

AKAI SERVICE MANUAL



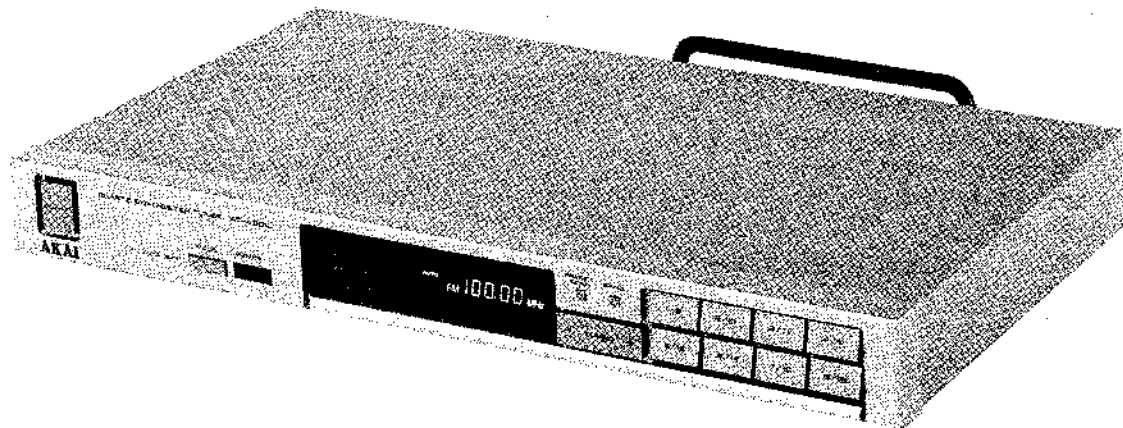
QUARTZ SYNTHESIZER TUNER

MODEL **AT-A301/L**

ABBREVIATIONS FOR SERVICE MANUAL

MODEL AT-A301/L

ABBREVIATION	EXPLANATION
FM	Frequency Modulation
AM	Amplitude Modulation
IF	Intermediate Frequency
MW	Medium Wave
LW	Long Wave
T.H.D.	Total Harmonic Distortion
VCO	Voltage Controlled Oscillator
SENS	SENSitivity
OSC	OSCillator
SSG	Standard Signal Generator
MONO	MONOphonic
TP	Test Point
ANT	ANTenna



QUARTZ SYNTHESIZER TUNER

MODEL AT-A301/L

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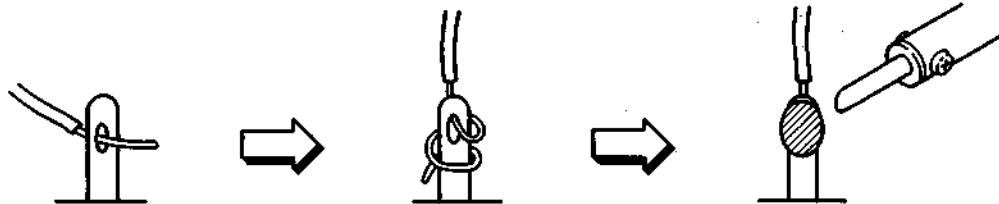
SAFETY INSTRUCTIONS

SAFETY CHECK AFTER SERVICING

Confirm the specified insulation resistance between power cord plug prongs and externally exposed parts of the set is greater than 10 Mohms, but for equipment with external antenna terminals (tuner, receiver, etc.) and is intended for **C** or **A**, specified insulation resistance should be more than 2.2 Mohms (ground terminals, microphone jacks, headphone jacks, line-in-out jacks etc.)

PRECAUTIONS DURING SERVICING

1. Parts identified by the Δ symbol parts are critical for safety. Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation. These must also be replaced only with specified replacements. Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
 - 1) Wires covered with PVC tubing
 - 2) Double insulated wires
 - 3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
 - 1) Insulation Tape
 - 2) PVC tubing
 - 3) Spacers (Insulating Barriers)
 - 4) Insulation sheets for transistors
 - 5) Plastic screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.

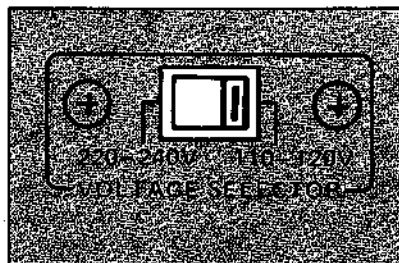


6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

VOLTAGE CONVERSION

Models for Canada, USA, Europe, UK 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 110–120V, or 220–240V as required. If your machine's voltage can be converted:

1. Disconnect the power cord.
2. Set the **VOLTAGE SELECTOR** located on the rear panel, with a screwdriver, until the correct voltage is indicated.



SECTION 1

SERVICE MANUAL

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

I. SPECIFICATIONS

FM TUNER SECTION

TUNING FREQUENCY RANGE	87.5MHz to 108.0MHz
USABLE SENSITIVITY (300 ohms)	11.2dBf
QUIETING SENSITIVITY (S/N = 50dB)	16.2dBf (Mono)/37.2dBf (Stereo)
CAPTURE RATIO	1.5dB
SELECTIVITY (± 400 kHz)	60dB
IMAGE REJECTION	78dB
IF REJECTION	85dB
SPURIOUS REJECTION	90dB
AM SUPPRESSION	60dB
SUB CARRIER SUPPRESSION	60dB
S/N (IHF)	75dB (Mono)/65dB (Stereo)
T.H.D.	0.1% (Mono)/0.3% (Stereo)
STEREO SEPARATION (1kHz)	45dB

AM TUNER SECTION

	AM (MW for AT-A301L)	LW (for AT-A301L)
TUNING FREQUENCY RANGE	531kHz to 1602kHz	160kHz to 340kHz
USABLE SENSITIVITY (LOOP ANTENNA)	400 μ V/m	800 μ V/m
SELECTIVITY	50dB	50dB
IMAGE REJECTION	40dB	40dB
IF REJECTION	30dB	30dB
S/N	40dB	35dB
T.H.D.	1.0%	2.0%

OUTPUT SECTION

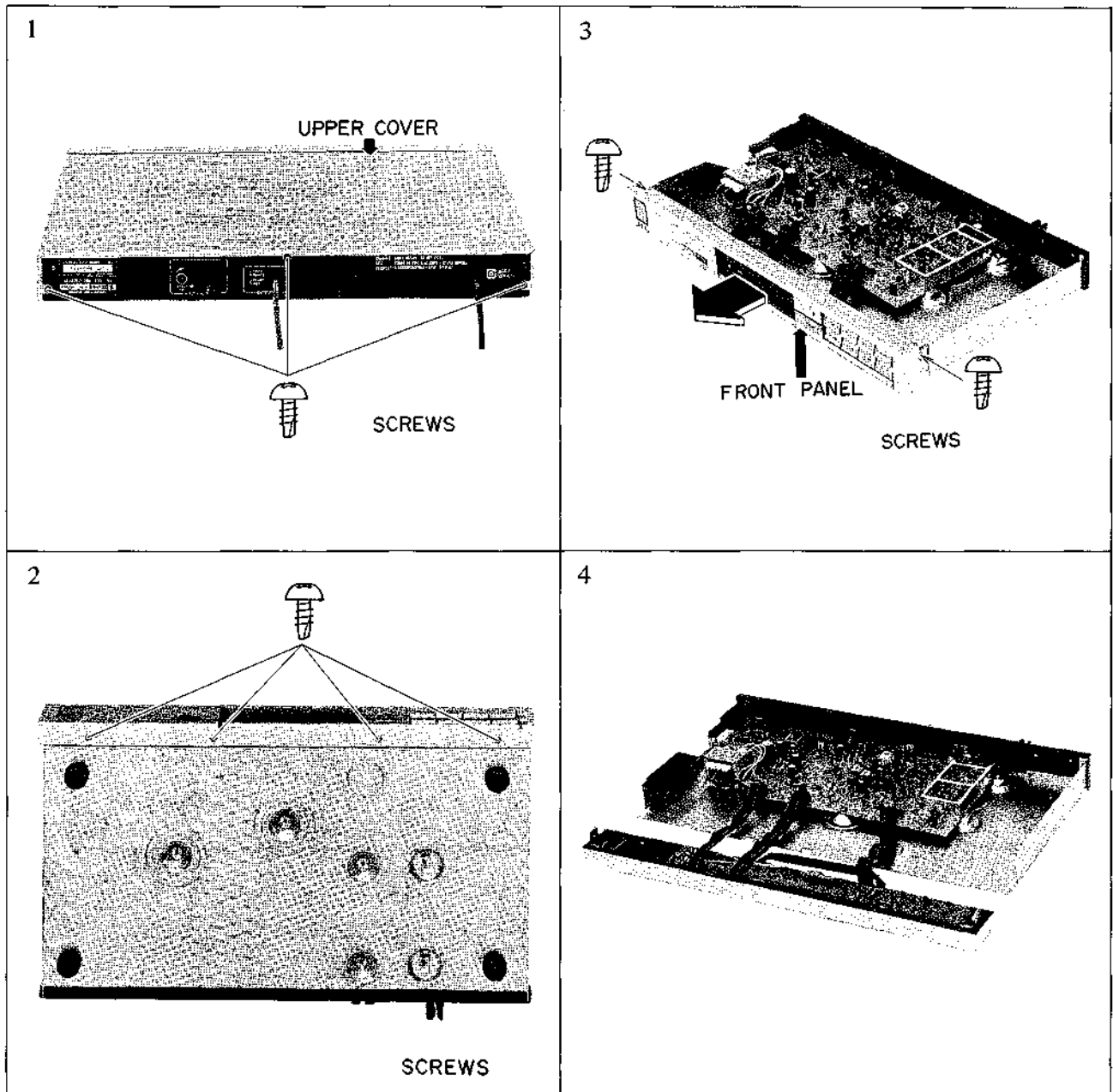
OUTPUT LEVEL

FM	700mV (100% Mod.)
AM	250mV (30% Mod.)
POWER REQUIREMENTS	120V, 60Hz for USA & Canada 220V, 50Hz for Europe except UK 240V, 50Hz for UK & Australia 110/120/220/240V, 50/60Hz switchable for other countries
DIMENSIONS	350(W) \times 54(H) \times 255(D)mm 440(W) \times 55(H) \times 275(D)mm (13.8 \times 2.1 \times 10.0 inches) (17.3 \times 2.2 \times 10.8 inches)
WEIGHT	2.2kg (4.8 lbs) 2.7kg (5.96 lbs)

* 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.



