

SERVICE MANUAL

NAD

SERVICE SAFETY PRECAUTIONS (UL)

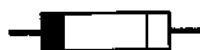
1. Use exact replacement parts for critical locations marked "⚠"
2. Return lead dress to original position and re-install protective covers.
3. Before returning to customer, test for shock hazard; use either method A or B:
 - A. Leakage test "cold":
 1. Unplug the AC cord; turn power switch ON.
 2. Connect one lead of High Voltage Insulation Tester to both prongs of the AC plug.
 3. Touch other lead to all exposed metal parts.
 4. Impedance measurement must be 0.3-5.0 Megohms.
 - B. Leakage test, "live":
 1. Plug unit directly into the AC outlet: do not use isolation transformer.
 2. Connect one lead of the Leakage Current Tester to earth ground.
 3. Touch other lead to all exposed metal parts.
 4. Leakage measurement must be less than 0.5 milliamps.

117/917 WITH
TUNER
AV STEREO
PREAMPLIFIER

117
917 WITH
TUNER
AV STEREO
PREAMPLIFIER

SAFETY INFORMATION

1. Replacing the fuses



This symbol located near the fuse indicates that the fuse used is fast operating type. For continued protection against fire hazard, replace with same type fuse. For fuse rating refer to the marking adjacent to the symbol.

| <u>Reference No</u> | <u>Part Number</u> | <u>Description</u> |
|---------------------|--------------------|--|
| F101-F102*AH | 5120-0010-0 | Fuse 250V 800mA Time Lag UL/CSA. |
| F104*AH | N51005010-1A | Fuse 250V 500mA Slow Blow UL/CSA. |
| F101-F102*B,C | 5120-0011-0 | Fuse 250V 800mA Time Lag LBC VDE/SEMKO. |
| F104*B,C | N51005010-1B | Fuse 250V 500mA Slow Blow LBC VDE/SEMKO. |

NOTE :

- <*AH > : USA, CANADIAN MODEL ONLY.
- <*B > : UK MODEL ONLY.
- <*C > : EUROPEAN MODEL ONLY.

2. Safety-check out

(Only U.S.A. model)

After correcting the original service problem perform the following safety check before releasing the set to the customer.

Connect the insulating-resistance tester between the plug of power supply cord and the screw on the back panel.

Specifications : 3.3 Mohm \pm 10% at 500V.

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SPECIFICATIONS

TUNER SPECIFICATION (For 917 Only)

Note: For FM tuner, the input voltage is expressed as the reading in open-circuit voltage of 75-ohm source impedance. The unit of the input voltage is in dB μ , which is expressed as a relative magnitude in dB, using 1 μ V as the reference voltage.

There are two types of tuner front-end modules used in the FM tuner circuit, the AH version uses A16, while the others use G55 or G58 (G58 is a revised G55). Hence, the specification between the two types are different. For the AM tuner, although there are two types of channel spacings between countries, the specification is in general the same.

FM BAND SPECIFICATION

Frequency Range

87.5 \pm 0.02 MHz TO 108 \pm 0.02 MHz

| | | FREQ | UNIT | LIMIT | |
|---|--------------------|---------------|----------|-------------|-------------|
| | | | | AH | C,B,B1 |
| Input sensitivity (1kHz, 3% THD) | MONO | 98MHz | dB μ | ≤ 8 | ≤ 20 |
| 50dB quieting | MONO | 98MHz | dB μ | ≤ 16 | ≤ 24 |
| | STEREO | 98MHz | dB μ | ≤ 34 | ≤ 38 |
| 60dB quieting | MONO | 98MHz | dB μ | ≤ 24 | ≤ 34 |
| | STEREO | 98MHz | dB μ | ≤ 42 | ≤ 48 |
| S/N RATIO (60dB μ IHF wtd) | MONO | 98MHz | dB | ≥ 76 | ≥ 76 |
| | STEREO | 98MHz | dB | ≥ 70 | ≥ 65 |
| THD (60dB μ) | MONO | 98MHz | % | ≤ 0.25 | ≤ 0.25 |
| | L + R STEREO | 98MHz | % | ≤ 0.25 | ≤ 0.25 |
| | L - R STEREO | 98MHz | % | ≤ 0.15 | ≤ 0.20 |
| IF Rejection | (10.7MHz) | 98MHz | dB | ≥ 65 | ≥ 75 |
| Image Rejection | (119.4 MHz) | 98MHz | dB | ≥ 58 | ≥ 65 |
| Capture ratio | (40dB μ) | 98MHz | dB | ≤ 2 | ≤ 1 |
| AM Supression | (60dB μ) | 98MHz | dB | ≥ 50 | ≥ 50 |
| Pilot suppression, | (60dB μ) | 98MHz | dB | ≥ 55 | ≥ 55 |
| Frequency response (1kHz Ref, 75usec) | | 30Hz to 15kHz | dB | 0 ± 1 | |
| | (1kHz Ref, 50usec) | 30Hz to 15kHz | dB | | 0 ± 1 |
| Channel Separation (60dB μ) | | 30Hz | dB | ≥ 30 | ≥ 30 |
| | | 1kHz | dB | ≥ 35 | ≥ 32 |
| | | 10kHz | dB | ≥ 30 | ≥ 27 |
| Alternate channel selectivity, (40dB μ) | | +400kHz | dB | ≥ 55 | ≥ 65 |
| | | -400kHz | dB | ≥ 55 | ≥ 65 |
| Auto-search sensitivity | | | dB μ | 18 ± 7 | 18 ± 7 |
| Center tune sensitivity | | | dB μ | 14 ± 7 | 14 ± 7 |
| Stereo indicator threshold | | OFF | dB μ | 18 ± 7 | 18 ± 7 |
| | | ON | dB μ | 21 ± 7 | 21 ± 7 |
| Bar graph No.8 sensitivity | | | dB μ | 44 ± 10 | 44 ± 10 |

AM BAND SPECIFICATION, ALL VERSIONS

Frequency Range, AH version 520 kHz \pm 2 kHz to 1610 kHz \pm 2 kHz, step 10 kHz
 C,B & B1 522 kHz \pm 2 kHz to 1611 kHz \pm 2 kHz, step 9 kHz

| | FREQ | UNIT | LIMIT |
|--|-----------------|----------|------------|
| Input Sensitivity (10% THD) | 1000kHz/999kHz | dB μ | \leq 24 |
| S/N @ 2mV(66dB μ) | 1000kHz/999kHz | dB | \geq 45 |
| Distortion (30% mod @ 1kHz, 66 dB μ) | 1000kHz/999kHz | % | \leq 3 |
| Image Rejection (LO) +2*IF | 1900kHz/1899kHz | dB | \geq 30 |
| IF Rejection | 450kHz | dB | \geq 35 |
| Selectivity +/- 10kHz \pm 9kHz (avg 2) | | dB | \geq 20 |
| Autosearching Sensitivity | 1000kHz/999kHz | dB μ | 31 \pm 7 |
| Bar Graph no.8 Sensitivity | 1000kHz/999kHz | dB μ | 39 \pm 7 |

A / V SURROUND TESTING (117/917)

A. AV STEREO.

| PARAMETER | SPEC | INPUT MODE | INPUT LEVEL | FREQ | OUTPUT | OUTPUT LEVEL | PROCEDURE |
|----------------------|------------------------------|------------|-----------------|-------|--------|-----------------|---|
| THD | \leq 0.03 % | L=R | 2 V | 1 kHz | L, R | 2 V | Measure THD. |
| 120 Hz | \leq 0.03% \leq 0.04% | L=R | 500 mV 1.5 V | 20 Hz | Sub | 500 mV 1.5 V | Adjust subwoofer volume and measure THD. |
| S/N-AWTD | \geq 90 dB | L, R | 500 mV | 1 kHz | L, R | 500 mV | Remove input signal and connect 1K termination. Measure noise level. |
| Unweighted | 77 dB | L=R | | 20 Hz | Sub | | Adjust subwoofer volume. Remove input signal and connect 1K termination. Measure noise level. |
| Sensitivity | 180 mV \pm 20 mV | L, R | - | 1 kHz | L, R | 1 V | Measure input level at maximum volume setting. |
| | 40 \pm 5 mV | L=R | - | 20 Hz | Sub | 1 V | Measure input level at maximum volume setting. |
| Maximum input level | \geq 5 V | L, R | - | 1 kHz | L, R | - | Volume set at unity gain. Increase input level until THD=0.1%. Measure input level. |
| Maximum Output level | Front \geq 5 V | L=R | 500 mV | 1 kHz | L, R | - | Adjust volume until THD=0.1%. Measure output level. |
| | Headphone \geq 5 | L=R | 500 mV | 1 kHz | H/P | - | Adjust volume until THD=0.1% with 600 ohms load. Measure output level. |

| PARAMETER | SPEC | INPUT MODE | INPUT LEVEL | FREQ | OUTPUT | OUTPUT LEVEL | PROCEDURE |
|--------------------|--|------------|-------------|------------------|--------|--------------|--|
| Channel separation | ≥ 70 dB ≥ 48 dB | L, R | 2 V | 1 kHz 10 kHz | L, R | 2 V | Measure output level at unselected output channel. |
| Crosstalk | ≥ 70 dB ≥ 48 dB | L=R | 2 V | 1 kHz 10 kHz | L, R | 2 V | Measure output level at unselected source input. |
| | ≥ 40 dB | L=R | 2 V | 1 kHz | L, R | 2 V | Measure output level at tape record with input signal at its tape input. |
| Gain tracking | at 0 dB ≤ 1 -30 dB ≤ 3 -60 dB ≤ 3 | L=R | - | 1 kHz | L, R | 2 V | From maximum, reduce volume by 60 dB and measure by difference in level between L and R. |
| Freq response | on 0 dB ± 0.5 | L=R | 500 mV | 20 Hz- 20 kHz | L, R | 500 mV | Measure rise and drop in output level with tone defeat on and off. |
| | off 0 dB ± 0.7 | | | | | | Sub |
| | Flat 0 dB ± 1 | | | | 60 Hz | | |
| | 60 Hz 120 Hz -3 dB ± 1 | | | | 120 Hz | | |
| Bass eq. | +3 dB ± 1 | L=R | 500 mV | 50 Hz | L, R | 500 mV | Measure rise in output level after switching bass eq. on. |
| Bass Treble | 10 dB ± 1.5 7 dB ± 1.5 | L=R | 500 mV | 50 Hz 10 kHz | L, R | 500 mV | Measure rise and drop of output level after adjusting controls to maximum and minimum. |

B. PRO-LOGIC (117/917)

| PARAMETER | SPEC | INPUT MODE | INPUT LEVEL | FREQ | OUTPUT | OUTPUT LEVEL | PROCEDURE |
|--------------------|---|------------|---------------------------|-------|---------------------|--------------|--|
| CDR | 5dB ± 1 dB 12dB ± 1 dB 0dB ± 1 dB | L=R | 177 mV 60 mV 345 mV | 1 kHz | L, R | 500 mV | Measure rise in output after switching CDR on and at Maximum volume setting. |
| Sibilance | -3dB ± 1 dB | L=R | 500 mV | 7 kHz | L, R | 500 mV | Measure drop in output after switching sib. on. |
| Channel separation | 45 dB 30 dB 35 dB | L, R | 500 mV | 1 kHz | R, L C SL, SR | 500 mV | Measure output at unselected output channel. |
| | 30 dB | L=R | 345 mV | 1 kHz | L, R C | | Measure output at unselected output channel. |
| | 20 dB 30 dB | L=R | 345 mV | 1 kHz | L, R SL, SR | | Measure output at unselected output channel. |

| PARAMETER | SPEC | INPUT MODE | INPUT LEVEL | FREQ | OUTPUT | OUTPUT LEVEL | PROCEDURE | |
|---------------|-----------------------------|--|--|--------------|-----------------|-----------------|--|--|
| Freq response | 0 dB \pm 0.8 | L, R | 500 mV | 20 Hz-20 kHz | L, R | 500 mV | Measure rise and drop of output level with 1 kHz reference. | |
| | -3dB point | 0 dB \pm 0.5 | L=R | 345 mV | 300 Hz-20 kHz | | C | Adjust center volume. Measure rise and drop of output level with 1 kHz reference. |
| 70 Hz-120 Hz | | Get frequency when level drops by 3 dB with 1 kHz reference. | | | | | | |
| -1 dB \pm 1 | | L=-R | 30 Hz | | SL, SR | | Adjust surround volume. Measure drop in level at 30 Hz. | |
| -3dB point | 7 kHz \pm 1 | | Get frequency when level drops by 3 dB with 1 kHz reference. | | | | | |
| THD | \leq 0.15% \leq 0.4% | L, R | 500 mV 1.5 V | 1 kHz | L, R | 500 mV 1.5 V | Measure THD. | |
| | Normal | \leq 0.1% \leq 0.4% | L=R | | 345 mV 1.5 V | | C | Adjust center volume and measure THD. |
| | | \leq 0.5% \leq 1.0% | L=-R | | SL, SR | | Adjust surround volume and measure THD. | |
| S/N- AWTD | \leq 80 dB | L, R | 500 mV | 1 kHz | L, R | 500 mV | Remove input signal and connect 1K termination. Measure noise level. | |
| | Normal | \leq 75 dB | L=R | | 345 mV | | C | Adjust center volume. Remove input signal and connect 1K termination. Measure noise level. |
| | | \leq 70 dB | L=-R | | | | SL, SR | Adjust surround volume. Remove input signal and connect 1K termination. Measure noise level. |
| Sensitivity | 90 \pm 10 mV | L, R | - | 1 kHz | L, R | 500 mV | Measure input level at maximum volume setting and +6 trim level. | |
| | Phantom Normal | 90 \pm 10 mV | | | L=R | | | L, R |
| | | 7.5 \pm 1.5mV | | | | | | C |
| | 4 channel | 13 \pm 2 mV | | | L=-R | | | SL, SR |
| | 3 channel | 130 \pm 10mV | | | | | | L, R |

C. SOUND SPACE

| INPUT | | | OUTPUT (mV) | | | | | | | | | | | |
|--------|--------|-------|--------------|--------------|-------------|---------------|-------------|-------------|-------------|-------------|--------------|--------------|-------------|-------------|
| | | | STADIUM | | | | HALL | | | | CLUB | | | |
| MODE | LEVEL | FREQ. | L | R | C | S | L | R | C | S | L | R | C | S |
| L | 125 mV | 1 kHz | 1000 0.2% | < 200 | < 20 | 2600 ±10% | 700 0.2% | < 20 | < 20 | < 20 | 1050 0.2% | < 200 | < 20 | < 20 |
| R | 125 mV | 1 kHz | < 200 | 1000 0.2% | < 20 | 1600 ±10% | < 20 | 700 0.2% | < 20 | < 20 | < 200 | 1050 0.2% | < 20 | < 20 |
| L = R | 125 mV | 1 kHz | 800 0.2% | 8000 0.2% | 880 0.2% | 4500 ±10% | < 100 | < 100 | 880 0.2% | < 20 | 1130 0.2% | 1130 0.2% | 880 0.2% | < 20 |
| L = -R | 125 mV | 1 kHz | 1150 0.2% | 1150 0.2% | < 20 | 2500 ±1000 | < 20 | < 20 | < 20 | 270 0.4% | 950 0.2% | 950 0.2% | < 20 | 650 0.4% |

PROCEDURE:

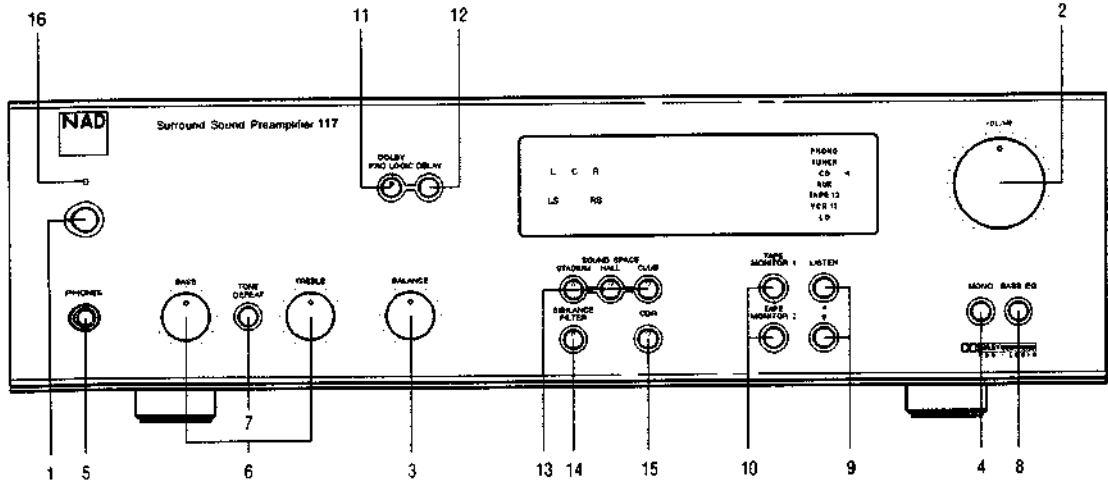
1. Set center switch to Normal and Surround Mode switch to 4 channel.
2. Set Delay to 15 msec.
3. Set master volume to maximum while center volume and surround volume are at "0" setting.
4. Measure output level and THD on each channel. There is no need to measure THD for levels below 200 mV.
5. Tolerance for output levels is ±20% unless otherwise specified.
6. For stadium surround outputs with L, R and L=R inputs, the input signal is 100 mV 40 Hz and the surround volume is set at "+6".
7. For stadium surround output with L=-R input, the input signal is 100 mV of pink noise (off-tuned tuner output) and the surround volume is set at "+6".

D. DIMENSIONS



Net Weight : 6.7 kg, 14.74 lb
 Shipping Weight : 8.3 kg, 18.26 lb
 Dimensions : 435 x 115 x 350 mm

117 REAR PANEL / FRONT PANEL VIEW

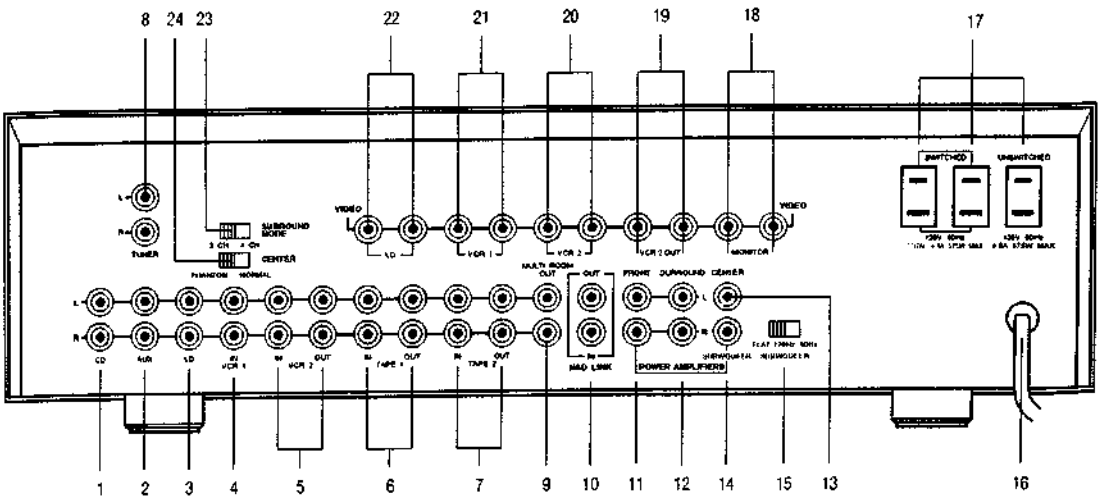
FRONT PANEL



- | | | |
|---------------------------|------------------------|----------------------|
| 1. POWER | 7. TONE DEFEAT | 13. SOUND SPACE |
| 2. VOLUME | 8. BASS EQ | 14. SIBILANCE FILTER |
| 3. BALANCE | 9. LISTEN | 15. CDR |
| 4. MONO | 10. TAPE MONITOR 1 & 2 | 16. POWER LED |
| 5. HEADPHONE SOCKET | 11. DOLBY PRO LOGIC | |
| 6. BASS & TREBLE CONTROLS | 12. DELAY | |

| | |
|---|---|
|  <p>The lightning flash with arrowhead, within an equilateral triangle is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure; that may be of sufficient magnitude to constitute a risk of electric shock to persons.</p> |  <p>The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.</p> |
|---|---|

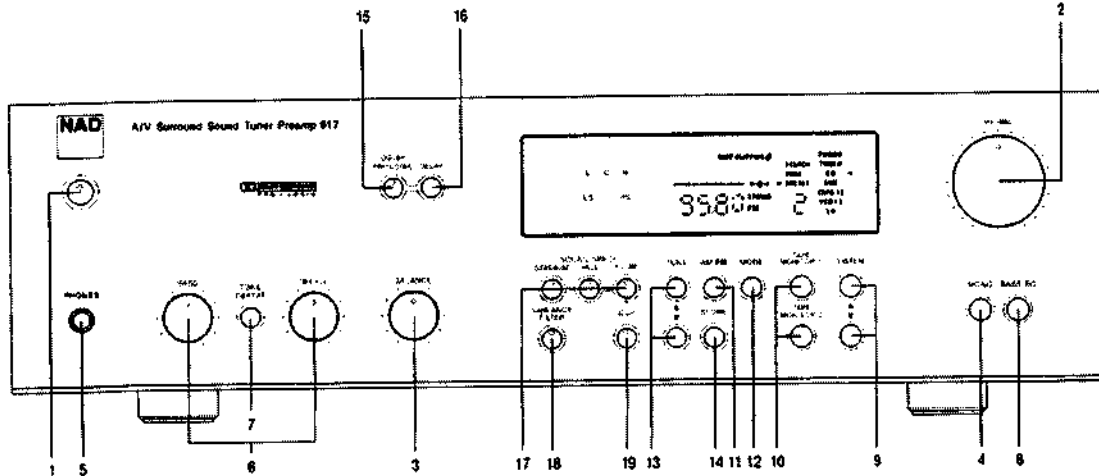
REAR PANEL CONNECTIONS




- | | | |
|--------------|----------------------------------|-------------------------------------|
| 1. CD INPUT | 8. TUNER INPUT | 18. MONITOR VIDEO OUTPUT |
| 2. AUX INPUT | 9. MULTI ROOM OUT | 19. VCR2 VIDEO OUTPUT |
| 3. LD INPUT | 10. NAD LINK IN OUT | 20-22. VIDEO INPUTS |
| 4. VCR 1 | 11-14. POWER AMPLIFIERS | 23. DOLBY 3CH/4CH SURROUND SELECTOR |
| 5. VCR 2 | 15. SUBWOOFER SELECTOR | 24. CENTER PHANTOM/ NORMAL SELECTOR |
| 6. TAPE 1 | 16. AC POWER CORD | |
| 7. TAPE 2 | 17. AC OUTLETS (US version only) | |

917 REAR PANEL / FRONT PANEL VIEW


FRONT PANEL



- | | | |
|---------------------------|------------------------|---------------------------|
| 1. POWER | 8. BASS EQ | 15. DOLBY PRO LOGIC DELAY |
| 2. VOLUME | 9. LISTEN | 16. SOUND SPACE |
| 3. BALANCE | 10. TAPE MONITOR 1 & 2 | 17. SIBILANCE FILTER |
| 4. MONO | 11. AM/FM SELECTOR | 18. CDR |
| 5. HEADPHONE SOCKET | 12. TUNING MODE | |
| 6. BASS & TREBLE CONTROLS | 13. TUNE MODE | |
| 7. TONE DEFEAT | 14. STORE MODE | |

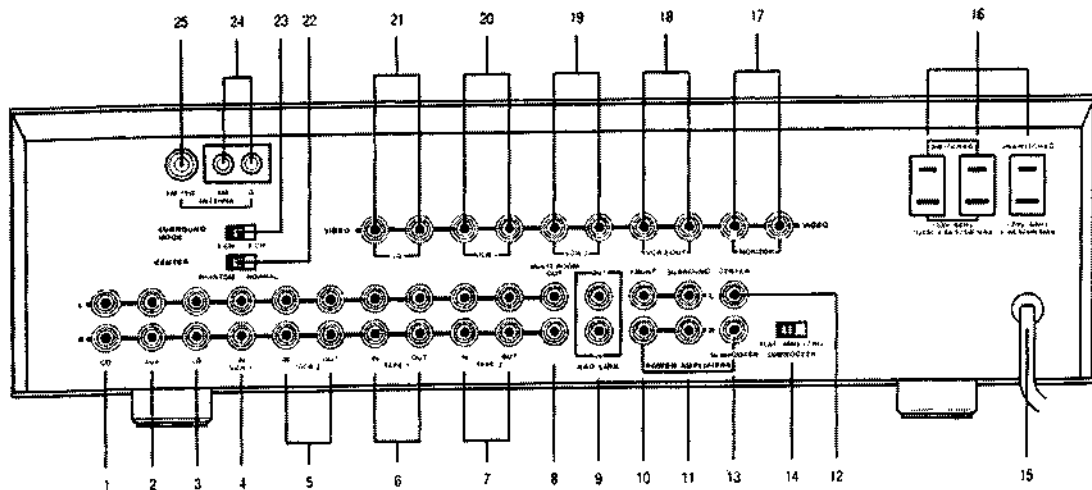


The lightning flash with arrowhead, within an equilateral triangle is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure; that may be of sufficient magnitude to constitute a risk of electric shock to persons.



