

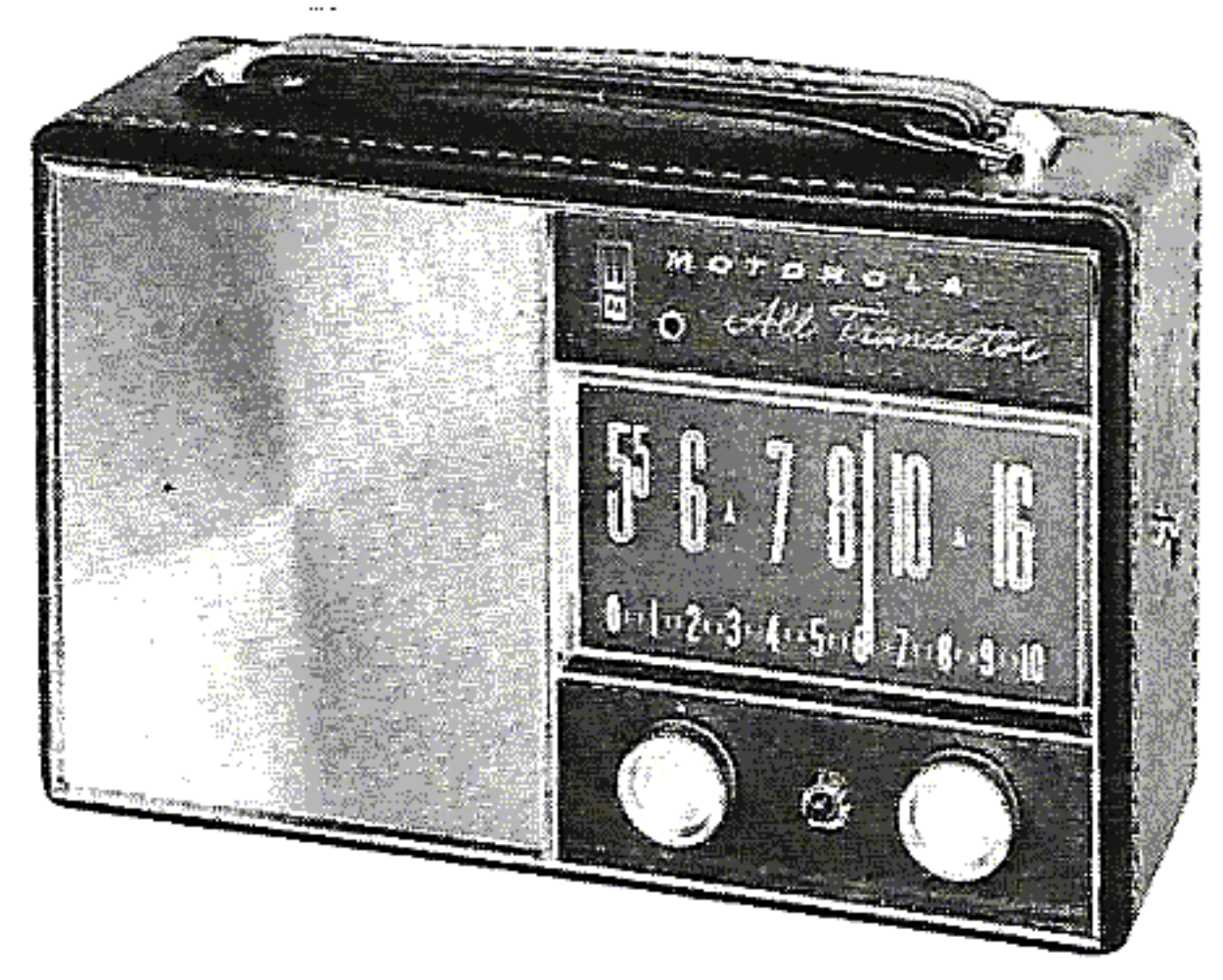


# PHOTOFACT<sup>®</sup> with



Met dank aan Jef Bos

TRADE NAME: Motorola Model X51N (Ch. HS-6114)  
 SUPPLIER: Motorola Inc.,  
 9401 W. Grand Ave., Franklin Park, Ill.  
 TYPE SET: 9 Transistor AM Receiver  
 POWER SUPPLY: 6 Volts DC  
 RATING: 12MA@6VDC (No Signal, Min. Volume)  
 20MA@6VDC (Signal, Normal Volume)  
 TUNING RANGE: BROADCAST 540 - 1620KC