III. CONTROLS

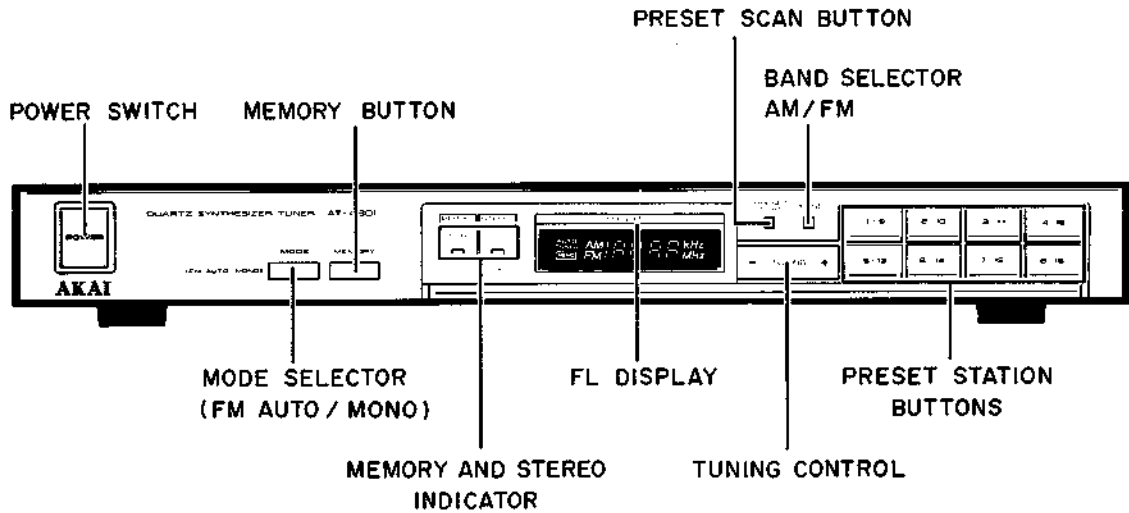


Fig. 3-1 Front View

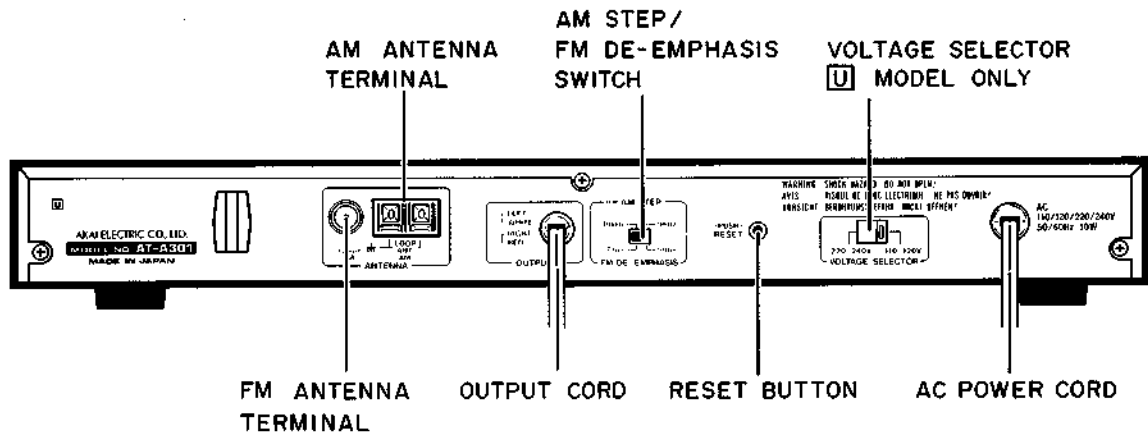


Fig. 3-2 Rear View

IV. PRINCIPAL PARTS LOCATION

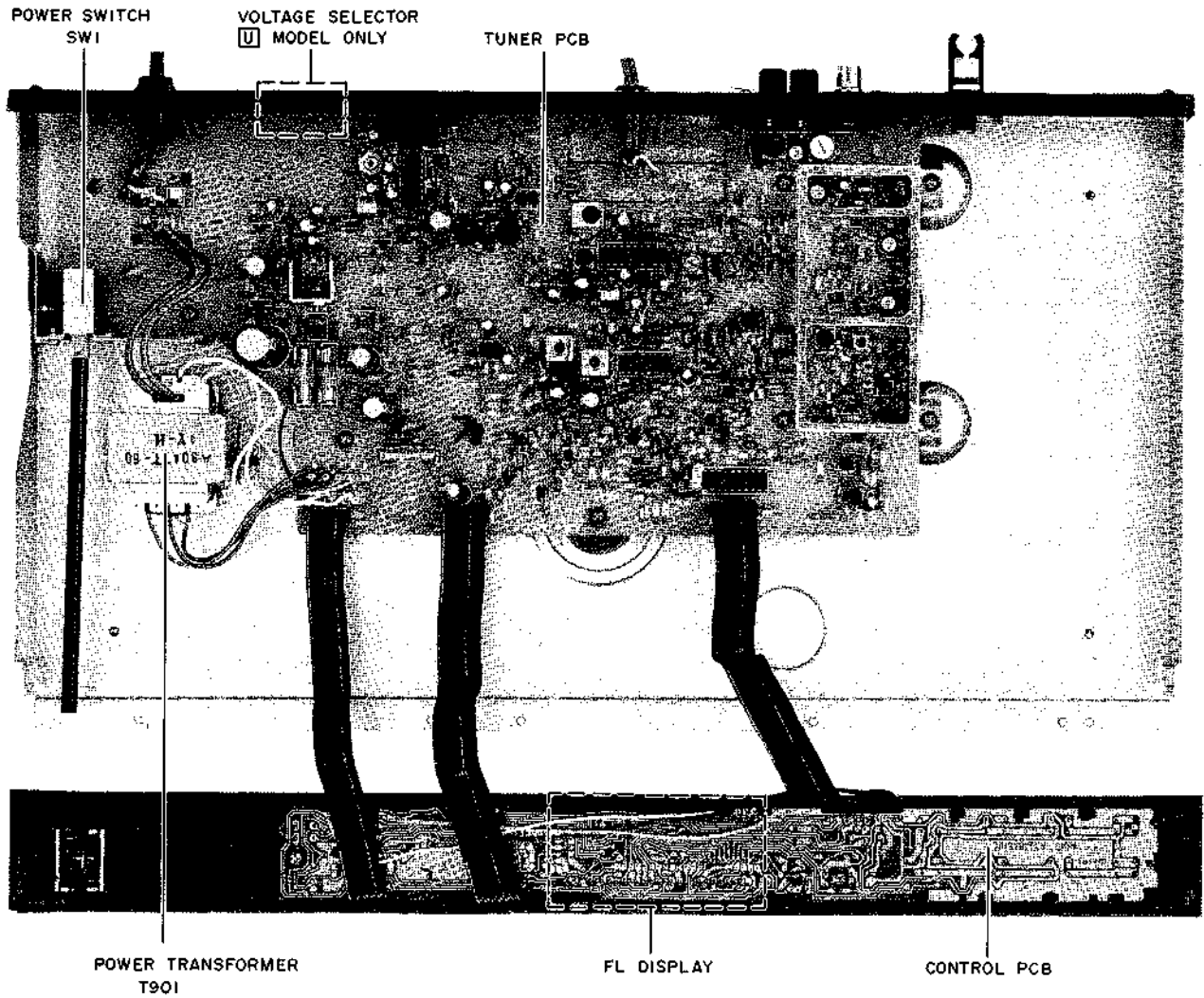


Fig. 4-1

V. ELECTRICAL ADJUSTMENT

5-1. PRIOR TO ELECTRICAL ADJUSTMENT

Press the Reset SW on the REAR PANEL, the internal frequency preset memory is set as.

	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8
[C, A, U] 10K STP	AM 600kHz	AM 100kHz	AM 1400kHz	AM 1610kHz	FM 90.0MHz	FM 98.0MHz	FM 106.0MHz	FM 108.0MHz
[E, V, S, U] 9K STP [E, B] AT-A301L	AM 603kHz	AM 999kHz	AM 1404Hz	AM 1602kHz				
	CH9	CH10	CH11	CH12	CH13	CH14	CH15	CH16
[C, A, U, E, V, S] 9K, 10K STP	FM 87.5MHz	FM 87.5MHz	FM 87.5MHz	FM 87.5MHz	FM 87.5MHz	FM 87.5MHz	FM 87.5MHz	FM 87.5MHz
[E, B] AT-A301L		AM 160kHz	AM 200kHz	AM 300kHz				

5-2. INSTRUMENT CONNECTIONS AND ADJUSTMENT POINTS FOR TUNER ADJUSTMENT

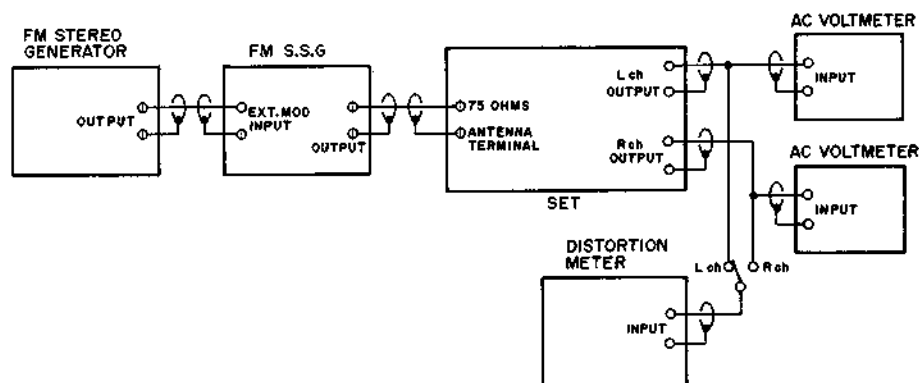


Fig. 5-1 Instrument Connections for FM Section Adjustment

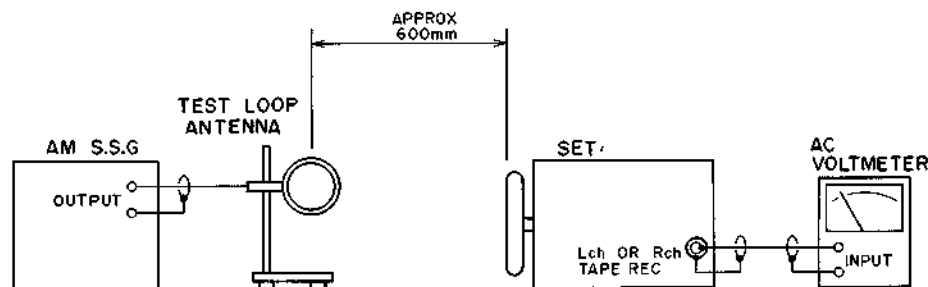


Fig. 5-2 Instrument Connections for AM (MW, LW) Section Adjustment

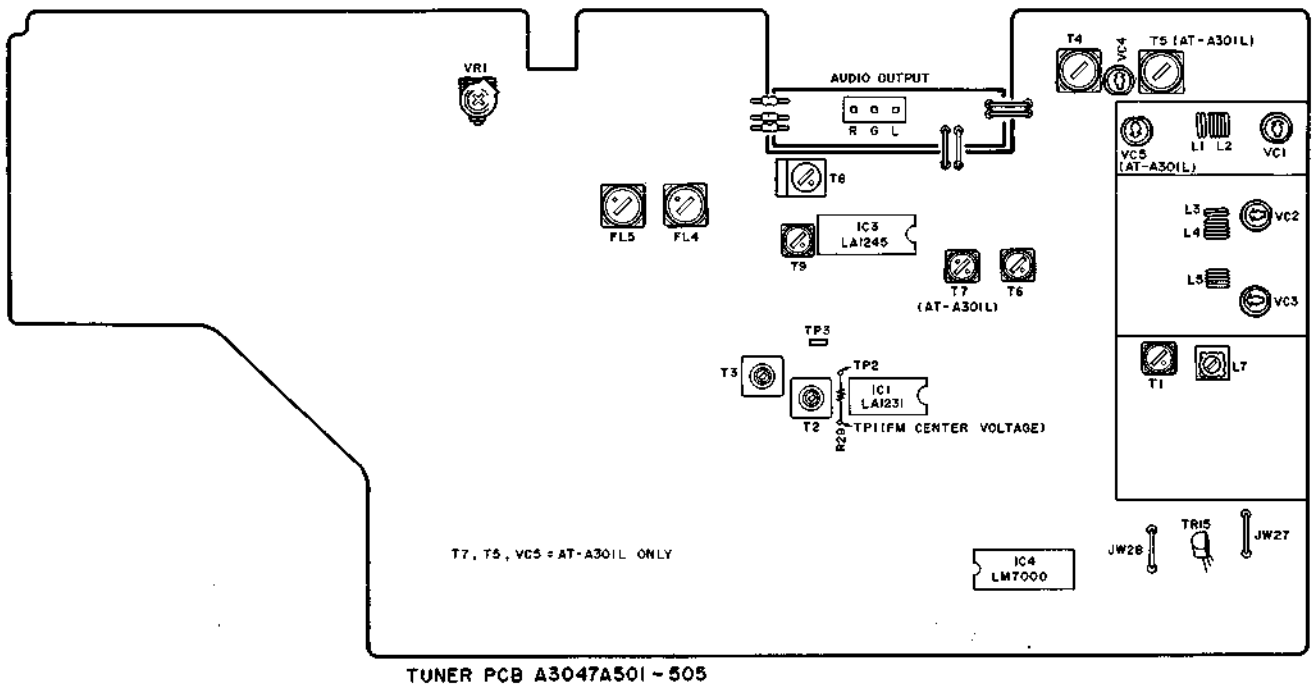


Fig. 5-3 TUNER PC BOARD ADJUSTMENT POINTS

5-3. HOW TO ADJUST TUNING COIL

Normally, no adjustment will be required of the coils within the front end. If, however, any of the coils has inadvertently been stretched and its adjustment needs to be restored, follow the procedure below for re-adjustment.

1. Contract the stretched coil to restore its original form.
2. Open one end of the coil (by referring to the illustration).
3. Set the trimmer capacitor in the illustrated position (that provides 3pF to 10pF).
4. After the above preparations, first adjust the low range by conforming to the adjusting procedure. The coil stretching procedure for this process is shown in Fig. 5-5.
5. Next, similarly adjust the high range.
6. Repeat 4 and 5 a few times until the best possible sensitivity is attained.

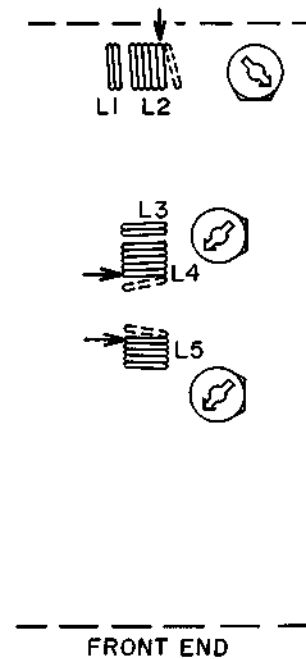


Fig. 5-4



Fig. 5-5

5-4. FM ADJUSTMENT (Refer to Fig. 5-1 and 5-3)

- NOTES: 1. Set the SSG to 75kHz deviation, 1kHz for [C, A, U, S] models, 40kHz deviation, 1kHz for [B, E, V] models.
 2. Readjust step 2 to step 6, in case T1 is turned more than a quarter turn obtaining the proper distortion (STEREO).
 3. Confirm that the sensitivity margin between Low and High Range sensitivities is within 3dB, otherwise readjust Low and High Range sensitivity.
 4. In step 2, normally confirmation only, except waved coil by mistake.
 5. $0dB\mu = 1\mu V$

Step	Adjustment Item	SSG FREQ/ATT	SET TUNING	Adjustment Part	Result	Remarks
1	FM OSC	NO SIGNAL INPUT	108.0MHz	L7	$12\pm 0.2V$	Connect the DC Voltmeter between JW27 and GND.
2	FM LOW Range Sensitivity	87.5MHz (MONO) 6dB μ	87.5MHz	L1 to L5	Within 3% Distortion Factor	Connect TP3 to GND. See NOTE 4.
3	FM HIGH Range Sensitivity	108.0MHz (MONO) 6dB μ	108.0MHz	VC1, VC2 and VC3	Within 3% Distortion Factor	Connect TP3 to GND.
4	For best Result, Repeat steps 2 and 3 two or three times.					
5	FM CENTER VOLTAGE	NO SIGNAL INPUT	See Remarks	T2	0V	Connect TP3 to GND. Connect the DC Voltmeter between TP1 and TP2. Tunes only noise without interference from Broadcasting.
6	Distortion Factor (MONO)	87.5MHz (MONO) 60dB μ	87.5MHz	T3	Less than 0.3%	
7	For best Result, Repeat steps 5 and 6 two or three times.					
8	MUTE Sensitivity	87.5MHz (MONO) 22dB μ ($\pm 12dB$)	87.5MHz	NONE	No Audio output	Confirmation
9	STEREO Separation	98.0MHz STEREO Lch (Rch) 60dB μ	98.0MHz	VR1	Minimum output of Rch (Lch)	
10	Distortion (STEREO)	98.0MHz STEREO Lch (Rch) 60dB μ	98.0MHz	T1	Less than 0.5% (Both channel)	

5-5. AM (MW) ADJUSTMENT((Refer to Fig. 5-2 and 5-3)

NOTES: 1. Set the S.S.G. to 30% 1kHz of each.

2. Confirm that the sensitivity margin between Low and High Range sensitivities is within 6dB μ , otherwise readjust Low and High Range Sensitivity.

3. (kHz) in Result & Remarks indicates the test frequencies in AM 10kHz STEP area.

Step	Adjustment Item	SSG FREQ/ATT	SET TUNING	Adjustment Part	Result	Remarks
1	AM(MW) OSC	NO SIGNAL INPUT	1404kHz (1400kHz)	T6	6.7V \pm 0.15V	Connect the DC Voltmeter between JW28 and GND.
2	Low Range Sensitivity	603kHz (600kHz) 60dB μ	603kHz (600kHz)	T4	Within 10% Distortion Factor	
3	High Range Sensitivity	1404kHz (1400kHz) 60dB μ	1404kHz (1400kHz)	VC4	Within 10% Distortion Factor	
4	For best Result, Repeat steps 2 nad 3 two or three times.					
5	AM IF	603kHz (600kHz) 74dB μ	603kHz (600kHz)	T8,T9	Maximum output	
6	Distortion (Confirmation)	999kHz (1000kHz) 74dB μ	999kHz (1000kHz)	NONE	Less than 2%	

5-6. LW ADJUSTMENT (for AT-A301L) (Refer to Fig. 5-2 and 5-3)

NOTES: 1. Set the SSG to 30%, 1kHz of each.

2. Confirm that the sensitivity margin between Low and High Range sensitivities is within 6dB μ , otherwise readjust Low and High Range sensitivity.

