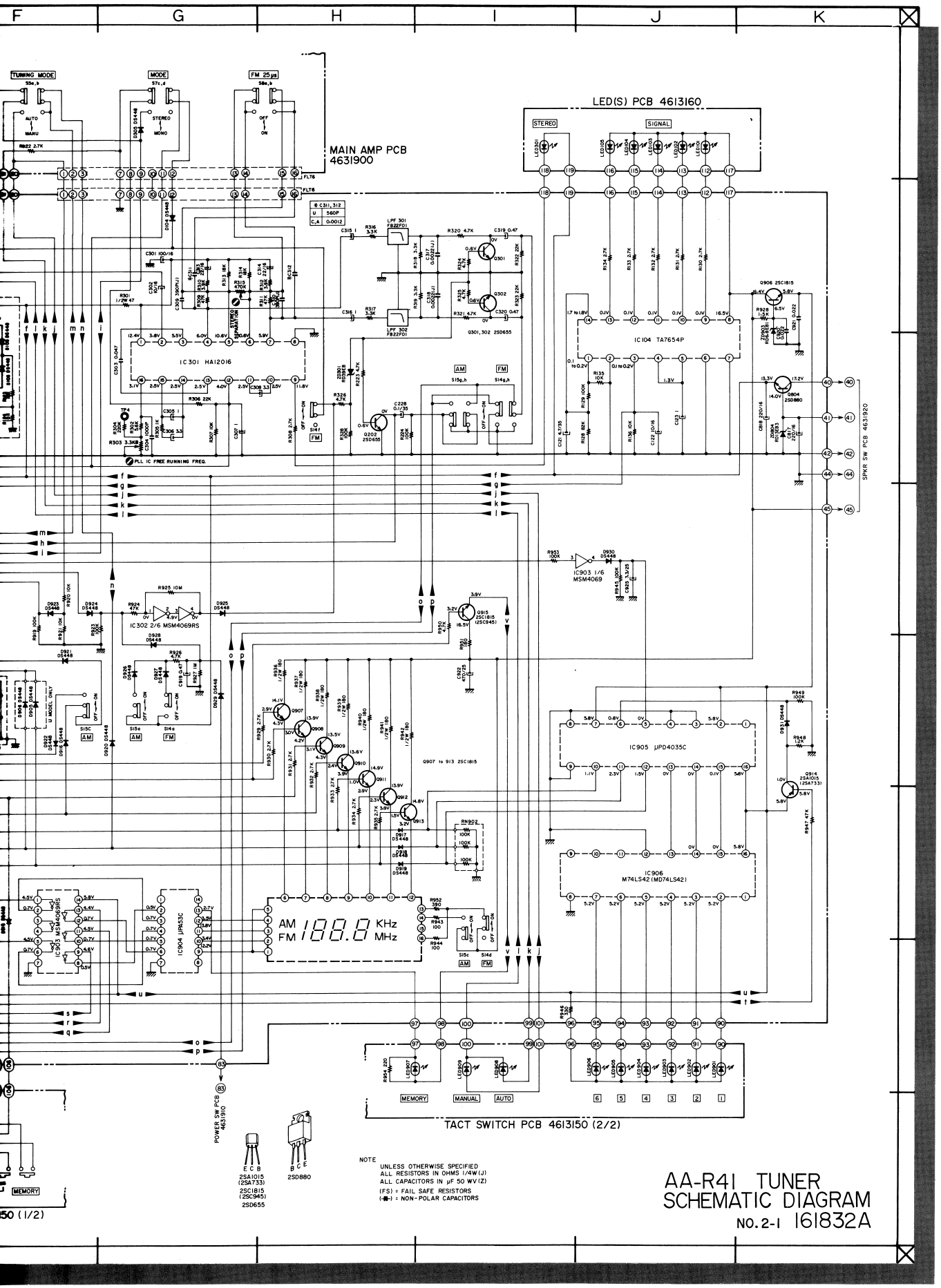




PIN NO.	SYMBOL	
1	EO1	PHASE DET. OUT SAME OUTPUT
2	EO2	
3	CE	CHIP ENABLE IN
4	PSC	PRESCALER CONTROL PRE SCALER IS μPB555AC
5	X1	X'TAL OSC 4.5MHz
6	X2	
7	SD	STATION DET. IN STOPS IN AT AUTO TUNING
8	MUTE	MUTE OUT NOISE PREVENTION WHEN FREQ. CHANGING
9	$\overline{D1}$	DIGIT SIGNAL OUT FOR WHEN INDICATING FREQ.