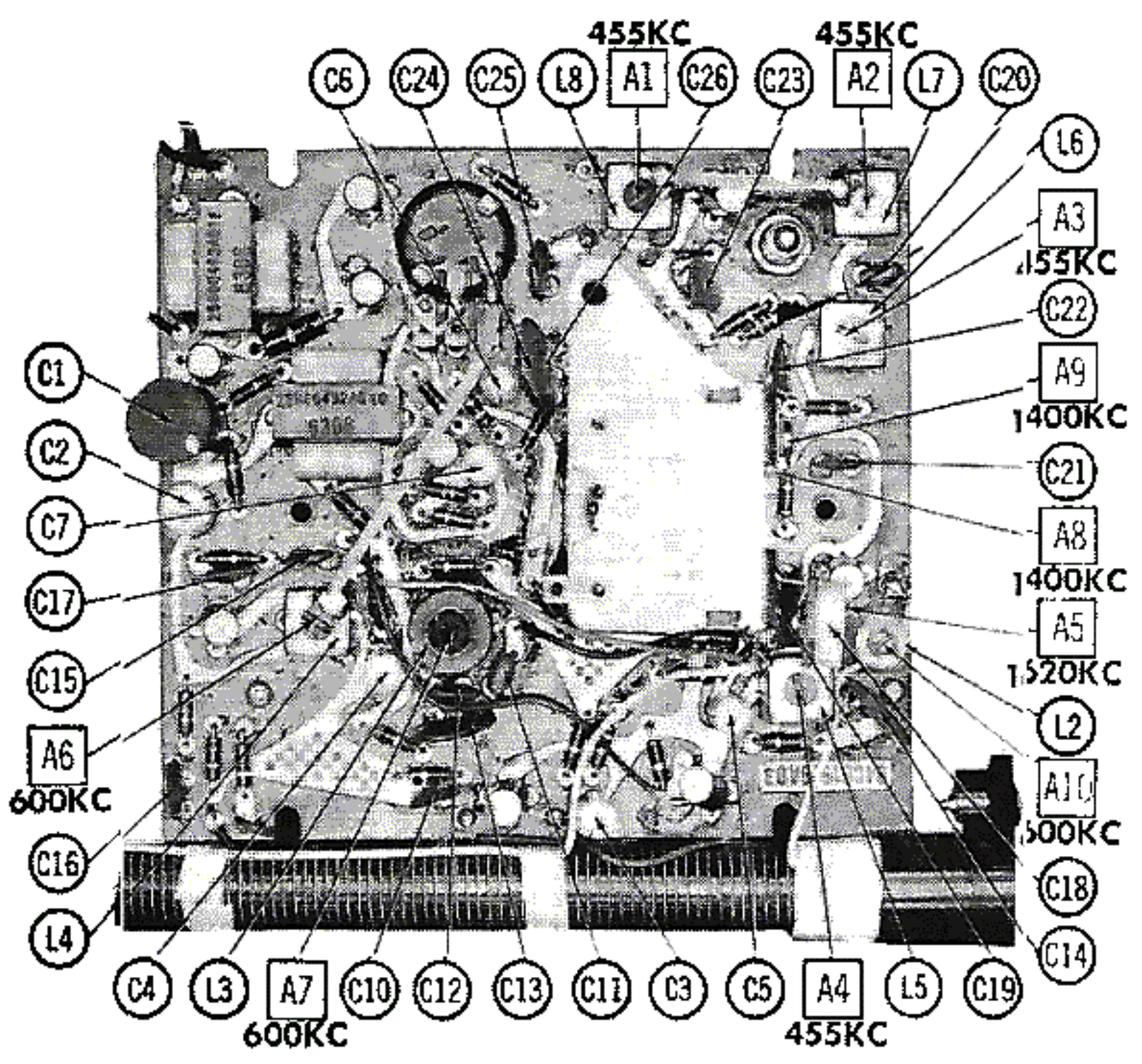


## ALIGNMENT INSTRUCTIONS

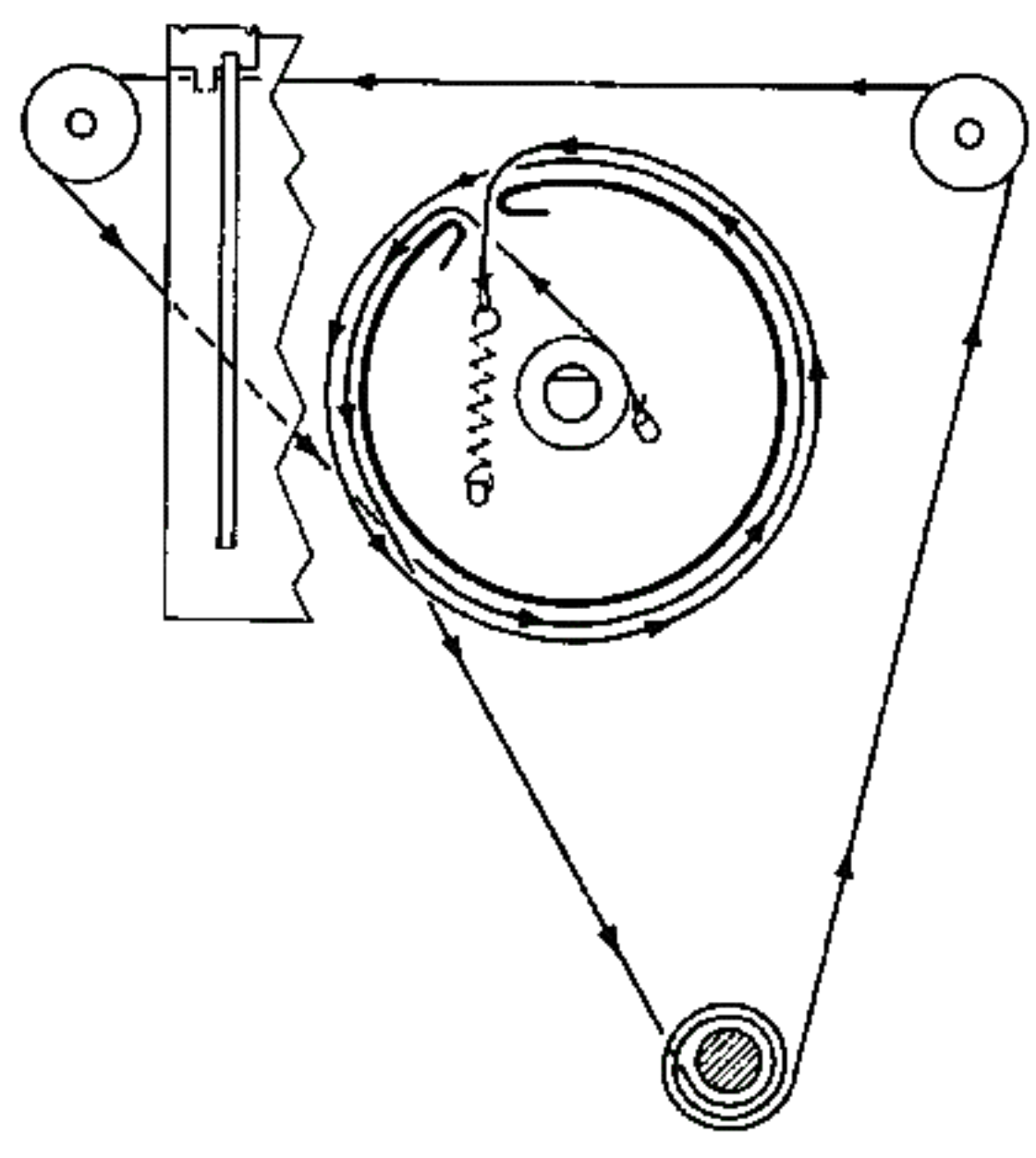
Check for specified source voltage.  
 Fashion loop of several turns of wire and connect generator across loop.  
 Adjust output of generator to radiate only enough signal into receiver to obtain a suitable indication.  
 Suggested Alignment Tools:

A1, A2, A3, A4, A6, A7, A10... GENERAL CEMENT #8282, 8606..... WALSCO #2526, 2543  
 A5, A8, A9..... GENERAL CEMENT #5000, 5066, 8290.. WALSCO #2512, 2525, 2528

