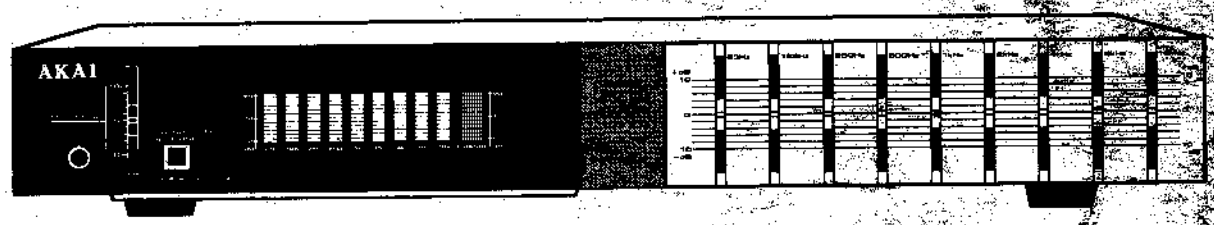
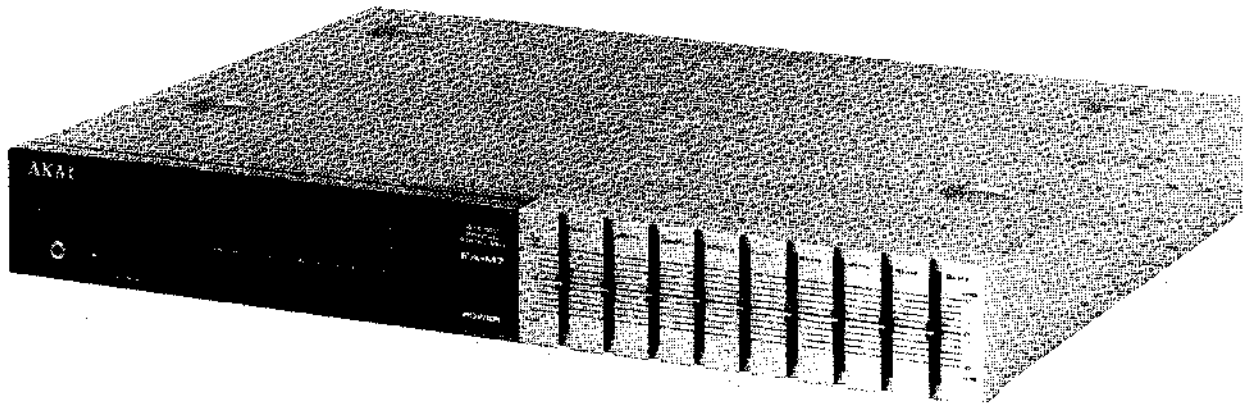


AKAI SERVICE MANUAL



STEREO GRAPHIC EQUALIZER

MODEL **EA-M7**



STEREO GRAPHIC EQUALIZER

MODEL EA-M7

| | | |
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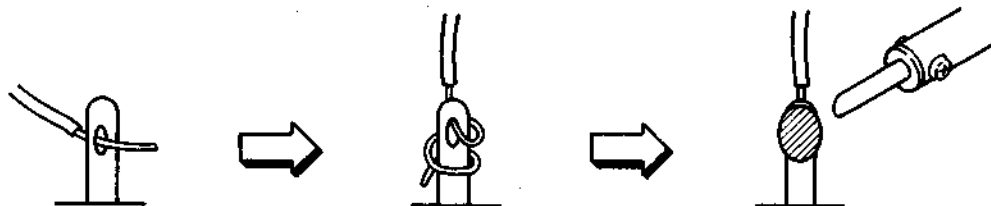
SAFETY INSTRUCTIONS

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.

SECTION 1

SERVICE MANUAL

TABLE CONTENTS

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

I. SPECIFICATIONS

| | | | | | |
|-------------------------------|--|------|-----------------|-----|---------|
| CENTER FREQUENCY | 63 Hz/125 Hz/250 Hz/500 Hz/1 kHz/2 kHz/4 kHz/8 kHz/16 kHz | | | | |
| CONTROL RANGE | ±10 dB | | | | |
| INPUT SENSITIVITY/IMP. | <table border="0"> <tr> <td style="text-align: center;">LINE</td> <td>150 mV/47 kohms</td> </tr> <tr> <td style="text-align: center;">MIC</td> <td>0.35 mV</td> </tr> </table> | LINE | 150 mV/47 kohms | MIC | 0.35 mV |
| LINE | 150 mV/47 kohms | | | | |
| MIC | 0.35 mV | | | | |
| SIGNAL TO NOISE RATIO (IHF-A) | 90 dB | | | | |
| DISTORTION | 0.02% (20 to 20,000 Hz) | | | | |
| POWER REQUIREMENTS | 100V, 50/60 Hz for Japan 120V, 60 Hz for USA & Canada 220V, 50 Hz for Europe except UK 240V, 50 Hz for UK & Australia 110V/120V/220V/240V, 50/60 Hz switchable for other countries | | | | |
| POWER CONSUMPTION | J: 8W A, C, U: 9W E, B, S: 10W | | | | |
| DIMENSIONS | 350(W) × 50(H) × 266(D) mm (13.8 × 2.0 × 10.5 inches) | | | | |
| NET WEIGHT | 2.1 kg (4.6 lbs) | | | | |

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

II. VOLTAGE CONVERSION

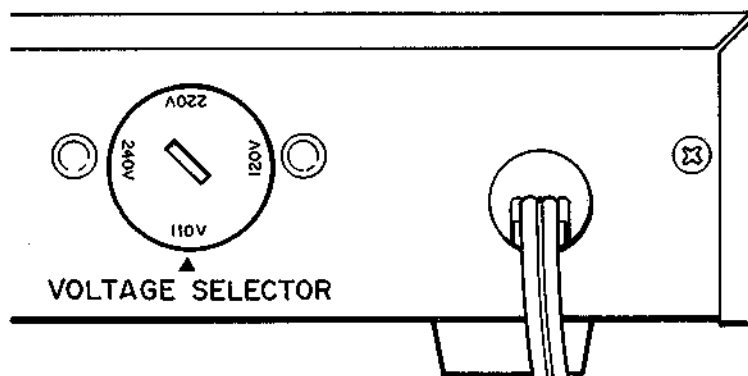


Fig. 1 Rear View

Models for Canada, USA, Europe, UK, Australia and Japan 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 your machine's voltage can be converted:

