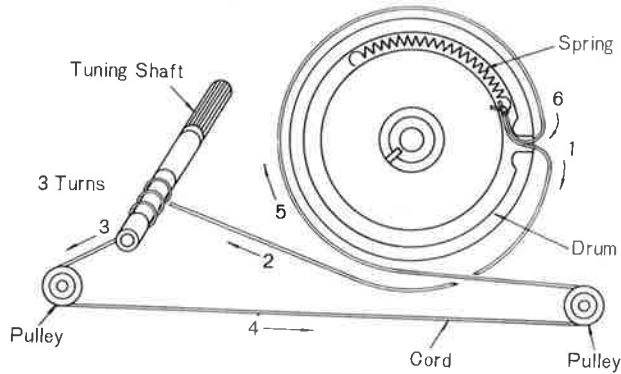
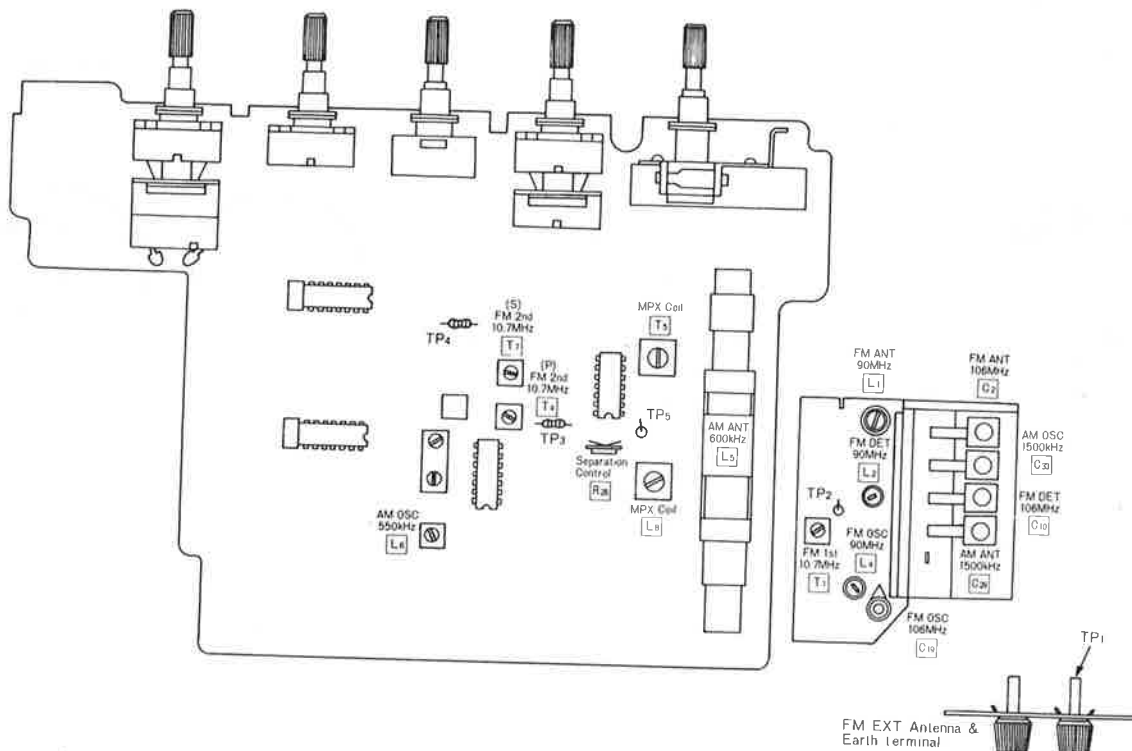


### ■ DIAL CORD INSTALLATION GUIDE

1. Dial cord length is  $31\frac{1}{2}$ ".
2. Tuning gang is positioned at maximum capacity.
3. Arrows (1~6) indicate correct order and direction of installation dial cord.
4. Cement dial cord ends.