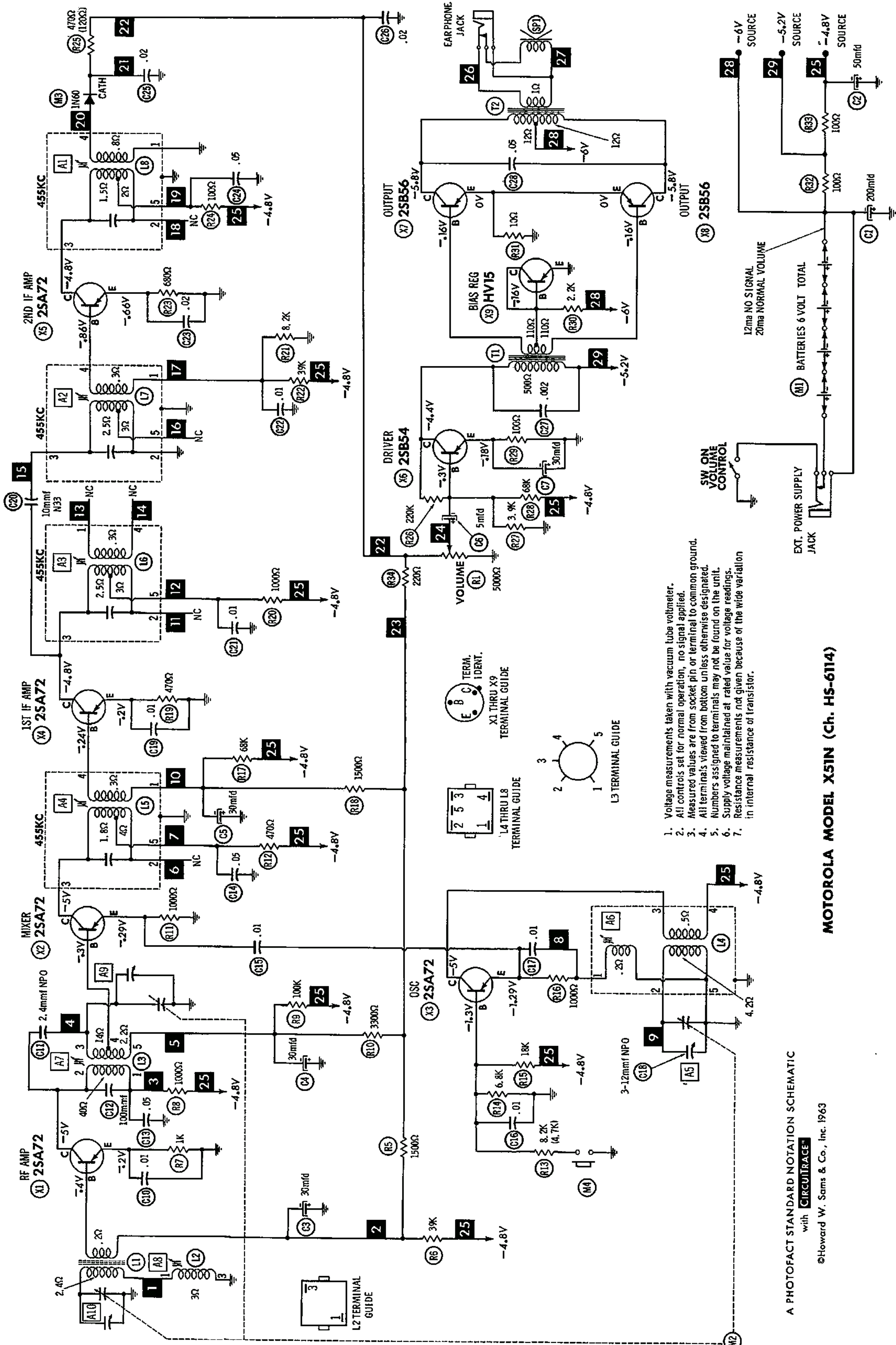
| SIGNAL GENERATOR FREQUENCY | RADIO DIAL SETTING      | INDICATOR                       | ADJUST         | REMARKS  |
|----------------------------|-------------------------|---------------------------------|----------------|--|
| 1. 455KC (400% Mod.)       | Tuning gang fully open. | Output Meter across voice coil. | A1, A2, A3, A4 | Adjust for maximum. Repeat as required.                        |
| 2. 1620KC                  | "                       | "                               | A5             | Adjust for maximum.  |
| 3. 600KC                   | Tune to Signal.         | "                               | A6, A7         | Rock tuning gang and adjust for maximum. Repeat steps 2 and 3. |
| 4. 1400KC                  | "                       | "                               | A8, A9         | Adjust for maximum.  |
| 5. 600KC                   | "                       | "                               | A10            | "  |



