

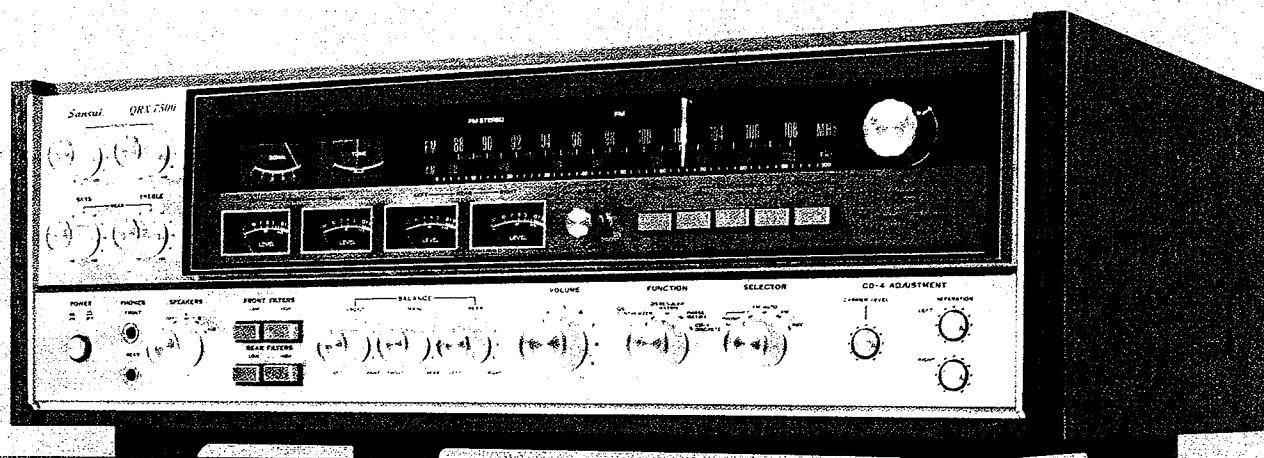
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4-CHAN

# SERVICE MANUAL

## 4-CHANNEL RECEIVER **SANSUI QRX-7500**



**Sansui**

SANSUI ELECTRIC CO., LTD.

This service manual is designed for service engineers to repair, adjust, maintain and order the replacement parts of the QRX-7500 correctly.

When ordering the parts, use the stock number and parts name specifically referring to the Parts Locations & Parts List.

For general usage and maintenance of the unit, please refer to the Operating Instructions attached with the unit.

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# 1. SPECIFICATIONS

## AUDIO SECTION

### POWER OUTPUT (at rated distortion)

MUSIC POWER (IHF).....260W (4 $\Omega$  1,000Hz)  
180W (8 $\Omega$  1,000Hz)

### CONTINUOUS POWER

Each Channel Driven ..52W  $\times$  4 (4 $\Omega$  1,000Hz)  
35W  $\times$  4 (8 $\Omega$  1,000Hz)  
4-Channels Driven..28+28+28+28W (8 $\Omega$  1,000Hz)  
25+25+25+25W  
(8 $\Omega$  20 to 20,000Hz)  
2-Channel Operation (2-channel driven)  
32+32W (8 $\Omega$  1,000Hz)

### TOTAL HARMONIC DISTORTION

(at rated power output)

OVERALL (from 4-CHANNEL AUX)  
less than 0.3%

### INTERMODULATION DISTORTION (at rated power output 70Hz:7,000Hz=4:1 SMPTE method)

OVERALL (from 4-CHANNEL AUX)  
less than 0.3%

POWER BANDWIDTH (IHF) ..10 to 30,000Hz

LOAD IMPEDANCE .....4 to 16 $\Omega$

DAMPING FACTOR .....40 (8 $\Omega$ )

INPUT SENSITIVITY AND IMPEDANCE (1,000Hz, for rated power output)

2-CHANNEL PHONO-1, 2 ..2.5mV 50k $\Omega$   
(Max. input capability; 150mV at rated distortion)

### 2-CHANNEL TAPE

PLAY Pin Jacks .....100mV 50k $\Omega$   
REC/PLAY DIN Socket ..100mV 50k $\Omega$   
4-CHANNEL AUX-LOW ..100mV 50k $\Omega$   
AUX-HIGH ..200mV 100k $\Omega$

### 4-CHANNEL TAPE-1, 2

PLAY Pin Jacks .....100mV 50k $\Omega$

### RECORDING OUTPUT

#### 2-CHANNEL TAPE

REC Pin Jacks .....100mV  
REC/PLAY DIN Socket ..30mV

#### 4-CHANNEL TAPE-1, 2

REC Pin Jacks .....100mV

### FREQUENCY RESPONSE (at 1 Watt output)

OVERALL (from 4-CHANNEL AUX)  
30 to 30,000Hz  $\pm$ 1.0  
-1.5 dB

EQUALIZATION (RIAA curve) 30 to 15,000Hz  $\pm$ 1.0dB

CROSSTALK (FUNCTION control: 2-CH, 1,000Hz)  
better than 50dB

### HUM AND NOISE (IHF)

2-CHANNEL PHONO ....better than 70dB  
4-CHANNEL AUX .....better than 80dB

### SWITCHES AND CONTROLS

BASS .....+12dB, -12dB at 50Hz  
TREBLE .....+12dB, -12dB at 15,000Hz  
LOUDNESS .....+8dB at 50Hz,  
+3dB at 10,000Hz

LOW FILTER .....-10dB at 50Hz (6dB/oct.)

HIGH FILTER .....-10dB at 10,000Hz  
(6dB/oct.)

SYNTHESIZER/DECODER ....QS regular matrix system  
with QS vario-matrix circuit.

## CD-4 DEMODULATOR

Input Sensitivity.....2.5mV (1 to 10mV adjustable)

Input Impedance .....50k $\Omega$

Frequency Response (STD test signal)

Main-Channel.....30 to 15,000Hz  $\pm$ 0.5  
-3.0 dB

Sub-Channel .....30 to 10,000Hz  $\pm$ 1.0  
-5.0 dB

## TUNER SECTION

### <FM>

TUNING RANGE.....88 to 108MHz

SENSITIVITY (IHF) .....1.9 $\mu$ V

(Max. input capability: 120dB)

SIGNAL TO NOISE RATIO (mono)

better than 65dB

CAPTURE RATIO (IHF) .....less than 2.0dB

IMAGE REJECTION .....better than 75dB

IF REJECTION .....better than 90dB

SPURIOUS RESPONSE REJECTION

better than 80dB

SELECTIVITY .....better than 60dB

TOTAL HARMONIC DISTORTION

Mono .....less than 0.3%

Stereo .....less than 0.5%

STEREO SEPARATION .....better than 37dB

FREQUENCY RESPONSE ....30 to 15,000Hz  $\pm$ 1.0  
-3.0 dB

ANTENNA IMPEDANCE ....300 $\Omega$  balanced,  
75 $\Omega$  unbalanced

### <AM>

TUNING RANGE .....535 to 1,605kHz

SENSITIVITY (bar antenna) ..50dB/m

IMAGE REJECTION .....better than 80dB

IF REJECTION .....better than 80dB

SELECTIVITY .....25dB

## OTHERS

### SEMICONDUCTORS

TRANSISTORS .....159

DIODES .....94

FETs .....13

ICs .....5

ZENER DIODES .....9

### POWER REQUIREMENTS

Voltage.....100, 117, 220, 240V 50/60Hz

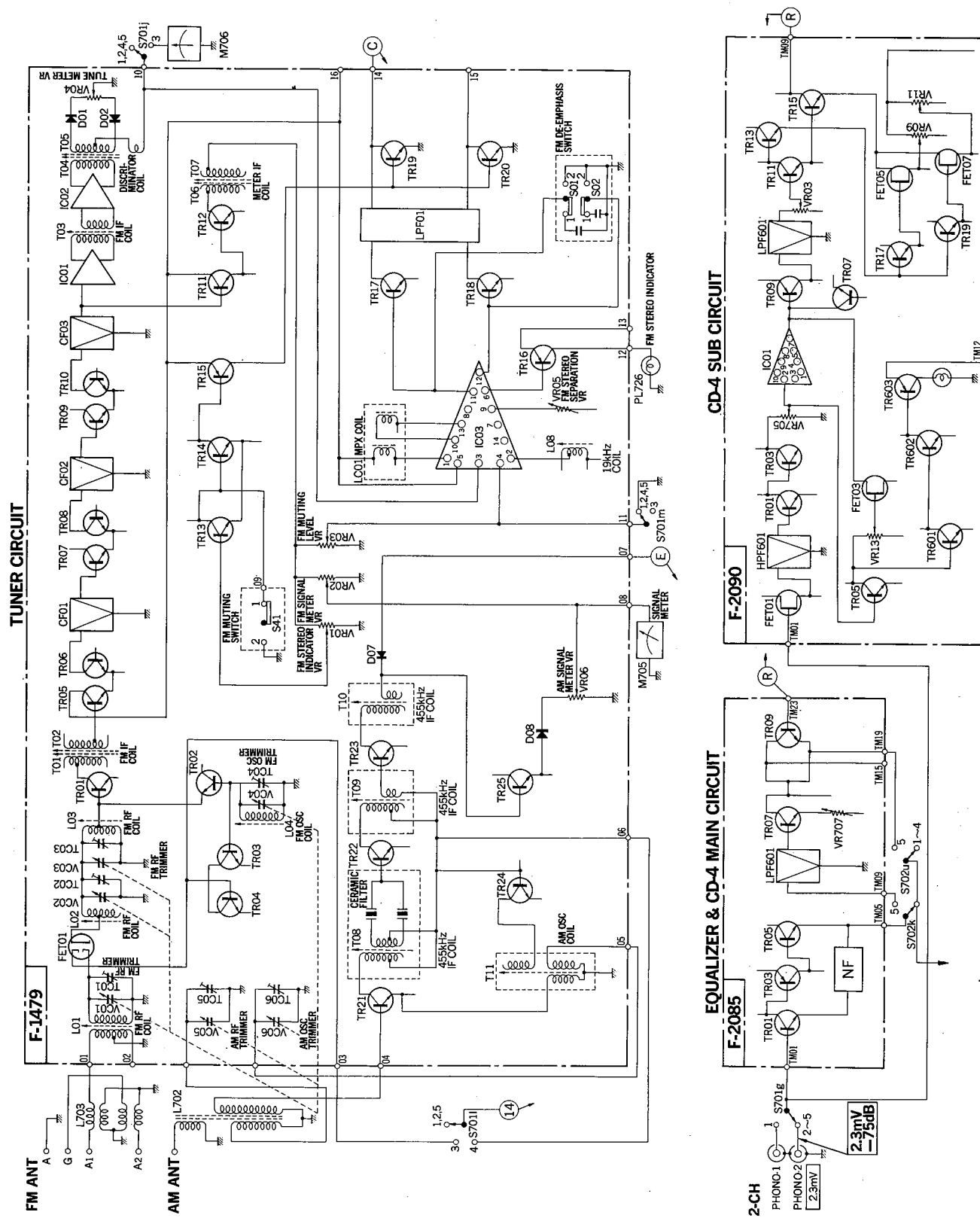
Consumption .....140W (rated), 400VA (max.)

DIMENSIONS .....594mm (23 $\frac{3}{8}$ "W,  
203mm (8"H),  
370mm (14 $\frac{5}{16}$ "D)

WEIGHT .....21.8kg (48.0 lbs.) Net  
25.0kg (55.0 lbs.) Packed

\* Design and specifications subject to change without notice for improvements.

## 2. BLOCK DIAGRAM AND VALUE OF EACH LEVEL



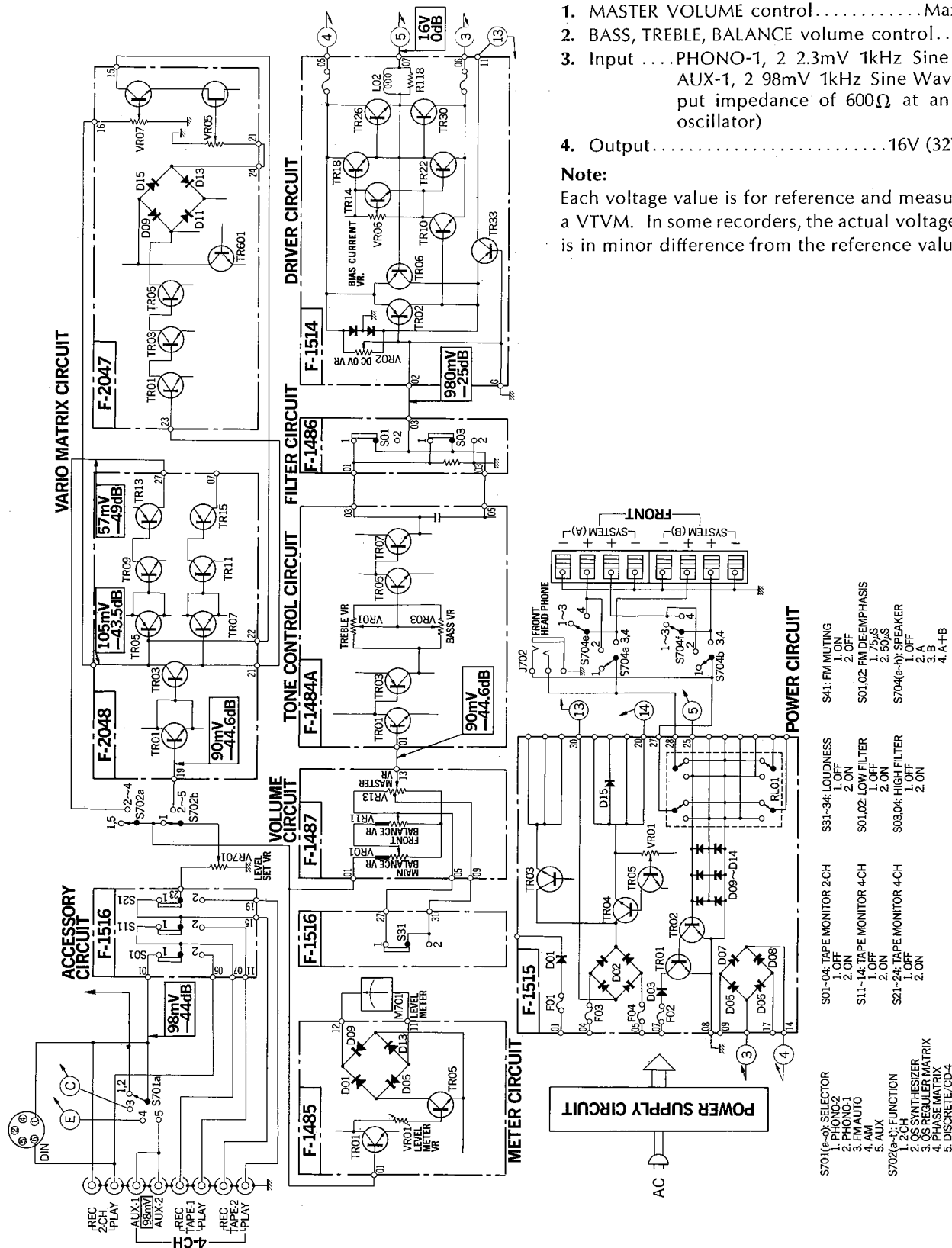
## Conditions of Level Measuring

\*Value of each level in block diagram was measured by the followings.

1. MASTER VOLUME control.....Maximum
2. BASS, TREBLE, BALANCE volume control..Center
3. Input ....PHONO-1, 2 2.3mV 1kHz Sine Wave  
AUX-1, 2 98mV 1kHz Sine Wave (output impedance of 600Ω at an audio oscillator)
4. Output.....16V (32W) 8Ω

### Note:

Each voltage value is for reference and measured by a VTVM. In some recorders, the actual voltage value is in minor difference from the reference value.



# 3. ALIGNMENTS AND ADJUSTMENTS

## Abbreviation

### Equipment

AM FM Generator Oscilloscope..... Genescope  
 AM Standard Signal Generator ..... AM SSG  
 FM Standard Signal Generator ..... FM SSG  
 FM Stereo Generator..... Stereo SG  
 Oscilloscope ..... Scope  
 Audio Oscillator ..... Audio Osci.  
 Distortion Meter ..... Dist. Meter

### Others

Clockwise ..... CW.  
 Counterclockwise ..... CCW.  
 Antenna ..... ANT.  
 Modulation..... MOD.

## 3-1. Regulated Power Supply Board Adjustment (See Fig. 3-1)

**Note:** 1. Function.....QS Synthesizer  
 2. Master Volume.....Minimum  
 3. Confirm the AC Power Supply voltage.

| STEP | SUBJECT                | EQUIPMENT     | MEASURE OUTPUT     | ADJUST      | ADJUST FOR | CONDITION |
|------|------------------------|---------------|--------------------|-------------|------------|-----------|
| 1    | Regulated Power Supply | DC volt meter | F-1515 terminal 18 | F-1515 VR01 | 25±0.1V    |           |

## 3-2. Level Meter Adjustment (See Fig. 3-2)

**Note:** 1. Function .....Discrete  
 2. Selector.....AUX-1  
 3. Master Volume .....Minimum  
 4. Level Set Volume .....Maximum  
 5. For adjustment, run the unit for more than 2 minutes after the power is switched on.

| STEP | SUBJECT     | FEED SIGNAL                           |                                 | MEASURE OUTPUT | ADJUST                                                                                                | ADJUST FOR | CONDITION                                      |
|------|-------------|---------------------------------------|---------------------------------|----------------|-------------------------------------------------------------------------------------------------------|------------|------------------------------------------------|
|      |             | FROM                                  | TO                              |                |                                                                                                       |            |                                                |
| 1    | Level Meter | 1kHz<br>Output : 100mV<br>Audio Osci. | FRONT, REAR<br>AUX-1<br>L, R-ch | Level Meter    | F-1485<br>VR01<br>(front L-ch)<br>VR02<br>(front R-ch)<br>VR03<br>(rear L-ch),<br>VR04<br>(rear R-ch) | 0 level    | ◦ Feed signal to 4-CH<br>(both FRONT and REAR) |

Fig. 3-1

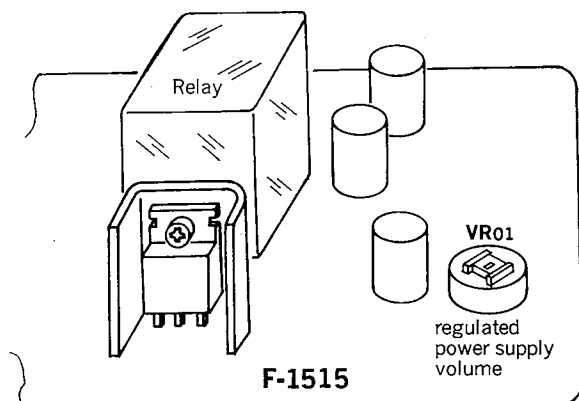
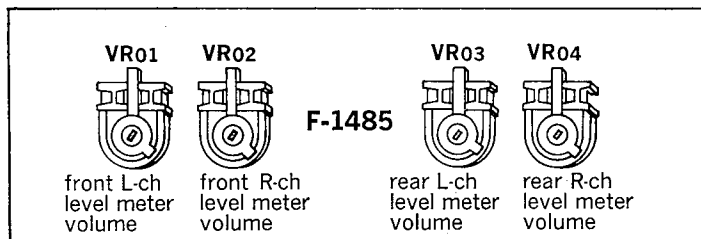


Fig. 3-2



### 3-3. Driver Circuit Board Adjustment (See Figs. 3-3 and 3-4)

- Note:** 1. Master Volume.....Minimum  
2. Make the SP terminals free (no load).  
3. Confirm the AC Power Supply voltage.  
4. After adjustment, run the unit for more than 5 minutes, then check and readjust necessary.  
5. Room temperature should be 18~28° (65~83°F) for bias current adjustment.

| STEP | SUBJECT                 | EQUIPMENT       | MEASURE OUTPUT                             | ADJUST         | ADJUST FOR    | CONDITION                                |
|------|-------------------------|-----------------|--------------------------------------------|----------------|---------------|------------------------------------------|
| 1    | DC 0V Front R           | DC volt meter   | Speaker terminal<br>Front R-ch<br>Fig. 3-4 | F-1514<br>VR01 | 0V $\pm$ 10mV | ○ Step down meter's range<br>accordingly |
| 2    | DC 0V Front L           | Same as above   | Speaker terminal<br>Front L-ch<br>Fig. 3-4 | F-1514<br>VR02 | Same as above | Same as above                            |
| 3    | DC 0V Rear R            | Same as above   | Speaker terminal<br>Rear R-ch<br>Fig. 3-4  | F-1514<br>VR03 | Same as above | Same as above                            |
| 4    | DC 0V Rear L            | Same as above   | Speaker terminal<br>Rear L-ch<br>Fig. 3-4  | F-1514<br>VR04 | Same as above | Same as above                            |
| 5    | Bias current<br>Front R | DC milliammeter | F-1482<br>F01<br>Fig. 3-3                  | F-1514<br>VR05 | 25 $\pm$ 1mA  | ○ Step down meter's range<br>accordingly |
| 6    | Bias current<br>Front L | Same as above   | F-1482<br>F02<br>Fig. 3-3                  | F-1514<br>VR06 | Same as above | Same as above                            |
| 7    | Bias current<br>Rear R  | Same as above   | F-1482<br>F03<br>Fig. 3-3                  | F-1514<br>VR07 | Same as above | Same as above                            |
| 8    | Bias current<br>Rear L  | Same as above   | F-1482<br>F04<br>Fig. 3-3                  | F-1514<br>VR08 | Same as above | Same as above                            |

Fig. 3-3

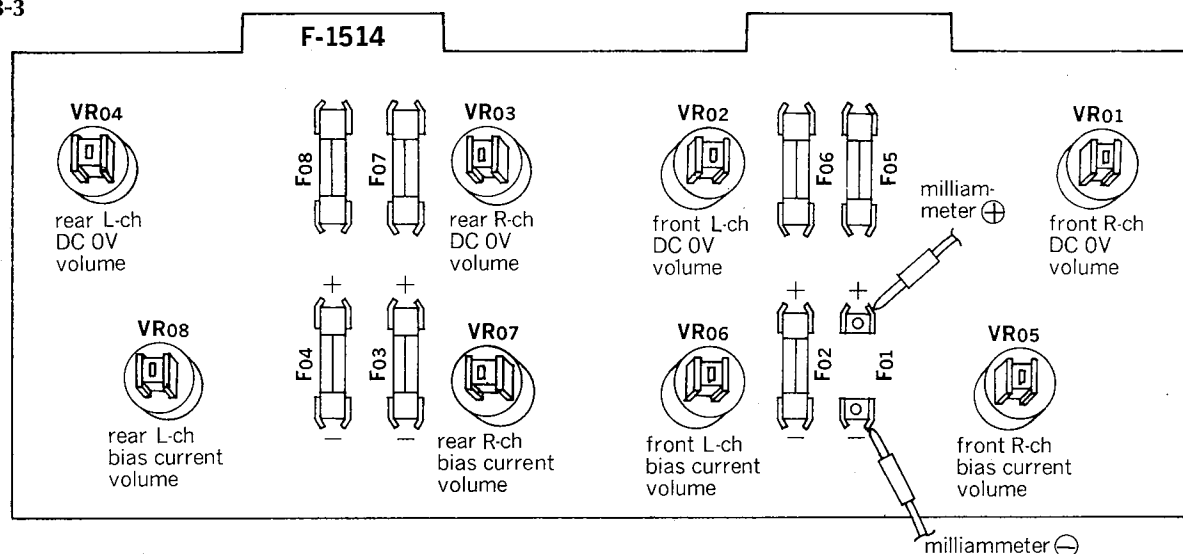
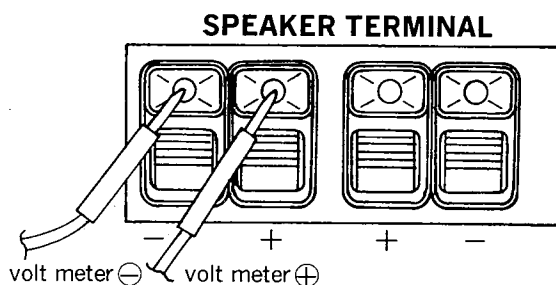
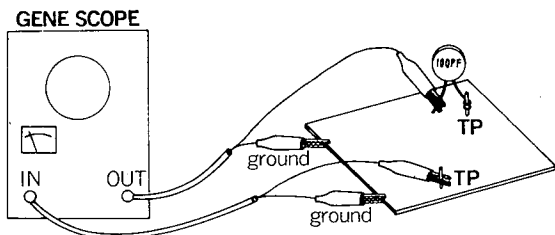


Fig. 3-4

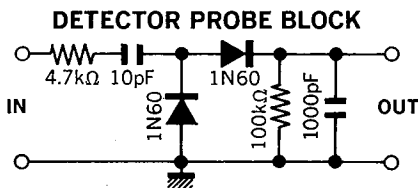


### 3-4. FM IF Alignment (See Fig. 3-10 on page 10)

- Note:** 1. Selector.....FM AUTO  
 2. Master Volume .....Minimum  
 3. Output lever of genescope .....After attenuator  
 4. Sweepwidth.....1.5~2cm/150kHz  
 5. Frequency band .....9.5~11.5MHz



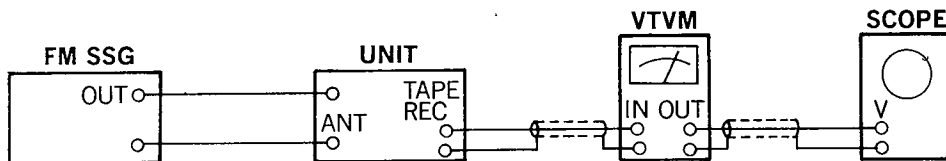
6. Connection .....Connect the output of genescope to TP.A through 100pF ceramic capacitor.  
 7. Before adjustment, turn both VR01 and VR02 CCW (Max.), VR03 CW (Max.) and VR04 to center.



| STEP | SUBJECT            | FEED SIGNAL           |                                         | MEASURE OUTPUT                                                                         | ADJUST     | ADJUST FOR                                                                        | CONDITION             |
|------|--------------------|-----------------------|-----------------------------------------|----------------------------------------------------------------------------------------|------------|-----------------------------------------------------------------------------------|-----------------------|
|      |                    | FROM                  | TO                                      |                                                                                        |            |                                                                                   |                       |
| 1    | IF coil            | Output 55dB Genescope | Base of TR01 on F-1479 (Fig. 3-10 TP.A) | Connected Point between R48 & R50 on F-1479 (Fig. 3-10 TP.B)<br><br>Use Detector Probe | T01, T02   | Max. IF waveform 1 as Fig. 3-9                                                    | Turn core of T06 CCW. |
| 2    | Meter coil         | Same as above         | Same as above                           | Connected point between R62 & VR02 on F-1479 (Fig. 3-10 TP.D) Direct from Genescope    | T06, T07   | Max. IF waveform 2<br>Set the center of waveform 2 with waveform 1 as Fig. 3-9    |                       |
| 3    | Discriminator coil | Same as above         | Same as above                           | Connected point between R67 & R68 on F-1479 (Fig. 3-10 TP.C) Direct from Genescope     | T04<br>T05 | Max. linearity of S curve<br>Set the center of S curve waveform 1 & 2 as Fig. 3-9 |                       |
| 4    | IF coil            | Same as above         |                                         | Same as above                                                                          | T03        | Max. noise                                                                        |                       |

### 3-5. FM Dial Calibration and RF Alignment (See Fig. 3-10 on page 10)

- Note:** 1. Selector.....FM AUTO  
 2. Master Volume .....Minimum  
 3. FM Muting switch .....OFF (pushed in)  
 4. Confirm start point of dial pointer before alignment.  
 5. In Step 3, 4 and 5, 1 and 2 are readjusted, repeat 3, 4 and 5 again.