### ■ ALIGNMENT POINTS



## ■ ALIGNMENT INSTRUCTIONS

| READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT  |   |                               |   |   |   |   |
|---|---|-------------------------------|---|---|---|---|
| <b>Notes:</b>   |   |                               |   |   |   |   |
| 1. Set volume control to maximum or minimum (FM-IF).  |   |                               |   |   |   |   |
| 2. Set tone control to center.  |   |                               |   |   |   |   |
| 3. Set loudness switch to OFF.  |   |                               |   |   |   |   |
| 4. Set balance control to center.   |   |                               |   |   |   |   |
| 5. Set band selector switch to AM or FM.  |   |                               |   |   |   |   |
| 6. Set power source voltage to 120 volts AC.  |   |                               |   |   |   |   |
| 7. Output of signal generator should be no higher than necessary to obtain an output reading. |   |                               |   |   |   |   |
| 8. When FM aligning, remove line cord antenna attached to EXT FM antenna terminal.            |   |                               |   |   |   |   |
| SIGNAL GENERATOR or SWEEP GENERATOR   |   | RADIO DIAL SETTING {DISTANCE} | INDICATOR (VTVM or SCOPE)                     | ADJUSTMENT  | REMARKS   |   |
| CONNECTIONS   | FREQUENCY   |                               |   |   |   |   |
| <b>AM ALIGNMENT</b>   |   |                               |   |   |   |   |
| 1   | Fashion loop of several turns of wire and radiate signal into loop of receiver. | 550 kHz                       | 550 kHz [Refer to fig. 1]                     | Output meter across voice coil, (Left side)                                   | L <sub>6</sub> (OSC Coil)   | Adjust for maximum output.  |
| 2   | "   | 600 kHz                       | 600 kHz [Refer to fig. 1]                     | "   | (* )L <sub>5</sub> (ANT Coil)   | Adjust for maximum output. Adjust L <sub>5</sub> by moving coil bobbin along ferrite core.    |
| 3   | "   | 1500 kHz                      | 1500 kHz [Refer to fig. 2]                    | "   | C <sub>33</sub> (OSC Trimmer)<br>C <sub>29</sub> (ANT Trimmer)  | Adjust for maximum output. Repeat steps (1)~(3).  |
| * Cement antenna bobbin with wax after completing alignment.                                  |   |                               |   |   |   |   |
| <b>FM-IF ALIGNMENT</b>  |   |                               |   |   |   |   |
| 4   | High side thru. 0.001mfd to point TP <sub>2</sub> . Common to chassis.          | 10.7 MHz (400 kHz SWP.)       | Point of non-interference. (on/about 90 MHz). | Connect vert. amp. of scope to point TP <sub>3</sub> . (*) Common to chassis. | T <sub>1</sub> (FM 1st IFT)<br>T <sub>4</sub> (FM 2nd IFT) (Primary)                                    | Adjust for maximum amplitude and proper linearity between ±100 kHz markers. (Refer to fig. 5) |
| 5   | "   | "                             | "   | Connect vert. amp. of scope to point TP <sub>3</sub> . Common to chassis.     | T <sub>7</sub> (FM 2nd IFT) (Secondary)   | Adjust T <sub>7</sub> so that 10.7 MHz marker appears at the center. (Refer to fig. 6)        |
| <b>FM-RF ALIGNMENT</b>  |   |                               |   |   |   |   |
| 6   | Connect to EXT FM antenna terminal through FM Dummy antenna. (Refer to fig. 7)  | 90 MHz                        | 90 MHz [Refer to fig. 3]                      | Output meter across voice coil, (Left side)                                   | L <sub>4</sub> (FM OSC Coil)<br>L <sub>2</sub> (FM DET Coil)<br>L <sub>1</sub> (FM ANT Coil)            | (* )Adjust for maximum output.  |
| 7   | "   | 106 MHz                       | 106 MHz [Refer to fig. 4]                     | "   | C <sub>19</sub> (FM OSC Trimmer)<br>C <sub>10</sub> (FM DET Trimmer)<br>C <sub>2</sub> (FM ANT Trimmer) | (* )Adjust for maximum output. Repeat steps (6) and (7).                                      |
| * Three output responses will be present; proper tuning is the center frequency.              |   |                               |   |   |   |   |

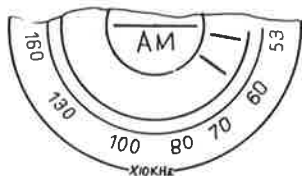


Fig. 1 550 & 600 kHz Marking

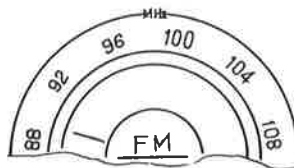


Fig. 3 90 MHz Marking

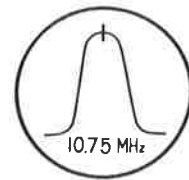


Fig. 5

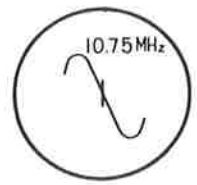


Fig. 6

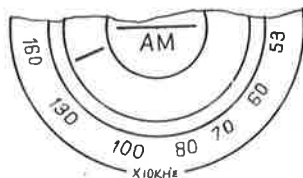


Fig. 2 1500 kHz Marking



Fig. 4 106 MHz Marking

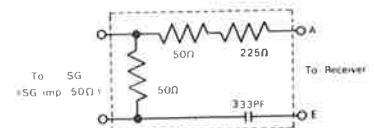


Fig. 7 FM Dummy Antenna

**EQUIPMENT REQUIRED**

- \* Stereo Modulator..... Connect Stereo Modulator output to EXT, Mod, terminal of signal generator.
- \* Signal Generator..... Modulation Rate of 19 kHz Pilot Signal.....10%  
Modulation Rate by L+R Signal.....27% (Alignment Step 3)  
Output Level.....30 dB or 60 dB (Alignment Step 2 & 3)  
Frequency.....Approximately 98 MHz