### DIAL CORD STRINGING



**HOWARD W. SAMS & CO., INC.** Indianapolis 6, Indiana

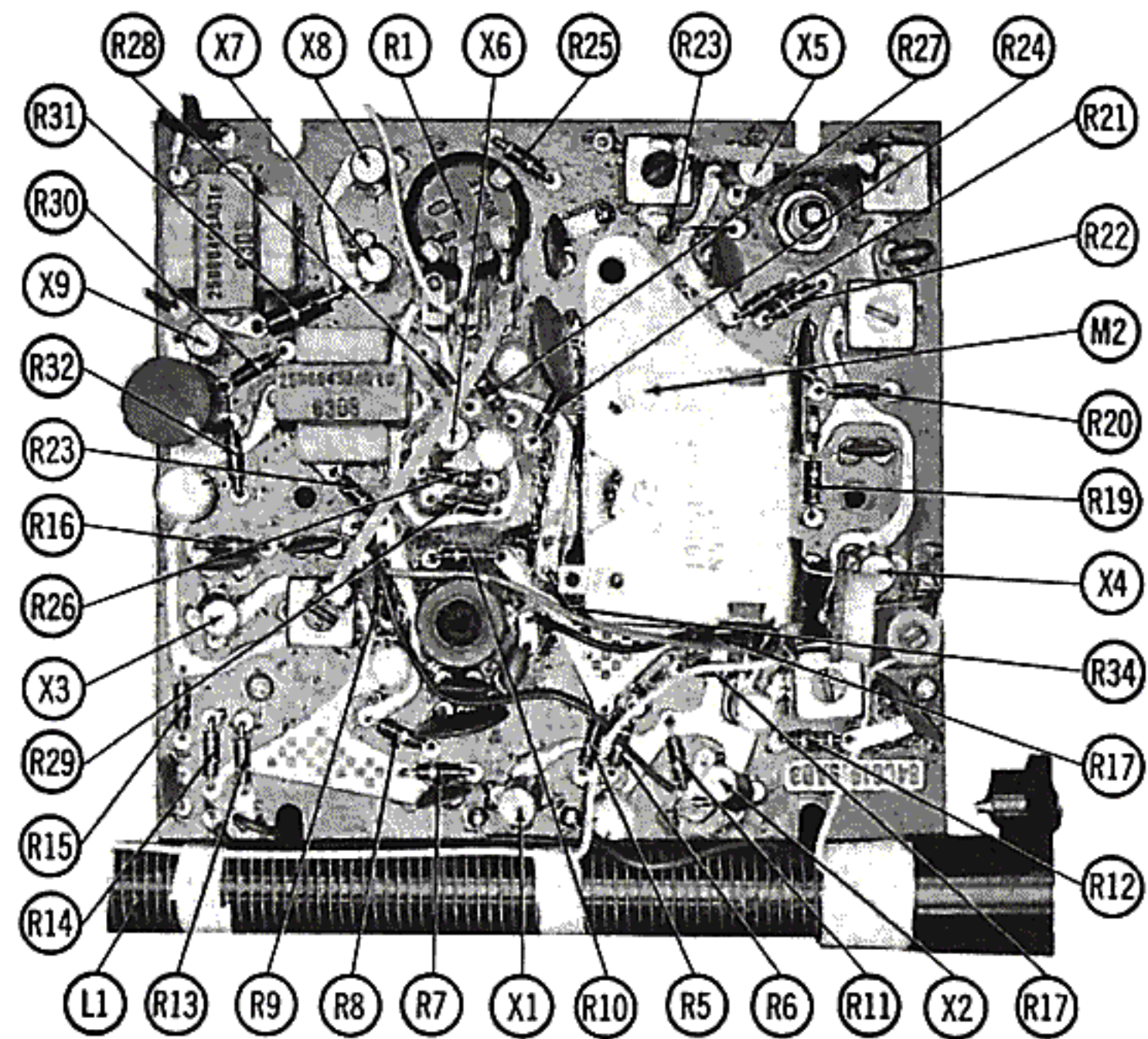
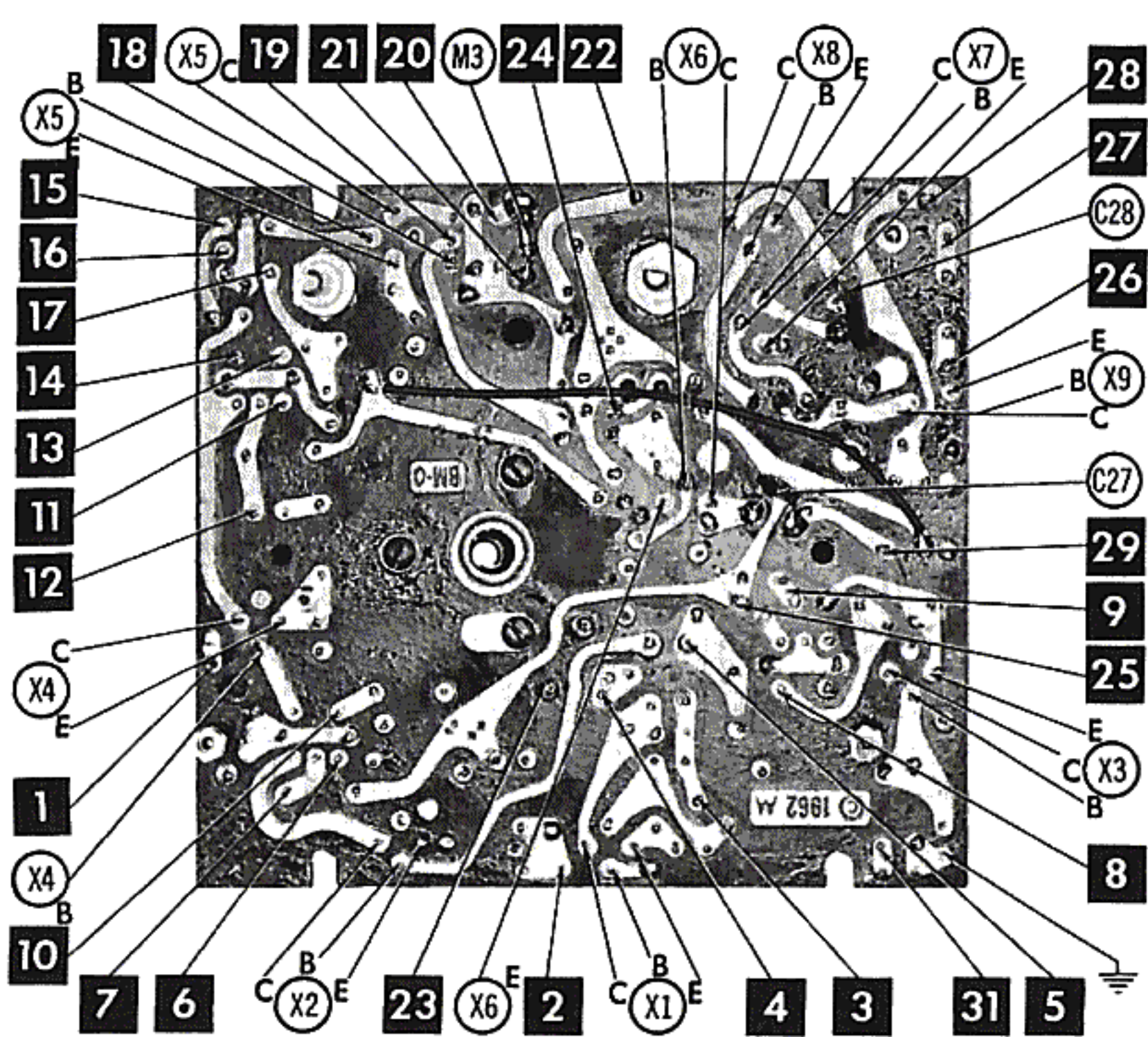