Step	Adjustment Item	SSG FREQ/ATT	SET TUNING	Adjustment Part	Result	Remarks
1	LW OSC	NO SIGNAL INPUT	351kHz	T7	7.10V \pm 0.15V	Connect the DC Voltmeter between JW28 and GND.
2	Low Range Sensitivity	160kHz 70dB μ	160kHz	T5	Within 10% Distortion Factor	
3	High Range Sensitivity	300kHz 70dB μ	300kHz	VC5	Within 10% Distortion Factor	
4	For best Result, Repeat Steps 2 and 3 two or three times.					
5	Distortion (Confirmation)	200kHz 74dB μ	200kHz	NONE	Less than 3.5%	

SECTION 2

PARTS LIST

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

ATTENTION

1. When placing an order for parts, be sure to list the parts no., model no., and description of each part. If any of this information is omitted, there are instances in which 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 part numbers and part definitions and supply in the Preliminary Parts List may have been the subject of changes, please use this parts list for all future reference.

HOW TO USE THIS PARTS LIST

1. This Parts List shows those parts which are considered necessary for repairs. Other parts, such as resistors and capacitors, are shown in the "Common List for Service Parts" from which these parts should be selected and parts.
2. The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
4. How to read the parts list

a) Mechanism Block

b) P.C Board Block

2. HEAD BASE BLOCK

REF. NO.	PART NO.	DESCRIPTION
2-1 X	BH-T2023A320A	HEAD BASE BLOCK GX-F66R
2-2	HP-H2206A010A	HEAD R/P PR4-8FU C
2-3	ZS-477876	PAN20x03STL CMT
2-4	ZS-536488	BID20x08STL CMT
2-5	ZG-402895	CS ANGLE ADJUST SPRING

SP (Service Parts) Classification

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

This number corresponds with the individual parts index number in that figure

This number corresponds with the Figure Number

6. SYS. CON. P C BOARD BLOCK

REF. NO.	PART NO.	DESCRIPTION
6-1	BA-T2034A070A	PC SYS CON BLK GX-F44R
6-1C1	EI-324536	IC HD14049BP
6-1C2	EI-336801	IC MB8841-564M
6-1C3	EI-331661	IC SN7405N
6-1C4	EI-336725	IC M54527P
6-TR1to4	ET-200985	TR 2SC2603 F,G
6-TR5to28	ET-554657	TR 2SA733A P,Q
6-D1	ED-318292	D SILICON H 1S2473T-77 T26
6-D2to4	ED-308952	D GERMA V 1K34A-LR F07
6-D5to10	ED-318292	D SILICON H 1S2473T-77 T26
6-X1	EI-318384	OSC X'TAL NC-18C 3.579545MHZ

SP (Service Parts) Classification

These reference symbols correspond with component symbols in the Schematic Diagrams.

5. The kind of part and its installation position can both be determined by the Part Number. To determine where a part number is listed, utilize the Parts Index at the end of the Parts List. It is necessary first of all to find the Part Number. This can be accomplished by using the Reference Number listed at the right of the part number in the Parts Index.

WARNING

△ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS

AVERTISSEMENT

△ IL INDIQUE LES COMPOSANTS CRITIQUES DE SECURITE POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL. NE REMPLACER QUE DES PIECES RECOMMANDEES PAR LE FABRICANT

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.	PART NO.	DESCRIPTION
1 N	BT-354948	△ TRANS POWER A3047T-20(A) [A]
2 N	BT-354946	△ TRANS POWER A3047T-30(C) [C]
3 N	BT-354949	△ TRANS POWER A3047T-40(E,V) [E,V,L(E)]
4 N	BT-354950	△ TRANS POWER A3047T-50(B,S) [S,L(B)]
5 N	BT-354945	△ TRANS POWER A3047T-70(U) [U,Y1]
6	EC-336865	C S-FIX H CTZ51C136 3.0-10
7	EC-356284	C S-FIX H VCT51G136A 7.5-50
8	ED-345555	△ D SILICON DBB10C 200/1.0A
9	ED-357754	△ D SILICON DS135D 200/1.0A
10	ED-328486	△ D ZENER H HZ15 3
11	ED-313623	△ D ZENER H HZ22 3
12	ED-562397	D GERMA H 1S188FM1 [A]
13	ED-321269	D LED GL5PR6 RED
14	ED-301911	D SILICON H DS448
15	ED-344280	D SILICON H GMA-01-FY2 F05
16	ED-348205	D SILICON V MC931 DOUBLE
17	ED-353692	D VACTOR SVC321 C,D DOUBLE
18	ED-336832	D VARACTOR SVC211SP [EXCEPT V]
19	ED-349448	D VARACTOR 1SV147
20	ED-313846	D ZENER H HZ16 3
21 N	ED-346419	D ZENER H HZ3FA F10 A2
22	ED-309069	D ZENER H HZ6 B2
23	EF-339903	△ FUSE SEMKO T 125MA 250V [E,V,S,L]
24	EF-668474	△ FUSE SEMKO T 400MA 250V [E,V,S,L]
25	EF-308933	△ FUSE TSC A 250V 0.20A [U,Y1]
26	EF-309390	△ FUSE TSC 125V 0.50A [C,A]
27	EH-344434	FILTER CE BFU450C4N 0.450MHz
28	EH-315407	FILTER CE SFE10.7MMKA 10.7MHz
29	EH-355568	FILTER CE SFE10.7MS2GY-A
30	EH-349059	FILTER LC LP 10PD
31	EH-359176	FILTER LC 64-5032-11 [V]
32 N	EI-358818	IC A3048
33	EI-322248	IC LA1231N
34	EI-202218	IC LA1245
35	EI-349963	IC LA3410
36 N	EI-354951	IC LM7000
37	EI-348409	OSC CE CSB400P 0.4MHz
38	EI-349970	OSC CE CSB456F11 0.456MHz
39	EI-344422	OSC XTAL HC-18/U 7.200000MHz
40	EM-353670	IND FL 8-BT-29ZK CHARACTER
41	EO-337598	COIL VARI 2 25A-1353-01
42	EO-337599	COIL VARI 2 25A-1354-03
43	ES-337902	△ SW PUSH SDLD1P002 01-1
44	ES-349464	△ SW SLIDE 00120319 01-2 [U,Y1]
45	ES-344439	SW SLIDE 00420451 2-04-02 [U,Y1]
46	ES-344445	SW TACT EVQ-QHR12B
47	ES-349367	SW TACT SKHMAB044A
48	ET-354364	TR DTC143TS [L]
49	ET-349449	TR FET 2SK161 O,Y
50	ET-351853	TR FET 2SK161 Y
51	ET-352408	TR FET 2SK192A GR [L]
52	ET-337759	TR FET 2SK246 GR
53	ET-337743	TR FET 3SK107 E.FAKAI
54 N	ET-353899	TR 2SA1317 S,T,U
55	ET-308141	TR 2SC2603 G [L]
56	ET-338410	TR 2SC2878 A,B [L]
57	ET-336869	TR 2SC2999 C,D
58	ET-336935	TR 2SC3000 D2,E,F
59 N	ET-353898	TR 2SC3330
60	ET-349081	TR 2SC3383 S,T
61	ET-328265	TR 2SC930 F
62	EV-345784	R S-FIX H RVF8P01 3P 304
63 N	EZ-358816	BATTERY LITHIUM BR2032-1HF

“NOTE” N: New Parts
 SYMBOL FOR DESTINATION
 [A] : AAL (USA)
 [B] : UK (England)
 [C] : CSA (Canada)
 [E] : CEE (Europe)
 [S] : SAA (Australia)
 [U] : U/T (Universal Area)
 [V] : VDE (West Germany)

1. PC BOARD BLOCK

REF. NO.	PART NO.	DESCRIPTION
1-1A	BA-A3048A020A	PC TUNER BLK AT-A301(U)
1-1B	BA-A3084A020B	PC TUNER BLK AT-A301(C)
1-1C	BA-A3048A020C	PC TUNER BLK AT-A301(E)
1-1D	BA-A3048A020D	PC TUNER BLK AT-A301(V)
1-1E	BA-A3048A020E	PC TUNER BLK AT-A301(S)
1-1F	BA-A3048A020F	PC TUNER BLK AT-A301L
1-1G	BA-A3048A020G	PC TUNER BLK AT-A301(Y1)
1-2A	BA-A3048A030A	PC CONTROL BLK AT-A301(U,Y1)
1-2B	BA-A3048A030B	PC CONTROL BLK AT-A301(C)
1-2C	BA-A3048A030C	PC CONTROL BLK AT-A301(E)
1-2D	BA-A3048A030D	PC CONTROL BLK AT-A301L
1-2E	BA-A3048A030E	PC CONTROL BLK AT-A301(A)

2. TUNER PC BOARD

REF. NO.	PART NO.	DESCRIPTION
TUNER PC BOARD		
2-1C1	EI-322248	IC LA1231N
2-1C2	EI-349963	IC LA3410
2-1C3	EI-202218	IC LA1245
2-1C4	EI-354951	IC LM7000
2-TR1	ET-337743	TR FET 3SK107 E.FAKAI
2-TR2	ET-336869	TR 2SC2999 C,D
2-TR3,TR4	ET-328265	TR 2SC930 F
2-TR7,TR8	ET-349081	TR 2SC3383 S,T
2-TR9	ET-338410	TR 2SC2878 A,B [L]
2-TR10	ET-352408	TR FET 2SK192A GR [L]
2-TR11,		
TR12	ET-308141	TR 2SC2603 G [L]
2-TR13	ET-353898	TR 2SC3330
2-TR14	ET-349081	TR 2SC3383 S,T
2-TR15	ET-337759	TR FET 2SK246 GR
2-TR16	ET-351853	TR FET 2SK161 Y
2-TR17,		
TR18	ET-336935	TR 2SC3000 D2,E,F
2-TR19	ET-353898	TR 2SC3330
2-TR20,		
TR21	ET-349081	TR 2SC3383 S,T
2-TR22	ET-353899	TR 2SA1317 S,T,U
2-TR23,		
TR24	ET-353898	TR 2SC3330
2-TR25	ET-349081	TR 2SC3383 S,T [V]
2-TR26	ET-349459	△ TR 2SD1406 O,Y,GR
2-TR27	ET-353898	△ TR 2SC3330
2-TR28	ET-353899	TR 2SA1317 S,T,U
2-TR29	ET-353898	TR 2SC3330
2-TR30	ET-336935	TR 2SC3000 D2,E,F
2-TR31	ET-354364	TR DTC143TS [L]
2-TR32	ET-353898	TR 2SC3330
2-TR33	ET-349449	TR FET 2SK161 O,Y
2-TR34	ET-353898	TR 2SC3330
2-D1A	ED-336832	D VARACTOR SVC211SP [EXCEPT V]
2-D1B	ED-349448	D VARACTOR 1SV147 [V]
2-D2A	ED-336832	D VARACTOR SVC211SP [EXCEPT V]
2-D2B	ED-349448	D VARACTOR 1SV147 [V]
2-D3A	ED-336832	D VARACTOR SVC211SP [EXCEPT V]
2-D3B	ED-349448	D VARACTOR 1SV147 [V]
2-D4A	ED-336832	D VARACTOR SVC211SP [EXCEPT V]
2-D4B	ED-349448	D VARACTOR 1SV147 [V]
2-D5	ED-344280	D SILICON H GMA-01-FY2 F05
2-D6	ED-301911	D SILICON H DS448
2-D9,D10	ED-353692	D VARACTOR SVC321 C,D DOUBLE

REF. NO.	PART NO.	DESCRIPTION
2-D11 to		
D13	ED-344280	D SILICON H GMA-01-FY2 F05 [L]
2-D14	ED-348205	D SILICON V MC931 DOUBLE
2-D15,D16	ED-344280	D SILICON H GMA-01-FY2 F05
2-D17	ED-301911	D SILICON H DS448
2-D19,D20	ED-344280	D SILICON H GMA-01-FY2 F05
2-D22,D23	ED-328486	△ D ZENER H HZ15 3
2-D24,D25	ED-309069	D ZENER H HZ6 B2
2-D26	ED-313846	D ZENER H HZ16 3
2-D27	ED-313623	△ D ZENER H HZ22 3
2-D28	ED-357754	△ D SILICON DS135D 200/1.0A
2-D29	ED-345555	△ D SILICON DBB10C 200/1.0A
2-D30	ED-344280	D SILICON H GMA-01-FY2 F05
2-D35 to		
D41	ED-344280	D SILICON H GMA-01-FY2 F05
2-D42	ED-301911	D SILICON H DS448
2-D43	ED-344280	D SILICON H GMA-01-FY2 F05
2-FL1	EH-315407	FILTER CE SFE10.7MMKA 10.7MHz
2-FL2	EH-355568	FILTER CE SFE 10.7MS2GY-A
2-FL3	EH-359176	FILTER LC 64-5032-11 [V]
2-FL4,FL5	EH-349059	FILTER LC LP 10PD
2-FL6	EH-344434	FILTER CE BFU450C4N 0.450MHz
2-L1	EO-349661	COIL FIX 2 LINK
2-L2	EO-349462	COIL FIX 2 U147
2-L3	EO-349461	COIL FIX 2 LINK
2-L4,L5	EO-349462	COIL FIX 2 U147
2-L6	EO-336934	COIL FIX 1 LAL03KH 2R2M
2-L7A	EO-349446	COIL OSC 2 TFE2-OSC-U [EXCEPT Y1]
2-L7B	EO-349447	COIL OSC 2 TFE2-OSC-J [Y1]
2-L10 to		
L12	EO-345907	COIL FIX 1 LAL03KH 3R3K
2-SW1	ES-337902	△ SW PUSH SDDL1P002 01-1
2-SW2	ES-349464	△ SW SLIDE 00120319 01-2 [U,Y1]
2-SW3	ES-344439	SW SLIDE 00420451 2-04-02 [U,Y1]
2-SW4	ES-344445	SW TACT EVQ-QHR12B
2-T1	EO-337640	COIL IFT 119AC-15533X 10.7MHz
2-T2	EO-349452	COIL DET 2 78-1045-01
2-T3	EO-349453	COIL DET 2 78-1046-01
2-T4	EO-337598	COIL VARI 2 25A-1353-01
2-T5	EO-337599	COIL VARI 2 25A-1354-03 [L]
2-T6A	EO-348209	COIL OSC 2 7NR-8646Y 115.0 UH [EXCEPT L]
2-T6B	EO-349456	COIL OSC 2 7NRS-9153Z 150.0 UH [L]
2-T7	EO-352089	COIL OSC 2 7BRS-9098X 580.0 UH [L]
2-T8	EO-356732	COIL IFT BCFLZ-450A
2-T9	EO-202216	COIL IFT 7MC-6733C 460.0KHz
2-X1	EI-349970	OSC CE CSB456F11 0.456MHz
2-X2	EI-344422	OSC X'TAL HC-18/U 7.200000MHz
2-VR1	EV-345784	R S-FIX H RVF8P01 3P 304
2-R25	ER-306805	△ R CB H S10 FS RDS 1/2W 101J
2-R26	ER-327710	△ R CB H S10 FS RDS 1/4W 151J
2-R29A	ER-333387	△ R CB H S10 FS RDS 1/4W 223J [EXCEPT Y1]
2-R29B	ER-333364	△ R CB H S10 FS RDS 1/4W 123J [Y1]
2-R43	ER-306805	△ R CB H S10 FS RDS 1/2W 101J
2-R45,R46	ER-324337	△ R CB H S10 FS RDS 1/4W 560J
2-R70	ER-324185	△ R CB H S10 FS RDS 1/4W 221J
2-R80	ER-324184	△ R CB H S10 FS RDS 1/4W 121J
2-R101	ER-327710	△ R CB H S10 FS RDS 1/4W 151J
2-R121	ER-324074	△ R CB H S10 FS RDS 1/4W 102J [V]
2-R127,		
R128	ER-358614	△ R OMF H S10 FS RSM 1/2W 560J
2-R131,		
R132	ER-200940	△ R CB H S10 FS RDS 1/4W 561J
2-R133	ER-358616	△ R OMF S10 FS RSM 1/2W 561J
2-R135	ER-200940	△ R CB H S10 FS RDS 1/4W 561J
2-R140	ER-356573	△ R SD ANTI-STATIC 1/2W 225K [C,A]