- \* Oscilloscope
- \* VTVM
- \* Dummy Antenna
- \* Low Pass Filter

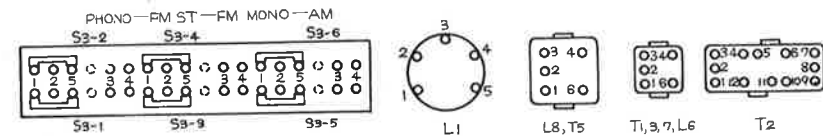
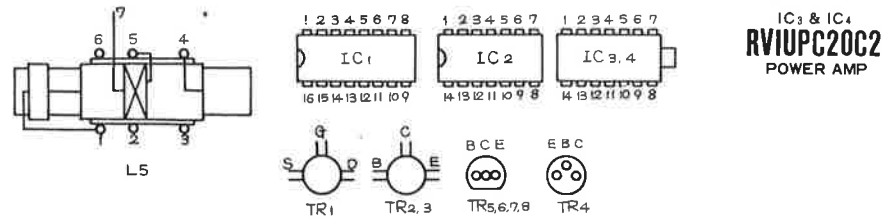
- Notes:**
1. When aligning, remove line cord antenna attached to External FM Antenna terminal.
  2. When aligning, set R<sub>2A</sub> as illustrated in figure below.



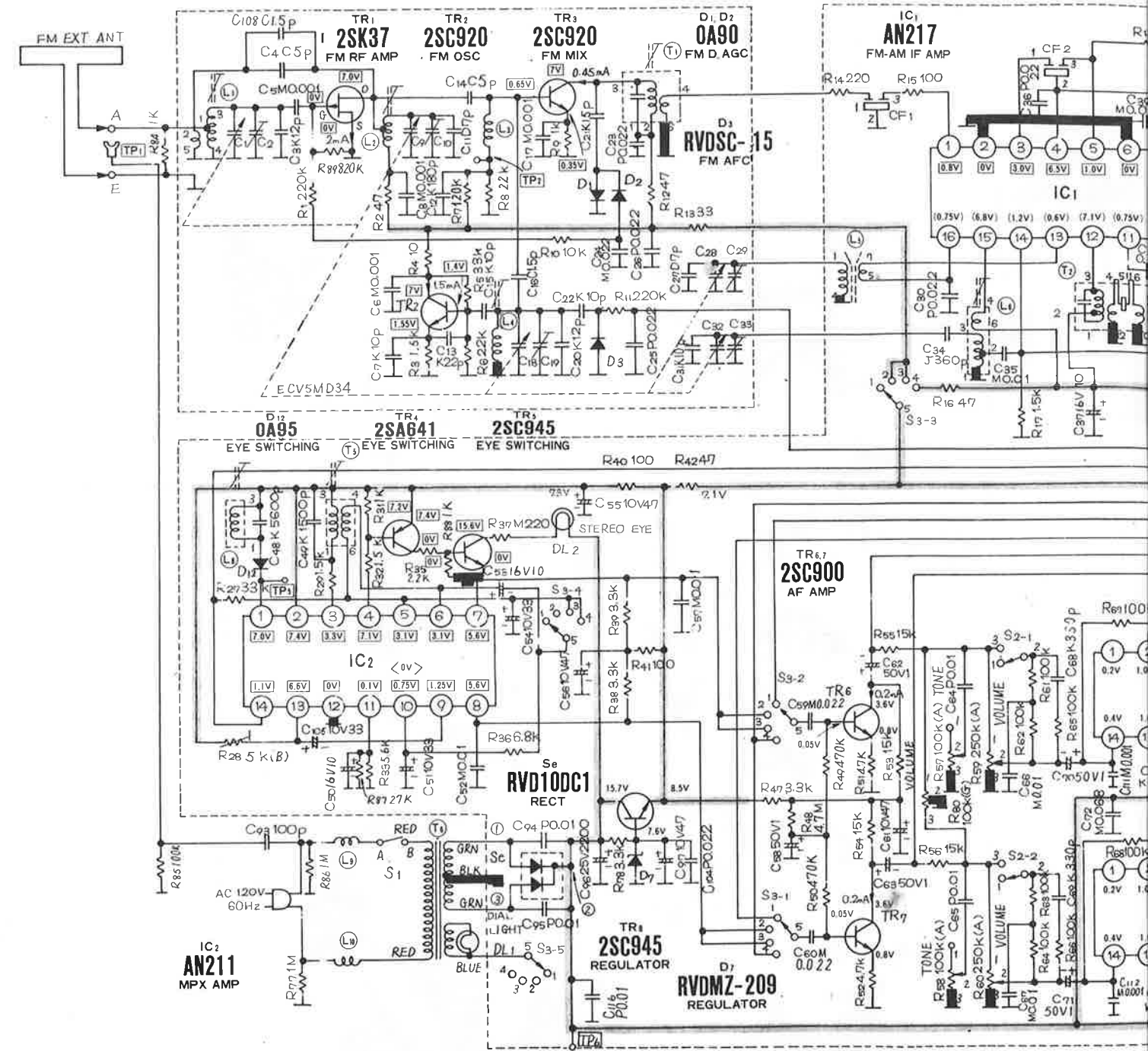
**CONTROL SETTING & PROCEDURE**

1. Set band selector switch to FM Stereo.
2. Set tone control to center.
3. Set loudness switch to OFF.
4. Set power source voltage to 120 volts AC.
5. Set tuning gang to approximately 98 MHz.
6. Set balance control to center, or Adjust so that output level from both units becomes equal. (Alignment Step 2).
7. Set volume control to audible level of speaker sound.