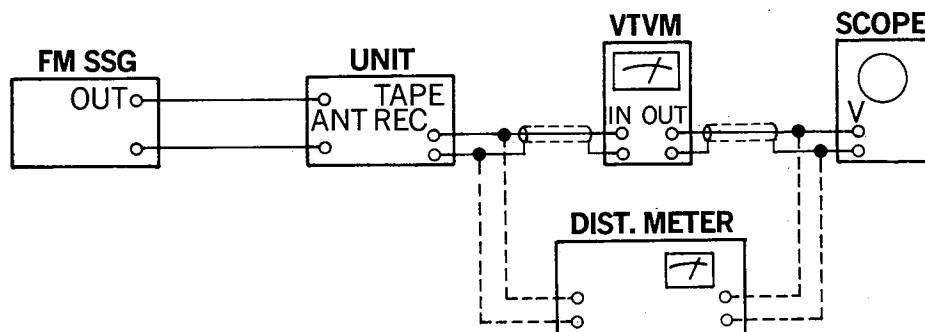


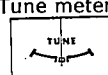
| STEP | SUBJECT                 | FEED SIGNAL                                  |                   | MEASURE OUTPUT                 | ADJUST            | ADJUST FOR    | CONDITION              |
|------|-------------------------|----------------------------------------------|-------------------|--------------------------------|-------------------|---------------|------------------------|
|      |                         | FROM                                         | TO                |                                |                   |               |                        |
| 1    | 88MHz Dial Calibration  | 88MHz ANT input 60dB 1kHz (100% MOD) FM SSG  | ANT terminal 300Ω | REC OUT L or R-ch VTVM & Scope | L04               | Max. output   | Set Dial on 88MHz<br>  |
| 2    | 108MHz Dial Calibration | 108MHz ANT input 60dB 1kHz (100% MOD) FM SSG | Same as above     | Same as above                  | Trimmer Cap. TC04 | Same as above | Set Dial on 108MHz<br> |

| STEP | SUBJECT                         | FEED SIGNAL                                  |               | MEASURE OUTPUT | ADJUST                        | ADJUST FOR                      | CONDITION                                       |
|------|---------------------------------|----------------------------------------------|---------------|----------------|-------------------------------|---------------------------------|-------------------------------------------------|
|      |                                 | FROM                                         | TO            |                |                               |                                 |                                                 |
| 3    | Confirm 88MHz Dial Calibration  | Same as Step 1                               | Same as above | Same as above  |                               | Confirm 88MHz Dial Calibration  | ◦ If not, repeat from Step 1                    |
| 4    | Confirm 98MHz Dial Calibration  | 98MHz ANT input 60dB 1kHz (100% MOD) FM SSG  | Same as above | Same as above  |                               | Confirm 98MHz Dial Calibration  |                                                 |
| 5    | Confirm 108MHz Dial Calibration | Same as Step 2                               | Same as above | Same as above  |                               | Confirm 108MHz Dial Calibration | ◦ If not, repeat from Step 2                    |
| 6    | 88MHz RF Adj.                   | 88MHz ANT input 10dB 1kHz (100% MOD) FM SSG  | Same as above | Same as above  | L01, L02, L03                 | Max. output                     | ◦ Tune FM SSG (Max. indication of Signal Meter) |
| 7    | 108MHz RF Adj.                  | 108MHz ANT input 10dB 1kHz (100% MOD) FM SSG | Same as above | Same as above  | Trimmer Cap. TC01, TC02, TC03 | Same as above                   | Same as above                                   |

### 3-6. FM Signal Meter, Mono Distortion, Tune Meter and Muting Adjustment (See Fig. 3-10 on page 10)

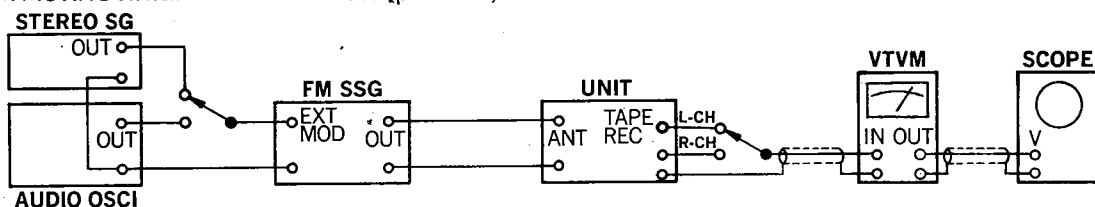
Note: 1. Selector.....FM AUTO  
2. Master Volume .....Minimum



| STEP | SUBJECT      | FEED SIGNAL                                 |                   | MEASURE OUTPUT                        | ADJUST | ADJUST FOR                                                                                                    | CONDITION                                                                                                                                            |
|------|--------------|---------------------------------------------|-------------------|---------------------------------------|--------|---------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
|      |              | FROM                                        | TO                |                                       |        |                                                                                                               |                                                                                                                                                      |
| 1    | Signal Meter | 98MHz ANT input 66dB 1kHz (100% MOD) FM SSG | ANT terminal 300Ω | Signal Meter                          | VR02   | 4.3 on meter<br>         | ◦ Tune FM SSG (Max. indication of Signal Meter)<br>◦ Before adjustment, if meter swings out or not enough, preadjust VR02 until the reasonable point |
| 2    | Distortion   | Same as above                               | Same as above     | REC OUT L or R-ch Dist. meter & Scope | T05    | Min. distortion                                                                                               | ◦ Set VR04 to center<br>◦ Tune FM SSG (Max. indication of Signal Meter)                                                                              |
| 3    | Tune Meter   |                                             |                   | Tune Meter                            | VR04   | Center on Tune meter<br> | ◦ Tune interstation noise                                                                                                                            |
| 4    | Muting Level | 98MHz ANT input 25dB 1kHz (100% MOD) FM SSG | Same as above     | REC OUT L or R-ch VTVM & Scope        | VR03   | Audio signal just muted                                                                                       | ◦ Set FM MUTING switch to OFF (pushed in)<br>◦ Tune the Tune Meter to center and set the muting switch to ON (pushed out)                            |

### 3-7. MPX Alignment (See Fig. 3-10 on page 10)

- Note:** 1. Selector .....FM AUTO  
 2. Master Volume.....Minimum  
 3. FM MUTING switch .....OFF (pushed in)  
 4. Before adjustment, turn VR01 CW (Max.) and VR05 to center.

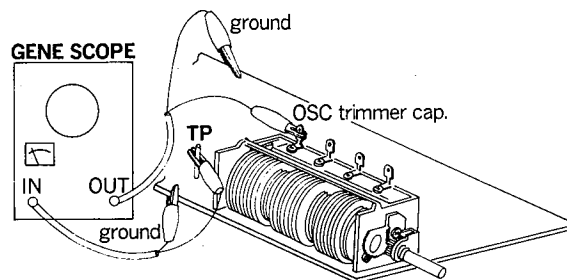
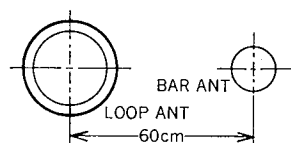


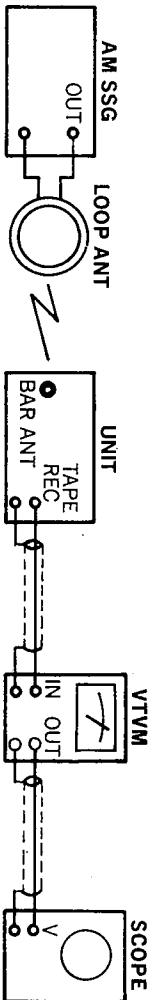
| STEP | SUBJECT                    | FEED SIGNAL                                                                                                           |                         | MEASURE OUTPUT                     | ADJUST | ADJUST FOR     | CONDITION                                       |
|------|----------------------------|-----------------------------------------------------------------------------------------------------------------------|-------------------------|------------------------------------|--------|----------------|-------------------------------------------------|
|      |                            | FROM                                                                                                                  | TO                      |                                    |        |                |                                                 |
| 1    | 19kHz coil                 | 98MHz<br>ANT input 60dB<br>FM SSG<br>Pilot 19kHz<br>(10% MOD)<br>L-ch 1kHz<br>(45% MOD)<br>R-ch (0% MOD)<br>Stereo SG | ANT<br>terminal<br>300Ω | REC OUT<br>L-ch<br>VTVM &<br>Scope | L08    | Max. output    | ◦ Tune FM SSG (Center indication of Tune Meter) |
| 2    | Separation                 | Same as above                                                                                                         | Same as above           | REC OUT<br>R-ch<br>VTVM &<br>Scope | VR05   | Min. output    |                                                 |
| 3    | Cofirm Separation          | 98MHz<br>ANT input 60dB<br>FM SSG<br>Pilot 19kHz<br>(10% MOD)<br>L-ch (0% MOD)<br>R-ch 1kHz<br>(45% MOD)<br>Stereo SG | Same as above           | REC OUT<br>L-ch<br>VTVM &<br>Scope | .      | Min. output    | ◦ If less the 37dB adjust VR05                  |
| 4    | Indicator (Lighting level) | 98MHz<br>ANT input 31dB<br>FM SSG<br>Pilot 19kHz<br>(10% MOD)<br>Stereo SG                                            | Same as above           | Stereo indicator lamp              | VR01   | Lighting Point | ◦ Tune FM SSG (Center indication of Tune Meter) |

### 3-8. AM IF, Dial Calibration, RF and Signal Meter Alignment (See Figs. 3-6, 3-7, 3-8 and 3-10 on page 10)

- Note:** 1. Selector.....AM  
 2. Master Volume .....Minimum  
 3. Confirm start point of dial pointer before alignment.  
 4. In case of using loop antenna, increase output of AM SSG for 26dB than bar antenna's direct input as it attenuates input sensitivity for 26dB. (See Fig. 3-5)  
 5. After adjustment of signal meter, confirm the meter's swing on FM. (If meter swang out or not enough, readjust VR02.) (See Page 3-8)

Fig. 3-5





| STEP | SUBJECT                          | FEED SIGNAL                                                 |                                   | MEASURE OUTPUT                                                 | ADJUST            | ADJUST FOR                                                                                    | CONDITION                                                                                                                                           |
|------|----------------------------------|-------------------------------------------------------------|-----------------------------------|----------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
|      |                                  | FROM                                                        | TO                                |                                                                |                   |                                                                                               |                                                                                                                                                     |
| 1    | IF coil                          | Output 70dB Genescope                                       | OSC trimmer cap. (TC06) Fig. 3-10 | Connected Point between R130 & R136 on F-1479 (Fig. 3-10 TP.E) | T08               | Max. IF waveform 1 Fig. 3-6                                                                   | ◦ Turn core T09 & T10 CCW.                                                                                                                          |
| 2    | IF coil                          | Output 55dB Genescope                                       | Same as above                     |                                                                | T09               | Max. IF waveform 2 Fig. 3-7                                                                   | ◦ If not, readjust T08 & T09 slightly                                                                                                               |
| 3    | IF coil                          | Output 45dB Genescope                                       | Same as above                     |                                                                | T10               | Max. IF waveform 3 Fig. 3-8                                                                   | ◦ If broadcasting station is near, it might be used                                                                                                 |
| 4    | 535kHz Dial calibration          | 535kHz ANT input 60dB 400Hz (30% MOD) AM SSG Use loop ANT   | Bar ANT                           | REC OUT L or R-ch VTVM & Scope                                 | T11               | Max. output                                                                                   |                                                                |
| 5    | 1400kHz Dial Calibration         | 1400kHz ANT input 60dB 400Hz (30% MOD) AM SSG Use loop ANT  | Same as above                     | Same as above                                                  | Trimmer Cap. TC06 | Same as above                                                                                 | Same as above                                                                                                                                       |
| 6    | Confirm 600kHz Dial Calibration  | 600kHz ANT input 60dB 400Hz (30% MOD) AM SSG Use loop ANT   | Same as above                     | Same as above                                                  |                   | Confirm 600kHz Dial Calibration                                                               | ◦ If not, repeat from Step 4                                                                                                                        |
| 7    | Confirm 1000kHz Dial Calibration | 1000kHz ANT input 60dB 400Hz (30% MOD) AM SSG Use loop ANT  | Same as above                     | Same as above                                                  |                   | Confirm 1000kHz Dial Calibration                                                              |                                                                                                                                                     |
| 8    | Confirm 1400kHz Dial Calibration | Same as Step 5                                              | Same as above                     | Same as above                                                  |                   | Confirm 1400kHz Dial Calibration                                                              | ◦ If not, repeat from Step 5                                                                                                                        |
| 9    | 600kHz RF Adj.                   | 600kHz ANT input 50dB 400Hz (30% MOD) AM SSG Use loop ANT   | Same as above                     | Same as above                                                  | Bar ANT L702      | Max. output                                                                                   |                                                                                                                                                     |
| 10   | 1400kHz RF Adj.                  | 1400kHz ANT input 50dB 400Hz (30% MOD) AM SSG Use loop ANT  | Same as above                     | Same as above                                                  | Trimmer Cap. TC05 | Same as above                                                                                 |                                                                                                                                                     |
| 11   | Signal Meter                     | 1000kHz ANT input 100dB 400Hz (30% MOD) AM SSG Use loop ANT | Same as above                     | Same as above                                                  | F-1479 VR06       | 4 on meter  | ◦ Tune AM SSG (Max. indication of signal meter)<br>◦ Before adjustment, if meter swang out or not enough, preadjust VR06 until the reasonable point |

4. THREADING OF DIAL CORD

\* If dial cord is or slips, replace cord by following procedures. As QRX-7500 is using 0.6mmφ cord, please it with same type certainly.

\* Length of dial cord.....approx. 210cm (82.7 inch)

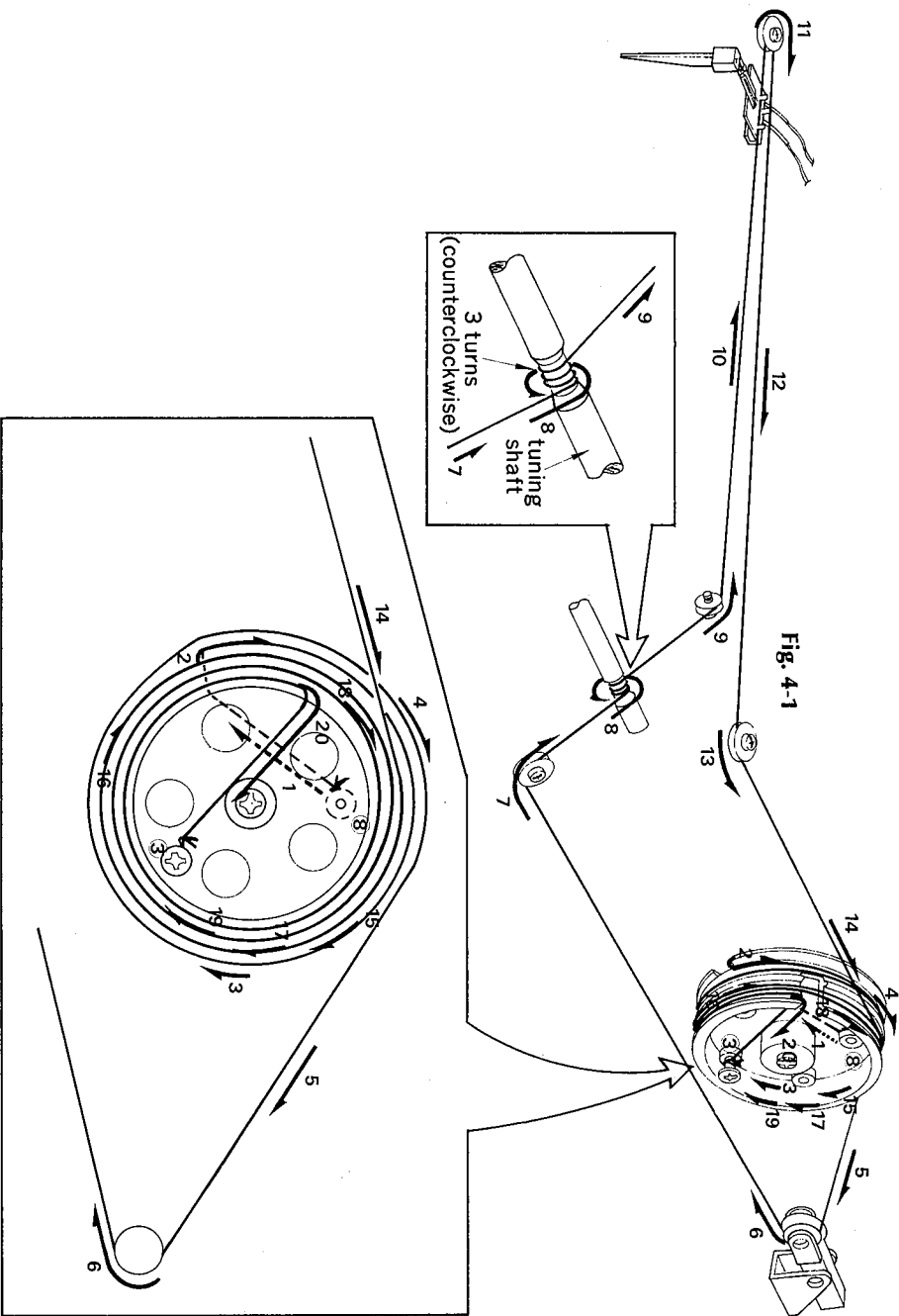


Fig. 4-1

1. How to Thread Dial Cord

\* Thread dial cord in numerical order from 1 to 20 as shown in Fig. 4-1.

- 1) Close the variable capacitor completely (Maximum capacitance).
  - 2) Tie cord to number ⑨ screw of the dial pulley and thread cord in direction of arrow from 1 to 7 toward tuning shaft 8.
  - 3) After 8, wind cord three turns around the tuning shaft counterclockwise and thread it in direction of arrow from 9 to 19.
  - 4) After 20, tie cord to number ⑨ screw of the pulley.
- \* In order to proceed with the above procedure 4) successfully, please follow the instruction under-mentioned.
- (1) To strengthen the dial cord's tension, hold around the end of cord and pull it toward the Front Panel.
- (2) Then, turn the tuning shaft counterclockwise, as cord's tension will be more constantly obtained.
- (3) Tie the cord to number ⑨ screw of the pulley (same as procedure 4).

- 5) After these procedures, lock the knots of cord with paint.

2. Attachment of Dial Pointer

- 1) Close the variable capacitor completely (Maximum capacitance).
- 2) Set the dial pointer to "0" on dial scale and tighten the dial pointer ass'y. (See Fig. 4-2)

\* Make sure that the dial mechanism operates smoothly by turning the Tuning knob.

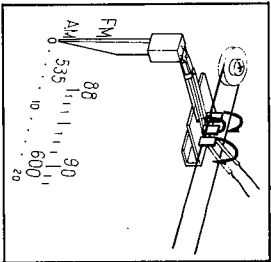


Fig. 4-2

5. TROUBLESHOOTING CHART

5-1. Troubleshooting on Power Supply Section

1. No power supplied to each section

| Symptom                    | Check Point | Cause & What to Do                        |
|----------------------------|-------------|-------------------------------------------|
| 1-1. Each lamp not lighted |             | 1. Imperfect contact of power supply plug |
|                            |             | 2. Power fuse open                        |
|                            |             | 3. Defective power switch S705            |
|                            |             | 4. F01 on F-1515 open                     |
|                            |             | 5. Defective power transformer PT001      |
| 1-2. Each lamp lighted     |             | 6. Defective D07, D08 on F-1515           |
|                            |             | 7. Defective D05, D06 on F-1515           |
|                            |             | 8. F02, F03 on F-1515 open                |
|                            |             | 9. Defective D02 on F-1515                |
|                            |             | 10. Defective TR03, TR04 on F-1515        |
|                            |             | 11. Defective TR05 on F-1515              |
|                            |             | 12. Imperfect contact of VR01 on F-1515   |
|                            |             | 13. Defective D15 on F-1515               |

5-2. Troubleshooting on Audio Section

1. Quick acting fuse open

- 1-1. After replacement, fuse not open
  - 1-2. After replacement, fuse open again
1. Set the bias current to 25mA
  2. Defective TR25, TR29 (TR26, TR30) on F-1514
  3. Defective TR17, TR21 (TR18, TR22) on F-1514
  4. Defective TR13 (TR14) on F-1514

2. 2-CH of FUNCTION inoperative

- 2-1. Both channels inoperative
  - 2-2. One channel inoperative
5. Defective power supply section (See 5-1)
  6. Imperfect contact of TAPE MONITOR switch S01 (S02) on F-1489
  7. Defective TR01, TR03, TR05, TR07 (TR02, TR04, TR06, TR08) on F-1484
  8. Imperfect contact of Low Filter switch S01 (S02) on F-1486
  9. Imperfect contact of High Filter switch S03 (S04) on F-1486
  10. Defective F-1514 printed board

### 3. PHONO inoperative

| Symptom                                                  | Check Point | Cause & What to Do                                                                                                                   |
|----------------------------------------------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------|
| 3-1. Both channels inoperative                           |             | 11. Defective power supply section (See 5-1)                                                                                         |
| 3-2. One channel inoperative                             |             |                                                                                                                                      |
| 1. Reverse the output cords of L and R-ch from turntable |             |                                                                                                                                      |
| 1-1. Inoperative channel reverses                        |             | 12. Imperfect contact of turntable output cord<br>13. Defective turntable                                                            |
| 1-2. Inoperative channel not reverses                    |             | 14. Defective TR01, TR03, TR05 (TR02, TR04, TR06) on F-2085<br>15. Imperfect contact of SELECTOR switch S701a (S701b), S701i (S701j) |

### 4. Level Meter inoperative

|                                     |  |                                                                                                                                                                                  |
|-------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4-1. 4-channels inoperative         |  | 16. Defective power supply section (See 5-1)<br>17. Defective F-2048, F-2047                                                                                                     |
| 1) Front L or R channel inoperative |  | 18. Defective TR01, TR05 (TR02, TR06) on F-1485<br>19. Defective D01, D05, D09, D13 (D02, D06, D10, D14) on F-1485<br>20. Defective VR01 (VR02) on F-1485<br>21. Defective Meter |
| 2) Rear L or R channel inoperative  |  | 22. Defective TR03, TR07 (TR04, TR08) on F-1485<br>23. Defective D03, D07, D11, D15 (D04, D08, D12, D16) on F-1485<br>24. Defective Meter<br>25. Defective VR03 (VR04)           |

## 5. QS SYNTHESIZER or QS REGULAR MATRIX of FUNCTION Switch inoperative

\*QS Regular Matrix circuit consists of both F-2047 and F-2048 printed boards.

(2-CH of FUNCTION switch operative)

- |                                       |                                                                 |
|---------------------------------------|-----------------------------------------------------------------|
| 5-1. Both Front and Rear inoperative  | 26. Defective power supply section (See 5-1)                    |
|                                       | 27. Defective TR01, TR03 (TR02, T04) on F-2048                  |
| 5-2. Front L or R channel inoperative | 28. Defective TR01, TR03, TR05 (TR02, TR04, TR06) on F-2047     |
|                                       | 29. Defective D09, D11, D13, D15 (D10, D12, D14, D16) on F-2047 |
|                                       | 30. Defective FET01 (FET02) on F-2047                           |
|                                       | 31. Defective TR07 (TR08, TR09) on F-2047                       |
|                                       | 32. Defective TR05, TR09, TR13 (TR06, TR10, TR14) on F-2048     |
|                                       | 33. Defective FUNCTION switch S702a~t, SELECTOR switch S701a~o  |
| 5-3. Rear L or R channel inoperative  | 34. Defective TR07, TR11, TR15 (TR08, TR12, TR16) on F-2048     |
|                                       | 35. Defective FUNCTION switch S702a~t, SELECTOR switch S701a~o  |

## 5-3. Troubleshooting on RF Section

- | Symptom                                                | Check Point                                           | Cause & What to Do                            |
|--------------------------------------------------------|-------------------------------------------------------|-----------------------------------------------|
| <b>1. Both FM and AM inoperative (PHONO operative)</b> |                                                       |                                               |
| 1-1. Both channels inoperative                         |                                                       |                                               |
|                                                        | 1) +13V not supplied at terminal 03, 06, 16 on F-1479 | 1. Defective power supply section (F-1515)    |
|                                                        | 2) +13V not supplied to terminal 03, 06, on F-1479    | 2. Imperfect contact of SELECTOR switch S701I |
| 1-2. One channel inoperative                           |                                                       |                                               |
|                                                        | 1) AM section inoperative                             | 3. Defective SELECTOR switch S701a (701b)     |
|                                                        | 2) FM section inoperative                             | 4. Defective SELECTOR switch S701a (701b)     |
|                                                        |                                                       | 5. Defective TR17 (TR18) on F-1479            |
|                                                        |                                                       | 6. Defective Low Pass Filter LPF01            |

## 2. FM Section

\*Before check, set MUTING switch to OFF (Pushed in)

### 2-1. FM inoperative only

#### 1. Tune FM signal or FM broadcasting station

- |                                                                                       |                                                    |
|---------------------------------------------------------------------------------------|----------------------------------------------------|
| 1-1. Signal meter operative<br>(Interstation noise too low compared with proper unit) | 7. Defective IC01, IC02 on F-1479                  |
|                                                                                       | 8. Defective T03~T05 on F-1479                     |
|                                                                                       | 9. Defective D01, D02 on F-1479                    |
|                                                                                       | 10. Defective IC03 on F-1479                       |
|                                                                                       | 11. Defective LC01 on F-1479                       |
| 1-2. Signal meter inoperative                                                         | 12. Defective CF01~CF03 on F-1479                  |
|                                                                                       | 13. Defective FET01, TR01~TR04 on F-1479           |
|                                                                                       | 14. Defective TR05~TR10 on F-1479                  |
|                                                                                       | 15. Defective L01~L04 on F-1479                    |
|                                                                                       | 16. Defective T01~T02 on F-1479                    |
| 2-2. Signal meter inoperative<br>(FM broadcasting sound can be heard)                 | 17. IF, RF out of adjustment on F-1479             |
|                                                                                       | 18. Defective TR11, TR12 on F-1479                 |
|                                                                                       | 19. Defective T06, T07 on F-1479                   |
|                                                                                       | 20. Defective D03, D04 on F-1479                   |
|                                                                                       | 21. Defective VR02 on F-1479                       |
|                                                                                       | 22. Defective signal meter                         |
| 2-3. Tune meter inoperative<br>(FM broadcasting sound can be heard)                   | 23. T04, T05, out of adjustment on F-1479          |
|                                                                                       | 24. IF out of adjustment on F-1479                 |
|                                                                                       | 25. Discriminator coil out of adjustment on F-1479 |
|                                                                                       | 26. Defective Tune meter                           |
|                                                                                       | 27. Defective SELECTOR switch S701j                |
|                                                                                       | 28. Defective D01, D02 on F-1479                   |
| 2-4. Muting circuit inoperative<br>(Signal meter operative)                           | 29. Defective TR13~TR15 on F-1479                  |
|                                                                                       | 30. Defective TR19, TR20 on F-1479                 |
|                                                                                       | 31. Defective D05 on F-1479                        |
|                                                                                       | 32. Defective VR03 on F-1479                       |
|                                                                                       | 33. Imperfect contact of MUTING switch S41         |

| Symptom                                              | Check Point                                                                        | Cause & What to Do                                                                                                                                                                                                                                                        |
|------------------------------------------------------|------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2-5. No channel separation on FM stereo broadcasting | *Confirm that SELECTOR switch is set to FM AUTO.<br>*Confirm signal meter operates |                                                                                                                                                                                                                                                                           |
| 1. Indicator lamp not lighted                        |                                                                                    | 34. Defective the indicator lamp PL726<br>35. Defective TR16 on F-1479<br>36. Defective L08 on F-1479<br>37. Defective IC03 on F-1479<br>38. Defective VR01 for indicator lamp on F-1479<br>39. Defective VR05 for FM stereo separation on F-1479<br>40. Defective F-1515 |
| 2. Indicator lamp lighted                            |                                                                                    | 41. Defective TR16 on F-1479                                                                                                                                                                                                                                              |

### 3. AM Section

#### 3-1. AM inoperative

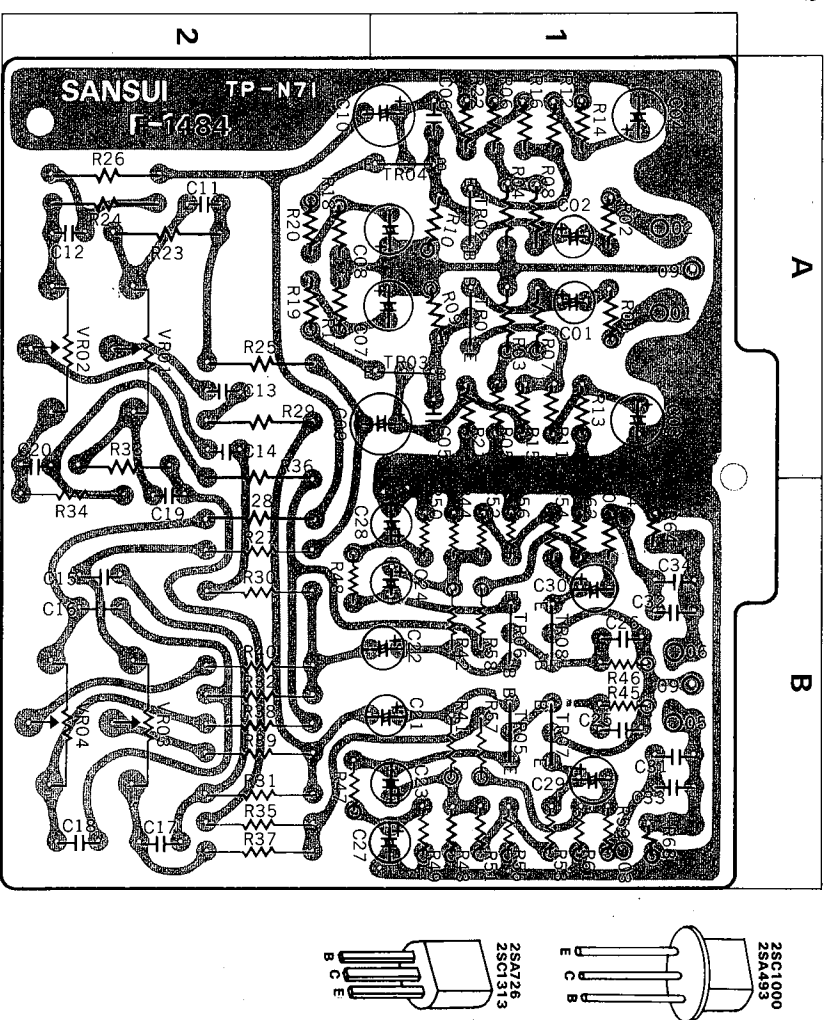
1. Interstation noise changes by touching the terminal 04 on F-1479

|                                                                       |                                                                                                                                                                                     |
|-----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1-1. Increase                                                         | 42. Defective bar antenna<br>43. Deective TR24 on F-1479<br>44. Defective T11 on F-1479<br>45. Variable capacitor shorted                                                           |
| 1-2. No change                                                        | 46. Defected D07 on F-1479<br>47. Defective TR21~TR23 on F-1479<br>48. Defective T08~T10 on F-1479                                                                                  |
| 3-2. Distortion                                                       | 49. Defective D06, D07 on F-1479<br>50. IF out of adjustment on F-1479                                                                                                              |
| 3-3. Signal meter inoperative<br>(AM broadcasting sound can be heard) | 51. IF, RF out of adjustment on F-1479<br>52. Defective TR25 on F-1479<br>53. Defective D08, D09 on F-1479<br>54. Imperfect contact of VR06 on F-1479<br>55. Defective signal meter |