10	$\overline{D2}$	
11	$\overline{D3}$	
12	D4	
13	$\overline{D5}$	
14	V_{DD}	POWER SUPPLY ±5V±0.5V

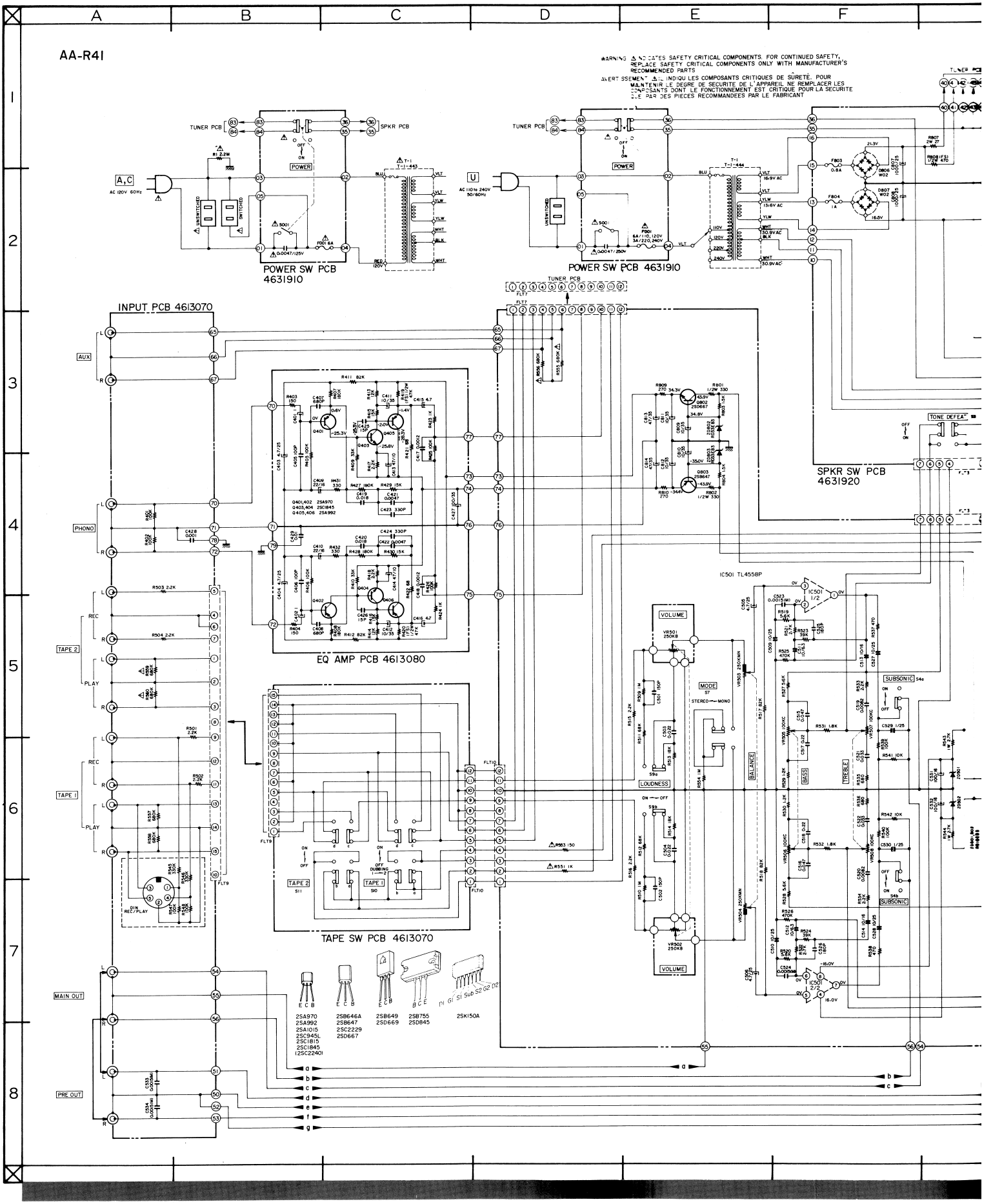
PIN NO.	SYMBOL	
15	Sg	SEGMENT SIGNAL OUT WHEN INDICATING FREQ.
16	Sf	
17	Se	
18	Sd	
19	Sc	
20	Sb	
21	Sa	
22	K3	KEY MATRIX IN
23	K2	
24	K1	
25	K0	
26	FM	FM PROGRAMMABLE COUNTER IN
27	GND	GND
28	AM	AM PROGRAMMABLE COUNTER IN