REF. NO.	PART NO.	DESCRIPTION
2-VC1 to VC3	EC-336865	C S-FIX H CTZ51C136 3.0-10
2-VC4	EC-356284	C S-FIX H VCT51G136A 7.5-50
2-VC5	EC-356284	C S-FIX H VCT51G136A 7.5-50 [L]
2-C46A	EC-355171	C PP V S05 CQMFS92 331J 50DC [U,S,Y1]
2-C46B	EC-355168	C PP V S05 CQMFS92 431J 50DC [C,A]
2-C46C	EC-355167	C PP V S05 CQMFS92 201J 50DC [E,V,L]
2-C47A	EC-355171	C PP V S05 CQMFS92 331 J 50DC [C,A]
2-C47B	EC-355168	C PP V S05 CQMFS92 431J 50DC [C,A]
2-C47C	EC-355167	C PP V S05 CQMFS92 201J 50DC [E,V,L]
2-C48,C49	EC-355170	C PP V S05 CQMFS92 181J 50DC [U,Y1]
2-C61	EC-355168	C PP V S05 CQMFS92 431J 50DC
2-C62	EC-355169	C PP V S05 CQMFS92 271J 50DC [L]
2-C97	EC-201750	C EC V CUT USM 102M 35.0DC
2-C108	EC-320548	△ C CE V F 103Z 250AC
2-C109A	EC-320548	△ C CE V F 103Z 250AC [U,Y1]
2-C109B	EC-338411	△ C CE V FZ 103P 400AC [C,A]
2-C109C	EC-338496	△ C CE V FZ 472P 400AC [E,V,S,L]
2-C128	EC-355166	C STY V S05 CQFS 101J 125DC
2-TM1	EJ-359031	TERMINAL LEVER YK-D31-0215 P 2P

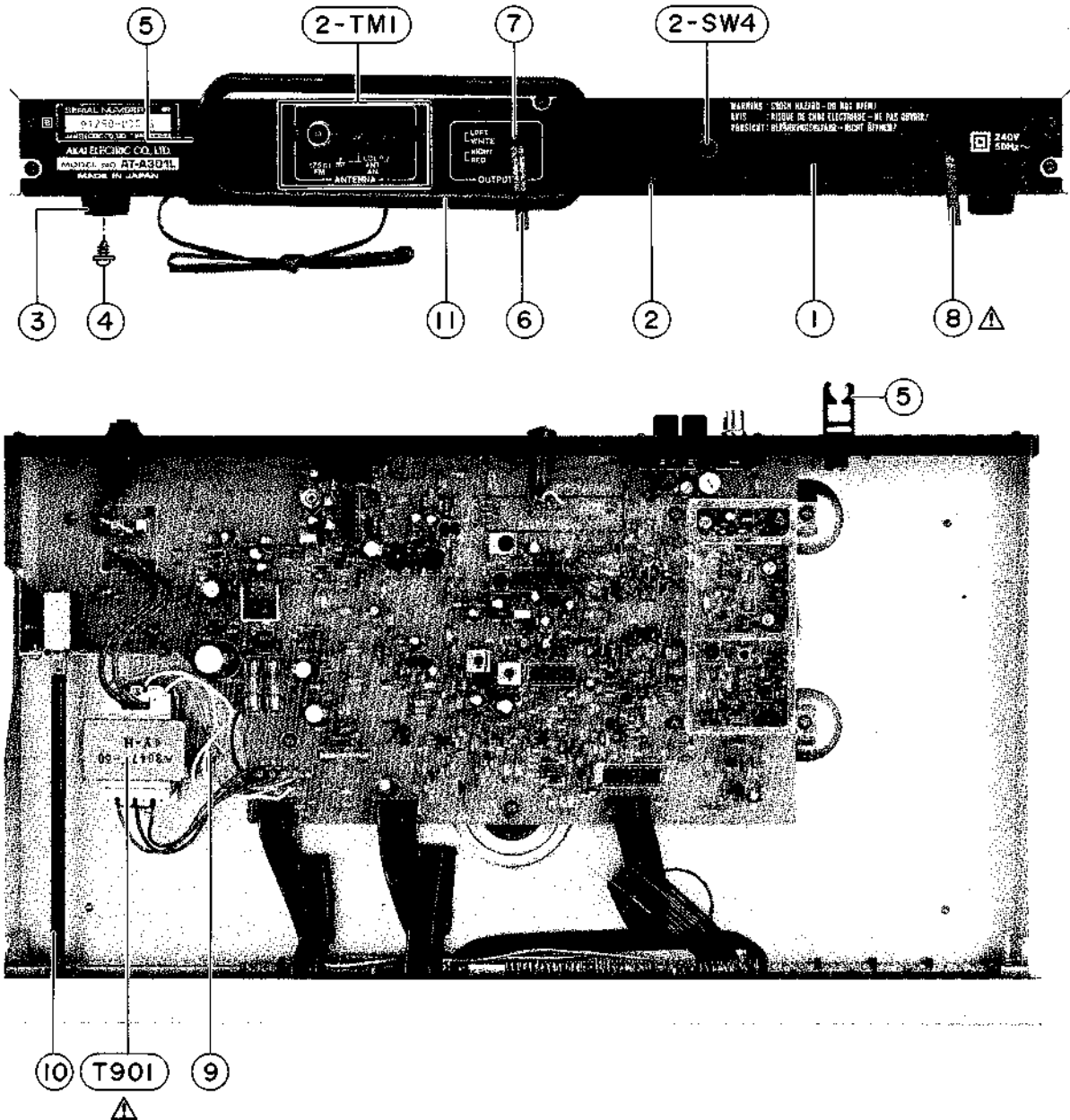
ASSEMBLY BLOCK

2-F1	EF-308933	△ FUSE TSC A 250V 0.20A [U,Y1]
2-F2A	EF-309390	△ FUSE TSC 125V 0.50A [C,A]
2-F2B	EF-668474	△ FUSE SEMKO T 400MA 250V [E,V,S,L]
2-F3A	EF-309390	△ FUSE TSC 125V 0.50A [C,A]
2-F3B	EF-668474	△ FUSE SEMKO T 400MA 250V [E,V,S,L]
2-F4	EF-339903	△ FUSE SEMKO T 125MA 250V [E,V,S,L]

3. CONTROL PC BOARD

REF. NO.	PART NO.	DESCRIPTION
3-IC1	EI-358818	IC A3048
3-TR1	ET-353899	TR 2SA1317 S,T,U [U,Y1]
3-D1	ED-321269	D LED GL5PR6 RED
3-D2	ED-321269	D LED GL5PR6 RED
3-D3,D4	ED-301911	D SILICON H DS448
3-D5	ED-344280	D SILICON H GMA-01-FY2 F05
3-D6,D7	ED-301911	D SILICON H DS448
3-D8	ED-344280	D SILICON H GMA-01-FY2 F05 [EXCEPT A]
3-D9	ED-346419	D ZENER H HZ3FA F10 A2
3-D10,D11	ED-344280	D SILICON H GMA-01-FY2 F05
3-D14,D15	ED-562397	D GERMA H 1S188FM1 [A]
3-D17	ED-344280	D SILICON H GMA-01-FY2 F05 [L]
3-D18	ED-344280	D SILICON H GMA-01-FY2 F05 [U,E,V,S,L,Y1]
3-D19	ED-344280	D SILICON H GMA-01-FY2 F05 [C,A]
3-D20	ED-344280	D SILICON H GMA-01-FY2 F05 [U,Y1]
3-SW1 to SW14	ES-349367	SW TACT SKHHAB044A
3-X1	EI-348409	OSC CE CSB400P 0.4MHZ
3-IB1	EH-355260	COMP R RRLD12×104K
3-IB2	EH-359120	COMP R RGLD4×104K
3-IN1	EM-353670	IND FL 8-BT-29ZK CHARACTER
3-BT1	EZ-358816	BATTERY LITHIUM BR2032-1HF

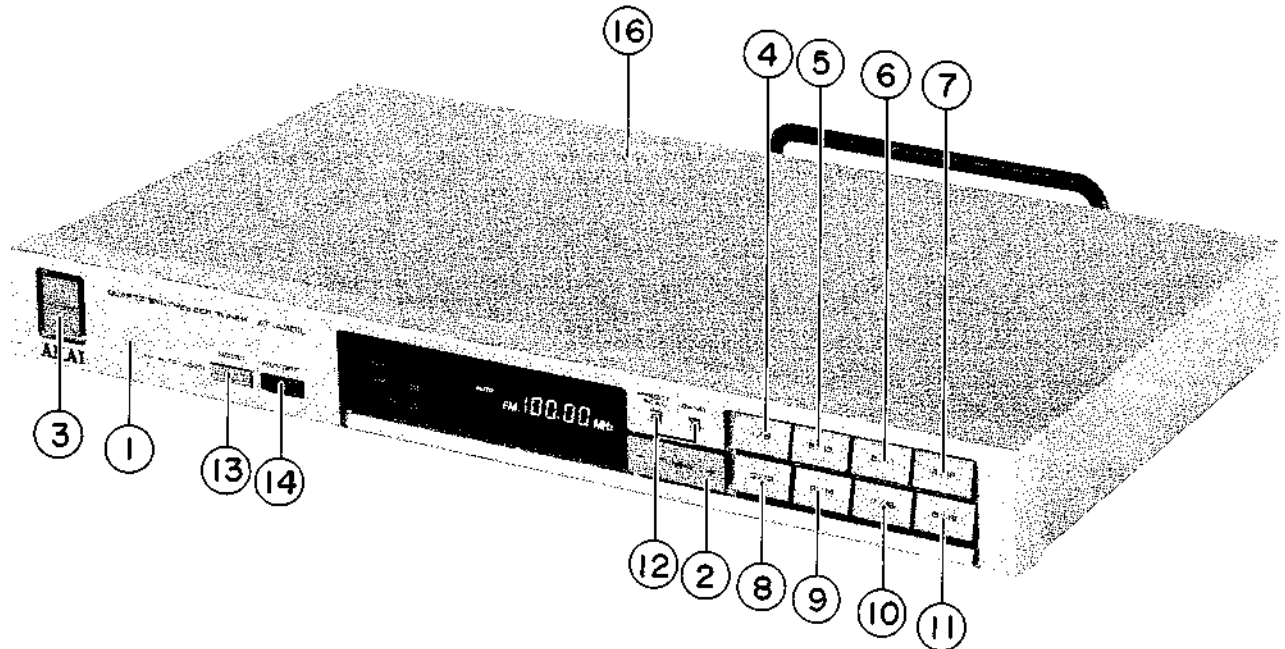
ASSEMBLY BLOCK



4. ASSEMBLY BLOCK

REF. NO.	PART NO.	DESCRIPTION
	ASSEMBLY BLOCK	
4-1A	SP-358714A	PANEL REAR AT-A301(U,Y1)
4-1B	SP-358714B	PANEL REAR AT-A301(C,A)
4-1C	SP-358714C	PANEL REAR AT-A301(E,V)
4-1D	SP-358714D	PANEL REAR AT-A301(S)
4-1E	SP-358714E	PANEL REAR AT-A301L(E)
4-2	ZS-308846	T2BR 30x08STL BZN PROJECTION
4-3	SA-332850	ROUND FOOT
4-4	ZS-331567	T2BR 30x08STL CMT C080
4-5	SZ-332739	HOLDER ANTENNA
4-6A	EW-336757	CORD SAE-020-PINX2 [EXCEPT C,A]
4-6B	EW-336758	CORD SAE-021-PINX2 [C,A]
4-7	EZ-631945	STRAIN RELIEF SR-4N-4
4-8A	EW-359448	△ AC CORD 2 CORES KP700A, VFF-CB U/T [U,Y1]
4-8B	EW-355031	△ AC CORD 2 CORES KP-8, SPT-1-CB M2 UC [C,A]
4-8C	EW-355033	△ AC CORD 2 CORES KP-419C, LTCE-2F-CBEV [E,V]
4-8D	EW-355035	△ AC CORD 2 CORES KP-560, LTSA-2F-CB S [S]
4-8E	EW-355034	△ AC CORD 2 CORES LTBS-2F-CB B [B]
4-9	ZS-315511	ST PAN30x06STL CMT CUP
4-10	MZ-358715	JOINT
4-11	EE-359265	ANT LOOP LA-200A-A
4-12x	EJ-352118	SOCKET COAX PAL B2-714P-900
4-T901A	BT-354945	△ TRANS POWER A3047T-70(U) [U,Y1]
4-T901B	BT-354946	△ TRANS POWER A3074T-30(C) [C]
4-T901C	BT-354948	△ TRANS POWER A3047T-20(A) [A]
4-T901D	BT-354949	△ TRNAS POWER A3047T-40(E,V) [E,V,L(E)]
4-T901E	BT-354950	△ TRANS POWER A4047T-50(B,S) [S,L(B)]
	TUNER PC BOARD	
2-SW4	ES-344445	SW TACT EVQ-QHR12D
2-TM1	EJ-359031	TERMINAL LEVER YK-D31-0215 P 2P

FINAL ASSEMBLY BLOCK



5. FINAL ASSEMBLY BLOCK

REF. NO.	PART NO.	DESCRIPTION
PANEL FRONT PART		
5-1A	BD-B358717A	PANEL FRONT AT-A301 PART
5-1B	BD-B358717B	PANEL FRONT AT-A301L PART
5-1C	BD-B358717C	PANEL FRONT AT-A301-B PART [BL]
5-1D	BD-B358717D	PANEL FRONT AT-A301L-B PART [BL]
5-2	SK-358723A	KNOB TUNING
5-2B	SK-358723B	KNOB TUNING-B
5-3	SK-343017C	KNOB POWER (2)
5-3B	SK-343017F	KNOB POWER-B
5-4	SK-358720A	KNOB A-1
5-4B	SK-358720J	KNOB B-1
5-5	SK-358720B	KNOB A-2
5-5B	SK-358720K	KNOB B-2
5-6	SK-358720C	KNOB A-3
5-6B	SK-358720L	KNOB B-3
5-7	SK-358720D	KNOB A-4
5-7B	SK-358720M	KNOB B-4
5-8	SK-358720E	KNOB A-5
5-8B	SK-358720N	KNOB B-5
5-9	SK-358720F	KNOB A-6
5-9B	SK-358720P	KNOB B-6
5-10	SK-358720G	KNOB A-7
5-10B	SK-358720Q	KNOB B-7
5-11	SK-358720H	KNOB A-8
5-11B	SK-358720R	KNOB B-8
FINAL ASSEMBLY BLOCK		
5-12	SK-358721A	KNOB AUTO
5-12B	SK-358721B	KNOB AUTO-B
5-13	SK-358722A	KNOB MODE
5-13B	SK-358722B	KNOB MODE-B
5-14	SK-358722C	KNOB MEMORY-B
5-15x	ZS-447840	T2BR30x08STL CMT [PANEL FRONT FIX]
5-16	SP-358718A	COVER UPPER
5-16B	SP-358718B	COVER UPPER-B

"NOTE"

PANEL FRONT PART consists of 5-2 to 5-11B.