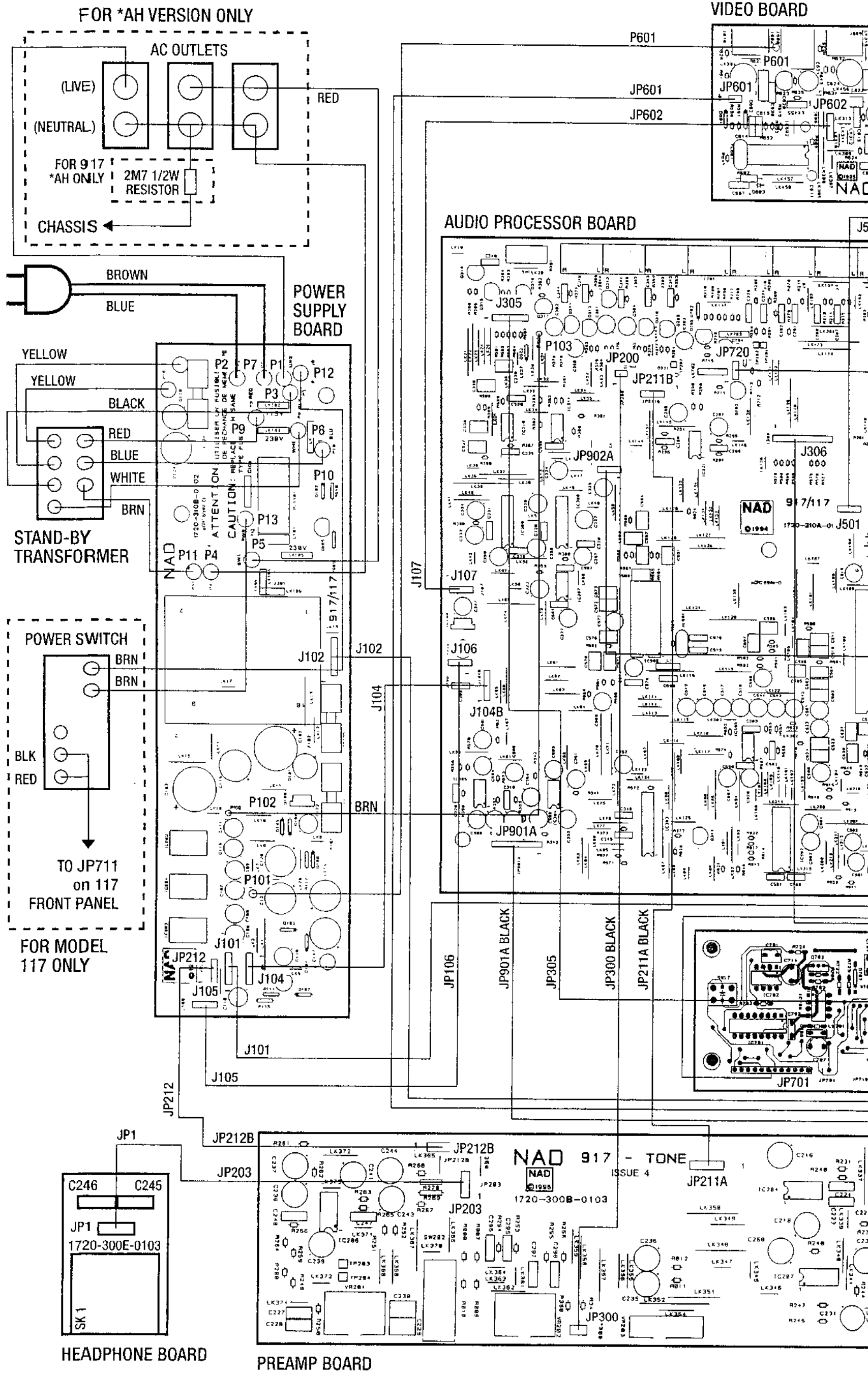
The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

REAR PANEL CONNECTIONS



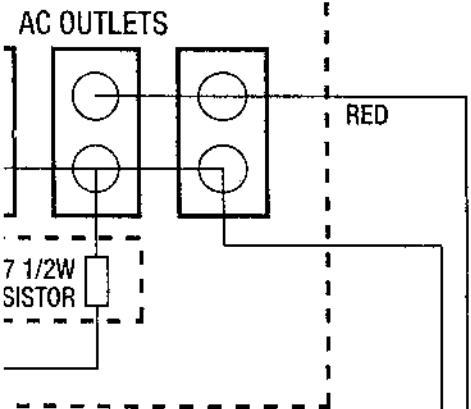
- | | | |
|-------------------|------------------------------------|------------------------------------|
| 1. CD INPUT | 9. NAD LINK IN OUT | 19-21. VIDEO INPUTS |
| 2. AUX INPUT | 10-13. OUTPUTS TO POWER AMPLIFIERS | 22. CENTER PHANTOM/NORMAL SELECTOR |
| 3. LD INPUT | 14. SUBWOOFER SELECTOR | 23. SURROUND MODE 3CH/4CH SELECTOR |
| 4. VCR 1 | 15. AC POWER CORD | 24. AM ANTENNA |
| 5. VCR 2 | 16. AC OUTLETS (US version only) | 25. FM ANTENNA |
| 6. TAPE 1 | 17. MONITOR VIDEO OUTPUT | |
| 7. TAPE 2 | 18. VCR 2 VIDEO OUTPUT | |
| 8. MULTI ROOM OUT | | |

WIRING DIAGRAM

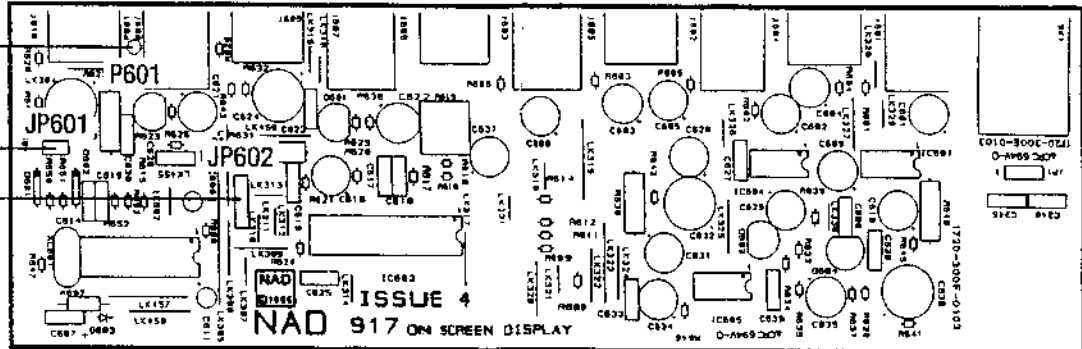


RAM

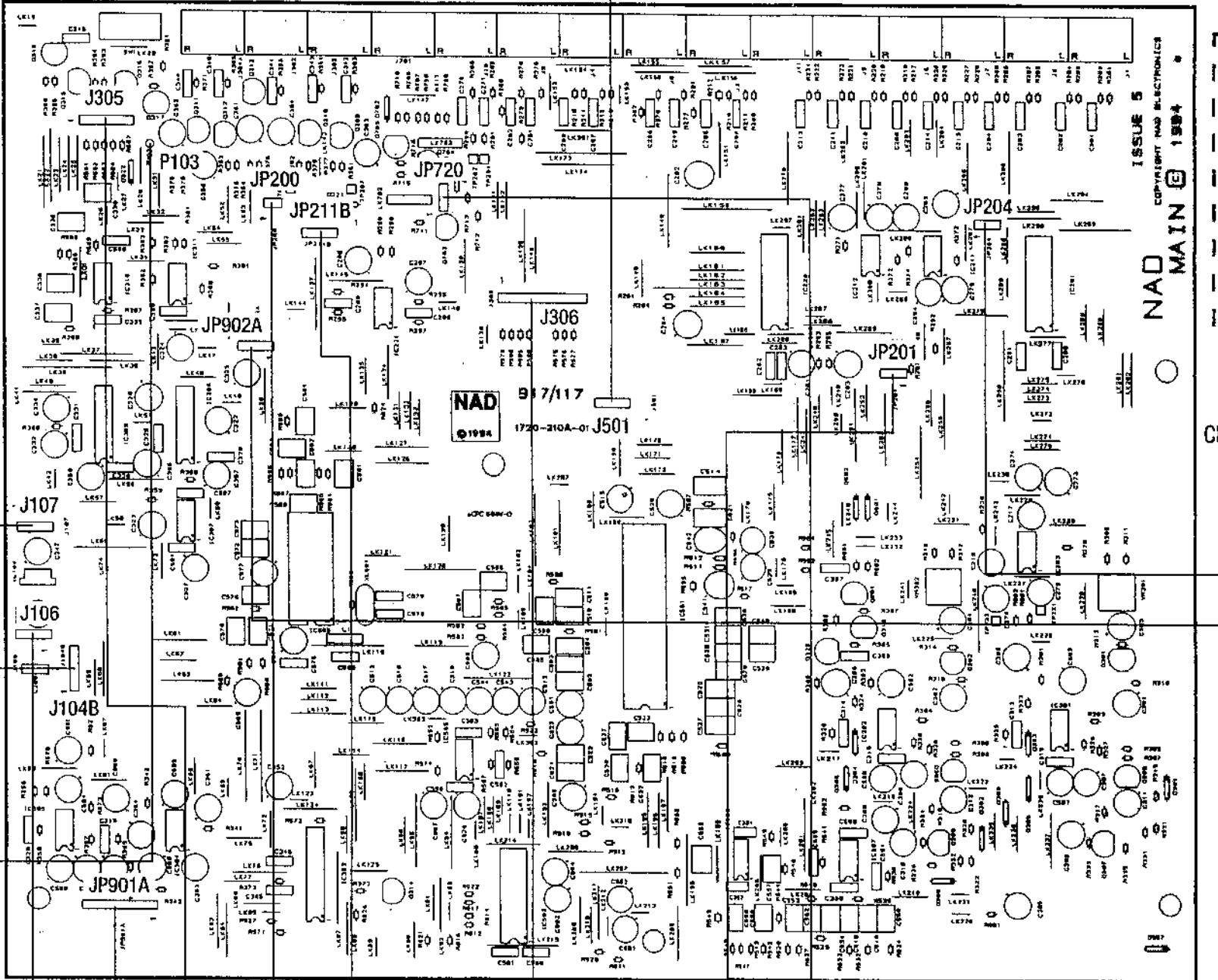
VERSION ONLY



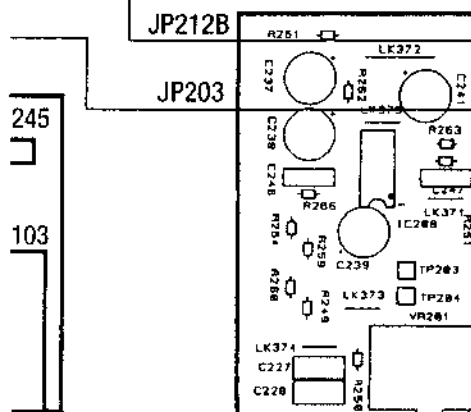
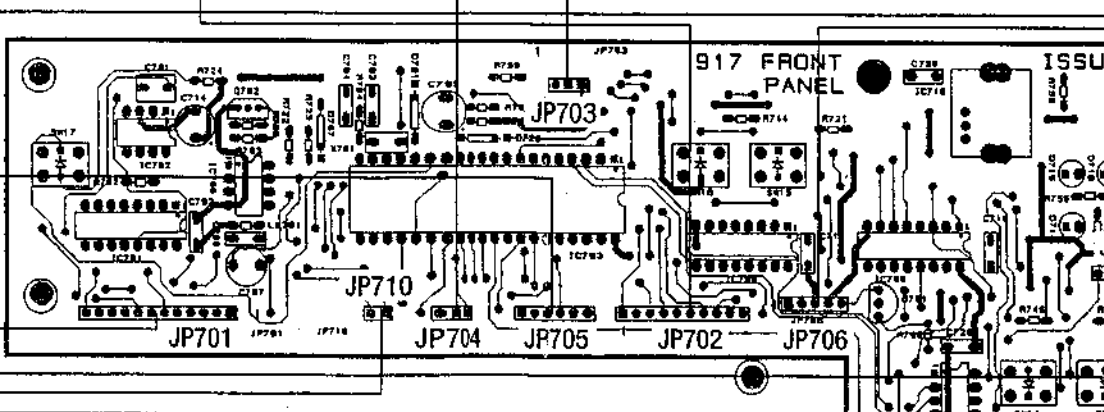
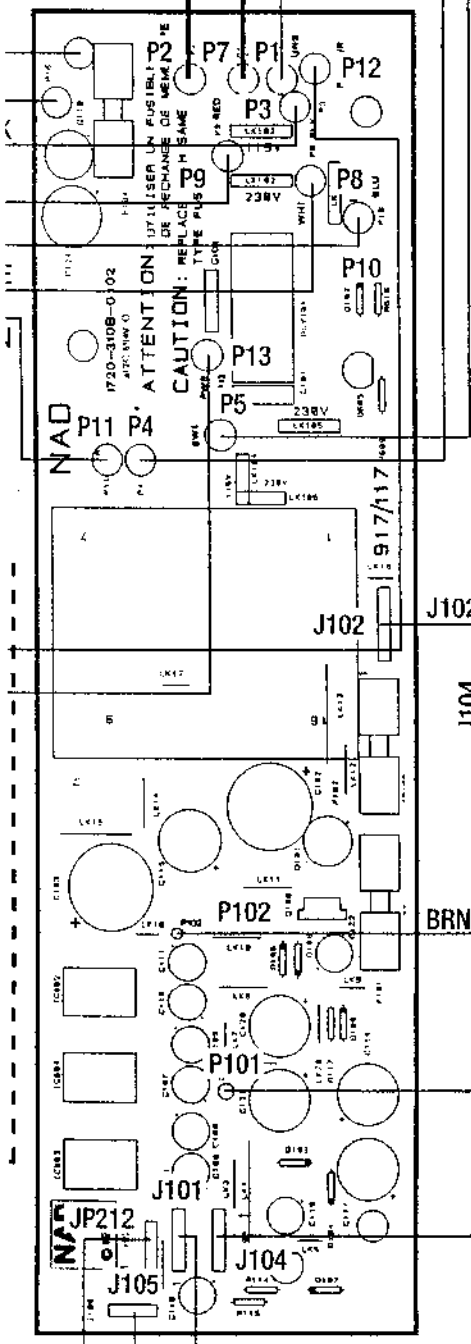
VIDEO BOARD



AUDIO PROCESSOR BOARD



POWER SUPPLY BOARD

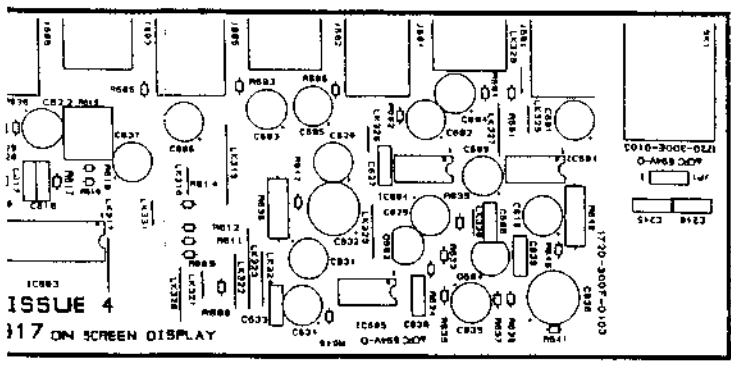


IE BOARD

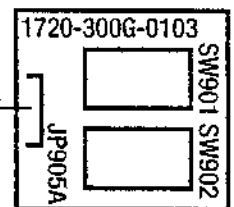
PREAMP BOARD

ISSUE 5
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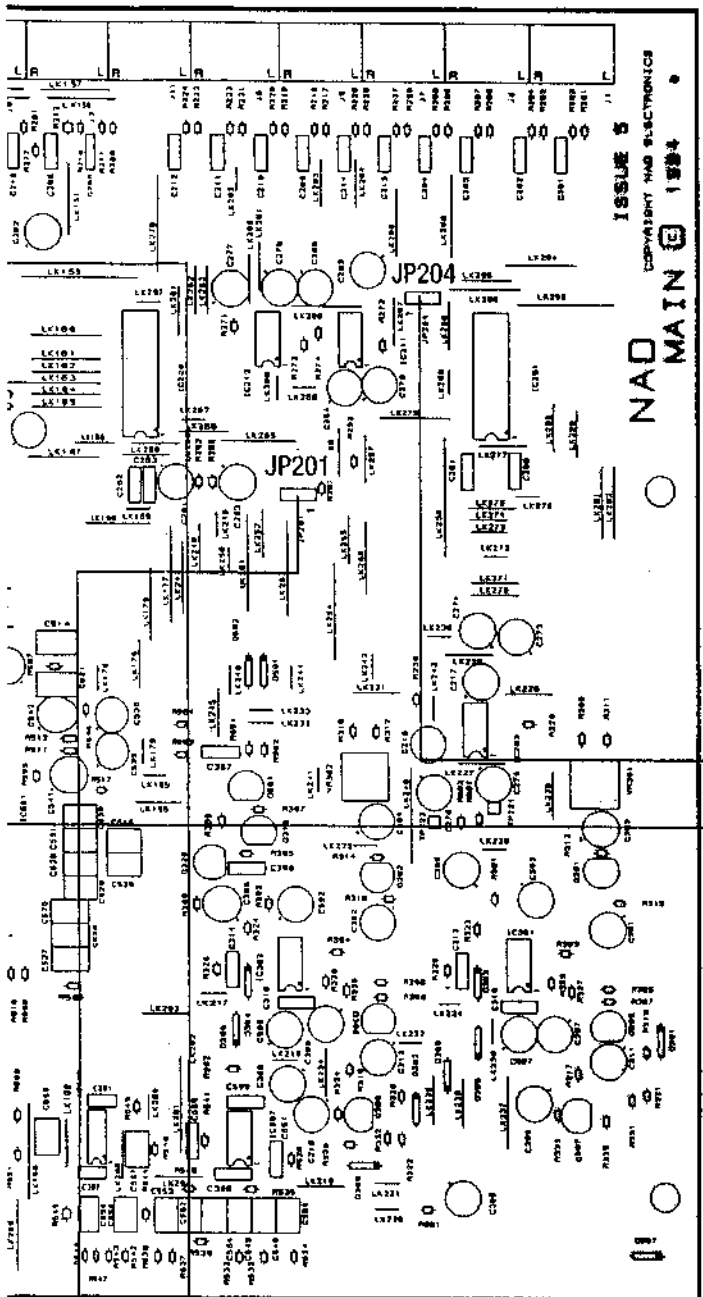
** NOTE: WIRES



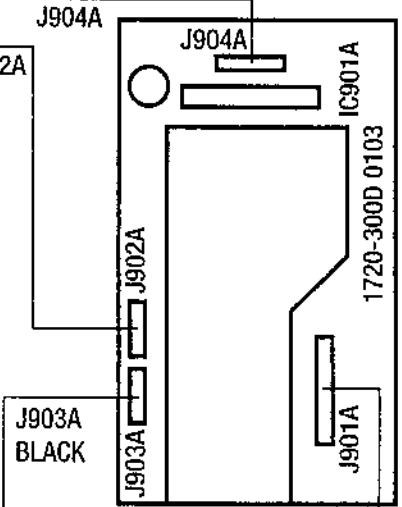
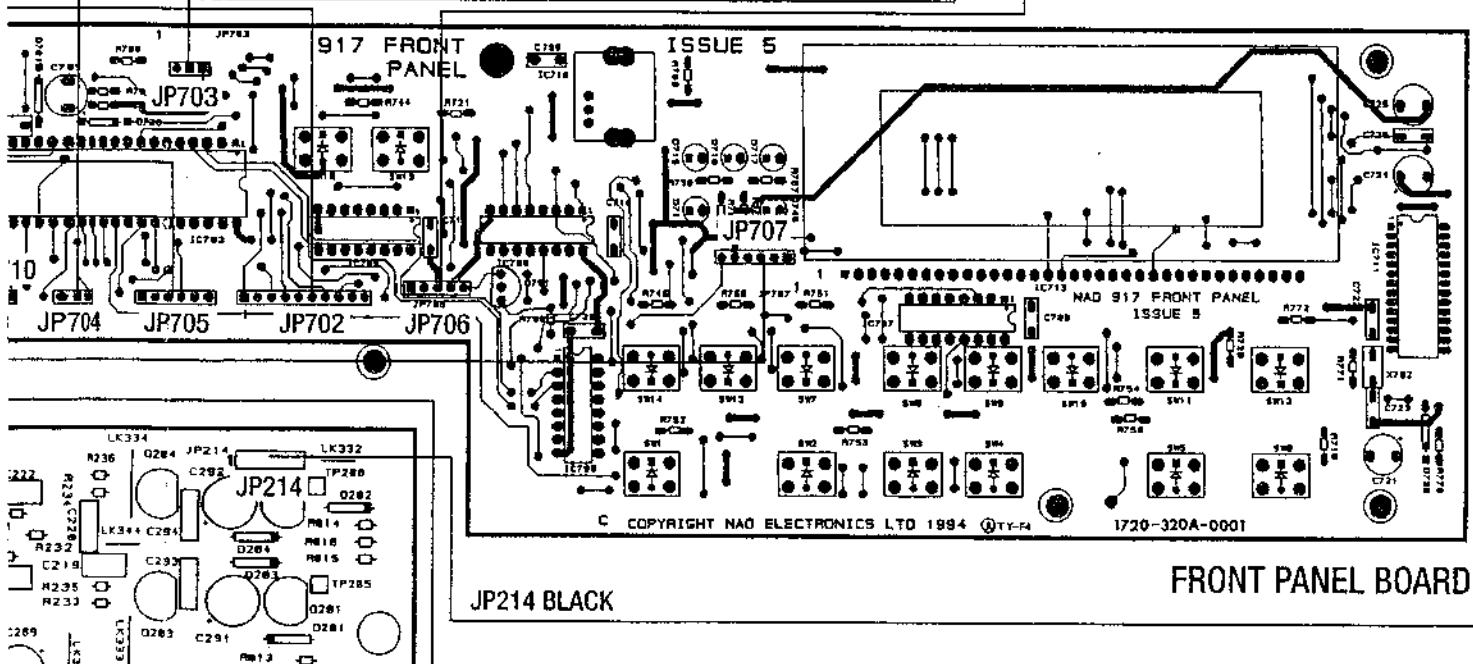
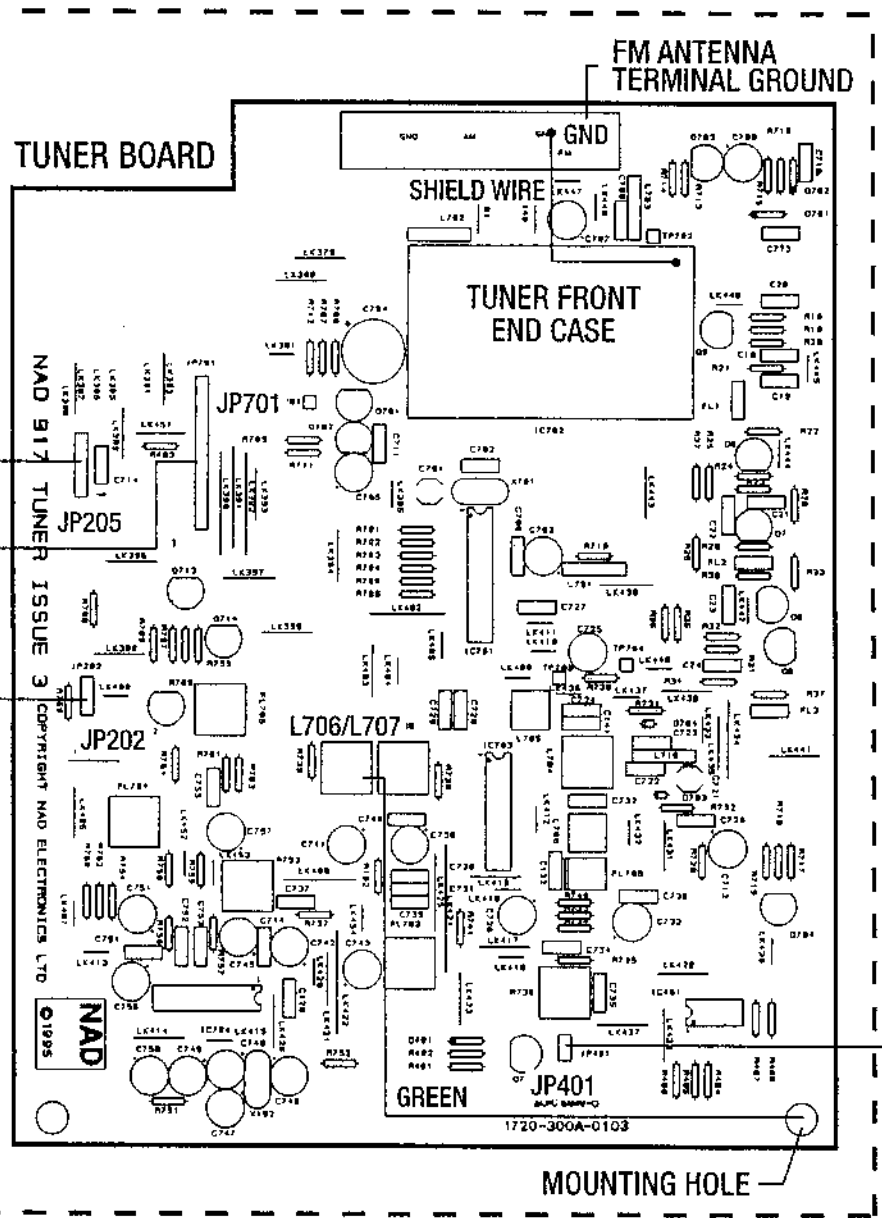
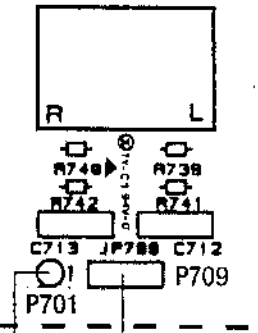
SURROUND/CENTER SWITCH BOARD



FOR 917 ONLY

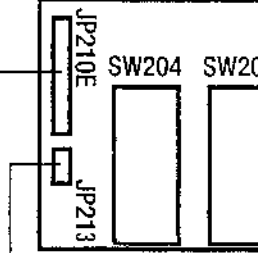


**FOR 117 ONLY
TUNER I/P BOARD**



VOLUME BOARD

J901A BLACK



PUSH-SWITCH BOARD

JP213

**** NOTE: WIRES, UNLESS SPECIFIED ARE WHITE COLOUR.**

DISASSEMBLY INSTRUCTIONS

- Remove machine screws M4.0 x 6.0 (① to ⑥) from the side panels. Remove tapping screw 3.0 x 8.0 (⑦ and ⑧) from the back panel. Refer to **Figure No. 1**.

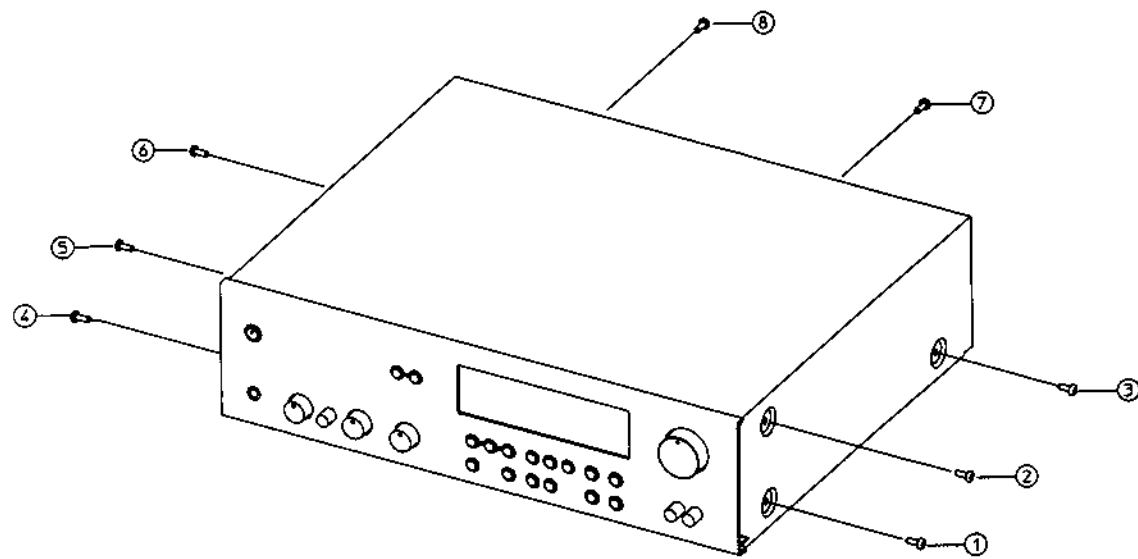


Figure No. 1.

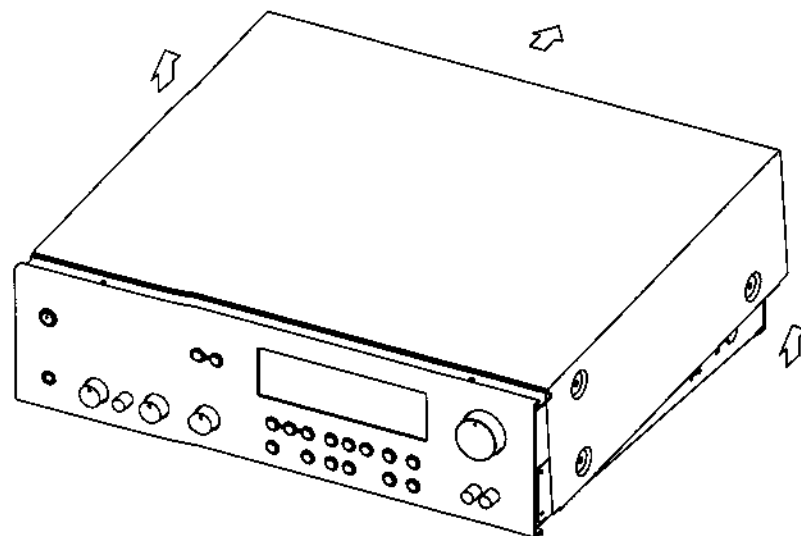
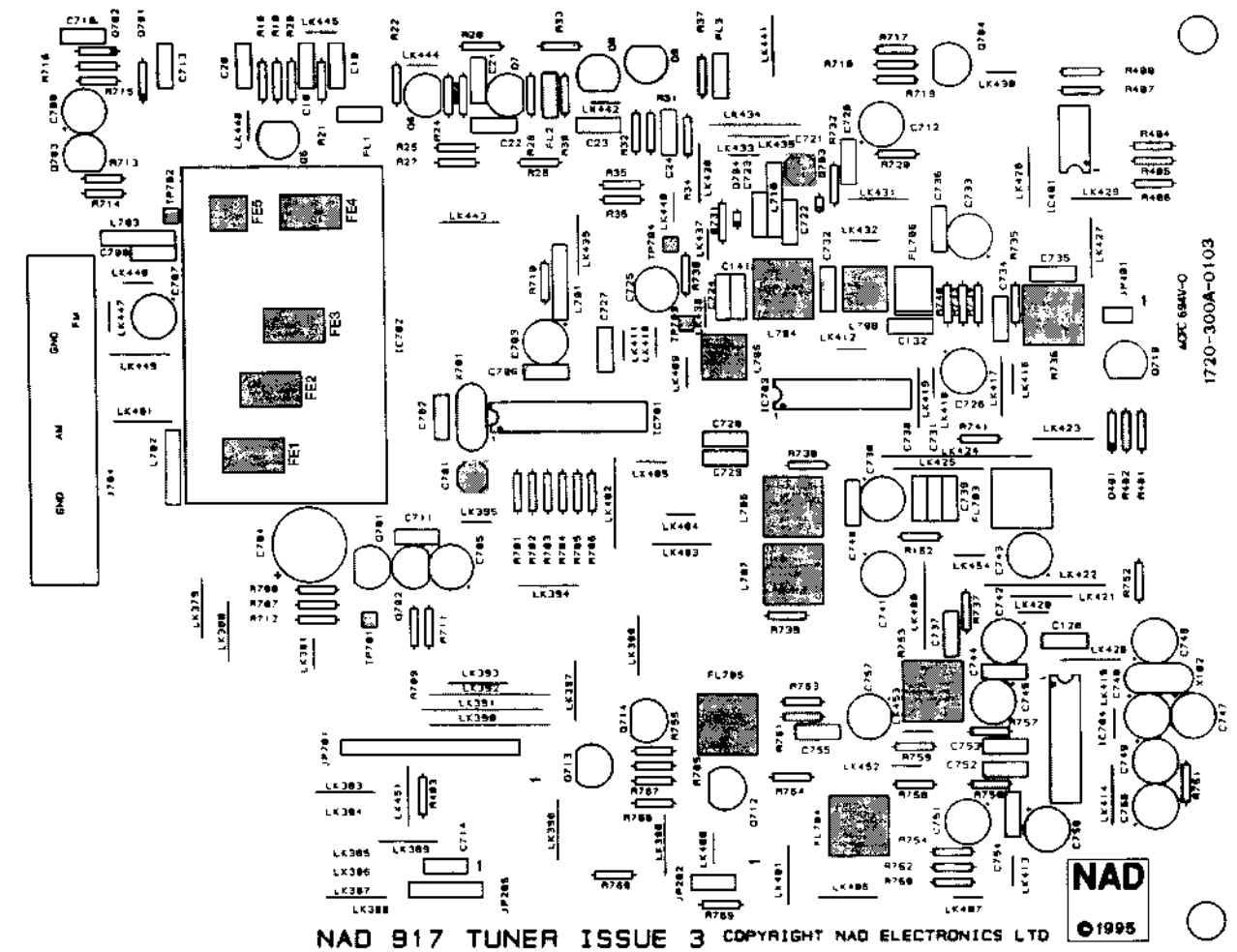


Figure No. 2.

