

# PHOTOFACT<sup>®</sup> with

# CIRCUITRACE<sup>®</sup>

For Supplier Address See PHOTOFACT Index

## NOTE

Repair or adjustment of transmitter circuits must be under supervision of a person with first-or second-class radiotelephone license.

(Refer to FCC Rules and Regulations Part 95, Subpart C & D.)

The frequency of the transmitter should be checked periodically with a secondary frequency standard to insure proper and legal operation.

Best results will be obtained when adjusting the final RF output circuit if the antenna normally used is connected and the chassis is as nearly in the cabinet as possible.

Connect either 50-ohm dummy load or the normally used antenna system.



MODEL CB-2460

## MANUFACTURER'S SPECIFICATIONS

### Transmitter section

|                            |                                                                                 |
|----------------------------|---------------------------------------------------------------------------------|
| RF power output .....      | 4W (maximum)                                                                    |
| Frequency range .....      | 27MHz Citizens Band                                                             |
| Channels .....             | 40 chs. P.L.L. (Phase Locked Loop) circuit Synthesizer                          |
| Type of crystal .....      | HC-18U                                                                          |
|                            | Tolerance                                                                       |
|                            | 10.240MHz . . . . . ± 0.004%                                                    |
|                            | Others. . . . . ± 0.003%                                                        |
| Transmitter modulation ... | 100% (maximum)                                                                  |
| Modulation limiter .....   | Yields high average modulation at average voice levels                          |
| Antenna matching .....     | Nominal 50 ohms                                                                 |
| Carrier deviation .....    | Not greater than ± 800Hz nominal on (exceeds F.C.C., D.O.C., etc. requirements) |
| Harmonic suppression ..... | Exceeds 60dB                                                                    |

### Receiver section

|                            |                                                            |
|----------------------------|------------------------------------------------------------|
| Audio power output .....   | 3.5 Watts maximum power output                             |
| Sensitivity .....          | 0.7μV/m for 10dB S + N/N ratio at 30% at 1000Hz modulation |
| Channels .....             | 40 chs. P.L.L. (Phase Locked Loop) circuit Synthesizer     |
| Type of crystal .....      | HC-18U                                                     |
|                            | 11.730MHz . . . . . ± 0.003%                               |
| Selectivity .....          | 6dB down at ±3kHz;<br>50dB down at ± 10kHz.                |
| Intermediate frequency ... | 1st-IF: 11.275MHz,<br>2nd-IF: 455kHz                       |

|                          |                                                                                                                                                                                |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Circuit type .....       | Dual conversion superheterodyne: P.L.L. circuit frequency synthesizer provides 40 transmit and receive channels. Delta tuning of ±1.0kHz on each channels plus ceramic filter. |
| Auxiliary circuits ..... | Automatic noise limiter (ANL), Variable squelch, Public Address System (P.A.)                                                                                                  |

### General

|                    |                                                                                                                                                                          |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power source ..... | DC 12.0V Nominal negative or positive ground                                                                                                                             |
| Antenna .....      | 50 ohm external antenna for car or base operation                                                                                                                        |
| Speaker .....      | 3-1/8" P.D.S. 8-ohm Imp.                                                                                                                                                 |
| Microphone .....   | Press-to-talk dynamic microphone (500 ohm)                                                                                                                               |
| Accessories .....  | Microphone hanger<br>Mobile mounting bracket<br>Mounting screws<br>Microphone with plug and cord.<br>Power supply cord with fuse holder and socket.<br>Spare fuse (2.3A) |
| Dimensions .....   | 2-1/4"(H) x 5-3/4"(W) x 7-7/8"(D)                                                                                                                                        |
| Weight .....       | 4 lbs. with microphone                                                                                                                                                   |
| Cabinet .....      | Metal body with plastic front                                                                                                                                            |

Courtesy of the Manufacturer

SHARP MODEL CB-2460

**HOWARD W. SAMS & CO., INC.** Indianapolis, Indiana 46206

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## ALIGNMENT INSTRUCTIONS

CAUTION: Use isolation transformer or observe polarity when connecting test equipment. Maintain line voltage at 120V AC. Allow a 15-minute warm-up period. Adjustments made with 13.8-volt DC input. Connect low sides of test equipment to ground unless specified otherwise. Connect 50-ohm dummy load or antenna before keying transmitter. Suggested Alignment Tools: GC ELECTRONICS;  
 L302, L303, T3 Thru T6, T301, T303, T304 ..... 5009  
 L304, L305, T1, T2, T201, T202, T203, T302 ..... 9440  
 C202, C222 ..... 5000

## SYNTHESIZER ALIGNMENT

| TEST EQUIPMENT                                                        | TRANSCIVER           | ADJUST | REMARKS                                                                                            |
|-----------------------------------------------------------------------|----------------------|--------|----------------------------------------------------------------------------------------------------|
| Input of frequency counter to 201 (IC201, Pin 1).                     | Ch. 19               | C202   | Adjust for 10.240MHz $\pm$ 300Hz.                                                                  |
| Input of RF VTVM to 211 (Q205, Base).                                 | Ch. 19               | T203   | Adjust for maximum RF voltage.<br>Turn core one turn counter-clockwise.                            |
| Input of frequency counter to 211 (Q205, Base).                       | Ch. 19               | C222   | Adjust for 36.960MHz $\pm$ 300Hz.                                                                  |
| Input of DC meter to 205 (IC202, Pin 1).                              | Ch. 19               | T201   | Adjust for 3.00 volts.                                                                             |
| Input of RF VTVM to 208 (T202, Secondary).                            | Ch. 19               | T202   | Adjust for maximum RF voltage.                                                                     |
| Input of frequency counter to 208 (T202, Secondary).                  | Ch. 1                |        | Check for 38.240MHz.<br>Check all channels (channel frequency + 11.275MHz = frequency on counter). |
| Input of frequency counter thru a 5pF capacitor to 3 (T6, Secondary). | Ch. 19, Delta Tune 0 | T6     | Adjust for 11.730MHz $\pm$ 300Hz.                                                                  |
| Input of frequency counter thru a 5pF capacitor to 302 (Q302, Base).  | Ch. 19, XMT          | T301   | Disconnect C305.<br>Adjust for 11.275MHz $\pm$ 300Hz.<br>Reconnect C305.                           |

## RECEIVER ALIGNMENT

Connect an AC VTVM or AF wattmeter across speaker voice coil. Adjust volume control to obtain a suitable indication. Set generator output low enough to prevent AGC limiting.

| TEST EQUIPMENT                                                                                | TRANSCIVER                                       | ADJUST            | REMARKS                                                  |
|-----------------------------------------------------------------------------------------------|--------------------------------------------------|-------------------|----------------------------------------------------------|
| Output of signal generator thru .01uF to 4 (Q6, Base).<br>455kHz, 1000Hz @ 30% modulation.    | Ch. 19<br>Delta Tune 0<br>ANL Off<br>Squelch MIN | T5                | Adjust for maximum output.                               |
| Output of signal generator thru .01uF to antenna jack.<br>27.185MHz, 1000Hz @ 30% modulation. | Ch. 19<br>Delta Tune 0<br>ANL Off<br>Squelch MIN | T4, T3,<br>T2, T1 | Adjust for maximum output.<br>If necessary, readjust T5. |

## RECEIVER ADJUSTMENTS

Connect an AC VTVM or AF wattmeter across speaker voice coil.  
Adjust volume control to obtain a suitable indication.

| TEST EQUIPMENT                                                                                                 | TRANSCIVER                        | ADJUST | REMARKS                                               |
|----------------------------------------------------------------------------------------------------------------|-----------------------------------|--------|-------------------------------------------------------|
| Output of signal generator thru .01uF to antenna jack.<br>27.185MHz, 1000Hz @ 30% modulation.<br>Output 100uV. | Ch. 19<br>Delta Tune 0<br>ANL Off | R19    | SIGNAL METER<br>Adjust R19 for 9 on S scale of meter. |

## TRANSMITTER ALIGNMENT

Connect an RF wattmeter and 50-ohm, 25-watt dummy load to antenna connector.  
NOTE: Be sure to check transmit frequency and power on all active channels after alignment of transmitter.  
See page 4 for channel frequencies.

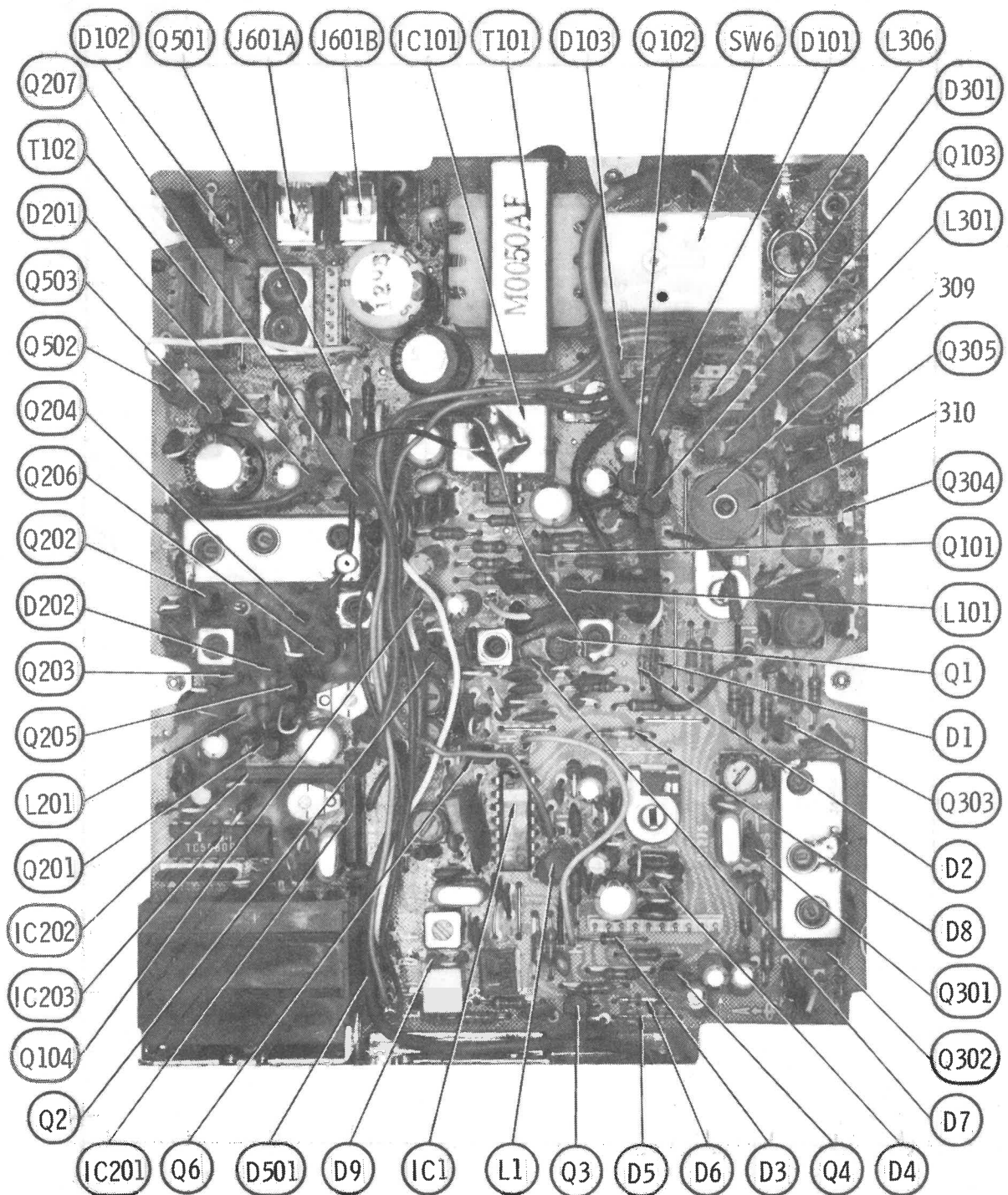
| TEST EQUIPMENT                                                                               | TRANSCIVER | ADJUST                           | REMARKS                     |
|----------------------------------------------------------------------------------------------|------------|----------------------------------|-----------------------------|
| Tunable field strength meter set at 54MHz.<br><br>Tunable field strength meter set at 81MHz. | Ch. 19     | T302,T303,<br>T304,L302,<br>L303 | Adjust for maximum.         |
|                                                                                              | Ch. 19     | L303                             | Adjust for 4 watts maximum. |
|                                                                                              | Ch. 19     | L305                             | Adjust for MINIMUM signal.  |
|                                                                                              | Ch. 19     | L304                             | Adjust for MINIMUM signal.  |