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

III. FREQUENCY CHARACTERISTICS

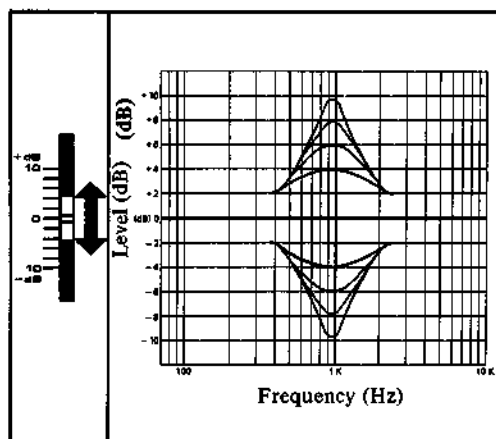


Fig. 2

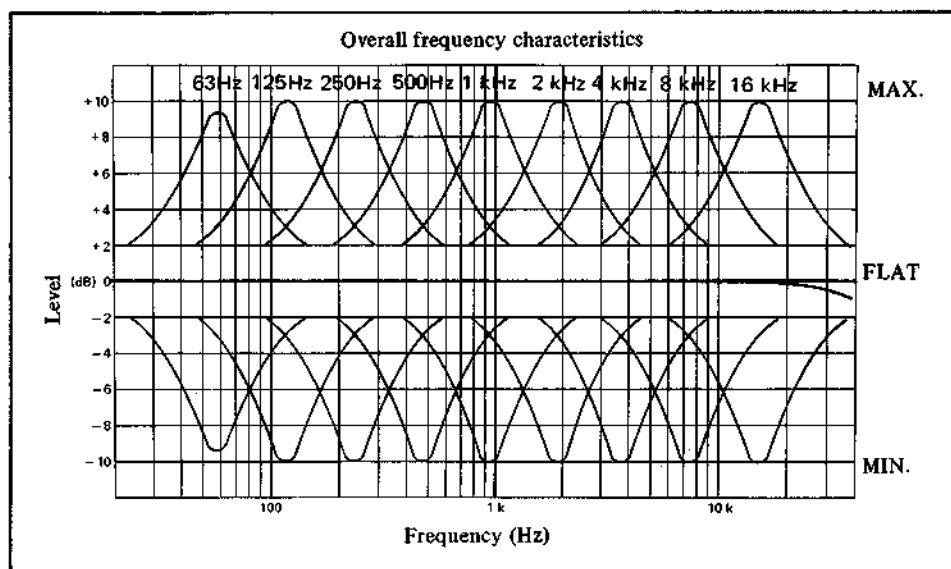


Fig. 3

The level controls divide the frequency range between 63 Hz and 16 kHz into 9 bands. The centre frequency of each band can be boosted or reduced by 10 dB. The boosting and reducing of centre frequencies is called "compensation". When a level control is set to "0", the frequency will be passed on as it is.

IV. BLOCK DIAGRAM

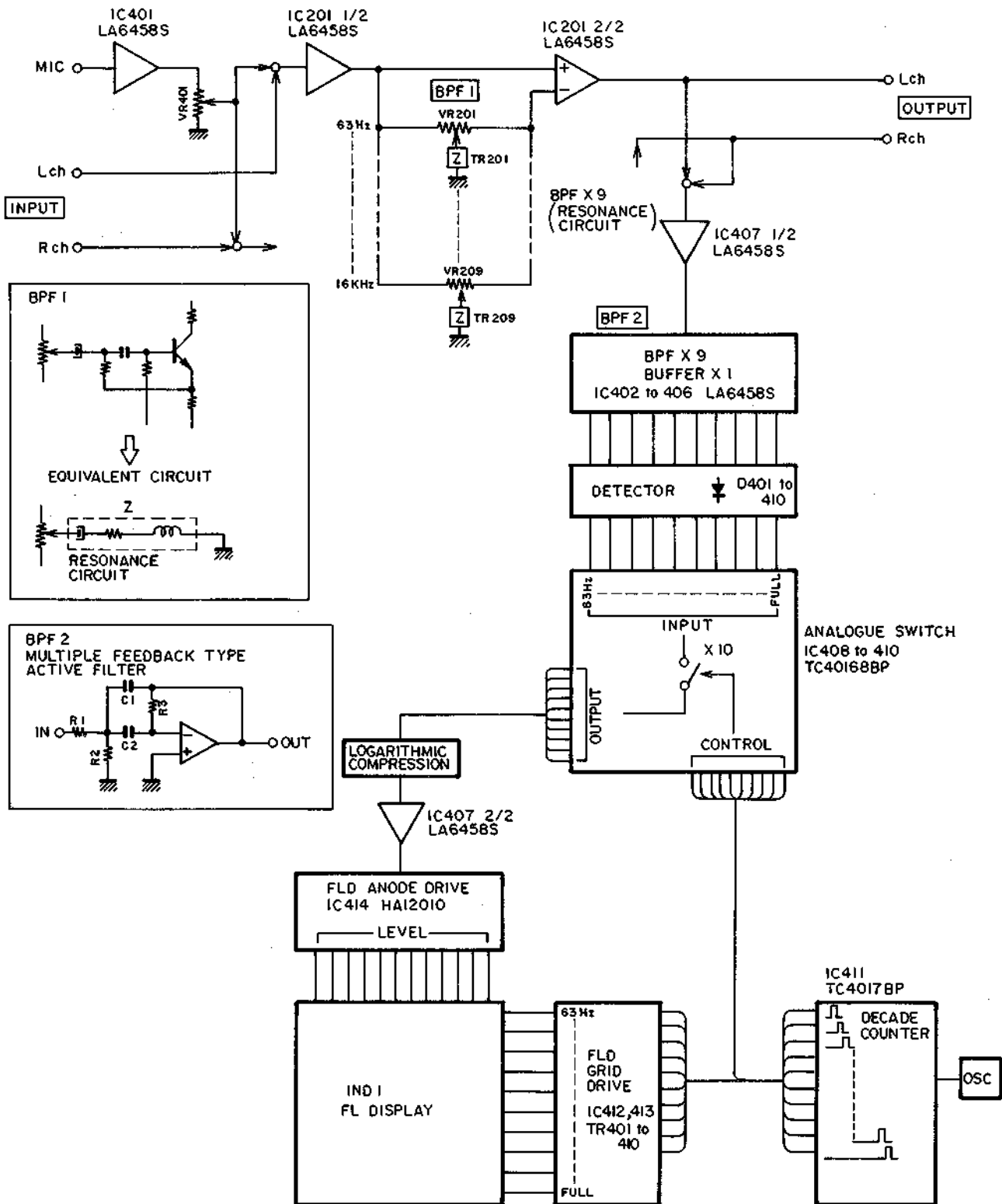
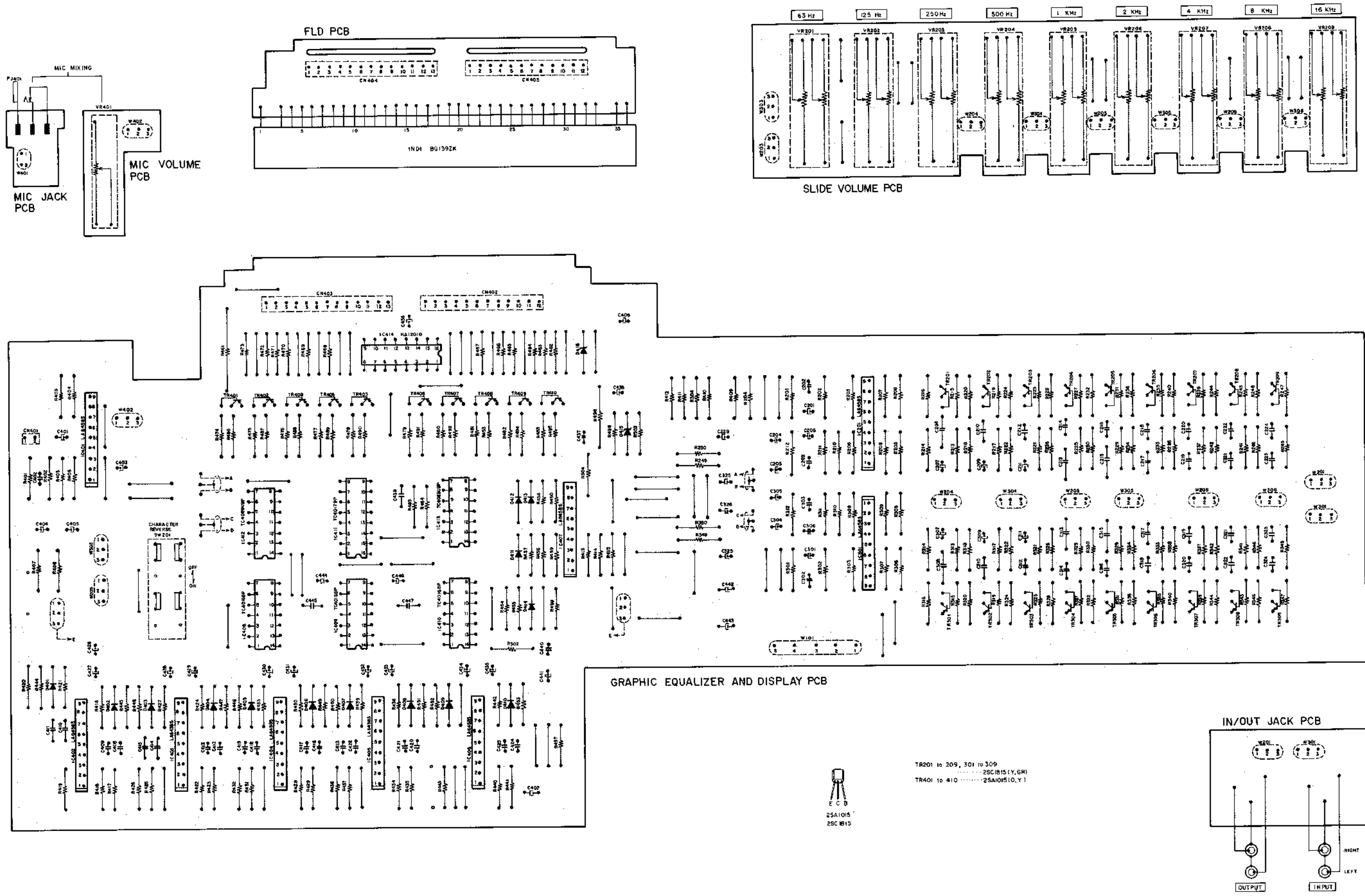