## 6. PARTS LOCATIONS AND PARTS LIST

## 6-1. F-1484 Tone Control Circuit Board

## Conductor Side



## Parts List

| Parts No. | Stock No.                        | Description                          | Position |
|-----------|----------------------------------|--------------------------------------|----------|
| TR01      | { 0305880, 1<br>or<br>0306071, 2 | 25C1000 (GR, BL)<br>25C1313 ® (G, H) | 1 A      |
| TR02      | { 0305880, 1<br>or<br>0306071, 2 | 25C1000 (GR, BL)<br>25C1313 ® (G, H) | 1 A      |
| TR03      | { 0300450<br>or<br>0300410, 1    | 25A493 (GR)<br>25A726 ® (F, G)       | 1 A      |
| TR04      | { 0300450<br>or<br>0300410, 1    | 25A493 (GR)<br>25A726 ® (F, G)       | 1 A      |
| TR05      | { 0305880<br>or<br>0306071, 2    | 25C1000 (GR, BL)<br>25C1313 ® (G, H) | 1 B      |
| TR06      | { 0305880<br>or<br>0306071, 2    | 25C1000 (GR, BL)<br>25C1313 ® (G, H) | 1 B      |
| TR07      | { 0305880<br>or<br>0306071, 2    | 25C1000 (GR, BL)<br>25C1313 ® (G, H) | 1 B      |
| TR08      | { 0306071, 2<br>or<br>0306071, 2 | 25C1313 ® (G, H)<br>25C1000 (GR, BL) | 1 B      |
| C01       | 0573109                          | 1 µF 25V T.C.                        | 1 A      |

| Parts No. | Stock No. | Description | Position |
|-----------|-----------|-------------|----------|
|-----------|-----------|-------------|----------|

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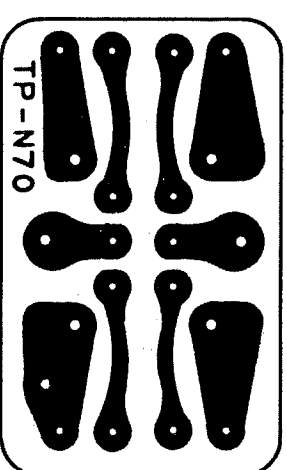
| Parts No. | Stock No. | Description | Position |
|-----------|-----------|-------------|----------|
|-----------|-----------|-------------|----------|

|      |            |               |                                    |     |
|------|------------|---------------|------------------------------------|-----|
| R56  | 0106220    | 22Ω           | ± 5 %<br>1/4 W<br>C.R.<br>(E.L.R.) | 1 B |
| R59  | 0106332    | 3.3kΩ         |                                    | 1 B |
| R60  | 0106332    | 3.3kΩ         |                                    | 1 B |
| R61  | 0106563    | 56kΩ          |                                    | 1 B |
| R62  | 0106563    | 56kΩ          |                                    | 1 B |
| R63  | 0106104    | 100kΩ         | }                                  | 1 B |
| R64  | 0106104    | 100kΩ         |                                    | 1 B |
| VR01 | 1010990, 1 | 100kΩ (W) × 2 | } Variable Resistor                | 2 A |
| VR02 | 1010990, 1 | 100kΩ (W) × 2 |                                    | 2 A |
| VR03 | 1010980    | 100kΩ (B) × 2 |                                    | 2 B |
| VR04 | 1010980    | 100kΩ (B) × 2 |                                    | 2 B |

## 6-2. F-1490 De-emphasis Circuit Board

(Stock No. 7591880 Complete Circuit Board F-1490)

## Conductor Side

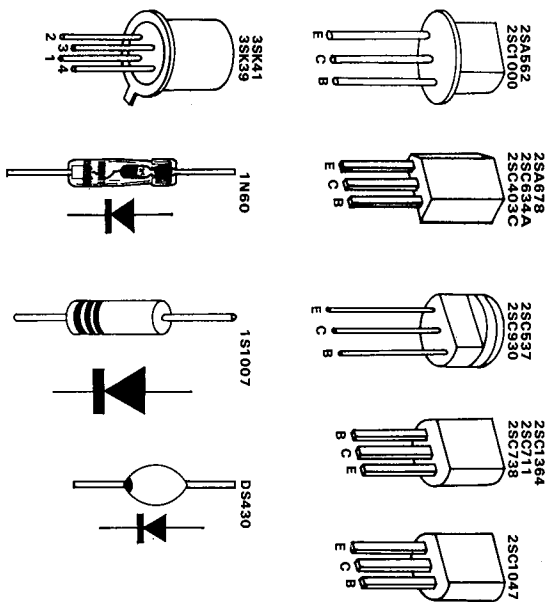
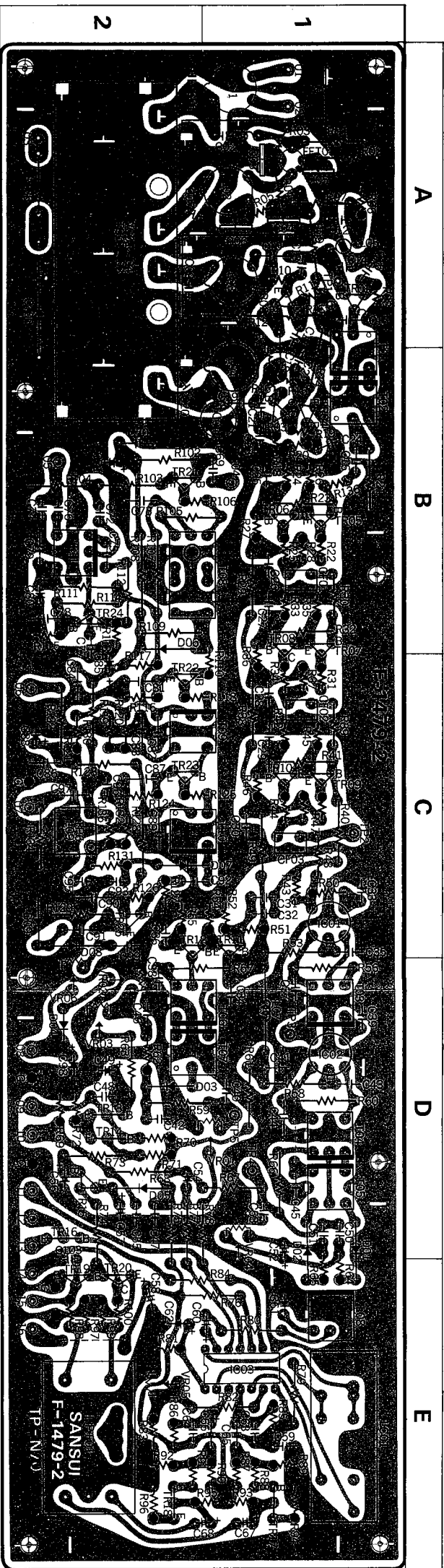


## Parts List

| Parts No. | Stock No. | Description                       |
|-----------|-----------|-----------------------------------|
| C01       | 0600826   | 0.0082 $\mu$ F $\pm$ 5 % 50V M.C. |
| C02       | 0600826   | 0.0082 $\mu$ F                    |
| S01, 02   | 1110240   | Slide Switch                      |

|                                 |                                           |
|---------------------------------|-------------------------------------------|
| <b>Abbreviations</b>            |                                           |
| C.R. : Carbon Resistor          | BP.E.C. : Bi-Polar Electrolytic Capacitor |
| S.R. : Solid Resistor           | C.C. : Ceramic Capacitor                  |
| Ce.R. : Cement Resistor         | MI.C. : Mica Capacitor                    |
| M.R. : Metallized Film Resistor | O.C. : Oil Capacitor                      |
| M.C. : Mylar Capacitor          | P.C. : Polystyrene Capacitor              |
| E.C. : Electrolytic Capacitor   | T.C. : Tantalum Capacitor                 |

6-3. F-1479A Tuner Circuit Board (Stock No. 7520700 Complete Circuit Board F-1479A) Conductor Side



Parts List

| Parts No. | Stock No. | Description | Position |
|-----------|-----------|-------------|----------|
|-----------|-----------|-------------|----------|

| Parts No. | Stock No. | Description | Position |
|-----------|-----------|-------------|----------|
|-----------|-----------|-------------|----------|

| Parts No. | Stock No. | Description | Position |
|-----------|-----------|-------------|----------|
|-----------|-----------|-------------|----------|

| Parts No. | Stock No. | Description | Position |
|-----------|-----------|-------------|----------|
|-----------|-----------|-------------|----------|

|       |            |               |        |
|-------|------------|---------------|--------|
| TR01  | 0305801    | 2SC1047 (B)   | 1 A    |
| TR02  | 0305802    | 2SC1047 (C)   | 1 A    |
| TR03  | 0305790, 1 | 2SC930 (C,D)  | 1 B    |
| TR04  | 0305440    | 2SC537 (E)    | 1 B    |
| TR05  | 0306113    | 2SC738 (D)    | 1 B    |
| TR06  | 0306113    | 2SC738 (D)    | 1 B    |
| TR07  | 0306113    | 2SC738 (D)    | 1 B, C |
| TR08  | 0306113    | 2SC738 (D)    | 1 B, C |
| TR09  | 0306113    | 2SC738 (D)    | 1 C    |
| TR10  | 0306113    | 2SC738 (D)    | 1 C    |
| TR11  | 0305791    | 2SC930 (D)    | 1 C    |
| TR12  | 0305791    | 2SC930 (D)    | 1, 2 C |
| TR13  | 0305733    | 2SC711 (G)    | 2 D    |
| TR14  | 0305733    | 2SC711 (G)    | 2 D    |
| TR15  | 0300291, 2 | 2SA678 (6, 7) | 2 D    |
| TR16  | 0300221    | 2SA562 (Y)    | 2 D    |
| TR17  | 0306132    | 2SC1364 (7)   | 1 E    |
| TR18  | 0306132    | 2SC1364 (7)   | 2 E    |
| TR19  | 0305891    | 2SC634A (6)   | 2 E    |
| TR20  | 0305891    | 2SC634A (6)   | 2 E    |
| TR21  | 0305992    | 2SC403C (4)   | 2 B    |
| TR22  | 0305992    | 2SC403C (4)   | 2 C    |
| TR23  | 0305992    | 2SC403C (4)   | 2 C    |
| TR24  | 0305991    | 2SC403C (3)   | 2 B    |
| TR25  | 0305991    | 2SC403C (3)   | 2 C    |
| IC01  | 0360070    | μpc555A       | 1 C    |
| IC02  | 0360070    | μpc555A       | 1 D    |
| IC03  | 0360080    | HA1120        | 1 E    |
| FET01 | 0370132, 1 | 3SK41 (K, L)  | 1 A    |
| D01   | 0370080, 1 | 3SK39 (R, Q)  | 1 D, E |
| D02   | 0311016    | 1N60          | 1 D, E |
| D03   | 0310331    | 1N60          | 2 D    |

|         |         |                      |        |
|---------|---------|----------------------|--------|
| D04     | 0340090 | DS430                | 2 D    |
| D05     | 0340090 | DS430                | 2 D    |
| D06     | 0310331 | 1N60                 | 2 B    |
| D07     | 0311090 | 1S1007-J             | 1, 2 C |
| D08     | 0310331 | 1N60                 | 2 C    |
| D09     | 0310331 | 1N60                 | 2 C    |
| T01     | 4236890 | 10.7MHz (WHITE)      | 1 A, B |
| T02     | 4236900 | 10.7MHz (BLACK)      | 1 B    |
| T03     | 4236860 | 10.7MHz (BLACK)      | 1 D    |
| T04     | 4236750 | 10.7MHz (PINK)       | 1 D    |
| T05     | 4236760 | 10.7MHz (BLUE)       | 1 D    |
| T06     | 4236840 | 10.7MHz (BLUE)       | 1, 2 D |
| T07     | 4236920 | 10.7MHz (BLACK)      | 1, 2 D |
| T08     | 0910180 | YEL-455E2 (CRW-4558) | 1, 2 B |
| T09     | 4230610 | 455KHz (BLACK)       | 1, 2 C |
| T10     | 4230580 | 455KHz (BLUE)        | 1, 2 C |
| T11     | 4220380 | AM OSC Coil          | 2 B    |
| CF01    | 0910150 | SFE-10.7MA-M         | 1 B    |
| CF02    | 0910150 | SFE-10.7MA-M         | 1 C    |
| CF03    | 0910150 | SFE-10.7MA-M         | 1 C    |
| L01     | 4200560 | FM ANT Coil          | 1 A    |
| L02     | 4210300 | FM RF Coil           | 1, 2 A |
| L03     | 4210300 | FM RF Coil           | 1 A    |
| L04     | 4220530 | OSC Coil             | 1 A, B |
| L05     | 4290110 | Choke Coil           | 1 A    |
| L07     | 4290011 | 3.5μH Choke Coil     | 1 D    |
| L08     | 4240720 | 19KHz Coil           | 1 E    |
| L09     | 4290030 | Peaking Coil         | 2 C    |
| LC01    | 4240710 | MPX Coil             | 1 E    |
| LPF01   | 0910210 | Low Pass Filter      | 2 E    |
| VC01-04 | 1220130 | Variable Capacitor   | 2 A, B |

|     |         |                        |        |
|-----|---------|------------------------|--------|
| C01 | 0669368 | 6.8pF ±0.25pF 50V C.C. | 2 A    |
| C02 | 0657102 | 0.001μF 50V C.C.       | 1 A    |
| C03 | 0659015 | 2200pF 50V C.C.        | 1 A    |
| C04 | 0659015 | 2200pF 50V C.C.        | 1 A    |
| C05 | 0659015 | 2200pF 50V C.C.        | 1 A    |
| C06 | 0659015 | 2200pF 50V C.C.        | 1 A    |
| C07 | 0669370 | 10pF ±5pF 50V C.C.     | 1, 2 A |
| C08 | 0679023 | 0.39pF ±5% 50V C.C.    | 2 A    |
| C09 | 0669370 | 10pF ±5pF 50V C.C.     | 2 A    |
| C10 | 0669209 | 8.2pF ±0.25pF 50V C.C. | 1 A    |
| C11 | 0657223 | 0.022μF 50V C.C.       | 1 A    |
| C12 | 0660221 | 220pF ±10% 50V C.C.    | 1 A    |
| C14 | 0669209 | 8.2pF ±0.25pF 50V C.C. | 1 A    |
| C15 | 0657223 | 0.022μF 50V C.C.       | 1 A    |
| C16 | 0657223 | 0.022μF 50V C.C.       | 1 B    |
| C17 | 0657223 | 0.022μF 50V C.C.       | 1 A    |
| C18 | 0669204 | 3.3pF ±0.25pF 50V C.C. | 1 A, B |
| C19 | 0669370 | 10pF ±5% 50V C.C.      | 2 B    |
| C20 | 0669382 | 12pF ±0.25pF 50V C.C.  | 1 B    |
| C21 | 0669369 | 8.2pF ±0.25pF 50V C.C. | 1 B    |
| C22 | 0657223 | 0.022μF 50V C.C.       | 1 B    |
| C23 | 0669375 | 15pF ±5% 50V C.C.      | 1 B    |
| C24 | 0657223 | 0.022μF 50V C.C.       | 1 B    |
| C25 | 0657223 | 0.022μF 50V C.C.       | 1 B    |
| C26 | 0657223 | 0.022μF 50V C.C.       | 1 B    |
| C27 | 0657223 | 0.022μF 50V C.C.       | 1 B    |
| C28 | 0657223 | 0.022μF 50V C.C.       | 1 C    |
| C29 | 0657223 | 0.022μF 50V C.C.       | 1 C    |
| C30 | 0657223 | 0.022μF 50V C.C.       | 1 C    |
| C31 | 0669218 | 18pF 50V C.C.          | 1 C    |
| C32 | 0669224 | 33pF 50V C.C.          | 1 C    |
| C33 | 0657223 | 0.022μF 50V C.C.       | 1 C    |
| C34 | 0657223 | 0.022μF 50V C.C.       | 1 D    |
| C35 | 0657223 | 0.022μF 50V C.C.       | 1 C    |
| C36 | 0657223 | 0.022μF 50V C.C.       | 2 C    |
| C37 | 0657223 | 0.022μF 50V C.C.       | 1 D    |
| C38 | 0657223 | 0.022μF 50V C.C.       | 2 D    |

|     |         |                      |     |
|-----|---------|----------------------|-----|
| C39 | 0657223 | 0.022μF 50V C.C.     | 1 D |
| C40 | 0657223 | 0.022μF 50V C.C.     | 1 D |
| C41 | 0657223 | 0.022μF 50V C.C.     | 1 D |
| C42 | 0669226 | 47pF 50V C.C.        | 2 D |
| C43 | 0657223 | 0.022μF 50V C.C.     | 1 D |
| C44 | 0657473 | 0.047μF 50V C.C.     | 1 D |
| C46 | 0657223 | 0.022μF 50V C.C.     | 2 D |
| C47 | 0657223 | 0.022μF 50V C.C.     | 2 D |
| C48 | 0657223 | 0.022μF 50V C.C.     | 2 D |
| C49 | 0573108 | 0.1μF ±20% 25V T.C.  | 2 D |
| C50 | 0660101 | 100pF ±10% 50V C.C.  | 1 D |
| C51 | 0660101 | 100pF ±10% 50V C.C.  | 1 D |
| C52 | 0519001 | 10μF 25V E.C.        | 1 D |
| C53 | 0660101 | 100pF ±10% 50V C.C.  | 1 D |
| C54 | 0513479 | 4.7μF 25V E.C.       | 2 D |
| C55 | 0657223 | 0.022μF 50V C.C.     | 2 D |
| C56 | 0519104 | 1.5μF ±20% 50V E.C.  | 2 D |
| C57 | 0515339 | 3.3μF 50V E.C.       | 2 D |
| C58 | 0512221 | 220μF 16V E.C.       | 2 E |
| C59 | 0657223 | 0.022μF 50V C.C.     | 1 E |
| C60 | 0515339 | 3.3μF 50V E.C.       | 1 E |
| C61 | 0629001 | 6800pF ±5% 50V P.C.  | 1 E |
| C62 | 0512100 | 10μF 16V E.C.        | 2 E |
| C63 | 0600187 | 0.018μF ±5% 50V M.C. | 1 E |
| C64 | 0600187 | 0.018μF ±5% 50V M.C. | 2 E |

**Abbreviations**

C.R. : Carbon Resistor  
S.R. : Solid Resistor  
Ce.R. : Cement Resistor  
M.R. : Metallized Film Resistor  
M.C. : Mylar Capacitor  
E.C. : Electrolytic Capacitor

BP.E.C. : Bi-Polar Electrolytic Capacitor  
C.C. : Ceramic Capacitor  
Mi.C. : Mica Capacitor  
O.C. : Oil Capacitor  
P.C. : Polystyrene Capacitor  
T.C. : Tantalum Capacitor

| Parts No. | Stock No. | Description              | Position                 |
|-----------|-----------|--------------------------|--------------------------|
| C65       | 0519105   | 2.2 $\mu$ F              | 1 E                      |
| C66       | 0519105   | 2.2 $\mu$ F              | 1 E                      |
| C67       | 0519105   | 2.2 $\mu$ F              | 1 E                      |
| C68       | 0519105   | 2.2 $\mu$ F              | 1, 2 E                   |
| C69       | 0657223   | 0.022 $\mu$ F            | 1 B                      |
| C70       | 0657473   | 0.47 $\mu$ F             | 2 B                      |
| C71       | 0519002   | 3.3 $\mu$ F $\pm 20\%$   | 25V E.C. 2 B             |
| C72       | 0600107   | 0.01 $\mu$ F $\pm 5\%$   | 50V M.C. 2 B             |
| C73       | 0657473   | 0.047 $\mu$ F            | 50V C.C. 2 B             |
| C74       | 0669215   | 15pF                     | 2 B                      |
| C75       | 0600107   | 0.01 $\mu$ F $\pm 5\%$   | 50V M.C. 2 B             |
| C76       | 0620361   | 360pF $\pm 5\%$          | 50V P.C. 2 B             |
| C77       | 0669223   | 27pF $\pm 5\%$           | 50V C.C. 2 B, C          |
| C78       | 0657473   | 0.047 $\mu$ F            | 50V C.C. 2 B             |
| C79       | 0657473   | 0.047 $\mu$ F            | 50V C.C. 2 B             |
| C80       | 0512470   | 47 $\mu$ F               | 16V E.C. 2 B             |
| C81       | 0657473   | 0.047 $\mu$ F            | 2 C                      |
| C82       | 0657473   | 0.047 $\mu$ F            | 2 C                      |
| C83       | 0657473   | 0.047 $\mu$ F            | 50V C.C. 2 C             |
| C84       | 0657473   | 0.047 $\mu$ F            | 2 C                      |
| C85       | 0512100   | 10 $\mu$ F               | 16V E.C. 2 C             |
| C86       | 0657473   | 0.047 $\mu$ F            | 50V C.C. 2 C             |
| C87       | 0601108   | 0.1 $\mu$ F $\pm 10\%$   | 50V M.C. 2 C             |
| C88       | 0512470   | 47 $\mu$ F               | 16V E.C. 2 C             |
| C89       | 0657473   | 0.047 $\mu$ F            | 2 C                      |
| C90       | 0657473   | 0.047 $\mu$ F            | 50V C.C. 2 C             |
| C91       | 0657473   | 0.047 $\mu$ F            | 2 C                      |
| C92       | 0669226   | 47pF $\pm 5\%$           | 50V C.C. 1, 2 C          |
| C93       | 0600476   | 0.0047 $\mu$ F $\pm 5\%$ | 50V M.C. 2 C             |
| C95       | 0600476   | 0.0047 $\mu$ F $\pm 5\%$ | 50V M.C. 2 C             |
| C96       | 0600107   | 0.01 $\mu$ F $\pm 5\%$   | 50V M.C. 2 C             |
| C97       | 0601477   | 0.047 $\mu$ F $\pm 10\%$ | 50V M.C. 2 C             |
| C98       | 0510101   | 100 $\mu$ F              | 6.3V E.C. 2 D            |
| C99       | 0657473   | 0.047 $\mu$ F            | 50V C.C. 2 C             |
| C100      | 0502100   | 10 $\mu$ F               | 16V E.C. 2 A, B          |
| C103      | 0620221   | 220pF $\pm 5\%$          | 50V P.C. 2 D, E          |
| C104      | 0669215   | 15pF $\pm 5\%$           | 50V C.C.                 |
| R01       | 0107104   | 100k $\Omega$            | $\pm 5\%$ 1/4 W C.R. 1 A |
| R02       | 0107181   | 180 $\Omega$             | 1 A                      |
| R03       | 0106104   | 100k $\Omega$            | 1 A                      |
| R04       | 0106224   | 220k $\Omega$            | $\pm 5\%$ 1/4 W 1 A      |
| R05       | 0106220   | 22 $\Omega$              | C.R. (E.L.R.) 1 A        |
| R06       | 0106562   | 5.6k $\Omega$            | 1 A                      |
| R07       | 0107123   | 12k $\Omega$ $\pm 5\%$   | 1/4 W C.R. 1 A           |
| R08       | 0106272   | 2.7k $\Omega$ $\pm 5\%$  | 1/4 W C.R. (E.L.R.) 1 A  |
| R09       | 0107220   | 22 $\Omega$ $\pm 5\%$    | 1/4 W C.R. 1 A           |
| R10       | 0106221   | 220 $\Omega$ $\pm 5\%$   | 1/4 W C.R. 1 A           |
| R11       | 0106121   | 120 $\Omega$             | (E.L.R.) 1 A             |
| R12       | 0107682   | 6.8k $\Omega$ $\pm 5\%$  | 1/4 W C.R. 1 A           |
| R13       | 0106473   | 47k $\Omega$ $\pm 5\%$   | 1/4 W C.R. (E.L.R.) 1 A  |
| R14       | 0107222   | 2.2k $\Omega$ $\pm 5\%$  | 1/4 W C.R. 1 A, B        |
| R15       | 0106152   | 1.5k $\Omega$            | 1 B                      |
| R16       | 0106270   | 27 $\Omega$              | 1 B                      |
| R17       | 0106222   | 2.2k $\Omega$            | $\pm 5\%$ 1/4 W C.R. 1 B |
| R18       | 0106122   | 1.2k $\Omega$            | (E.L.R.) 1 B             |
| R19       | 0106123   | 12k $\Omega$             | 1 B                      |
| R20       | 0106272   | 2.7k $\Omega$            | 1 B                      |
| R21       | 0107222   | 2.2k $\Omega$ $\pm 5\%$  | 1/4 W C.R. 1 B           |
| R22       | 0106151   | 150 $\Omega$ $\pm 5\%$   | 1/4 W C.R. (E.L.R.) 1 B  |

| Parts No. | Stock No. | Description             | Position                          |
|-----------|-----------|-------------------------|-----------------------------------|
| R23       | 0107182   | 1.8k $\Omega$ $\pm 5\%$ | 1/4 W C.R. 1 B                    |
| R24       | 0106182   | 1.8k $\Omega$           | 1 B                               |
| R25       | 0106151   | 150 $\Omega$            | 1 B                               |
| R26       | 0106101   | 100 $\Omega$            | $\pm 5\%$ 1/4 W C.R. 1 B          |
| R27       | 0106153   | 15k $\Omega$            | (E.L.R.) 1 B                      |
| R28       | 0106331   | 330 $\Omega$            | 1 B                               |
| R29       | 0107479   | 4.7 $\Omega$ $\pm 5\%$  | 1/4 W C.R. 1 B                    |
| R30       | 0113101   | 100 $\Omega$ $\pm 5\%$  | 1/4 W S.R. 1 B                    |
| R31       | 0106151   | 150 $\Omega$ $\pm 5\%$  | 1/4 W C.R. (E.L.R.) 1 C           |
| R32       | 0107182   | 1.8k $\Omega$ $\pm 5\%$ | 1/4 W C.R. 1 B                    |
| R33       | 0106472   | 4.7k $\Omega$           | 1 B                               |
| R34       | 0106151   | 150 $\Omega$            | $\pm 5\%$ 1/4 W C.R. 1 C          |
| R35       | 0106224   | 220k $\Omega$           | (E.L.R.) 1 B, C                   |
| R36       | 0106153   | 15k $\Omega$            | 1 B, C                            |
| R37       | 0106471   | 470 $\Omega$            | 1 C                               |
| R38       | 0107479   | 4.7 $\Omega$ $\pm 5\%$  | 1/4 W C.R. 1 C                    |
| R39       | 0113101   | 100 $\Omega$ $\pm 5\%$  | 1/4 W S.R. 1 C                    |
| R40       | 0106151   | 150 $\Omega$ $\pm 5\%$  | 1/4 W C.R. (E.L.R.) 1 C           |
| R41       | 0107182   | 1.8k $\Omega$ $\pm 5\%$ | 1/4 W C.R. 1 C                    |
| R42       | 0106472   | 4.7k $\Omega$ $\pm 5\%$ | 1/4 W C.R. (E.L.R.) 1 C           |
| R43       | 0107222   | 2.2k $\Omega$ $\pm 5\%$ | 1/4 W C.R. 1 C                    |
| R44       | 0106151   | 150 $\Omega$            | 1 C                               |
| R45       | 0106224   | 220k $\Omega$           | $\pm 5\%$ 1/4 W 1 C               |
| R46       | 0106153   | 15k $\Omega$            | C.R. (E.L.R.) 1 C                 |
| R47       | 0106471   | 470 $\Omega$            | 1 C                               |
| R48       | 0113100   | 10 $\Omega$             | $\pm 5\%$ 1/4 W S.R. 1 C          |
| R49       | 0107479   | 4.7 $\Omega$ $\pm 5\%$  | 1/4 W C.R. 1 C                    |
| R50       | 0106331   | 330 $\Omega$            | 1 C                               |
| R51       | 0106473   | 47k $\Omega$            | $\pm 5\%$ 1/4 W C.R. (E.L.R.) 1 C |
| R52       | 0106153   | 15k $\Omega$            | 1 C                               |
| R53       | 0107100   | 10 $\Omega$             | $\pm 5\%$ 1/4 W C.R. 1 C          |
| R54       | 0106222   | 2.2k $\Omega$ $\pm 5\%$ | 1/4 W C.R. 1 C                    |
| R55       | 0106821   | 820 $\Omega$            | (E.L.R.) 2 C                      |
| R56       | 0107562   | 5.6k $\Omega$           | 1 D                               |
| R57       | 0107101   | 100 $\Omega$            | 1, 2 D                            |
| R58       | 0107100   | 10 $\Omega$             | 1 D                               |
| R59       | 0107103   | 10k $\Omega$            | $\pm 5\%$ 1/4 W C.R. 1, 2 D       |
| R60       | 0107682   | 6.8k $\Omega$           | 1 D                               |
| R61       | 0107479   | 4.7 $\Omega$            | 1 D                               |
| R62       | 0106392   | 3.9k $\Omega$ $\pm 5\%$ | 1/4 W C.R. (E.L.R.) 2 D           |
| R63       | 0107683   | 68k $\Omega$ $\pm 5\%$  | 1/4 W C.R. 2 D                    |
| R64       | 0106102   | 1k $\Omega$             | $\pm 5\%$ 1/4 W C.R. 1 D, E       |
| R65       | 0106102   | 1k $\Omega$             | (E.L.R.) 1 D, E                   |
| R66       | 0107100   | 10 $\Omega$             | 1 D                               |
| R67       | 0107102   | 1k $\Omega$             | $\pm 5\%$ 1/4 W C.R. 1, 2 D       |
| R68       | 0107153   | 15k $\Omega$            | 2 D                               |
| R69       | 0106152   | 1.5k $\Omega$           | 2 D                               |
| R70       | 0106105   | 1M $\Omega$ $\pm 5\%$   | 1/4 W C.R. 2 D                    |
| R71       | 0106153   | 15k $\Omega$            | (E.L.R.) 2 D                      |
| R72       | 0106560   | 56 $\Omega$             | 2 D                               |
| R73       | 0107473   | 47k $\Omega$            | 2 D                               |
| R74       | 0107472   | 4.7k $\Omega$           | 2 D, E                            |
| R75       | 0107479   | 4.7 $\Omega$            | 2 D, E                            |
| R76       | 0107104   | 100k $\Omega$           | $\pm 5\%$ 1/4 W C.R. 1, 2 E       |
| R77       | 0107100   | 10 $\Omega$             | 2 D, E                            |
| R78       | 0107104   | 100k $\Omega$           | 2 D, E                            |
| R79       | 0107221   | 220 $\Omega$            | 1 E                               |
| R80       | 0107479   | 4.7 $\Omega$            | 1 E                               |
| R81       | 0106472   | 4.7k $\Omega$ $\pm 5\%$ | 1/4 W C.R. (E.L.R.) 2 E           |