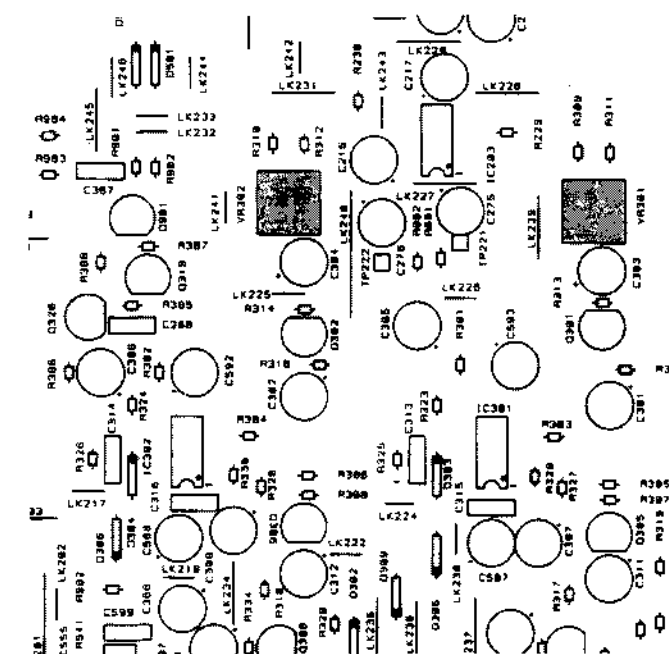
- Pull both sides of the TOP COVER slightly outwards, tilt approximately 35° and then remove in the direction as shown in **Figure No. 2**.

ADJUSTMENT POINTS DIAGRAM

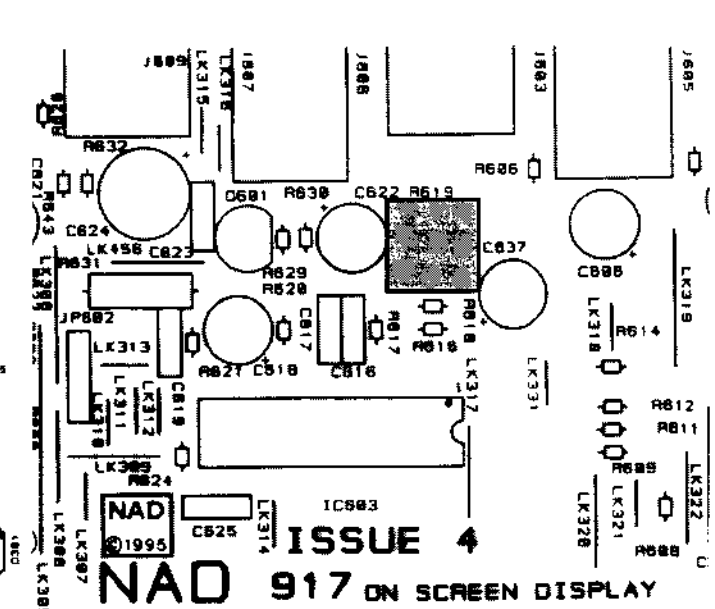
1. TUNER (For 917 Only)



2. CDR



3. OSD



ALIGNMENT PROCEDURES

FM SECTION (For 917 Only)

AF Modulation: 1 kHz, 75 kHz Deviation, MONO Mode
Store Frequency: 98 MHz, 87.5 MHz, 108 MHz, 90 MHz, 106 MHz
RF Level: 75-ohm Impedance, Open circuit

OSCILLATION TUNING VOLTAGE

Connect DVM between TP701 & GND.

For A16 Front-end Module:

Tune to 87.5 MHz, adjust FE4 (osc coil) to read 3 ± 0.5 V.

Tune to 108 MHz, adjust FE4 (osc coil) to read 20.5 ± 0.5 V.

For G55 or G58 Front-end Module:

Tune to 87.5 MHz, adjust FE4 (osc coil) to read 1.6 ± 0.5 V.

Tune to 108 MHz, adjust FE4 (osc coil) to read 8.0 ± 0.5 V.

I.F.

Connect DVM between TP703 & TP704.

Apply 10.7 MHz, 90 dB μ via 1 kilo ohm resistor to TP702.

Adjust L706 for 0 ± 50 mV reading on DVM.

Adjust L707 for minimum distortion (THD).

Repeat adjustment until no further improvement.

SYNTHESIZER I.F. TRACKING

Maintain connection of DVM across TP703 & TP704.

Disconnect 10.7 MHz tap to TP702.

Apply 98 MHz, 60 dB μ to antenna input.

Tune to 98 MHz.

Adjust C701 for 0 ± 20 mV reading on DVM.

Fine adjust L707 for minimum distortion.

Repeat until no further improvement.

Front-end IF.

Connect DVM between LK391 and ground

Turn R736 fully counter clockwise

Apply 98 MHz, 18 dB μ to antenna

Adjust FE5 to obtain maximum reading on DVM.

R.F.

Apply 98 MHz, 7 dB μ for AH, or 21 dB μ for C, to antenna input.

Check THD.

If THD > 3%, adjust FE1, FE2 & FE3 in the front-end module with non-metallic tool for minimum THD.

Check THD at 90 MHz & 106 MHz with 8 dB μ input for AH, or 22 dB μ for C.

FM Stereo: 1 kHz, 67.5 kHz devi., 60 dB μ V, Pilot signal 19 kHz, 7.5 kHz devi.

STEREO SEPARATION & PILOT SUPPRESSION

Set modulated signal to Left only.

Adjust R753 for minimum output at right channel.

Set modulated signal to Right only.

Adjust R753 for minimum output at left channel.

Repeat until readings are the same.

Turn off modulating signal, leaving the pilot tone.

Adjust FL704 and FL705 for minimum outputs on right and left channels respectively.

SIGNAL STRENGTH METER

Set L=R, 98 MHz, 66 dB μ .

Adjust R736 until all segments are just on.

AM SECTION (For 917 Only)

AF Modulation: 400 Hz, 30%

For AH Version, store frequencies 603, 999, 1404 kHz.

For C & B Versions, store frequencies 600, 1000, 1400 kHz.

Connect 22 pF ceramic to capacitor between signal generator and antenna terminal.

OSCILLATION TUNING VOLTAGE

Connect DVM between TP701 & GROUND.

Tune to 603/600 kHz.

Adjust L705 for 1.75 ± 0.05 V reading on DVM.

I.F.

Apply 999/1000 kHz, set 45 dB μ to antenna input.

Tune to 999/1000 kHz.

Adjust L708 for maximum output.

R.F.

Apply 603/600 kHz, 45 dB μ .

Tune to 603/600 kHz.

Adjust L704 for maximum output.

Apply 1404/1400 kHz, 45 dB μ .

Adjust C721 for maximum output.

Repeat until no further improvement.

CDR FUNCTION

Apply 177mV to CD input, L-CH only.

Connect AC voltmeter to L & R outputs.

Select CD input and HALL mode.

Switch CDR off.

Adjust main control volume for 500 mV output.

Switch CDR on.

Adjust VR301 for 5 dB increase in output.

Remove L input and connect to R input.

Monitor R output.

Adjust VR302 for 5 dB increase in output.

Repeat if L & R output difference exceeds 0.2 dB.

ON-SCREEN DISPLAY (OSD) FUNCTION

Connect a video generator or any source of composite video signal to LD video input RCA jack.

Connect a video monitor to MONITOR video output RCA jack.

Press TEST once on the remote control (or DELAY continuously on the front panel) for the OSD to appear in the monitor.

Adjust R619 until OSD becomes stable and at the center of the monitor. The OSD can slightly shift to the right by a ratio of 2:1.

Press TEST once (or release DELAY) for the OSD to disappear from the monitor.

FUNCTIONAL DESCRIPTION:

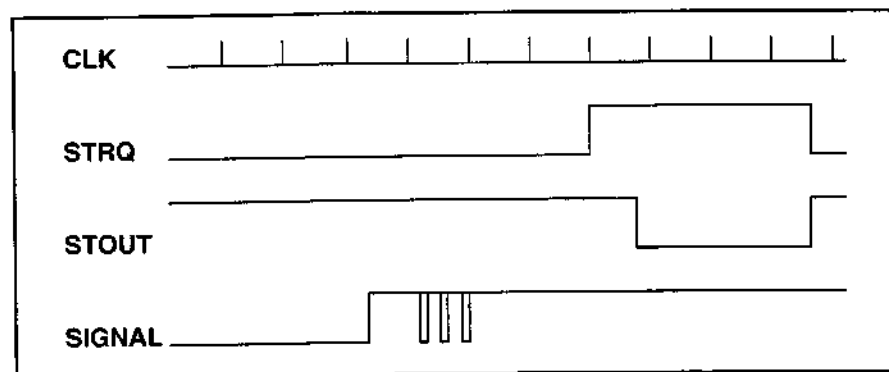
TUNING SEARCH (For 917 Only)

1. The following pins are used in finding a station:

STRQ: MCU output
STOUT: MCU output
SIGNAL: MCU output

2. The time it takes to search from 87.5 to 108 MHz at 100 kHz step is approximately 24 seconds, which means that the station check takes 117mS per station.
3. After tuning to a station (setting the value for LM7000), the SIGNAL pin is checked by the MCU for 30 μ S. If the SIGNAL pin is low, the station search continues. If the SIGNAL pin is high, then the STRQ pin is set high by the MCU.
4. After 135 mS that the STRQ is high, the LM7000 will pull the STOUT pin to logic low for 350 mS to indicate that a station is present and the station search is terminated by the MCU.
5. After the LM7000 has pulled the STOUT pin high, then the MCU will pull the STRQ pin low.
6. After a station is found, the SIGNAL pin is not checked anymore.

Attached is the timing diagram for reference:



DOLBY PROLOGIC

Dolby Prologic function provides two additional output channels, Center and Surround, which are derived from the two input channels, left and right. When the two channels are in phase, the signal will be passed to the center channel. If only the left channel has signal, the signal will be passed to the left channel without sharing to other channels. Likewise, signal at right channel only would go the right channel. If the signals are out of phase by 180°, the signal is passed to the rear surround channels.

In fact, the surround left channel and the surround right channel are identical. It is better to have two rear speakers at the rear corners for better sound effect.

If the left and right channels are out of phase in between 0° and 180°, the signal will be shared in proportion to the phase between the channels. That is, the out of phase signal between the two front channels will be shared by the rear surround channel. Only the signal which is discrete to left or right channel will be remained in left or right channel.

FUNCTIONAL TEST

MONITOR DISPLAY

Video display from MONITOR output indicates the status of the selected channel as on the panel display. The label on the screen should be adjusted to the center. No distortion should occur with either PAL or NTSC signal. The center of the text label may be allowed to be shifted slightly to the right. The ratio between the distances of the label center to the left and right edges should be less than 2.

SELF TEST - OUTPUTS ONLY

When the test program is selected by pressing the 'TEST' button on the remote control, a sequence of noise signal will be generated from the output channels. The 5 LEDs on the panel will turn on sequentially when the corresponding channel is selected by the test program.

S-VHS TEST

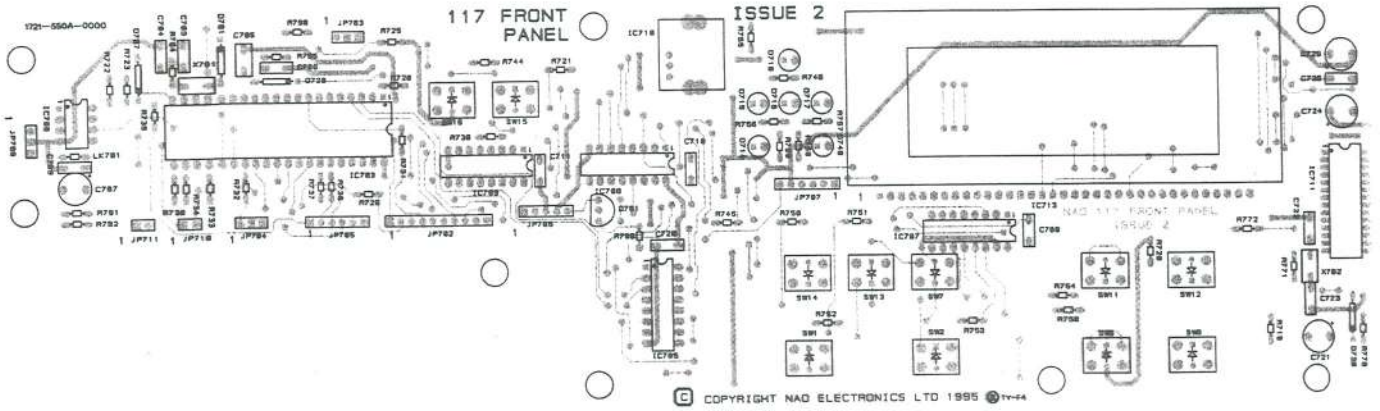
If there is no S-VHS signal available from the video generator, black screen signal with cross and circle pattern may be used. The colour burst is set to 300mVpp and the horizontal synchronous signal is set to 300mVpp also. The signal is fed into both the two SVHS input pins of the selected input channel. Monitor these two SVHS video outputs on the video terminal, one at a time, and check for the stability of the text display.

For better functional check, the outputs at the S-VHS terminal should be monitored with a dual trace oscilloscope and check for any obvious delay between the two colour burst signals. Colour burst and horizontal sync pulse should still be 300mV \pm 1 dB on chrominance and luminance channels of SVHS outputs (VCR2 and Monitor).

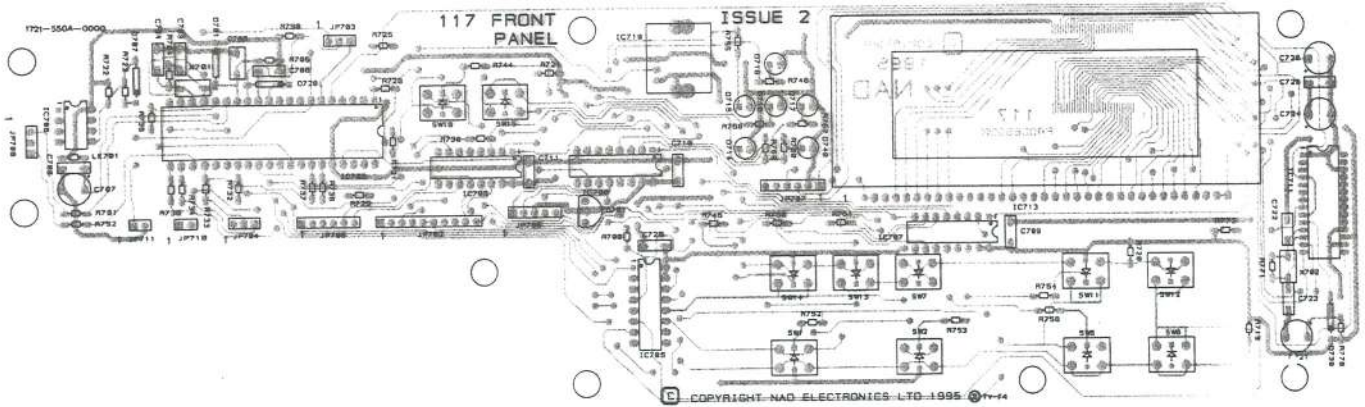
PCB LAYOUT

117 FRONT PANEL/ POWER SWITCH/ TUNER INPUT

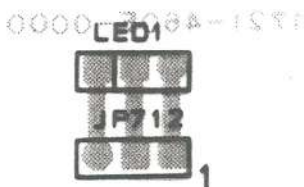
COMPONENT SIDE



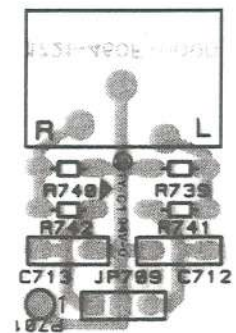
SOLDER SIDE



STANDBY LED

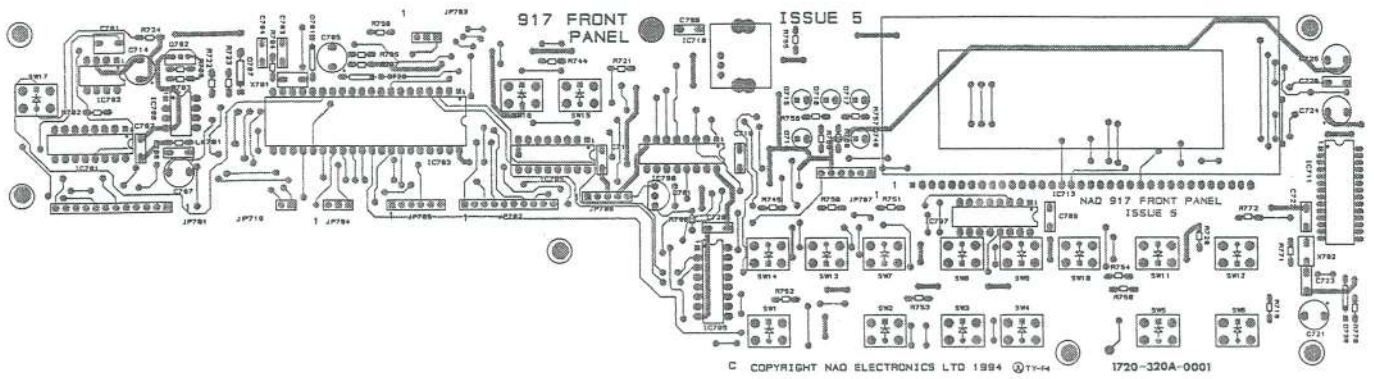


TUNER INPUT

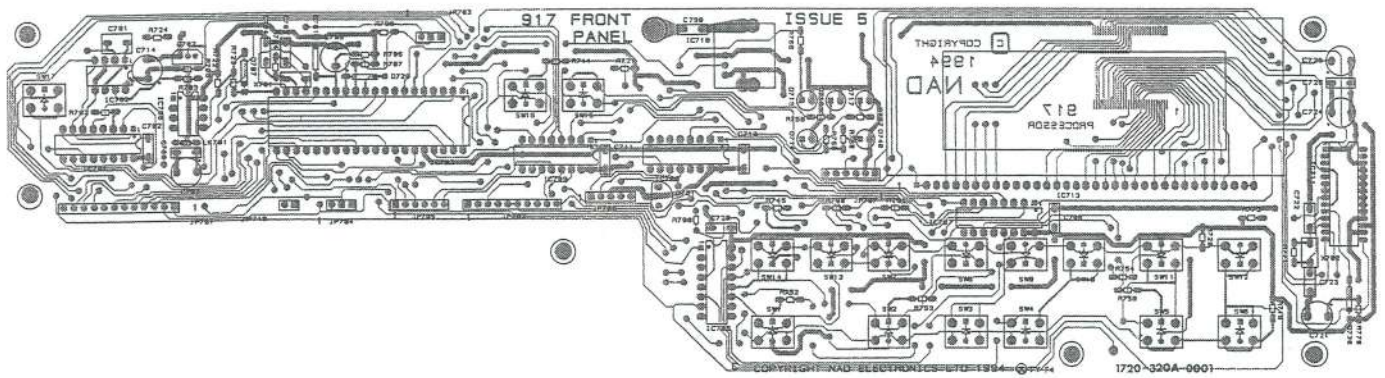


917 FRONT PANEL

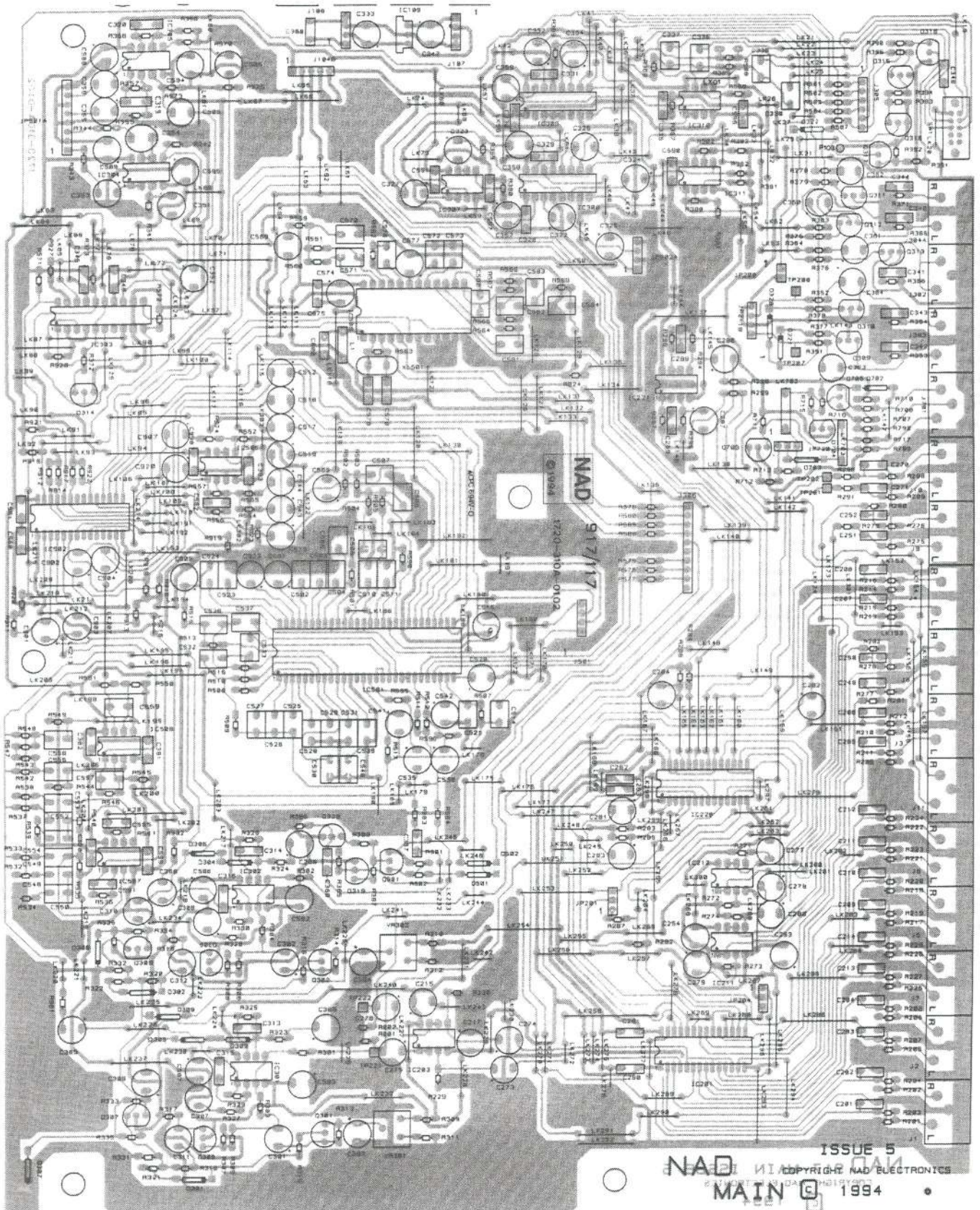
COMPONENT SIDE



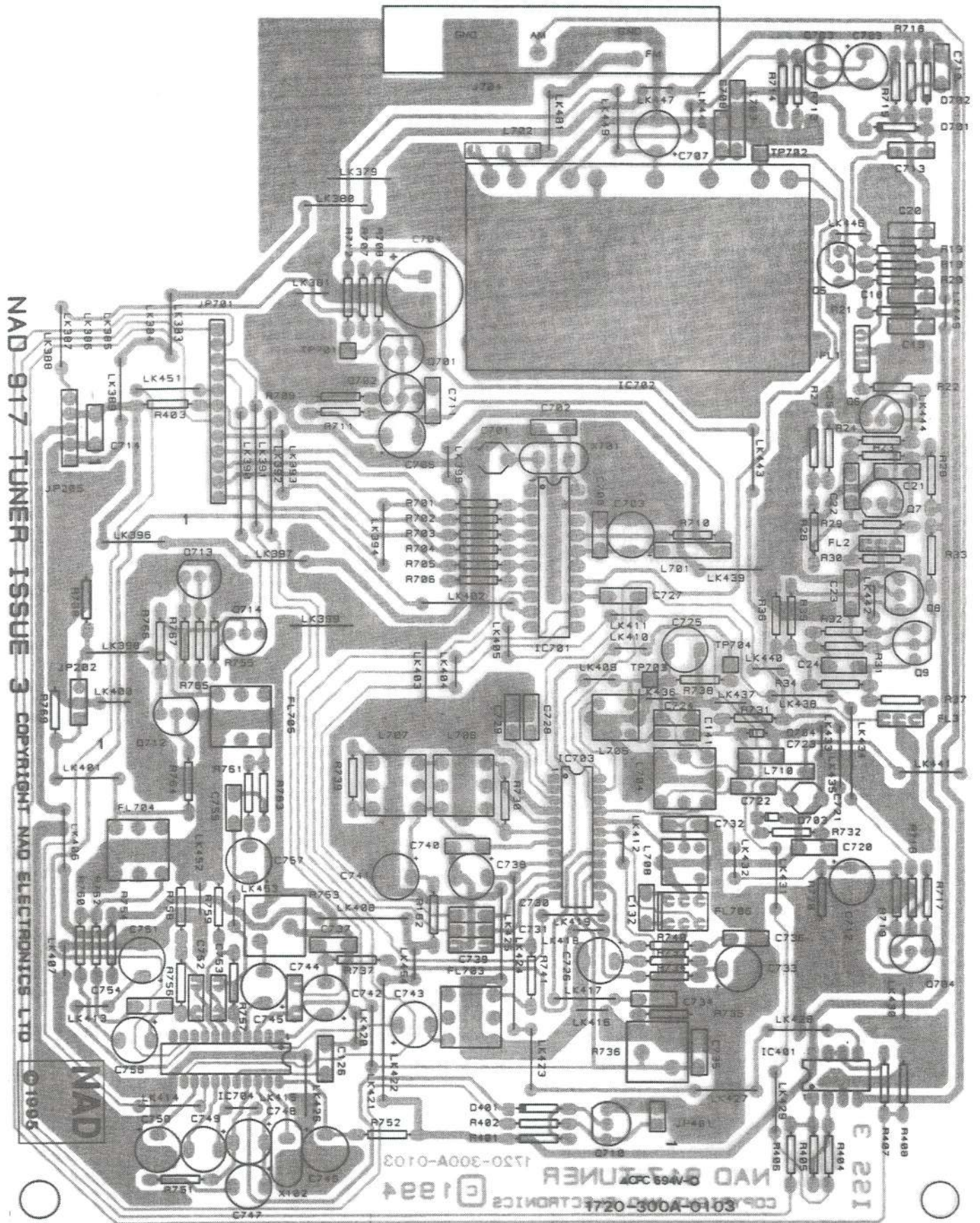
SOLDER SIDE



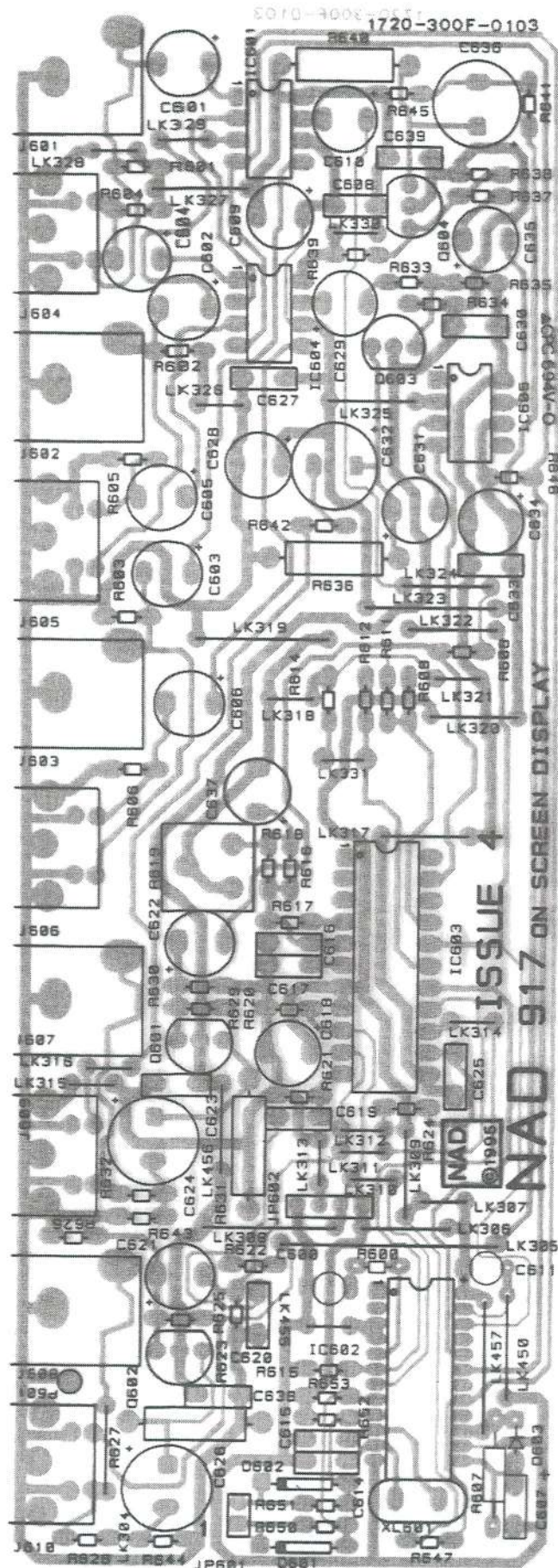
AUDIO PROCESSOR



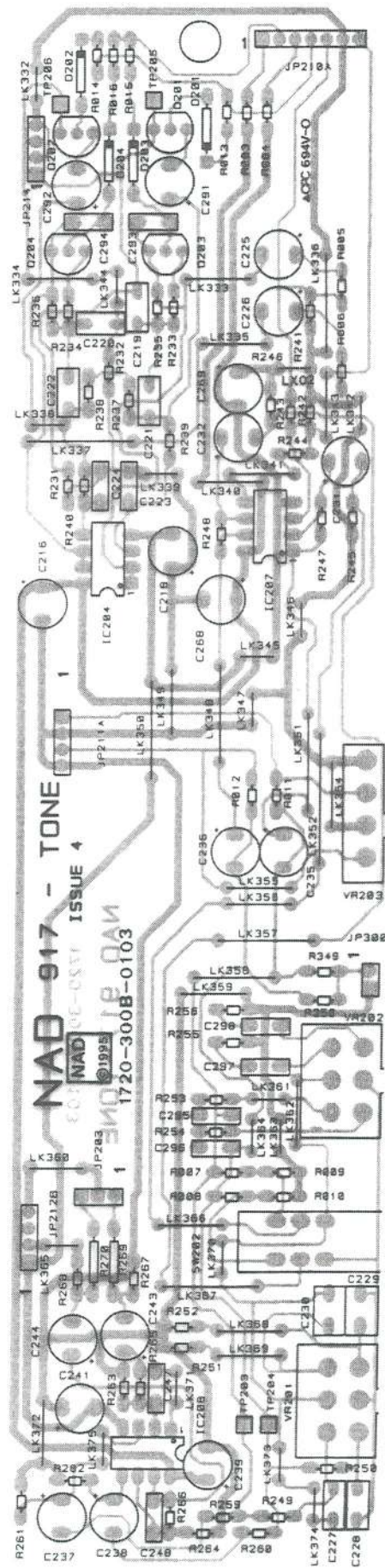
TUNER (For 917 Only)