SYMBOL FOR COLOR VARIATION

NON: STANDARD COLOR

B or BL: BLACK

INDEX

PART NO.	REF. NO.	PART NO.	REF. NO.	PART NO.	REF. NO.	PART NO.	REF. NO.	PART NO.	REF. NO.
BA-A3048A020A	1-1A	ED-344280	3-D8	ER-358614	2-R127	SK-358720N	5-8B		
BA-A3048A020B	1-1B	ED-344280	3-D5	ER-358614	2-R128	SK-358720P	5-9B		
BA-A3048A020C	1-1C	ED-344280	3-D18	ER-358616	2-R133	SK-358720Q	5-10B		
BA-A3048A020D	1-1D	ED-344280	3-D17	ES-337902	2-SW1	SK-358720R	5-11B		
BA-A3048A020E	1-1E	ED-344280	3-D11	ES-344439	2-SW3	SK-358721A	5-12		
BA-A3048A020F	1-1F	ED-344280	3-D10	ES-344445	2-SW4	SK-358721B	5-12B		
BA-A3048A020G	1-1G	ED-345555	2-D29	ES-349367	3-SW14	SK-358722A	5-13		
BA-A3048A030A	1-2A	ED-346419	3-D9	ES-349367	3-SW6	SK-358722B	5-13B		
BA-A3048A030B	1-2B	ED-348205	2-D14	ES-349367	3-SW2	SK-358722C	5-14		
BA-A3048A030C	1-2C	ED-349448	2-D4B	ES-349367	3-SW5	SK-358723A	5-2		
BA-A3048A030D	1-2D	ED-349448	2-D3B	ES-349367	3-SW3	SK-358723B	5-2B		
BA-A3048A030E	1-2E	ED-349448	2-D2B	ES-349367	3-SW4	SP-358714A	4-1A		
BD-B358717A	5-1A	ED-349448	2-D1B	ES-349367	3-SW12	SP-358714B	4-1B		
BD-B358717B	5-1B	ED-353692	2-D10	ES-349367	3-SW11	SP-358714C	4-1C		
BD-B358717C	5-1C	ED-553692	2-D9	ES-349367	3-SW1	SP-358714D	4-1D		
BD-B358717D	5-1D	ED-357754	2-D28	ES-349367	3-SW7	SP-358714E	4-1E		
BT-354945	4-T901A	ED-562397	3-D15	ES-349367	3-SW10	SP-358718A	5-16		
BT-354946	4-T901B	ED-562397	3-D14	ES-349367	3-SW8	SP-358718B	5-16B		
BT-354948	4-T901C	EE-359265	4-11	ES-349367	3-SW9	SZ-332739	4-5		
BT-354949	4-T901D	EF-308933	2-F1	ES-349367	3-SW13	ZS-308846	4-2		
BT-354950	4-T901E	EF-309390	2-F3A	ES-349464	2-SW2	ZS-315511	4-9		
EC-201750	2-C97	EF-309390	2-F2A	ET-308141	2-TR11	ZS-331567	4-4		
EC-320548	2-C108	EF-339903	2-F4	ET-308141	2-TR12	ZS-447840	5-15x		
EC-320548	2-C109A	EF-668474	2-F2B	ET-328265	2-TR3				
EC-336865	2-VC3	EF-668474	2-F3B	ET-328265	2-TR4				
EC-336865	2-VC2	EH-315407	2-FL1	ET-336869	2-TR2				
EC-336865	2-VC1	EH-344434	2-FL6	ET-336935	2-TR17				
EC-338411	2-C109B	EH-349059	2-FL5	ET-336935	2-TR18				
EC-338496	2-C109C	EH-349059	2-FL4	ET-336935	2-TR30				
EC-355166	2-C128	EH-355260	3-IB1	ET-337743	2-TR1				
EC-355167	2-C46C	EH-355568	2-FL2	ET-337759	2-TR15				
EC-355167	2-C47C	EH-359120	3-IB2	ET-338410	2-TR9				
EC-355168	2-C61	EH-359176	2-FL3	ET-349081	2-TR7				
EC-355168	2-C47B	EI-202218	2-IC3	ET-349081	2-TR14				
EC-355168	2-C46B	EI-322248	2-IC1	ET-349081	2-TR8				
EC-355169	2-C62	EI-344422	2-X2	ET-349081	2-TR20				
EC-355170	2-C48	EI-348409	3-X1	ET-349081	2-TR21				
EC-355170	2-C49	EI-349963	2-IC2	ET-349081	2-TR25				
EC-355171	2-C47A	EI-349970	2-X1	ET-349449	2-TR33				
EC-355171	2-C46A	EI-354951	2-IC4	ET-349459	2-TR26				
EC-356284	2-VC5	EI-358818	3-IC1	ET-351853	2-TR16				
EC-356284	2-VC4	EJ-352118	4-12x	ET-352408	2-TR10				
ED-301911	2-D6	EJ-359031	2-TM1	ET-353898	2-TR13				
ED-301911	2-D17	EM-356670	3-IN1	ET-353898	2-TR23				
ED-301911	2-D42	EO-202216	2-T9	ET-353898	2-TR27				
ED-301911	3-D4	EO-336934	2-L6	ET-353898	2-TR29				
ED-301911	3-D6	EO-337598	2-T4	ET-353898	2-TR32				
ED-301911	3-D3	EO-337599	2-R5	ET-353898	2-TR34				
ED-301911	3-D7	EO-337640	2-T1	ET-353898	2-TR24				
ED-309069	2-D24	EO-345907	2-L12	ET-353898	2-TR19				
ED-309069	2-D25	EO-345907	2-L11	ET-353899	2-TR28				
ED-313623	2-D27	EO-345907	2-L10	ET-353899	2-TR22				
ED-313846	2-D26	EO-348209	2-T6A	ET-353899	3-TR1				
ED-321269	3-D1	EO-349446	2-L7A	ET-354364	2-TR31				
ED-312269	3-D2	EO-349447	2-L7B	EV-345784	2-VR1				
ED-328486	2-D22	EO-349452	2-T2	EW-336757	4-6A				
ED-328486	2-D23	EO-349453	2-T3	EW-336758	4-6B				
ED-336832	2-D1A	EO-349456	2-T6B	EW-355031	4-8B				
ED-336832	2-D4A	EO-349461	2-L3	EW-355033	4-8C				
ED-336832	2-D3A	EO-349461	2-L1	EW-355034	4-8E				
ED-336832	2-D2A	EO-349462	2-L4	EW-355035	4-8D				
ED-344280	2-D15	EO-349462	2-L2	EW-359448	4-8A				
ED-344280	2-D30	EO-349462	2-L5	EZ-358816	3-BT1				
ED-344280	2-D12	EO-352089	2-T7	EZ-631945	4-7				
ED-344280	2-D38	EO-356732	2-T8	MZ-358715	4-10				
ED-344280	2-D36	ER-200940	2-R135	SA-332850	4-3				
ED-344280	2-D39	ER-200940	2-R131	SK-343017C	5-3				
ED-344280	2-D35	ER-200940	2-R132	SK-343017F	5-3B				
ED-344280	2-D20	ER-306805	2-R43	SK-358720A	5-4				
ED-344280	2-D19	ER-306805	2-R25	SK-358720B	5-5				
ED-344280	2-D16	ER-323074	2-R121	SK-358720C	5-6				
ED-344280	2-D41	ER-324184	2-R80	SK-358720D	5-7				
ED-344280	2-D11	ER-324185	2-R70	SK-358720E	5-8				
ED-344280	2-D37	ER-324337	2-R45	SK-358720F	5-9				
ED-344280	2-D13	ER-344337	2-R46	SK-358720G	5-10				
ED-344280	2-D43	ER-327710	2-R26	SK-358720H	5-11				
ED-344280	2-D40	ER-327710	2-R101	SK-358720J	5-4B				
ED-344280	2-D5	ER-333364	2-R29B	SK-357720K	5-5B				
ED-344280	3-D19	ER-333387	2-R29A	SK-358720L	5-6B				
ED-344280	3-D20	ER-356573	2-R140	SK-358720M	5-7B				

AKAI

MODEL AT-A301/L

SCHEMATIC DIAGRAM AND PC BOARD

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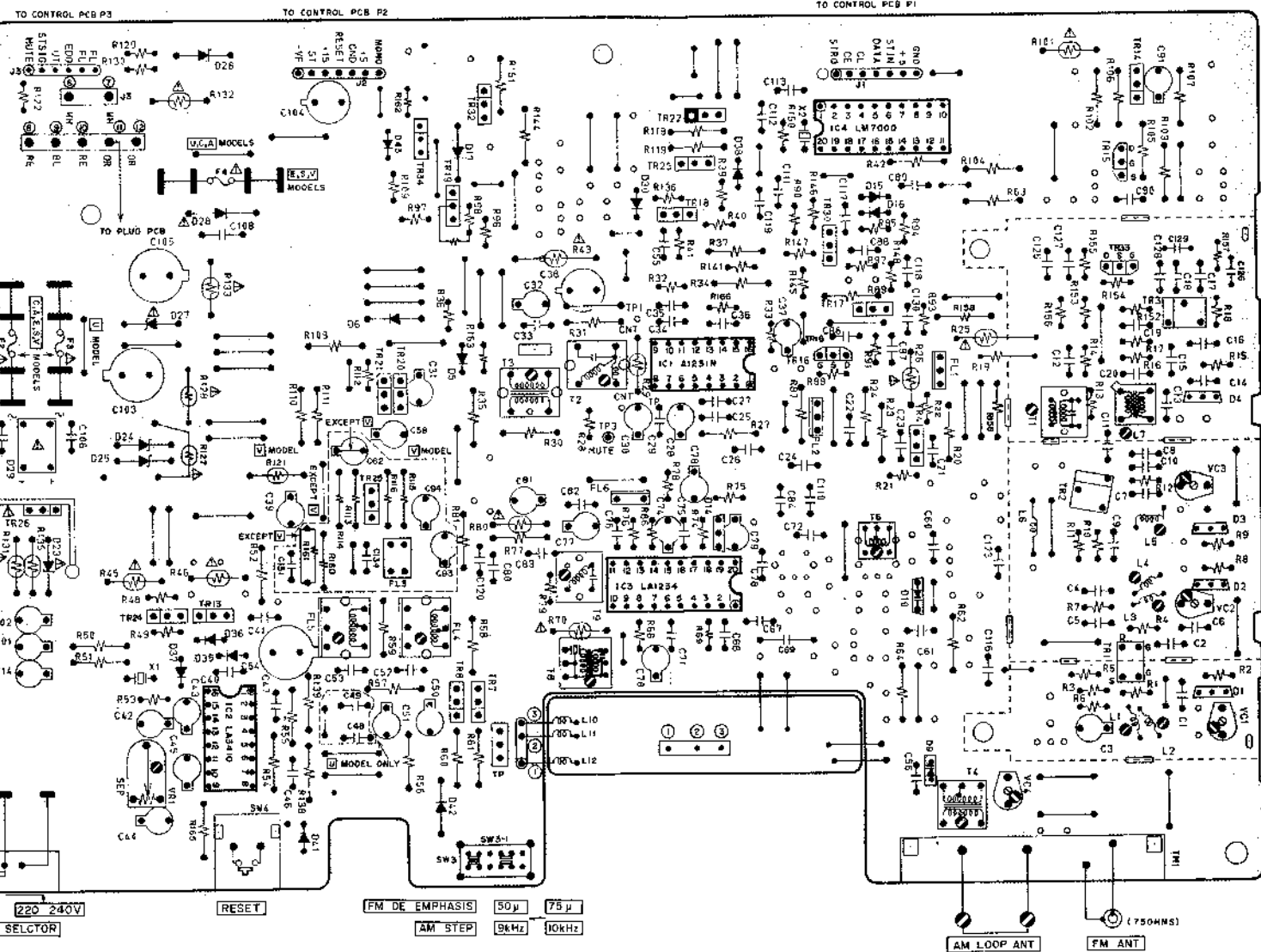
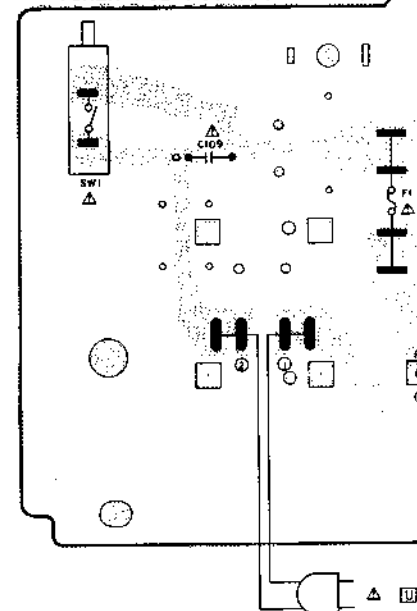
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A3048

Pin	PORT NAME	DESCRIPTION
1	K2	Key scan input from Key matrix
2	K3	
3	SENS	Power ON detect input
5	STSIG	IF signal input or muting signal input for detecting the station during auto-tuning. (active L)
6	STIN	Auto tuning stop input from PLL IC (active L)
7	DATA	Transfer data to PLL IC
8	CL	Clock output to PLL IC (⌄)
9	CE	Chip enable output for selecting PLL IC (active H)
10	STRQ	Stop request output to PLL IC for IF amplifier function and IF frequency count down (active H)
14	MONO	Forced MONO control output
15	EDO	150 m sec output when Keys depressed (except MEMORY KEY) NO output when from Back-up mode.
17	ME9-16	Indicator output for 9~16ch Preset memory rewriting
18	AMUTE	Audio mute output when band changed, tuning up/down, from back-up mode and preset memory reading.
19	RES	Reset input
20	TEST	Connect to GND
21	VSS	Connect to GND
22	OSC1	Oscillator for clock
23	OSC2	
24	D0	Digit Data output for Indicator and Data for Key scan (active H)
25	D1	
26	D2	
27	D3	
28	a	Segment output for Indicator
29	b	
30	c	
31	d	
32	e	
33	f	
34	g	
35	h	
36	D4	Digit output for Indicator and Key scanning (active H)
37	D5	
38	HOLD	Internal RAM hold input (active L)
39	INT	Interrupt request input
40	VDD	Power input (+5V)
41	K0	Key scan input from Key matrix
42	K1	

WARNING: Δ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.
 AVERTISSEMENT: Δ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.