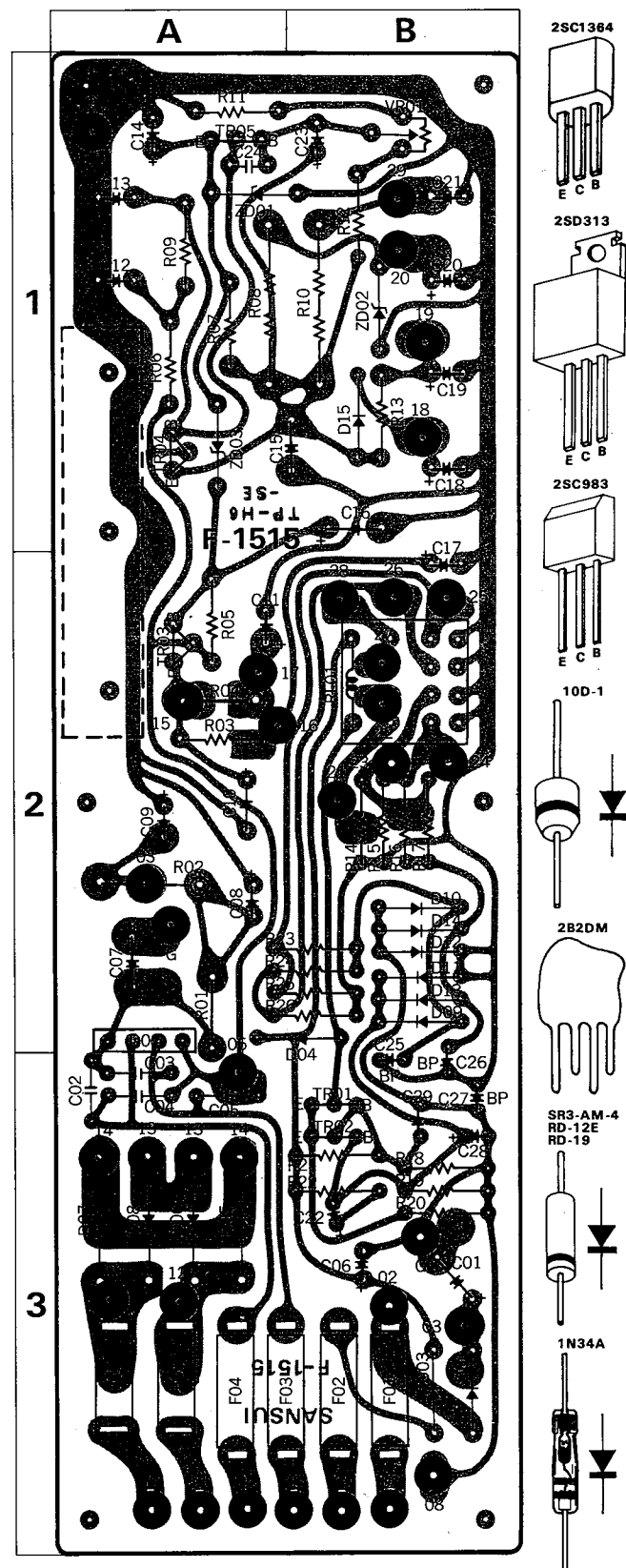
to be continued

**F-1479A Parts List**

| Parts No. | Stock No. | Description                        | Position |
|-----------|-----------|------------------------------------|----------|
| R82       | 0107151   | 150Ω ± 5 % 1/4 W C.R.              | 1, 2 E   |
| R83       | 0106561   | 560Ω ± 5 % 1/4 W C.R.<br>(E.L.R.)  | 2 E      |
| R84       | 0107822   | 8.2kΩ ± 5 % 1/4 W C.R.             | 1, 2 E   |
| R85       | 0106332   | 3.3kΩ                              | 1 E      |
| R86       | 0106332   | 3.3kΩ                              | 2 E      |
| R87       | 0106184   | 180kΩ                              | 1 E      |
| R88       | 0106332   | 3.3kΩ                              | 1 E      |
| R89       | 0106273   | 27kΩ                               | 1 E      |
| R90       | 0106184   | 180kΩ                              | 1 E      |
| R91       | 0106332   | 3.3kΩ                              | 2 E      |
| R92       | 0106273   | 27kΩ ± 5 % 1/4 W C.R.<br>(E.L.R.)  | 2 E      |
| R93       | 0106332   | 3.3kΩ                              | 1 E      |
| R94       | 0106391   | 390Ω                               | 1 E      |
| R95       | 0106332   | 3.3kΩ                              | 1, 2 E   |
| R96       | 0106391   | 390Ω                               | 2 E      |
| R97       | 0106332   | 3.3kΩ                              | 2 E      |
| R98       | 0106562   | 5.6kΩ                              | 2 E      |
| R99       | 0106332   | 3.3kΩ                              | 2 E      |
| R100      | 0106562   | 5.6kΩ                              | 2 E      |
| R102      | 0107103   | 10kΩ                               | 2 B      |
| R103      | 0107220   | 22Ω                                | 2 B      |
| R104      | 0107102   | 1kΩ ± 5 % 1/4 W C.R.               | 2 B      |
| R105      | 0107224   | 220kΩ                              | 1, 2 B   |
| R106      | 0106561   | 560Ω ± 5 % 1/4 W C.R.<br>(E.L.R.)  | 1, 2 B   |
| R107      | 0107561   | 560Ω                               | 2 B      |
| R108      | 0107392   | 3.9kΩ ± 5 % 1/4 W C.R.             | 2 B      |
| R109      | 0107123   | 12kΩ                               | 2 B      |
| R110      | 0106332   | 3.3kΩ ± 5 % 1/4 W C.R.<br>(E.L.R.) | 1 B, C   |
| R111      | 0107272   | 2.7kΩ ± 5 % 1/4 W C.R.             | 2 B      |
| R112      | 0107100   | 10Ω ± 5 % 1/4 W C.R.               | 2 B      |
| R113      | 0106102   | 1kΩ ± 5 % 1/4 W C.R.<br>(E.L.R.)   | 2 B      |
| R114      | 0107223   | 22kΩ ± 5 % 1/4 W C.R.              | 2 B      |
| R115      | 0106332   | 3.3kΩ                              | 2 B      |
| R116      | 0106102   | 1kΩ                                | 2 C      |
| R117      | 0106124   | 120kΩ                              | 2 C      |
| R118      | 0106681   | 680Ω ± 5 % 1/4 W C.R.<br>(E.L.R.)  | 1, 2 C   |
| R119      | 0106562   | 5.6kΩ                              | 2 C      |
| R120      | 0106822   | 8.2kΩ                              | 2 C      |
| R121      | 0106470   | 47Ω                                | 2 C      |
| R122      | 0107470   | 47Ω                                | 2 C      |
| R123      | 0107101   | 100Ω ± 5 % 1/4 W C.R.              | 2 C      |
| R124      | 0106102   | 1kΩ                                | 2 C      |
| R125      | 0106471   | 470Ω ± 5 % 1/4 W C.R.<br>(E.L.R.)  | 1, 2 C   |
| R126      | 0106223   | 22kΩ                               | 2 C      |
| R127      | 0106103   | 10kΩ                               | 2 C      |
| R128      | 0107101   | 100Ω                               | 2 C      |
| R129      | 0107272   | 2.7kΩ ± 5 % 1/4 W C.R.             | 2 C      |
| R130      | 0107153   | 15kΩ                               | 2 C      |
| R131      | 0106102   | 1kΩ ± 5 % 1/4 W C.R.<br>(E.L.R.)   | 2 C      |
| R132      | 0106472   | 4.7kΩ                              | 2 C      |
| R134      | 0107473   | 47kΩ ± 5 % 1/4 W C.R.              | 2 C      |
| R135      | 0107100   | 10Ω ± 5 % 1/4 W C.R.               | 2 C      |
| R136      | 0106101   | 100Ω ± 5 % 1/4 W C.R.<br>(E.L.R.)  | 1 B, 2 C |
| VR01      | 1035190   | 100kΩ(B)                           | 1, 2 D   |
| VR02      | 1035170   | 47kΩ(B)                            | 2 D      |
| VR03      | 1035190   | 100kΩ(B) Semi-Variable Resistor    | 2 D      |
| VR04      | 1035130   | 10kΩ(B) (Solid Type)               | 1 D      |
| VR05      | 1035070   | 1kΩ(B)                             | 2 E      |
| VR06      | 1035170   | 47kΩ(B)                            | 2 D      |

**6-4. F-1515 Protector & Power Circuit Board**

(Stock No. 7598140 Complete Circuit Board F-1515)



| Parts No.   | Stock No.                | Description                        | Position |
|-------------|--------------------------|------------------------------------|----------|
| TR01        | 0306132, 3               | 2SC1364 (7, 8)                     | 3 B      |
| TR02        | 0306132, 3               | 2SC1364 (7, 8)                     | 3 B      |
| TR03        | 0308392, 3               | 2SD313 (E, F)                      | 2 A      |
| TR04        | 0308392, 3               | 2SD313 (E, F)                      | 1 A      |
| TR05        | 0306020, 1               | 2SC983 (O, R)                      | 1 A      |
| Transistor  |                          |                                    |          |
| D01         | 0310340                  | 10D-1                              | 3 B      |
| D02         | 0311070                  | 2B2DM                              | 2 A      |
| D03         | 0310340                  | 10D-1                              | 3 B      |
| D04         | 0310340                  | 10D-1                              | 2 A, B   |
| D05         | 0311240                  | SR3-AM-4                           | 3 A      |
| D06         | 0311240                  | SR3-AM-4                           | 3 A      |
| D07         | 0311240                  | SR3-AM-4                           | 3 A      |
| D08         | 0311240                  | SR3-AM-4                           | 3 A      |
| D09         | 0310400                  | 1N-34A                             | 2 B      |
| D10         | 0310400                  | 1N-34A                             | 2 B      |
| D11         | 0310400                  | 1N-34A                             | 2 B      |
| D12         | 0310400                  | 1N-34A                             | 2 B      |
| D13         | 0310400                  | 1N-34A                             | 2 B      |
| D14         | 0310400                  | 1N-34A                             | 2 B      |
| D15         | 0310340                  | 10D-1                              | 1 B      |
| Diode       |                          |                                    |          |
| ZD01        | 0316300                  | RD-12E (C)                         | 1 A      |
| ZD02        | 0316300                  | RD-12E (C)                         | 1 B      |
| ZD03        | 0315410<br>or<br>0315650 | RD-19 (A, L)<br>or<br>EQB01-18     | 1 A      |
| Zener Diode |                          |                                    |          |
| C01         | 0511102                  | 1000 $\mu$ F 10V E.C.              | 3 B      |
| C06         | 0515330                  | 33 $\mu$ F 50V E.C.                | 3 B      |
| C07         | 0519903                  | 100 $\mu$ F 80V E.C.               | 2 A      |
| C08         | 0519903                  | 100 $\mu$ F 80V E.C.               | 2 A      |
| C09         | 0515330                  | 33 $\mu$ F 50V E.C.                | 2 A      |
| C10         | 0514331                  | 330 $\mu$ F 35V E.C.               | 2 A      |
| C11         | 0515101                  | 100 $\mu$ F 50V E.C.               | 2 A      |
| C12         | 0515330                  | 33 $\mu$ F 50V E.C.                | 1 A      |
| C13         | 0514331                  | 330 $\mu$ F 35V E.C.               | 1 A      |
| C14         | 0512101                  | 100 $\mu$ F 16V E.C.               | 1 A      |
| C15         | 0515101                  | 100 $\mu$ F 50V E.C.               | 1 A      |
| C16         | 0514331                  | 330 $\mu$ F 35V E.C.               | 1 B      |
| C17         | 0515101                  | 100 $\mu$ F 50V E.C.               | 2 B      |
| C18         | 0515101                  | 100 $\mu$ F 50V E.C.               | 1 B      |
| C19         | 0515101                  | 100 $\mu$ F 50V E.C.               | 1 B      |
| C20         | 0512101                  | 100 $\mu$ F 16V E.C.               | 1 B      |
| C21         | 0512101                  | 100 $\mu$ F 16V E.C.               | 1 B      |
| C22         | 0519103                  | 0.47 $\mu$ F 50V E.C.              | 3 B      |
| C23         | 0515100                  | 10 $\mu$ F 50V E.C.                | 1 B      |
| C25         | 0530470                  | 47 $\mu$ F 6.3V BP.E.C.            | 3 B      |
| C26         | 0530470                  | 47 $\mu$ F 6.3V BP.E.C.            | 2, 3 B   |
| C27         | 0535109                  | 1 $\mu$ F 50V BP.E.C.              | 3 B      |
| C28         | 0515109                  | 1 $\mu$ F 50V E.C.                 | 3 B      |
| C29         | 0510471                  | 470 $\mu$ F 6.3V E.C.              | 3 B      |
| C30         | 0660221                  | 220 pF 50V C.C.                    |          |
| C31         | 0659011                  | 0.01 $\mu$ F 500V C.C.             |          |
| R03         | 0107470                  | 47 $\Omega$ $\frac{1}{4}$ W C.R.   | 2 A      |
| R04         | 0103820                  | 82 $\Omega$ 1 W C.R.               | 2 A      |
| R05         | 0107392                  | 3.9k $\Omega$ $\frac{1}{4}$ W C.R. | 2 A      |
| R06         | 0107152                  | 1.5k $\Omega$ $\frac{1}{4}$ W C.R. | 1 A      |
| R07         | 0107562                  | 5.6k $\Omega$ 1 A                  | 1 A      |
| R08         | 0162561                  | 560 $\Omega$ 2 W Ce.R.             | 1 A      |
| R09         | 0107152                  | 1.5k $\Omega$ $\frac{1}{4}$ W C.R. | 1 A      |
| R10         | 0162181                  | 180 $\Omega$ 2 W Ce.R.             | 1 B      |

| Parts No. | Stock No.  | Description                                           | Position |
|-----------|------------|-------------------------------------------------------|----------|
| R11       | 0107682    | 6.8k $\Omega$ $\frac{1}{4}$ W C.R.                    | 1 A      |
| R12       | 0107682    | 6.8k $\Omega$ $\frac{1}{4}$ W C.R.                    | 1 B      |
| R13       | 0103220    | 22 $\Omega$ $\frac{1}{2}$ W C.R.                      | 1 B      |
| R14       | 0107332    | 3.3k $\Omega$ $\frac{1}{4}$ W C.R.                    | 2 B      |
| R15       | 0107332    | 3.3k $\Omega$ $\frac{1}{4}$ W C.R.                    | 2 B      |
| R16       | 0107473    | 47k $\Omega$ $\frac{1}{4}$ W C.R.                     | 2 B      |
| R17       | 0107473    | 47k $\Omega$ $\frac{1}{4}$ W C.R.                     | 2 B      |
| R18       | 0103271    | 270 $\Omega$ $\frac{1}{2}$ W C.R.                     | 3 B      |
| R19       | 0103271    | 270 $\Omega$ $\frac{1}{2}$ W C.R.                     | 3 B      |
| R20       | 0107479    | 4.7 $\Omega$ 3 B                                      | 3 B      |
| R21       | 0107823    | 82k $\Omega$ 3 A, B                                   | 3 A, B   |
| R22       | 0107394    | 390k $\Omega$ 2 A, B                                  | 2 A, B   |
| R23       | 0107473    | 47k $\Omega$ $\frac{1}{4}$ W C.R.                     | 2 A, B   |
| R24       | 0107473    | 47k $\Omega$ $\frac{1}{4}$ W C.R.                     | 2 A, B   |
| R25       | 0107332    | 3.3k $\Omega$ 2 A, B                                  | 2 A, B   |
| R26       | 0107332    | 3.3k $\Omega$ 2 A, B                                  | 2 A, B   |
| R27       | 0107474    | 470k $\Omega$ 2 A, B                                  | 2 A, B   |
| VR01      | 1035090    | 2.2k $\Omega$ (B) Semi-Variable Resistor (Solid Type) | 1 B      |
| RL01      | 1150101    | MY4-O-US-SA Relay                                     | 2 B      |
| F01       | 0432900, 1 | 5 A Fuse                                              | 3 B      |
| F02       | 0432830, 1 | 1 A Fuse                                              | 3 B      |
| F03       | 0432850, 1 | 2 A Fuse                                              | 3 A      |
| F04       | 0432850, 1 | 2 A Fuse                                              | 3 A      |

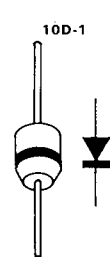
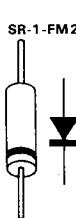
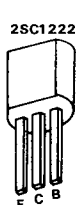
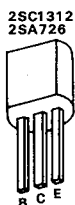
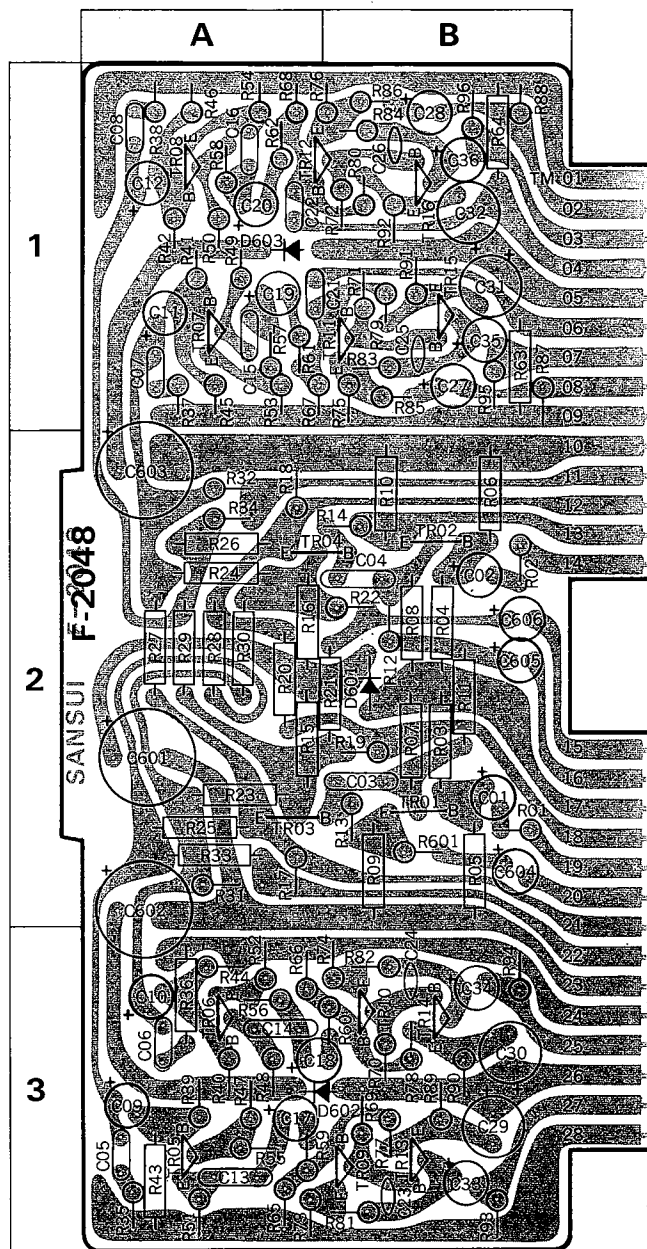
### Abbreviations

|       |                            |          |                                 |
|-------|----------------------------|----------|---------------------------------|
| C.R.  | : Carbon Resistor          | BP.E.C.: | Bi-Polar Electrolytic Capacitor |
| S.R.  | : Solid Resistor           | C.C.     | : Ceramic Capacitor             |
| Ce.R. | : Cement Resistor          | Mi.C.    | : Mica Capacitor                |
| M.R.  | : Metallized Film Resistor | O.C.     | : Oil Capacitor                 |
| M.C.  | : Mylar Capacitor          | P.C.     | : Polystyrene Capacitor         |
| E.C.  | : Electrolytic Capacitor   | T.C.     | : Tantalum Capacitor            |

# 6-5. F-2048 Vario-Matrix Circuit Board

(Stock No. 7650120 Complete Circuit Board F-2048)

## Conductor Side



## Parts List

| Parts No. | Stock No.                        | Description                               | Position           |
|-----------|----------------------------------|-------------------------------------------|--------------------|
| TR01,02   | { 0306011, 2<br>or<br>0306091, 2 | { 2SC1222 (E, F)<br>or<br>2SC1312® (G, H) | 2 B                |
| TR03,04   | { 0306011, 2<br>or<br>0306091, 2 | { 2SC1222 (E, F)<br>or<br>2SC1312® (G, H) | 2 A, B             |
| TR05      | { 0300470<br>or<br>0300410, 1    | { 2SA726® (F)<br>or<br>2SA726® (F, G)     | 3 A                |
| TR06,07   | { 0306011, 2<br>or<br>0306091, 2 | { 2SC1222 (E, F)<br>or<br>2SC1312® (G, H) | 3 A, 1 A           |
| TR08      | { 0300470<br>or<br>0300410, 1    | { 2SA726® (F)<br>or<br>2SA726® (F, G)     | Transistor 1 A     |
| TR09,10   | { 0306011, 2<br>or<br>0306091, 2 | { 2SC1222 (E, F)<br>or<br>2SC1312® (G, H) | 3 B                |
| TR11,12   | { 0306011, 2<br>or<br>0306091, 2 | { 2SC1222 (E, F)<br>or<br>2SC1312® (G, H) | 1 B                |
| TR13,14   | { 0300470<br>or<br>0300410, 1    | { 2SA726® (F)<br>or<br>2SA726® (F, G)     | 3 B                |
| TR15,16   | { 0300470<br>or<br>0300410, 1    | { 2SA726® (F)<br>or<br>2SA726® (F, G)     | 1 B                |
| D601      | { 0310870<br>or<br>0310340       | { SR-1-FM2<br>or<br>10D-1                 | 2 B                |
| D602      | { 0300470<br>or<br>0300340       | { SR-1-FM2<br>or<br>10D-1                 | Diode 3 A, B       |
| D603      | { 0310870<br>or<br>0310340       | { SR-1-FM2<br>or<br>10D-1                 | 1 A                |
| C01       | 0519102                          | 3.3µF                                     | 50V E.C. 2 B       |
| C02       | 0519102                          | 3.3µF                                     | 50V E.C. 2 B       |
| C03       | 0600107                          | 0.01µF                                    | 2 B                |
| C04       | 0600107                          | 0.01µF                                    | 2 B                |
| C05       | 0600157                          | 0.015µF                                   | 50V M.C. 3 A       |
| C06       | 0600157                          | 0.015µF                                   | 50V M.C. 3 A       |
| C07       | 0600107                          | 0.01µF                                    | 1 A                |
| C08       | 0600107                          | 0.01µF                                    | 1 A                |
| C09       | 0519105                          | 2.2µF                                     | 50V E.C. 3 A       |
| C10       | 0519105                          | 2.2µF                                     | 50V E.C. 3 A       |
| C11       | 0573108                          | 0.1µF                                     | 25V T.C. 1 A       |
| C12       | 0573108                          | 0.1µF                                     | 25V T.C. 1 A       |
| C13       | 0600607                          | 0.06µF                                    | 3 A                |
| C14       | 0600607                          | 0.06µF                                    | 50V M.C. 3 A       |
| C15       | 0600126                          | 0.0012µF                                  | 50V M.C. 1 A       |
| C16       | 0600686                          | 0.0068µF                                  | 1 A                |
| C17       | 0573228                          | 0.22µF                                    | 3 A                |
| C18       | 0573228                          | 0.22µF                                    | 25V T.C. 3 A, B    |
| C19       | 0573228                          | 0.22µF                                    | 25V T.C. 1 A       |
| C20       | 0573228                          | 0.22µF                                    | 1 A                |
| C21       | 0600106                          | 0.001µF                                   | ± 5 % 50V M.C. 1 A |
| C22       | 0600156                          | 0.0015µF                                  | 50V M.C. 1 A       |
| C23       | 0660470                          | 47 pF                                     | 3 B                |
| C24       | 0660470                          | 47 pF                                     | 50V C.C. 3 B       |
| C25       | 0660470                          | 47 pF                                     | 50V C.C. 1 B       |
| C26       | 0660470                          | 47 pF                                     | 1 B                |
| C27       | 0513100                          | 10µF                                      | 25V E.C. 1 B       |

| Parts No. | Stock No. | Description                                           | Position |
|-----------|-----------|-------------------------------------------------------|----------|
| C28       | 0513100   | 10 $\mu$ F 25V E.C.                                   | 1 B      |
| C29       | 0510101   | 100 $\mu$ F                                           | 3 B      |
| C30       | 0510101   | 100 $\mu$ F                                           | 3 B      |
| C31       | 0510101   | 100 $\mu$ F                                           | 1 B      |
| C32       | 0510101   | 100 $\mu$ F                                           | 1 B      |
| C33       | 0573478   | 0.47 $\mu$ F                                          | 3 B      |
| C34       | 0573478   | 0.47 $\mu$ F                                          | 3 B      |
| C35       | 0573478   | 0.47 $\mu$ F                                          | 1 B      |
| C36       | 0573478   | 0.47 $\mu$ F                                          | 1 B      |
| C37       | 0660151   | 150 pF                                                |          |
| C38       | 0660151   | 150 pF                                                |          |
| C39       | 0660151   | 150 pF                                                |          |
| C40       | 0660151   | 150 pF                                                |          |
| C601      | 0513221   | 220 $\mu$ F                                           | 2 A      |
| C602      | 0513221   | 220 $\mu$ F                                           | 2, 3 A   |
| C603      | 0513221   | 220 $\mu$ F                                           | 1, 2 A   |
| C604      | 0513100   | 10 $\mu$ F                                            | 2 B      |
| C605      | 0573108   | 0.1 $\mu$ F                                           | 2 B      |
| C606      | 0573108   | 0.1 $\mu$ F                                           | 2 B      |
| R01       | 0106222   | 2.2k $\Omega$ $\pm 5\%$ $\frac{1}{4}$ W C.R. (E.L.R.) | 2 B      |
| R02       | 0106222   | 2.2k $\Omega$                                         | 2 B      |
| R03       | 0107224   | 220k $\Omega$                                         | 2 B      |
| R04       | 0107224   | 220k $\Omega$                                         | 2 B      |
| R05       | 0107104   | 100k $\Omega$                                         | 2 B      |
| R06       | 0107104   | 100k $\Omega$                                         | 2 B      |
| R07       | 0107222   | 2.2k $\Omega$ $\pm 5\%$ $\frac{1}{4}$ W C.R.          | 2 B      |
| R08       | 0107222   | 2.2k $\Omega$                                         | 2 B      |
| R09       | 0107222   | 2.2k $\Omega$                                         | 2 B      |
| R10       | 0107222   | 2.2k $\Omega$                                         | 2 B      |
| R11       | 0107224   | 220k $\Omega$                                         | 2 B      |
| R12       | 0106224   | 220k $\Omega$                                         | 2 B      |
| R13       | 0106223   | 22k $\Omega$ $\pm 5\%$ $\frac{1}{4}$ W C.R. (E.L.R.)  | 2 B      |
| R14       | 0106223   | 22k $\Omega$                                          | 2 B      |
| R15       | 0107152   | 1.5k $\Omega$ $\pm 5\%$ $\frac{1}{4}$ W C.R.          | 2 A      |
| R16       | 0107152   | 1.5k $\Omega$                                         | 2 A      |
| R17       | 0106152   | 1.5k $\Omega$                                         | 2 A      |
| R18       | 0106152   | 1.5k $\Omega$ $\pm 5\%$ $\frac{1}{4}$ W C.R. (E.L.R.) | 2 A      |
| R19       | 0106224   | 220k $\Omega$                                         | 2 B      |
| R20       | 0107224   | 220k $\Omega$ $\pm 5\%$ $\frac{1}{4}$ W C.R.          | 2 A      |
| R21       | 0107224   | 220k $\Omega$                                         | 2 B      |
| R22       | 0106224   | 220k $\Omega$ $\pm 5\%$ $\frac{1}{4}$ W C.R. (E.L.R.) | 2 B      |
| R23       | 0107104   | 100k $\Omega$                                         | 2 A      |
| R24       | 0107104   | 100k $\Omega$                                         | 2 A      |
| R25       | 0107104   | 100k $\Omega$                                         | 2 A      |
| R26       | 0107104   | 100k $\Omega$                                         | 2 A      |
| R27       | 0107104   | 100k $\Omega$ $\pm 5\%$ $\frac{1}{4}$ W C.R.          | 2 A      |
| R28       | 0107104   | 100k $\Omega$                                         | 2 A      |
| R29       | 0107104   | 100k $\Omega$                                         | 2 A      |
| R30       | 0107104   | 100k $\Omega$                                         | 2 A      |
| R31       | 0106563   | 56k $\Omega$ $\pm 5\%$ $\frac{1}{4}$ W C.R. (E.L.R.)  | 2 A      |
| R32       | 0106563   | 56k $\Omega$                                          | 2 A      |
| R33       | 0107563   | 56k $\Omega$ $\pm 5\%$ $\frac{1}{4}$ W C.R.           | 2 A      |
| R34       | 0106563   | 56k $\Omega$ $\pm 5\%$ $\frac{1}{4}$ W C.R. (E.L.R.)  | 2 A      |
| R35       | 0106563   | 56k $\Omega$                                          | 3 A      |
| R36       | 0107563   | 56k $\Omega$ $\pm 5\%$ $\frac{1}{4}$ W C.R.           | 3 A      |
| R37       | 0106563   | 56k $\Omega$                                          | 1 A      |
| R38       | 0106563   | 56k $\Omega$                                          | 1 A      |
| R39       | 0106104   | 100k $\Omega$ $\pm 5\%$ $\frac{1}{4}$ W C.R. (E.L.R.) | 3 A      |
| R40       | 0106224   | 220k $\Omega$                                         | 3 A      |
| R41       | 0106224   | 220k $\Omega$                                         | 1 A      |
| R42       | 0106104   | 100k $\Omega$                                         | 1 A      |