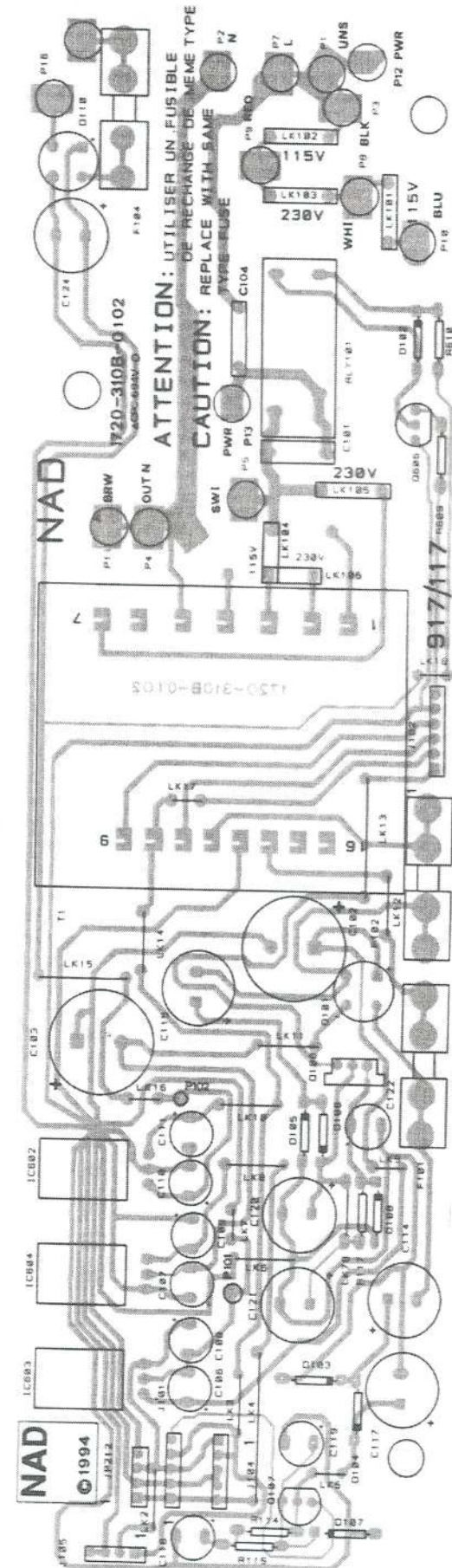
VIDEO



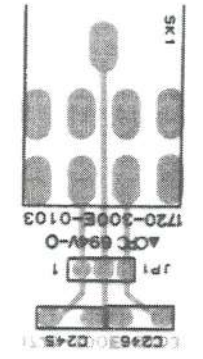
TONE



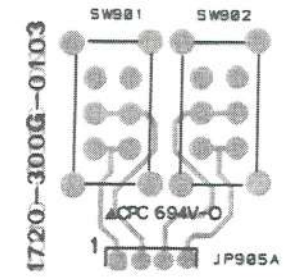
POWER SUPPLY



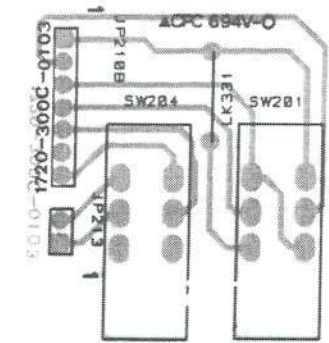
HEADPHONE



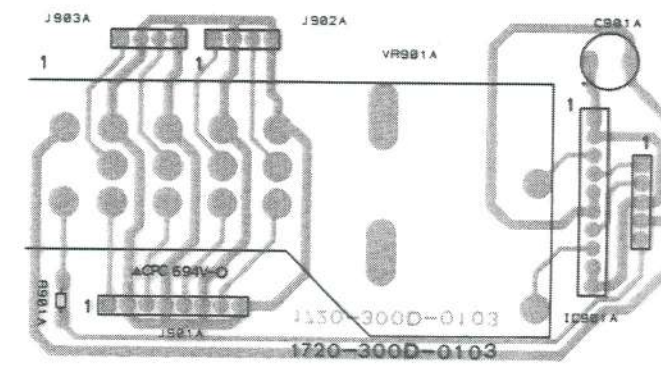
SURROUND/CENTER SWITCH



PUSH-SWITCH

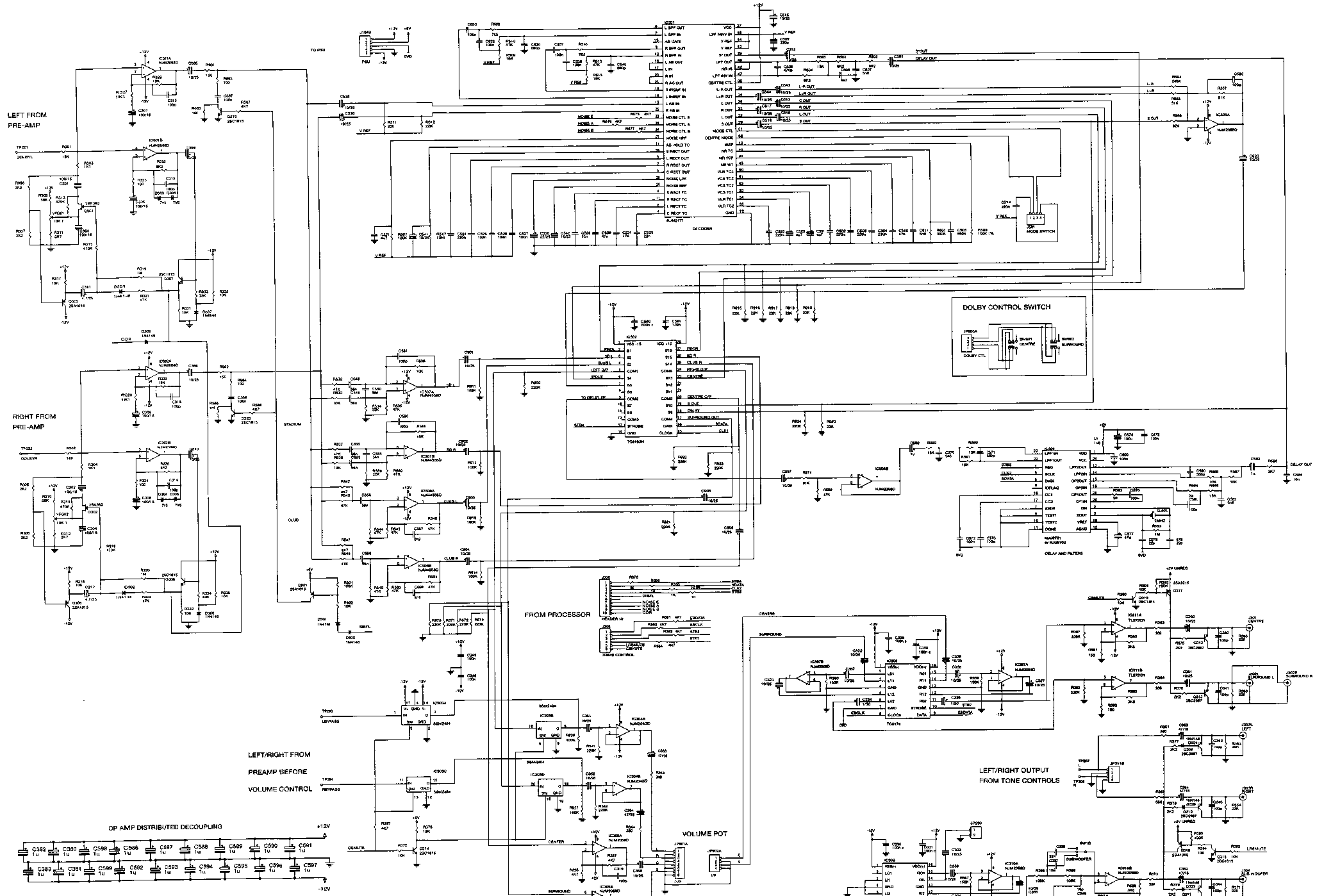


VOLUME



SCHEMATIC DIAGRAM

AUDIO PROCESSOR PCB

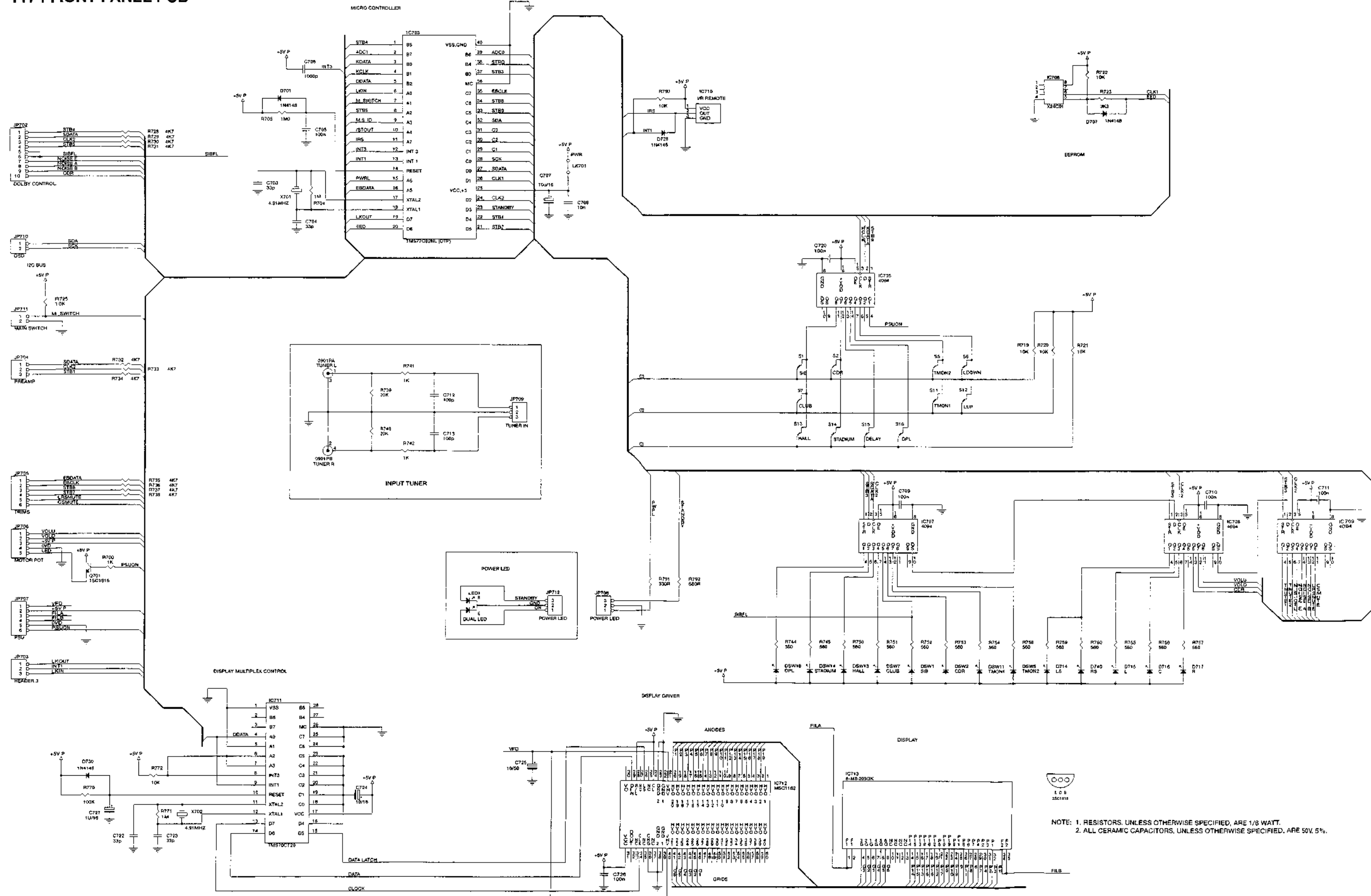


NOTE: 1. Resistors, unless otherwise specified, are 1/8 Watt.
 2. All ceramic capacitors, unless otherwise specified, are 50V, 10%.

6dB GAIN FOR CENTER AND SURROUND

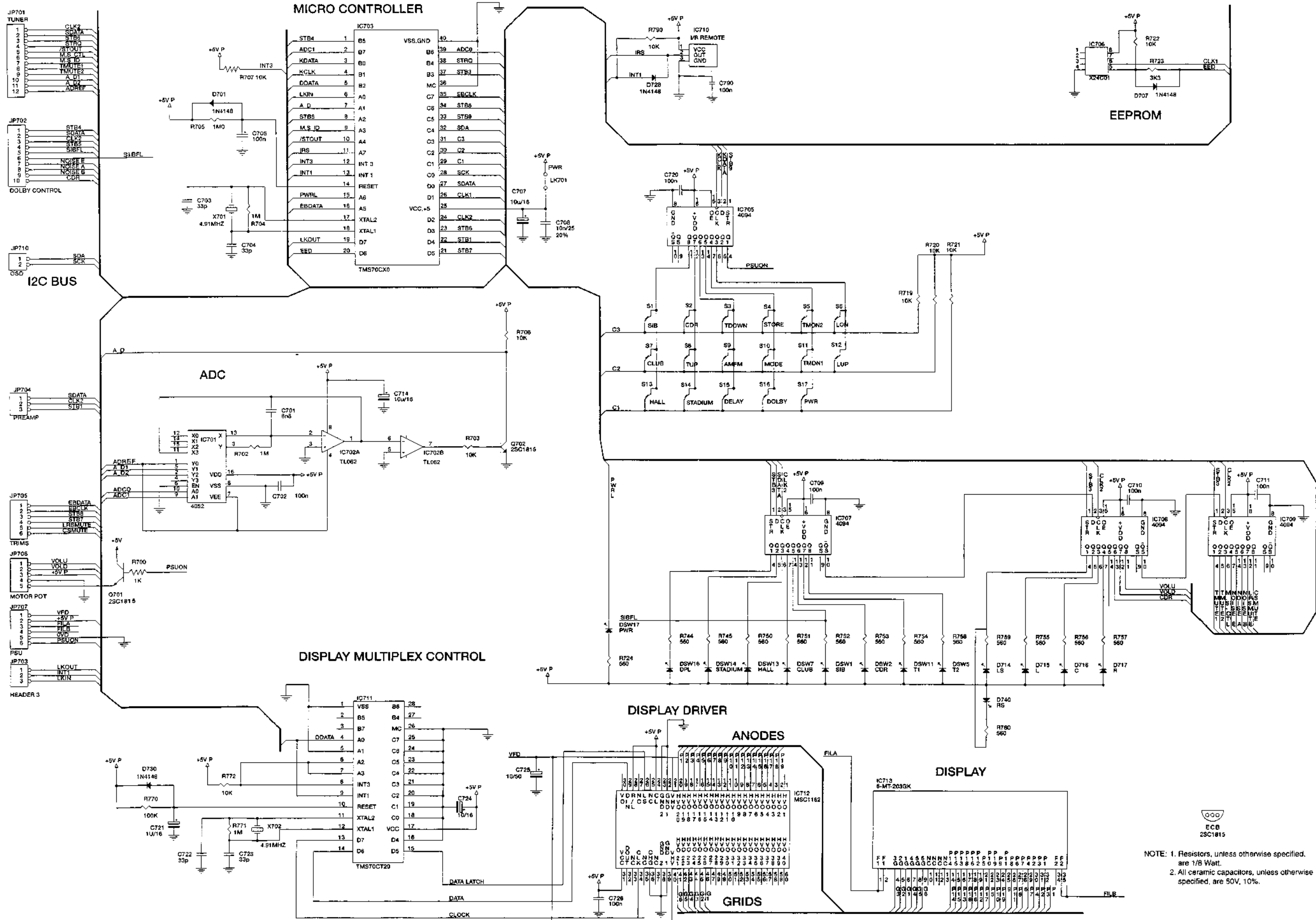
OP AMP DISTRIBUTED DECOUPLING

117 FRONT PANEL PCB



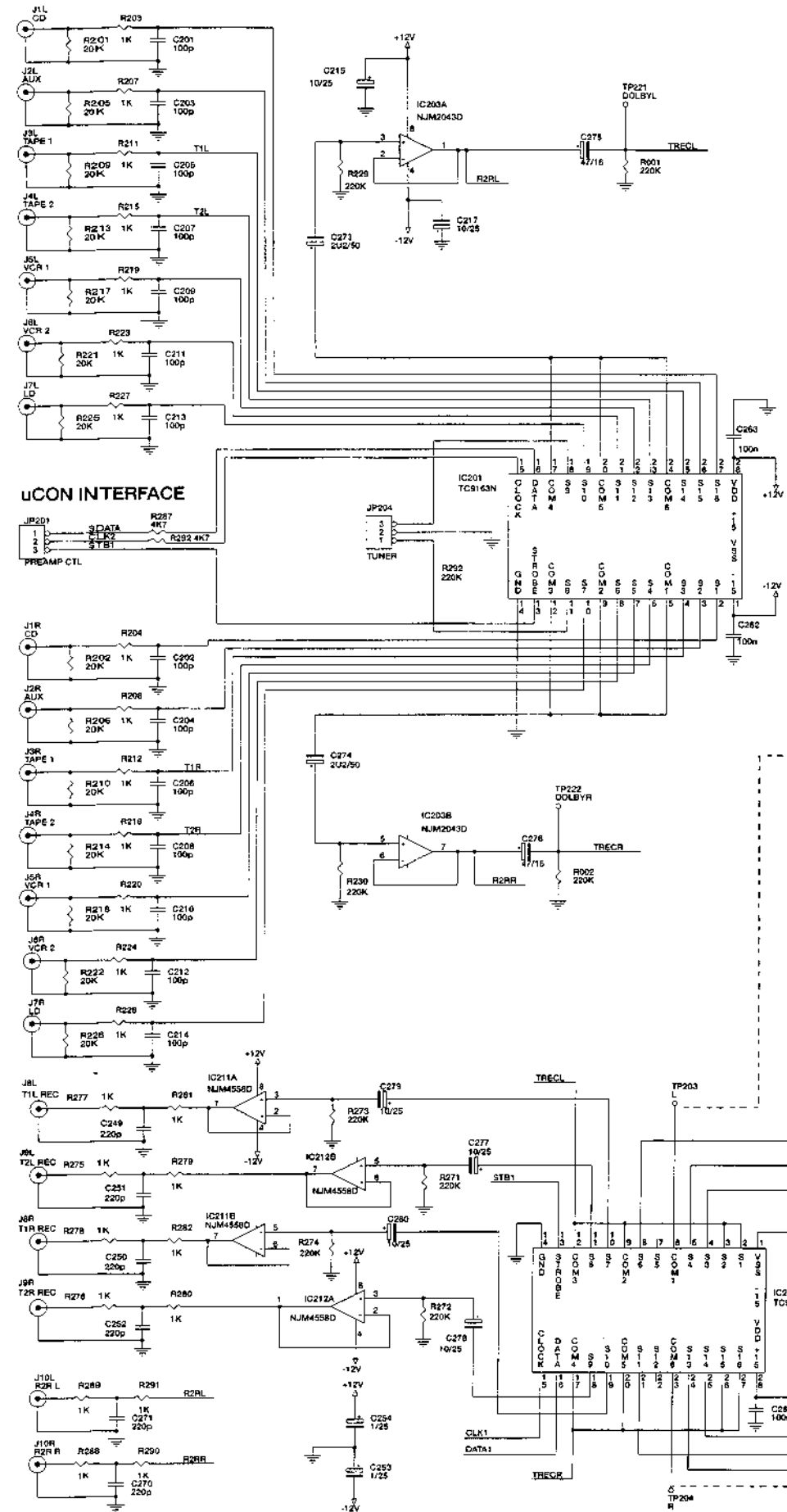
NOTE: 1. RESISTORS, UNLESS OTHERWISE SPECIFIED, ARE 1/8 WATT.
 2. ALL CERAMIC CAPACITORS, UNLESS OTHERWISE SPECIFIED, ARE 50V 5%.

917 FRONT PANEL PCB



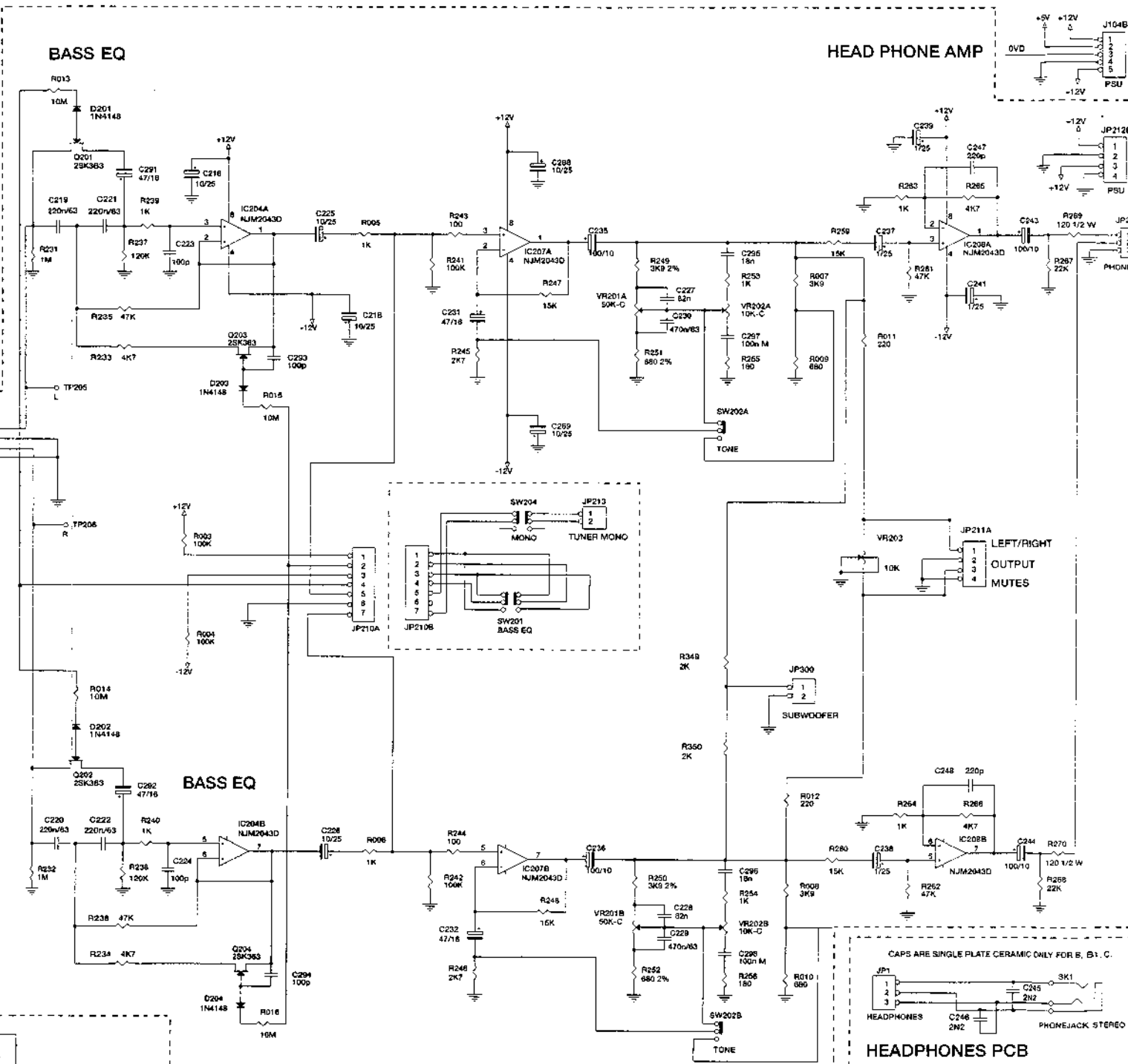
NOTE: 1. Resistors, unless otherwise specified, are 1/8 Watt.
2. All ceramic capacitors, unless otherwise specified, are 50V, 10%.