## TRANSMITTER ADJUSTMENTS

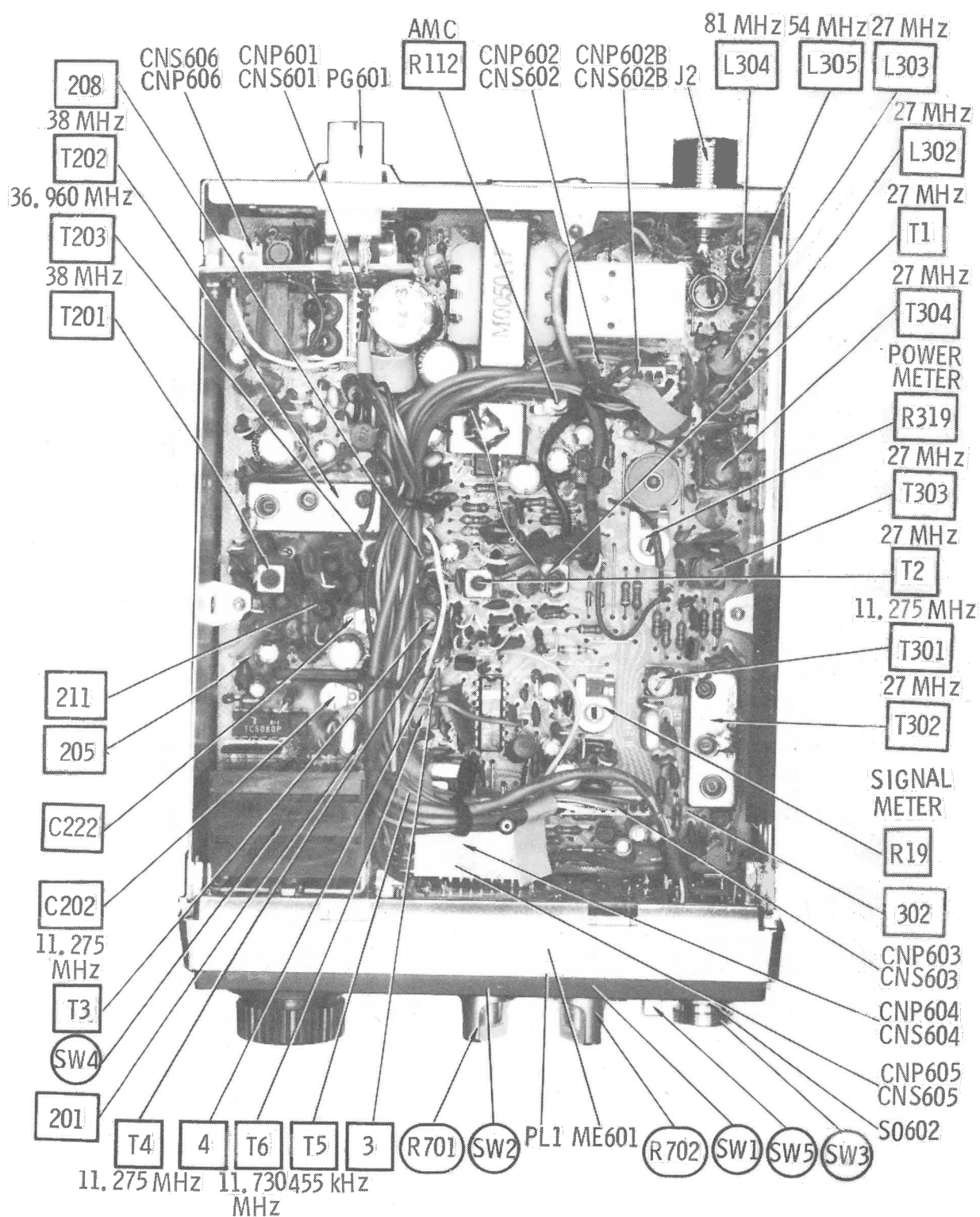
Connect an RF wattmeter and 50-ohm, 25-watt dummy load to antenna connector.  
NOTE: Be sure to check transmit frequency and power on all active channels after adjustment of transmitter.  
See page 4 for channel frequencies.

| TEST EQUIPMENT                                                                  | TRANSCIVER | ADJUST | REMARKS                                                                  |
|---------------------------------------------------------------------------------|------------|--------|--------------------------------------------------------------------------|
| Modulation meter to antenna jack.<br>Inject a 1000Hz, 30mV signal at MIC input. | Ch. 19     | R112   | AMC<br>Adjust R112 for 80% modulation.                                   |
| Connect an RF wattmeter and 50-ohm, 25-watt dummy load to antenna connector.    | Ch. 19     | R319   | POWER METER<br>Adjust R319 so that power meter agrees with RF wattmeter. |