| Parts No. | Stock No. | Description                                           | Position |
|-----------|-----------|-------------------------------------------------------|----------|
| R43       | 0107224   | 220k $\Omega$ $\pm 5\%$ $\frac{1}{4}$ W C.R.          | 3 A      |
| R44       | 0106104   | 100k $\Omega$                                         | 3 A      |
| R45       | 0106104   | 100k $\Omega$                                         | 1 A      |
| R46       | 0106224   | 220k $\Omega$                                         | 1 A      |
| R47       | 0106682   | 6.8k $\Omega$                                         | 3 A      |
| R48       | 0106682   | 6.8k $\Omega$                                         | 3 A      |
| R49       | 0106682   | 6.8k $\Omega$                                         | 1 A      |
| R50       | 0106682   | 6.8k $\Omega$                                         | 1 A      |
| R51       | 0106682   | 6.8k $\Omega$                                         | 3 A      |
| R52       | 0106682   | 6.8k $\Omega$                                         | 3 A      |
| R53       | 0106682   | 6.8k $\Omega$ $\pm 5\%$ $\frac{1}{4}$ W C.R. (E.L.R.) | 1 A      |
| R54       | 0106682   | 6.8k $\Omega$                                         | 1 A      |
| R55       | 0106223   | 22k $\Omega$                                          | 3 A      |
| R56       | 0106223   | 22k $\Omega$                                          | 3 A      |
| R57       | 0106153   | 15k $\Omega$                                          | 1 A      |
| R58       | 0106153   | 15k $\Omega$                                          | 1 A      |
| R59       | 0106223   | 22k $\Omega$                                          | 3 A      |
| R60       | 0106223   | 22k $\Omega$                                          | 3 B      |
| R61       | 0106223   | 22k $\Omega$                                          | 1 A      |
| R62       | 0106223   | 22k $\Omega$                                          | 1 A      |
| R63       | 0107104   | 100k $\Omega$ $\pm 5\%$ $\frac{1}{4}$ W C.R.          | 1 B      |
| R64       | 0107104   | 100k $\Omega$                                         | 1 B      |
| R65       | 0106154   | 150k $\Omega$                                         | 3 A      |
| R66       | 0106154   | 150k $\Omega$                                         | 3 A      |
| R67       | 0106154   | 150k $\Omega$                                         | 1 A, B   |
| R68       | 0106154   | 150k $\Omega$                                         | 1 A      |
| R69       | 0106124   | 120k $\Omega$                                         | 3 B      |
| R70       | 0106124   | 120k $\Omega$                                         | 3 B      |
| R71       | 0106124   | 120k $\Omega$                                         | 1 B      |
| R72       | 0106124   | 120k $\Omega$                                         | 1 B      |
| R73       | 0106392   | 3.9k $\Omega$                                         | 3 A      |
| R74       | 0106392   | 3.9k $\Omega$                                         | 3 B      |
| R75       | 0106392   | 3.9k $\Omega$                                         | 1 B      |
| R76       | 0106392   | 3.9k $\Omega$                                         | 1 A, B   |
| R77       | 0106824   | 820k $\Omega$                                         | 3 B      |
| R78       | 0106824   | 820k $\Omega$                                         | 3 B      |
| R79       | 0106824   | 820k $\Omega$                                         | 1 B      |
| R80       | 0106824   | 820k $\Omega$ $\pm 5\%$ $\frac{1}{4}$ W C.R. (E.L.R.) | 1 B      |
| R81       | 0106123   | 12k $\Omega$                                          | 3 B      |
| R82       | 0106123   | 12k $\Omega$                                          | 3 B      |
| R83       | 0106123   | 12k $\Omega$                                          | 1 B      |
| R84       | 0106123   | 12k $\Omega$                                          | 1 B      |
| R85       | 0106123   | 12k $\Omega$                                          | 1 B      |
| R86       | 0106123   | 12k $\Omega$                                          | 1 B      |
| R87       | 0106104   | 100k $\Omega$                                         | 1 B      |
| R88       | 0106104   | 100k $\Omega$                                         | 1 B      |
| R89       | 0106122   | 1.2k $\Omega$                                         | 3 B      |
| R90       | 0106122   | 1.2k $\Omega$                                         | 3 B      |
| R91       | 0106122   | 1.2k $\Omega$                                         | 1 B      |
| R92       | 0106122   | 1.2k $\Omega$                                         | 1 B      |
| R93       | 0106104   | 100k $\Omega$                                         | 3 B      |
| R94       | 0106104   | 100k $\Omega$                                         | 3 B      |
| R95       | 0106104   | 100k $\Omega$                                         | 1 B      |
| R96       | 0106104   | 100k $\Omega$                                         | 1 B      |
| R601      | 0106822   | 8.2k $\Omega$                                         |          |

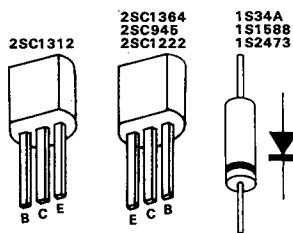
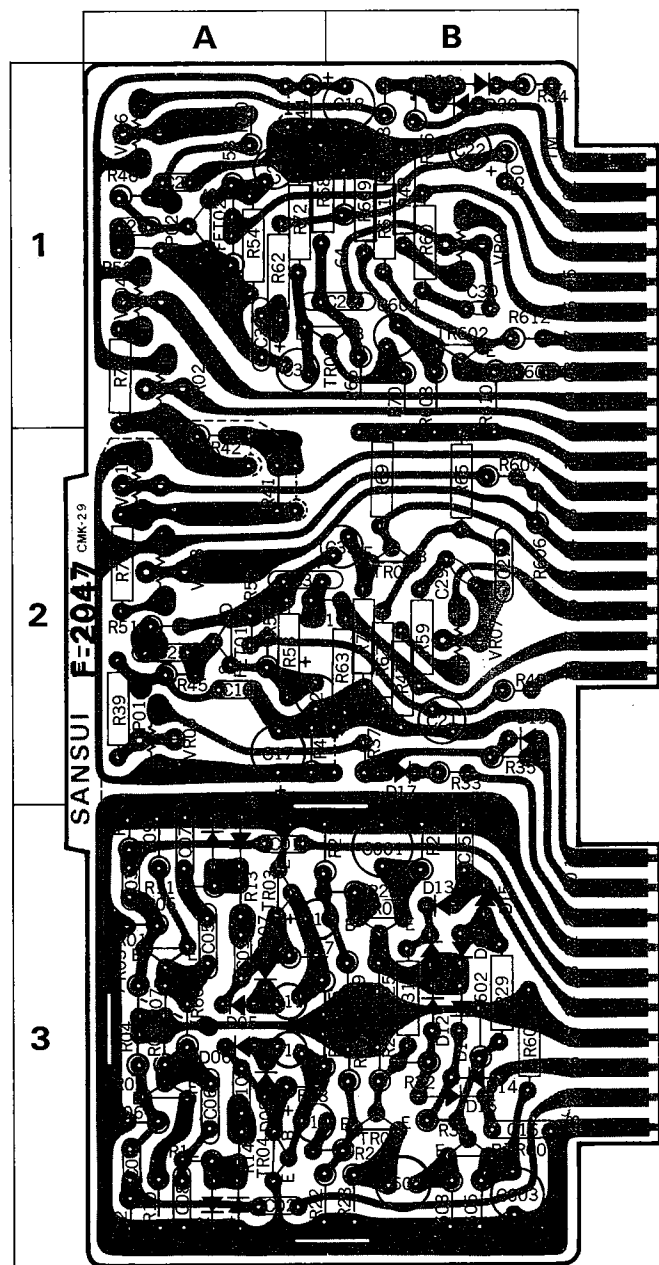
#### Abbreviations

|       |                            |          |                                 |
|-------|----------------------------|----------|---------------------------------|
| C.R.  | : Carbon Resistor          | BP.E.C.: | Bi-Polar Electrolytic Capacitor |
| S.R.  | : Solid Resistor           | C.C.     | : Ceramic Capacitor             |
| Ce.R. | : Cement Resistor          | Mi.C.    | : Mica Capacitor                |
| M.R.  | : Metallized Film Resistor | O.C.     | : Oil Capacitor                 |
| M.C.  | : Mylar Capacitor          | P.C.     | : Polystyrene Capacitor         |
| E.C.  | : Electrolytic Capacitor   | T.C.     | : Tantalum Capacitor            |

# 6-6. F-2047 Vario-Matrix Circuit Board

(Stock No. 7850110 Complete Circuit Board F-2047)

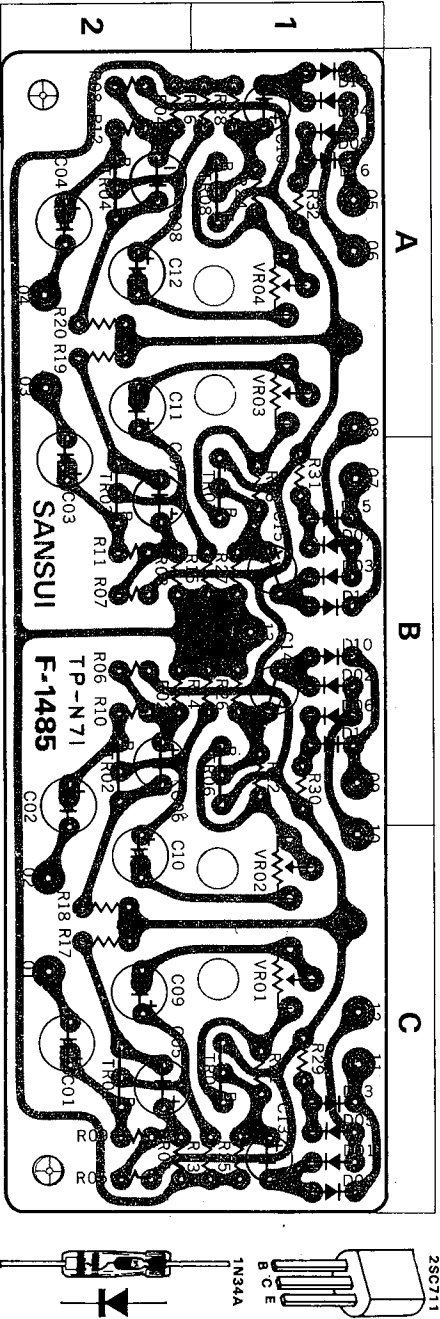
## Conductor Side



## Parts List

| Parts No. | Stock No.                      | Description                           | Position     |
|-----------|--------------------------------|---------------------------------------|--------------|
| TR01, 02  | 0306132, 3<br>or<br>0305953, 2 | 2SC1364 (7, 8)<br>or<br>2SC945 (K, P) | 3 A          |
| TR03, 04  | 0306132, 3<br>or<br>0305953, 2 | 2SC1364 (7, 8)<br>or<br>2SC945 (K, P) | 3 A          |
| TR05, 06  | 0306132, 3<br>or<br>0305953, 2 | 2SC1364 (7, 8)<br>or<br>2SC945 (K, P) | 3 B          |
| TR07, 08  | 036011, 2<br>or<br>035091, 2   | 2SC1222 (E)<br>or<br>2SC1312®(G, H)   | 1 B, 2 B     |
| TR601     | 0306132, 3<br>or<br>0305953, 2 | 2SC1364 (7, 8)<br>or<br>2SC945 (K, P) | 3 B          |
| TR602     | 036011, 2<br>or<br>036091, 2   | 2SC1222 (E)<br>or<br>2SC1312®(G, H)   | 1 B          |
| FET01, 02 | 0370140, 1                     | 2K34 (E, D)                           | FET 1 A, 2 A |
| D01-04    | 0311190                        | 1S34                                  | 3 A          |
| D06-08    | 0311180<br>or<br>0311160       | 1S1588<br>or<br>1S2473D               | 3 A          |
| D09-16    | 0311180<br>or<br>0311160       | 1S1588<br>or<br>1S2473D               | 3 B          |
| D17, 18   | 0311180<br>or<br>0311160       | 1S1588<br>or<br>1S2473D               | 1 B, 2 B     |
| C01       | 0600106                        | 0.001 $\mu$ F                         | 3 A          |
| C02       | 0600106                        | 0.001 $\mu$ F                         | 3 A          |
| C03       | 0600206                        | 0.002 $\mu$ F                         | 3 A          |
| C04       | 0600206                        | 0.002 $\mu$ F                         | 3 A          |
| C05       | 0600477                        | 0.047 $\mu$ F                         | 3 A          |
| C06       | 0600477                        | 0.047 $\mu$ F                         | 3 A          |
| C07       | 0600206                        | 0.002 $\mu$ F                         | 3 A          |
| C08       | 0600206                        | 0.002 $\mu$ F                         | 3 A          |
| C09       | 0600477                        | 0.047 $\mu$ F                         | 3 A          |
| C10       | 0600477                        | 0.047 $\mu$ F                         | 2 A          |
| C11       | 0573228                        | 0.22 $\mu$ F                          | 3 A          |
| C12       | 0573228                        | 0.22 $\mu$ F                          | 3 A          |
| C13       | 0513479                        | 4.7 $\mu$ F                           | 3 A, B       |
| C14       | 0513479                        | 4.7 $\mu$ F                           | 3 A, B       |
| C15       | 0600477                        | 0.047 $\mu$ F                         | 3 B          |
| C16       | 0600477                        | 0.047 $\mu$ F                         | 3 B          |
| C17       | 0513100                        | 10 $\mu$ F                            | 2 A          |
| C18       | 0513100                        | 10 $\mu$ F                            | 1 B          |
| C19       | 0600397                        | 0.039 $\mu$ F                         | 2 A          |
| C20       | 0600187                        | 0.018 $\mu$ F                         | 1 A          |
| C21       | 0513100                        | 10 $\mu$ F                            | 2 B          |
| C22       | 0513100                        | 10 $\mu$ F                            | 1 B          |
| C23       | 0513479                        | 4.7 $\mu$ F                           | 2 A, B       |
| C24       | 0513479                        | 4.7 $\mu$ F                           | 1 A          |
| C25       | 0600226                        | 0.0022 $\mu$ F                        | 2 A          |
| C26       | 0600226                        | 0.0022 $\mu$ F                        | 1 A          |
| C27       | 0600477                        | 0.047 $\mu$ F                         | 2 B          |
| C28       | 0600227                        | 0.022 $\mu$ F                         | 1 A, B       |
| C29       | 0620681                        | 680pF                                 | 2 B          |
| C30       | 0620681                        | 680pF                                 | 1 B          |
| C31       | 0600397                        | 0.039 $\mu$ F                         | 2 A, B       |
| C32       | 0600397                        | 0.039 $\mu$ F                         | 1 A          |

6-7. F-1485 Meter Circuit Board (Stock No. 7591840 Complete Circuit Board F-1485)  
Conductor Side



| Parts No. | Stock No. | Description | Position |
|-----------|-----------|-------------|----------|
| T R01     | 0305732   | 2SC711 (F)  | 2 C      |
| T R02     | 0305732   | 2SC711 (F)  | 2 B      |
| T R03     | 0305732   | 2SC711 (F)  | 2 B      |
| T R04     | 0305732   | 2SC711 (F)  | 2 A      |
| T R05     | 0305732   | 2SC711 (F)  | 1 C      |
| T R06     | 0305732   | 2SC711 (F)  | 1 B      |
| T R07     | 0305732   | 2SC711 (F)  | 1 B      |
| T R08     | 0305732   | 2SC711 (F)  | 1 A      |

| Parts No. | Stock No. | Description  | Position |
|-----------|-----------|--------------|----------|
| C15       | 0519103   | 0.47 $\mu$ F | 1 B      |
| C16       | 0519103   | 0.47 $\mu$ F | 1 A      |

| Parts No. | Stock No. | Description       | Position |
|-----------|-----------|-------------------|----------|
| R55       | 0106153   | 15k $\Omega$      | 2 A      |
| R56       | 0106153   | 15k $\Omega$      | 1 A      |
| R57       | 0106123   | 12k $\Omega$      | 2 A      |
| R58       | 0106123   | 12k $\Omega$      | 1 A      |
| R59       | 0107153   | 15k $\Omega$      | 2 B      |
| R60       | 0107153   | 15k $\Omega$      | 1 B      |
| R61       | 0106151   | 150 $\Omega$      | 2 A, B   |
| R62       | 0107151   | 150 $\Omega$      | 1 A      |
| R63       | 0107104   | 100k $\Omega$     | 2 B      |
| R64       | 0106104   | 100k $\Omega$     | 1 B      |
| R65       | 0107184   | 180k $\Omega$     | 2 B      |
| R66       | 0106154   | 150k $\Omega$     | 1 B      |
| R67       | 0107473   | 47k $\Omega$      | 2 B      |
| R68       | 0107473   | 47k $\Omega$      | 1 A, B   |
| R69       | 0107472   | 47k $\Omega$      | 2 B      |
| R70       | 0106472   | 47k $\Omega$      | 1 B      |
| R71       | 0107222   | 22k $\Omega$      | 2 B      |
| R72       | 0107272   | 27k $\Omega$      | 1 A      |
| R73       | 0107101   | 100 $\Omega$      | 2 A      |
| R74       | 0107101   | 100 $\Omega$      | 1 A      |
| R601      | 0106105   | 1M $\Omega$       | 3 A      |
| R602      | 0106472   | 47k $\Omega$      | 3 B      |
| R603      | 0106102   | 1k $\Omega$       | 3 B      |
| R604      | 0107224   | 220k $\Omega$     | 3 B      |
| R605      | 0106333   | 33k $\Omega$      | 3 B      |
| R606      | 0106104   | 100k $\Omega$     | 2 B      |
| R607      | 0106104   | 100k $\Omega$     | 1 B      |
| R608      | 0106224   | 220k $\Omega$     | 1 B      |
| R609      | 0107104   | 100k $\Omega$     | 1 B      |
| R610      | 0106152   | 1.5k $\Omega$     | 1 B      |
| R611      | 0107152   | 1.5k $\Omega$     | 1 B      |
| R612      | 0106472   | 47k $\Omega$      | 1 B      |
| VR01      | 1031120   | 20k $\Omega$ (B)  | 2 A      |
| VR02      | 1031120   | 20k $\Omega$ (B)  | 1 A      |
| VR03      | 1031120   | 20k $\Omega$ (B)  | 2 A      |
| VR04      | 1031120   | 20k $\Omega$ (B)  | 1 A      |
| VR05      | 1031180   | 1M $\Omega$ (B)   | 2 A      |
| VR06      | 1031180   | 1M $\Omega$ (B)   | 1 A      |
| VR07      | 1031140   | 100k $\Omega$ (B) | 2 B      |
| VR08      | 1031140   | 100k $\Omega$ (B) | 1 B      |
|           | 2260010   | A4-01775 Test Pin |          |

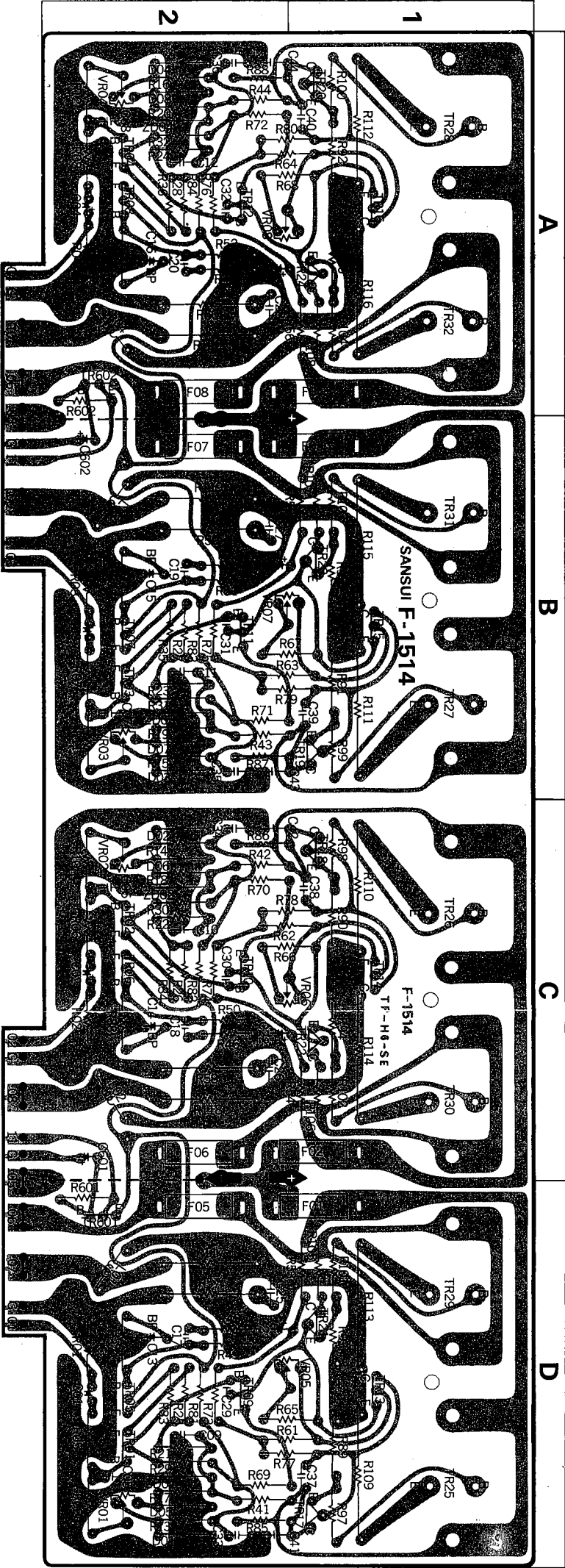
Abbreviations

|       |                            |         |                                   |
|-------|----------------------------|---------|-----------------------------------|
| C.R.  | : Carbon Resistor          | BP.E.C. | : Bi-Polar Electrolytic Capacitor |
| S.R.  | : Solid Resistor           | C.C.    | : Ceramic Capacitor               |
| Ce.R. | : Cement Resistor          | MI.C.   | : Mica Capacitor                  |
| M.R.  | : Metallized Film Resistor | O.C.    | : Oil Capacitor                   |
| M.C.  | : Mylar Capacitor          | P.C.    | : Polystyrene Capacitor           |
| E.C.  | : Electrolytic Capacitor   | T.C.    | : Tantalum Capacitor              |

| Parts No. | Stock No. | Description    | Position     |
|-----------|-----------|----------------|--------------|
| C33       | 0513479   | 4.7 $\mu$ F    | 2 A, B       |
| C34       | 0513479   | 4.7 $\mu$ F    | 1 A          |
| C601      | 0510101   | 100 $\mu$ F    | 3 B          |
| C602      | 0510101   | 100 $\mu$ F    | 3 B          |
| C603      | 0513479   | 4.7 $\mu$ F    | 3 B          |
| C604      | 0519102   | 3.3 $\mu$ F    | 1 B          |
| C605      | 0600476   | 0.0047 $\mu$ F | 50V M.C. 1 B |
| R01       | 0106683   | 68k $\Omega$   | 3 A          |
| R02       | 0106683   | 68k $\Omega$   | 3 A          |
| R03       | 0106105   | 1M $\Omega$    | 3 A          |
| R04       | 0106105   | 1M $\Omega$    | 3 A          |
| R05       | 0106224   | 220k $\Omega$  | 3 A          |
| R06       | 0106224   | 220k $\Omega$  | 3 A          |
| R07       | 0106223   | 22k $\Omega$   | 3 A          |
| R08       | 0106223   | 22k $\Omega$   | 3 A          |
| R09       | 0106103   | 10k $\Omega$   | 3 A          |
| R10       | 0106103   | 10k $\Omega$   | 3 A          |
| R11       | 0106472   | 4.7k $\Omega$  | 3 A          |
| R12       | 0106472   | 4.7k $\Omega$  | 3 A          |
| R13       | 0106472   | 4.7k $\Omega$  | 3 A          |
| R14       | 0106472   | 4.7k $\Omega$  | 3 A          |
| R15       | 0106333   | 33k $\Omega$   | 3 A          |
| R16       | 0106333   | 33k $\Omega$   | 3 A          |
| R17       | 0110685   | 6.8M $\Omega$  | 3 A          |
| R18       | 0110685   | 6.8M $\Omega$  | 3 A          |
| R19       | 0106104   | 100k $\Omega$  | 3 B          |
| R20       | 0106224   | 220k $\Omega$  | 3 B          |
| R21       | 0106153   | 15k $\Omega$   | 3 A, B       |
| R22       | 0106333   | 33k $\Omega$   | 3 A, B       |
| R23       | 0106123   | 12k $\Omega$   | 3 A, B       |
| R24       | 0106123   | 12k $\Omega$   | 3 A, B       |
| R25       | 0106472   | 4.7k $\Omega$  | 3 B          |
| R26       | 0106472   | 4.7k $\Omega$  | 3 B          |
| R27       | 0106102   | 1k $\Omega$    | 3 B          |
| R28       | 0106102   | 1k $\Omega$    | 3 B          |
| R29       | 0107104   | 100k $\Omega$  | 3 B          |
| R30       | 0106104   | 100k $\Omega$  | 3 B          |
| R31       | 0107104   | 100k $\Omega$  | 3 B          |
| R32       | 0106104   | 100k $\Omega$  | 3 B          |
| R33       | 0106564   | 560k $\Omega$  | 2 B          |
| R34       | 0106564   | 560k $\Omega$  | 1 B          |
| R35       | 0106224   | 220k $\Omega$  | 2 B          |
| R36       | 0106224   | 220k $\Omega$  | 1 B          |
| R37       | 0106474   | 470k $\Omega$  | 2 B          |
| R38       | 0106474   | 470k $\Omega$  | 1 B          |
| R39       | 0107334   | 330k $\Omega$  | 2 A          |
| R40       | 0106334   | 330k $\Omega$  | 1 A          |
| R41       | 0106682   | 6.8k $\Omega$  | 2 A          |
| R42       | 0106682   | 6.8k $\Omega$  | 2 A          |
| R43       | 0106183   | 18k $\Omega$   | 2 A          |
| R44       | 0106183   | 18k $\Omega$   | 1 A          |
| R45       | 0106105   | 1M $\Omega$    | 2 A          |
| R46       | 0106105   | 1M $\Omega$    | 1 A          |
| R47       | 0107153   | 15k $\Omega$   | 2 B          |
| R48       | 0107473   | 47k $\Omega$   | 1 B          |
| R49       | 0106103   | 10k $\Omega$   | 2 B          |
| R50       | 0106103   | 10k $\Omega$   | 1 B          |
| R51       | 0106105   | 1M $\Omega$    | 2 A          |
| R52       | 0106105   | 1M $\Omega$    | 1 A          |
| R53       | 0107333   | 33k $\Omega$   | 2 A          |
| R54       | 0107333   | 33k $\Omega$   | 1 A          |

6-8. F-1514 Driver Circuit Board (Stock No. 7570870 Complete Circuit Board F-1514)