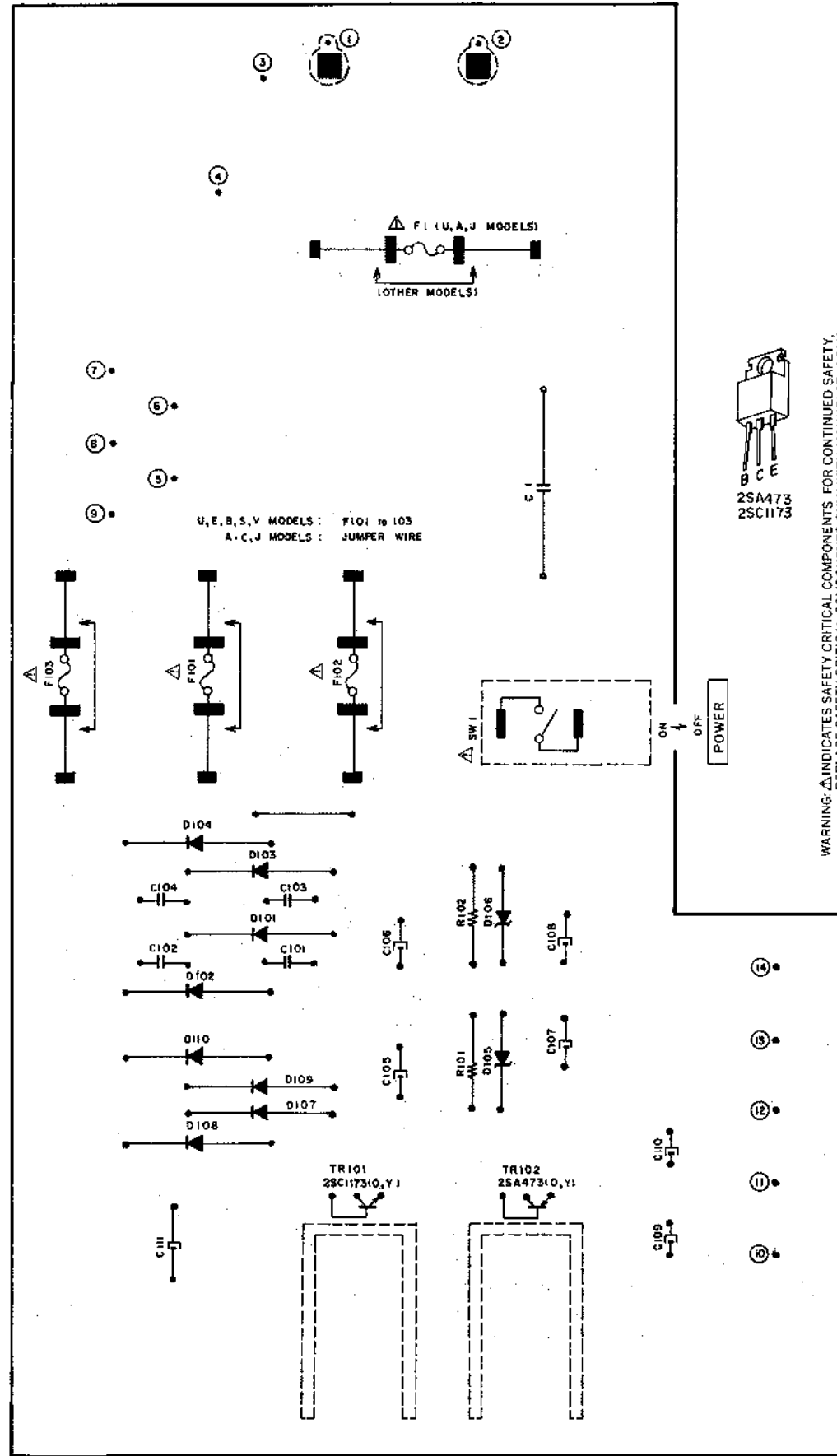
Fig. 4 EA-M7 BLOCK DIAGRAM

V. COMPOSITION OF VARIOUS P.C BOARDS

1. GRAPHIC EQUALIZER AND DISPLAY PCB, SLIDE VOLUME PCB, FLD PCB, MIC VOLUME PCB, MIC JACK PCB and IN/OUT JACK PCB



2. POWER SUPPLY PCB



POWER SUPPLY PCB (A) PCB-005A U, E, B, S, V
 (B) PCB-005B A, C, J

SECTION 2

PARTS LIST

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| 2. POWER SUPPLY P.C BOARD BLOCK | 11 |
| 3. FINAL ASSEMBLY BLOCK | 12 |
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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. 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 Parts List may be partially changed, please use this parts list for all future reference.