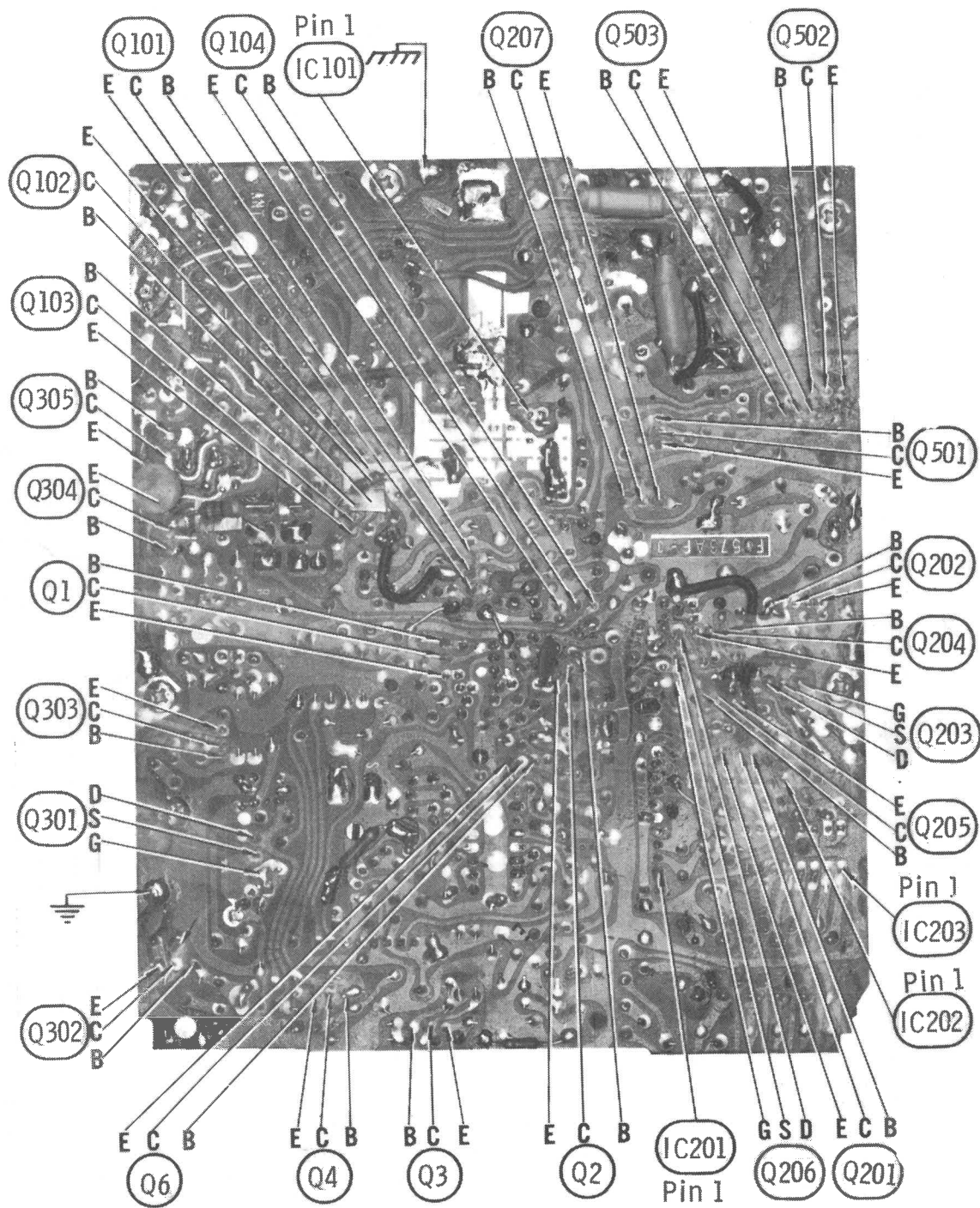
SHARP MODEL CB-2460



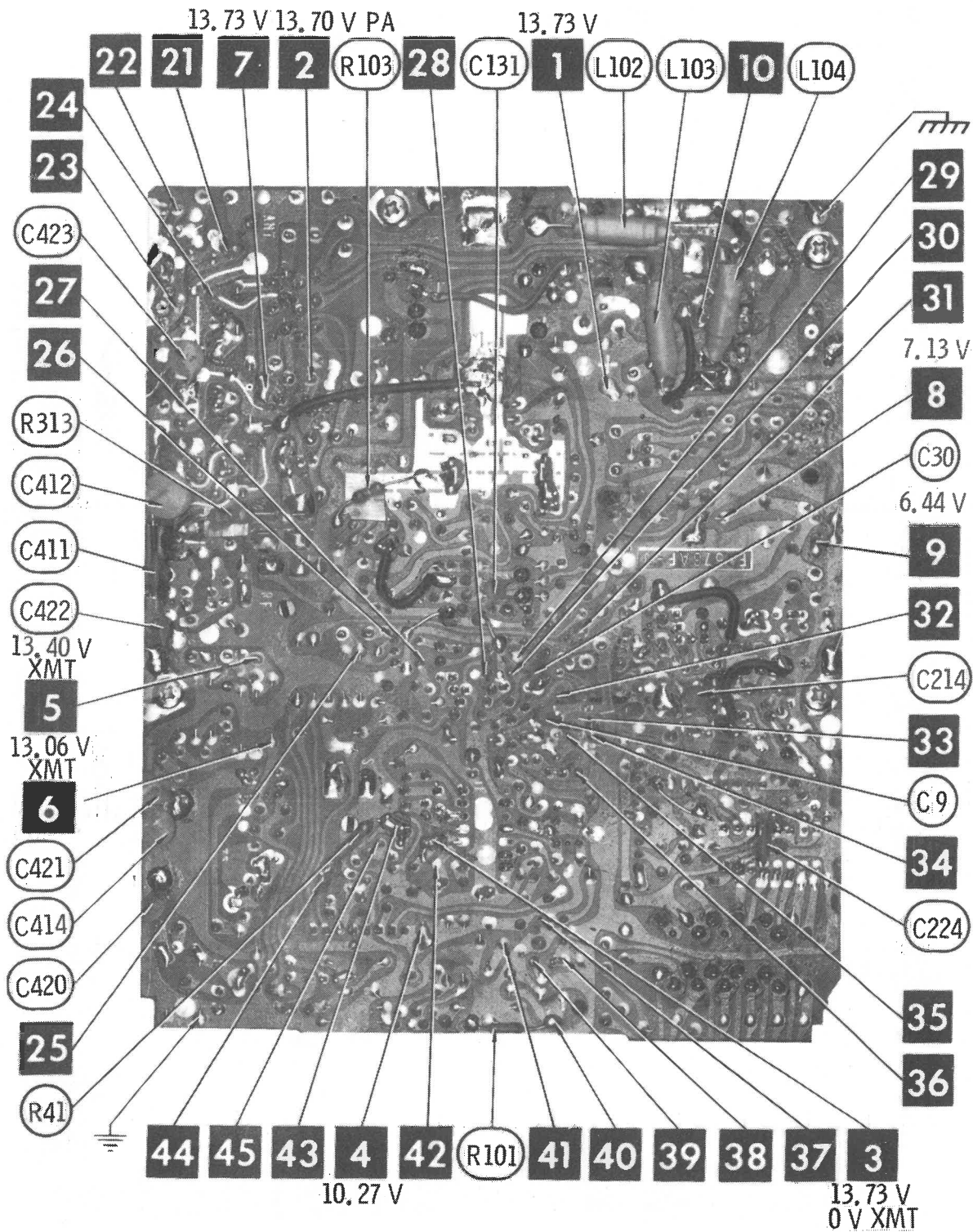
MAIN BOARD



CHASSIS-BOTTOM

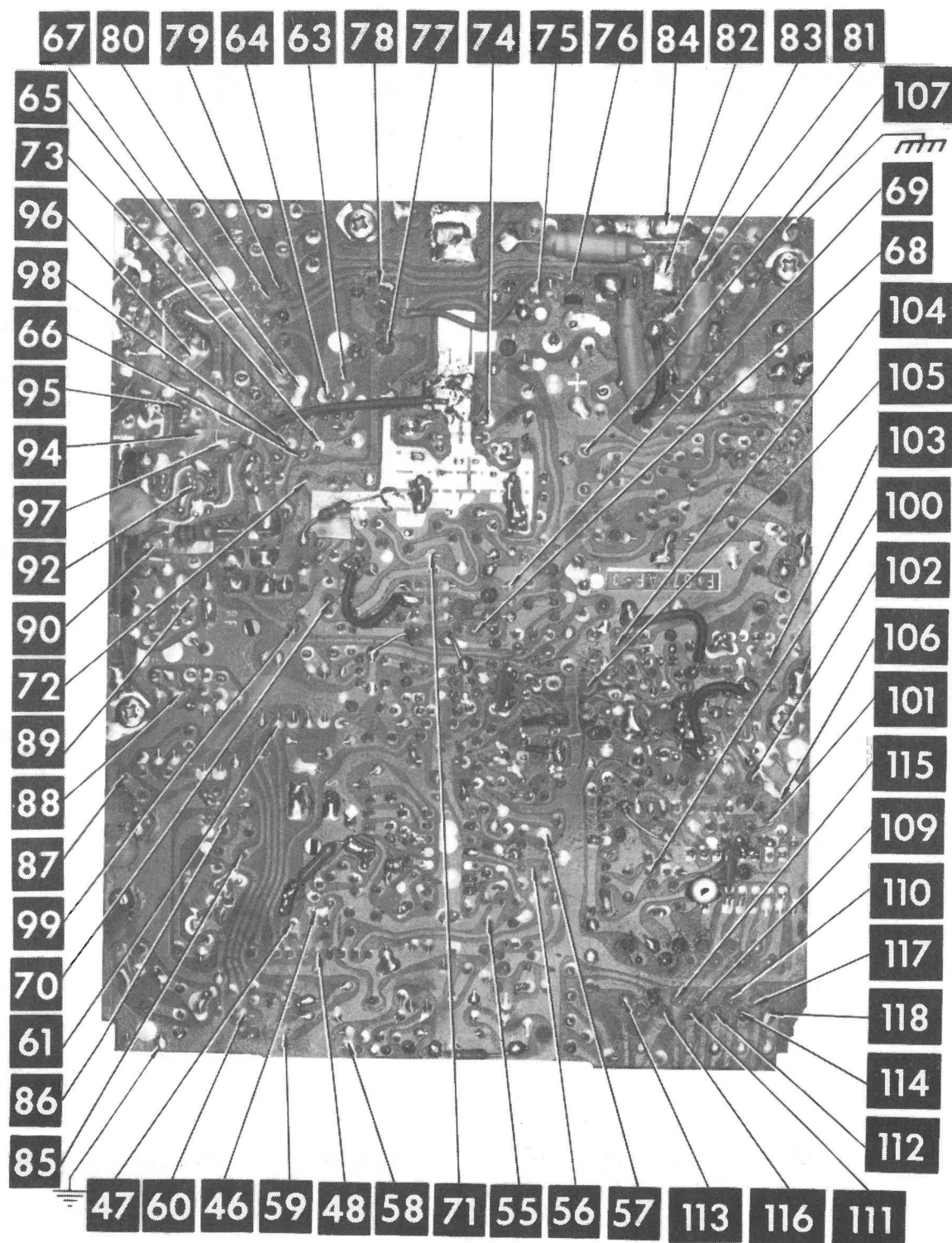