PREAMP PCB

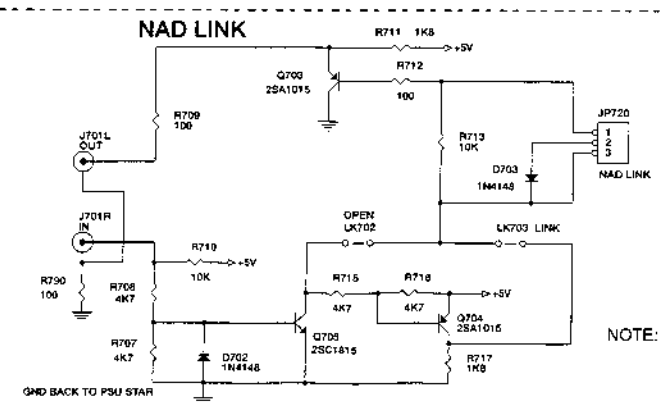


DOLBY PROCESSOR
VOLUME POT
SOUND SPACE
CDR
SIB FILTER

DOLBY PROCESSOR
VOLUME POT
SOUND SPACE
CDR
SIB FILTER



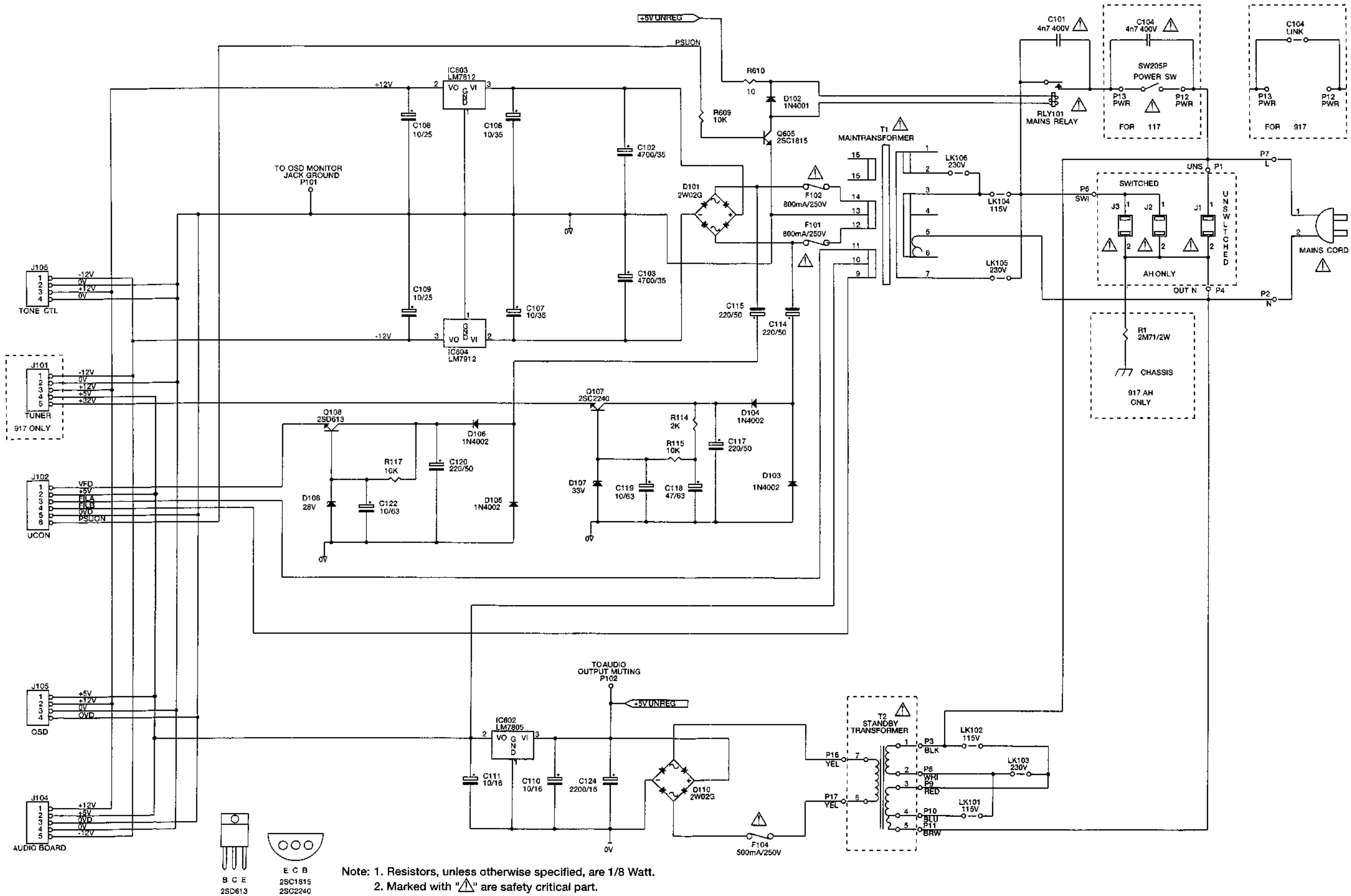
HEADPHONES PCB



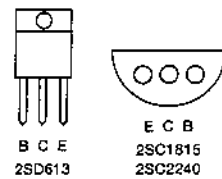
OSD +5V SUPPLY

NOTE: 1. Resistors, unless otherwise specified, are 1/8 Watt.
2. All ceramic capacitors, unless otherwise specified, are 50V, 10%.

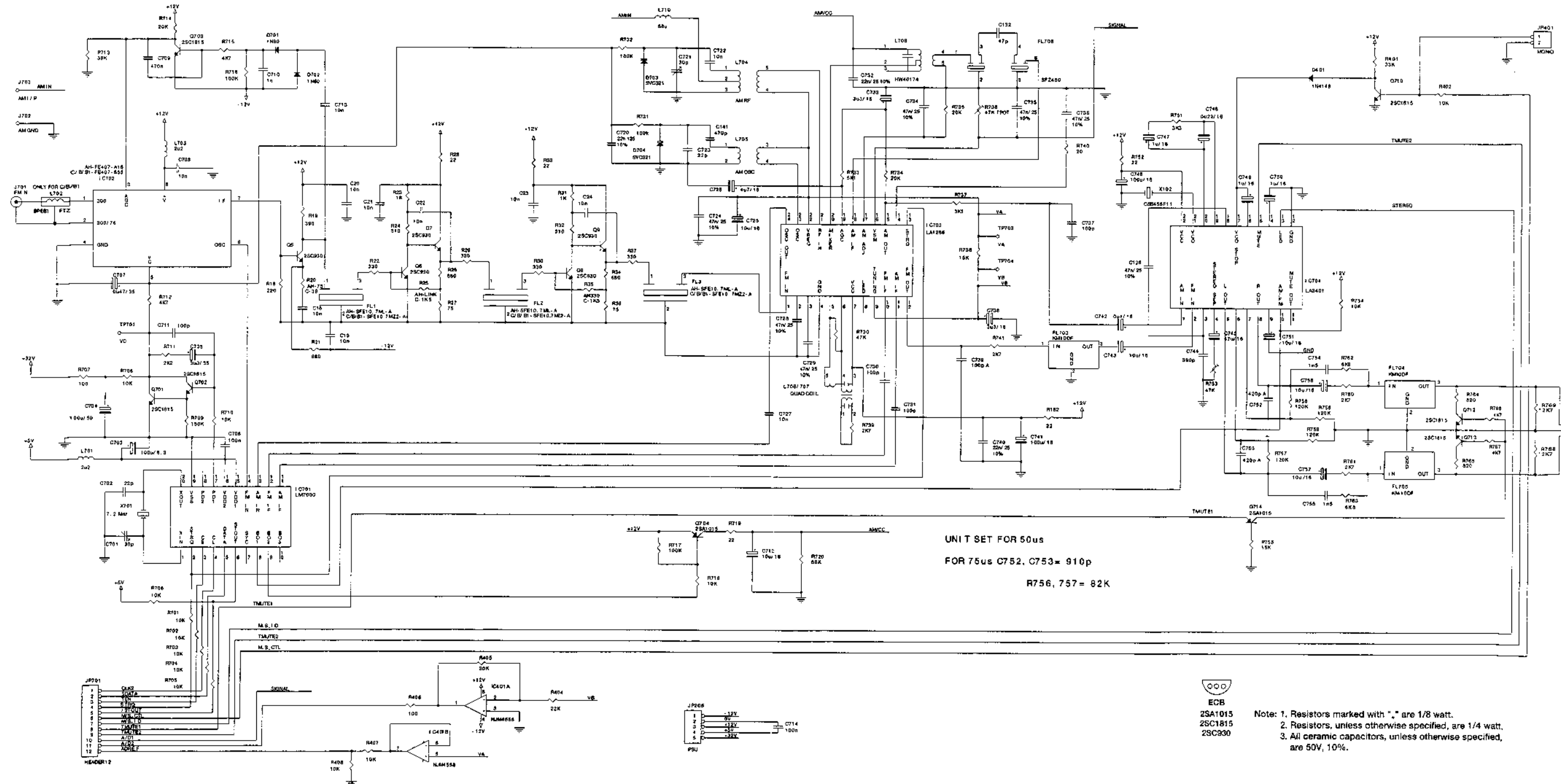
PSU PCB



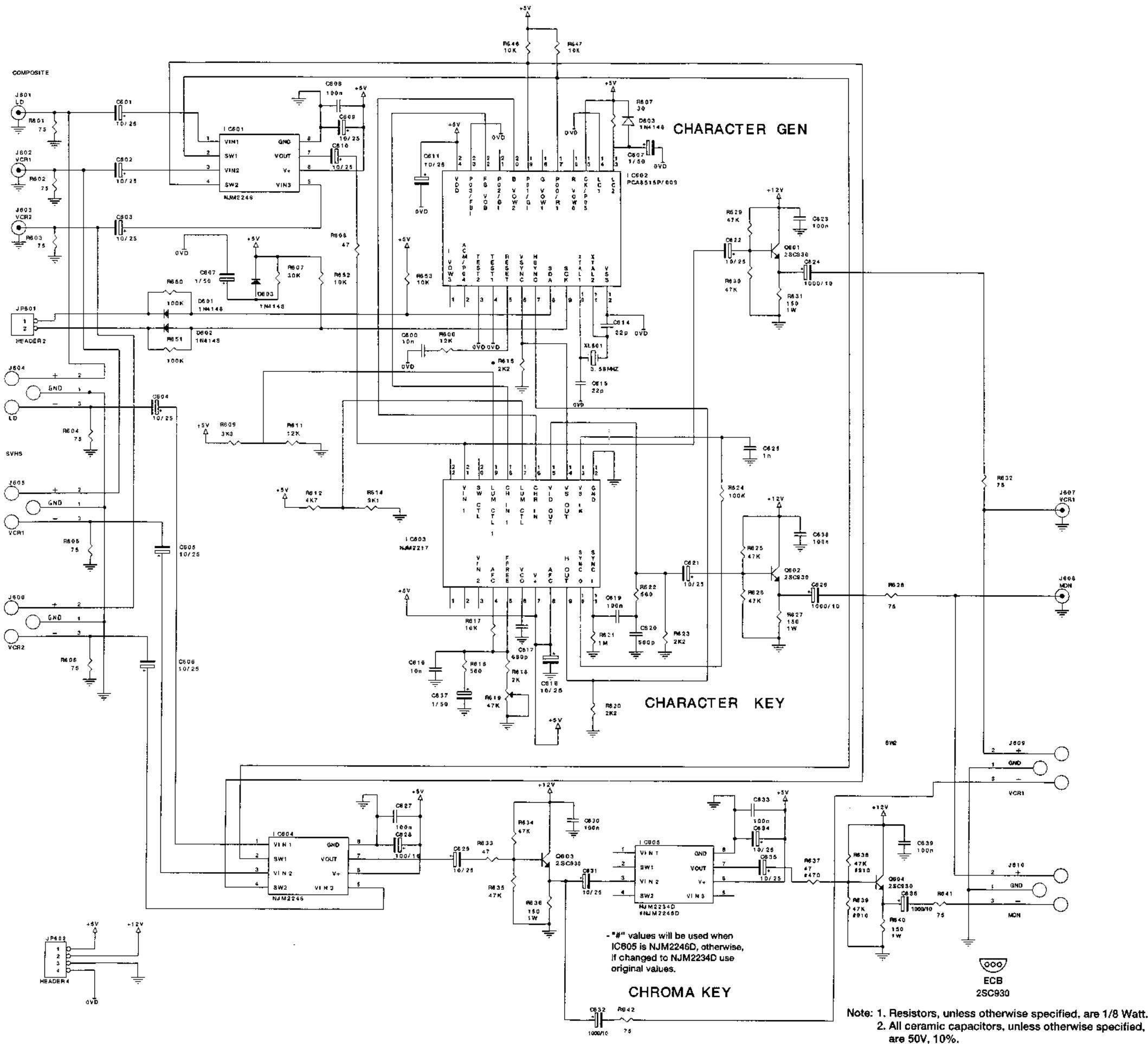
Note: 1. Resistors, unless otherwise specified, are 1/8 Watt.
 2. Marked with "▲" are safety critical part.



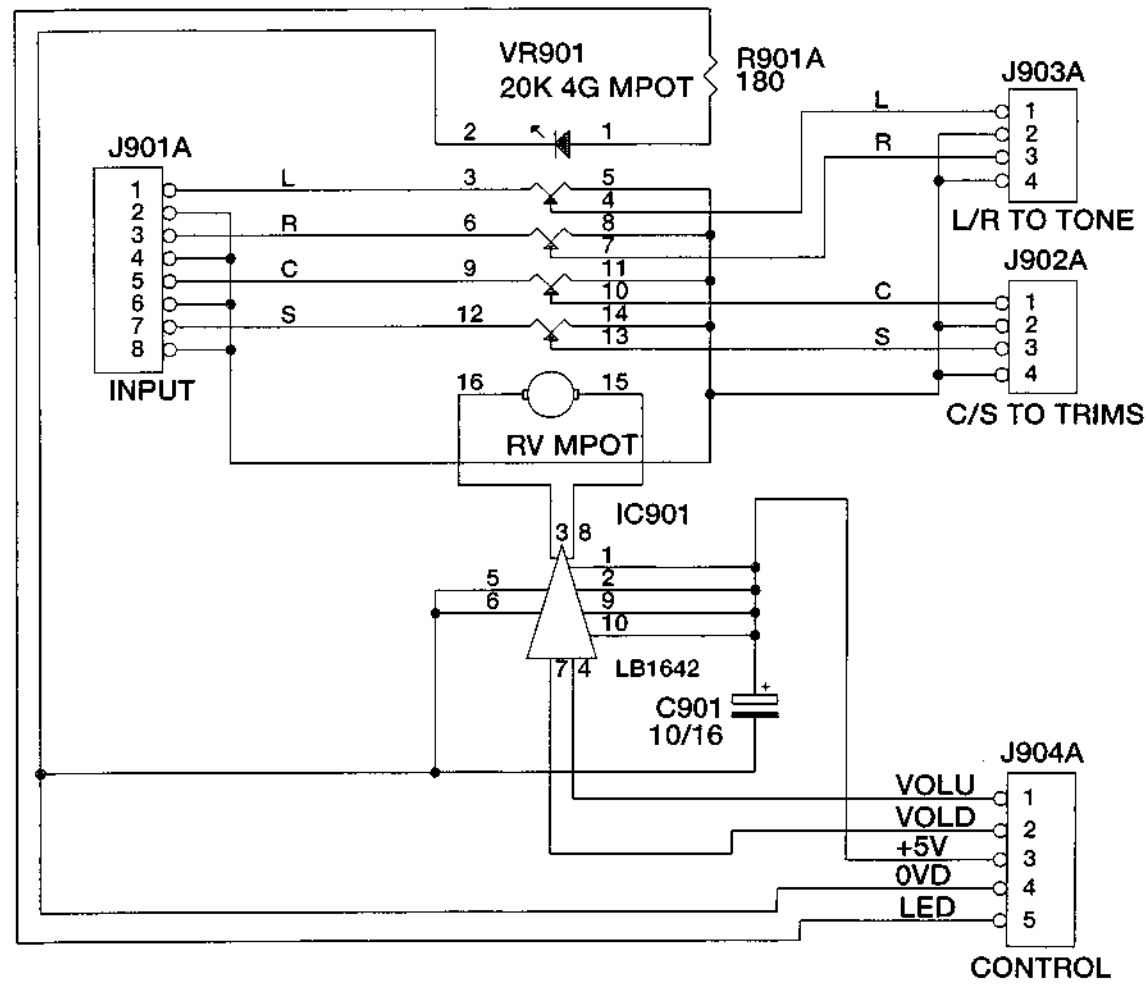
917 TUNER PCB



VIDEO PCB



MOTOR POT PCB

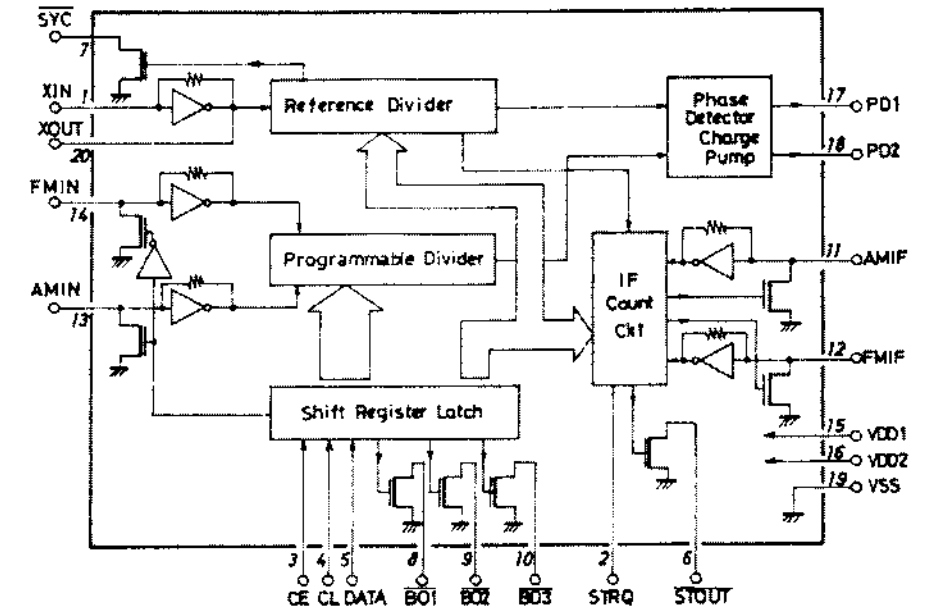


NOTE: Resistor, unless otherwise specified, is 1/8 Watt.

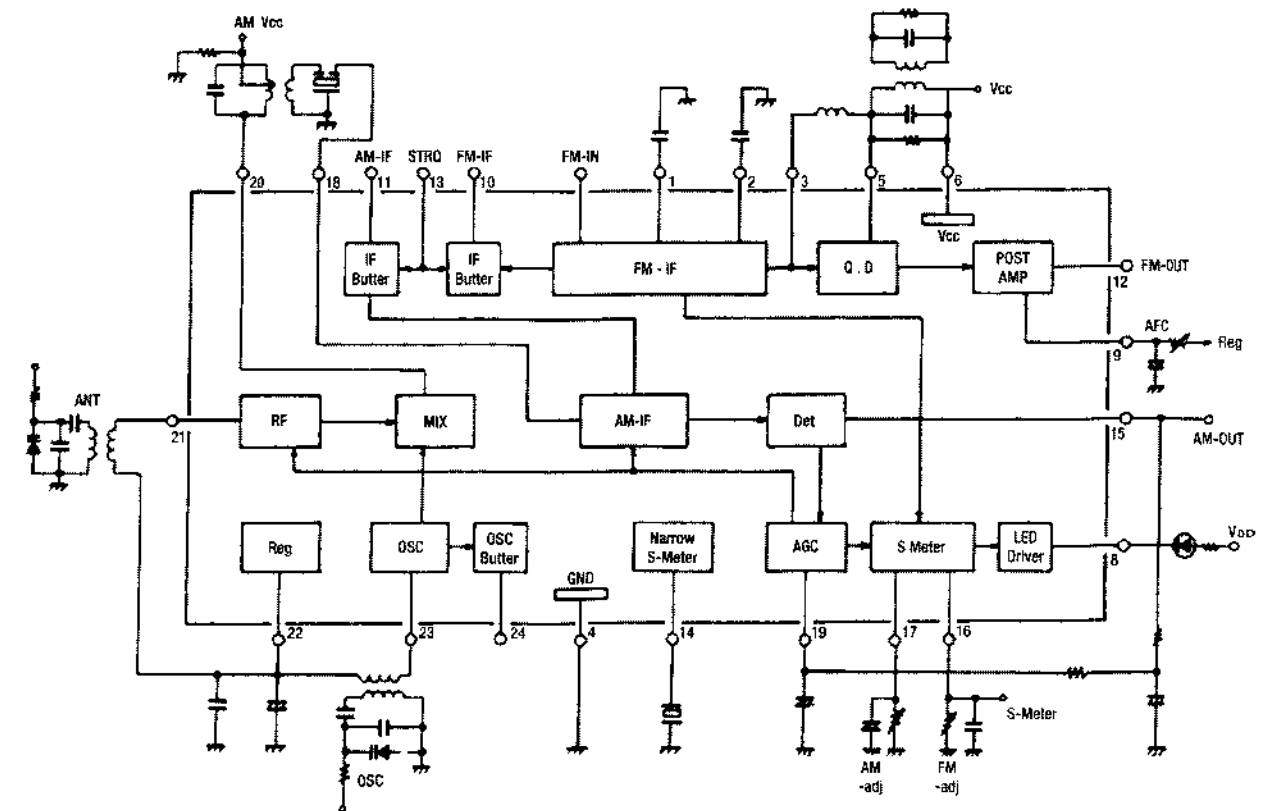
IC BLOCK DIAGRAM

TUNER (For 917 only)

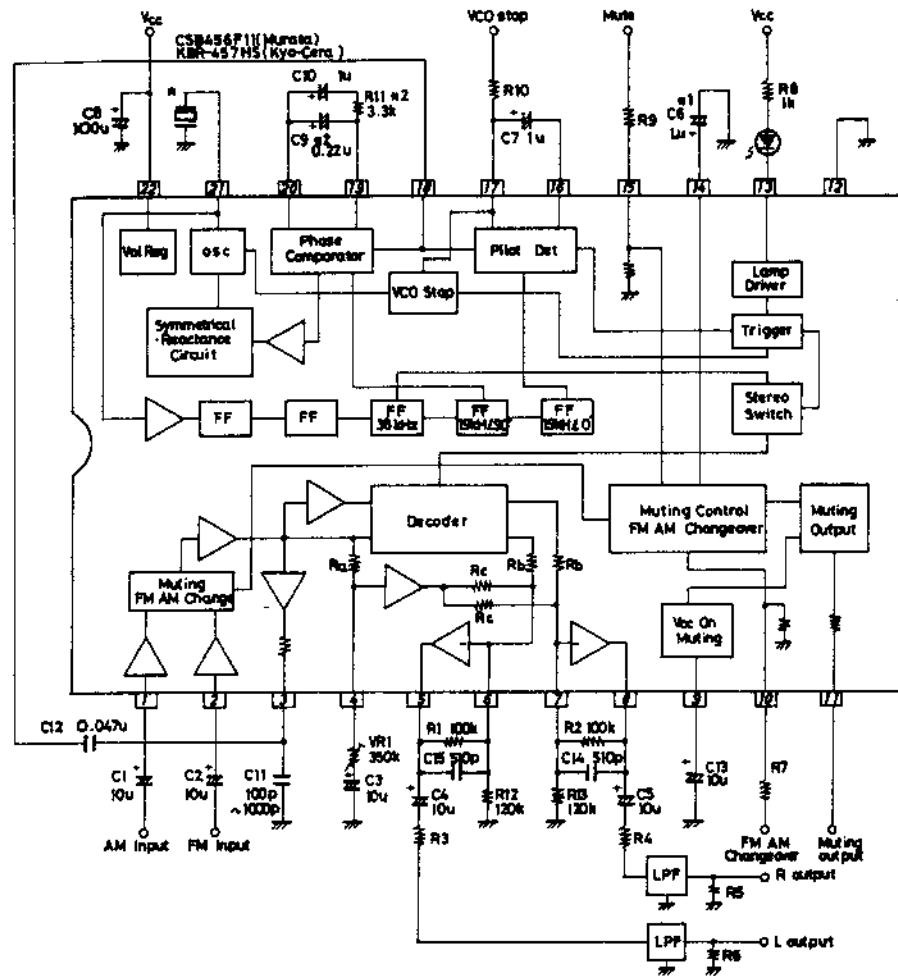
IC701: LM7000 (BLOCK DIAGRAM)



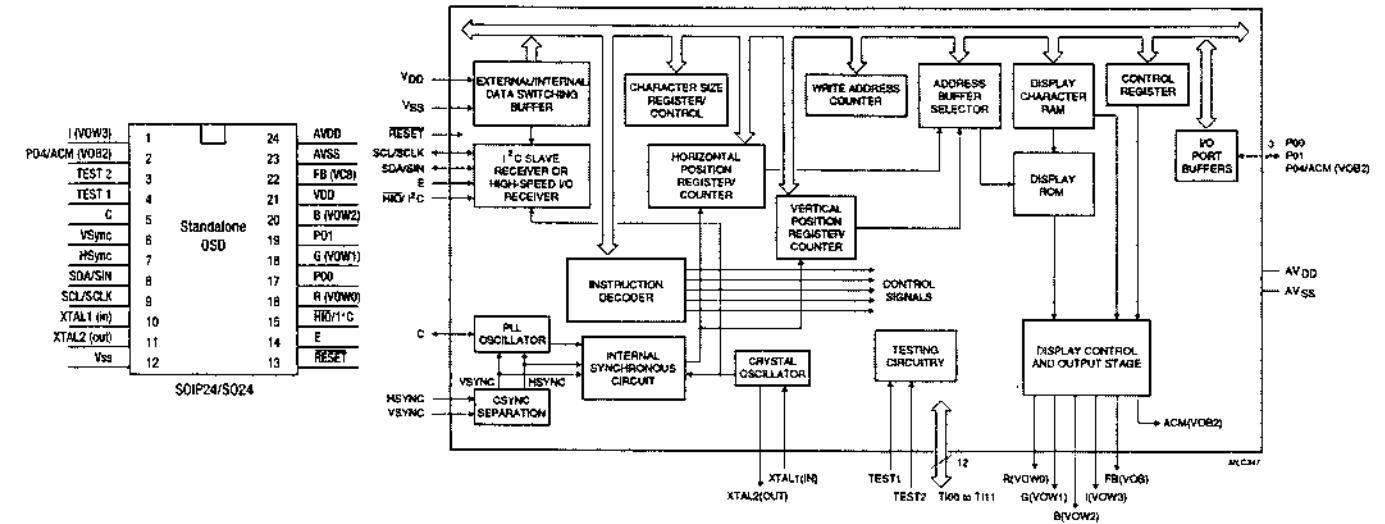
IC703: LA1266 (BLOCK DIAGRAM)



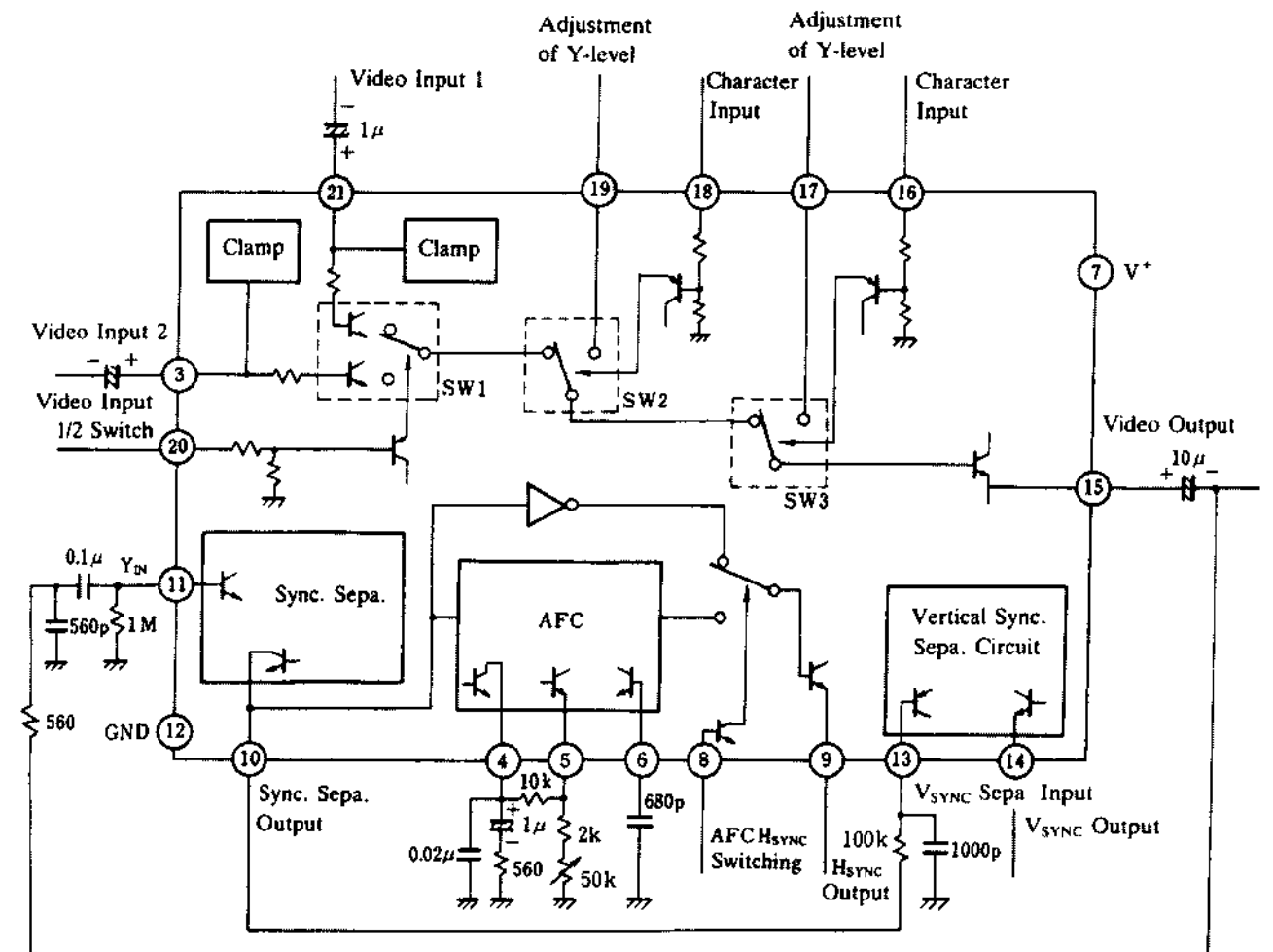
IC704: LA3401 (BLOCK DIAGRAM)