Conductor Side



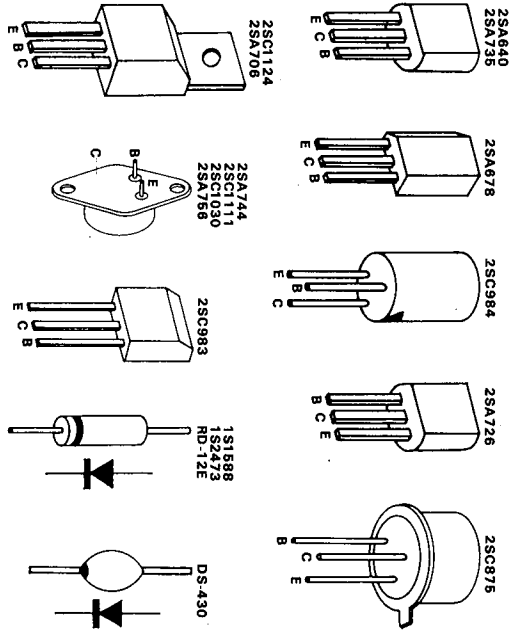
Parts List

| Parts No. | Stock No.                                                            | Description                         | Position |
|-----------|----------------------------------------------------------------------|-------------------------------------|----------|
| TR01, 02  | { 0300302, 3<br>or<br>0300410, 1<br>0300302, 3<br>2SA640 (K, L)      | { 2SA726Ⓢ (F, G)<br>2SA640 (K, L)   | 2 D. 2 C |
| TR03, 04  | { 0300410, 1<br>or<br>0300302, 3<br>2SA640 (K, L)                    | { 2SA726Ⓢ (F, G)<br>2SA640 (K, L)   | 2 B. 2 A |
| TR05, 06  | { 0300410, 1<br>or<br>0300302, 3<br>2SA640 (K, L)                    | { 2SA726Ⓢ (F, G)<br>2SA640 (K, L)   | 2 D. 2 C |
| TR07, 08  | { 0300410, 1<br>or<br>0300302, 3<br>2SA726Ⓢ (F, G)<br>2SA640 (K, L)  | { 2SA726Ⓢ (F, G)<br>2SA640 (K, L)   | 2 B. 2 A |
| TR09, 10  | { 0305980-2<br>or<br>0306020, 1<br>2SC875 (D, E, F)<br>2SC983 (O, R) | { 2SC875 (D, E, F)<br>2SC983 (O, R) | 2 D. 2 C |
| TR11, 12  | { 0305980-2<br>or<br>0305872<br>2SC984 (C)                           | { 2SC875 (D, E, F)<br>2SC984 (C)    | 2 B. 2 A |
| TR13, 14  | { 0305872<br>or<br>0305901<br>2SC1124 (2)                            | { 2SC984 (C)<br>2SC1124 (2)         | 1 D. 1 C |
| TR15, 16  | { 0305872<br>or<br>0305901<br>2SC1124 (2)                            | { 2SC984 (C)<br>2SC1124 (2)         | 1 B. 1 A |
| TR17, 18  | { 0305872<br>or<br>0305901<br>2SC1124 (2)                            | { 2SC984 (C)<br>2SC1124 (2)         | 1 D. 1 C |
| TR19, 20  | { 0305872<br>or<br>0305901<br>2SC1124 (2)                            | { 2SC984 (C)<br>2SC1124 (2)         | 1 B. 1 A |
| TR21, 22  | { 0305872<br>or<br>0305901<br>2SC1124 (2)                            | { 2SC984 (C)<br>2SC1124 (2)         | 1 D. 1 C |
| TR23, 24  | { 0305872<br>or<br>0305901<br>2SC1124 (2)                            | { 2SC984 (C)<br>2SC1124 (2)         | 1 B. 1 A |
| TR25, 26  | { 0305872<br>or<br>0305901<br>2SC1124 (2)                            | { 2SC984 (C)<br>2SC1124 (2)         | 1 D. 1 C |
| TR27, 28  | { 0305872<br>or<br>0305901<br>2SC1124 (2)                            | { 2SC984 (C)<br>2SC1124 (2)         | 1 B. 1 A |
| TR29, 30  | { 0305872<br>or<br>0305901<br>2SC1124 (2)                            | { 2SC984 (C)<br>2SC1124 (2)         | 1 D. 1 C |
| TR31, 32  | { 0305872<br>or<br>0305901<br>2SC1124 (2)                            | { 2SC984 (C)<br>2SC1124 (2)         | 1 B. 1 A |

| Parts No.       | Stock No.                                                          | Description                      | Position |
|-----------------|--------------------------------------------------------------------|----------------------------------|----------|
| TR33<br>(TR601) | { 0300291, 2<br>or<br>0300601, 2<br>2SA735 (6, 7)<br>2SA735 (6, 7) | { 2SA735 (6, 7)<br>2SA735 (6, 7) | 2 C, D   |
| TR34<br>(TR602) | { 0300601, 2<br>or<br>2SA735 (6, 7)                                | { 2SA735 (6, 7)<br>2SA735 (6, 7) | 2 B, A   |

|          |                                      |                          |          |
|----------|--------------------------------------|--------------------------|----------|
| D01, 02  | { 0311160<br>or<br>0340090<br>DS-430 | { 1S1588<br>or<br>DS-430 | 2 D. 2 C |
| D03, 04  | { 0311160<br>or<br>0340090<br>DS-430 | { 1S1588<br>or<br>DS-430 | 2 B. 2 A |
| D05, 06  | { 0311160<br>or<br>0340090<br>DS-430 | { 1S1588<br>or<br>DS-430 | 2 D. 2 C |
| D07, 08  | { 0311160<br>or<br>0340090<br>DS-430 | { 1S1588<br>or<br>DS-430 | 2 B. 2 A |
| ZD01, 02 | { 0316300<br>or<br>RD-12E(C)         | { 1S1588<br>or<br>DS-430 | 2 D. 2 C |
| ZD03, 04 | { 0316300<br>or<br>RD-12E(C)         | { 1S1588<br>or<br>DS-430 | 2 B. 2 A |

| Parts No. | Stock No. | Description      | Position  |
|-----------|-----------|------------------|-----------|
| L01, 02   | 4290210   | 2R5K Coil        | 2 D. 2 C  |
| L03, 04   | 4290210   | 2R5K Coil        | 2 B. 2 A  |
| C01, 02   | 0519103   | 0.47μF 50V E.C.  | 2 D. 2 C  |
| C03, 04   | 0519103   | 0.47μF 50V E.C.  | 2 B. 2 A  |
| C05, 06   | 0650680   | 68pF 50V C.C.    | 2 D. 2 C  |
| C07, 08   | 0650680   | 68pF 50V C.C.    | 2 B. 2 A  |
| C09, 10   | 0657473   | 0.047μF 50V C.C. | 2 D. 2 C  |
| C11, 12   | 0657473   | 0.047μF 50V C.C. | 2 B. 2 A  |
| C13, 14   | 0531101   | 100μF B.E.C.     | 2 D. 2 C  |
| C15, 16   | 0531101   | 100μF B.E.C.     | 2 B. 2 A  |
| C21, 22   | 0515100   | 10μF 50V E.C.    | 2 D. 2 C  |
| C23, 24   | 0515100   | 10μF 50V E.C.    | 1, 2B, 2A |
| C25, 26   | 0600687   | 0.068μF 50V M.C. | 2 D. 2 C  |
| C27, 28   | 0600687   | 0.068μF 50V M.C. | 2 B. 2 A  |
| C29, 30   | 0660220   | 22pF 50V C.C.    | 2 D. 2 C  |
| C31, 32   | 0660220   | 22pF 50V C.C.    | 2 B. 2 A  |
| C33, 34   | 0657473   | 0.047μF 50V C.C. | 2 D. 2 C  |
| C35, 36   | 0657473   | 0.047μF 50V C.C. | 2 B. 2 A  |
| C37, 38   | 0660101   | 100pF 50V C.C.   | 2 D. 2 C  |
| C39, 40   | 0660101   | 100pF 50V C.C.   | 2 B. 2 A  |
| C601      | 0515330   | 33μF 50V E.C.    | 2 C       |
| C602      | 0515330   | 33μF 50V E.C.    | 2 B       |
| R01, 02   | 0107104   | 100kΩ            | 2 D. 2 C  |
| R03, 04   | 0107104   | 100kΩ            | 2 B. 2 A  |
| R05, 06   | 0107103   | 10kΩ             | 2 D. 2 C  |
| R07, 08   | 0107103   | 10kΩ             | 2 B. 2 A  |
| R09, 10   | 0107104   | 100kΩ            | 2 D. 2 C  |
| R11, 12   | 0107104   | 100kΩ            | 2 B. 2 A  |
| R13, 14   | 0107183   | 18kΩ             | 2 D. 2 C  |
| R15, 16   | 0107183   | 18kΩ             | 2 B. 2 A  |

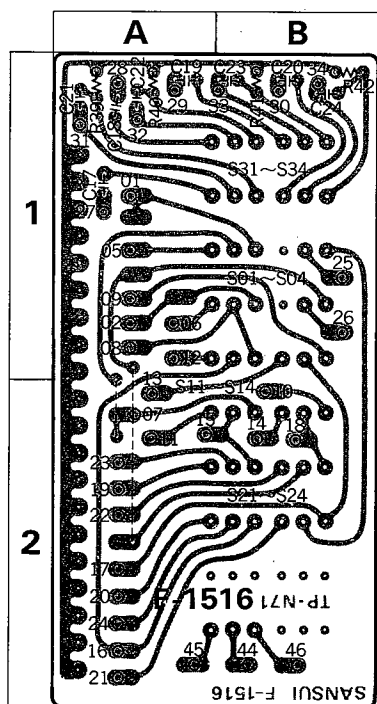


| Parts No. | Stock No. | Description | Position |
|-----------|-----------|-------------|----------|
| R17, 18   | 0107683   | 68kΩ        | 2 D. 2 C |
| R19, 20   | 0107683   | 68kΩ        | 2 B. 2 A |
| R21, 22   | 0107103   | 10kΩ        | 2 D. 2 C |
| R23, 24   | 0107103   | 10kΩ        | 2 B. 2 A |
| R25, 26   | 0107100   | 10Ω         | 2 D. 2 C |
| R27, 28   | 0107100   | 10Ω         | 2 B. 2 A |
| R29, 30   | 0107152   | 1.5kΩ       | 2 D. 2 C |
| R31, 32   | 0107152   | 1.5kΩ       | 2 B. 2 A |
| R33, 34   | 0107100   | 10Ω         | 2 D. 2 C |
| R35, 36   | 0107100   | 10Ω         | 2 B. 2 A |
| R37, 38   | 0107332   | 3.3kΩ       | 2 D. 2 C |
| R39, 40   | 0107332   | 3.3kΩ       | 2 B. 2 A |
| R41, 42   | 0107682   | 6.8kΩ       | 2 D. 2 C |
| R43, 44   | 0107682   | 6.8kΩ       | 2 B. 2 A |
| R45, 46   | 0107563   | 56kΩ        | 2 D. 2 C |
| R47, 48   | 0107563   | 56kΩ        | 2 B. 2 A |
| R49, 50   | 0107182   | 1.8kΩ       | 2 D. 2 C |
| R51, 52   | 0107182   | 1.8kΩ       | 2 B. 2 A |
| R53, 54   | 0107182   | 1.8kΩ       | 2 D. 2 C |
| R55, 56   | 0107182   | 1.8kΩ       | 2 B. 2 A |
| R57, 58   | 0152100   | 10Ω         | 2 D. 2 C |
| R59, 60   | 0152100   | 10Ω         | 2 B. 2 A |
| R61, 62   | 0107332   | 3.3kΩ       | 2 D. 2 C |
| R63, 64   | 0107332   | 3.3kΩ       | 2 B. 2 A |
| R65, 66   | 0107821   | 820Ω        | 2 D. 2 C |
| R67, 68   | 0107821   | 820Ω        | 2 B. 2 A |
| R69, 70   | 0107680   | 68Ω         | 2 D. 2 C |
| R71, 72   | 0107680   | 68Ω         | 2 B. 2 A |
| R73, 74   | 0107472   | 4.7kΩ       | 2 D. 2 C |
| R75, 76   | 0107390   | 39Ω         | 2 B. 2 A |
| R77, 78   | 0107390   | 39Ω         | 2 D. 2 C |
| R79, 80   | 0107479   | 4.7kΩ       | 2 B. 2 A |
| R81, 82   | 0107479   | 4.7kΩ       | 2 D. 2 C |
| R83, 84   | 0107221   | 220Ω        | 2 B. 2 A |
| R85, 86   | 0107221   | 220Ω        | 2 D. 2 C |
| R87, 88   | 0107221   | 220Ω        | 2 B. 2 A |
| R89, 90   | 0107221   | 220Ω        | 2 D. 2 C |
| R91, 92   | 0107221   | 220Ω        | 2 B. 2 A |
| R93, 94   | 0107221   | 220Ω        | 2 D. 2 C |
| R95, 96   | 0107221   | 220Ω        | 2 B. 2 A |
| R97, 98   | 0107689   | 6.8Ω        | 2 D. 2 C |
| R99, 100  | 0107689   | 6.8Ω        | 2 B. 2 A |
| R101, 102 | 0107689   | 6.8Ω        | 2 D. 2 C |

| Parts No. | Stock No. | Description   | Position       |
|-----------|-----------|---------------|----------------|
| R103, 104 | 0107689   | 6.8Ω ¼W C.R.  | 1 B. 1 A       |
| R109, 110 | 0133478   | 0.47Ω         | 1 D. 1 C       |
| R111, 112 | 0133478   | 0.47Ω         | 1 B. 1 A       |
| R113, 114 | 0133478   | 0.47Ω         | 1 D. 1 C       |
| R115, 116 | 0133478   | 0.47Ω         | 1 B. 1 A       |
| R117, 118 | 0104479   | 4.7Ω          | 2 D. 2 C       |
| R119, 120 | 0104479   | 4.7Ω          | 2 B. 2 A       |
| R601      | 0107682   | 6.8kΩ ¼W C.R. | 2 D            |
| R602      | 0107682   | 6.8kΩ         | 2 A            |
| VR01, 02  | 1035110   | 4.7kΩ (B)     | 2 D. 2 C       |
| VR03, 04  | 1035110   | 4.7kΩ (B)     | 2 B. 2 A       |
| VR05, 06  | 1035070   | 1.0kΩ (B)     | 1, 2 D. 1, 2 C |
| VR07, 08  | 1035070   | 1.0kΩ (B)     | 1, 2 B. 1, 2 A |
| F01, 02   | 0433680   | 3.5A          | 1, 2 D. 1, 2 C |
| F03, 04   | 0433680   | 3.5A          | 1, 2 B. 1, 2 A |
| F05, 06   | 0433680   | 3.5A          | 2 D. 2 C       |
| F07, 08   | 0433680   | 3.5A          | 2 B. 2 A       |

## 6-9 F-1516 Accessory Circuit Board

(Stock No. 7592060 Complete Circuit Board F-1516)

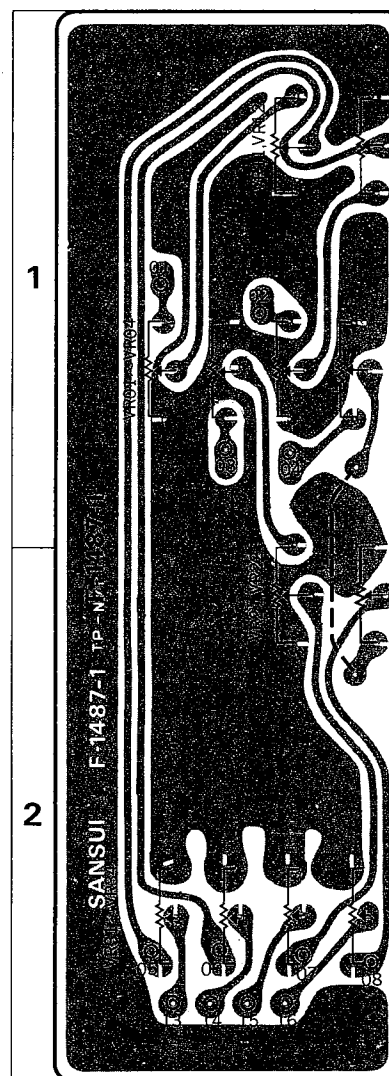


| Parts No. | Stock No. | Description         | Position |
|-----------|-----------|---------------------|----------|
| C17, 18   | 0620151   | 150pF               | 1 A. 1 A |
| C19, 20   | 0620151   | 150pF               | 1 A. 1 B |
| C21, 22   | 0600227   | 0.022μF             | 1 A. 1 A |
| C23, 24   | 0600227   | 0.022μF             | 1 B. 1 B |
| R39, 40   | 0106333   | 33kΩ                | 1 A. 1 A |
| R41, 42   | 0106333   | 33kΩ                | 1 B. 1 B |
| S31~34    | 1130750   | SPM055D Push Switch | 1 B      |

## 6-10. F-1487 Volume Circuit Board

(Stock No. 7591850 Complete Circuit Board F-1487)

### Conductor Side



### Parts List

| Parts No. | Stock No.  | Description    | Position |
|-----------|------------|----------------|----------|
| VR01~04   | 1060250, 1 | 250kΩ (HB) × 4 | 1        |
| VR11, 12  | 1010400, 1 | 250kΩ (HB)     | 1        |
| VR21, 22  | 1010400, 1 | 250kΩ (HB)     | 1, 2     |
| VR31~34   | 1060240, 1 | 250kΩ (B) × 4  | 2        |

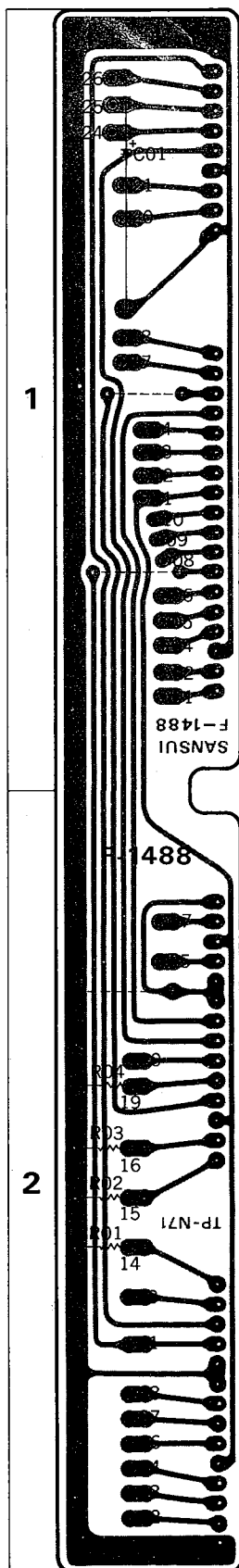
### Abbreviations

|                                        |                                                   |
|----------------------------------------|---------------------------------------------------|
| <b>C.R.</b> : Carbon Resistor          | <b>B.P.E.C.</b> : Bi-Polar Electrolytic Capacitor |
| <b>S.R.</b> : Solid Resistor           | <b>C.C.</b> : Ceramic Capacitor                   |
| <b>Ce.R.</b> : Cement Resistor         | <b>Mi.C.</b> : Mica Capacitor                     |
| <b>M.R.</b> : Metallized Film Resistor | <b>O.C.</b> : Oil Capacitor                       |
| <b>M.C.</b> : Mylar Capacitor          | <b>P.C.</b> : Polystyrene Capacitor               |
| <b>E.C.</b> : Electrolytic Capacitor   | <b>T.C.</b> : Tantalum Capacitor                  |

# 6-11. F-1488 Connector Joint Circuit

**Board** (Stock No. 7591860 Complete Circuit Board F-1488)

**Conductor Side**



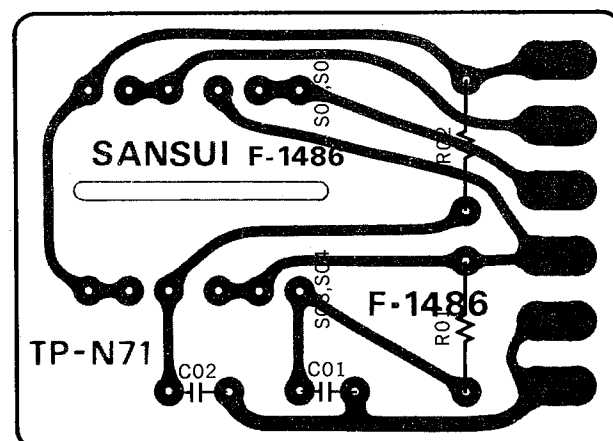
## Parts List

| Parts No. | Stock No. | Description                    | Position |
|-----------|-----------|--------------------------------|----------|
| C01       | 0504221   | 220 $\mu$ F 35V E.C.           | 1        |
| R01       | 0107474   | 470k $\Omega$                  | 2        |
| R02       | 0107474   | 470k $\Omega$                  | 2        |
| R03       | 0107474   | 470k $\Omega$                  | 2        |
| R04       | 0107474   | 470k $\Omega$                  | 2        |
|           |           | $\pm 5\%$ $\frac{1}{4}$ W C.R. |          |
|           | 2420150   | 10P Connector                  |          |
|           | 2420160   | 14P Connector                  |          |
|           | 2420170   | 18P Connector                  |          |

# 6-12. F-1486 Filter Circuit Board

(Stock No. 7591830 Complete Circuit Board F-1486)

**Conductor Side**



## Parts List

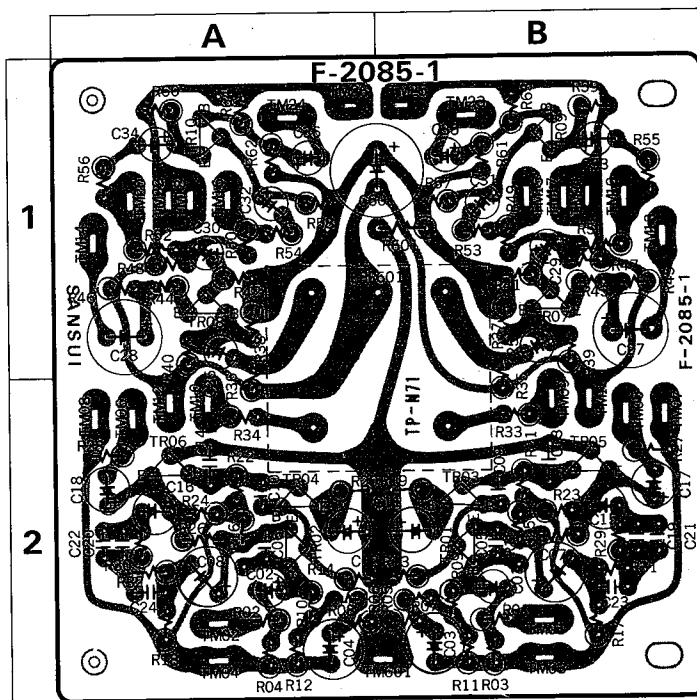
| Parts No. | Stock No. | Description                      |
|-----------|-----------|----------------------------------|
| C01       | 0600187   | 0.018 $\mu$ F $\pm 5\%$ 50V M.C. |
| C02       | 0600187   | 0.018 $\mu$ F $\pm 5\%$ 50V M.C. |
| R01       | 0107824   | 820k $\Omega$                    |
| R02       | 0107824   | 820k $\Omega$                    |
|           |           | $\pm 5\%$ $\frac{1}{4}$ W C.R.   |
| S01-04    | 1130760   | Push Switch                      |

## Abbreviations

|       |                            |          |                                 |
|-------|----------------------------|----------|---------------------------------|
| C.R.  | : Carbon Resistor          | BP.E.C.: | Bi-Polar Electrolytic Capacitor |
| S.R.  | : Solid Resistor           | C.C.     | : Ceramic Capacitor             |
| Ce.R. | : Cement Resistor          | Mi.C.    | : Mica Capacitor                |
| M.R.  | : Metallized Film Resistor | O.C.     | : Oil Capacitor                 |
| M.C.  | : Mylar Capacitor          | P.C.     | : Polystyrene Capacitor         |
| E.C.  | : Electrolytic Capacitor   | T.C.     | : Tantalum Capacitor            |

## 6-13. F-2085 Equalizer & CD-4 Main Circuit Board

(Stock No. 7650210 Complete Circuit Board F-2085)



2SC1312  
2SA726



2SA640  
2SC1222



### Parts List

| Parts No. | Stock No.   | Description                | Position  | Parts No. | Stock No. | Description   | Position  |
|-----------|-------------|----------------------------|-----------|-----------|-----------|---------------|-----------|
| TR01,02   | 0306090, 1  | 2SC1312 (F, G)             | 2 B . 2 A | R01,02    | 0106332   | 3.3k $\Omega$ | 2 B . 2 A |
| TR03,04   | 0300410, 1  | 2SA726 <sup>®</sup> (F, G) | 2 B . 2 A | R03,04    | 0106823   | 82k $\Omega$  | 2 B . 2 A |
|           | or          | or                         |           | R05,06    | 0106184   | 180k $\Omega$ | 2 B . 2 A |
| TR05,06   | 0300301,3,5 | 2SA640 (M, K, L)           | 2 B . 2 A | R07,08    | 0106274   | 270k $\Omega$ | 2 B . 2 A |
|           | 0306090, 1  | 2SC1312 (F, G)             |           | R09,10    | 0106473   | 47k $\Omega$  | 2 B . 2 A |
| TR07,08   | or          | or                         | 1 B . 1 A | R11,12    | 0106104   | 100k $\Omega$ | 2 B . 2 A |
|           | 0306011, 2  | 2SC1222 (E, F)             |           | R13,14    | 0106273   | 27k $\Omega$  | 2 B . 2 A |
| TR09,10   | 0306090, 1  | 2SC1312 (F, G)             | 1 B . 1 A | R15,16    | 0106104   | 100k $\Omega$ | 2 B . 2 A |
|           | or          | or                         |           | R17,18    | 0106681   | 680 $\Omega$  | 2 B . 2 A |
|           | 0306011, 2  | 2SC1222 (E, F)             |           | R19,20    | 0106152   | 1.5k $\Omega$ | 2 B . 2 A |
|           | 0306090, 1  | 2SC1312 (F, G)             |           | R21,22    | 0106683   | 68k $\Omega$  | 2 B . 2 A |
|           | or          | or                         |           | R23,24    | 0106332   | 3.3k $\Omega$ | 2 B . 2 A |
|           | 0306011, 2  | 2SC1222 (E, F)             |           | R25,26    | 0106824   | 820k $\Omega$ | 2 B . 2 A |
| LPF601    | 0910230     | VSL-200-3 Low Pass Filter  |           | R27,28    | 0106333   | 33k $\Omega$  | 2 B . 2 A |
| C01,02    | 0573229     | 2.2 $\mu$ F 25V T.C.       | 2 B . 2 A | R29,30    | 0106474   | 470k $\Omega$ | 2 B . 2 A |
| C03,04    | 0512330     | 33 $\mu$ F 16V E.C.        | 2 B . 2 A | R31,32    | 0106223   | 22k $\Omega$  | 2 B . 2 A |
| C05,06    | 0660470     | 47pF 50V C.C.              | 2 B . 2 A | R33,34    | 0106472   | 4.7k $\Omega$ | 2 B . 2 A |
| C07,08    | 0510470     | 47 $\mu$ F 6.3V E.C.       | 2 B . 2 A | R35,36    | 0106472   | 4.7k $\Omega$ | 1 B . 1 A |
| C09,10    | 0660220     | 22pF 50V C.C.              | 2 B . 2 A | R37,38    | 0106184   | 180k $\Omega$ | 1 B . 1 A |
| C11,12    | 0511330     | 33 $\mu$ F 10V E.C.        | 2 B . 2 A | R39,40    | 0106823   | 82k $\Omega$  | 1 B . 1 A |
| C15,16    | 0513100     | 10 $\mu$ F 25V E.C.        | 2 B . 2 A | R41,42    | 0106822   | 8.2k $\Omega$ | 1 B . 1 A |
| C17,18    | 0519102     | 3.3 $\mu$ F 50V E.C.       | 2 B . 2 A | R43,44    | 0106271   | 270 $\Omega$  | 1 B . 1 A |
| C19,20    | 0600107     | 0.01 $\mu$ F               | 2 B . 2 A | R45,46    | 0106472   | 4.7k $\Omega$ | 1 B . 1 A |
| C21,22    | 0601106     | 0.001 $\mu$ F              | 2 B . 2 A | R47,48    | 0106124   | 120k $\Omega$ | 1 B . 1 A |
| C23,24    | 0600336     | 0.0033 $\mu$ F             | 2 B . 2 A | R49,50    | 0106123   | 12k $\Omega$  | 1 B . 1 A |
| C25,26    | 0515109     | 1 $\mu$ F 50V E.C.         | 1 B . 1 A | R51,52    | 0106103   | 10k $\Omega$  | 1 B . 1 A |
| C27,28    | 0511101     | 100 $\mu$ F 10V E.C.       | 1 B . 1 A | R53,54    | 0106103   | 10k $\Omega$  | 1 B . 1 A |
| C29,30    | 0519105     | 2.2 $\mu$ F                | 1 B . 1 A | R55,56    | 0106103   | 10k $\Omega$  | 1 B . 1 A |
| C31,32    | 0519102     | 3.3 $\mu$ F                | 1 B . 1 A | R57,58    | 0106102   | 1k $\Omega$   | 1 B . 1 A |
| C33,34    | 0519102     | 3.3 $\mu$ F                | 1 B . 1 A | R59,60    | 0106102   | 1k $\Omega$   | 1 B . 1 A |
| C35,36    | 0515109     | 1 $\mu$ F                  | 1 B . 1 A | R61,62    | 0106394   | 390k $\Omega$ | 1 B . 1 A |
| C601      | 0513101     | 100 $\mu$ F 25V E.C.       | 1 A, B    | R63,64    | 0106274   | 270k $\Omega$ | 1 B . 1 A |
|           |             |                            |           | R601      | 0106561   | 560 $\Omega$  | 1 B       |

1/4W C.R.  
(E.L.R.)