MAIN BOARD

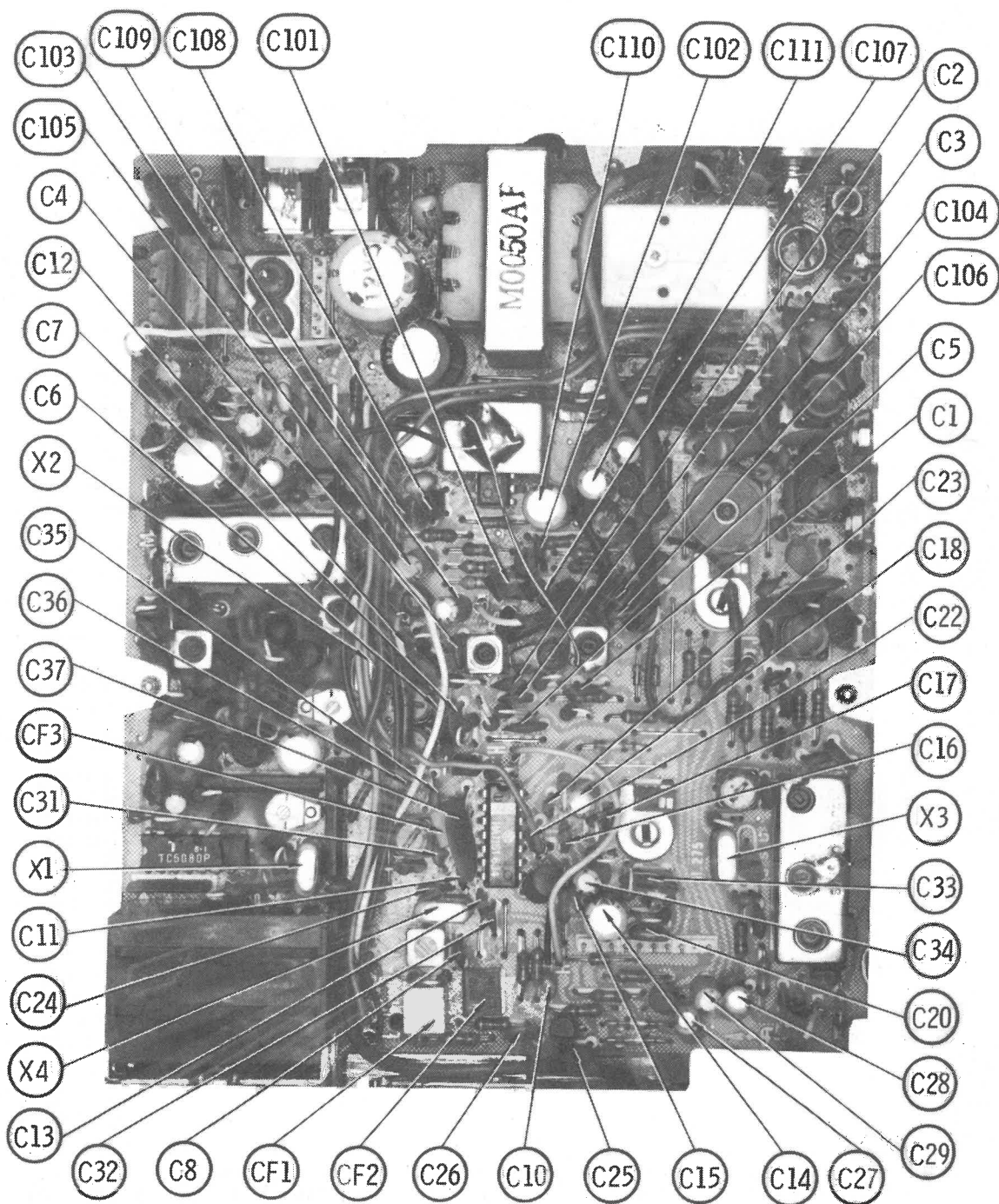


SHARP MODEL CB-2460

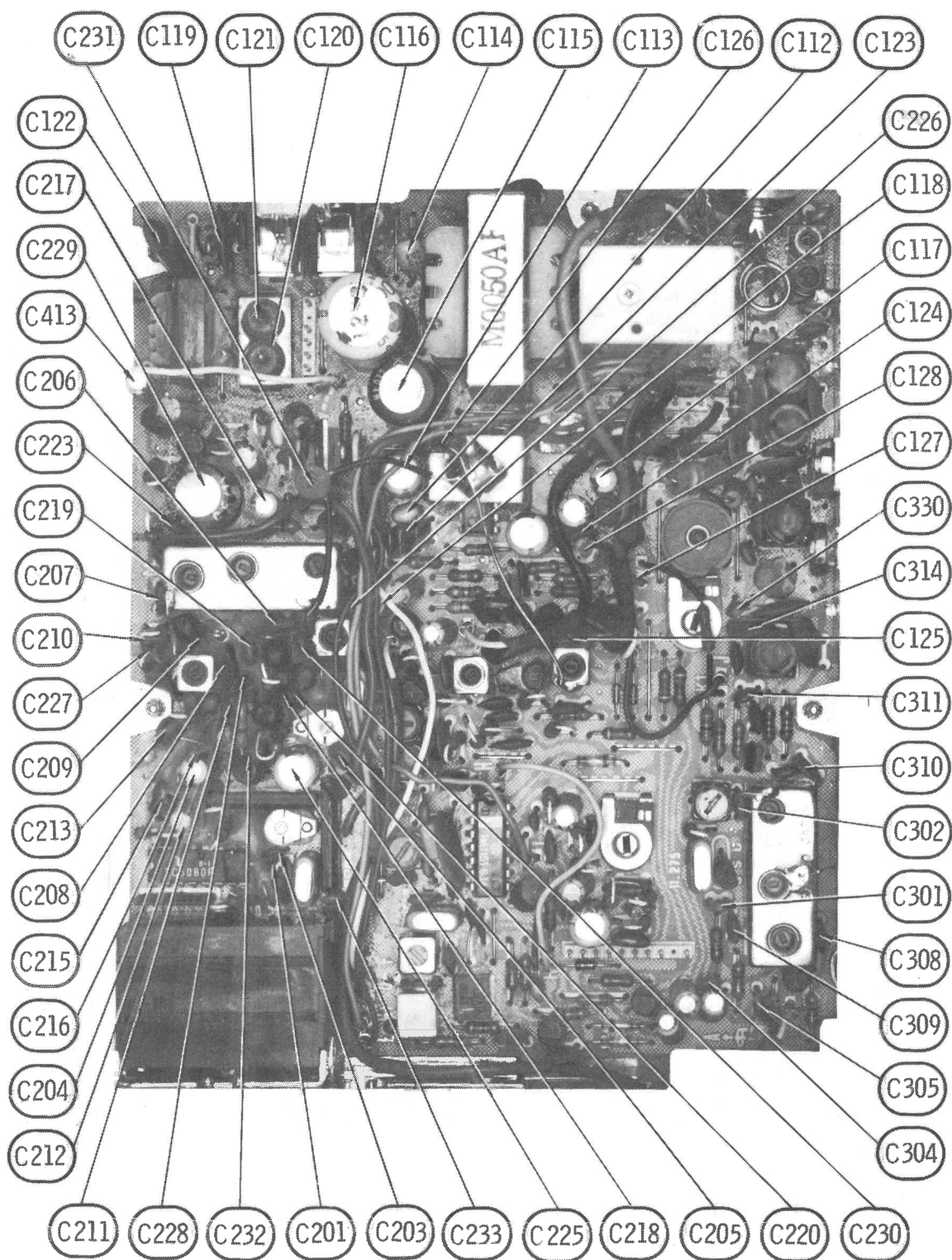
MAIN BOARD



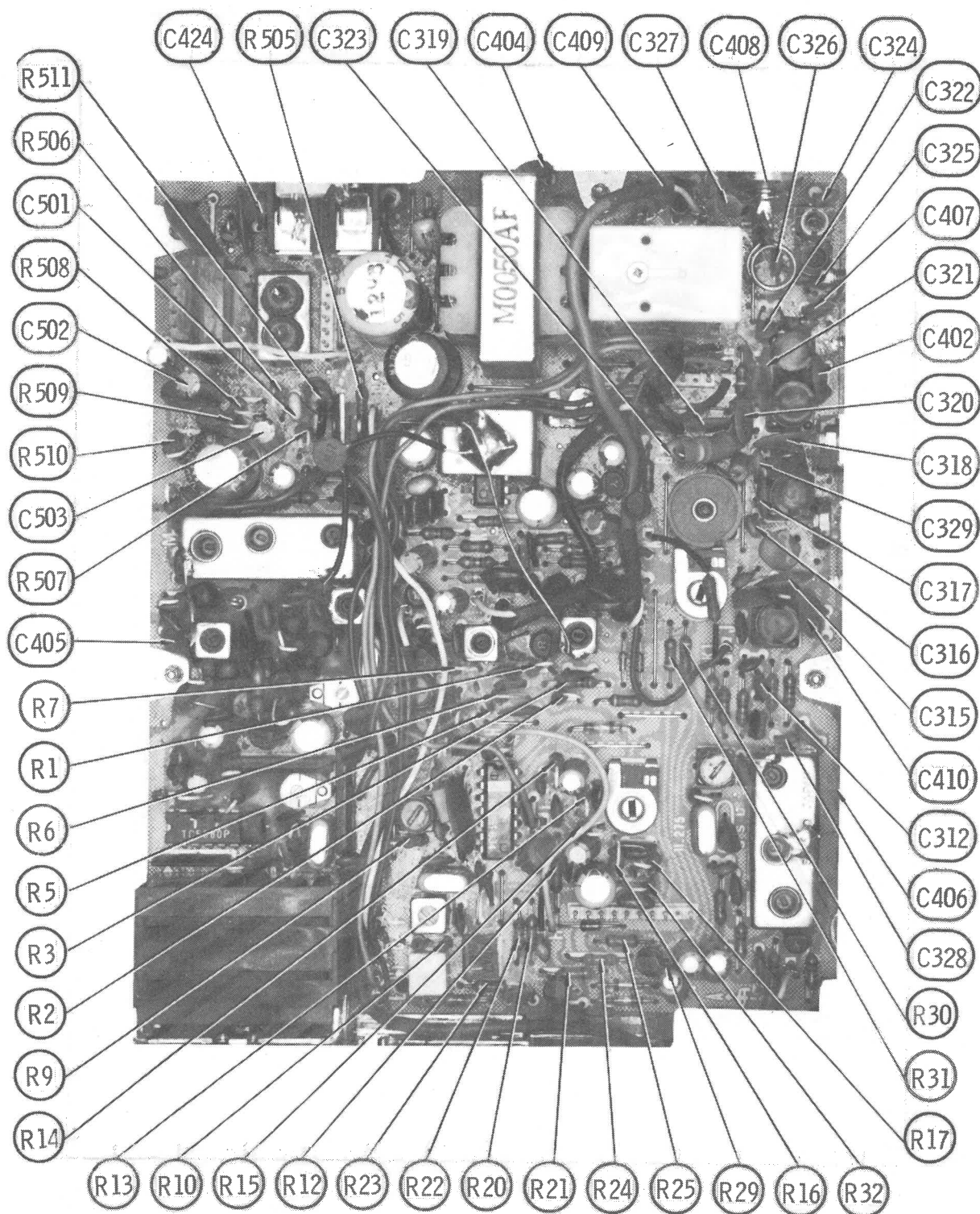