HOW TO USE THIS PARTS LIST

1. This Parts List shows the parts that are considered necessary for repairs. Other parts, such as resistors and capacitors, are shown in the "Common List for Service Parts". Select and order such parts from the "Common List for Service Parts".
2. The Recommended Spare Parts 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 be supplied in principle.

4. How to read list

a) Mechanism Block

b) P.C Board Block

2. HEAD BASE BLOCK

| REF. NO. | PARTS NO. | DESCRIPTION |
|----------|---------------|-------------------------|
| 2-1x | 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. | PARTS NO. | DESCRIPTION |
|-----------|---------------|----------------------------|
| 6-1 | BA-T2034A070A | PC SYS CON BLK GX-F44R |
| 6-IC1 | EI-324536 | IC HD14049BP |
| 6-IC2 | EI-336801 | IC MB8841-564M |
| 6-IC3 | EI-331661 | IC SN7405N |
| 6-IC4 | 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

This reference numbers corresponds with symbol numbers of Schematic Diagrams.

5. 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.

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.

1. GRAPHIC EQUALIZER AND DISPLAY P.C BOARD BLOCK

| REF. NO. | PARTS NO. | DESCRIPTION |
|----------|-----------|-----------------------------------|
| 1-1 | BA-710523 | PC GRAPHIC EQUALIZER BLK EA-M7 |

GRAPHIC EQUALIZER AND DISPLAY P.C BOARD BLK

| | | |
|--------------|-----------|----------------------------|
| 1-IC201 | EI-336761 | IC LA6458S |
| 1-IC301 | EI-336761 | IC LA6458S |
| 1-IC401to407 | EI-336761 | IC LA6458S |
| 1-IC408to410 | EI-337324 | IC TC4016BP |
| 1-IC411 | EI-709342 | IC TC4017BP |
| 1-IC412,413 | EI-306726 | IC TC4069UBP |
| 1-IC414 | EI-709343 | IC HA12010 |
| 1-TR201to209 | ET-305221 | TR 2SC1815 O,Y GR |
| 1-TR301to309 | ET-305221 | TR 2SC1815 O,Y GR |
| 1-TR401to410 | ET-325501 | TR 2SA1015 O,Y |
| 1-D401to414 | ED-557447 | D SILICON H 1S1588 |
| 1-D415 | ED-709346 | D ZENER 05Z4.7 Y |
| 1-D416 | ED-709344 | D ZENER 05Z8.2 Y |
| 1-SW201 | ES-347086 | SW PUSH SUL191A 2-04-02S |
| 1-R461 | ER-265072 | R OMF H 2W181J |
| 1-C207,307 | EC-334750 | C EC V CUT NP LR R68M 50DC |
| 1-C209,309 | EC-314986 | C EC V CUT NP LR R47M 50DC |
| 1-C211,311 | EC-334749 | C EC V CUT NP LR R33M 50DC |
| 1-C401 | EC-333902 | C EC V CUT LL 220 50DC |
| 1-C408,409 | EC-710516 | C CE 103K 25AC |
| 1-C410,411 | EC-710518 | C CE 393K 25AC |
| 1-C412,413 | EC-710519 | C CE 272K 25AC |
| 1-C414,415 | EC-710517 | C CE 223K 25AC |
| 1-C416,417 | EC-710520 | C CE 332K 25AC |
| 1-C418,419 | EC-710519 | C CE 272K 25AC |
| 1-C420,421 | EC-710520 | C CE 332K 25AC |
| 1-C422,423 | EC-710521 | C CE 562K 25AC |
| 1-C424,425 | EC-710520 | C CE 332K 25AC |
| 1-C440 | EC-324376 | C EC V F05 NP LR 1R0M 50DC |

SLIDE VOLUME P.C BOARD

| | | |
|--------------|-----------|------------------------|
| 1-VR201to209 | EV-347084 | VR SLIDE 20 2S 0A B203 |
|--------------|-----------|------------------------|

MIC VOLUME P.C BOARD

| | | |
|---------|-----------|------------------------|
| 1-VR401 | EV-347085 | VR SLIDE 20 1S 0A B502 |
|---------|-----------|------------------------|

IN/OUT JACK P.C BOARD

| | | |
|---------|-----------|------------------|
| 1-PJ201 | EJ-709341 | PIN J 4P PJK-004 |
|---------|-----------|------------------|

MIC JACK P.C BOARD

| | | |
|---------|-----------|------------------|
| 1-PJ401 | EJ-710522 | MIC JACK PJK-003 |
|---------|-----------|------------------|