IC602: PCA8515 & BLOCK DIAGRAM



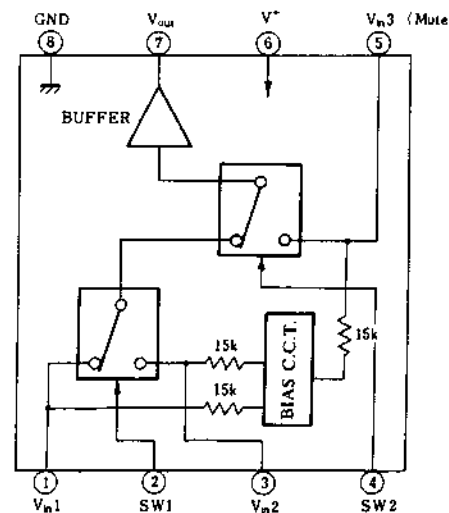
IC603: NJM2217 (BLOCK DIAGRAM)



VIDEO BOARD

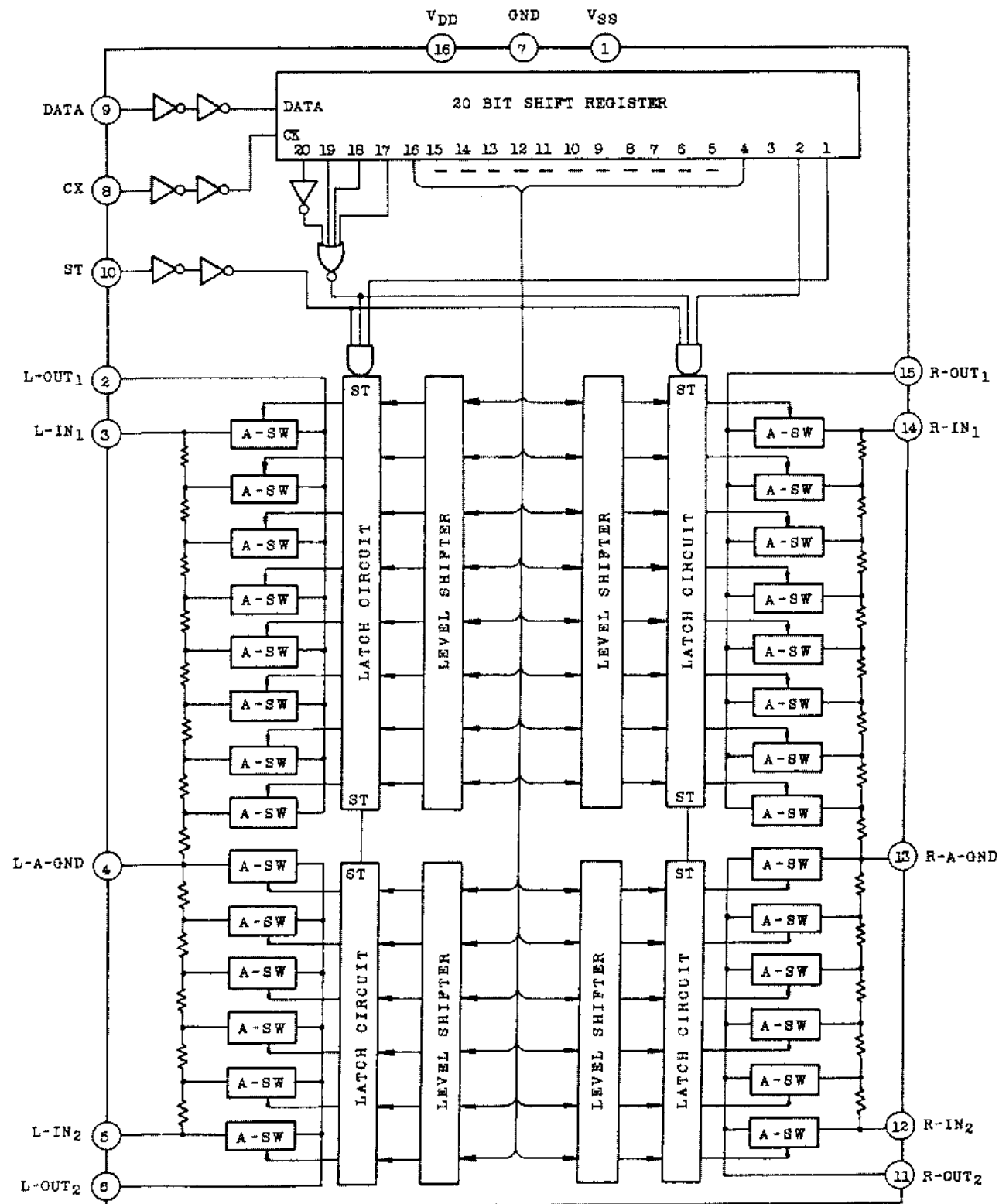
IC601/604: NJM2246

IC605: NJM2234D

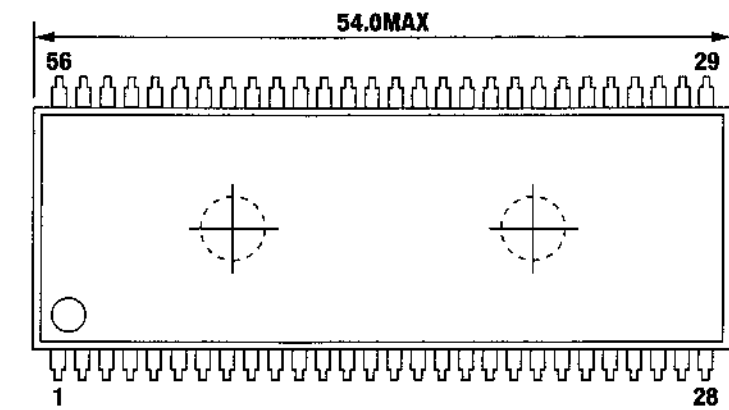
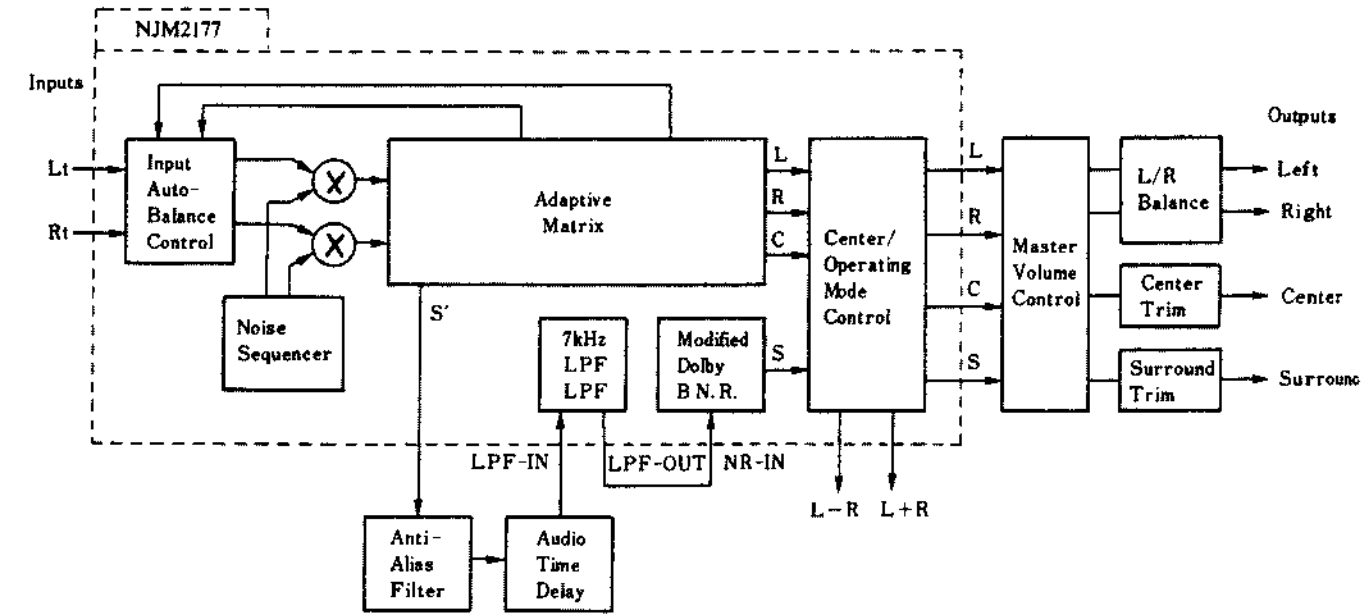


AP BOARD

IC308/309: TC 9176 ELECTRONIC VOLUME (BLOCK DIAGRAM)

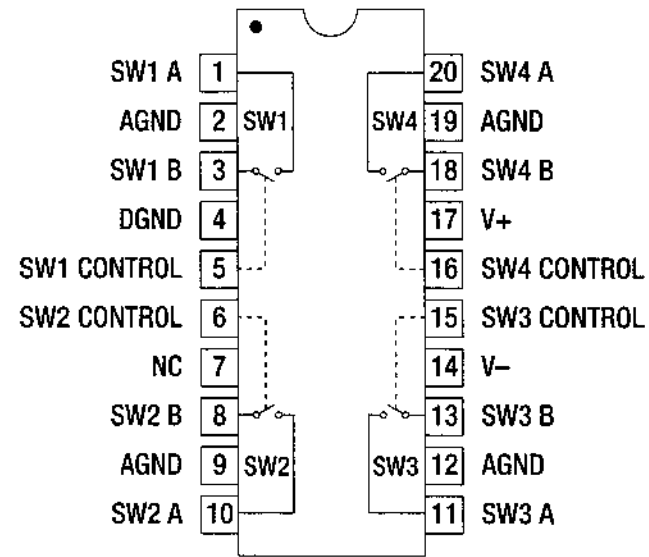


IC501: NJM2177 (DOLBY PROLOGIC)

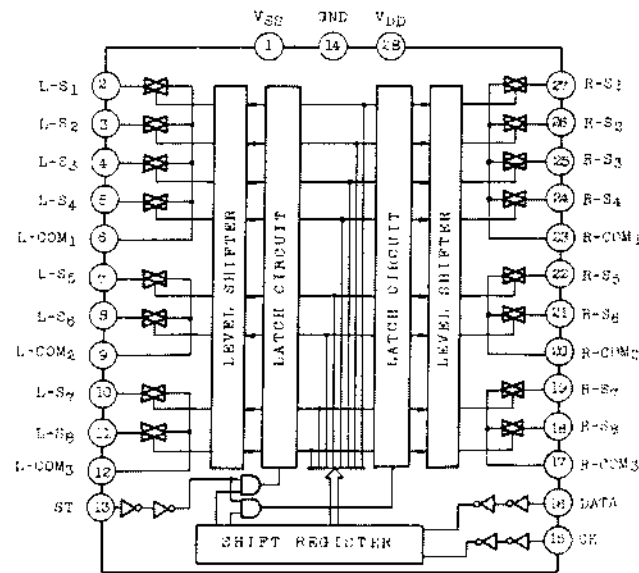


| PIN No. | Pin Name | PIN No. | Pin Name | PIN No. | Pin Name | PIN No. | Pin Name |
|---------|------------|---------|-------------|---------|-------------|---------|-------------|
| 1. | C-RECT-OUT | 15. | L-AB-IN | 29. | S-OUT | 43. | VREF |
| 2. | R-RECT-OUT | 16. | L-AB-OUT | 30. | CENTER-CNT | 44. | VREF |
| 3. | L-RECT-OUT | 17. | L-IN | 31. | MODE-CNT | 45. | NR-WT |
| 4. | S-RECT-TC | 18. | L-INBUF-OUT | 32. | L-OUT | 46. | LPF-OUT |
| 5. | C-RECT-TC | 19. | R-INBUF-OUT | 33. | R-OUT | 47. | LPF-INV-IN |
| 6. | L-BPF-OUT | 20. | R-IN | 34. | L+R-OUT | 48. | LPF-NINV-IN |
| 7. | L-BPF-IN | 21. | R-AB-OUT | 35. | L-R-OUT | 49. | NR-TC |
| 8. | L-RECT-TC | 22. | R-AB-IN | 36. | CENTER-MODE | 50. | VLR-TC3 |
| 9. | R-BPF-OUT | 23. | NOISE-CNT-E | 37. | V+ | 51. | VCS-TC3 |
| 10. | R-BPF-IN | 24. | NOISE-CNT-A | 38. | C-OUT | 52. | VCS-TC2 |
| 11. | R-RECT-TC | 25. | NOISE-CNT-B | 39. | S'-OUT | 53. | VCS-TC1 |
| 12. | GND | 26. | NOISE-REF | 40. | IREF | 54. | VLR-TC1 |
| 13. | AB-GATE | 27. | NOISE-HPF | 41. | NR-VCF | 55. | VLR-TC2 |
| 14. | AB-HOLD-TC | 28. | NOISE-LPF | 42. | NR-IN | 56. | S-RECT-OUT |

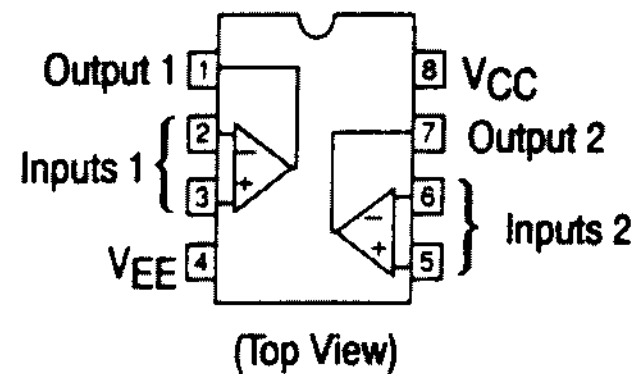
IC303: SSM2404 (QUAD ANALOG SWITCH)



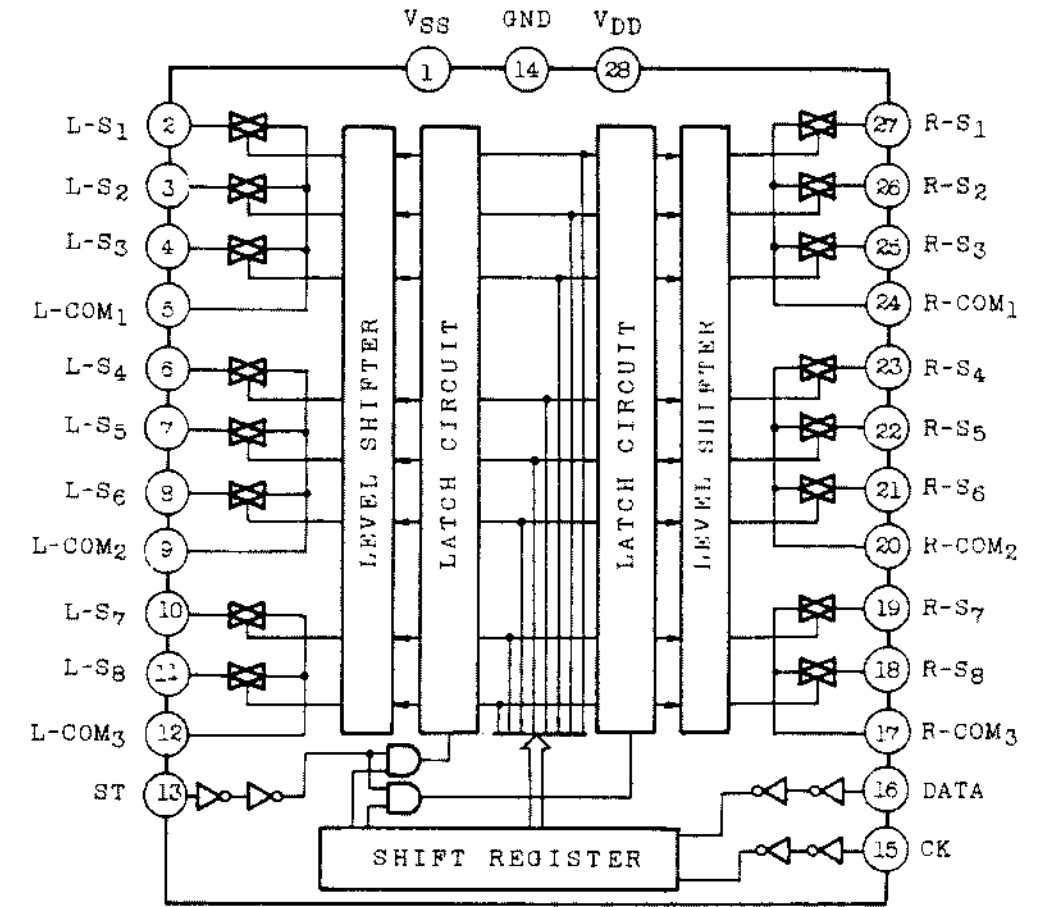
IC220: TC9164N



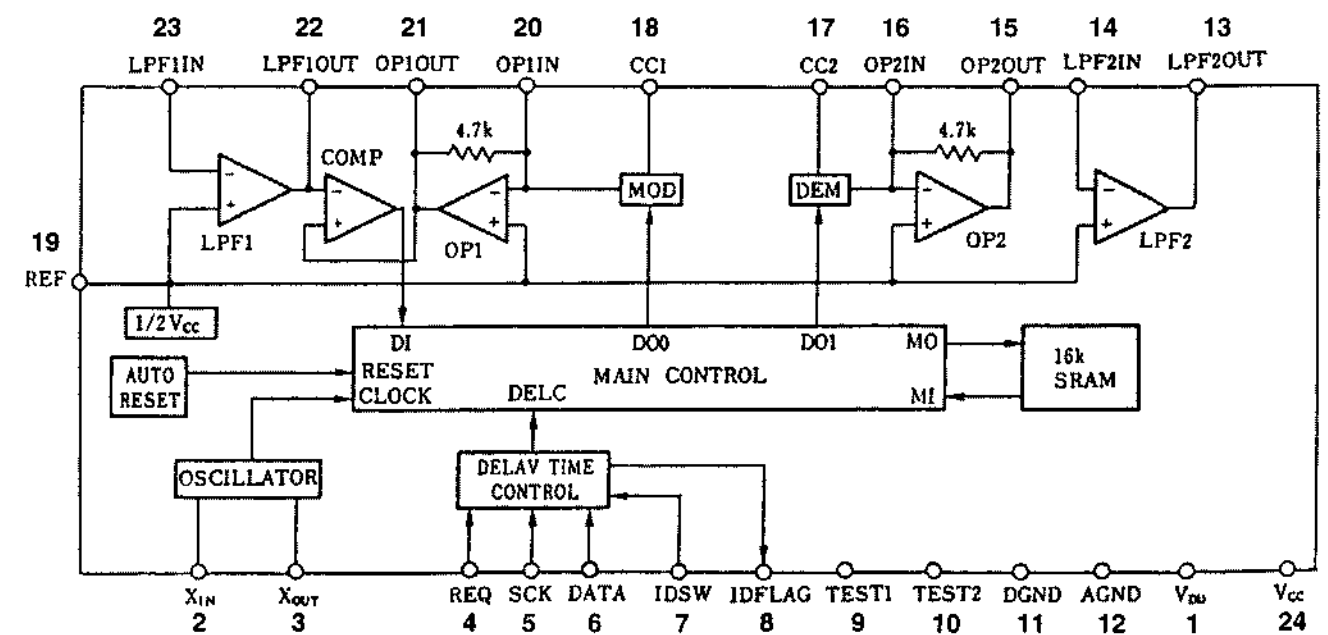
IC221: NJM4558, IC301/302: NJM2068D, IC304: NJM2043D, IC311: TL072CN, IC702: TL062 (ON PANEL BOARD)



IC502: TC9163N

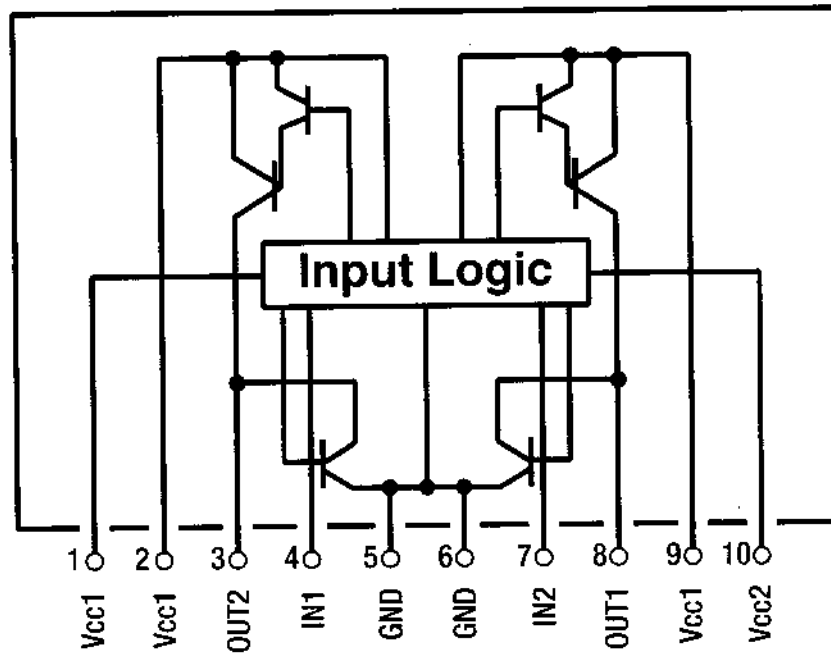


IC506: NJU 9701 (DELAY AND FILTER)



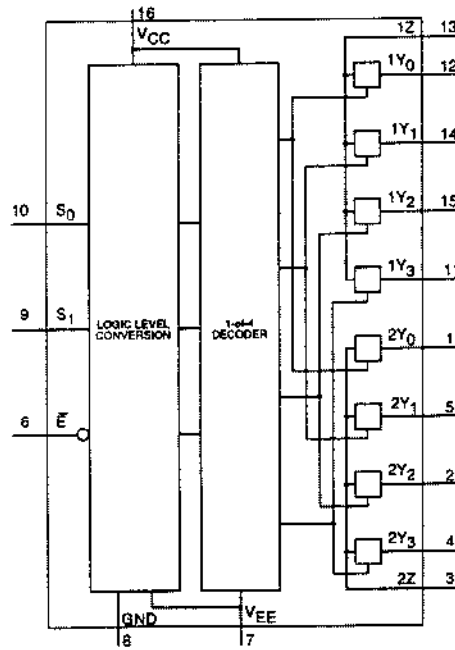
MOTOR POT BOARD

IC901: LB1642 (EQUIVALENT CIRCUIT BLOCK DIAGRAM)