| EQUIPMENT CONNECTIONS          |   |   |                                      |   |
|--------------------------------|---|---|--------------------------------------|---|
| SIGNAL GENERATOR               | VTVM  | OSCILLOSCOPE  | ADJUSTMENT                           | REMARKS   |
| <b>PILOT CIRCUIT ALIGNMENT</b> |   |   |                                      |   |
| 1                              | Connect to EXT FM antenna terminal through dummy antenna. | Connect vert. amp. of scope to point TP <sub>5</sub> , Common to chassis. | L <sub>8</sub> (MPX Coil)            | Adjust L <sub>8</sub> for maximum oscilloscope pattern of 19 kHz.   |
| 2                              | "   | Connect across speaker voice coil of left.                                | T <sub>5</sub> (MPX Coil)            | Adjust T <sub>5</sub> for maximum indication on VTVM from the left side output when the left side of Stereo modulator is modulated.       |
| <b>SEPARATION ALIGNMENT</b>    |   |   |                                      |   |
| 3                              | "   | "   | R <sub>2A</sub> (Separation Control) | Adjust R <sub>2A</sub> for the minimum indication on VTVM from the left side output when the right side of Stereo modulator is modulated. |



BOTTOM VIEW



|   |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |     |
|---|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|-----|
| C | 108 | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 28 | 29 | 32 | 33 | 27 | 31 | 30 | 34 | 35 | 36 | 37 | 38 |    |    |    |    |    |    |    |     |     |
| R | 85  | 27 | 28 | 86 | 77 | 29 | 87 | 31 | 32 | 33 | 35 | 88 | 36 | 37 | 78 | 98 | 39 | 40 | 41 | 42 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 111 | 112 |

- Positive Voltage Line
- Negative Voltage Line

- Notes:**
1. S<sub>1</sub>: Power source switch in "OFF" position.
  2. S<sub>2</sub>-1, S<sub>2</sub>-2: Loudness switch in "OFF" position.
  3. S<sub>3</sub>-1~S<sub>3</sub>-6: Band selector switch in "PHONO" position.
  4. DC tes

signal generator.

p 3)  
3)

remove line cord antenna at  
ernal FM Antenna terminal.  
set R28 as illustrated in figure



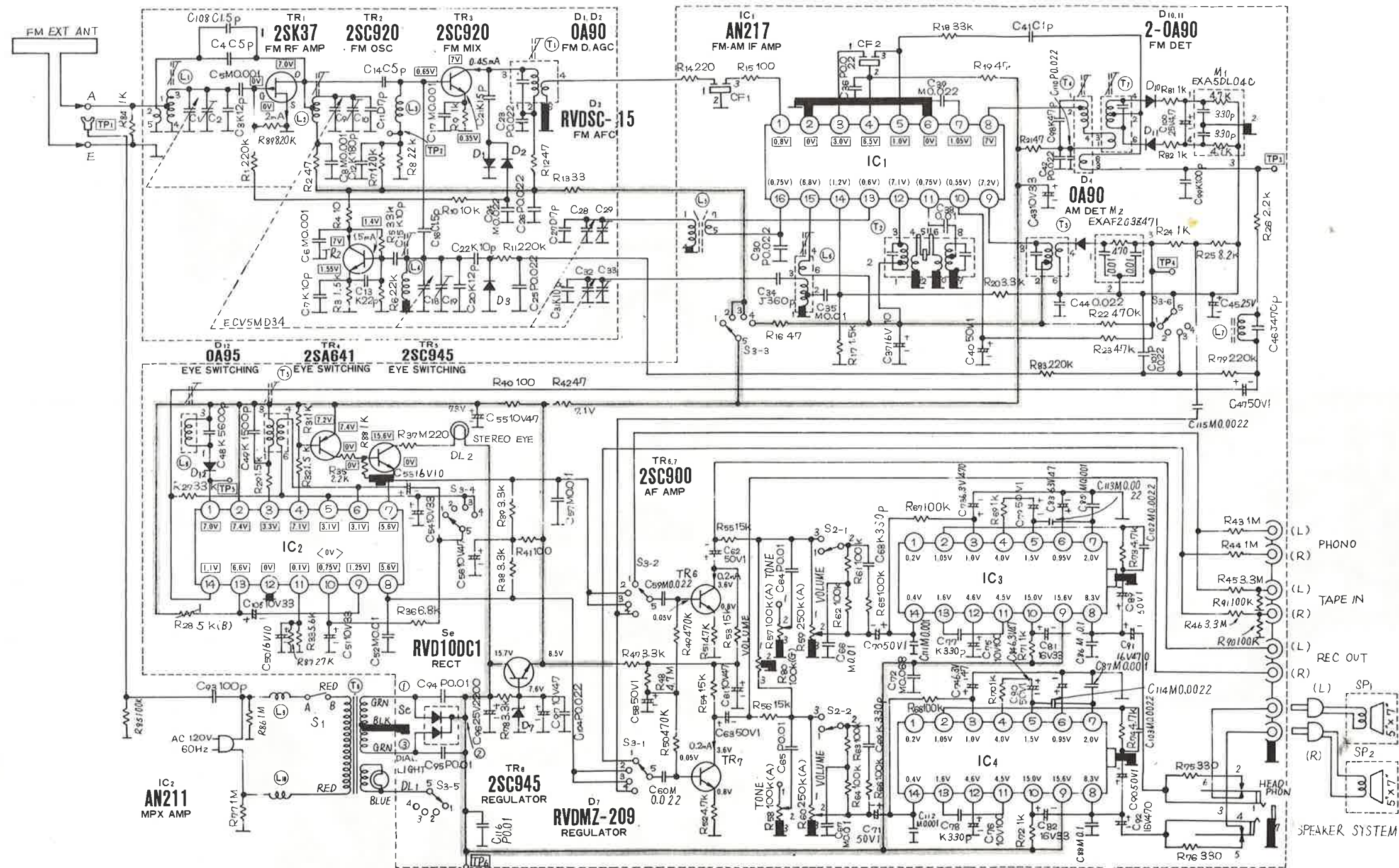
equal. (Alignment Step 2).