MAIN BOARD



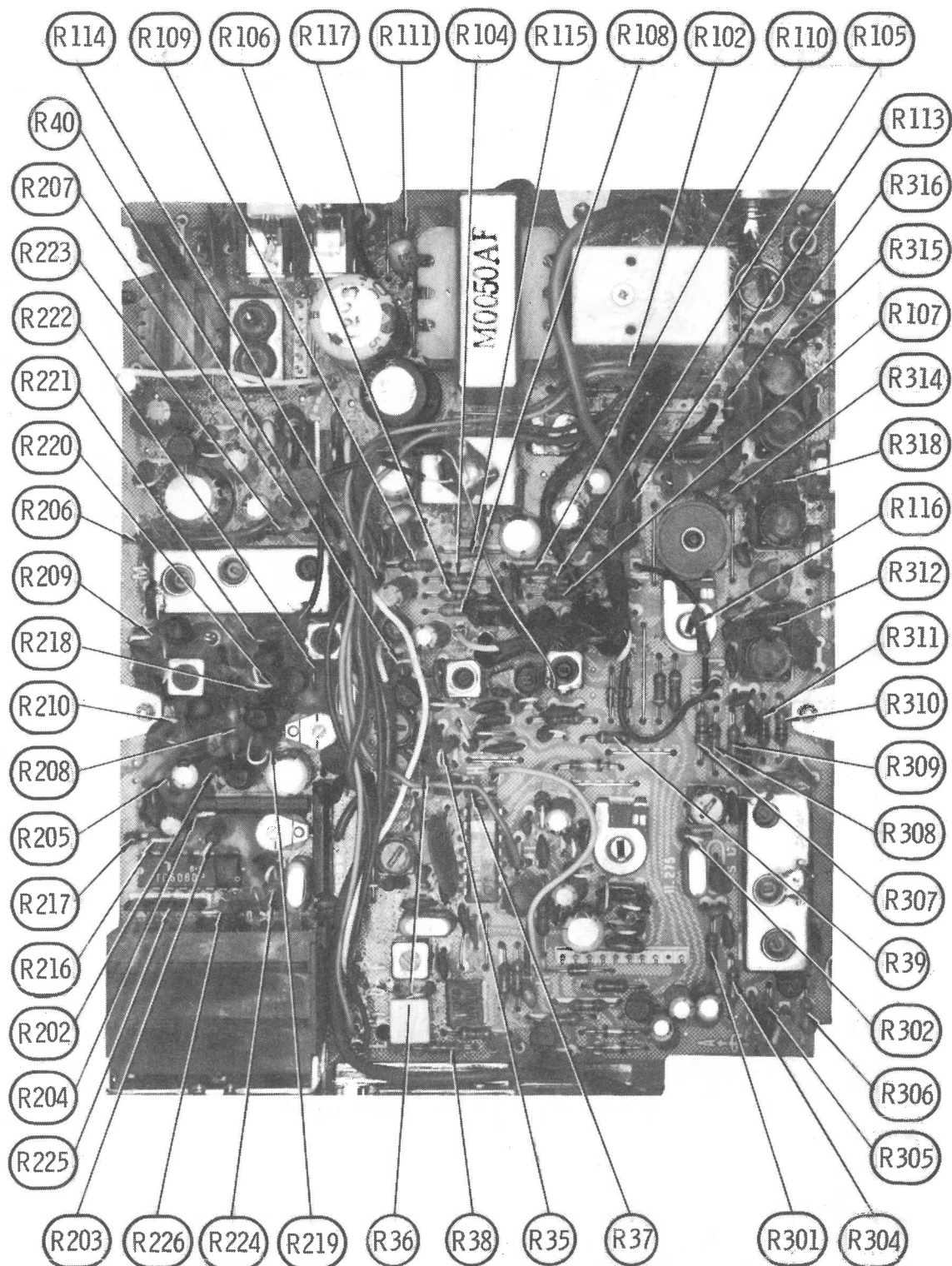
MAIN BOARD



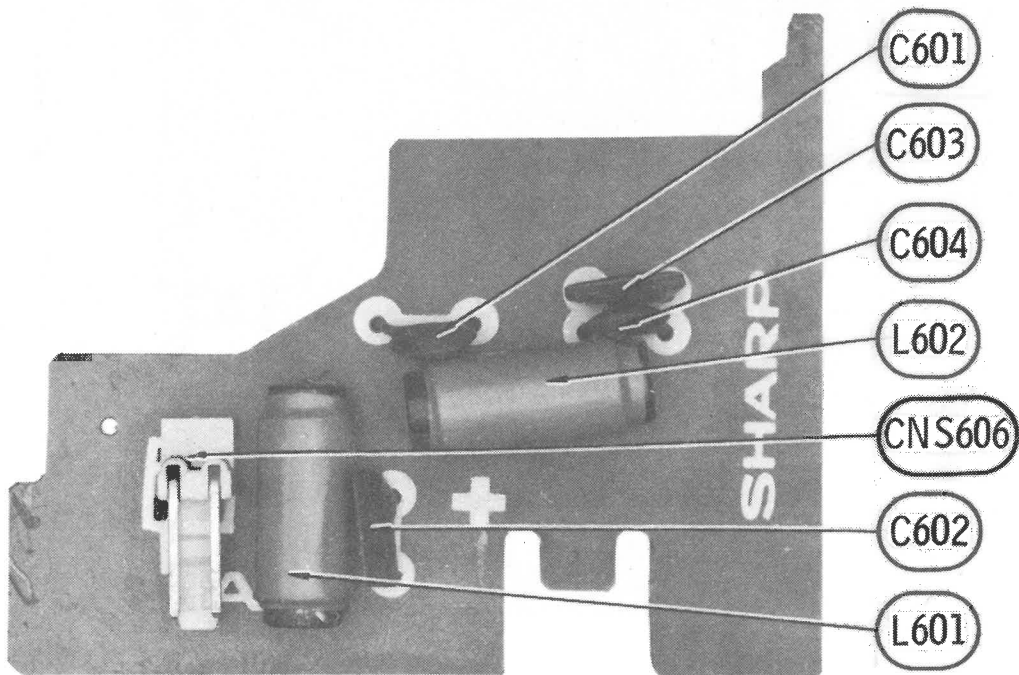
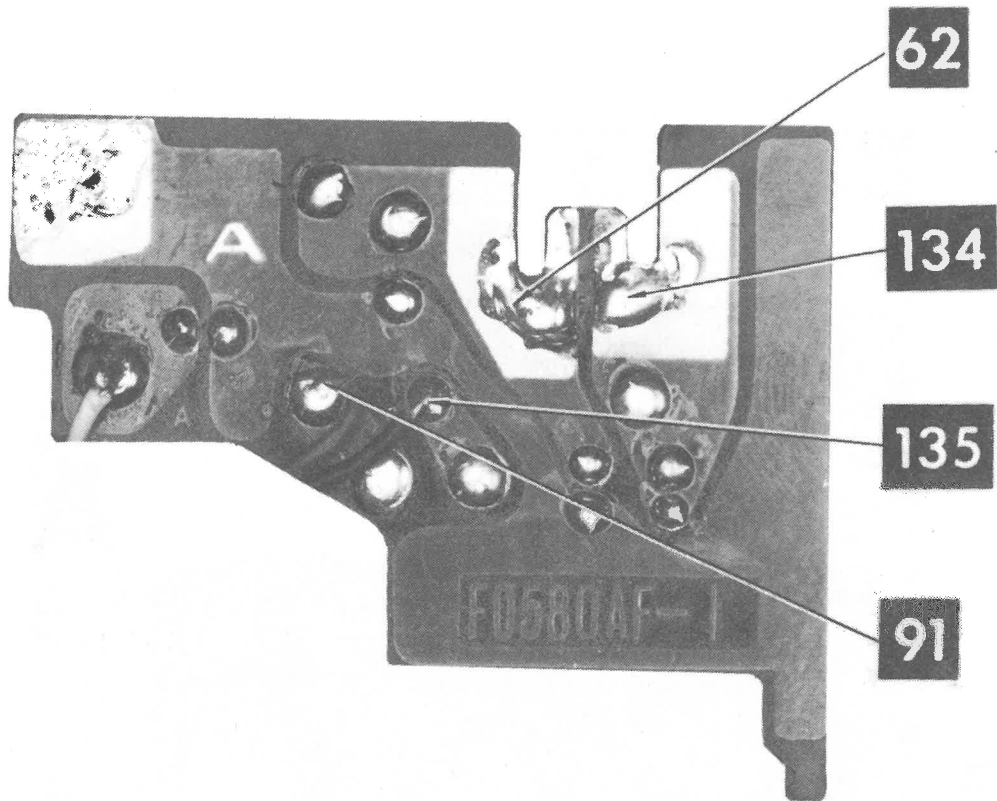
MAIN BOARD