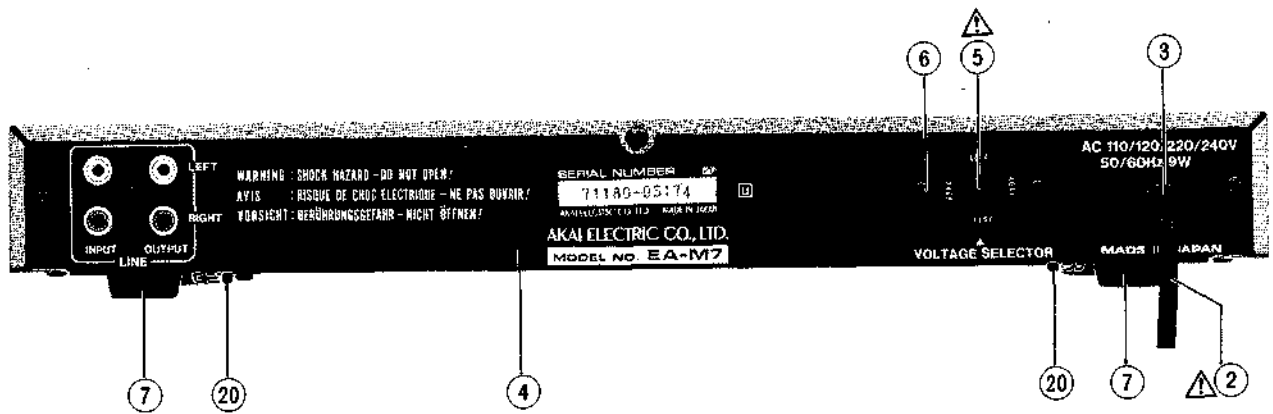
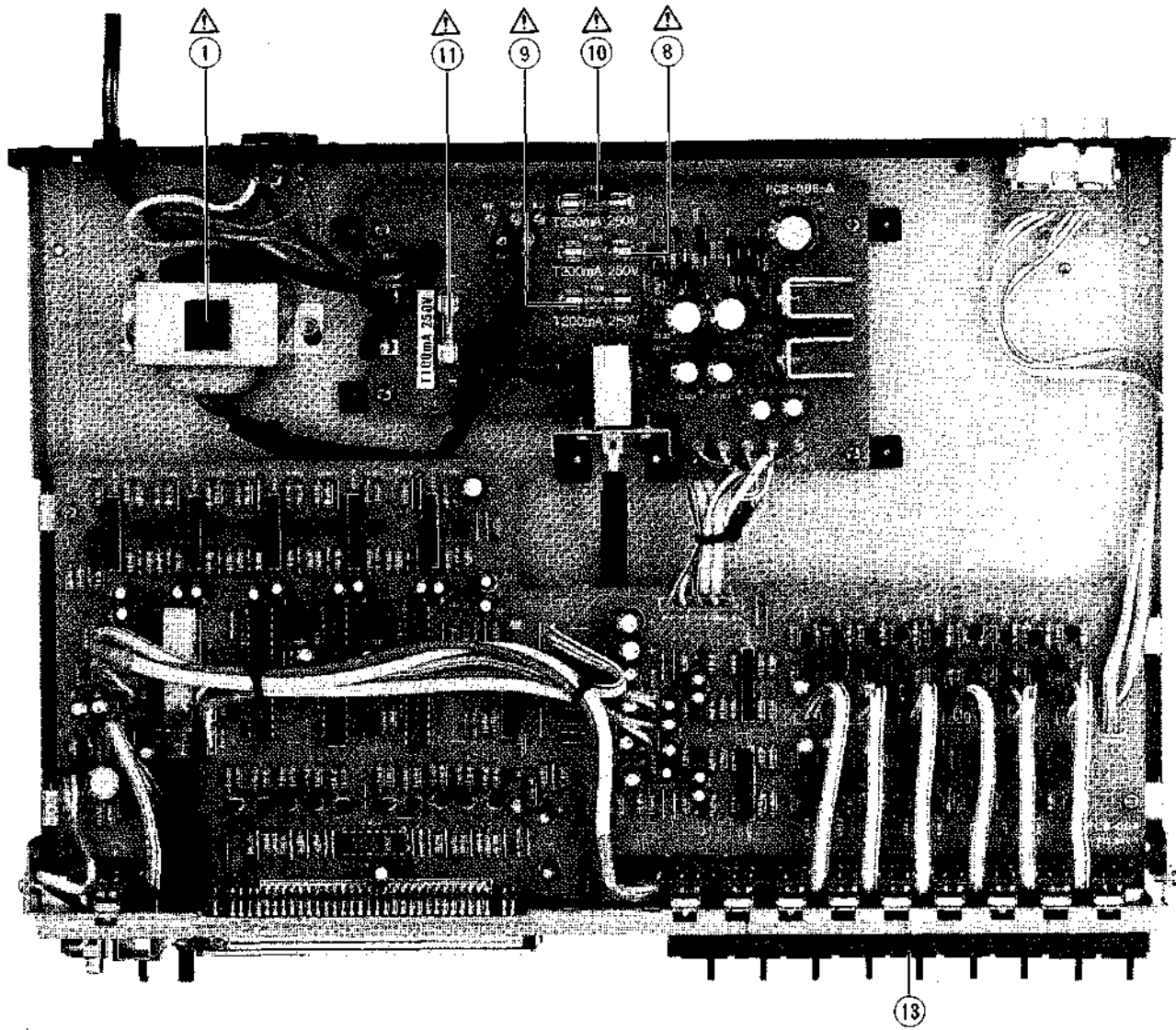
FLD P.C BOARD

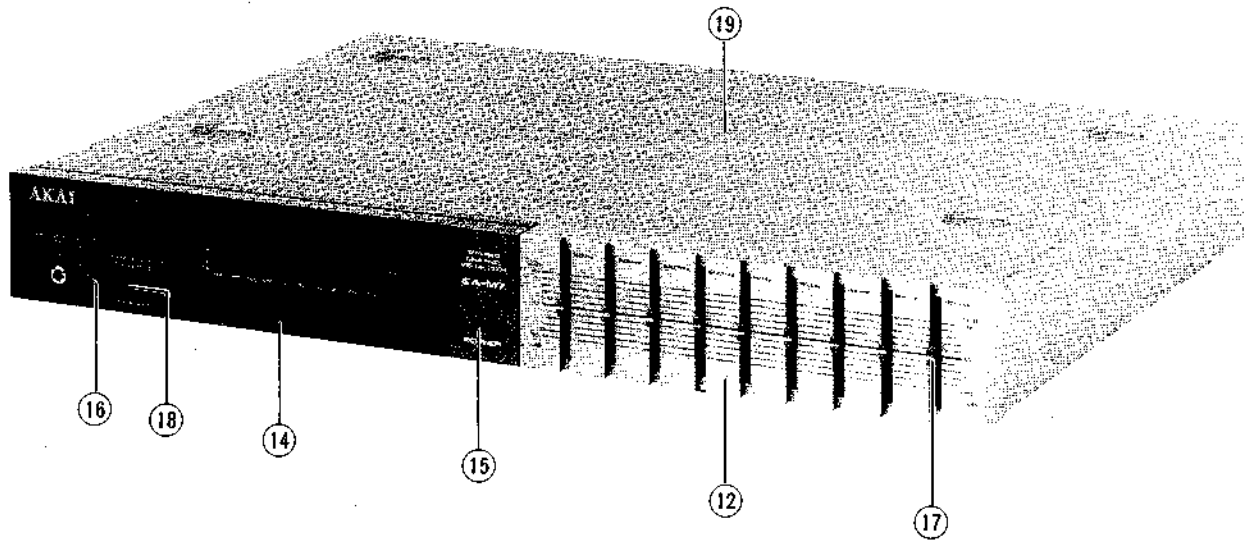
| | | |
|--------|-----------|-----------------|
| 1-IND1 | EM-347087 | IND FL BG-139ZK |
|--------|-----------|-----------------|