REMARKS

Adjust L<sub>8</sub> for maximum  
oscilloscope pattern of 19 kHz.

Adjust T<sub>5</sub> for maximum  
indication on VTVM from the  
left side output when the left  
side of Stereo modulator is  
modulated.

Adjust R<sub>28</sub> for the minimum  
indication on VTVM from the  
left side output when the right  
side of Stereo modulator is  
modulated.



|   |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|---|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| C | 108 | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  | 25  | 26  | 28  | 29  | 30  | 31  | 32  | 33  | 34  | 35  | 36  | 37  | 38  | 39  | 40  | 41  | 42  | 43  | 44  | 45  | 46  | 47  |
| R | 84  | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 | 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 | 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 | 121 | 122 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 130 |

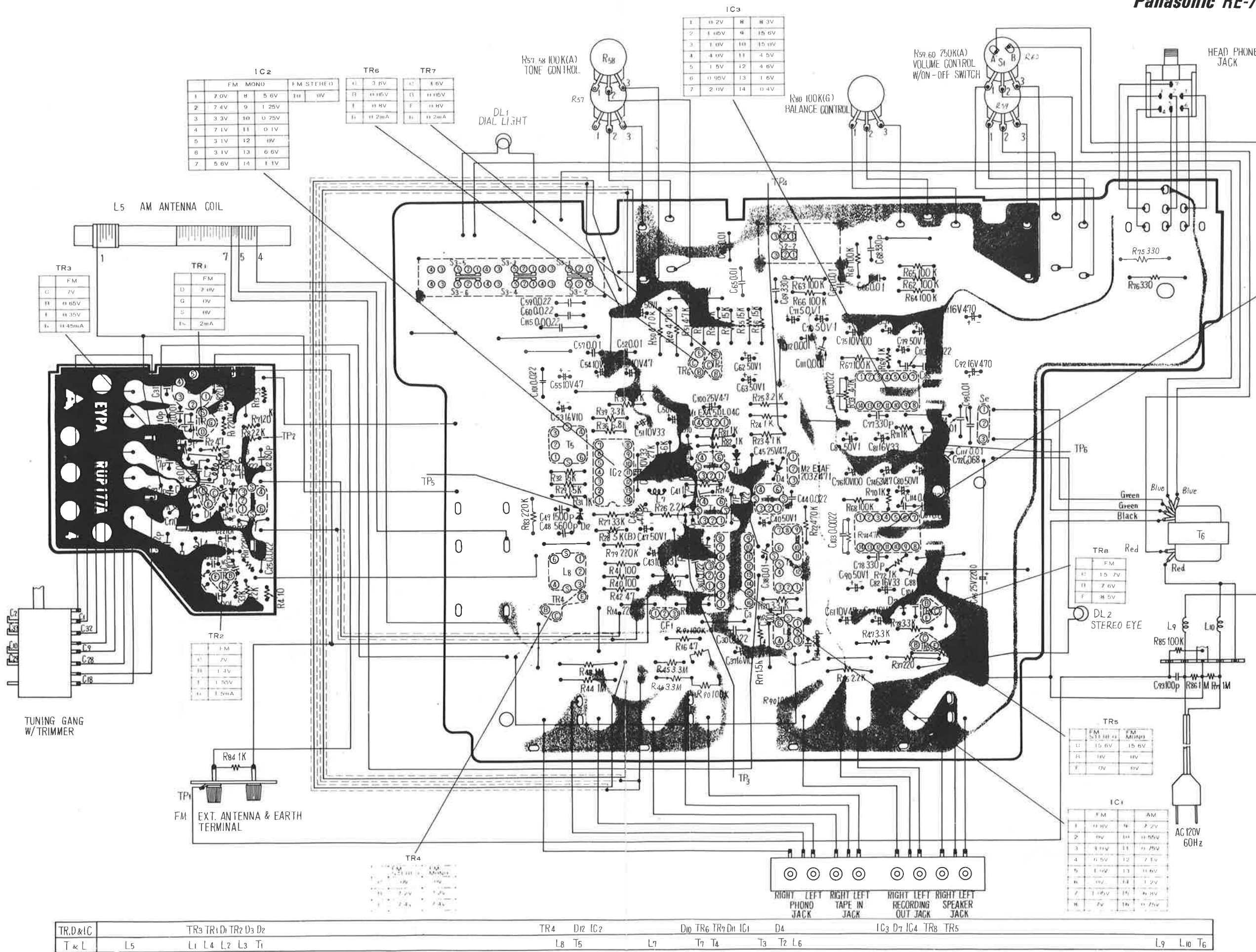
Positive Voltage Line  
Negative Voltage Line