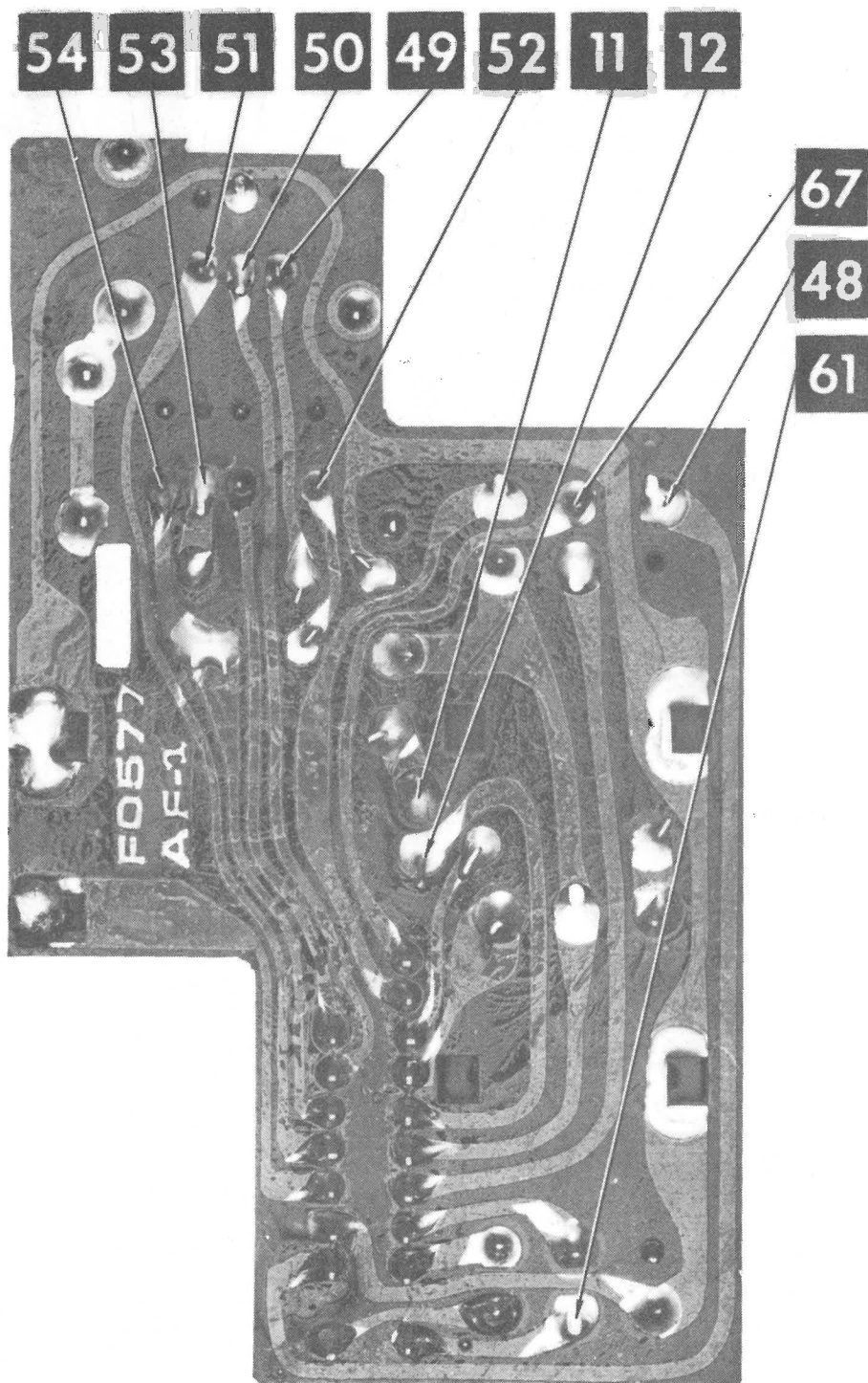
MA IN BOARD



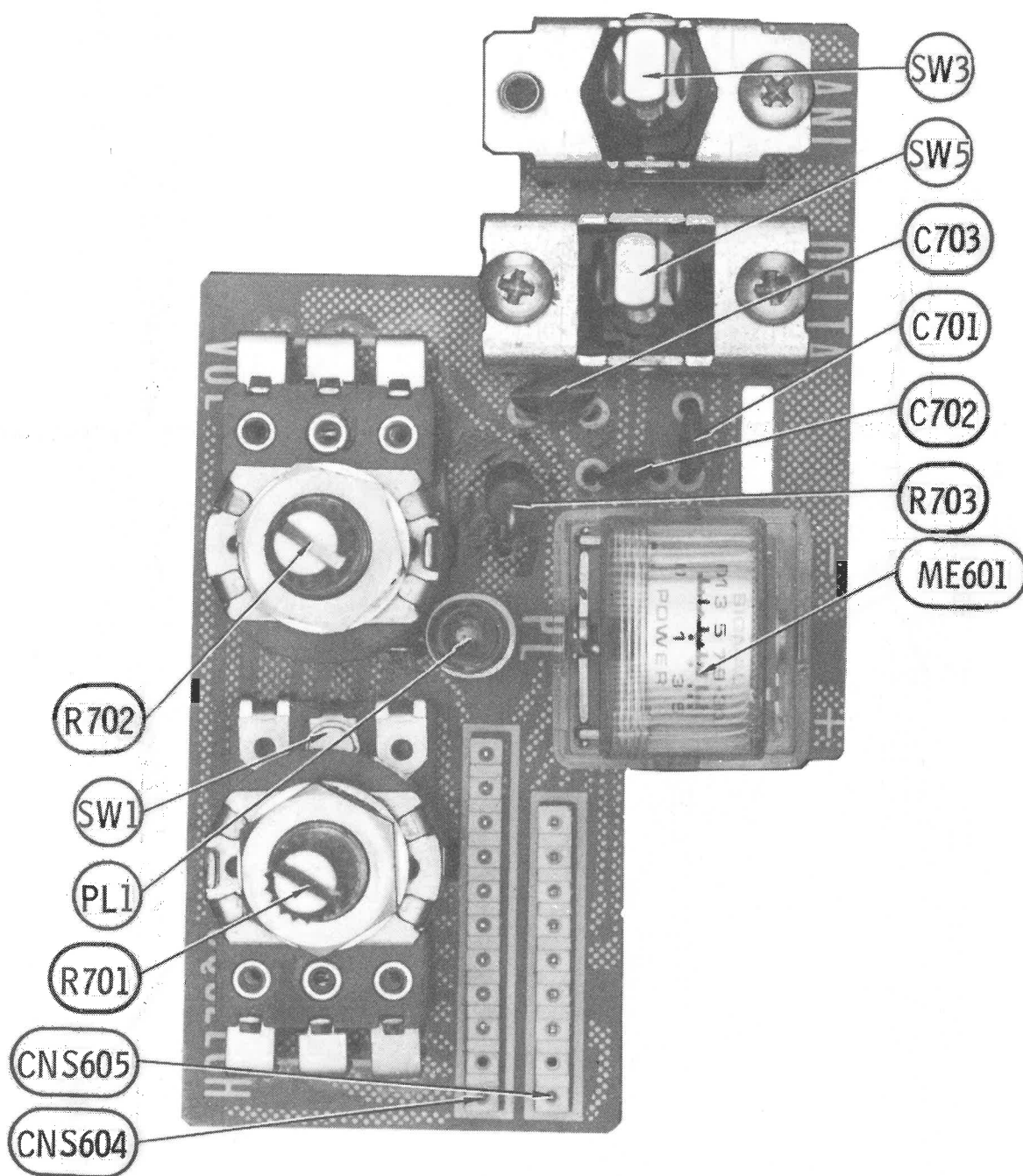
MAIN BOARD



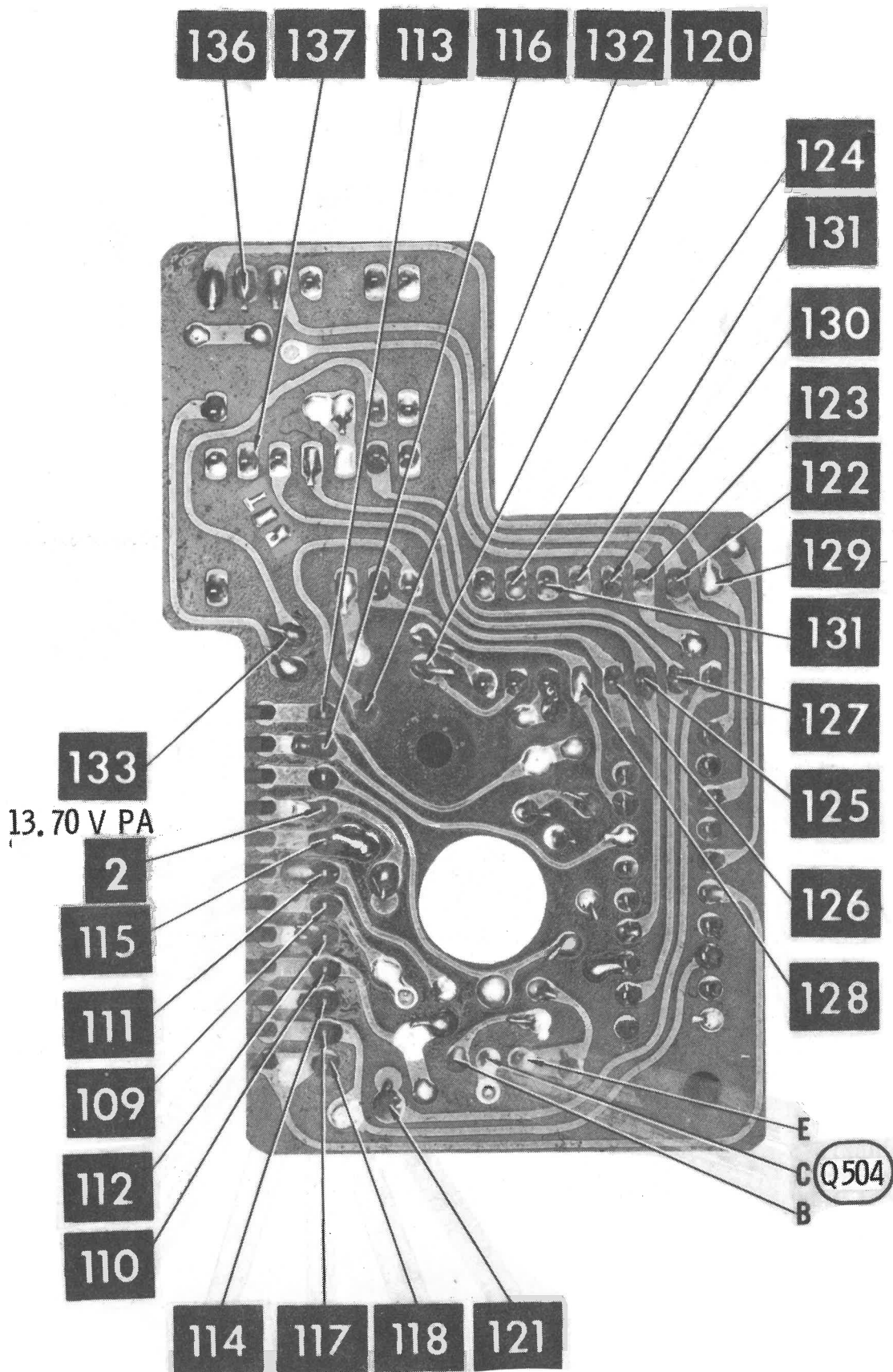
POWER SUPPLY BOARD



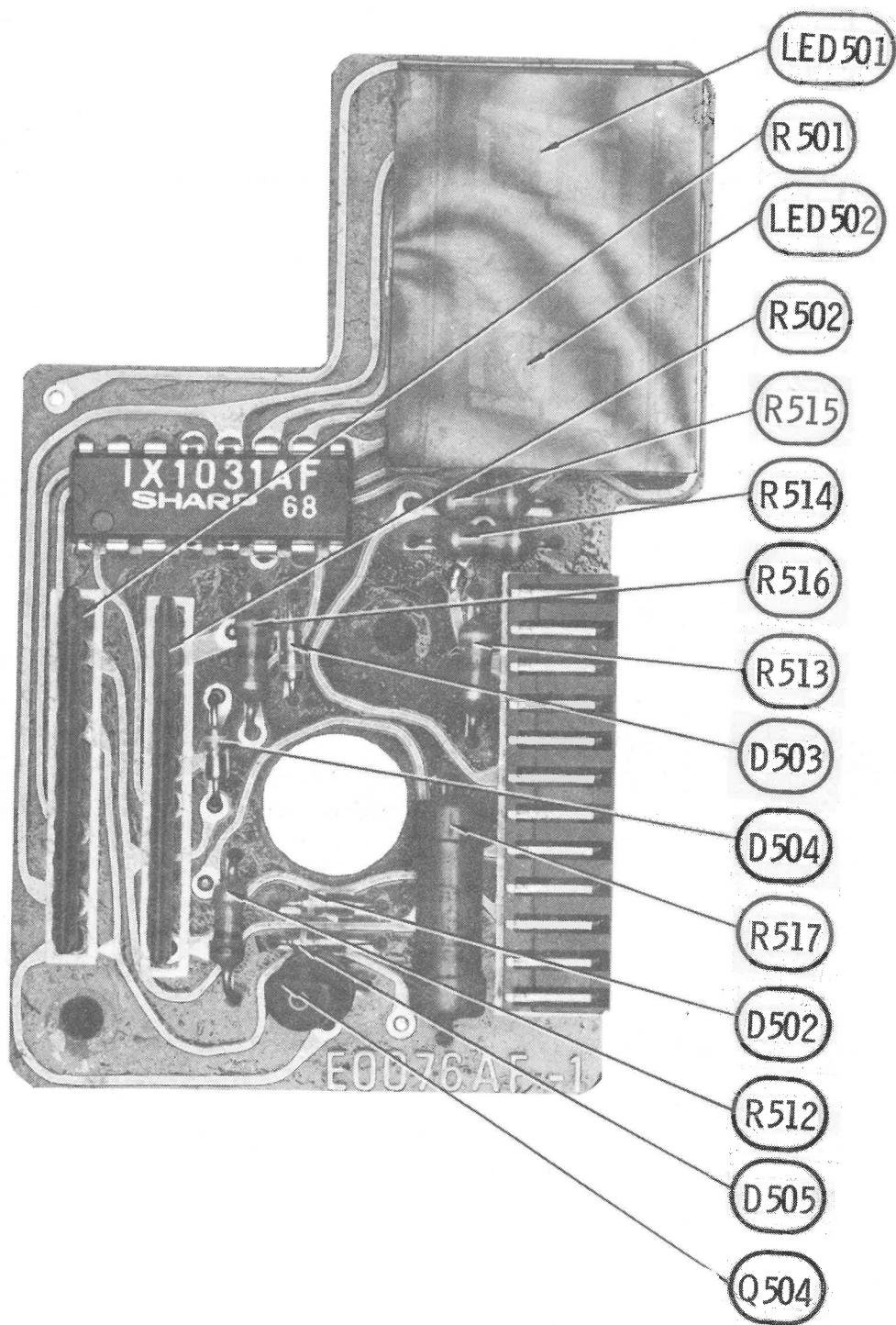