1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.
7. Resistance measurements not given because of the wide variation in internal resistance of transistor.

A PHOTOFAC STANDARD NOTATION SCHEMATIC  
with **CIRCUITRACE™**

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**MOTOROLA MODEL X51N (Ch. HS-6114)**



## WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid 22AWG) Available  
8524 (Stranded 22AWG) in  
8570 (Stranded 26AWG) 12 Colors

## TRANSISTORS

| ITEM No. | ORIG. TYPE | USE              | REPLACEMENT DATA |                           |              | NOTES |
|----------|------------|------------------|------------------|---------------------------|--------------|-------|
|          |            |                  | DELCO PART No.   | GENERAL ELECTRIC PART No. | RCA PART No. |       |
| X1       | 2SA72      | RF Amplifier     | DS-25            | GE-1                      | 2N1527       | PNP   |
| X2       | 2SA72      | Mixer            | DS-25            | GE-1                      | 2N1527       | PNP   |
| X3       | 2SA72      | Oscillator       | DS-25            | GE-1                      | 2N1527       | PNP   |
| X4       | 2SA72      | 1st IF Amplifier | DS-25            | GE-1                      | 2N1527       | PNP   |
| X5       | 2SA72      | 2nd IF Amplifier | DS-25            | GE-1                      | 2N1527       | PNP   |
| X6       | 2SB54      | Driver           | DS-26            | GE-2                      | 2N406        | PNP   |
| X7       | 2SB56      | Output           | DS-26            | GE-2                      | 2N408        | PNP   |
| X8       | 2SB56      | Output           | DS-26            | GE-2                      | 2N408        | PNP   |
| X9       | HV15       | Bias Regulator   |                  |                           | 1N2326       | PNP   |