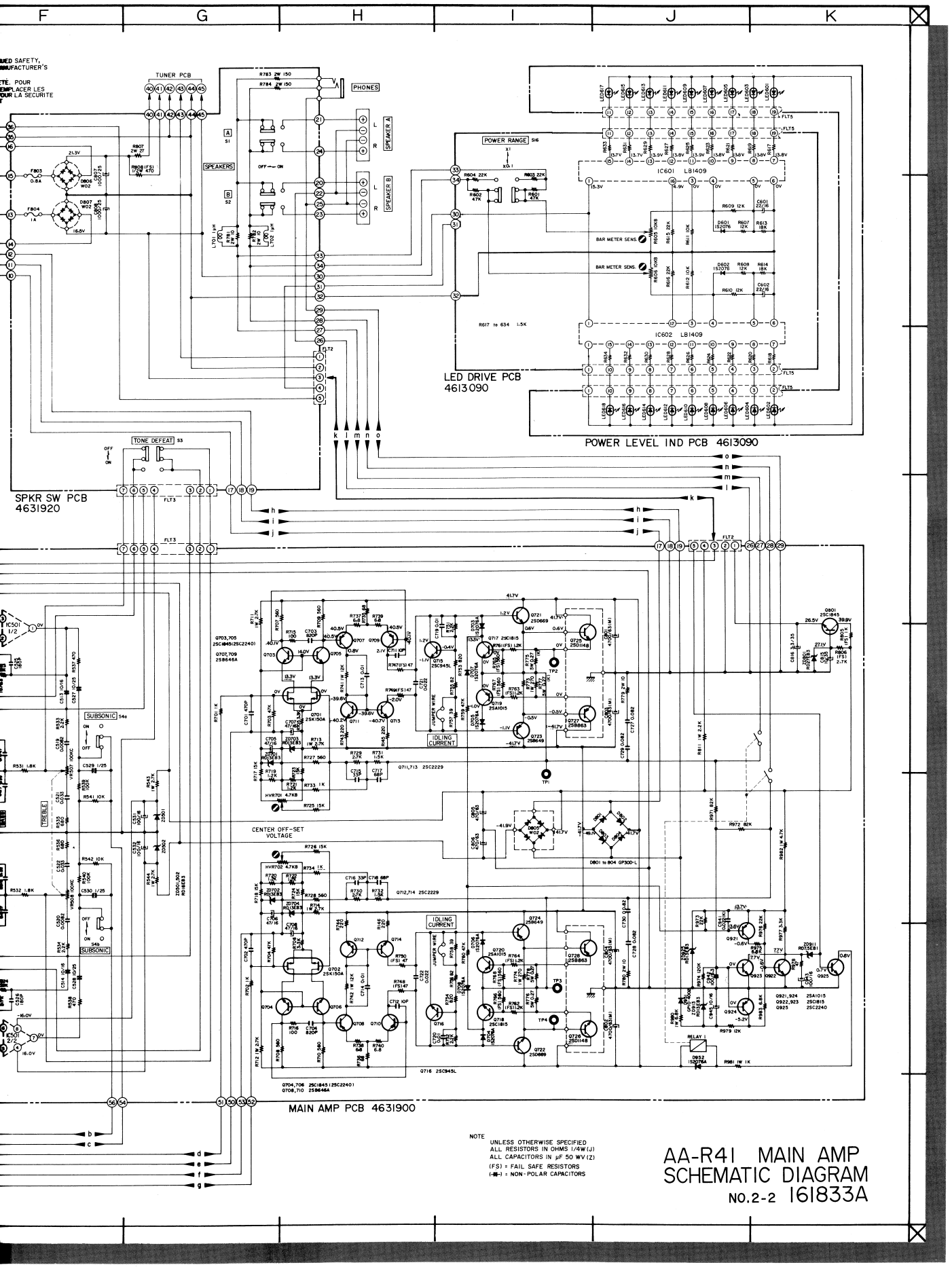

AA-R41
FRONT END
TUNER PCB 4613144
TUNING MODE
AUTO
MANU
75 OHMS
FM
300 OHMS
GND
AM (EXT)
SPKR SW PCB 4631920
BAR ANTENNA
POWER SW PCB 4631910
IC101 μPC5554
IC102 μPC1167C2 (HA11225)
IC103 TL4558
IC201 LA1245
IC302 2/6 MSM4069RS
IC902 μPD1703C-016
IC903 MSM4069RS
AM IF
AM HIGH RANGE
AM LOW RANGE
VOLTAGE : THE VOLTAGE MESURED AT FM MODE. (98.0MHz)
( ) : AM MODE
PHONO
AUX
MAIN AMP PCB 4631900
LED PCB 461314A
TACT SWITCH PCB 4613150 (1/2)
TUNING
PRESET STATION
MEMORY
DOWN
UP
M1
M2
M3
M4
M5
M6