Notes:

- S<sub>1</sub>: Power source switch in "OFF" position.
- S<sub>2-1</sub>, S<sub>2-2</sub>: Loudness switch in "OFF" position.
- S<sub>3-1</sub>~S<sub>3-6</sub>: Band selector switch in "PHONO" position.
- DC voltage measurements are taken with circuit tester 10 kΩ/V from chassis.  
□.....FM position ( ).....AM position  
< >.....FM stereo position



T<sub>2</sub>



SEMICONDUCTORS

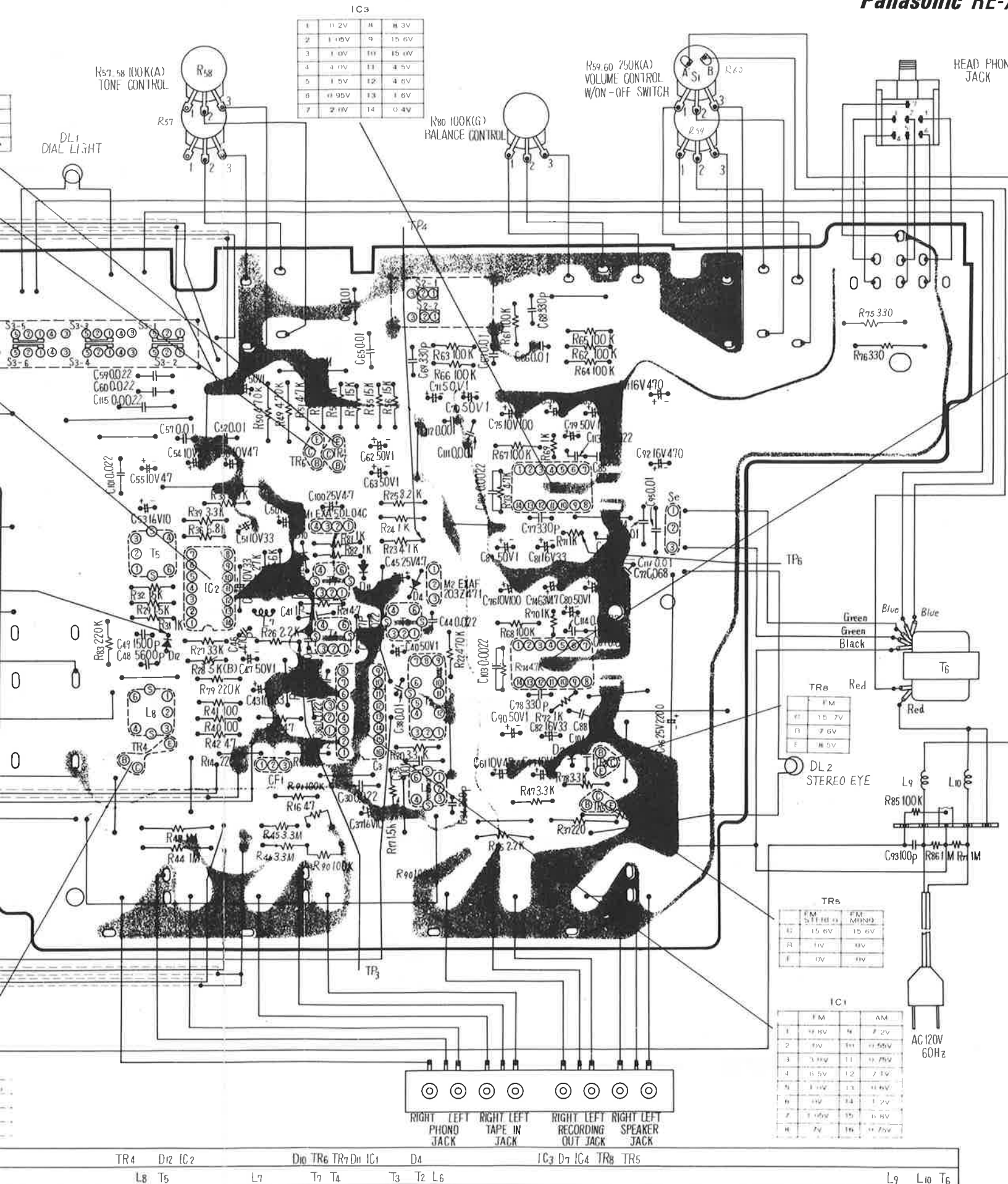
| ITEM | PART NO./TYPE |
|------|---------------|
| D1   | OA90          |
| D2   | OA90          |
| D3   | RVDS-15       |
| D4   | OA90          |
| D7   | RVDM-209      |
| D10  | 2-OA90        |
| D11  | 2-OA90        |
| D12  | OA95          |
| IC1  | AN217         |
| IC2  | AN211         |
| IC3  | RVIUPC20C2    |
| IC4  | RVIUPC20C2    |
| SE   | RVD10DC1      |
| TR1  | 2SK37         |
| TR2  | 2SC920        |
| TR3  | 2SC920        |
| TR4  | 2SA641        |
| TR5  | 2SC945        |
| TR6  | 2SC900        |
| TR7  | 2SC900        |
| TR8  | 2SC945        |