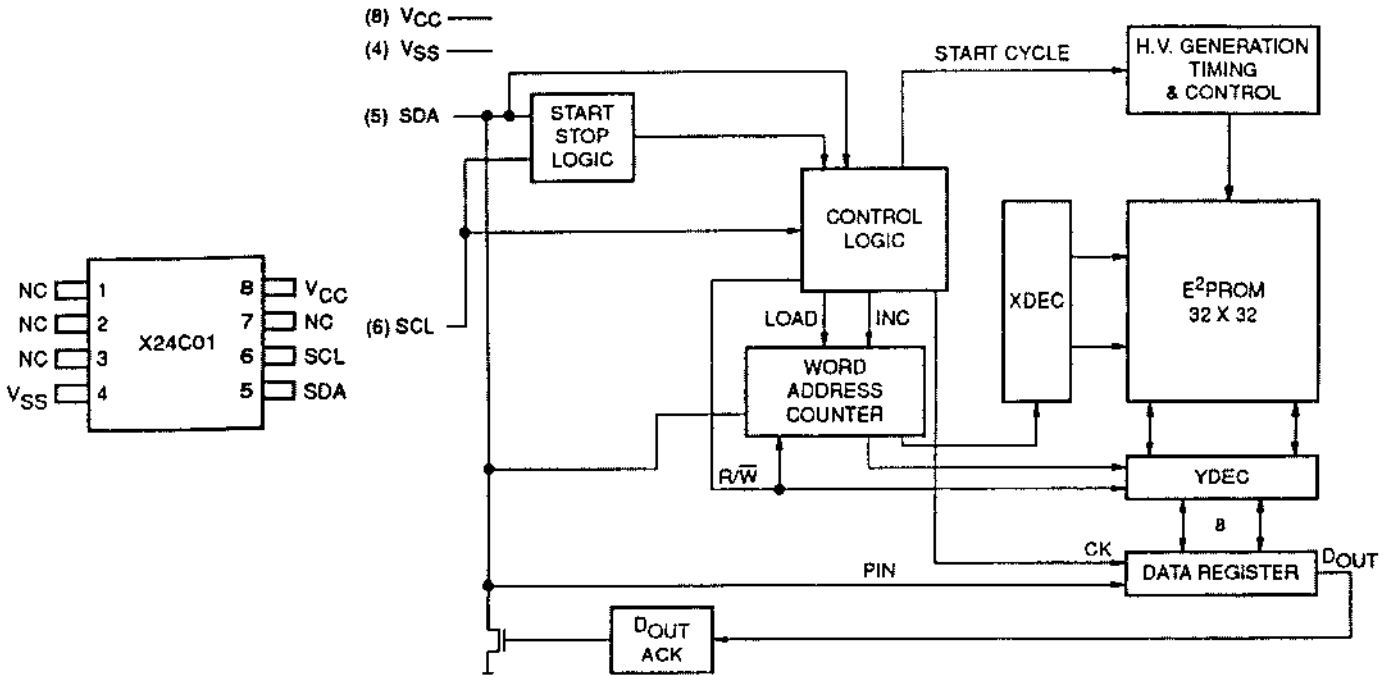


PANEL BOARD

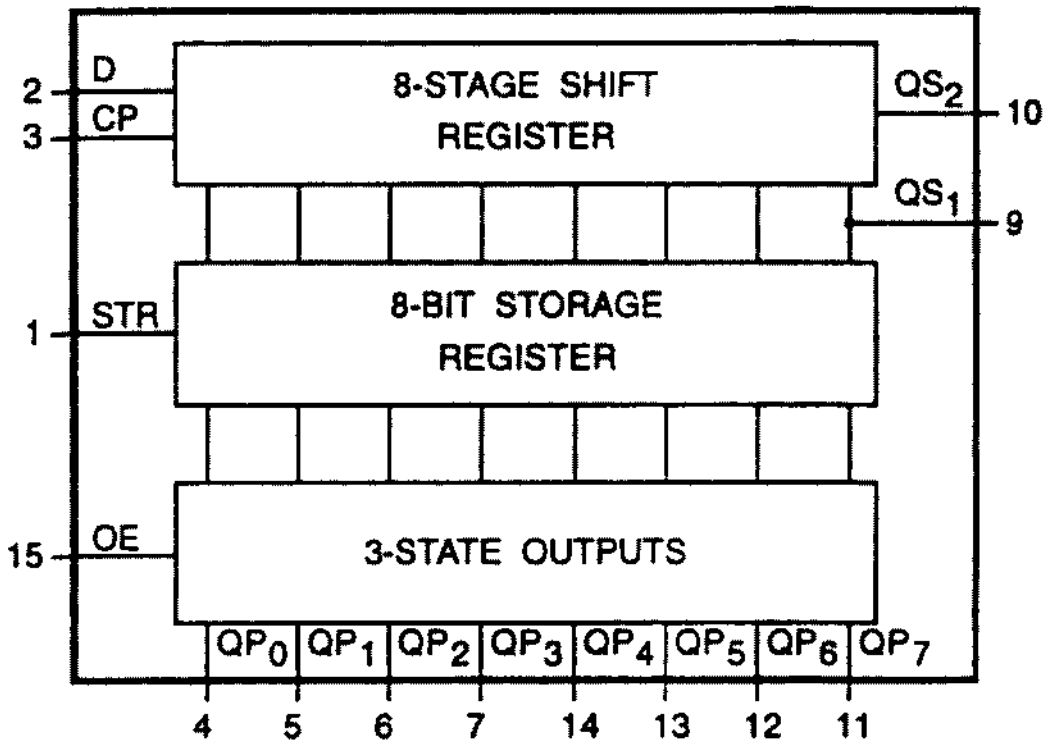
IC701: MC14052BCP



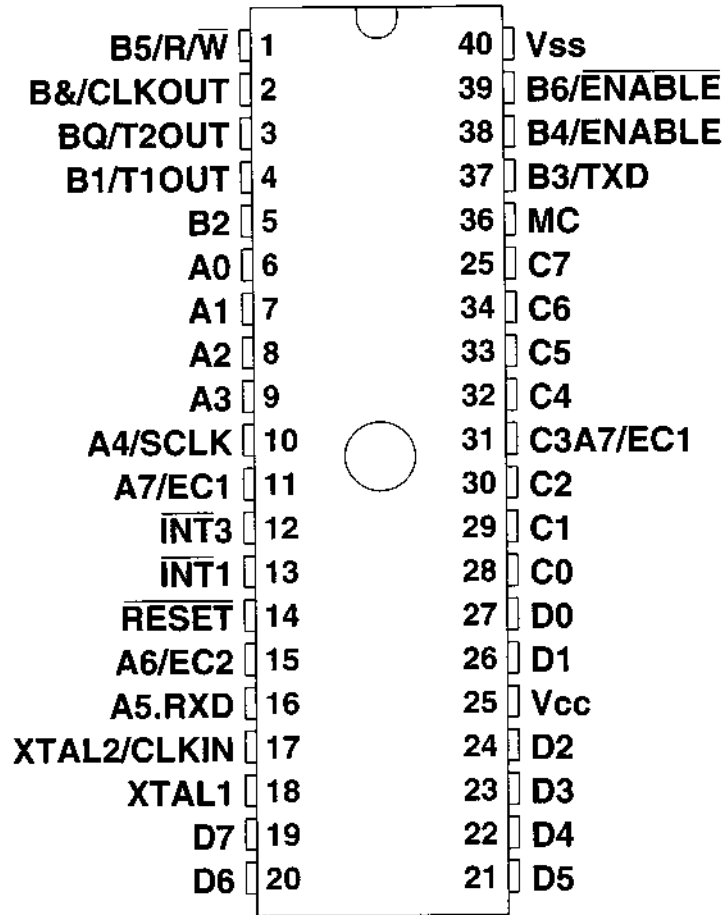
IC706: X24C01P



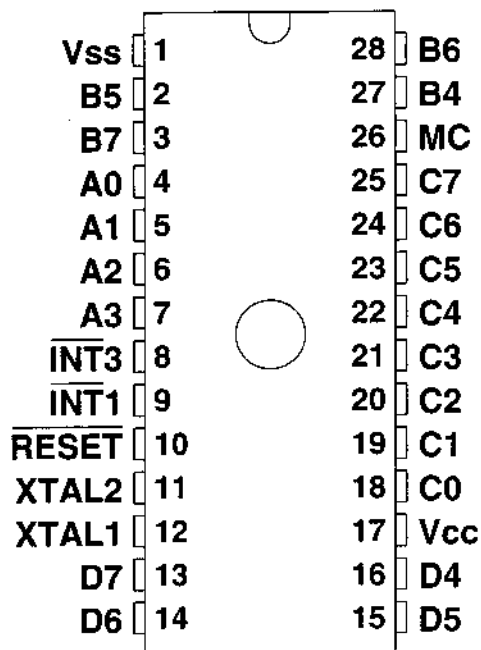
IC705: MC14094BCP



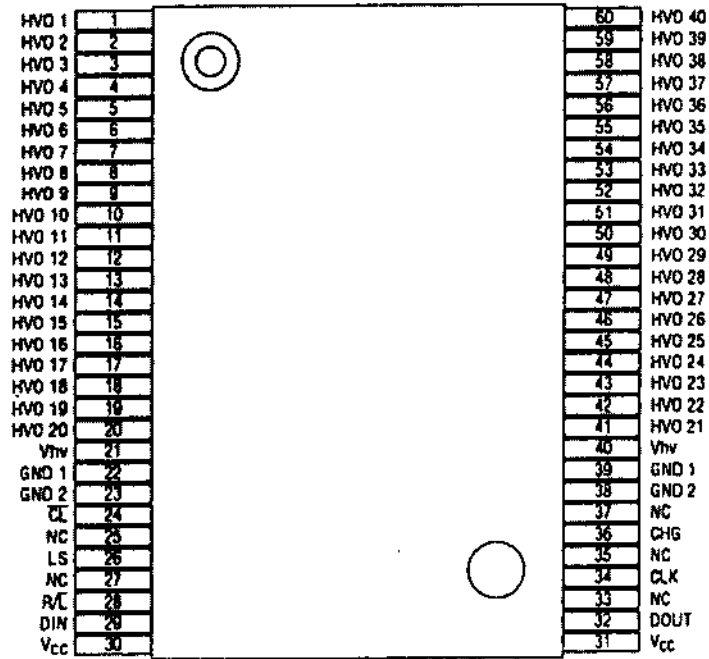
IC703: TMS70CT82



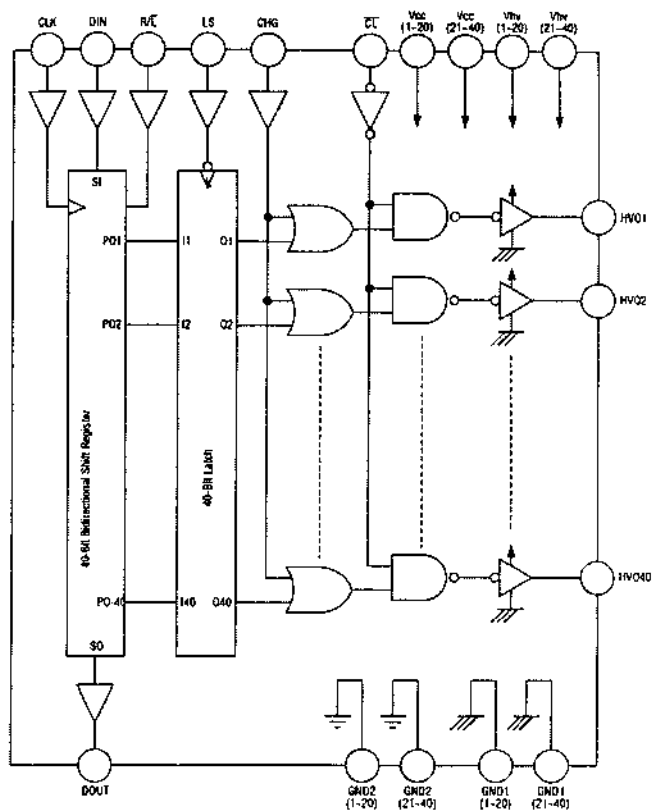
IC711: TMS70CT20



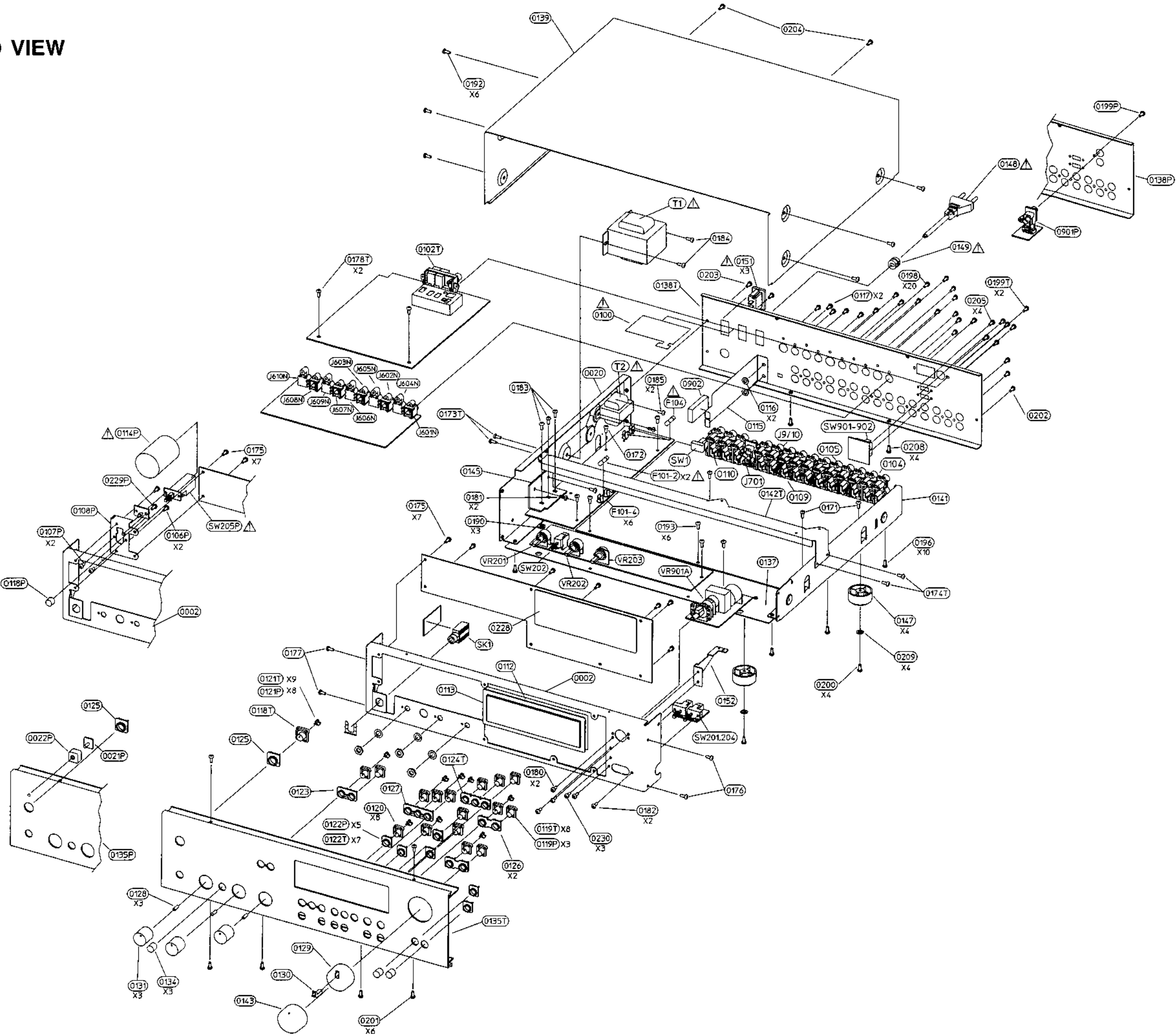
IC712: TMS1162



IC712: TMS1162 (BLOCK DIAGRAM)



EXPLODED VIEW



EXPLODED VIEW PARTS LIST

| Item | Part No | Description | Qty |
|-----------|----------------|----------------------------------|-----|
| FH101-4 | 4131-9131-0 | FUSE HOLDER 6.5MM PICTH RECT | 6 |
| 0002 | N14023390-2 | SUBFACIA | 1 |
| 0020 | N14023430-1 | LEFT SIDE PANEL | 1 |
| 0021P | N37145706-0 | LED LENS | 1 |
| 0022P | 4152-1701-0 | LED BEZEL | 1 |
| 0100*AH △ | N41520571-0 | AC OUTLET COVER PLATE AH VERSION | 1 |
| 0102T*AH | N21070641-0 | ANTENNA TERMINAL F-TYPE | 1 |
| 0102T*B,C | N21070681-0 | ANTENNA TERMINAL DIN-TYPE | 1 |
| 0104-0105 | N21038506-2 | 6P RCA JACK R/W NI | 2 |
| 0106P | 2904-3006-4000 | MACHINE SCREW 3X6MM | 2 |
| 0107P | 2904-3006-4000 | MACHINE SCREW 3X6MM | 2 |
| 0108P | 4132-2641-0 | POWER SWITCH BRACKET | 1 |
| 0109-0110 | N21038506-2 | 6P RCA JACK R/W NI | 2 |
| 0112 | N37145206-0 | FILTER 156X53X0.5MM | 1 |
| 0113 | N37143426-0 | DISPLAY LENS | 1 |
| 0114P △ | 1660-0620-0 | SHRINKABLE TUBE | 1 |
| 0115 | 1454-1751-0 | SHIELD PLATE 80MM HIGH | 1 |
| 0116 | 2836-3005-0 | HEX NUT M3X0.5P | 2 |
| 0117 | 2904-3006-3000 | MACHINE SCREW 3X6MM (BLK) | 2 |
| 0118P | N2437510B-0 | DIA 9.5 GLOSS POWER BUTTON | 1 |
| 0118T | N2437720B-0 | SINGLE LENS POWER BUTTON | 1 |
| 0119P | N24377301-0 | SINGLE BUTTON (BLACK) | 3 |
| 0119T | N24377301-0 | SINGLE BUTTON (BLACK) | 8 |
| 0120 | N24377401-0 | SINGLE LENS BUTTON | 8 |
| 0121P | N37143306-0 | BUTTON LENS (CLEAR) | 8 |
| 0121T | N37143306-0 | BUTTON LENS (CLEAR) | 9 |
| 0122P | N41520131-0 | SINGLE BEZEL | 5 |
| 0122T | N41520131-0 | SINGLE BEZEL | 7 |
| 0123 | N41520141-0 | DUAL LINKED BEZEL | 1 |
| 0124T | N41520151-0 | TRIPLE BEZEL | 1 |
| 0125 | N41520161-0 | POWER BEZEL | 1 |
| 0126 | N41520171-0 | DUAL BEZEL | 2 |
| 0127 | N41520181-0 | TRIPLE LINKED BEZEL | 1 |
| 0128 | N41520041-0 | KNOB POINTER | 3 |
| 0129 | N24377601-0 | 35MM KNOB CORE | 1 |
| 0130 | N24377706-0 | 35MM KNOB LENS | 1 |
| 0131 | N24375701-1 | KNOB 18.5MM BASS/TREBLE/BALANCE | 3 |
| 0134 | N24376001-0 | LONG BUTTON 8.0MM (INPUT SELECT) | 3 |
| 0135P | N14024021-0 | FASCIA | 1 |
| 0135T | N14620701-0 | FASCIA | 1 |
| 0137 | N14023400-0 | BASE | 1 |
| 0138P*AH | N14023410-0 | REAR PANEL AH VERSION | 1 |
| 0138P*C | 1402-4041-1 | REAR PANEL C VERSION | 1 |
| 0138T*AH | N14023411-1 | REAR PANEL AH VERSION | 1 |
| 0138T*B,C | 1402-3481-1 | REAR PANEL B,C VERSION | 1 |

| Item | Part No | Description | Qty |
|-----------|----------------|-------------------------------------|-----|
| 0139 | N14023420-0 | TOP COVER | 1 |
| 0141 | N14023440-0 | RIGHT SIDE PANEL | 1 |
| 0142T | N14023450-0 | STRAP | 1 |
| 0143 | N14023460-0 | 35MM KNOB SKIN | 1 |
| 0145 | N54000891-0 | HEATSINK | 1 |
| 0147 | N41519371-1 | RUBBER FOOT | 4 |
| 0148*AH △ | N70093100-1 | AC CORD AH VERSION | 1 |
| 0148*C △ | N70093110-0 | AC CORD C VERSION | 1 |
| 0148T*B △ | N70095110-1 | AC CORD B VERSION | 1 |
| 0149 △ | N41519461-0 | STRAIN RELIEF BUSHING | 3 |
| 0151*AH △ | N21035802-0 | AC OUTLET 125V 15A UL AH VERSION | 1 |
| 0152 | N41520641-0 | VR BRACKET | 1 |
| 0171 | 2954-3008-0000 | TAPPING SCREW 3X8MM B-TITE YEL | 2 |
| 0172 | 2954-3008-0000 | TAPPING SCREW 3X8MM B-TITE YEL | 1 |
| 0173T | 2954-3008-0000 | TAPPING SCREW 3X8MM B-TITE YEL | 2 |
| 0174T | 2954-3008-0000 | TAPPING SCREW 3X8MM B-TITE YEL | 2 |
| 0175 | 2904-3006-4000 | MACHINE SCREW 3X6MM | 7 |
| 0176 | 2954-3008-0000 | TAPPING SCREW 3X8MM B-TITE YEL | 2 |
| 0177 | 2954-3008-0000 | TAPPING SCREW 3X8MM B-TITE YEL | 2 |
| 0178T | 2954-3008-0000 | TAPPING SCREW 3X8MM B-TITE YEL | 2 |
| 0180 | 2954-3006-0000 | TAPPING SCREW 3X6MM B-TITE YEL | 2 |
| 0181 | 2954-3006-0000 | TAPPING SCREW 3X6MM B-TITE YEL | 2 |
| 0182 | 2904-3008-4000 | MACHINE SCREW 3X8MM | 2 |
| 0183 | 2904-3012-4000 | MACHINE SCREW 3X12MM | 3 |
| 0184 | 2900-4006-3010 | SCREW M4X0.5X6MM W/FLAT WASHER | 2 |
| 0185 | 2900-3006-4000 | MACHINE SCREW 3X6MM | 2 |
| 0190 | 2836-3005-0 | HEX NUT M3X0.5P | 3 |
| 0192 | 2900-4006-3010 | SCREW M4X0.5X6MM W/FLAT WASHER | 6 |
| 0193 | 2900-3014-3000 | MACHINE SCREW 3X14MM (BLK.ZN) | 6 |
| 0196 | 2954-3006-3000 | TAPPING SCREW 3X6MM B-TITE (BLK.ZN) | 10 |
| 0198 | 2954-3008-3000 | TAPPING SCREW 3X8MM B-TITE B | 20 |
| 0199P | 2954-3008-3000 | TAPPING SCREW 3X8MM B-TITE B | 1 |
| 0199T | 2954-3008-3000 | TAPPING SCREW 3X8MM B-TITE B | 2 |
| 0200 | 2954-3008-3000 | TAPPING SCREW 3X8MM B-TITE B | 4 |
| 0201 | 2954-3008-3000 | TAPPING SCREW 3X8MM B-TITE B | 6 |
| 0202 | 2954-3008-3000 | TAPPING SCREW 3X8MM B-TITE B | 1 |
| 0203 | 2954-3006-3000 | TAPPING SCREW 3X6MM B-TITE (BLK.ZN) | 2 |
| 0204 | 2954-3008-3000 | TAPPING SCREW 3X8MM B-TITE B | 2 |
| 0205 | 2900-2604-3000 | MACHINE SCREW 2.6X4MM (BLK.ZN) | 4 |
| 0208 | 2954-3008-3000 | TAPPING SCREW 3X8MM B-TITE B | 4 |
| 0209 | 2842-3367-0 | METAL WASHER ID=3.3 OD=6.7 | 4 |
| 0228 | N24600990-0 | DISPLAY PANEL | 1 |
| 0229P | 2954-3006-0000 | TAPPING SCREW 3X6MM B-TITE (YEL.ZN) | 1 |
| 0230 | 2904-3006-4000 | MACHINE SCREW 3X6MM NICKEL | 3 |
| 0901P | 2113-0700-0 | RCA JACK R/W NI-PLATED | 1 |

ELECTRICAL PARTS LIST

| Item | Part No | Description | Qty |
|------------------------|----------------|---|-----|
| 0902 | 4152-0561-0 | SHIELD PLATE CUSHION | 1 |
| F101-2*AH Δ | 5120-0010-0 | FUSE 250V 800MA TIME LAG UL/CSA | 2 |
| F104*AH Δ | N51005010-1A | FUSE 250V 500MA SLOW BLOW UL/CSA | 1 |
| F101-2T*B,C Δ | 5120-0011-0 | FUSE 250V 800MA TIME LAG LBC VDE/SEMKO | 2 |
| F101-2P*C Δ | 5120-0011-0 | FUSE 250V 800MA TIME LAG LBC VDE/SEMKO | 2 |
| F104T*B,C&P*C Δ | N51005010-1B | FUSE 250V 500MA SLOW BLOW LBC VDE/SEMKO | 1 |
| T1 Δ | N18062104-0 | TRANSFORMER MAIN 614C | 1 |
| T2 Δ | N18062096-0 | TRANSFORMER EI35 115/230VDC 160MA | 1 |
| J601N-J603N | 21038201-0 | 1P RCA SOCKET,YELLOW | 3 |
| J604N-J606N | 21038301-0 | 1P S-VHS SOCKET | 3 |
| J607N-J608N | 21038201-0 | 1P RCA SOCKET,YELLOW | 2 |
| J609N-J610N | 21038301-0 | 1P S-VHS SOCKET | 2 |
| J701 | N21039102-0 | 2P RCA JACK ORG | 1 |
| J9/10 | N21037604-2 | 4P RCA JACK R/W NI | 1 |
| SK1 | N21038401-0 | 6MM PHONE JACK JY6312 W/CLIP | 1 |
| SW1 | N52003261-0-01 | SLIDE SWITCH 2P3T | 1 |
| SW201,SW204 | N52003271-0-01 | DUAL PUSH SWITCH DPDT (SPUN22) | 1 |
| SW202 | N52003121-0-01 | 2P2T ALPS SPUN W/O FRAME | 1 |
| SW205P Δ | 5200-3481-0 | POWER SWITCH TV-3 3A/250V | 1 |
| SW901,SW902 | N52003251-0-01 | SLIDE SWITCH DPDT | 2 |
| VR201 | N47503676-0 | VR BASS 2X50KC W/WASHER & NUT | 1 |
| VR202 | N47503646-0 | VR TREBLE 2X10KC W/WASHER & NUT | 1 |
| VR203 | N47503656-0 | VR BALANCE 1X10KW W/WASHER & NUT | 1 |
| VR901A | N47503706-0 | MOTOR DRIVE RM (20KBX4) RK16314MCL | 1 |

NOTE : - THE COMPONENTS IDENTIFIED BY Δ MARK ARE CRITICAL FOR RISK OF FIRE AND ELECTRICAL SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.


- <*AH> : USA, CANADIAN MODEL ONLY.


<*B> : UK MODEL ONLY.

<*C> : EUROPEAN MODEL ONLY.

- ITEMS WITH THE EXTENSION "T" ARE FOR THE 917 ONLY,
ITEMS WITH THE EXTENSION "P" ARE FOR THE 117 ONLY,
ALL OTHER ITEMS ARE COMMON PARTS.

| Reference No | Part Number | Description |
|--|--|--|
| PUSH SWITCH BOARD PC BOARD Δ | 1720-300C-0103 MI-20300C-01-S MI-21460G-01-S | PCB NO COMPONENTS PCB ASSEMBLY (917) PCB ASSEMBLY (117) |
| SWITCH SW201 | N52003271-0-01 | DUAL PUSH SWITCH DPDT (SPUN22) |
| SLIDE SWITCH BOARD PC BOARD Δ | 1720-300G-0103 MI-20300G-01-S MI-21460H-01-S | PCB NO COMPONENTS PCB ASSEMBLY (917) PCB ASSEMBLY (117) |
| SWITCHES SW901-SW902 | N52003251-0-01 | SLIDE SWITCH DPDT |
| MOTOR POT ASSEMBLY PC BOARD Δ | 1720-300D-0103 MI-20300D-01-S MI-21460C-01-S | PCB NO COMPONENTS PCB ASSEMBLY (917) PCB ASSEMBLY (117) |
| ICS IC901A | N31303410-0 | IC LB1642 MOTOR DRIVER |
| CAPACITORS C901A | 157D-106M-5-II | CE 16V 10 μ F 20% |
| VARIABLE RES. VR901A | N47503706-0 | MOTOR DRIVE RM (20KBX4) RK16314MCL |
| HEADPHONE ASSEMBLY PC BOARD Δ | 1720-300E-0103 MI-20300E-01-S MI-21460D-01-S | PCB NO COMPONENTS PCB ASSEMBLY (917) PCB ASSEMBLY (117) |
| PHONE JACK SK1 | N21038401-0 | 6MM PHONE JACK JY6312 W/CLIP |
| PANEL ASSEMBLY PC BOARD Δ | 1720-320A-0001 MI-20320A-01-S MI-21550A-01-S | FRONT PANEL PCB - NO COMPONENTS PCB ASSEMBLY (917) PCB ASSEMBLY (117) |
| ICS IC701T IC702T IC703 IC705 IC706 IC707-IC709 | N31303840-0 N31303590-0 3130-4930-0 N31303600-0 N31303450-0 N31303600-0 | MC14052BCP QUAD ANALOG SWITCH DUAL JFET OPAMP TL062 IC TMS77C82 OTP BLANK MC14094BCP 8-BIT SIPO SR 3S IC X24COIP XICOR EEPROM MC14094BCP 8-BIT SIPO SR 3S |

| Reference No | Part Number | Description |
|---|--|---|
| IC710 IC711 IC712 | N89100033-0 N31303630-0 N31303640-0 | IR RECEIVER HC-341F 70CT20 DISPLAY MPX MSC1162 ANODE/GRID DRIVER |
| TRANSISTORS Q701-Q702T | 4860-0700-5 | TR 2SC1815GR |
| CAPACITORS C701T C702T C703-C704 C707,C714T C721 C722-C723 C724 C725 C790T | 153F-682K-5-KW 150F-104K-5-II 15CH-330J-5-IG 157D-106M-5-II 157E-225M-5-EI 15CH-330J-5-IG 157E-225M-5-EI 157F-106M-5-IU 150F-104K-5-II | CM 50V 6800pF 10% CC 50V 0.1uF 10% CAP-TEMP 0/60 33pF 5% CE 16V 10u 20% CE 25V 2.2uF 20% CAP-TEMP 0/60 33pF 5% CE 25V 2.2uF 20% CE 50V 10uF 20% CC 50V 0.1uF 10% |
| DIODES D701,D707 D714-D717P D714-D717T D728,D730 D740P D740T | 4804-1480-C 3700-3513-Y 3700-4509-Y 4804-1480-C 3700-3513-Y 3700-4509-Y | DIODE 1N4148 LED 3MM YELLOW LED 2MM YELLOW DIODE 1N4148 LED 3MM YELLOW LED 2MM YELLOW |
| RESISTORS R702T R703T R706T-R707T R724T R725P R728P-R738P R791P R792P | 4701-105J-C 4701-103J-C 4701-103J-C 4701-561J-C 4701-103J-C 4701-472J-C 4701-331J-C 4701-681J-C | RCF 1M OHM 1/8W 5% RCF 10K OHM 1/8W 5% RCF 10K OHM 1/8W 5% RCF 560 OHM 1/8W 5% RCF 10K OHM 1/8W 5% RCF 4.7K OHM 1/8W 5% RCF 330 OHM 1/8W 5% RCF 680 OHM 1/8W 5% |
| SWITCHES S1-S2 S3T-S4T S5 S6 S7 S8T-S10T S11 S12 S13-S14 S15 S16-S17T | N52003231-0-01 N52003241-0-01 N52003231-0-01 N52003241-0-01 N52003201-0-01 N52003241-0-01 N52003231-0-01 N52003241-0-01 N52003201-0-01 N52003241-0-01 N52003201-0-01 | TACT SWITCH ALPS SKHQFH AMBER LED TACT SWITCH ALPS SKHQAC TACT SWITCH ALPS SKHQFH AMBER LED TACT SWITCH ALPS SKHQAC TACT SWITCH ALPS SKWQFG GREEN LED TACT SWITCH ALPS SKHQAC TACT SWITCH ALPS SKHQFH AMBER LED TACT SWITCH ALPS SKHQAC TACT SWITCH ALPS SKWQFG GREEN LED TACT SWITCH ALPS SKHQAC TACT SWITCH ALPS SKWQFG GREEN LED |
| RESONATOR X701-X702 | N27030120-0 | CERAMIC RESONATOR CSA 4.91MG |
| TONE CONTROL ASSEMBLY PC BOARD  | 1720-300B-0103 MI-20300B-01-S MI-21460A-01-S | PCB NO COMPONENTS PCB ASSEMBLY (917) PCB ASSEMBLY (117) |
| ICS IC204 IC207-IC208 | N31303680-0 N31303680-0 | IC NJM2043D DUAL OP AMP. IC NJM2043D DUAL OP AMP. |
| TRANSISTORS Q201-Q204 | N485363BL-5 | TR N-JFET 2SK363BL |