AA-R41 TUNER SCHEMATIC DIAGRAM

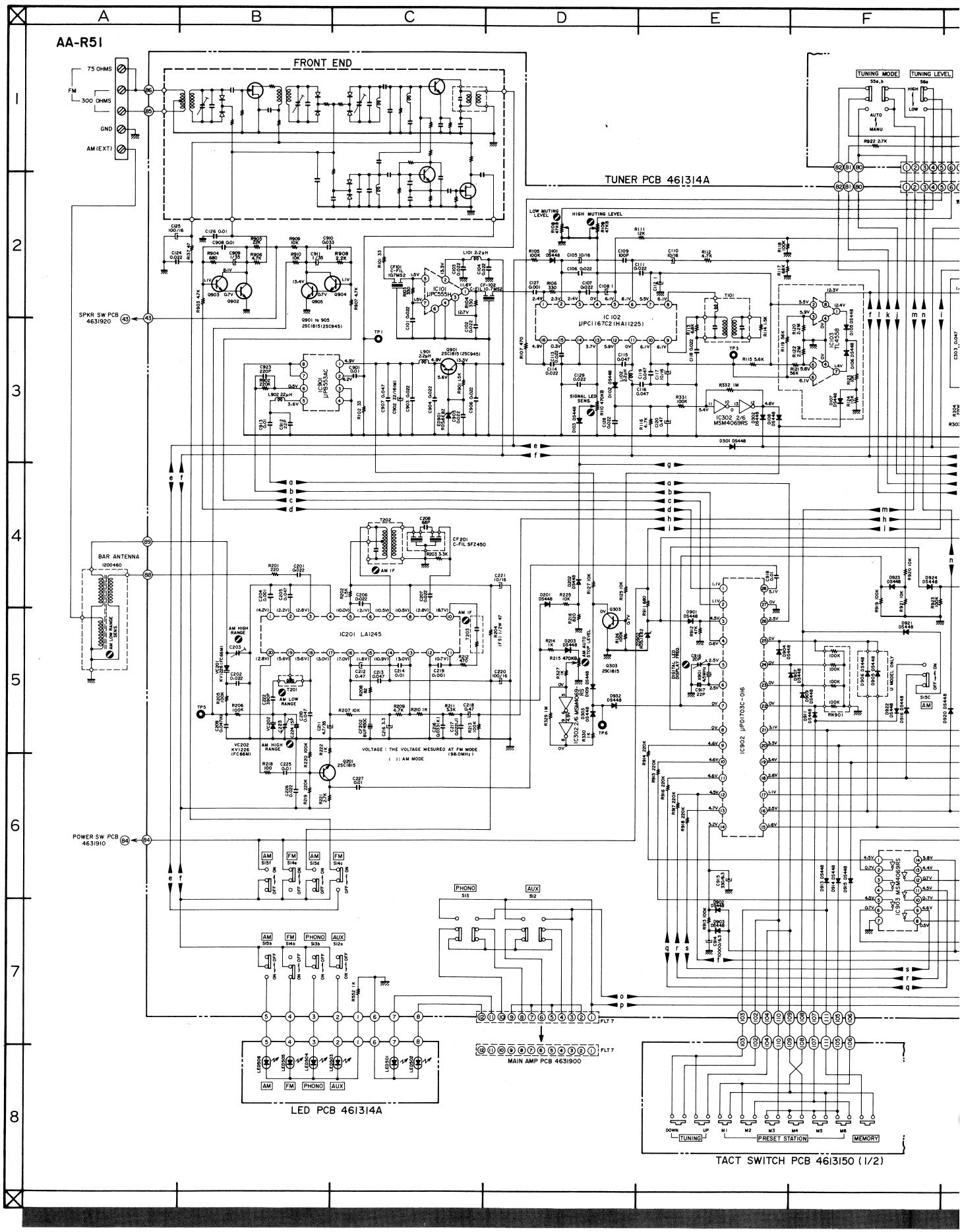
NO.2-1 161832A

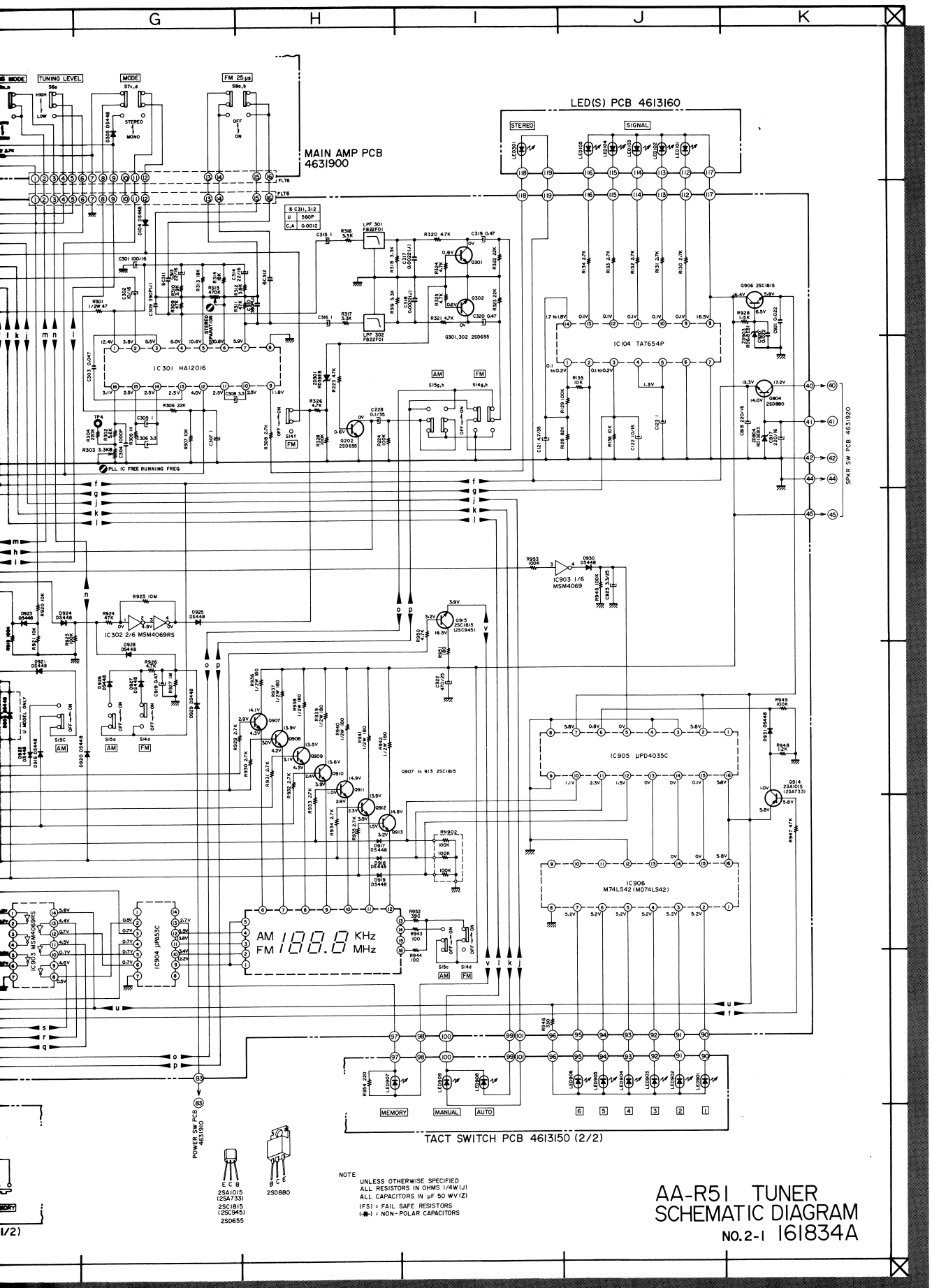

AA-R41
WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.
POWER SW PCB 4631910
POWER SW PCB 4631910
SPKR SW PCB 4631920
INPUT PCB 4613070
EQ AMP PCB 4613080
TAPE SW PCB 4613070
IC501 TL4558P
VOLUME
VOLUME
MODE
BALANCE
LOUDNESS
BASS
TREBLE
SUBSONIC
TONE DEFEAT
AUX
PHONO
TAPE 2
TAPE 1
MAIN OUT
PRE OUT
2SA970 2SA992 2SA1015 2SC945L 2SC1815 2SC1845 (2SC2240)
2SB646A 2SB647 2SC2229 2SD667
2SB649 2SD669
2SB755 2SD845
2SK150A



NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50 WV(Z)
(FS) = FAIL SAFE RESISTORS
(-||-) = NON-POLAR CAPACITORS

AA-R41 MAIN AMP SCHEMATIC DIAGRAM NO.2-2 161833A

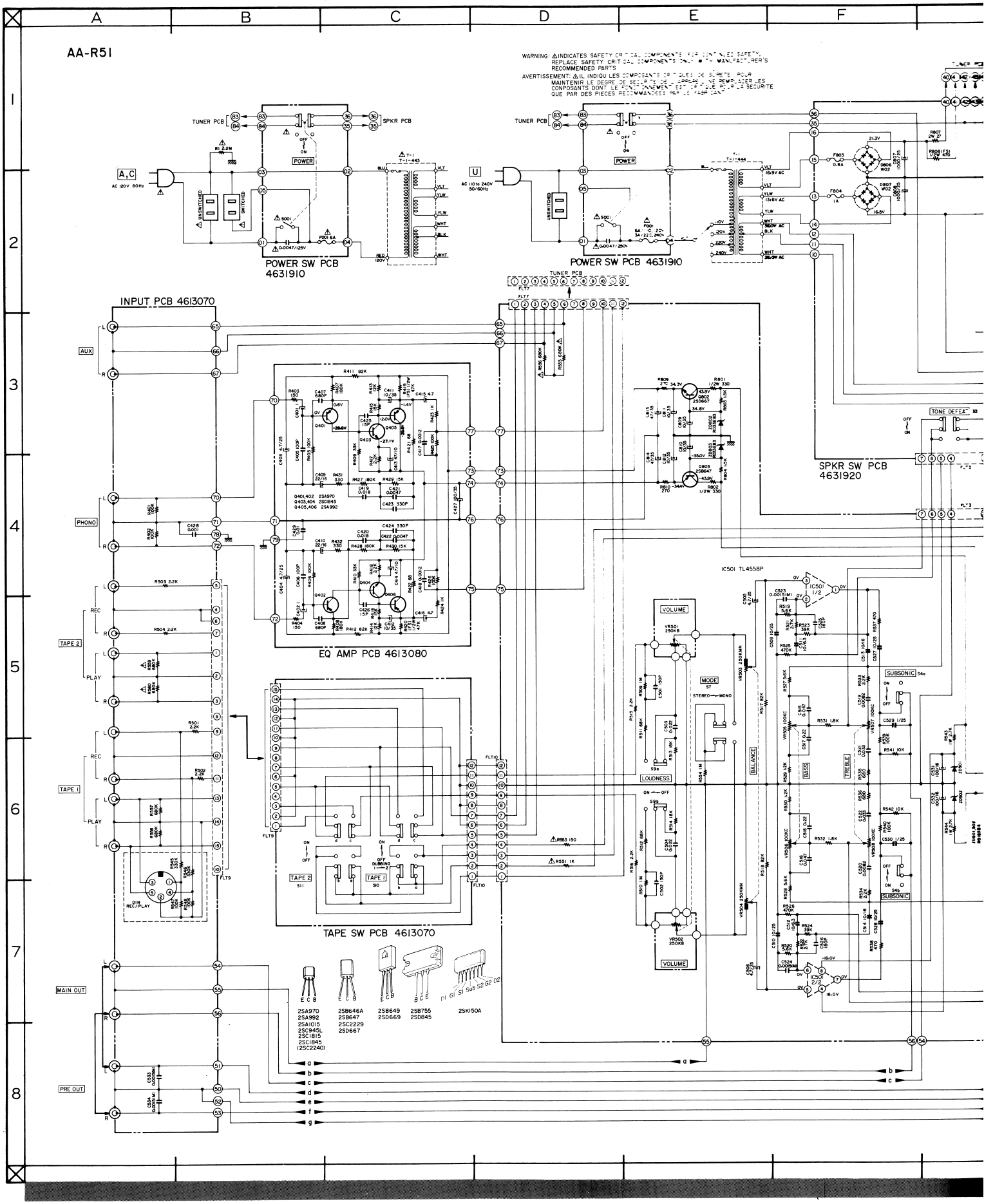

AA-R51
FRONT END
TUNER PCB 461314A
75 OHMS
FM
300 OHMS
GND
AM (EXT)
SPKR SW PCB 4631920
POWER SW PCB 4631910
BAR ANTENNA
TUNING MODE
TUNING LEVEL
IC 102 μPC1167C2 (HA11225)
IC201 LA1245
IC902 μPD1703C-016
IC303 MSM4069RS
IC302 2/6 MSM4069RS
LED PCB 461314A
MAIN AMP PCB 4631900
TACT SWITCH PCB 4613150 (1/2)
PHONO
AUX
TUNING
PRESET STATION
MEMORY