2. POWER SUPPLY P.C BOARD BLOCK

| REF. NO. | PARTS NO. | DESCRIPTION |
|-------------|-----------|---------------------------|
| 2-TR101 | ET-336941 | TR 2SD313 E,F |
| 2-TR102 | ET-323348 | TR 2SB507HP D,E,F |
| 2-D101to104 | ED-306724 | D SILICON S5277B 100/1.0A |
| 2-D105,106 | ED-337750 | D ZENER H 05Z16 Y |
| 2-D107to110 | ED-306724 | D SILICON S5277B 100/1.0A |
| 2-SW1 | ES-337902 | Δ SW PUSH SDDL1P 01-1 |
| 2-C1U | EC-256950 | Δ C MP V 103M 250AC |
| | | (U,E,B,S,V) |
| 2-C1J | EC-330308 | Δ C MMY V ECQUF 103M |
| | | 250AC (J,C,A) |

FINAL ASSEMBLY BLOCK





3. FINAL ASSEMBLY BLOCK

| REF. NO. | PARTS NO. | DESCRIPTION | REF. NO. | PARTS NO. | DESCRIPTION |
|----------|-----------|--|----------|-----------|--|
| 3-1U | BT-709339 | △ TRANS POWER PPT-005 EA-M7(U) | 3-4C | SP-710503 | PANEL REAR EA-M7 (C) |
| 3-1J | BT-709335 | △ TRANS POWER PPT-006 EA-M7(J) | 3-4A | SP-710502 | PANEL REAR EA-M7 (A) |
| 3-1C | BT-709337 | △ TRANS POWER PPT-003 EA-M7(C) | 3-4E | SP-710505 | PANEL REAR EA-M7 (E,V) |
| 3-1A | BT-709336 | △ TRANS POWER PPT-002 EA-M7(A) | 3-4B | SP-710506 | PANEL REAR EA-M7 (B,S) |
| 3-1E | BT-709338 | △ TRANS POWER PPT-004 EA-M7 (E,V) | 3-5 | ES-709333 | △ VOLTAGE SELECTOR (U) |
| 3-1B | BT-709340 | △ TRANS POWER PPT-007 EA-M7 (B,S) | 3-6 | ZW-241200 | RV NYL30x080 BL (U) |
| 3-2U | EW-306428 | △ AC CORD 2 CORES KP-205A, VFF J (U) | 3-7 | SA-710514 | RUBBER FOOT EA-M7 |
| 3-2J | EW-306427 | △ AC CORD 2 CORES KP-211, VFF J (J) | 3-8 | EF-300588 | △ FUSE EAWK T 250V 0.20A (F101) (U,E,B,S,V) |
| 3-2C | EW-328245 | △ AC CORD 2 CORES KP-8, SPT-1 105C UC (C,A) | 3-9 | EF-300588 | △ FUSE EAWK T 250V 0.20A (F102) (U,E,B,S,V) |
| 3-2E | EW-313882 | △ AC CORD 2 CORES KP-419C, LTCE-2F E (E,V) | 3-10 | EF-300586 | △ FUSE EAWK T 250V 0.25A (F103) (U,E,B,S,V) |
| 3-2B | EW-313884 | △ AC CORD 2 CORES GTBS-2F 24/0.20x2 B (B) | 3-11U | EF-300575 | △ FUSE EAWK T 250V 0.10A (F1) (U,J) |
| 3-2S | EW-201515 | △ AC CORD 2 CORES KP-560, LT SA-2F S (S) | 3-11A | EF-306700 | △ FUSE SS2 250V 0.10A (F1) (A) |
| 3-3 | SZ-631945 | STRAIN RELIEF SR-4N-4 EXCEPT (B) | 3-12 | SE-710527 | FRONT ESCUTCHEON ASSY EA-M7 |
| 3-3B | EJ-692908 | STRAIN RELIEF SR-5N-4 (B) | 3-13 | SE-710509 | BACK BOARD EA-M7 |
| 3-4U | SP-710507 | PANEL REAR EA-M7 (U) | 3-14 | SE-710510 | TRANSPARENT BOARD EA-M7 |
| 3-4J | SP-710501 | PANEL REAR EA-M7 (J) | 3-15 | SK-710511 | KNOB POWER ASSY EA-M7 |
| | | | 3-16 | SK-710512 | KNOB SLIDE (BL) EA-M7 |
| | | | 3-17 | SK-710513 | KNOB SLIDE (BR) EA-M7 |
| | | | 3-18 | SK-710528 | KNOB PUSH EA-M7 |
| | | | 3-19 | SP-710508 | UPPER COVER EA-M7 |
| | | | 3-20 | SA-305646 | RUBBER FOOT (A) (BLACK) |