## ELECTROLYTIC CAPACITORS

| ITEM No. | RATING |       | REPLACEMENT DATA  |                  |                           |                           |                             |                  |                  |
|----------|--------|-------|-------------------|------------------|---------------------------|---------------------------|-----------------------------|------------------|------------------|
|          | CAP.   | VOLT. | MOTOROLA PART No. | AEROVOX PART No. | CORNELL-DUBILIER PART No. | GENERAL ELECTRIC PART No. | GENERAL INSTRUMENT PART No. | MALLORY PART No. | SPRAGUE PART No. |
| C1       | 200    | 15    | 23C61031A03       | BCD20200         | ECPB421                   | MT1-23                    | BL2140                      | TT15X200         | TE-1164          |
| C2       | 50     | 10    | 23C60496A04       | BCD10050         | ECPB415                   | MT1-16                    | MLV50-10                    | PET1575          | TE-1119          |
| C3       | 30     | 3     | 23C60496A02       | BCD3025          | ECPB412                   | MT1-13                    | MLV30-6                     | PET130           | TE-1092          |
| C4       | 30     | 3     | 23C60496A02       | BCD3025          | ECPB412                   | MT1-13                    | MLV30-6                     | PET130           | TE-1092          |
| C5       | 30     | 3     | 23C60496A02       | BCD3025          | ECPB412                   | MT1-13                    | MLV30-6                     | PET130           | TE-1092          |
| C6       | 5      | 6     | 23C60496A08       | BCD6005          | ECPB406                   | MT1-3                     | MLV5-6                      | PET1210          | TE-1084          |
| C7       | 30     | 3     | 23C60496A02       | BCD3025          | ECPB412                   | MT1-13                    | MLV30-6                     | PET130           | TE-1092          |

## FIXED CAPACITORS

| ITEM No. | RATING   | REMARKS      | REPLACEMENT DATA |                    |                           |                  |                  |                  |
|----------|----------|--------------|------------------|--------------------|---------------------------|------------------|------------------|------------------|
|          |          |              | AEROVOX PART No. | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | ELMENCO PART No. | MALLORY PART No. | SPRAGUE PART No. |
| C10      | .01      |              | TTD-01           | CK-103             | H2                        |                  | TA-110           | TG-S10           |
| C11      | 2.4 NPO  |              | NPO-DI 2.2       | DTZ-2R2            | C10V22C                   | CCTO-2R2         | CNO-522          | 10TCC-V22        |
| C12      | 100      |              | NPO-DI 100       | DTZ-100            | C10T1C                    | CCTO-101         | CNO-310          | 10TCC-T10        |
| C13      | .05      |              | TTD-05           | CK-503             | H5                        |                  | TA-150           | TG-S50           |
| C14      | .05      |              | TTD-05           | CK-503             | H5                        |                  | TA-150           | TG-S50           |
| C15      | .01      |              | TTD-01           | CK-103             | H2                        |                  | TA-110           | TG-S10           |
| C16      | .01      |              | TTD-01           | CK-109             | H2                        |                  | TA-110           | TG-S10           |
| C17      | .01      |              | TTD-01           | CK-103             | H2                        |                  | TA-110           | TG-S10           |
| C18      | 3-12 NPO |              |                  | 822-FZ             |                           | 460              | ST-553-Z         |                  |
| C19      | .01      |              | TTD-01           | CK-103             | H2                        |                  | TA-110           | TG-S10           |
| C20      | 10 N33   | #21D80500A14 |                  |                    |                           | *                |                  |                  |
| C21      | .01      |              | TTD-01           | CK-103             | H2                        |                  | TA-110           | TG-S10           |
| C22      | .01      |              | TTD-01           | CK-103             | H2                        |                  | TA-110           | TG-S10           |
| C23      | .02      |              | TTD-02           | CK-203             | H3                        |                  | TA-120           | TG-S20           |
| C24      | .05      |              | TTD-05           | CK-503             | H5                        |                  | TA-150           | TG-S50           |
| C25      | .02      |              | TTD-02           | CK-203             | H3                        |                  | TA-120           | TG-S20           |
| C26      | .02      |              | TTD-02           | CK-203             | H3                        |                  | TA-120           | TG-S20           |
| C27      | .002     |              |                  | DM-202             |                           |                  |                  |                  |
| C28      | .05      |              | TTD-05           | CK-503             | H5                        |                  | TA-150           | TG-S50           |