CONTROL BOARD



CONTROL BOARD



LED BOARD



LED BOARD

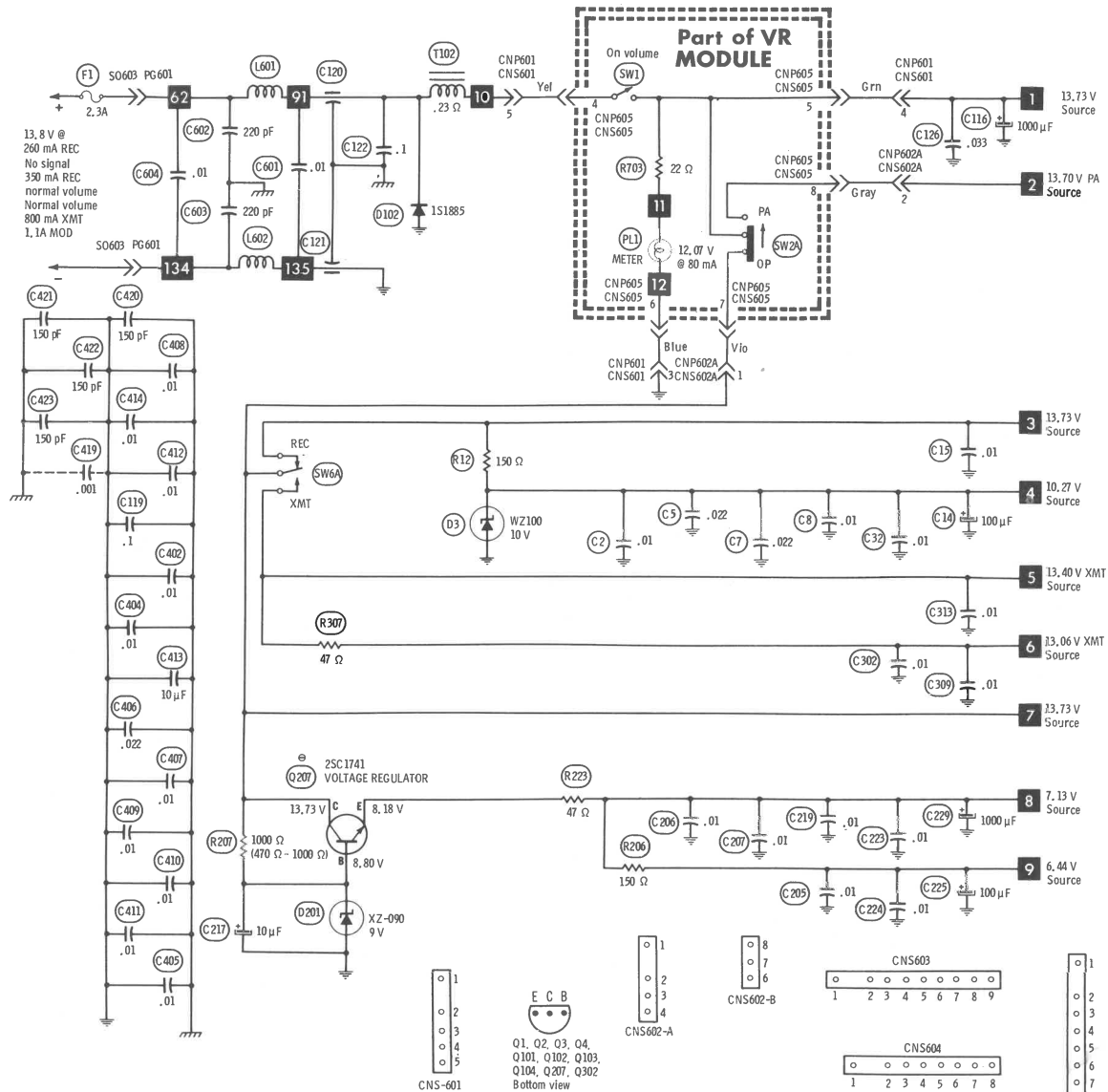


# PARTS LIST AND DESCRIPTION

(When ordering parts, state Model, Part Number, and Description.)