TUNER PCB A3047A501A (3ED)



LOCATION OF COMPONENTS

- ICs
 IC1.....2D
 IC2.....3C
 IC3.....1D
 IC4.....2D
 TRs
 TR1.....3E
 TR2,3,4.....2E
 TR7,8.....3C
 TR12.....1D
 TR13.....3C
 TR14,15.....1E

- TR16,17.....2D
 TR18.....1D
 TR19.....1C
 TR20,21.....2C
 TR22,23.....1D
 TR24.....3B
 TR25.....2C
 TR26,27,28...2B
 TR29.....3B
 TR30.....1D
 TR32.....1C
 TR33.....1E
 TR34.....1C

- TR1.....38K107 (E)
 TR2.....2SC2999 (C,D)
 TR3,4.....2SC930 (E,F)
 TR7,8,14,20,21,25...2SC3383 (S,T)
 TR13,19,23,24,27,29,32,34...2SC3330
 TR15.....2SK246 (GR)
 TR16,33.....2SK161 (Y)
 TR17,18,30.....2SC3000 (D2,E,F)
 TR22,28.....2SA1317 (S,T,U)
 TR26.....2SD1406 (O,Y,GR)

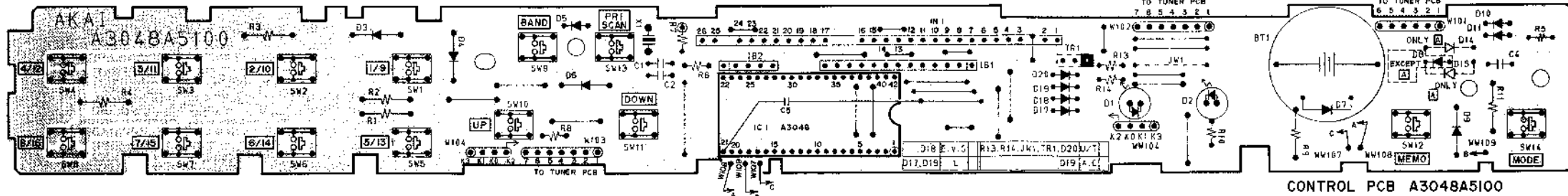
- \square PNP TRANSISTOR
 \square NPN TRANSISTOR

- L1 to 5.....FM SRNS (LOW)
 L7.....FM OSC

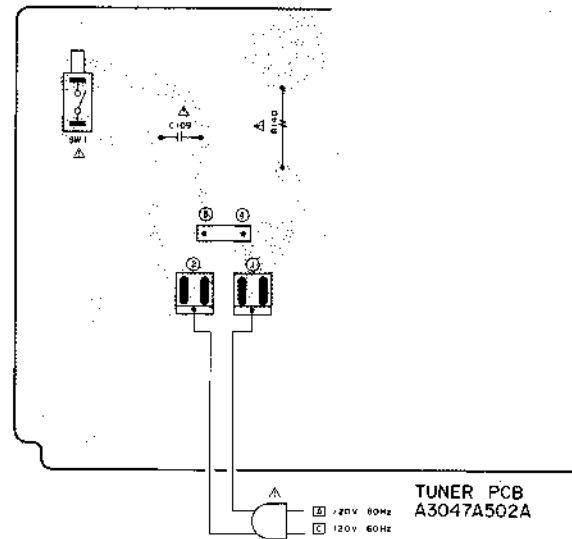
- T1.....FM DISTORTION (STEREO)
 T2.....FM CENTER VOLTAGE
 T3.....FM DISTORTION (MONO)
 T4.....AM SRNS (LOW)
 T6.....AM OSC
 T8,9.....AM IF
 VC1 to 3.....FM SENS (HIGH)
 VC4.....AM SENS (HIGH)
 VR1.....FM SEPARATION



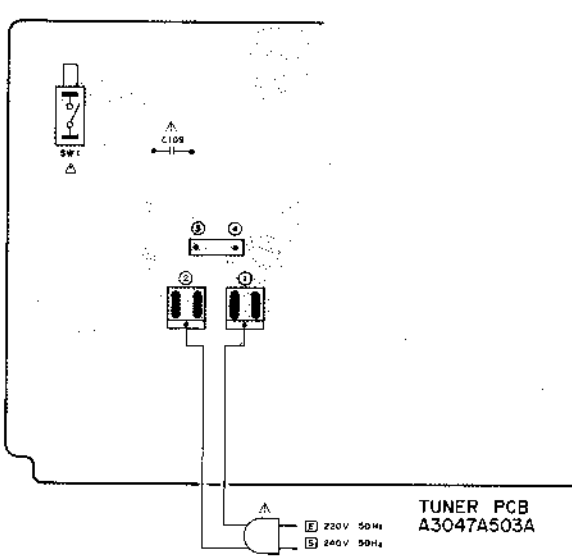
- 2SC930
 2SC3000
 2SC3383
 2SA1317
 2SC2999
 2SC3330
 2SK107
 2SK246
 2SK161
 2SD1406



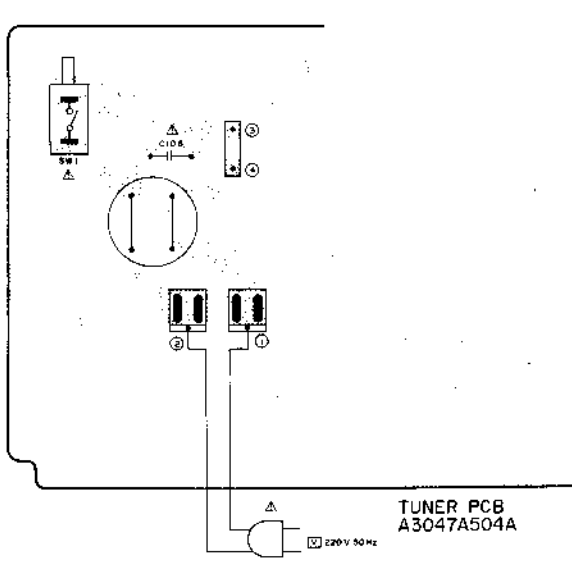
CONTROL PCB A3048A5100



TUNER PCB A3047A502A

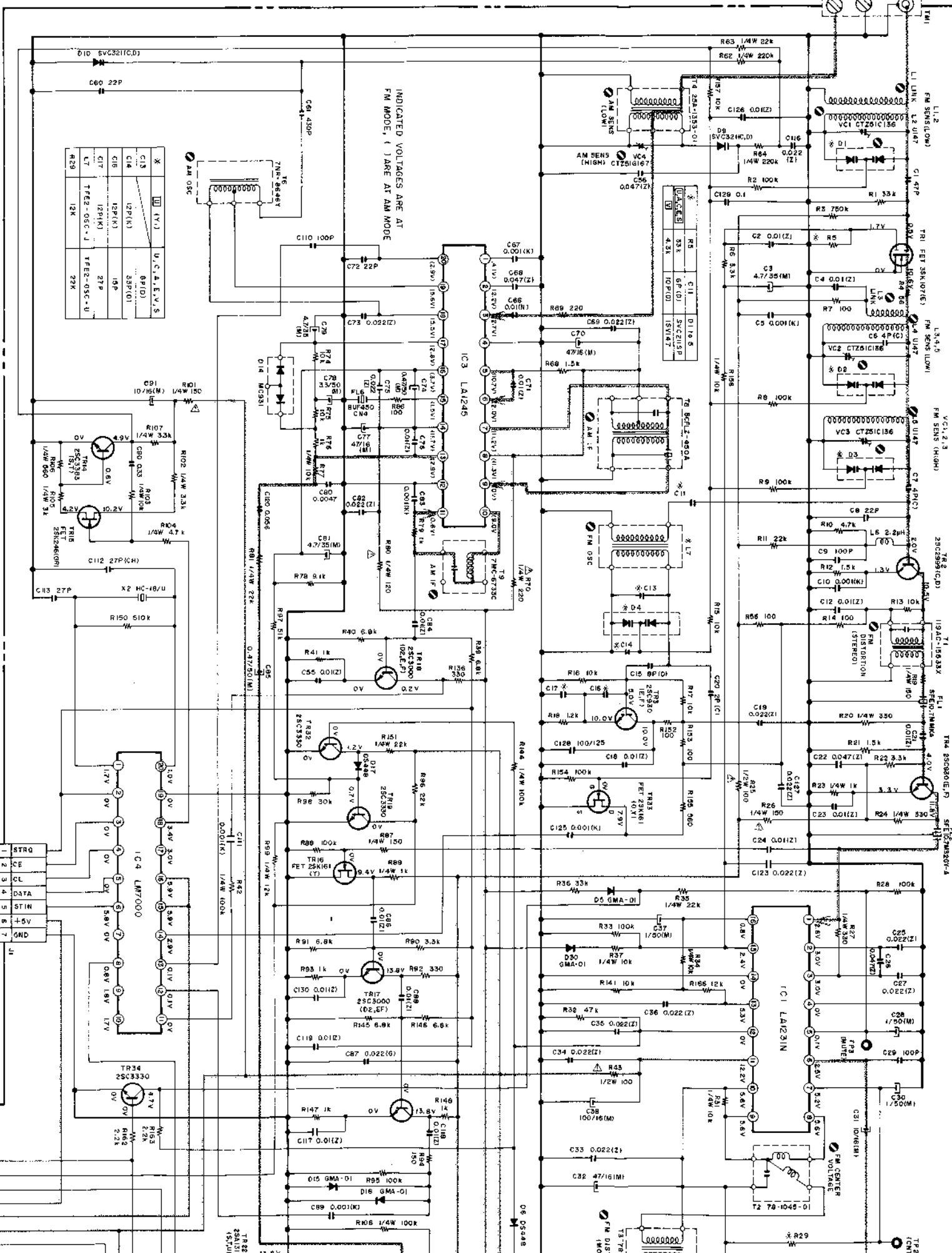


TUNER PCB A3047A503A



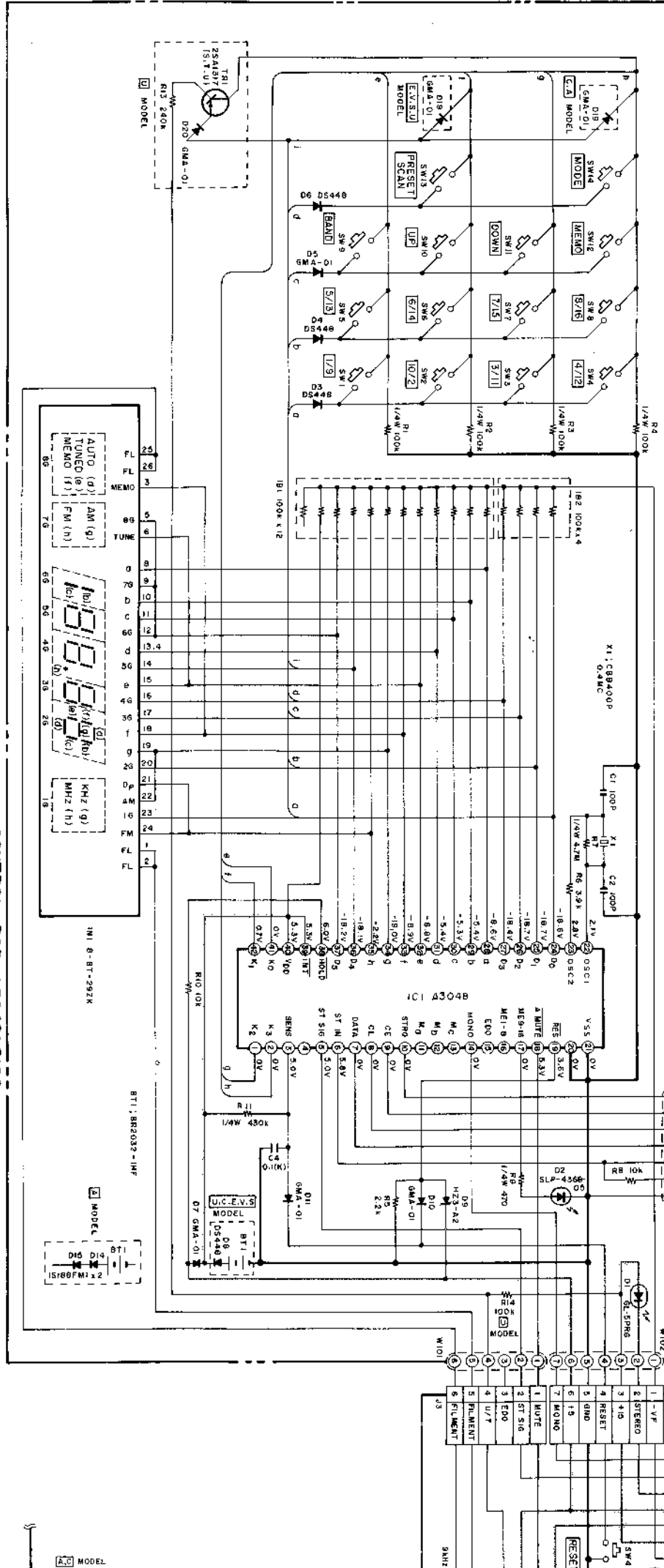
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A B C D E F