# Motorola Part Number.

\* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

## CONTROLS

All wattages 1/2 watt, or less, unless otherwise listed.

| ITEM No. | USE             | RESIST-ANCE | REPLACEMENT DATA  |                    |                    |                  |                  |
|----------|-----------------|-------------|-------------------|--------------------|--------------------|------------------|------------------|
|          |                 |             | MOTOROLA PART No. | CENTRALAB PART No. | CLAROSTAT PART No. | CTS-IRC PART No. | MALLORY PART No. |
| R1       | Volume & Switch | 5000Ω       | 18B61051A01       |                    |                    |                  |                  |

# DESCRIPTION

## COILS (RF-IF)

| ITEM No. | USE          | REPLACEMENT DATA  |                |                 |                  |                  | NOTES |
|----------|--------------|-------------------|----------------|-----------------|------------------|------------------|-------|
|          |              | MOTOROLA PART No. | MERIT PART No. | MILLER PART No. | STANCOR PART No. | WORKMAN PART No. |       |
| L1       | Loopstick    | 24B61953A01       |                |                 |                  |                  |       |
| L2       | Ant. Peaking | 24B61876A02       |                |                 |                  |                  |       |
| L3       | RF           | 24B61302A01       |                |                 |                  |                  |       |
| L4       | Osc.         | 24C61366A02       |                |                 |                  |                  |       |
| L5       | 1st IF       | 24K646566         | BC-574         | 2066            | RTC-9266         |                  |       |
| L6       | 2nd IF       | 24K647701         | BC-575         | 2067            | RTC-9267         |                  |       |
| L7       | 3rd IF       | 24K647701         | BC-575         | 2067            | RTC-9267         |                  |       |
| L8       | 4th IF       | 24K646138         | BC-576         | 2068            | RTC-9268         |                  |       |

## TRANSFORMER (DRIVER)

| ITEM No. | TURNS RATIO |      | REPLACEMENT DATA  |                |                  |                     |                | NOTES |
|----------|-------------|------|-------------------|----------------|------------------|---------------------|----------------|-------|
|          | PRI.        | SEC. | MOTOROLA PART No. | MERIT PART No. | STANCOR PART No. | THORDARSON PART No. | TRIAD PART No. |       |
| T1       | 1.2         | 1    | 25B60492A01       |                |                  |                     |                |       |

## TRANSFORMER (AUDIO OUTPUT)

| ITEM No. | IMPEDANCE |      | REPLACEMENT DATA  |                |                  |                     |                | NOTES |
|----------|-----------|------|-------------------|----------------|------------------|---------------------|----------------|-------|
|          | PRI.      | SEC. | MOTOROLA PART No. | MERIT PART No. | STANCOR PART No. | THORDARSON PART No. | TRIAD PART No. |       |
| T2       | 100Ω CT   | 6-8Ω | 25B60493A01       |                |                  |                     |                |       |

## SPEAKER

| ITEM No. | TYPE           | REPLACEMENT DATA  |               | NOTES |
|----------|----------------|-------------------|---------------|-------|
|          |                | MOTOROLA PART No. | QUAM PART No. |       |
| SP1      | 3 1/2" PM 6-8Ω | 50C61766A02       |               |       |

## BATTERIES

| ITEM No. | VOLTAGE | MOTOROLA PART No. | REPLACEMENT DATA    |                   |                         | NOTES      |
|----------|---------|-------------------|---------------------|-------------------|-------------------------|------------|
|          |         |                   | BURGESS             | EVEREADY          | MALLORY                 |            |
| M1       | 6       |                   | 930 (or AL-9, Hg-9) | 1015 (or E91, E9) | M-15R (or MN1500, ZM-9) | 4 Required |

## MISCELLANEOUS

| ITEM No. | PART NAME           | MOTOROLA PART No. | NOTES |
|----------|---------------------|-------------------|-------|
| M2       | Tuning Cap.         | 19B61789A01       |       |
| M3       | Detector (1N60)     | 48K644681         |       |
| M4       | Switch-Battery Life | 40K647760         |       |

## CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

| ITEM                           | PART No.    | ITEM                             | PART No.    |
|--------------------------------|-------------|----------------------------------|-------------|
| Knob - Tuning                  | 36C61599A02 | Cabinet Front Cover              | 16E61834A03 |
| Knob - Volume                  | 36C61599A03 | Escutcheon - Includes Dial Glass | 1V60050A54  |
| Cabinet Back - Includes Handle | 16E61834A02 |                                  |             |