INDEX

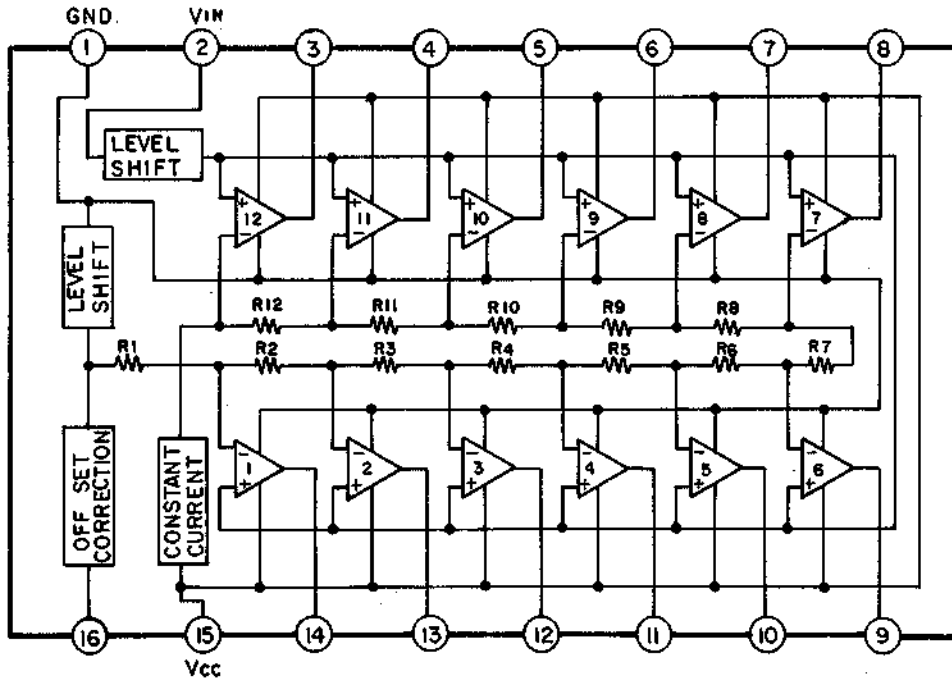
| PARTS NO. | REF. NO. | PARTS NO. | REF. NO. | PARTS NO. | REF. NO. | PARTS NO. | REF. NO. |
|-----------|--------------|-----------|----------|-----------|----------|-----------|----------|
| BA-710523 | 1-1 | | | | | | |
| BT-709335 | 3-1J | | | | | | |
| BT-709336 | 3-1A | | | | | | |
| BT-709337 | 3-1C | | | | | | |
| BT-709338 | 3-1E | | | | | | |
| BT-709339 | 3-1U | | | | | | |
| BT-709340 | 3-1B | | | | | | |
| EC-256950 | 2-C1U | | | | | | |
| EC-314986 | 1-C209,309 | | | | | | |
| EC-324376 | 1-C440 | | | | | | |
| EC-330308 | 2-C1J | | | | | | |
| EC-333902 | 1-C401 | | | | | | |
| EC-334749 | 1-C211,311 | | | | | | |
| EC-334750 | 1-C207,307 | | | | | | |
| EC-710516 | 1-C408,409 | | | | | | |
| EC-710517 | 1-C414,415 | | | | | | |
| EC-710518 | 1-C410,411 | | | | | | |
| EC-710519 | 1-C418,419 | | | | | | |
| EC-710519 | 1-C412,413 | | | | | | |
| EC-710520 | 1-C416,417 | | | | | | |
| EC-710520 | 1-C420,421 | | | | | | |
| EC-710520 | 1-C424,425 | | | | | | |
| EC-710521 | 1-C422,423 | | | | | | |
| ED-306724 | 2-D107to110 | | | | | | |
| ED-306724 | 2-D101to104 | | | | | | |
| ED-337750 | 2-D105,106 | | | | | | |
| ED-557447 | 1-D401to414 | | | | | | |
| ED-709344 | 1-D416 | | | | | | |
| ED-709346 | 1-D415 | | | | | | |
| EF-300575 | 3-11U | | | | | | |
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| EF-306700 | 3-11A | | | | | | |
| EI-306726 | 1-IC412,413 | | | | | | |
| EI-336761 | 1-IC401to407 | | | | | | |
| EI-336761 | 1-IC201 | | | | | | |
| EI-336761 | 1-IC301 | | | | | | |
| EI-337324 | 1-IC408to410 | | | | | | |
| EI-709342 | 1-IC411 | | | | | | |
| EI-709343 | 1-IC414 | | | | | | |
| EJ-692908 | 3-3B | | | | | | |
| EJ-709341 | 1-PJ201 | | | | | | |
| EJ-710522 | 1-PJ401 | | | | | | |
| EM-347087 | 1-IND1 | | | | | | |
| ER-265072 | 1-R461 | | | | | | |
| ES-337902 | 2-SW1 | | | | | | |
| ES-347086 | 1-SW201 | | | | | | |
| ES-709333 | 3-5 | | | | | | |
| ET-305221 | 1-TR201to209 | | | | | | |
| ET-305221 | 1-TR301to309 | | | | | | |
| ET-323348 | 2-TR102 | | | | | | |
| ET-325501 | 1-TR401to410 | | | | | | |
| ET-336941 | 2-TR101 | | | | | | |
| EV-347084 | 1-VR201to209 | | | | | | |
| EV-347085 | 1-VR401 | | | | | | |
| EW-201515 | 3-2S | | | | | | |
| EW-306427 | 3-2J | | | | | | |
| EW-306428 | 3-2U | | | | | | |
| EW-313882 | 3-2E | | | | | | |
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| SP-710502 | 3-4A | | | | | | |
| SP-710503 | 3-4C | | | | | | |
| SP-710505 | 3-4E | | | | | | |
| SP-710506 | 3-4B | | | | | | |
| SP-710507 | 3-4U | | | | | | |
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SECTION 3