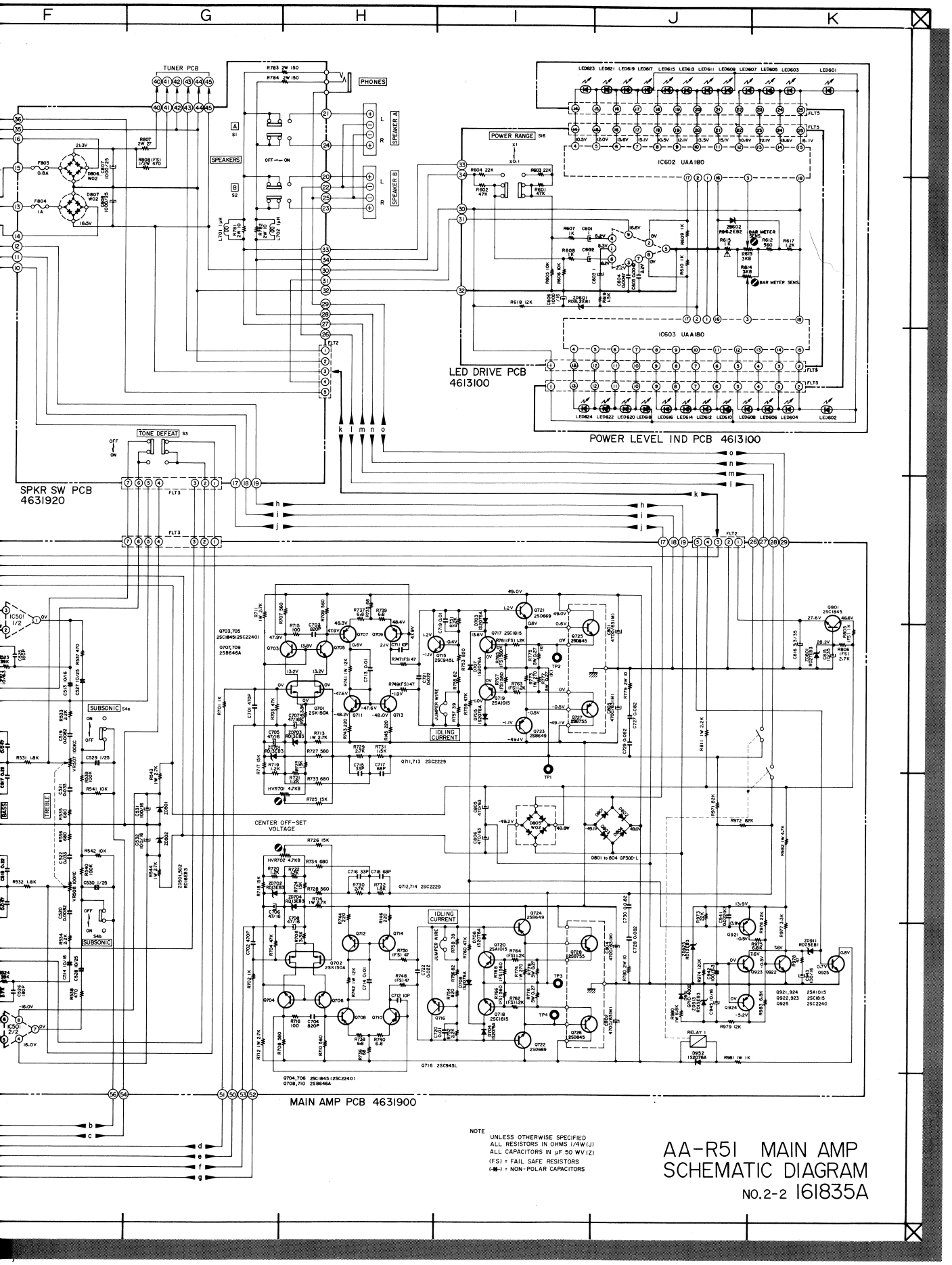


NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W (J)
ALL CAPACITORS IN µF 50 WV (Z)
(FS) = FAIL SAFE RESISTORS
(⊣⊢) = NON-POLAR CAPACITORS

AA-R51 TUNER SCHEMATIC DIAGRAM

NO.2-1 161834A


AA-R51
WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS
AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SURETE POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL. NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT
TUNER PCB
SPKR PCB
POWER
POWER SW PCB 4631910
POWER SW PCB 4631910
INPUT PCB 4613070
AUX
PHONO
TAPE 2
TAPE 1
MAIN OUT
PRE OUT
EQ AMP PCB 4613080
TAPE SW PCB 4613070
SPKR SW PCB 4631920
IC501 TL4558P
VOLUME
MODE
STEREO — MONO
BALANCE
LOUDNESS
BASS
TREBLE
SUBSONIC
TONE DEFEA
2SA970 2SA992 2SA1015 2SC945L 2SC1815 2SC1845 (2SC2240)
2SB646A 2SB647 2SC2229 2SD667
2SB649 2SD669
2SB755 2SD845
2SK150A



NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50 WV(Z)
(FS) = FAIL SAFE RESISTORS
(-||-) = NON-POLAR CAPACITORS

AA-R51 MAIN AMP SCHEMATIC DIAGRAM

NO.2-2 161835A