ELECTROLYTIC/VARIABLE CAPS

| ITEM | PART NO.     | DESCRIPTION      |
|------|--------------|------------------|
| C1   |              |                  |
| C2   |              |                  |
| C9   |              |                  |
| C10  | ECV5MD34X21A | Tuning G Trimmer |
| C18  |              |                  |
| C29  |              |                  |
| C32  |              |                  |
| C33  |              |                  |
| C19  | ECV12W10P32  | Trimmer          |
| C37  | ECEA16V10    | 10mfd            |
| C40  | ECEA50V1     | 1mfd             |
| C43  | ECEA10V33    | 33mfd            |
| C45  | ECEA25V47    | 4.7mfd           |
| C47  | ECEA50V1     | 1mfd             |
| C50  | ECEA16V10    | 10mfd            |
| C51  | ECEA10V33    | 33mfd            |
| C53  | ECEA16V10    | 10mfd            |
| C54  | ECEA10V33    | 33mfd            |
| C55  | ECEA10V47    | 47mfd            |
| C56  | ECEA10V47    | 47mfd            |
| C58  | ECEA50V1     | 1mfd             |
| C61  | ECEA10V47    | 47mfd            |
| C62  | ECEA50V1     | 1mfd             |
| C63  | ECEA50V1     | 1mfd             |
| C70  | ECEA50V1     | 1mfd             |
| C71  | ECEA50V1     | 1mfd             |
| C73  | ECEA6V47     | 47mfd            |
| C74  | ECEA6V47     | 47mfd            |
| C75  | ECEA10V100   | 100mfd           |
| C76  | ECEA10V100   | 100mfd           |
| C79  | ECEA50V1     | 1mfd             |
| C80  | ECEA50V1     | 1mfd             |
| C81  | ECEA16V33    | 33mfd            |
| C82  | ECEA16V33    | 33mfd            |
| C83  | ECEA6V47     | 47mfd            |
| C84  | ECEA6V47     | 47mfd            |
| C89  | ECEA50V1     | 1mfd             |
| C90  | ECEA50V1     | 1mfd             |
| C91  | ECEA16V470   | 470mfd           |
| C92  | ECEA16V470   | 470mfd           |
| C96  | ECEB25V2200  | 2200mfd          |
| C97  | ECEA10V47    | 47mfd            |
| C100 | ECEA25V47    | 4.7mfd           |
| C105 | ECEA10V33    | 33mfd            |

|            |                      |                |                     |    |                          |
|------------|----------------------|----------------|---------------------|----|--------------------------|
| TR, D & IC | TR3 TR1 D1 TR2 D3 D2 | TR4 D2 IC2     | D10 TR6 TR7 D11 IC1 | D4 | IC3 D7 IC4 TR8 TR5       |
| T & L      | L5                   | L1 L4 L2 L3 T1 | L8 T5               | L7 | T7 T4 T3 T2 L6 L9 L10 T6 |

# Panasonic RE-7412



## SEMICONDUCTORS

| ITEM | PART NO./TYPE |
|------|---------------|
| D1   | 0A90          |
| D2   | 0A90          |
| D3   | RVDS-15       |
| D4   | 0A90          |
| D7   | RVDMZ-209     |
| D10  | 2-0A90        |
| D11  | 2-0A90        |
| D12  | 0A95          |
| IC1  | AN217         |
| IC2  | AN211         |
| IC3  | RVIUPC20C2    |
| IC4  | RVIUPC20C2    |
| SE   | RV10DC1       |
| TR1  | 2SK37         |
| TR2  | 2SC920        |
| TR3  | 2SC920        |
| TR4  | 2SA641        |
| TR5  | 2SC945        |
| TR6  | 2SC900        |
| TR7  | 2SC900        |
| TR8  | 2SC945        |

## CONTROLS

| ITEM | PART NO.     | DESCRIPTION          |
|------|--------------|----------------------|
| R28  | EVL0AA00B53  | 5000 ohms Separation |
| R57  | EVFN0AV30A15 | 100K Tone            |
| R58  | EVFN0AV30A15 | 100K Tone            |
| R59  | EVFN15U30AF5 | 250K Volume          |
| R60  | EVFN15U30AF5 | 250K Volume          |
| R80  | EVCS2AU30G15 | 100K Balance         |