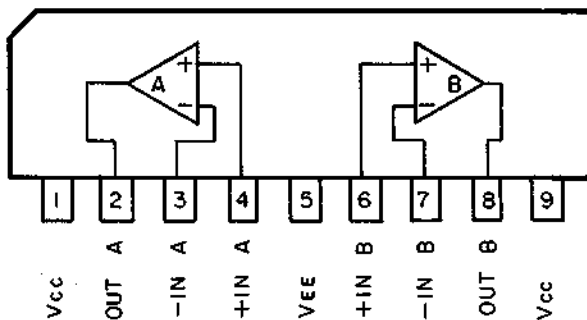
SCHEMATIC DIAGRAM

1. SCHEMATIC DIAGRAM OF ICs 15
2. EA-M7 NO. 830121A SCHEMATIC DIAGRAM 17

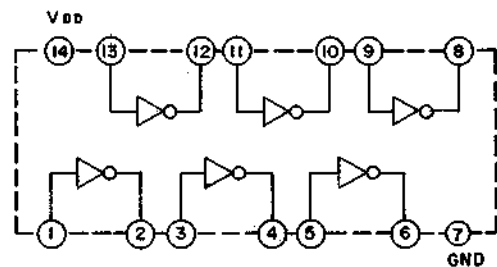
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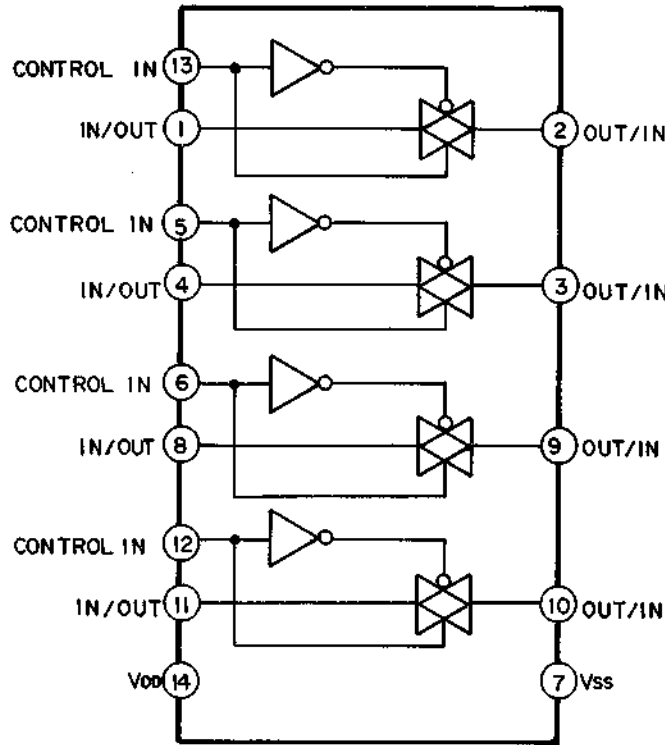
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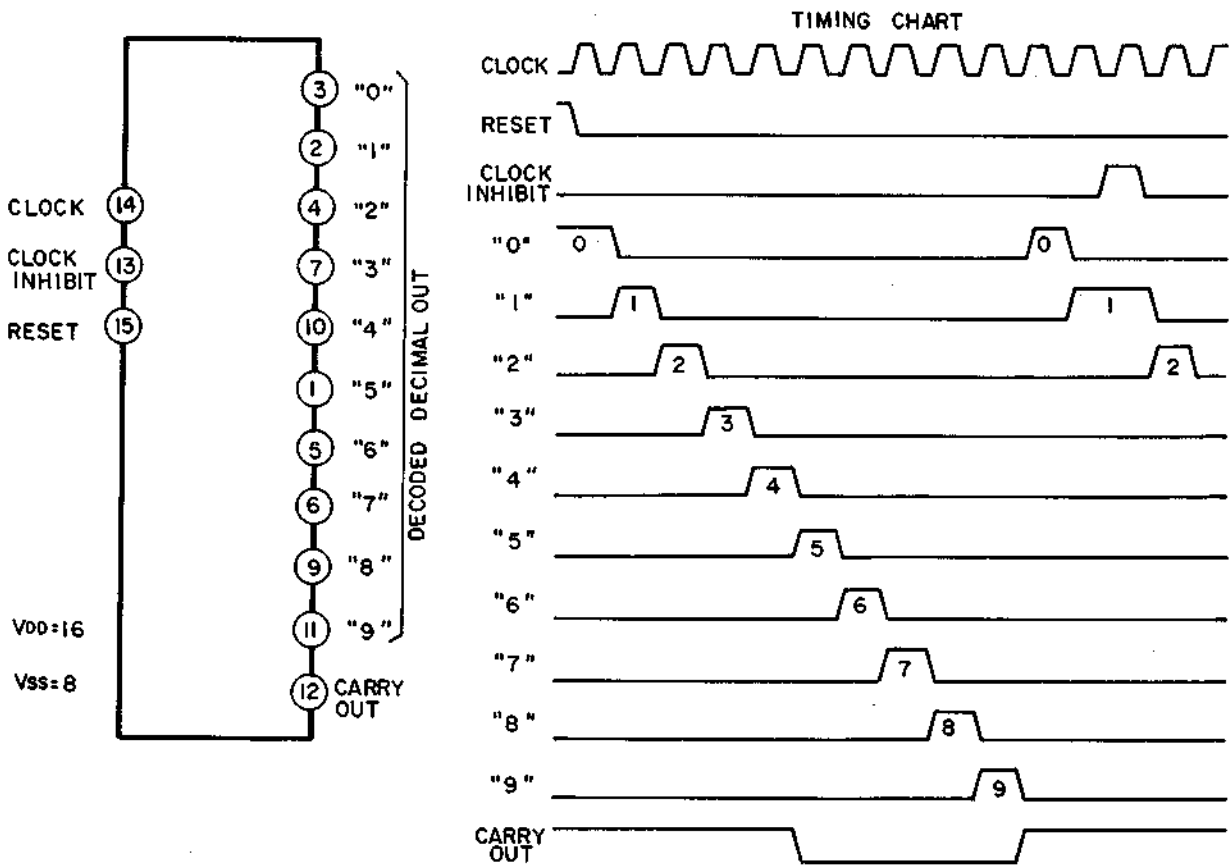
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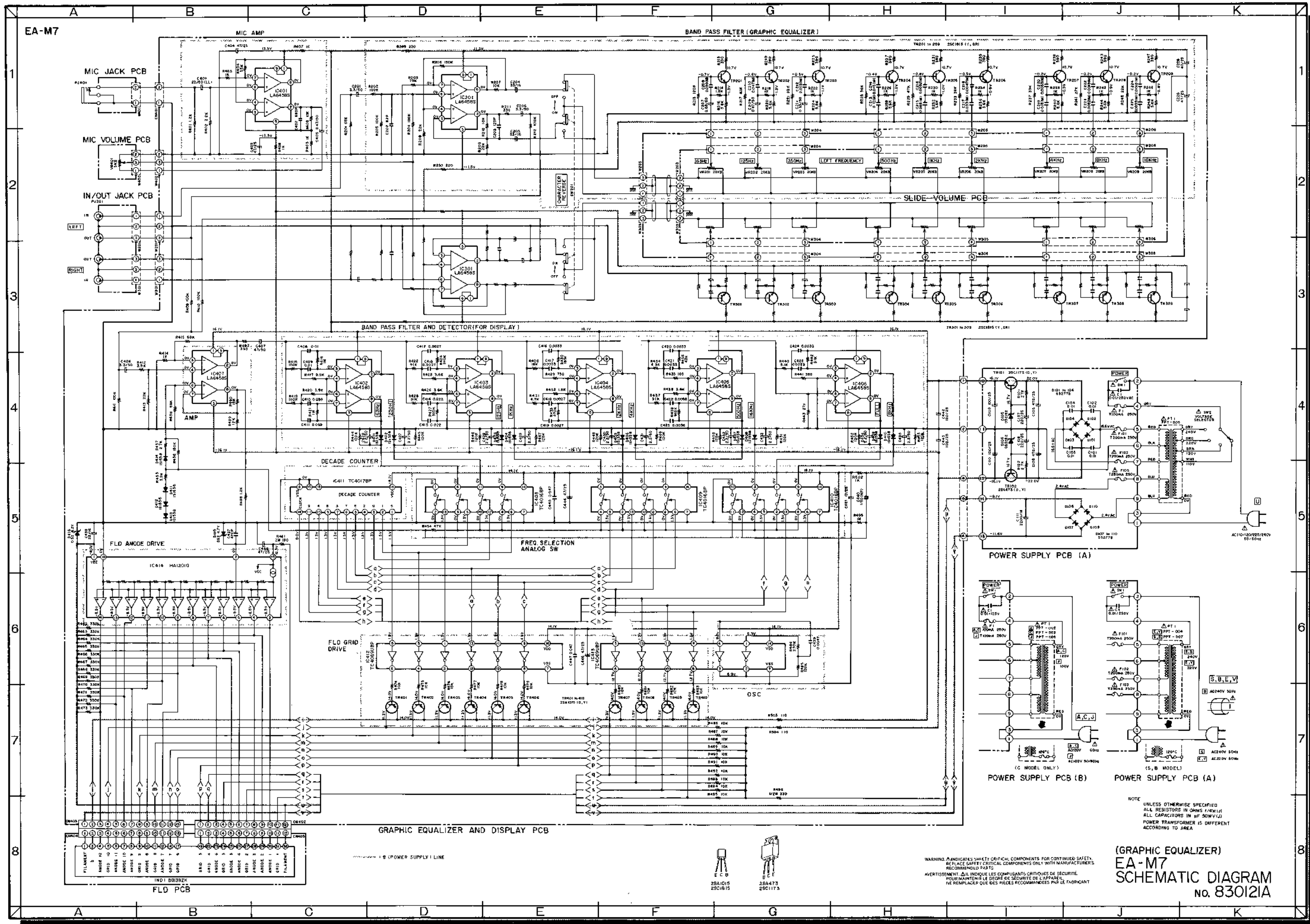


TC4016BP



TC4017BP





WARNING: INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.
 AVERTISSEMENT: ΔΔ INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.

NOTE: UNLESS OTHERWISE SPECIFIED ALL RESISTORS IN OHMS (4W/1W) ALL CAPACITORS IN μF (50V/10V) POWER TRANSFORMER IS DIFFERENT ACCORDING TO AREA

(GRAPHIC EQUALIZER)
EA-M7
 SCHEMATIC DIAGRAM
 No. 830121A