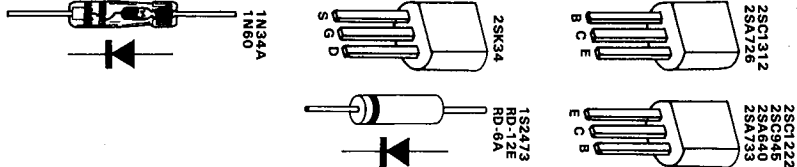
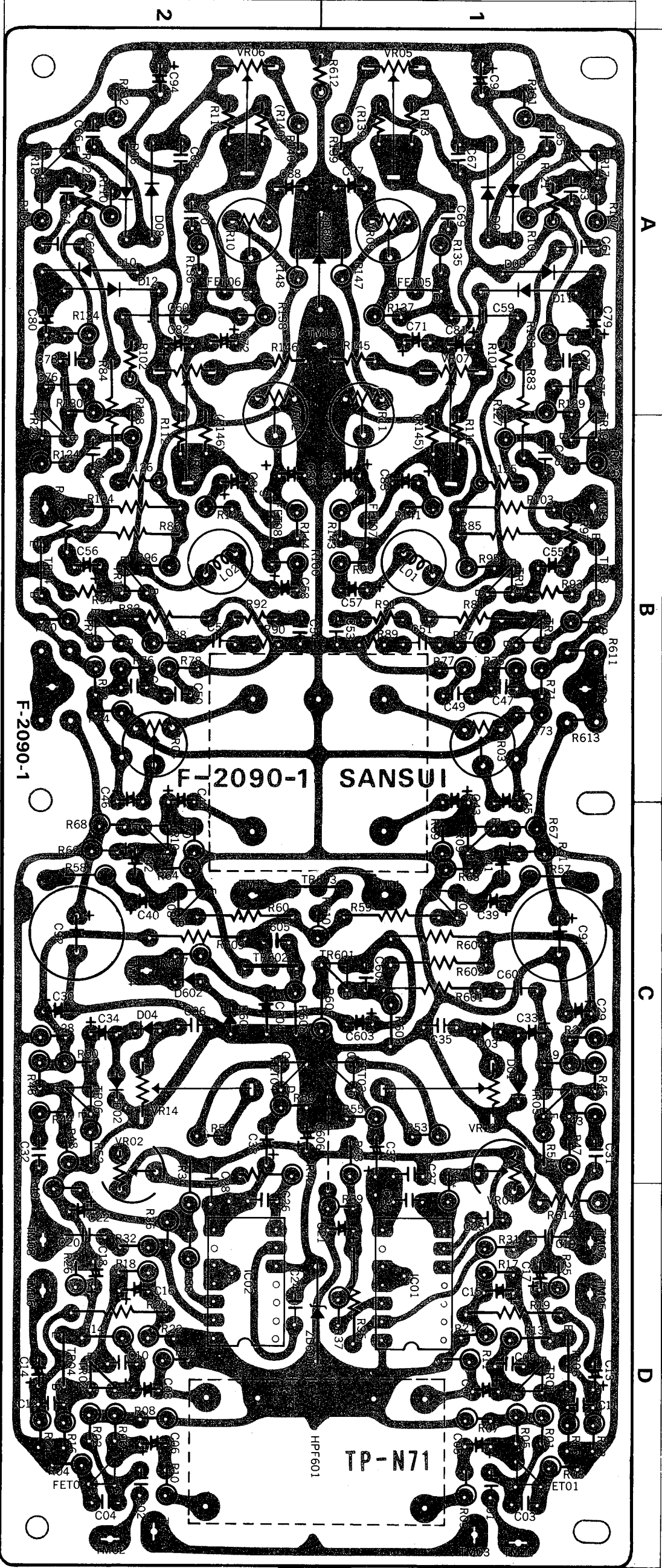
# 6-14. F-2090 CD-4 Sub Channel Unit Circuit Board

(Stock No. 7650220 Complete Circuit Board F-2090)

## Parts List

| Parts No.   | Stock No.     | Description             | Position         | Parts No. | Stock No. | Description             | Position     |
|-------------|---------------|-------------------------|------------------|-----------|-----------|-------------------------|--------------|
| TR01, 02    | 0306160, 1    | 2SC1312 (F, G)          | 1 D. 2 D         | C29, 30   | 0512100   | 10 $\mu$ F 16V E.C.     | 1 C. 2 C     |
|             | or            | or                      |                  | C31, 32   | 0601476   | 0.047 $\mu$ F 50V M.C.  | 1 C. 2 C     |
| TR03, 04    | 0306011, 2    | 2SC1222 (E, F)          | 1 D. 2 D         | C33, 34   | 0515109   | 1 $\mu$ F 50V E.C.      | 1 C. 2 C     |
|             | 0306160, 1    | 2SC1312 (F, G)          |                  | C35, 36   | 0601157   | 0.015 $\mu$ F 50V M.C.  | 1 C. 2 C     |
| TR05, 06    | 0306011, 2    | 2SC1222 (E, F)          | 1 C. 2 C         | C37, 38   | 0512330   | 33 $\mu$ F 16V E.C.     | 1 C. 2 C     |
|             | 0305951~3     | 2SC945 (Q, P, K)        |                  | C39, 40   | 0515339   | 3.3 $\mu$ F 50V E.C.    | 1 C. 2 C     |
| TR07, 08    | 0305951~3     | 2SC945 (Q, P, K)        | 1 C. 2 C         | C41, 42   | 0515339   | 3.3 $\mu$ F 50V E.C.    | 1 C. 2 C     |
|             | 0300301, 3, 5 | 2SA640 (M, K, L)        |                  | C43, 44   | 0513479   | 4.7 $\mu$ F 25V E.C.    | 1B, C, 2B, C |
| TR09, 10    | or            | or                      | 1 C. 2 C         | C45, 46   | 0515109   | 1 $\mu$ F 50V E.C.      | 1B, C, 2B, C |
|             | 0300410, 1    | 2SA726 (F, G)           |                  | C47, 48   | 0620331   | 330pF 50V P.C.          | 1 B. 2 A     |
| TR11, 12    | 0306160, 1    | 2SC1312 (F, G)          | 1 B. 2 B         | C49, 50   | 0600476   | 0.0047 $\mu$ F 50V C.C. | 1 B. 2 A     |
|             | or            | or                      |                  | C51, 52   | 0600827   | 0.082 $\mu$ F 50V C.C.  | 1 B. 2 A     |
| TR13, 14    | 0306011, 2    | 2SC1222 (E, F)          | 1 B. 2 B         | C53, 54   | 0620331   | 330pF 50V P.C.          | 1 B. 2 A     |
|             | 0306160, 1    | 2SC1312 (F, G)          |                  | C55, 56   | 0515109   | 1 $\mu$ F 50V E.C.      | 1 B. 2 A     |
| TR15, 16    | 0306011, 2    | 2SC1222 (E, F)          | 1 B. 2 A         | C57, 58   | 0573688   | 0.68 $\mu$ F 25V T.C.   | 1 B. 2 A     |
|             | 0306160, 1    | 2SC1312 (F, G)          |                  | C59, 60   | 0600158   | 0.15 $\mu$ F 50V M.C.   | 1 A. 2 A     |
| TR17, 18    | 0305951~3     | 2SC945 (Q, P, K)        | 1 A. 2 A         | C61, 62   | 0600686   | 0.0068 $\mu$ F 50V E.C. | 1 A. 2 A     |
|             | 0305951~3     | 2SC945 (Q, P, K)        |                  | C63, 64   | 0600686   | 0.0068 $\mu$ F 50V E.C. | 1 A. 2 A     |
| TR601, 602  | 0305951~3     | 2SC945 (Q, P, K)        | 1 C. 2 C         | C65, 66   | 0600226   | 0.0022 $\mu$ F 50V E.C. | 1 A. 2 A     |
|             | 0300510, 1    | 2SA733 (Q, P)           |                  | C67, 68   | 0601227   | 0.022 $\mu$ F 50V M.C.  | 1 A. 2 A     |
| IC01, 02    | 0360110       | CD894A                  | IC               | C69, 70   | 0601476   | 0.0047 $\mu$ F 50V M.C. | 1 A. 2 A     |
| FET01, 02   | 0370150, 1    | 2SK34 (B, C)            | F.E.T            | C71, 72   | 0512100   | 10 $\mu$ F 16V E.C.     | 1 A. 2 A     |
| FET03, 04   | 0370150       | 2SK34 (B)               |                  | C73, 74   | 0600127   | 0.012 $\mu$ F 50V M.C.  | 1 B. 2 A     |
| FET05, 06   | 0370151       | 2SK34 (C)               |                  | C75, 76   | 0600157   | 0.015 $\mu$ F 50V M.C.  | 1 A. 2 A     |
| FET07, 08   | 0370151       | 2SK34 (C)               |                  | C77, 78   | 0600157   | 0.015 $\mu$ F 50V M.C.  | 1 A. 2 A     |
| D01, 02     | 0311160       | 1S2473D                 | Diode            | C79, 80   | 0573338   | 0.33 $\mu$ F 25V T.C.   | 1 A. 2 A     |
| D03, 04     | 0311160       | 1S2473D                 |                  | C81, 82   | 0573338   | 0.33 $\mu$ F 25V T.C.   | 1 A. 2 A     |
| D05, 06     | 0310403       | 1N34A                   |                  | C83, 84   | 0573338   | 0.33 $\mu$ F 25V T.C.   | 1 B. 2 A     |
| D07, 08     | 0310403       | 1N34A                   |                  | C85, 86   | 0511330   | 33 $\mu$ F 10V E.C.     | 1 B. 2 A     |
| D09, 10     | 0310403       | 1N34A                   | Zener Diode      | C87, 88   | 0510470   | 47 $\mu$ F 6.3V E.C.    | 1 A. 2 A     |
| D11, 12     | 0310403       | 1N34A                   |                  | C91, 92   | 0513221   | 220 $\mu$ F 25V E.C.    | 1 C. 2 C     |
| D601, 602   | 0310330       | 1N60                    |                  | C93, 94   | 0513101   | 100 $\mu$ F 25V E.C.    | 1 A. 2 A     |
| ZD601       | 0310290       | RD12E (B)               |                  | C601      | 0601106   | 0.001 $\mu$ F 50V M.C.  | 1 C          |
| ZD602       | 0315530       | RD6A (K)                |                  | C602      | 0660220   | 22pF 50V C.C.           | 1 C          |
| HPF601, 602 | 0910250       | VSL-400-3               | High Pass Filter | C603      | 0515109   | 1 $\mu$ F 50V E.C.      | 1 C          |
| LPF601, 602 | 0910240       | VSL-200-6               | Low Pass Filter  | C604      | 0513479   | 4.7 $\mu$ F 25V E.C.    | 2 C          |
| L01, 02     | 4900191       | 100mH                   | Feri Inductor    | C605      | 0657223   | 0.022 $\mu$ F 50V C.C.  | 2 C          |
| C01, 02     | 0601106       | 0.001 $\mu$ F 50V M.C.  | 1 D. 2 D         | C606      | 0512100   | 10 $\mu$ F 16V E.C.     | 2 C          |
| C03, 04     | 0660509       | 5pF 50V C.C.            |                  | R01, 02   | 0106105   | 1M $\Omega$             | 1 D. 2 D     |
| C05, 06     | 0515109       | 1 $\mu$ F 50V E.C.      |                  | R03, 04   | 0106102   | 1k $\Omega$             | 1 D          |
| C07, 08     | 0515109       | 1 $\mu$ F 50V E.C.      |                  | R05, 06   | 0106221   | 220 $\Omega$            | 1 D. 2 D     |
| C09, 10     | 0660680       | 68pF 50V C.C.           | 1 D. 2 D         | R07, 08   | 0106123   | 12k $\Omega$            | 1 D. 2 D     |
| C11, 12     | 0660150       | 15pF 50V C.C.           |                  | R09, 10   | 0106272   | 2.7k $\Omega$           | 1 D. 2 D     |
| C13, 14     | 0515109       | 1 $\mu$ F 50V E.C.      |                  | R11, 12   | 0106332   | 3.3k $\Omega$           | 1 D. 2 D     |
| C15, 16     | 0515109       | 1 $\mu$ F 50V E.C.      |                  | R13, 14   | 0106394   | 390k $\Omega$           | 1 D          |
| C17, 18     | 0515109       | 1 $\mu$ F 50V E.C.      | 1 D. 2 D         | R15, 16   | 0106184   | 180k $\Omega$           | 1 D. 2 D     |
| C19, 20     | 0601477       | 0.047 $\mu$ F 50V M.C.  |                  | R17, 18   | 0106472   | 4.7k $\Omega$           | 1 D. 2 D     |
| C21, 22     | 0515109       | 1 $\mu$ F 50V E.C.      |                  | R19, 20   | 0107104   | 100k $\Omega$           | 1 D. 2 D     |
| C23, 24     | 0600276       | 0.0027 $\mu$ F 50V M.C. |                  | R21, 22   | 0106331   | 330 $\Omega$            | 1 D. 2 D     |
| C25, 26     | 0657102       | 0.001 $\mu$ F 50V C.C.  | 1 D. 2 D         | R23, 24   | 0106472   | 4.7k $\Omega$           | 1 D. 2 D     |
| C27, 28     | 0600336       | 0.0033 $\mu$ F 50V M.C. |                  | R25, 26   | 0106471   | 470 $\Omega$            | 1 D. 2 D     |
|             |               |                         |                  | R27       | 0106332   | 3.3k $\Omega$           | 1 C          |
|             |               |                         |                  | R28       | 0106472   | 4.7k $\Omega$           | 2 C          |
|             |               |                         | 1 D. 2 D         | R31, 32   | 0106222   | 2.2k $\Omega$           | 1 D. 2 D     |
|             |               |                         |                  | R33, 34   | 0106103   | 10k $\Omega$            | 1C, D, 2C, D |
|             |               |                         |                  | R35       | 0107472   | 4.7k $\Omega$           | 1 D          |
|             |               |                         |                  | R36       | 0106472   | 4.7k $\Omega$           | 2 D          |
|             |               |                         | 1 D. 2 D         | R37, 38   | 0106472   | 4.7k $\Omega$           | 1 D. 2 D     |
|             |               |                         |                  | R39, 40   | 0106103   | 10k $\Omega$            | 1 D. 2 D     |
|             |               |                         |                  | R41, 42   | 0106272   | 2.7k $\Omega$           | 1C, D, 2C, D |
|             |               |                         |                  | R43, 44   | 0106821   | 820 $\Omega$            | 1 C. 2 C     |

Conductor Side



| Parts No. | Stock No. | Description   | Position  |
|-----------|-----------|---------------|-----------|
| R45, 46   | 0106564   | 560k $\Omega$ | 1 C. 2C   |
| R47, 48   | 0106473   | 47k $\Omega$  | 1 C. 2C   |
| R49, 50   | 0106682   | 6.8k $\Omega$ | 1 C. 2C   |
| R51, 52   | 0106680   | 68 $\Omega$   | 1 C. 2C   |
| R53, 54   | 0106683   | 68k $\Omega$  | 1 C. 2C   |
| R55, 56   | 0106104   | 100k $\Omega$ | 1 C. 2C   |
| R57, 58   | 0106562   | 5.6k $\Omega$ | 1 C. 2C   |
| R59, 60   | 0107223   | 22k $\Omega$  | 1 C. 2C   |
| R61, 62   | 0106333   | 33k $\Omega$  | 1 C. 2C   |
| R63, 64   | 0106474   | 470k $\Omega$ | 1 C. 2C   |
| R67, 68   | 0106221   | 220 $\Omega$  | 1 C. 2C   |
| R69, 70   | 0106472   | 4.7k $\Omega$ | 1 C. 2C   |
| R71, 72   | 0106474   | 470k $\Omega$ | 1 B. 2B   |
| R73, 74   | 0106473   | 47k $\Omega$  | 1 B. 2B   |
| R75, 76   | 0106333   | 33k $\Omega$  | 1 B. 2B   |
| R77, 78   | 0106472   | 4.7k $\Omega$ | 1 B. 2B   |
| R79, 80   | 0106273   | 27k $\Omega$  | 1 B. 2B   |
| R81, 82   | 0107272   | 2.7k $\Omega$ | 1 B. 2B   |
| R83, 84   | 0107479   | 4.7 $\Omega$  | 1 A.B. 2A |
| R85, 86   | 0107103   | 10k $\Omega$  | 1 B. 2B   |

| Parts No. | Stock No. | Description   | Position    |
|-----------|-----------|---------------|-------------|
| R87, 88   | 0106473   | 47k $\Omega$  | 1 B. 2B     |
| R89, 90   | 0106103   | 10k $\Omega$  | 1 B. 2B     |
| R91, 92   | 0106223   | 22k $\Omega$  | 1 B. 2B     |
| R93, 94   | 0106103   | 10k $\Omega$  | 1 B. 2B     |
| R95, 96   | 0106392   | 3.9k $\Omega$ | 1 B. 2B     |
| R97, 98   | 0106183   | 18k $\Omega$  | 1 B. 2B     |
| R99, 100  | 0106271   | 270 $\Omega$  | 1 B. 2B     |
| R101, 102 | 0106561   | 560 $\Omega$  | 1 A. 2A     |
| R103, 104 | 0107333   | 33k $\Omega$  | 1 B. 2A     |
| R107, 108 | 0106473   | 47k $\Omega$  | 1 A. 2A     |
| R109, 110 | 0106823   | 82k $\Omega$  | 1 A. 2A     |
| R111, 112 | 0106473   | 47k $\Omega$  | 1 B. 2B     |
| R113, 114 | 0106274   | 270k $\Omega$ | 1 A. 2A     |
| R121, 122 | 0106473   | 47k $\Omega$  | 1 A. 2A     |
| R123, 124 | 0106473   | 47k $\Omega$  | 1 B. 2B     |
| R125, 126 | 0106473   | 47k $\Omega$  | 1 B. 2B     |
| R127, 128 | 0106103   | 10k $\Omega$  | 1 A.B. 2A.B |
| R129, 130 | 0106103   | 10k $\Omega$  | 1 A.B. 2A.B |
| R131, 132 | 0106682   | 6.8k $\Omega$ | 1 A. 2A     |
| R133, 134 | 0106682   | 6.8k $\Omega$ | 1 A. 2A     |

| Parts No. | Stock No. | Description   | Position |
|-----------|-----------|---------------|----------|
| R135, 136 | 0106104   | 100k $\Omega$ | 1 A. 2A  |
| R137, 138 | 0106183   | 18k $\Omega$  | 1 A. 2A  |
| R139, 140 | 0106274   | 270k $\Omega$ | 1 A. 2A  |
| R141, 142 | 0106104   | 100k $\Omega$ | 1 B. 2B  |
| R143, 144 | 0106183   | 18k $\Omega$  | 1 B. 2B  |
| R145, 146 | 0106394   | 390k $\Omega$ | 1 A. 2A  |
| R147, 148 | 0106102   | 1k $\Omega$   | 1 A. 2A  |
| R601      | 0107562   | 5.6k $\Omega$ | 1 C      |
| R602      | 0107664   | 860k $\Omega$ | 1 C      |
| R603      | 0106104   | 100k $\Omega$ | 1 C      |
| R604      | 0107332   | 3.3k $\Omega$ | 1 C      |
| R605      | 0106331   | 330 $\Omega$  | 1.2C     |
| R607      | 0106222   | 2.2k $\Omega$ | 2C       |
| R608      | 0106472   | 4.7k $\Omega$ | 2C       |
| R609      | 0107562   | 5.6k $\Omega$ | 2C       |
| R610      | 0106183   | 18k $\Omega$  | 1.2C     |
| R611      | 0106820   | 82 $\Omega$   | 1 B      |
| R612      | 0106681   | 680 $\Omega$  | 1.2      |
| R613      | 0106680   | 68 $\Omega$   | 1 B      |
| R614      | 0104331   | 330 $\Omega$  | 1 D      |

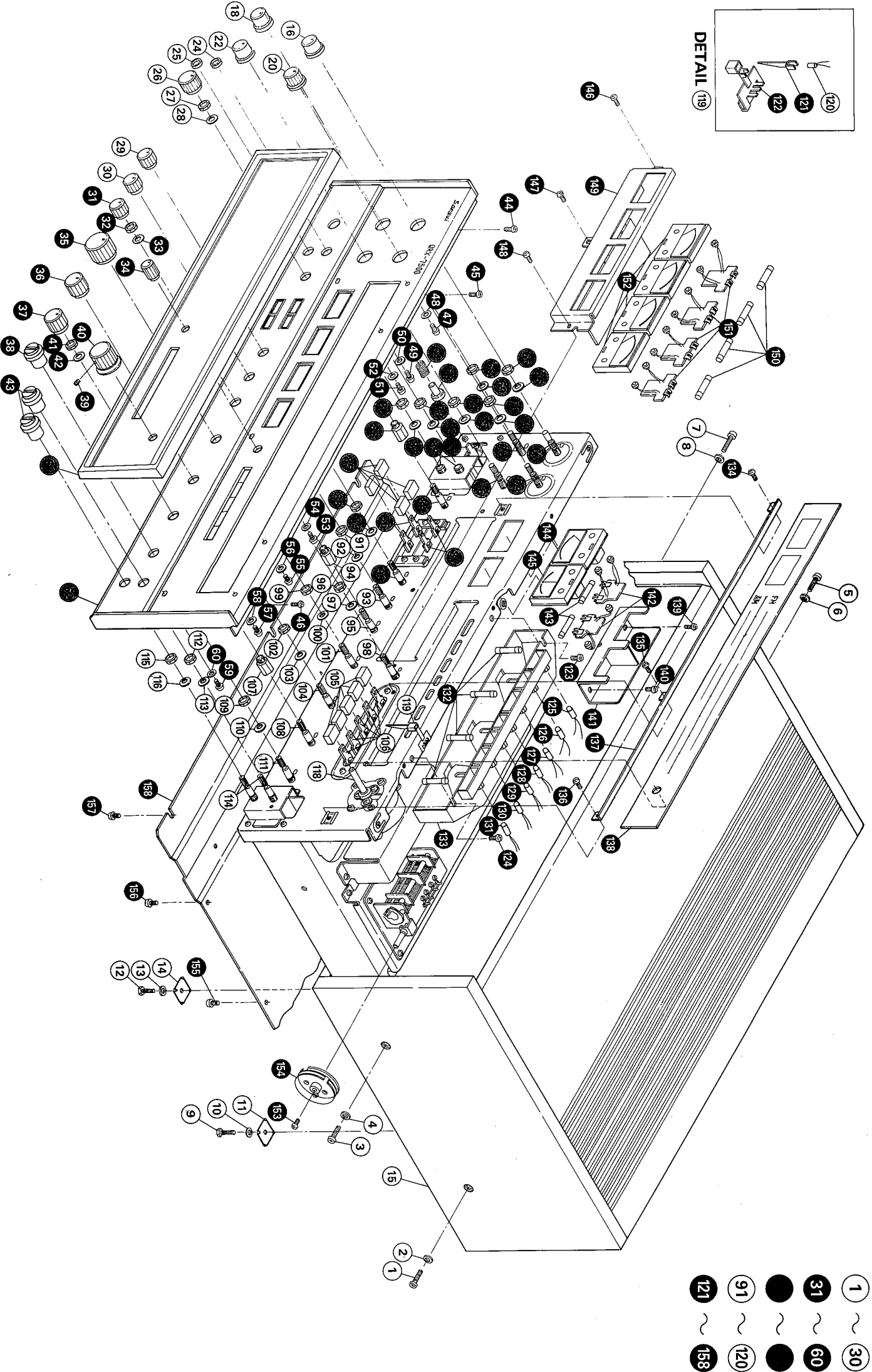
| Parts No. | Stock No.  | Description       | Position    |
|-----------|------------|-------------------|-------------|
| VR01, 02  | 1035090    | 2.2k $\Omega$ (B) | 1 C.B. 2C.B |
| VR03, 04  | 1035110    | 4.7k $\Omega$ (B) | 1 B. 2B     |
| VR09, 10  | 1035150    | 22k $\Omega$ (B)  | 1 A. 2A     |
| VR11, 12  | 1035150    | 22k $\Omega$ (B)  | 1 A.B. 2A.B |
| VR13, 14  | 1032620, 1 | 100k $\Omega$ (B) | 1 C. 2C     |

**Abbreviations**

C.R. : Carbon Resistor  
S.R. : Solid Resistor  
C.e.R. : Cement Resistor  
M.R. : Metallized Film Resistor  
M.C. : Mylar Capacitor  
E.C. : Electrolytic Capacitor

BP.E.C.: Bi-Polar Electrolytic Capacitor  
C.C. : Ceramic Capacitor  
Mi.C. : Mica Capacitor  
O.C. : Oil Capacitor  
P.C. : Polystyrene Capacitor  
T.C. : Tantalum Capacitor

6-15. Other Parts (Front Side)



| Parts List |           |                           |
|------------|-----------|---------------------------|
| Parts No.  | Stock No. | Description               |
| 1          | 5100173   | Binding Head Screw, M4×25 |
| 2          | 5186110   | Plain Washer, 4φ          |
| 3          | 5100173   | Binding Head Screw, M4×25 |
| 4          | 5186110   | Plain Washer, 4φ          |
| 5          | 5100173   | Binding Head Screw, M4×25 |
| 6          | 5186110   | Plain Washer, 4φ          |
| 7          | 5100173   | Binding Head Screw, M4×25 |

| Parts No. | Stock No. | Description               |
|-----------|-----------|---------------------------|
| 8         | 5186110   | Plain Washer, 4φ          |
| 9         | 5104571   | Hexagon Head Bolts, M4×23 |
| 10        | 5121260   | Spring Washer, 4φ         |
| 11        | 5186091   | Nail Washer               |
| 12        | 5104571   | Hexagon Head Bolts, M4×23 |
| 13        | 5121260   | Spring Washer, 4φ         |
| 14        | 5186091   | Nail Washer               |