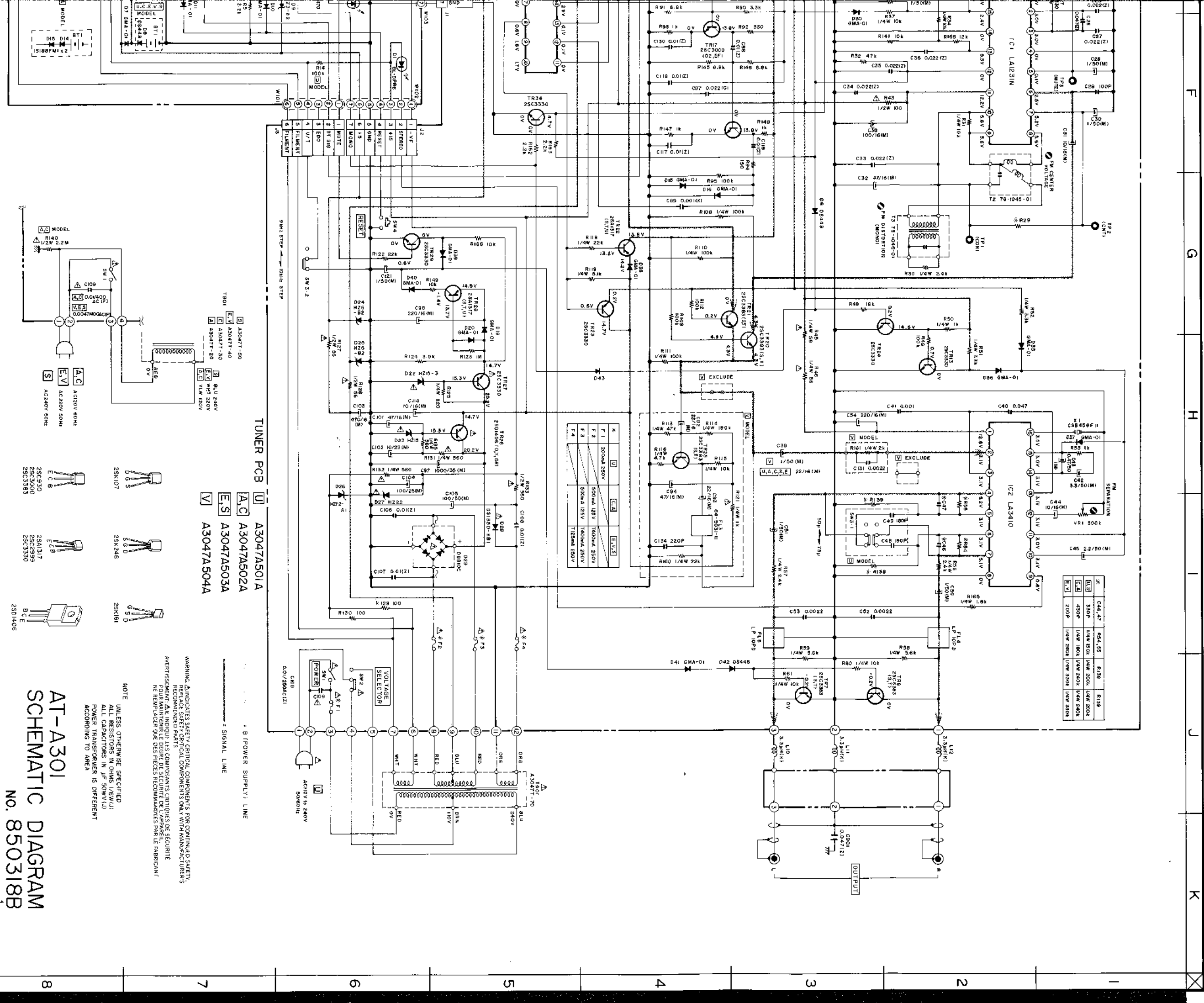
X	(V)	U.C.A.E.V.S.
C13	(2P(K))	8P(D)
C14	(2P(K))	83P(F)
C16	(2P(K))	10P
C17	(2P(K))	27P
L7	(2P(K))	TPE2-05C-U
R29	(1K)	29K

03



A B C D E F

02



X	Y	Part	Value	Notes
R138	R139	R139	1/4W 200Ω	1/4W 200Ω
R140	R141	R141	1/4W 200Ω	1/4W 200Ω
R142	R143	R143	1/4W 200Ω	1/4W 200Ω
R144	R145	R145	1/4W 200Ω	1/4W 200Ω
R146	R147	R147	1/4W 200Ω	1/4W 200Ω
R148	R149	R149	1/4W 200Ω	1/4W 200Ω
R150	R151	R151	1/4W 200Ω	1/4W 200Ω

Part	Value	Notes
F1	200μA 250V	
F2	500mA 125V	T4000MA 250V
F3	500mA 125V	T4000MA 250V
F4	175mA 250V	

TUNER PCB

- U A3047A501A
- A C A3047A502A
- E S A3047A503A
- V A3047A504A

AT-A301
SCHEMATIC DIAGRAM
 No. 850318B

NOTE: UNLESS OTHERWISE SPECIFIED, ALL RESISTORS IN OHMS (Ω), KΩ (K), MΩ (M), ALL CAPACITORS IN μF (μ), P (PICO), POWER TRANSFORMER IS DIFFERENT ACCORDING TO AREA.

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

AVERTISSEMENT: ALL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.

F G H I J K

8

7

6

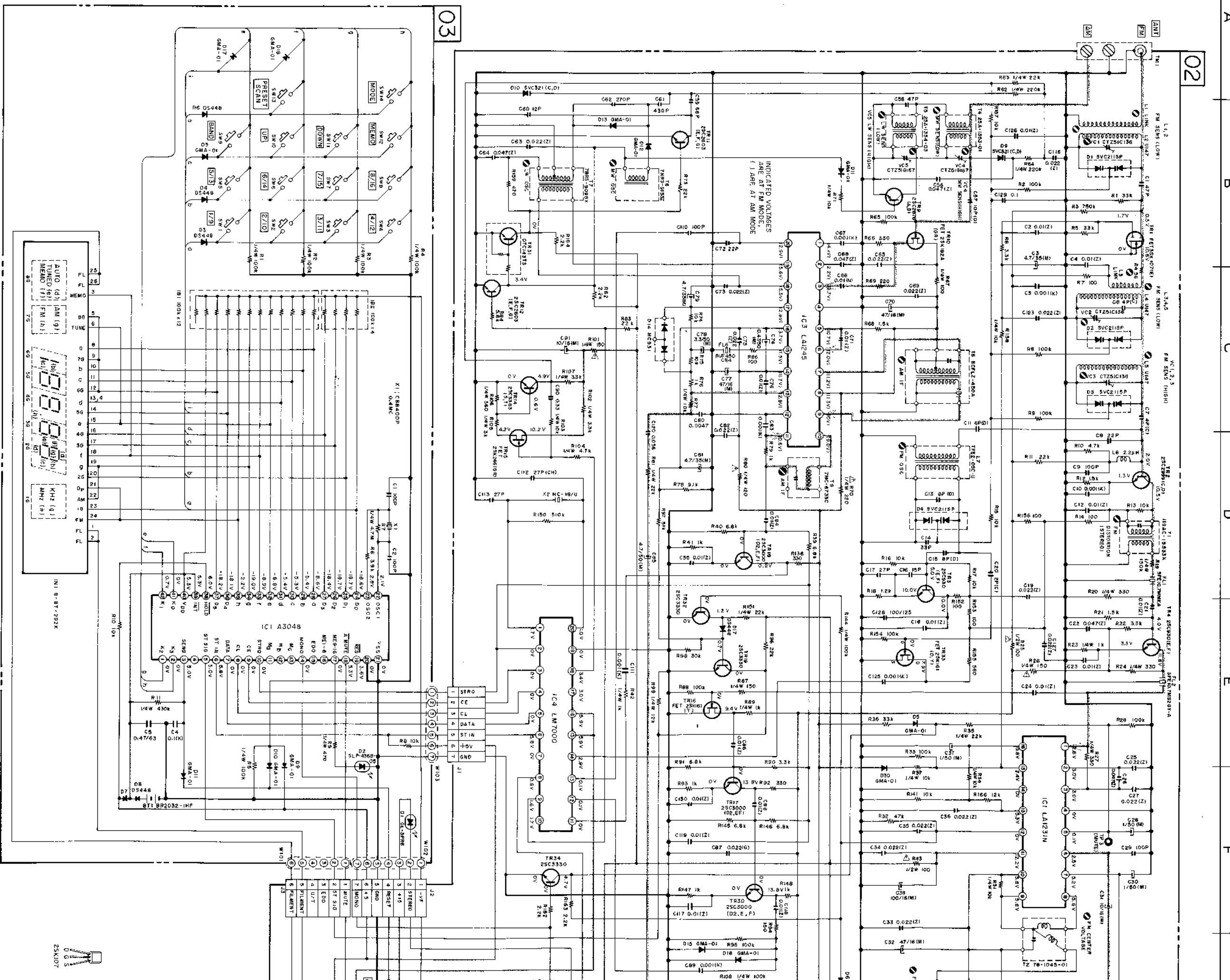
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3

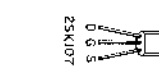
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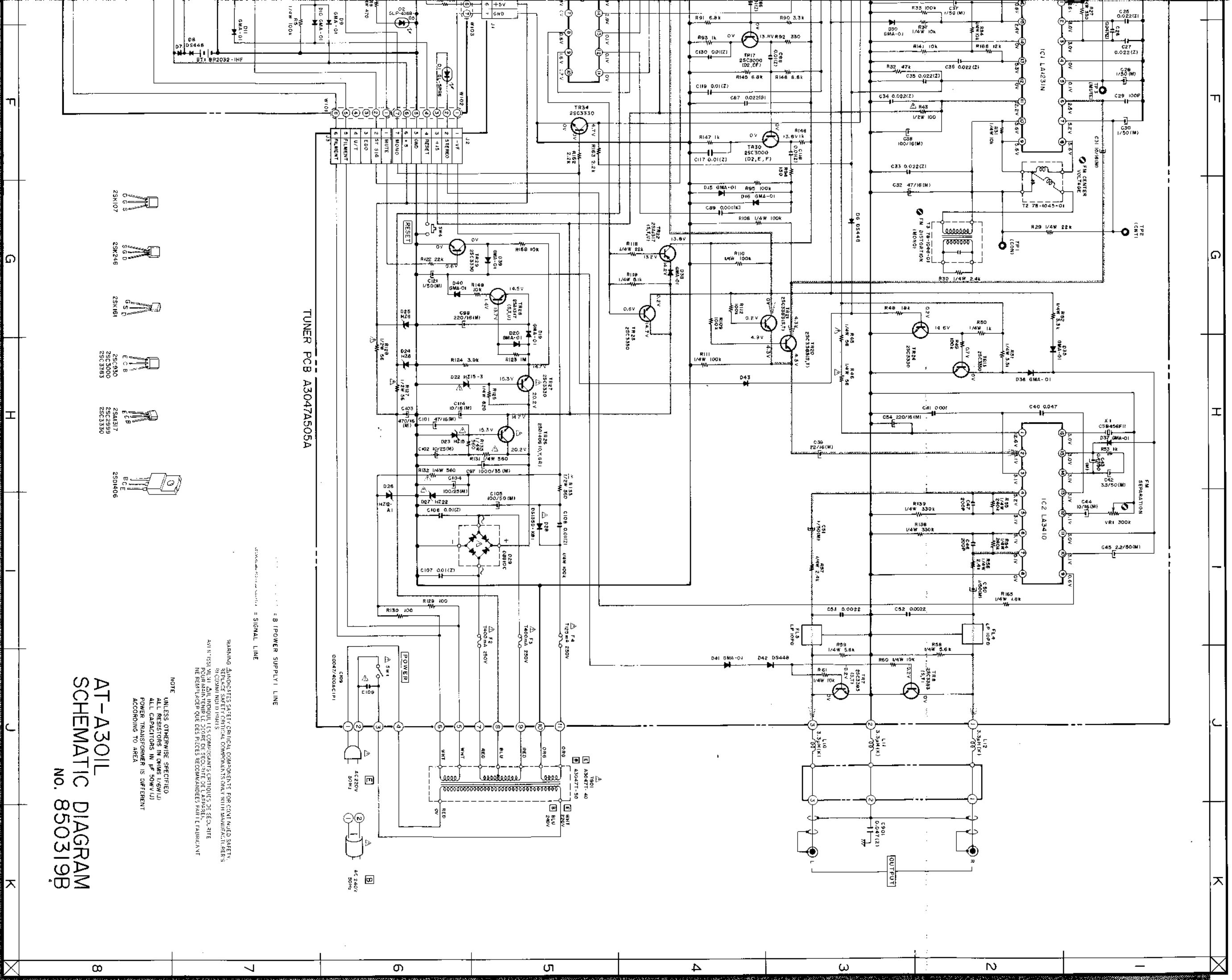
CONTROL PCB A3048A5100