| Reference No | Part Number | Description |
|--|--|--|
| DIODES D201-D204 | 4804-1480-C | DIODE 1N4148 |
| CAPACITORS C216-C218 C219-C222 C225-C226 C227-C228 C229-C230 C231-C232 C235-C236 C237-C241 C243-C244 C268-C269 C291-C292 C295-C296 C297-C298 | 157E-106M-5-IU 153I-224J-9-NL 157E-106M-5-IU 153F-823J-5-SY 153I-474J-9-NO 157D-476M-5-KW 157C-107M-5-IU 157F-105M-5-IU 157C-107M-5-IU 157E-106M-5-IU 157D-476M-5-KW 153F-183J-5-KP 153F-104J-5-SY | CE 25V 10uF 20% CM 63V 0.22uF 5% CE 25V 10uF 20% CM 50V 0.082uF 5% CM 63V 0.47uF 5% CE 16V 47uF 20% CE 10V 100uF 20% CE 50V 1uF 20% CE 10V 100uF 20% CE 25V 10uF 20% CE 16V 47uF 20% CM 50V 0.018uF 5% CM 50V 0.1uF 5% |
| VARIABLE RES. VR201 VR202 VR203 | N47503676-0 N47503646-0 N47503656-0 | VR BASS 2X50KC W/WASHER & NUT VR TREBLE 2X10KC W/WASHER & NUT VR BALANCE 1X10KW W/WASHER & NUT |
| SWITCHES SW202 | N52003121-0-01 | 2P2T ALPS SPUN W/O FRAME |
| PROCESSOR ASSEMBLY PC BOARD  | 1720-310A-0102 MI-20310A-01-S | PCB NO COMPONENTS PCB ASSEMBLY(917,117) |
| ICS IC109 IC201 IC203 IC211-IC212 IC220 IC221 IC301-IC302 IC303 IC304 IC305-IC307 IC308-IC309 IC310 IC311 IC501 IC502 IC505 IC506 IC507-IC508 | 3130-2020-1 N31303710-0 N31303680-0 3130-0890-0 N31303730-0 3130-0890-0 N31303660-0 N31303670-0 N31303680-0 N31303660-0 N31303690-0 N31303660-0 N31304080-0 N31303700-0 N31303710-0 N31303660-0 3130-4870-0 3130-0890-0 | IC UPD7805H 1A 5V IC TC9163N HV ANALOG SWITCH IC NJM2043D DUAL OP AMP. IC NJM4558D DUAL OP AMP IC TC9164N HV ANALOG SW IC NJM4558D DUAL OP AMP. IC NJM2068D DUAL LN-OP AMP. IC SSM2404 QUAD ANALOG SWITCH IC NJM2043D DUAL OP AMP. IC NJM2068D DUAL LN-OP AMP. IC TC9176 VOLUME CONTRO IC NJM2068D DUAL LN-OP IC TL072 DUAL FET OP AMP. IC NJM2177 DOLBY PROLOGIC IC TC9163N HV ANALOG SWITCH IC NJM2068D DUAL LN-OP AMP. IC NJU9702 OR NJU9701 FILTER/DELAY IC NJM4558D DUAL OP AMP. |
| TRANSISTORS Q301-Q302 Q305-Q306 Q307-Q315 Q316-Q317 Q318-Q320 Q703-Q704 Q705 Q901 | N485363BL-5 N48600660-5 4860-0700-5 N48600660-5 4860-0700-5 N48600660-5 N4851815Y-5 N48600660-5 | TR N-JFET 2SK363BL TR 2SA1015GR TR 2SC1815GR TR 2SA1015GR TR 2SC1815GR TR 2SA1015GR TR 2SC1815Y HFE 120-240 TR 2SA1015GR |

| Reference No | Part Number | Description |
|-------------------|-----------------|--------------------------|
| DIODES | | |
| D301-D302 | 4804-1480-C | DIODE 1N4148 |
| D303-D306 | 4837-7V51-2 | ZENER 1/2W 7.5V |
| D307-D308 | 4804-1480-C | DIODE 1N4148 |
| D309 | 4804-1480-2 | DIODE 1N4148 |
| D320-D321 | 4804-1480-C | DIODE 1N4148 |
| D501-D502 | 4804-1480-C | DIODE 1N4148 |
| D702-D703 | 4804-1480-C | DIODE 1N4148 |
| COILS | | |
| L001 | 1801-1R5M-M | CHOKER COIL 1.5UH 20% |
| CAPACITORS | | |
| C215-C217 | 157E-106M-5-IU | CE 25V 10 μ F 20% |
| C253-C254 | 157F-105M-5-IU | CE 50V 1 μ F 20% |
| C273-C274 | 157F-225M-5-IU | CE 50V 2.2 μ F 20% |
| C275-C276 | 157D-476M-5-KW | CE 16V 47 μ F 20% |
| C277-C287 | 157E-106M-5-IU | CE 25V 10 μ F 20% |
| C301-C308 | 157D-107M-5-KW | CE 16V 100 μ F 20% |
| C309-C310 | 157E-106M-5-IU | CE 25V 10 μ F 20% |
| C311-C312 | 157E-475M-5-IU | CE 25V 4.7 μ F 20% |
| C322-C323 | 157E-106M-5-IU | CE 25V 10 μ F 20% |
| C324 | 157F-105M-5-IU | CE 50V 1 μ F 20% |
| C325 | 157E-106M-5-IU | CE 25V 10 μ F 20% |
| C326 | 157F-105M-5-IU | CE 50V 1 μ F 20% |
| C327 | 157E-106M-5-IU | CE 25V 10 μ F 20% |
| C332 | 157E-106M-5-IU | CE 25V 10 μ F 20% |
| C333 | 157D-106M-5-IU | CE 16V 10 μ F 20% |
| C334-C335 | 157E-106M-5-IU | CE 25V 10 μ F 20% |
| C336 | 153F-223K-5-LQ | CM 50V 0.022 μ F 10% |
| C337 | 153F-103K-5-KM | CM 50V 0.01 μ F 10% |
| C338 | 153F-223K-5-LQ | CM 50V 0.022 μ F 10% |
| C339 | 153F-103K-5-KM | CM 50V 0.01 μ F 10% |
| C347 | 157D-106M-5-IU | CE 16V 10 μ F 20% |
| C348 | 15CH-180K-5-GG | CAP-TEMP 0/60 18PF 10% |
| C351-C352 | 157E-106M-5-IU | CE 25V 10 μ F 20% |
| C353-C354 | 157D-476M-5-IU | CE 16V 47 μ F 20% |
| C355-C361 | 157E-106M-5-IU | CE 25V 10 μ F 20% |
| C362-C365 | 157D-476M-5-IU | CE 16V 47 μ F 20% |
| C365-C366 | 157E-106M-5-IU | CE 25V 10 μ F 20% |
| C367-C368 | 153F-104K-5-PT | CM 50V 0.1 μ F 10% |
| C380-C383 | 157F-105M-5-IU | CE 50V 1 μ F 20% |
| C501 | 157D-475M-5-IU | CE 16V 4.7 μ F 20% |
| C502-C504 | 153F-224K-5-MIB | CM 50V 0.22 μ F 10% |
| C505 | 153F-684K-5-KW | CM 50V 0.68 μ F 10% |
| C506 | 153F-472K-5-KW | CM 50V 4700PF 10% |
| C507 | 153F-562K-5-KW | CM 50V 5600PF 10% |
| C508 | 158F-471J-5-KW | CP 50V 470PF 5% |
| C509 | 157D-227M-5-OW | CE 16V 220 μ F 20% |
| C510 | 153F-473K-4-RY | CM 50V 0.047 μ F 10% |
| C511 | 153F-562K-5-KW | CM 50V 5600PF 10% |
| C512-C513 | 157E-106M-5-IU | CE 25V 10 μ F 20% |
| C514 | 153F-224K-5-MIB | CM 50V 0.22 μ F 10% |
| C515-C519 | 157E-106M-5-IU | CE 25V 10 μ F 20% |
| C520 | 157D-226M-5-IU | CE 16V 22 μ F 20% |
| C521 | 153F-472K-5-KW | CM 50V 4700PF 10% |
| C522 | 157D-475M-5-IU | CE 16V 4.7 μ F 5% |
| C523-C524 | 153F-224K-5-MIB | CM 50V 0.22 μ F 10% |
| C525-C527 | 153F-104K-5-PT | CM 50V 0.1 μ F 10% |
| C528-C529 | 153F-223K-5-LQ | CM 50V 0.022 μ F 10% |
| C530 | 158F-681J-5-KW | CP 50V 680PF 5% |
| C531 | 153F-473K-4-RY | CM 50V 0.047 μ F 10% |
| C532-C533 | 153F-104K-5-PT | CM 50V 0.1 μ F 10% |

| Reference No | Part Number | Description |
|----------------------|--------------------|--------------------------|
| C535-C536 | 157E-106M-5-IU | CE 25V 10 μ F 20% |
| C537-C538 | 153F-104K-5-PT | CM 50V 0.1 μ F 10% |
| C539 | 153F-473K-4-RY | CM 50V 0.047 μ F 10% |
| C540 | 158F-681J-5-KW | CP 50V 680PF 5% |
| C541-C544 | 157E-106M-5-IU | CE 25V 10 μ F 20% |
| C548-C550 | 153F-563K-5-OS | CM 50V 0.056 μ F 10% |
| C552-C554 | 153F-563K-5-OS | CM 50V 0.056 μ F 10% |
| C556 | 153F-563K-5-OS | CM 50V 0.056 μ F 10% |
| C557 | 153F-222K-5-KW | CM 50V 2200PF 10% |
| C558 | 153F-563K-5-OS | CM 50V 0.056 μ F 10% |
| C559 | 153F-222K-5-KW | CM 50V 2200PF 10% |
| C569 | 157F-105M-5-IU | CE 50V 1 μ F 20% |
| C570 | 153F-562K-5-KW | CM 50V 5600PF 10% |
| C571 | 158F-561J-5-KW | CP 50V 560PF 5% |
| C572-C573 | 153F-473K-4-RY | CM 50V 0.047 μ F 5% |
| C574 | 157D-107M-5-KW | CE 16V 100 μ F 20% |
| C576 | 153F-104K-5-PT | CM 50V 0.1 μ F 10% |
| C577 | 157D-476M-5-IU | CE 16V 47 μ F 20% |
| C580 | 158F-561J-5-KW | CP 50V 560PF 5% |
| C581 | 153F-104K-5-PT | CM 50V 0.1 μ F 10% |
| C582 | 153F-562K-5-KW | CM 50V 5600PF 10% |
| C583 | 157F-105M-5-IU | CM 50V 1 μ F 20% |
| C584 | 153F-103K-5-KM | CM 50V 0.01 μ F 10% |
| C585 | 157E-106M-5-IU | CE 25V 10 μ F 20% |
| C586-C599 | 157F-105M-5-IU | CE 50V 1 μ F 20% |
| C901-C920 | 157E-106M-5-IU | CE 25V 10 μ F 20% |
| RESISTORS | | |
| R590 | 4715-1003-2-K | RMF 100K OHM 1/4W 1% |
| VARIABLE RES. | | |
| VR301-VR302 | N47561030-3-11 | SEMI-FIXED 10K OHM |
| SWITCHES | | |
| SW1 | N52003261-0-01 | SLIDE SWITCH 2P3T |
| CRYSTAL | | |
| XL501 | N23000920-0 | CRYSTAL 2MHZ HC-49/U |
| RCA JACK | | |
| 0104-0105 | N21038506-2 | 6P RCA JACK R/W NI |
| 0109-0110 | N21038506-2 | 6P RCA JACK R/W NI |
| J9/10 | N21037604-2 | 4P RCA JACK R/W NI |
| J701 | N21039102-0 | 2P RCA JACK ORG |
| PSU ASSEMBLY | | |
| PC BOARD | | |
| | 1720-300B-0102 | PCB NO COMPONENTS |
| | MI-20310B-01-S | PCB ASSEMBLY (917AH) |
| | MI-20310B-02-S | PCB ASSEMBLY (917B,C) |
| | MI-20310B-03-S | PCB ASSEMBLY (117AH) |
| | MI-20310B-04-S | PCB ASSEMBLY (117C) |
| ICS | | |
| IC602 | 3130-2020-1 | IC UPD7805H 1A 5V |
| IC603 | N31302520-1 | IC 7812 12V REGULATOR |
| IC604 | N31303800-0 | IC UPC79M12HF REGULATOR |
| TRANSISTORS | | |
| Q107 | N485240GR-5 | TR 2SC2240GR |
| Q108 | N485D613D-5 | TR 2SD613D |
| Q605 | N4851815Y-5 | TR 2SC1815-Y HFE 120-240 |

| Reference No | Part Number | Description |
|----------------------------------|----------------|--|
| DIODES | | |
| D101 | N48400630-0 | BRIDGE DIODE 2W02G |
| D102 | 4804-0010-1 | DIODE 1N4001 |
| D103-D106 | 4804-0020-1 | DIODE 1N4002 |
| D107 | N48400650-0 | ZENER 1/2W 33V 5% |
| D108 | N48400640-0 | ZENER 1/2W 28V HZ273 |
| D110 | N48400630-0 | BRIDGE DIODE 2W02G |
| CAPACITORS | | |
| C101 | N89100049-0 | CAP 400V 4700P DE7150F472MVA1KC |
| C102-C103 | 8910-0007-0 | CAP 35V 4700U 35V 16X35 |
| C104T | 635N-0001-0 | JUMPER #23 TAPE & WHEEL |
| C104P | N89100049-0 | CAP 400V 4700P DE7150F472MVA1KC |
| C106-C107 | 157Q-106M-5-IU | CE 35V 10μF 20% |
| C108-C109 | 157E-106M-5-IU | CE 25V 10μF 20% |
| C110-C111 | 157D-106M-5-II | CE 16V 10μF 20% |
| C114-C117 | 157F-227M-5-S5 | CE 50V 220μF 20% |
| C118 | 157I-476M-5-OV | CE 63V 47μF 20% |
| C119 | 157I-106M-5-IU | CE 63V 10μF 20% |
| C120 | 157F-227M-5-S5 | CE 50V 220μF 20% |
| C122 | 157I-106M-5-IU | CE 63V 10μF 20% |
| C124 | 157D-228M-5-W9 | CE 16V 2200μF 20% |
| RELAY | | |
| RLY101 | N45000110-0 | RELAY 12V-DC |
| SWITCH | | |
| SW205P | 5200-3481-0 | POWER SWITCH TV-3 3A/250V |
| FUSES | | |
| F101-F102*AH | 5120-0010-0 | FUSE 250V 800MA TIME LAG UL/CSA |
| F104*AH | N51005010-1A | FUSE 250V 500MA SLOW BLOW UL/CSA |
| F101-F102T*B,C & P*C | 5120-0011-0 | FUSE 250V 800MA TIME LAG LBC SEMKO |
| F104T*B,C & P*C | N51005010-1B | FUSE 250V 500MA SLOW BLOW LBC VDE/SEMKO |
| FH101-F104 | 4131-9131-0 | FUSE HOLDER 6.5MM PITCH RECT |
| TRANSFORMER | | |
| T1 | N18062104-0 | TRANSFORMER MAIN 614C |
| T2 | N18062096-0 | TRANSFORMER EI35 115/230VDC 160MA |
| AC OUTLET TERMINAL | | |
| O100*AH | N41520571-0 | AC OUTLET COVER PLATE |
| O151*AH | N21035802-0 | AC OUTLET 125V 15A UL |
| OUTLET*AH (917 ONLY) | N4707275J-2 | RCF 2.7M Ohm 1/2W 5% AT (SAFETY DISCHARGE) |
| TUNER ASSEMBLY (917 ONLY) | | |
| PC BOARD | | |
| | 1720-300A-0103 | PCB NO COMPONENTS |
| | MI-20300A-01-S | PCB ASSEMBLY (917AH) |
| | MI-20300A-02-S | PCB ASSEMBLY (917B,C) |
| ICS | | |
| IC401 | 3130-0890-0 | IC NJM4558D DUAL OP AMP. |
| IC701 | N31303430-0 | IC LM7000 DTS |
| IC702*AH | N89100034-0 | TUNER MODULE FE407-A16 |
| IC702*C | 1300-0606-0 | TUNER MODULE FE407-G58 |

| Reference No | Part Number | Description |
|----------------------|--------------------|------------------------------|
| IC703 | N31303390-0 | IC LA1266 FM/AM TUNER |
| IC704 | N31303400-0 | IC LA3401 PLL MPX |
| TRANSISTORS | | |
| Q005-Q009 | 485C-930E-5 | TR 2SC930E HFE 100-200 |
| Q701-Q703 | 4860-0700-5 | TR 2SC1815GR |
| Q704 | N48600660-5 | TR 2SA1015GR |
| Q710-Q713 | 4860-0700-5 | TR 2SC1815GR |
| Q714 | N48600660-5 | TR 2SA1015GR |
| DIODES | | |
| D401 | 4804-1480-C | DIODE 1N4148 |
| D701-D702 | N4801N60P-1 | GERMANIUM DIODE 1N60P |
| D703-D704 | 484C-321D-5 | SVC321-D AM CAR. DIODE |
| COILS | | |
| L701 | 1801-2R2M-M | COIL 2.2 μ H 20% |
| L702*C | 2701-0609-4 | BAND PASS FILTER 64-108MHZ |
| L703 | 1801-2R2M-M | COIL 2.2 μ H 20% |
| L704 | N56002276-S | AM COIL 5564102600 |
| L705 | N56002286-S | AM OSC COIL 5564312800 |
| L706 | N56002256-S | FM COIL PRIMARY |
| L707 | N56002266-S | FM COIL SECONDARY |
| L708 | N56002246-S | AM IF COIL |
| L710 | N1801680M-M | COIL 68 μ H 20% |
| CAPACITORS | | |
| C701 | 1551-0210-0 | TRIMMER 5.2-30PF |
| C703 | 157B-107M-5-KM | CE 6.3V 100 μ F 20% |
| C704 | 157F-107M-5-OW | CE 50V 100 μ F 20% |
| C705 | 157F-335M-5-IU | CE 50V 3.3 μ F 20% |
| C707 | 157F-474M-5-IU | CE 50V 0.47 μ F 20% |
| C709 | 157Q-474M-5-IU | CE 35V 0.47 μ F 20% |
| C712 | 157D-106M-5-IU | CE 16V 10 μ F 20% |
| C721 | 1551-0210-0 | TRIMMER 5.2-30PF |
| C725 | 157D-106M-5-IU | CE 16V 10 μ F 20% |
| C726 | 157F-475M-5-IU | CE 50V 4.7 μ F 20% |
| C733 | 157F-335M-5-IU | CE 50V 3.3 μ F 20% |
| C738 | 157F-335M-5-IU | CE 50V 3.3 μ F 20% |
| C739 | 158F-101J-5-KW | CP 50V 100PF 5% |
| C741 | 157D-107M-5-KW | CE 16V 100 μ F 20% |
| C742 | 157F-104M-5-IU | CE 50V 0.1 μ F 20% |
| C743 | 157D-106M-5-IU | CE 16V 10 μ F 20% |
| C744 | 158F-391J-5-KW | CP 50V 390PF 5% |
| C745 | 157D-476M-5-IU | CE 16V 47 μ F 20% |
| C746 | 157D-107M-5-KW | CE 16V 100 μ F 20% |
| C747 | 157F-105M-5-IU | CE 50V 1 μ F 20% |
| C748 | 157F-224M-5-IU | CE 50V 0.22 μ F 20% |
| C749-C750 | 157F-105M-5-IU | CE 50V 1 μ F 20% |
| C751 | 157D-106M-5-IU | CE 16V 10 μ F 20% |
| C752-C753*AH | 158F-911J-5-KW | CP 50V 910PF 5% |
| C752-C753*C | 158F-431J-5-KW | CP 50V 430PF 5% |
| C754-C755 | 153F-152J-5-KW | CM 50V 1500PF 5% |
| C756-C757 | 157D-106M-5-IU | CE 16V 10 μ F 20% |
| VARIABLE RES. | | |
| R736 | N47564730-3-11 | SEMI-FIXED 47K OHM |
| R753 | N47564730-3-11 | SEMI-FIXED 47K OHM |
| FILTERS | | |
| FL01-FL03*AH | N27010546-1-0 | CERAMIC FILTER 10.7MHZ ML-A |
| FL01-FL03*C | N27010556-1-0 | CERAMIC FILTER 10.7MHZ MZ2-A |
| FL703 | N56002296-S | FTZ COIL |

| Reference No | Part Number | Description |
|--|--|---|
| FL704-FL705 FL706 | N56002236-S 2701-0066-0 | FILTER COIL 19KHZ CERAMIC FILTER 450 KHZ |
| RESONATOR X102 | 2703-0020-0 | CERAMIC RESONATOR CSB456F11 |
| CRYSTAL X701 | N23000440-0 | CRYSTAL 7.2MHZ 20PPM |
| ANTENNA TERMINAL 0102*AH 0102*B,C | N21070641-0 N21070681-0 | ANTENNA TERMINAL F-TYPE ANTENNA TERMINAL DIN-TYPE |
| TUNER I/P ASSEMBLY (117 ONLY) PC BOARD | MI-21460F-01-S | PCB ASSEMBLY |
| RCA JACK 0901P | 2113-0700-0 | RCA JACK R/W NI-PLATED |
| LED ASSEMBLY (117 ONLY) PC BOARD | MI-21460E-01-S | PCB ASSEMBLY |
| LED LED1 | N37003517-RG | LED RED/GREEN L-469 HGW |
| VIDEO ASSEMBLY PC BOARD ▲ | 1720-300F-0103 MI-20300F-01-S MI-21460B-01-S | PCB NO COMPONENTS PCB ASSEMBLY (917) PCB ASSEMBLY (117) |
| ICS IC601 IC602 IC603 IC604 IC605 | N31303740-0 N31304130-0 N31303760-0 N31303740-0 N31304050-0 | IC NJM2246 3IP VIDEO SWITCH IC PCA8515P/009 OSD IC NJM2217 VIDEO SUPERIMPOSER IC NJM2246 3IP VIDEO SWITCH IC NJM2234D 3I/P VIDEO SWITCH |
| TRANSISTORS Q601-Q604 | 485C-930E-5 | TR 2SC930E |
| DIODES D601-D602 | 4804-1480-C | DIODE 1N4148 |
| CAPACITORS C600 C601-C606 C607 C609-C611 C618 C621-C622 C624 C625 C626 C628 C629 C631 C632 | 153F-103J-5-KW 157E-106M-5-IU 157F-105M-5-IU 157E-106M-5-IU 157E-106M-5-IU 157E-106M-5-IU 157E-106M-5-IU 157C-108M-5-S5 153F-222K-5-KW 157C-108M-5-S5 157D-107M-5-KW 157E-106M-5-IU 157E-106M-5-IU 157C-108M-5-S5 | CM 50V 0.01µF 5% CE 25V 10µF 20% CE 50V 1µF 20% CE 25V 10µF 20% CE 25V 10µF 20% CE 25V 10µF 20% CE 25V 10µF 20% CE 10V 1000µF 20% CM 50V 2200PF 10% CE 10V 1000µF 20% CE 16V 100µF 20% CE 25V 10µF 20% CE 25V 10µF 20% CE 10V 1000µF 20% |

| Reference No | Part Number | Description |
|--|--|---|
| C634-C635 C636 C637 | 157E-106M-5-IU 157C-108M-5-S5 157F-105M-5-IU | CE 25V 10µF 20% CE 10V 1000µF 20% CE 50V 1µF 20% |
| VARIABLE RES. R619 | N47564730-3-11 | SEMI-FIXED 47K OHM |
| CRYSTAL XL601 | N23000930-0 | CRYSTAL 3.58MHZ HC-49/U |
| SOCKETS J601N J602N J603N J604N J605N J606N J607N J608N J609N J610N | 21038201-0 21038201-0 21038201-0 21038301-0 21038301-0 21038301-0 21038301-0 21038201-0 21038201-0 21038301-0 21038301-0 | 1P RCA SOCKET, YELLOW 1P RCA SOCKET, YELLOW 1P RCA SOCKET, YELLOW 1P S-VHS SOCKET 1P S-VHS SOCKET 1P S-VHS SOCKET 1P S-VHS SOCKET 1P RCA SOCKET, YELLOW 1P RCA SOCKET, YELLOW 1P S-VHS SOCKET 1P S-VHS SOCKET |

NOTE : - THE COMPONENTS IDENTIFIED BY Δ MARK ARE CRITICAL FOR RISK OF FIRE AND ELECTRICAL SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

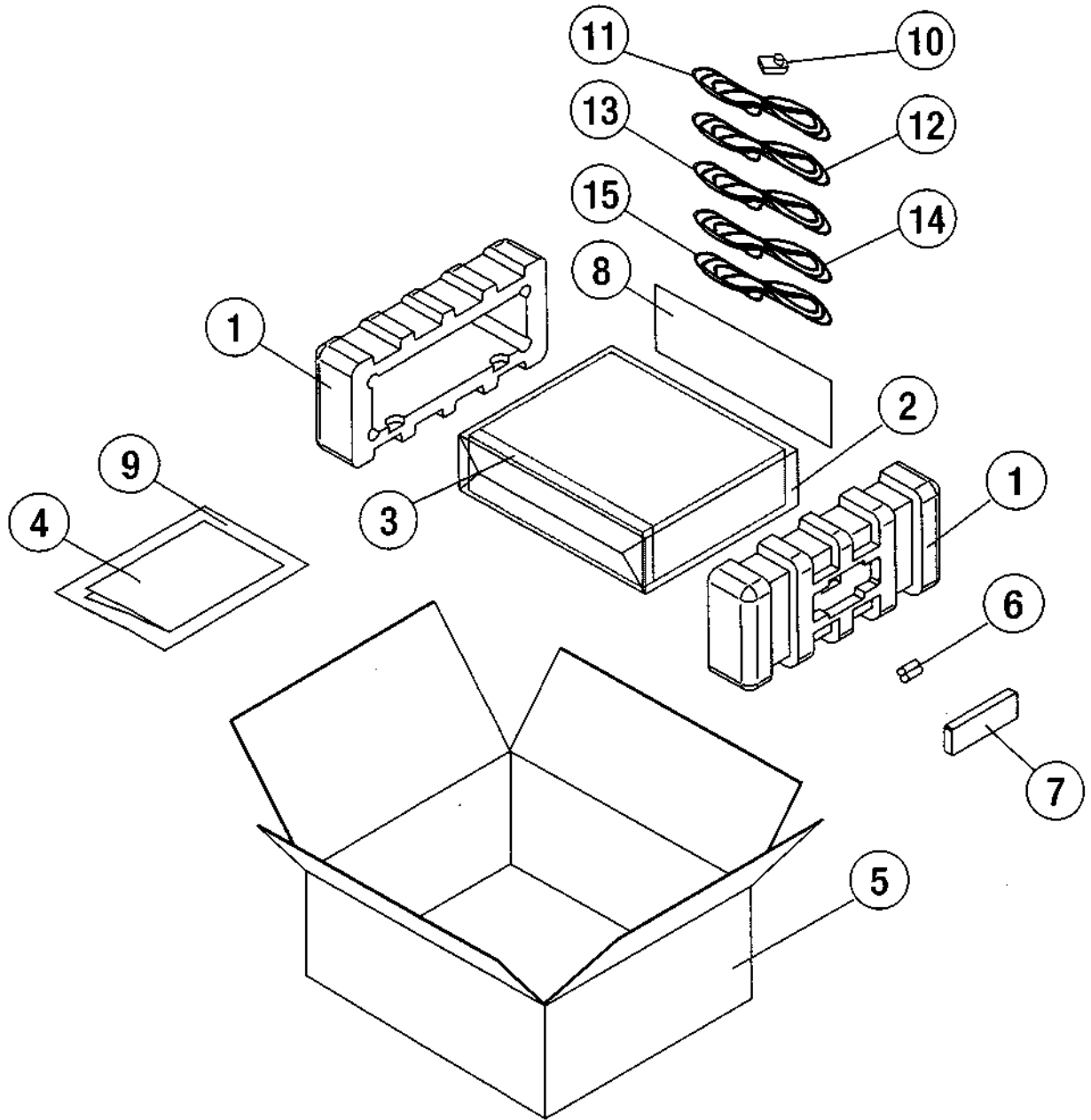
- <*AH > : USA, CANADIAN MODEL ONLY.

<*B > : UK MODEL ONLY.

<*C > : EUROPEAN MODEL ONLY.

- ITEMS WITH THE EXTENSION "T" ARE FOR THE 917 ONLY,
ITEMS WITH THE EXTENSION "P" ARE FOR THE 117 ONLY,
ALL OTHER ITEMS ARE COMMON PARTS.

117/917 PACKING DIAGRAM



117/917 PACKING LIST

| <u>Item</u> | <u>Part No</u> | <u>Description</u> | <u>Qty</u> |
|-------------|----------------|----------------------------|------------|
| 1 | 1490-1873-0 | POLYFOAM END CAP | 2 |
| 2 | N14971072-3 | POLYBAG | 1 |
| 3 | N14971252-0 | EPE COVER | 1 |
| 4P | 4301-3611-1 | INSTRUCTION MANUAL | 1 |
| 4T | 4301-3523-1 | INSTRUCTION MANUAL | 1 |
| 5 | N14763800-0 | CARTON BOX | 1 |
| 6 | 4060-0630-0 | BATTERIES | 2 |
| 7 | N89001100-0 | REMOTE CONTROL | 1 |
| 8 | 1497-1320-0 | POLYBAG | 1 |
| 9 | N14971062-0 | MANUAL POLYBAG | 1 |
| 10T*AH | N21036101-0 | RF CONNECTOR PLUG F-Type | 1 |
| 10T*C | N21036201-0 | RF CONNECTOR PLUG DIN-Type | 1 |
| 11T | N21070661-1 | "T" 300OHM ANTENNA | 1 |
| 12T | N70093220-0 | 200CM WHITE AWG22 | 1 |
| 13 | N21039001-0 | VIDEO YEL RCA PLUGS | 2 |
| 14 | N21038901-0 | MONO BLK RCA PLUGS | 1 |
| 15 | N21038801-0 | STEREO R/W RCA PLUGS | 2 |

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