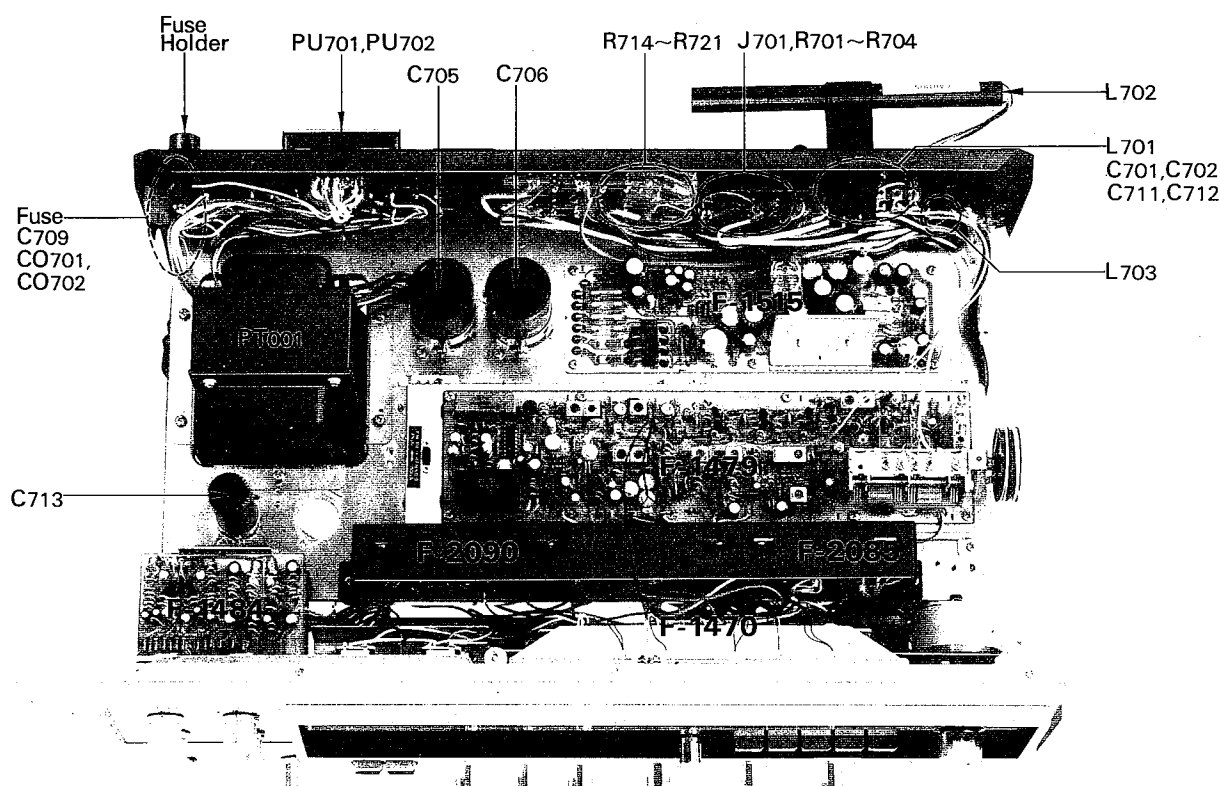
| Parts No. | Stock No. | Description                    |
|-----------|-----------|--------------------------------|
| 15        | 5726821   | Wood Case                      |
| 16        | 5317850   | S-2-S Type Knob, BASS volume   |
| 18        | 5317850   | S-2-S Type Knob, BASS volume   |
| 20        | 5317850   | S-2-S Type Knob, TREBLE volume |
| 22        | 5317850   | S-2-S Type Knob, TREBLE volume |
| 24        | 5176052   | Lock Nut                       |
| 25        | 5176052   | Lock Nut                       |

| Parts No. | Stock No. | Description                   |
|-----------|-----------|-------------------------------|
| 26        | 5317642   | M-2 Type Knob, SPEAKER switch |
| 27        |           | Hex. Nut, M9                  |
| 28        |           | Plain Washel, 9φ              |
| 29        | 5317652   | S-2 Type Knob, BALANCE volume |
| 30        | 5317652   | S-2 Type Knob, BALANCE volume |
| 31        | 5317652   | S-2 Type Knob, BALANCE volume |
| 32        |           | Hex. Nut, M9                  |

| Parts No. | Stock No.  | Description                           |
|-----------|------------|---------------------------------------|
| 33        |            | Plain Washer, 9φ                      |
| 34        | 5317811    | P-5 Type Knob, LEVEL SET volume       |
| 35        | 5317632    | L-2 Type Knob, VOLUME                 |
| 36        | 5317642    | M-2 Type Knob, FUNCTION switch        |
| 37        | 5317642    | M-2 Type Knob, DIRECTION switch       |
| 38        | 5317860    | Q-5 Type Knob, CD-4 LEVEL Volume      |
| 39        | 5106061    | Hex. Socket Setscrew, M4 × 6          |
| 40        | 5317780    | N-5 Type Knob, TUNING                 |
| 41        |            | Hex. Nut, M9                          |
| 42        |            | Plain Washer, 9φ                      |
| 43        | 5317860    | Q-5 Type Knob, CD-4 SEPARATION Volume |
| 44        | 5101043    | Binding Head Screw, M3 × 6            |
| 45        | 5101043    | Binding Head Screw, M3 × 6            |
| 46        | 5101043    | Binding Head Screw, M3 × 6            |
| 47        | 5101042    | Binding Head Screw, M3 × 5            |
| 48        | 5120141    | Plain Washer, 3φ                      |
| 49        | 5101042    | Binding Head Screw, M3 × 5            |
| 50        | 5120141    | Plain Washer, 3φ                      |
| 51        | 5101042    | Binding Head Screw, M3 × 5            |
| 52        | 5120141    | Plain Washer, 3φ                      |
| 53        | 5101042    | Binding Head Screw, M3 × 5            |
| 54        | 5120141    | Plain Washer, 3φ                      |
| 55        | 5101042    | Binding Head Screw, M3 × 5            |
| 56        | 5120141    | Plain Washer, 3φ                      |
| 57        | 5101042    | Binding Head Screw, M3 × 5            |
| 58        | 5120141    | Plain Washer, 3φ                      |
| 59        | 5101042    | Binding Head Screw, M3 × 5            |
| 60        | 5120141    | Plain Washer, 3φ                      |
| 61        | 5308891    | Smoked Plate Frame                    |
|           | 5047680    | Smoked Plate                          |
| 62        | 7006930    | Front Panel                           |
| 63        | 7106083    | Push Button, POWER switch             |
| 64        | 6906031    | Spring, POWER switch                  |
| 65        |            | Hex. Nut, M11                         |
| 66        |            | Plain Washer, 11φ                     |
| 67        | 1010980, 1 | 100kΩ (B) × 2 BASS Volume             |
| 68        |            | Hex. Nut, M11                         |
| 69        |            | Plain Washer, 11φ                     |
| 70        | 1010980, 1 | 100kΩ (B) × 2 BASS Volume             |
| 71        |            | Hex. Nut, M11                         |
| 72        |            | Plain Washer, 11φ                     |
| 73        | 1010990, 1 | 100kΩ (W) × 2 TREBLE Volume           |
| 74        |            | Hex. Nut, M11                         |
| 75        |            | Plain Washer, 11φ                     |
| 76        | 1010990, 1 | 100kΩ (W) × 2 TREBLE Volume           |
| 77        | 1130350    | Push Switch, POWER switch             |
| 78        |            | Hex. Nut, M9                          |
| 79        |            | Plain Washer, 9φ                      |
| 80        |            | Hex. Nut, M9                          |
| 81        |            | Plain Washer, 9φ                      |
| 82        | 2430200    | Headphone Jack                        |
| 83        | 5236491    | Spacer Nut, M9                        |
| 84        | 1102500, 1 | Rotary Switch Y-2-2-4, SPEAKER switch |
| 85        | 5326380    | Push Button, LOW & HIGH FILTER switch |
| 86        | 1130760    | Push Switch (2 Stage)                 |
| 87        | 1130760    | Push Switch (2 Stage)                 |
| 88        |            | Hex. Nut, M8                          |
| 89        |            | Plain Washer, 8φ                      |
| 90        | 1010400, 1 | 250kΩ (HB) BALANCE Volume             |
| 91        |            | Hex. Nut, M8                          |
| 92        |            | Plain Washer, 8φ                      |
| 93        | 1060250, 1 | 250kΩ (HB) × 4 BALANCE Volume         |
| 94        | 5236461    | Spacer Nut, M8                        |
| 95        | 1010400, 1 | 250 (HB) BALANCE Volume               |

| Parts No. | Stock No.  | Description                                     |
|-----------|------------|-------------------------------------------------|
| 96        |            | Hex. Nut, M8                                    |
| 97        |            | Plain Washer, 8φ                                |
| 98        | 1060260, 1 | 250kΩ (B) × 4 LEVEL SET Volume                  |
| 99        |            | Hex. Nut, M9                                    |
| 100       |            | Plain Washer, 9φ                                |
| 101       | 1060240, 1 | 250kΩ (B) × 4 VOLUME                            |
| 102       |            | Hex. Nut, M9                                    |
| 103       |            | Plain Washer, 9φ                                |
| 104       | 1106130    | Rotary Switch Y-6-21-5, FUNCTION switch         |
| 105       | 5326380    | Push Button, accessory switch                   |
| 106       | 1130750    | Push Switch (5 Stage)                           |
| 107       | 5236491    | Spacer Nut, M9                                  |
| 108       | 1105200    | Rotary Switch Y-5-13-5, SELECTOR switch         |
| 109       |            | Hex. Nut, M8                                    |
| 110       |            | Plain Washer, 8φ                                |
| 111       | 1010970, 1 | 10kΩ (B) × 2 CARRIER LEVEL Volume               |
| 112       |            | Hex. Nut, M8                                    |
| 113       |            | Plain Washer, 8φ                                |
| 114       | 1005110, 1 | 50kΩ (B) SEPARATION Volume                      |
| 115       |            | Hex. Nut, M8                                    |
| 116       |            | Plain Washer, 8φ                                |
| 118       | 7036361    | Tuning Ass'y                                    |
| 119       |            | Dial Pointer Ass'y                              |
| 120       | 0400200    | Pilot Lamp, lead type (6.3V 75mA)               |
| 121       | 5416050    | Dial Pointer                                    |
| 122       | 5416300    | Holder, dial pointer                            |
| 123       | 5109122    | Binding Head Tapping Screw, M3 × 8              |
| 124       | 5109122    | Binding Head Tapping Screw, M3 × 8              |
| 125       | 0400300    | Lead Type Lamp (7V 100mA),<br>STEREO indicator  |
| 126       | 0400310    | Lead Type Lamp (7V 100mA),<br>PHONO-2 indicator |
| 127       | 0400330    | Lead Type Lamp (7V 100mA),<br>PHONO-1 indicator |
| 128       | 0400300    | Lead Type Lamp (7V 100mA),<br>FM indicator      |
| 129       | 0400290    | Lead Type Lamp (7V 100mA),<br>AM indicator      |
| 130       | 0400320    | Lead Type Lamp (7V 100mA),<br>AUX indicator     |
| 131       | 0400310    | Lead Type Lamp (7V 100mA),<br>CD-4 indicator    |
| 132       | 0420040    | Fuse Type Lamp (7V 300mA)                       |
| 133       | 5066211    | Indicator Box                                   |
| 134       | 5109122    | Binding Head Tapping Screw, M3 × 8              |
| 135       | 5109122    | Binding Head Tapping Screw, M3 × 8              |
| 136       | 5109122    | Binding Head Tapping Screw, M3 × 8              |
| 137       | 5269240    | Stopper, dial scale                             |
| 138       | 5407610    | Dial Scale                                      |
| 139       | 5109122    | Binding Head Tapping Screw, M3 × 8              |
| 140       | 5109122    | Binding Head Tapping Screw, M3 × 8              |
| 141       | 5269260    | Holder, tuning & signal meter                   |
| 142       | 7726050    | Meter Lamp Unit                                 |
| 143       | 0420040    | Fuse Type Lamp (7V 300mA)                       |
| 144       | 4300610    | Signal Meter                                    |
| 145       | 4300600    | Tuning Meter                                    |
| 146       | 5109122    | Binding Head Tapping Screw, M3 × 8              |
| 147       | 5109122    | Binding Head Tapping Screw, M3 × 8              |
| 148       | 5109122    | Binding Head Tapping Screw, M3 × 8              |
| 149       | 5269250    | Holder, level meter                             |
| 150       | 0420040    | Fuse Type Lamp (7V 300mA)                       |
| 151       | 7726050    | Meter Lamp Unit                                 |
| 152       | 4300620    | Level Meter                                     |
| 153       | 5101123    | Binding Head Screw, M2, 6 × 6                   |
| 154       | 6146651    | Dial Pulley                                     |
| 155       | 5101161    | Binding Head Screw, M4 × 6                      |
| 156       | 5101161    | Binding Head Screw, M4 × 6                      |
| 157       | 5101161    | Binding Head Screw, M4 × 6                      |
| 158       | 5058100    | Bottom Plate                                    |

## 6-16. Other Parts (Top Side)

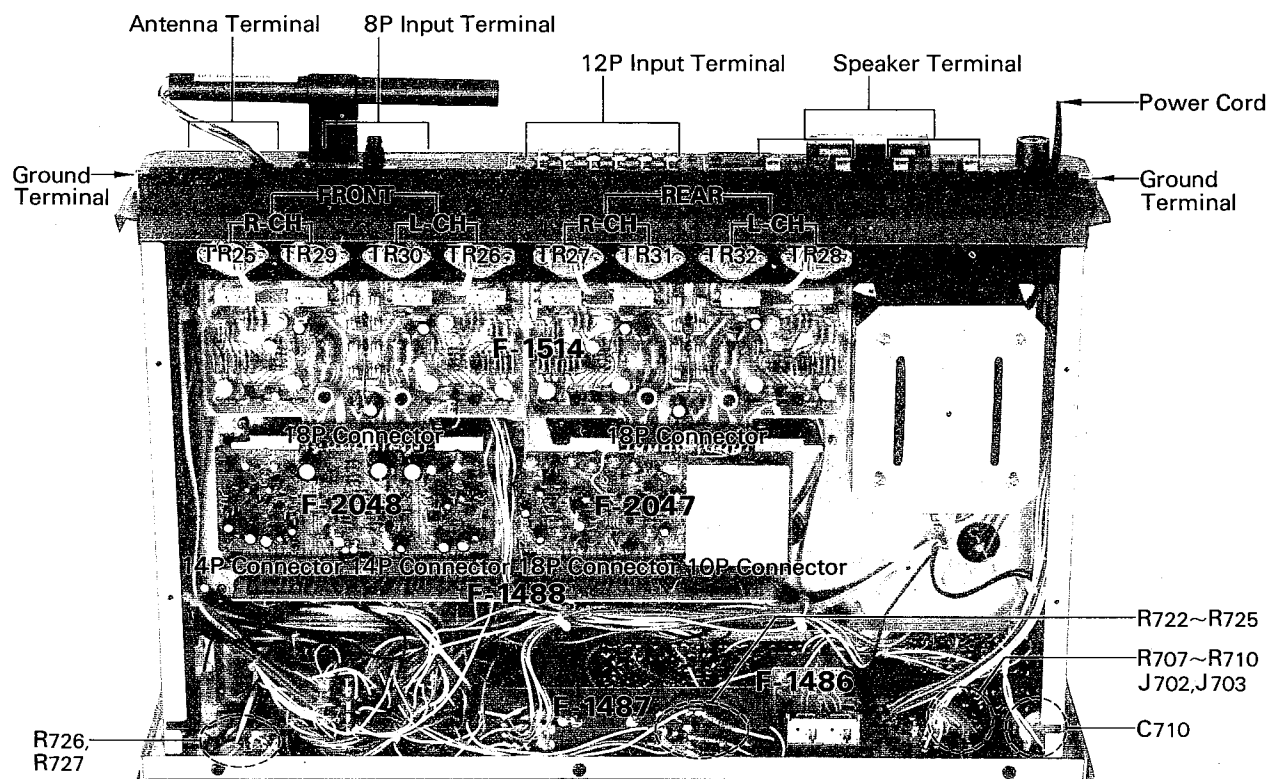


### Top Side Parts List

| Parts No. | Stock No. | Description                          |
|-----------|-----------|--------------------------------------|
| C701      | 0657473   | 0.047 $\mu$ F } 50V C.C.             |
| C702      | 0657473   |                                      |
| C705      | 0559107   | 10000 $\mu$ F } 35V E.C.             |
| C706      | 0559107   |                                      |
| C709      | 0605477   | 0.047 $\mu$ F 250V M.C.              |
| C711      | 0657473   | 0.047 $\mu$ F } 50V C.C.             |
| C712      | 0657473   |                                      |
| C713      | 0559501   | 1000 $\mu$ F 63V E.C.                |
| R701      | 0107104   | 100k $\Omega$ } $\frac{1}{4}$ W C.R. |
| R702      | 0107184   |                                      |
| R703      | 0107184   |                                      |
| R704      | 0107104   |                                      |
| R714      | 0107332   |                                      |
| R715      | 0107563   |                                      |
| R716      | 0107332   |                                      |
| R717      | 0107563   |                                      |
| R718      | 0107332   |                                      |
| R719      | 0107563   |                                      |
| R720      | 0107332   |                                      |
| R721      | 0107563   |                                      |
|           | 0431310   | 3.5A Power Fuse (220V~240V)          |
|           | 0431290   | 6A Power Fuse (100V~117V)            |
|           | 2300060   | Fuse Holder                          |

| Parts No. | Stock No. | Description                         |
|-----------|-----------|-------------------------------------|
| J701      | 2430040   | DIN Connector                       |
| L701      | 4290030   | 1 $\mu$ H Coil                      |
| L702      | 4200550   | Bar Antenna                         |
| L703      | 4290021   | 75 $\Omega$ : 300 $\Omega$ FM Balun |
| CO701     | 2450040   | AC Outlet                           |
| CO702     | 2450040   | AC Outlet                           |
| PT001     | 4002010   | Power Transformer                   |
| PU701     | 2410090   | Voltage Selector, Plug              |
| PU702     | 2410080   | Voltage Selector, Socket            |

## 6-17. Other Parts (Bottom Side)



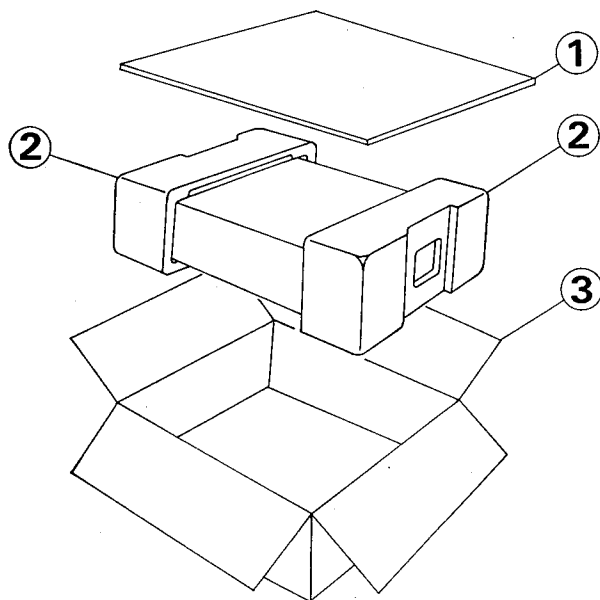
## Bottom Side Parts List

| Parts No. | Stock No.  | Description             |
|-----------|------------|-------------------------|
| TR25      | 0305631, 2 | 2SC1030 (B, C)          |
|           | or         | or                      |
|           | 0305830, 1 | 2SC1111 (O, R)          |
| TR26      | 0305631, 2 | 2SC1030 (B, C)          |
|           | or         | or                      |
|           | 0305830, 1 | 2SC1111 (O, R)          |
| TR27      | 0305631, 2 | 2SC1030 (B, C)          |
|           | or         | or                      |
|           | 0305830, 1 | 2SC1111 (O, R)          |
| TR28      | 0305631, 2 | 2SC1030 (B, C)          |
|           | or         | or                      |
|           | 0305830, 1 | 2SC1111 (O, R)          |
| TR29      | 0300551, 2 | 2SA756 (B, C)           |
|           | or         | or                      |
|           | 0300580, 1 | 2SA744 (O, R)           |
| TR30      | 0300551, 2 | 2SA756 (B, C)           |
|           | or         | or                      |
|           | 0300580, 1 | 2SA744 (O, R)           |
| TR31      | 0300551, 2 | 2SA756 (B, C)           |
|           | or         | or                      |
|           | 0300580, 1 | 2SA744 (O, R)           |
| TR32      | 0300551, 2 | 2SA756 (B, C)           |
|           | or         | or                      |
|           | 0300580, 1 | 2SA744 (O, R)           |
| C710      | 0659801    | 0.01 $\mu$ F 1.4kV C.C. |

| Parts No. | Stock No. | Description         |
|-----------|-----------|---------------------|
| R707      | 0172331   | 220 $\Omega$        |
| R708      | 0172331   | 220 $\Omega$        |
| R709      | 0172331   | 220 $\Omega$        |
| R710      | 0172331   | 220 $\Omega$        |
| R722      | 0107104   | 100k $\Omega$       |
| R723      | 0107104   | 100k $\Omega$       |
| R724      | 0107104   | 100k $\Omega$       |
| R725      | 0107104   | 100k $\Omega$       |
| R726      | 0107102   | 1k $\Omega$         |
| R727      | 0107102   | 1k $\Omega$         |
| J702      | 2430200   | Headphone Jack      |
| J703      | 2430200   | Headphone Jack      |
|           | 3800020   | Power Cord (KP-200) |
|           | 2200340   | 8P Input Terminal   |
|           | 2200360   | 12P Input Terminal  |
|           | 2290100   | Speaker Terminal    |
|           | 2290110   | Antenna Terminal    |
|           | 2230050   | Ground Terminal     |
|           | 2420020   | 18P Connector       |
|           | 2420030   | 10P Connector       |
|           | 2420150   | 14P Connector       |

## 7. PACKING LIST

| Parts No. | Stock No. | Description       |
|-----------|-----------|-------------------|
| 1         | 9017310   | Inner Packing     |
| 2         | 9027750   | Styrofoam Packing |
| 3         | 9007770   | Carton Case       |

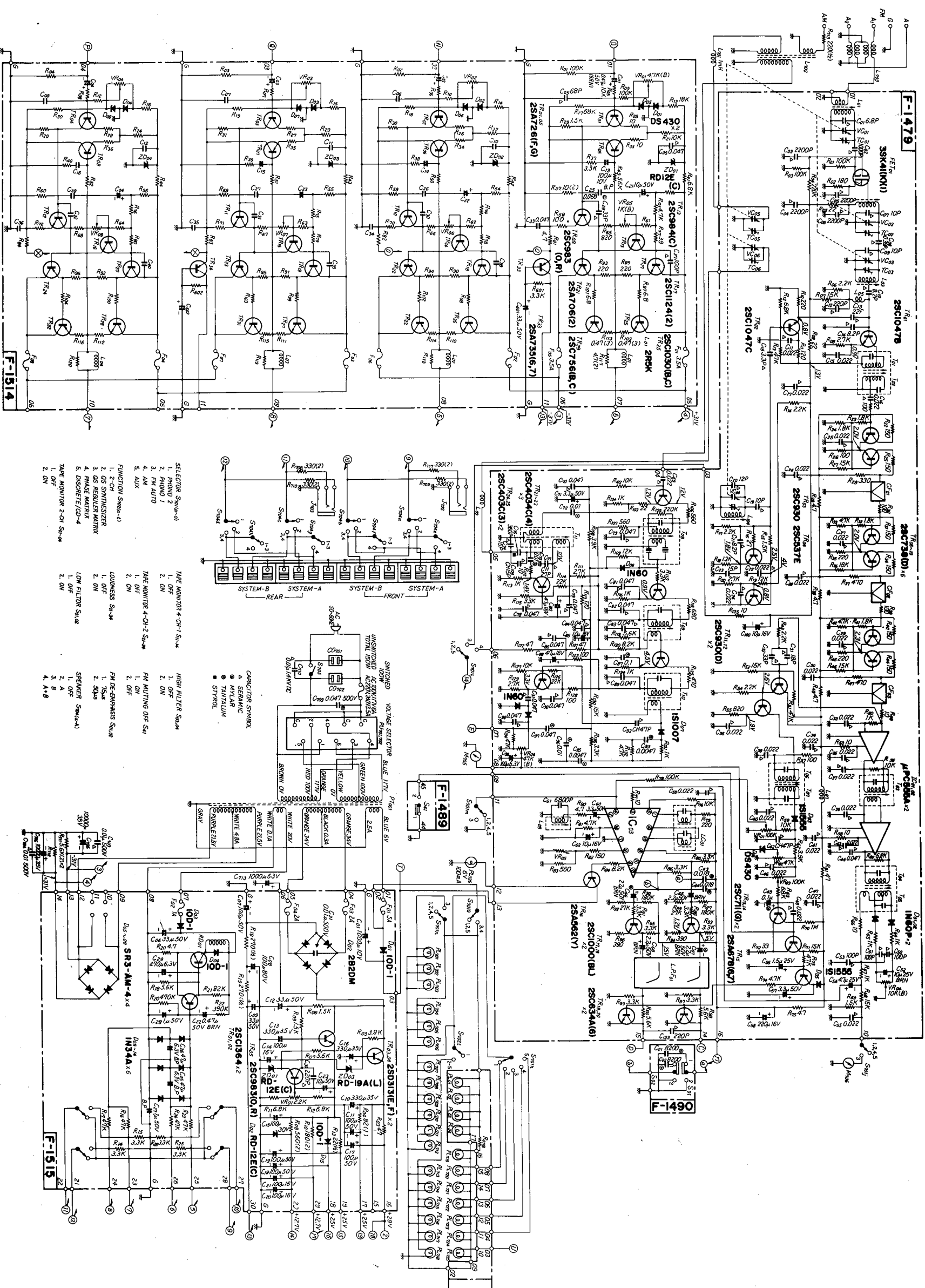


## 8. ACCESSORY PARTS LIST

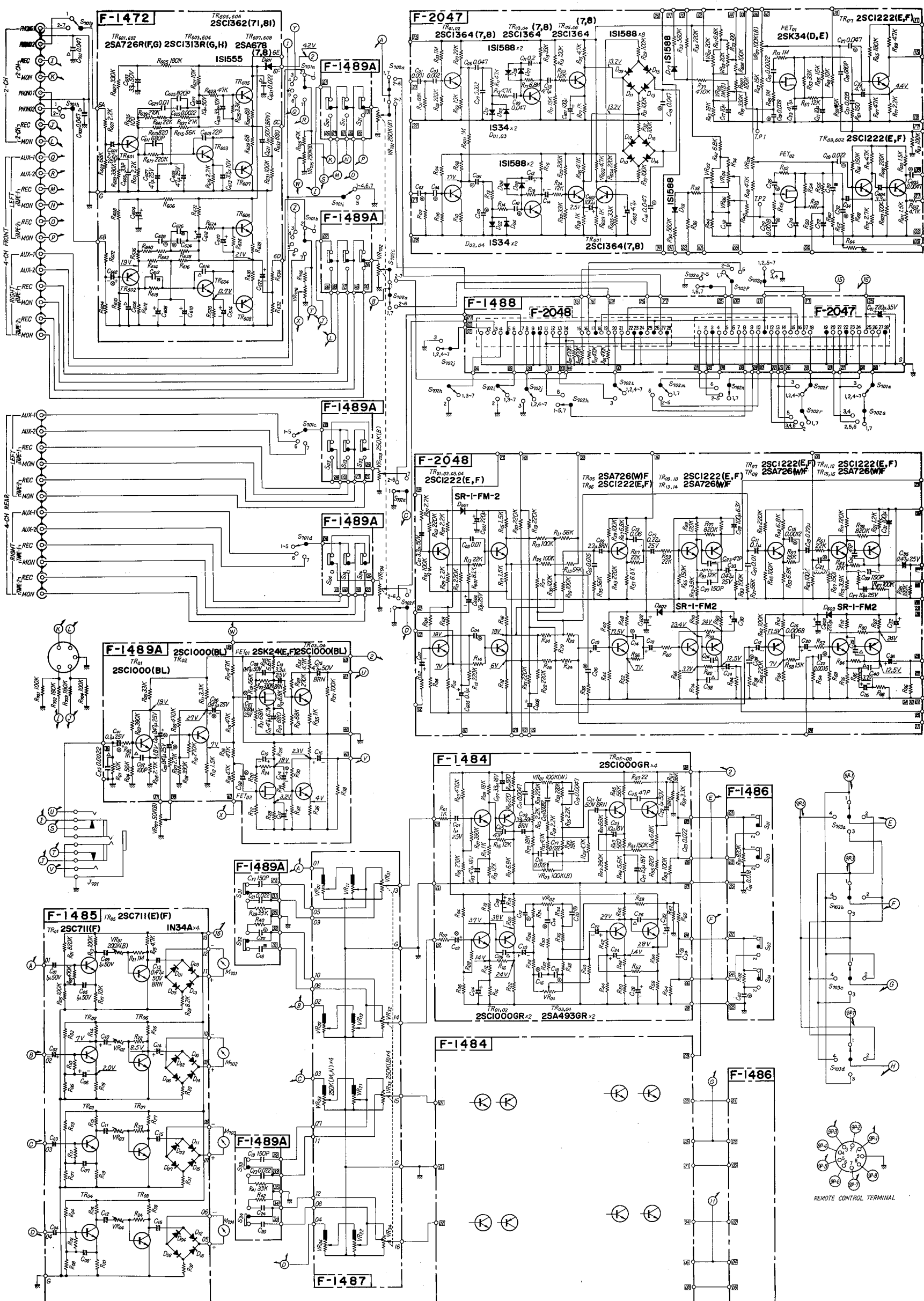
| Stock No. | Description                 |
|-----------|-----------------------------|
| 9406020   | Polishing Cloth             |
| 0433680   | 3.5A Quick Acting Fuse      |
| 3820040   | FM Antenna                  |
| 9207620   | Operating Instruction       |
| 9207620   | Operating Instruction Sheet |

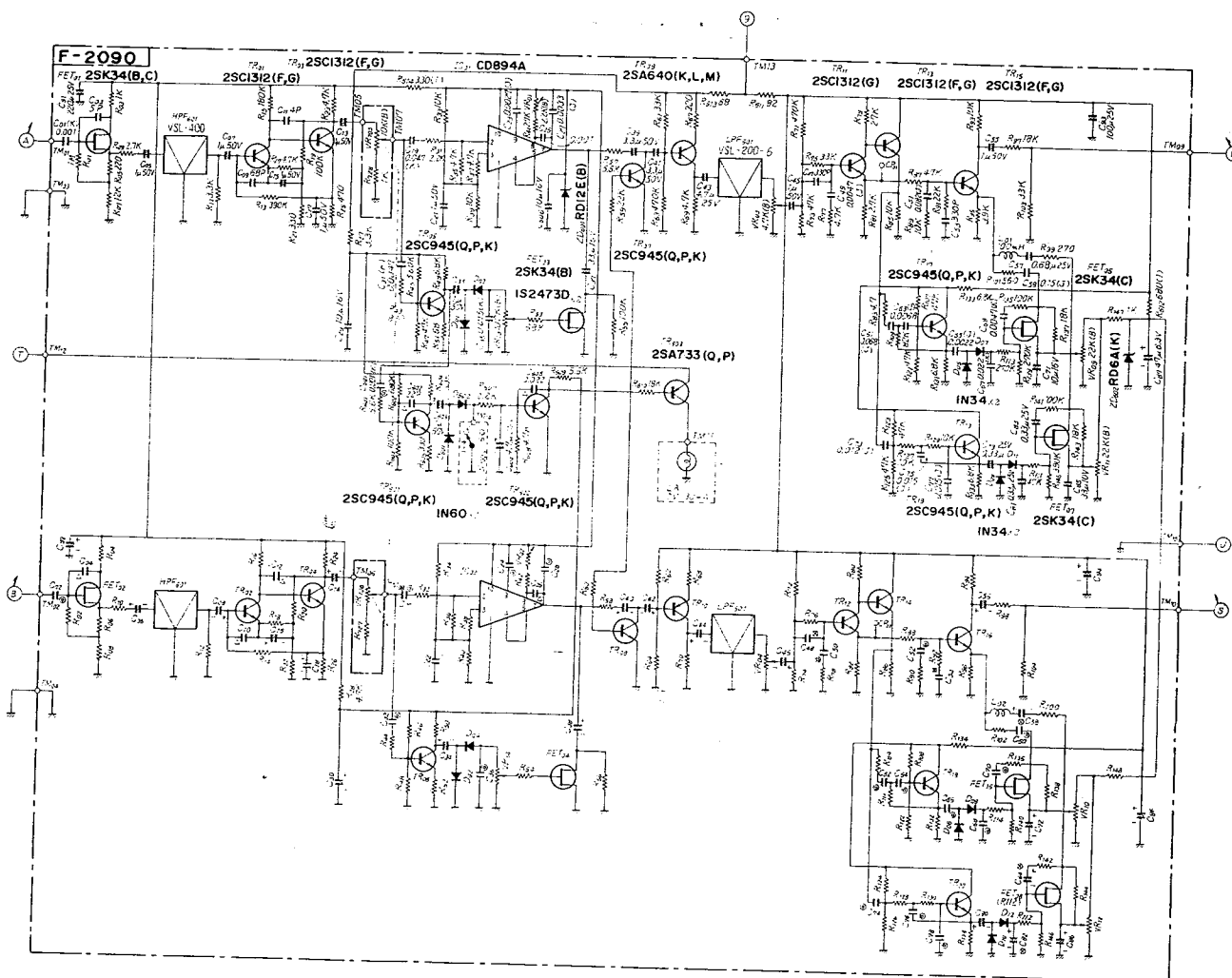
# 9. SCHEMATIC DIAGRAM OF TUNER SECTION

\* Design and specifications subject to change without notice for improvements.



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