A B C D E F



02

03



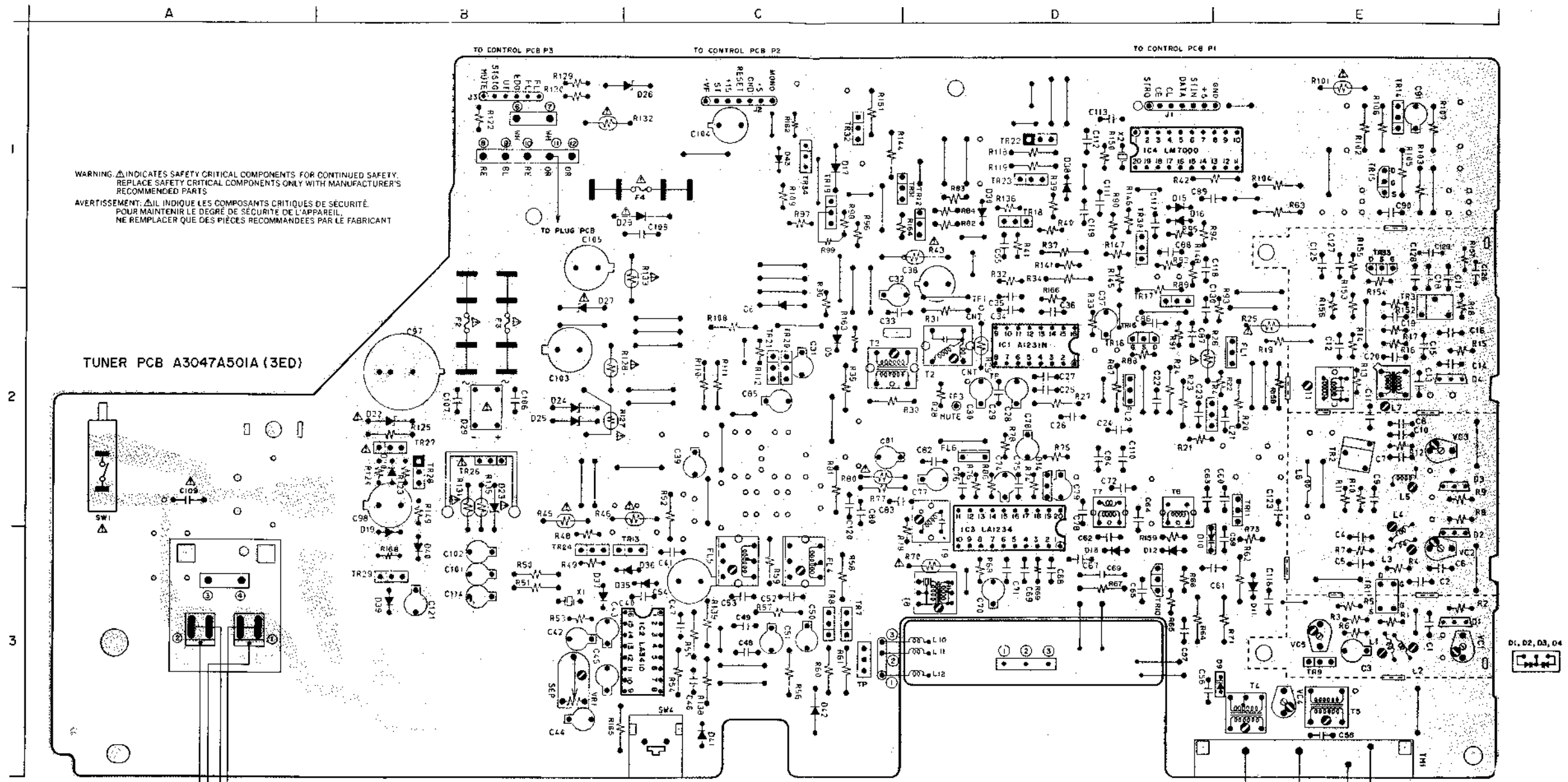
TUNER PCB A3047A505A

AT-A301L
SCHEMATIC DIAGRAM
No. 850319B

NOTE: UNLESS OTHERWISE SPECIFIED, ALL RESISTORS IN OHMS (50K, 500K, 1K, 10K, 100K, 1M, 10M, 100M, 1K, 10K, 100K, 1M, 10M, 100M). ALL CAPACITORS IN μF (500N, 100N, 10N, 1N, 100P, 10P, 1N, 10N, 100N, 1μ, 10μ, 100μ, 1M, 10M, 100M). POWER TRANSFORMER IS DIFFERENT ACCORDING TO AREA.

WARNING: ASSOCIATED SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S ORIGINAL EQUIPMENT PARTS. ADVISE SERVICE PERSONNEL OF THIS WARNING. POWER TRANSFORMER IS DIFFERENT ACCORDING TO AREA.

- 25K107 G S D
- 25K246 G S D
- 25K161 G S D
- 25C930 E C B
- 25C3000 E C B
- 25C3383 E C B
- 25A117 E C B
- 25C2999 E C B
- 25C3330 E C B
- 25D1406 E C E



WARNING Δ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.
 AVERTISSEMENT: Δ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.

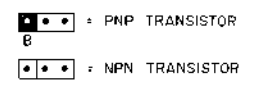
TUNER PCB A3047A501A (3ED)

AC240V50Hz 220V50Hz

LOCATION OF COMPONENTS

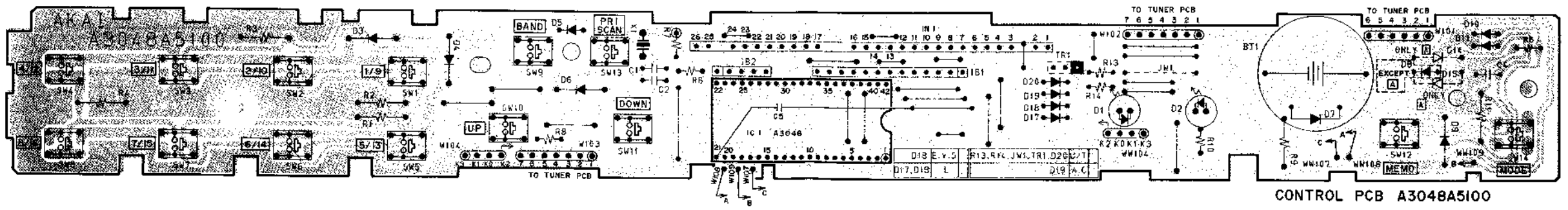
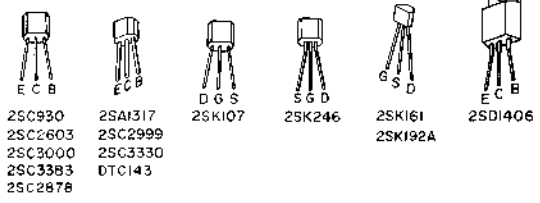
- | | |
|----------------|-----------------|
| ICs | |
| IC1.....2D | TR16,17.....2D |
| IC2.....3C | TR18.....1D |
| IC3.....2D | TR19.....1C |
| IC4.....1D | TR20,21.....2C |
| | TR22,23.....1D |
| TRs | |
| TR1.....3E | TR24.....3B |
| TR2,3,4.....2E | TR25.....2C |
| TR7,8.....3C | TR26,27,28...2B |
| TR9,10,11...3D | TR29.....3B |
| TR12.....1D | TR30.....1D |
| TR13.....3C | TR32.....1C |
| TR14,15...1E | TR33.....1E |
| | TR34.....1C |

- | | |
|-------------------------------------|--|
| TR1.....38K107 (E) | |
| TR2.....28C2999 (C,D) | |
| TR3,4.....28C930 (E,F) | |
| TR7,8,14,20,21,25...28C3383 (S,T) | |
| TR9.....28C2878 (A,B) | |
| TR10.....28K192A (GR) | |
| TR11,12.....28C2603 (E,F,C) | |
| TR13,19,23,24,27,29,32,34...28C3330 | |
| TR15.....28K246 (GR) | |
| TR16,33.....28K161 (Y) | |
| TR17,18,30.....28C3000 (D2,E,F) | |
| TR22,28.....28A1317 (S,T,U) | |
| TR26.....28D1406 (O,U,GR) | |
| TR31.....DTC147S | |

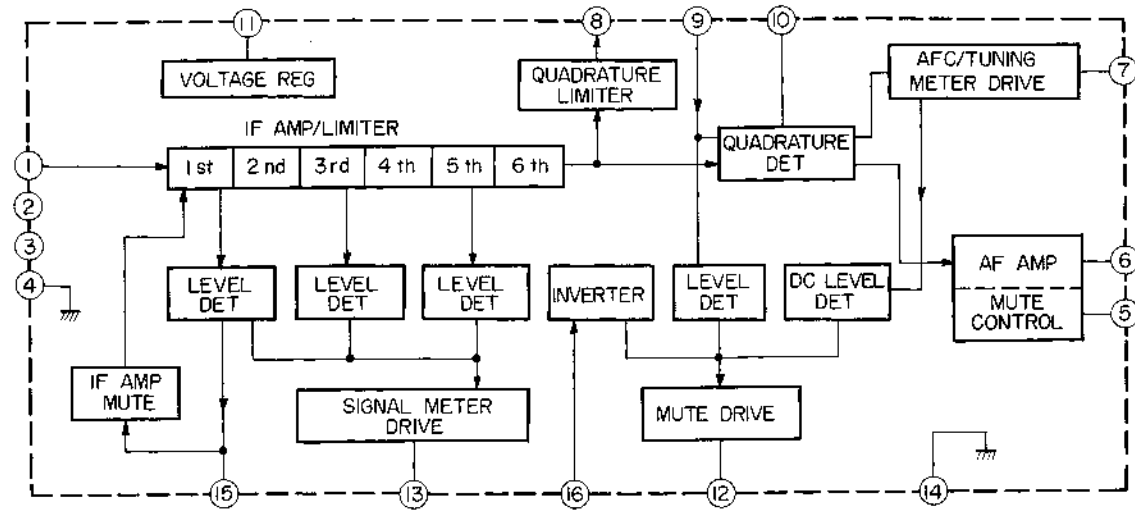


L1 to 5.....FM SENS (LOW)
 L7.....FM OSC

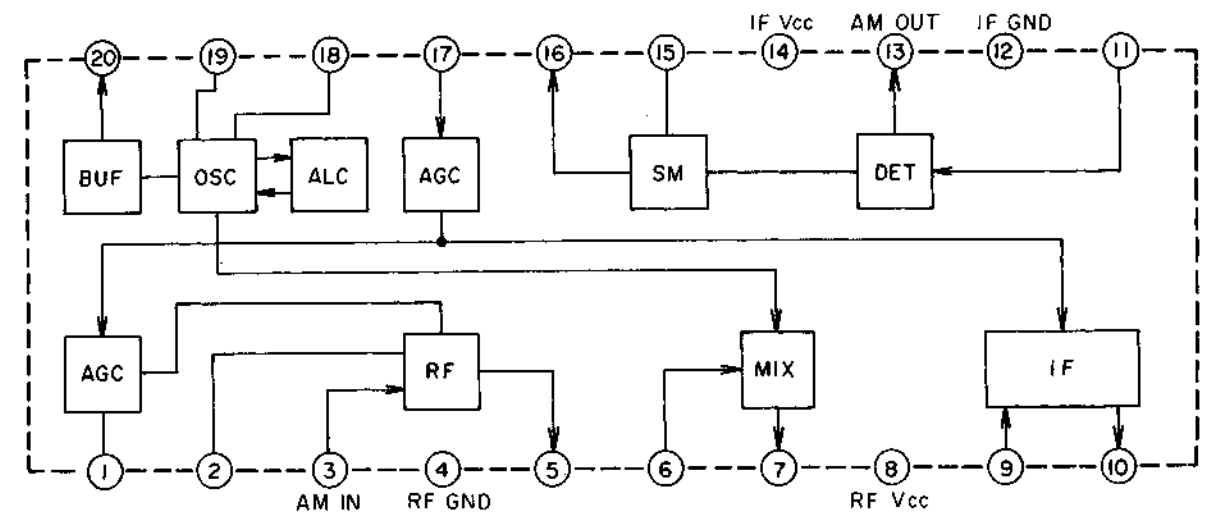
- | | |
|-------------------------------|-----------------------------|
| T1.....FM DISTORTION (STEREO) | VC1 to J.....FM SENS (HIGH) |
| T2.....FM CENTER VOLTAGE | VC4.....MW SENS (HIGH) |
| T3.....FM DISTORTION (MONO) | |
| T4.....MW SENS (LOW) | |
| T5.....LW SENS (HIGH) | |
| T6.....MW OSC | |
| T7.....LW OSC | |
| T8,9.....AM IF | |
| VR1.....FM SEPARATION | |



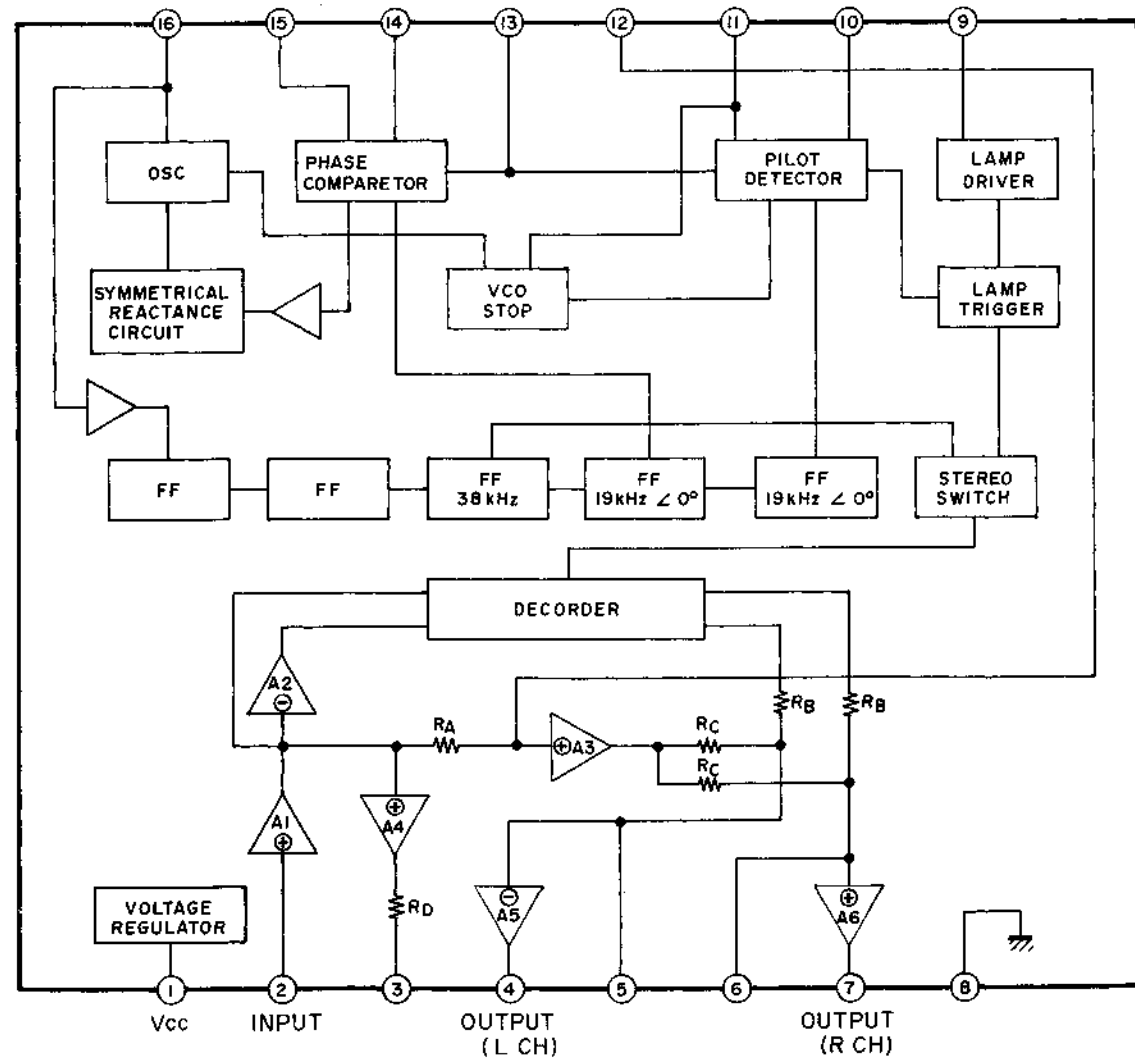
LA1231



LA1245



LA3410



LM7000