## COILS/TRANSFORMERS

| ITEM | PART NO.     |
|------|--------------|
| CF1  | RVFCF10S12CW |
| CF2  | RVFCF10S12CW |
| L1   | RLA4P7       |
| L2   | RLD4N21      |
| L3   | RLQY15G-5    |
| L4   | RL04N41      |
| L5   | RLF2C42-0    |
| L6   | RL02B83-M    |
| L7   | RLM1X1-Y     |
| L8   | RLM1C16      |
| T1   | RLI4B152     |
| T2   | RLI7W104Q-T  |
| T3   | RLI2B415-T   |
| T4   | RLI4B551     |
| T5   | RLM1C17      |
| T6   | RLT5K61-W    |
| T7   | RLI4B552     |

## ELECTROLYTIC/VARIABLE CAPS

| ITEM | PART NO.     | DESCRIPTION             |
|------|--------------|-------------------------|
| C1   |              |                         |
| C2   |              |                         |
| C9   |              |                         |
| C10  | ECV5MD34X21A | Tuning Gang w/ Trimmers |
| C18  |              |                         |
| C29  |              |                         |
| C32  |              |                         |
| C33  |              |                         |
| C19  | ECV12W10P32  | Trimmer                 |
| C37  | ECEA16V10    | 10mfd 16V               |
| C40  | ECEA50V1     | 1mfd 50V                |
| C43  | ECEA10V33    | 33mfd 10V               |
| C45  | ECEA25V4R7   | 4.7mfd 25V              |
| C47  | ECEA50V1     | 1mfd 50V                |
| C50  | ECEA16V10    | 10mfd 16V               |
| C51  | ECEA10V33    | 33mfd 10V               |
| C53  | ECEA16V10    | 10mfd 16V               |
| C54  | ECEA10V33    | 33mfd 10V               |
| C55  | ECEA10V47    | 47mfd 10V               |
| C56  | ECEA10V47    | 47mfd 10V               |
| C58  | ECEA50V1     | 1mfd 50V                |
| C61  | ECEA10V47    | 47mfd 10V               |
| C62  | ECEA50V1     | 1mfd 50V                |
| C63  | ECEA50V1     | 1mfd 50V                |
| C70  | ECEA50V1     | 1mfd 50V                |
| C71  | ECEA50V1     | 1mfd 50V                |
| C73  | ECEA6V47     | 47mfd 6.3V              |
| C74  | ECEA6V47     | 47mfd 6.3V              |
| C75  | ECEA10V100   | 100mfd 10V              |
| C76  | ECEA10V100   | 100mfd 10V              |
| C79  | ECEA50V1     | 1mfd 50V                |
| C80  | ECEA50V1     | 1mfd 50V                |
| C81  | ECEA16V33    | 33mfd 16V               |
| C82  | ECEA16V33    | 33mfd 16V               |
| C83  | ECEA6V47     | 47mfd 6.3V              |
| C84  | ECEA6V47     | 47mfd 6.3V              |
| C89  | ECEA50V1     | 1mfd 50V                |
| C90  | ECEA50V1     | 1mfd 50V                |
| C91  | ECEA16V470   | 470mfd 16V              |
| C92  | ECEA16V470   | 470mfd 16V              |
| C96  | ECEB25V2200  | 2200mfd 25V             |
| C97  | ECEA10V47    | 47mfd 10V               |
| C100 | ECEA25V4R7   | 4.7mfd 25V              |
| C105 | ECEA10V33    | 33mfd 10V               |

## MISCELLANEOUS

| ITEM | NAME   | PART NO.    |
|------|--|-------------|
| M1   | Component Combination (330mfd, 330mfd, 4.7K)     | EXA5DLO4C   |
| M2   | Component Combination (.01mfd, .01mfd, 470 ohms) | EXAF203Z471 |
| S2   | Switch, Loudness                                 | RSR29A      |
| S3   | Switch, Band Selector                            | RSR30A      |
| SP1  | Speaker, 5" x 7" oval                            | EAS18D02S   |
| SP2  | Speaker, 5" x 7" oval                            | EAS18D02S   |

## CABINET PARTS

| NAME                         | PART NO.   |
|------------------------------|------------|
| Assembly, Cabinet (Complete) | RYARE7412M |
| Cabinet                      | RKM116A    |
| Scale, Dial                  | RKD142A    |
| Escutcheon, Dial Scale       | RGC22A     |
| Panel, Dial                  | RGP106A    |
| Panel, Cabinet Front         | RGP107A    |
| Knob, Selector               | RBN76A     |
| Knob, Volume                 | RBN77A     |
| Knob, Balance                | RBN77A     |
| Knob, Tone                   | RBN77A     |
| Knob, Loudness               | RBN77A     |
| Knob, Tuning                 | RBN77A     |
| Panel, Cabinet Rear          | RKU81A     |
| Cabinet, Speaker             | RKM123A    |
| Panel, Speaker Cabinet Rear  | RKU85A     |