## SEMICONDUCTORS (Select replacement transistor for best results)

| ITEM No. | TYPE No.  | MFG. PART No.  | REPLACEMENT DATA          |                  |                   |                   |              |                  |                   |                     |                  |                 |
|----------|-----------|----------------|---------------------------|------------------|-------------------|-------------------|--------------|------------------|-------------------|---------------------|------------------|-----------------|
|          |           |                | GENERAL ELECTRIC PART No. | MALLORY PART No. | MOTOROLA PART No. | RAYTHEON PART No. | RCA PART No. | SPRAGUE PART No. | SYLVANIA PART No. | THORDARSON PART No. | WORKMAN PART No. | ZENITH PART No. |
| D1       | 1S2076    | VHD1S2076/-1   | GE-300                    | PTC214           | HEPR0602          | RE 52             | SK3100       | RT-218           | ECG177            | 1N4148              | WEP1062          |                 |
| D2       | 1S2076    | VHD1S2076/-1   | GE-300                    | PTC214           | HEPR0602          | RE 52             | SK3100       | RT-218           | ECG177            | 1N4148              | WEP1062          |                 |
| D3       | WZ100     | VHEWZ-100/IF   | GEZD-10                   | ZM10B            |                   | RE 115            | SK3061       | RT-241           | ECG5019           | 1N4740A             | WEP1420          |                 |
| D4       | 1N60      | VHD1N60///-1   | 1N60                      | PTC206           | HEPR9135          | RE 47             | SK3088       | RT-263           | ECG109            | 1N60                | WEP134           | ZEN-430         |
| D5       | 1N60      | VHD1N60///-1   | 1N60                      | PTC206           | HEPR9135          | RE 47             | SK3088       | RT-263           | ECG109            | 1N60                | WEP134           | ZEN-430         |
| D6       | 1N60      | VHD1N60///-1   | 1N60                      | PTC206           | HEPR9135          | RE 47             | SK3088       | RT-263           | ECG109            | 1N60                | WEP134           | ZEN-430         |
| D7       | 1S2076    | VHD1S2076/-1   | GE-300                    | PTC214           | HEPR0602          | RE 52             | SK3100       | RT-218           | ECG177            | 1N4148              | WEP1062          |                 |
| D8       | 1N60      | VHD1N60///-1   | 1N60                      | PTC206           | HEPR9135          | RE 47             | SK3088       | RT-263           | ECG109            | 1N60                | WEP134           | ZEN-430         |
| D9       | 1N60      | VHD1N60///-1   | 1N60                      | PTC206           | HEPR9135          | RE 47             | SK3088       | RT-263           | ECG109            | 1N60                | WEP134           | ZEN-430         |
| D101     | 1N60      | VHD1N60///-1   | 1N60                      | PTC206           | HEPR9135          | RE 47             | SK3088       | RT-263           | ECG109            | 1N60                | WEP134           | ZEN-430         |
| D102     | 1S1885    | VHD1S1885///-1 | GE-504A                   | PTC201           | HEPR0052          | RE 49             | SK3030       | RT-213           | ECG116            | 1N4004              | WEP156           | 212-61          |
| D103     | 10E1      | VHD10E1///-1   | GE-504A                   | PTC201           | HEPR0052          | RE 49             | SK3030       | RT-213           | ECG116            | 1N4004              | WEP156           | 212-61          |
| D201     | XZ-090    | VHEXZ-090///-1 | GEZE-9.1                  | ZM9.1B           |                   | RE 114            | SK3060       | RT-240           | ECG5018           | 1N4739A             | WEP1419          | 103-279-1       |
| D202     | BB1096    | VHCBB1096///-1 | GE-90                     |                  | HEPR2503          |                   |              | RT-262           | ECG614            |                     | WEP200           | ZEN-453         |
| D301     | 1S2076    | VHD1S2076/-1   | GE-300                    | PTC214           | HEPR0602          | RE 52             | SK3100       | RT-218           | ECG177            | 1N4148              | WEP1062          |                 |
| D501     | 10E-1     | RH-DX1006AFZ   | GE-504A                   | PTC201           | HEPR0052          | RE 49             | SK3030       | RT-213           | ECG116            | 1N4004              | WEP156           | 212-61          |
| D502     | 1S2473    | VHD1S2473///-1 | GE-300                    | PTC214           | HEPR0602          | RE 52             | SK3100       | RT-218           | ECG177            | 1N4148              | WEP1062          |                 |
| D503     | 1S2473    | VHD1S2473///-1 | GE-300                    | PTC214           | HEPR0602          | RE 52             | SK3100       | RT-218           | ECG177            | 1N4148              | WEP1062          |                 |
| D504     | 1S2473    | VHD1S2473///-1 | GE-300                    | PTC214           | HEPR0602          | RE 52             | SK3100       | RT-218           | ECG177            | 1N4148              | WEP1062          |                 |
| D505     | 1S2473    | VHD1S2473///-1 | GE-300                    | PTC214           | HEPR0602          | RE 52             | SK3100       | RT-218           | ECG177            | 1N4148              | WEP1062          |                 |
| IC1      | HA11516J4 | RH-1X1030AFZ   |                           |                  |                   |                   |              |                  |                   |                     |                  |                 |
| IC101    | TBA810SH  | RH-1X1020AFZ   | GEIC279                   |                  |                   |                   | SK3184       |                  | ECG1115A          |                     |                  |                 |
| IC201    | TC5082P   | RH-1X1039AFZ   |                           |                  |                   |                   |              |                  | ECG1197           |                     |                  |                 |
| IC202    | TC5081P   | RH-1X1038AFZ   |                           |                  |                   |                   |              |                  | ECG1208           |                     |                  |                 |
| IC203    | TC5080P   | RH-1X1061AFZ   |                           |                  |                   |                   |              |                  | ECG1207           |                     |                  |                 |
| IC501    | 1X1031AF  | RH-1X1031AFZ   |                           |                  |                   |                   |              |                  |                   |                     |                  |                 |
| Q1       | 2SC784R   | VS2SC784-R/1F  | GE-60*                    | PTC132*          | HEPS0008*         | RE 28*            | SK3018*      | RT-187           | ECG229*           | 2SC784              | WEP784           | ZEN-104         |
|          | 2SC784    |                | GE-60*                    | PTC132*          | HEPS0008*         | RE 28*            | SK3018*      | RT-187           | ECG229*           | 2SC784              | WEP784           | ZEN-104         |
|          | 2SC1675M  | VS2SC1675M/-1  | GE-213                    | PTC139*          | HEPS0025*         | RE 13*            | SK3124       | RT-308           | ECG229*           |                     | WEP956*          | ZEN-127         |
|          | 2SC1675   |                | GE-213                    | PTC139*          | HEPS0025*         | RE 13*            | SK3124       | RT-308           | ECG229*           |                     | WEP956*          | ZEN-127         |
| Q2       | 2SC394Y   | VS2SC394-Y/-1  | GE-61*                    | PTC121*          | HEPS0014*         | RE 9              | SK3018*      | RT-309           | ECG229*           | 2SC394              | WEP394           | ZEN-114         |
|          | 2SC394    |                | GE-61*                    | PTC121*          | HEPS0014*         | RE 9              | SK3018*      | RT-309           | ECG229*           | 2SC394              | WEP394           | ZEN-114         |
|          | 2SC1675M  | VS2SC1675M/-1  | GE-213                    | PTC139*          | HEPS0025*         | RE 13*            | SK3124       | RT-308           | ECG229*           |                     | WEP956*          | ZEN-127         |
|          | 2SC1675   |                | GE-213                    | PTC139*          | HEPS0025*         | RE 13*            | SK3124       | RT-308           | ECG229*           |                     | WEP956*          | ZEN-127         |
| Q3       | 2SC373    | VS2SC373-G/-1  | GE-212                    | PTC121*          | HEPS0015*         | RE 192            | SK3122       | RT-105           | ECG199            | 2SC373              | WEP373           | ZEN-119         |
|          | 2SC945AK  | VS2SC945AK/-1  | GE-212                    | PTC121*          | HEPS0015*         | RE 192            | SK3124       | RT-107A          | ECG199            | 2SC945              | WEP1945          | 121-Z9000       |
| Q4       | 2SC373    | VS2SC373-G/-1  | GE-212                    | PTC121*          | HEPS0015*         | RE 192            | SK3122       | RT-105           | ECG199            | 2SC373              | WEP373           | ZEN-119         |
|          | 2SC945AP  | VS2SC945AP/-1  | GE-212                    | PTC121*          | HEPS0015*         | RE 192            | SK3124       | RT-107A          | ECG199            | 2SC945              | WEP1945          | 121-Z9000       |
| Q6       | 2SC460B   | VS2SC460B/-1   | GE-61*                    | PTC136*          | HEPS0014*         | RE 9              | SK3018*      | RT-134           | ECG107            | 2SC460              | WEP460           | 121-722         |
|          | 2SC460    |                | GE-61*                    | PTC136*          | HEPS0014*         | RE 9              | SK3018*      | RT-134           | ECG107            | 2SC460              | WEP460           | 121-722         |
|          | 2SC394Y   | VS2SC394-Y/-1  | GE-61*                    | PTC121*          | HEPS0014*         | RE 9              | SK3018*      | RT-309           | ECG229*           | 2SC394              | WEP394           | ZEN-114         |
|          | 2SC394    |                | GE-61*                    | PTC121*          | HEPS0014*         | RE 9              | SK3018*      | RT-309           | ECG229*           | 2SC394              | WEP394           | ZEN-114         |
| Q101     | 2SC945L   | VS2SC945LP/-1  | GE-212                    | PTC121*          | HEPS0015*         | RE 192            | SK3124       | RT-107A          | ECG199            | 2SC945              | WEP1945          | 121-Z9000       |
|          | 2SC945P   | VS2SC945LP/-1  | GE-212                    | PTC121*          | HEPS0015*         | RE 192            | SK3124       | RT-107A          | ECG199            | 2SC945              | WEP1945          | 121-Z9000       |
| Q102     | 2SC735Y   | VS2SC735-Y/-1  | GE-210*                   | PTC123*          | HEPS0014*         | RE 13*            | SK3122       | RT-308*          | ECG289            | 2SC735              | WEP735A          | ZEN-127         |
|          | 2SC735    |                | GE-210*                   | PTC123*          | HEPS0014*         | RE 13*            | SK3122       | RT-308*          | ECG289            | 2SC735              | WEP735A          | ZEN-127         |
|          | 2SD227V   | VS2SD227-V/-1  | GE-62                     | PTC136           | HEPS0015          | RE 13             | SK3122       | RT-105           | ECG123A           |                     | WEP736           | ZEN-119         |
|          | 2SD227    |                | GE-62                     | PTC136           | HEPS0015          | RE 13             | SK3122       | RT-105           | ECG123A           |                     | WEP736           | ZEN-119         |
| Q103     | 2SC373    | VS2SC373-G/-1  | GE-212                    | PTC121*          | HEPS0015*         | RE 192            | SK3122       | RT-105           | ECG199            | 2SC373              | WEP373           | ZEN-119         |
|          | 2SC945    |                | GE-212                    | PTC121*          | HEPS0015*         | RE 192            | SK3124       | RT-107A          | ECG199            | 2SC945              | WEP1945          | 121-Z9000       |
|          | 2SC945A   | VS2SC945AP/-1  | GE-212                    | PTC121*          | HEPS0015*         | RE 192            | SK3124       | RT-107A          | ECG199            | 2SC945              | WEP1945          | 121-Z9000       |
| Q104     | 2SC733BL  | VS2SC733-B/-1  | GE-62                     | PTC139*          | HEPS0025*         | RE 192            | SK3122       | RT-302           | ECG199            | 2SC733              | WEP66            | ZEN-114         |
|          | 2SC733    |                | GE-62                     | PTC139*          | HEPS0025*         | RE 192            | SK3122       | RT-302           | ECG199            | 2SC733              | WEP66            | ZEN-114         |
|          | 2SC900U   | VS2SC900-U/-1  | GE-62                     | PTC139*          | HEPS0015*         | RE 192            | SK3124       | RT-302           | ECG199            | 2SC900              | WEP66            | ZEN-119         |
|          | 2SC900    |                | GE-62                     | PTC139*          | HEPS0015*         | RE 192            | SK3124       | RT-302           | ECG199            | 2SC900              | WEP66            | ZEN-119         |
| Q201     | 2SC373    | VS2SC373-G/-1  | GE-212                    | PTC121*          | HEPS0015*         | RE 192            | SK3122       | RT-105           | ECG199            | 2SC373              | WEP373           | ZEN-119         |
|          | 2SC945AP  | VS2SC945AP/-1  | GE-212                    | PTC121*          | HEPS0015*         | RE 192            | SK3124       | RT-107A          | ECG199            | 2SC945              | WEP1945          | 121-Z9000       |
| Q202     | 2SC394Y   | VS2SC394-Y/-1  | GE-61*                    | PTC121*          | HEPS0014*         | RE 9              | SK3018*      | RT-309           | ECG229*           | 2SC394              | WEP394           | ZEN-114         |
|          | 2SC394    |                | GE-61*                    | PTC121*          | HEPS0014*         | RE 9              | SK3018*      | RT-309           | ECG229*           | 2SC394              | WEP394           | ZEN-114         |
|          | 2SC945AP  | VS2SC945AP/-1  | GE-212                    | PTC121*          | HEPS0015*         | RE 192            | SK3124       | RT-107A          | ECG199            | 2SC945              | WEP1945          | 121-Z9000       |
|          | 2SC945    |                | GE-212                    | PTC121*          | HEPS0015*         | RE 192            | SK3124       | RT-107A          | ECG199            | 2SC945              | WEP1945          | 121-Z9000       |
| Q203     | 2SK49F    | VS2SK49-F//--1 | GE-FET-2                  | PTC161           | HEPF0021          | RE 45             | SK3116       | RT-175           | ECG312            | 2SK49F              | WEP920           | ZEN-123         |
|          | 2SK49     |                | GE-FET-2                  | PTC161           | HEPF0021          | RE 45             | SK3116       | RT-175           | ECG312            | 2SK49               | WEP920           | ZEN-123         |
|          | 2SK61Y    | VS2SK61-Y//--1 | GE-FET-2                  | PTC161           | HEPF0021          | RE 45             | SK3116       | RT-175           | ECG312            | 2SK61Y              | WEP920           | ZEN-123         |
|          | 2SK61     |                | GE-FET-2                  | PTC161           | HEPF0021          | RE 45             | SK3116       | RT-175           | ECG312            | 2SK61               | WEP920           | ZEN-123         |
| Q204     | 2SC373    | VS2SC373-G/-1  | GE-212                    | PTC121*          | HEPS0015*         | RE 192            | SK3122       | RT-105           | ECG199            | 2SC373              | WEP373           | ZEN-119         |
|          | 2SC945AP  | VS2SC945AP/-1  | GE-212                    | PTC121*          | HEPS0015*         | RE 192            | SK3124       | RT-107A          | ECG199            | 2SC945              | WEP1945          | 121-Z9000       |
|          | 2SC945    |                | GE-212                    | PTC121*          | HEPS0015*         | RE 192            | SK3124       | RT-107A          | ECG199            | 2SC945              | WEP1945          | 121-Z9000       |
| Q205     | 2SC373    | VS2SC373-G/-1  | GE-212                    | PTC121*          | HEPS0015*         | RE 192            | SK3122       | RT-105           | ECG199            | 2SC373              | WEP373           | ZEN-119         |
|          | 2SC945AP  | VS2SC945AP/-1  | GE-212                    | PTC121*          | HEPS0015*         | RE 192            | SK3124       | RT-107A          | ECG199            | 2SC945              | WEP1945          | 121-Z9000       |
|          | 2SC945    |                | GE-212                    | PTC121*          | HEPS0015*         | RE 192            | SK3124       | RT-107A          | ECG199            | 2SC945              | WEP1945          | 121-Z9000       |
| Q206     | 2SK61Y    | VS2SK61-Y//--1 | GE-FET-2                  | PTC161           | HEPF0021          | RE 45             | SK3116       | RT-175           | ECG312            | 2SK61Y              | WEP920           | ZEN-123         |
|          | 2SK61     |                | GE-FET-2                  | PTC161           | HEPF0021          | RE 45             | SK3116       | RT-175           | ECG312            | 2SK61               | WEP920           | ZEN-123         |
|          | 2SK49F    | VS2SK49-F//--1 | GE-FET-2                  | PTC161           | HEPF0021          | RE 45             | SK3116       | RT-175           | ECG312            | 2SK49F              | WEP920           | ZEN-123         |
|          | 2SK49     |                | GE-FET-2                  | PTC161           | HEPF0021          | RE 45             | SK3116       | RT-175           | ECG312            | 2SK49               | WEP920           | ZEN-123         |
| Q207     | 2SC1741   | VS2SC1741//--1 | GE-47                     | PTC144*          | HEPS3001          | RE 17*            | SK3024       | RT-114*          | ECG128            |                     | WEP59            |                 |
|          | 2SD471S   | VS2SD471-S/-1  | GE-268                    | PTC144*          | HEPS3001*         | RE 196*           | SK3124       | RT-114*          | ECG289            |                     | WEP910           |                 |
| Q301     | 2SK49F    | VS2SK49-F//--1 | GE-FET-2                  | PTC161           | HEPF0021          | RE 45             | SK3116       | RT-175           | ECG312            |                     | WEP920           | ZEN-123         |
|          | 2SK49     |                | GE-FET-2                  | PTC161           | HEPF0021          | RE 45             | SK3116       | RT-175           | ECG312            |                     | WEP920           | ZEN-123         |
|          | 2SK61Y    | VS2SK61-Y//--1 |                           |                  |                   |                   |              |                  |                   |                     |                  |                 |



✱ Circuitry not used in some versions

--- Circuitry used in some versions

⊖ See parts list

✱ Nominal value

⊥ Ground

⏏ Chassis

▽ Common tie point

Measurements made with switching as shown unless noted.

Item numbers in rectangles appear in the alignment/adjustment instructions.

Supply voltage maintained as shown at input.

Voltages measured with digital meter, no signal.

Controls adjusted for normal operation.

Arrow at control indicates direction of advance.

Terminal identification may not be found on unit.

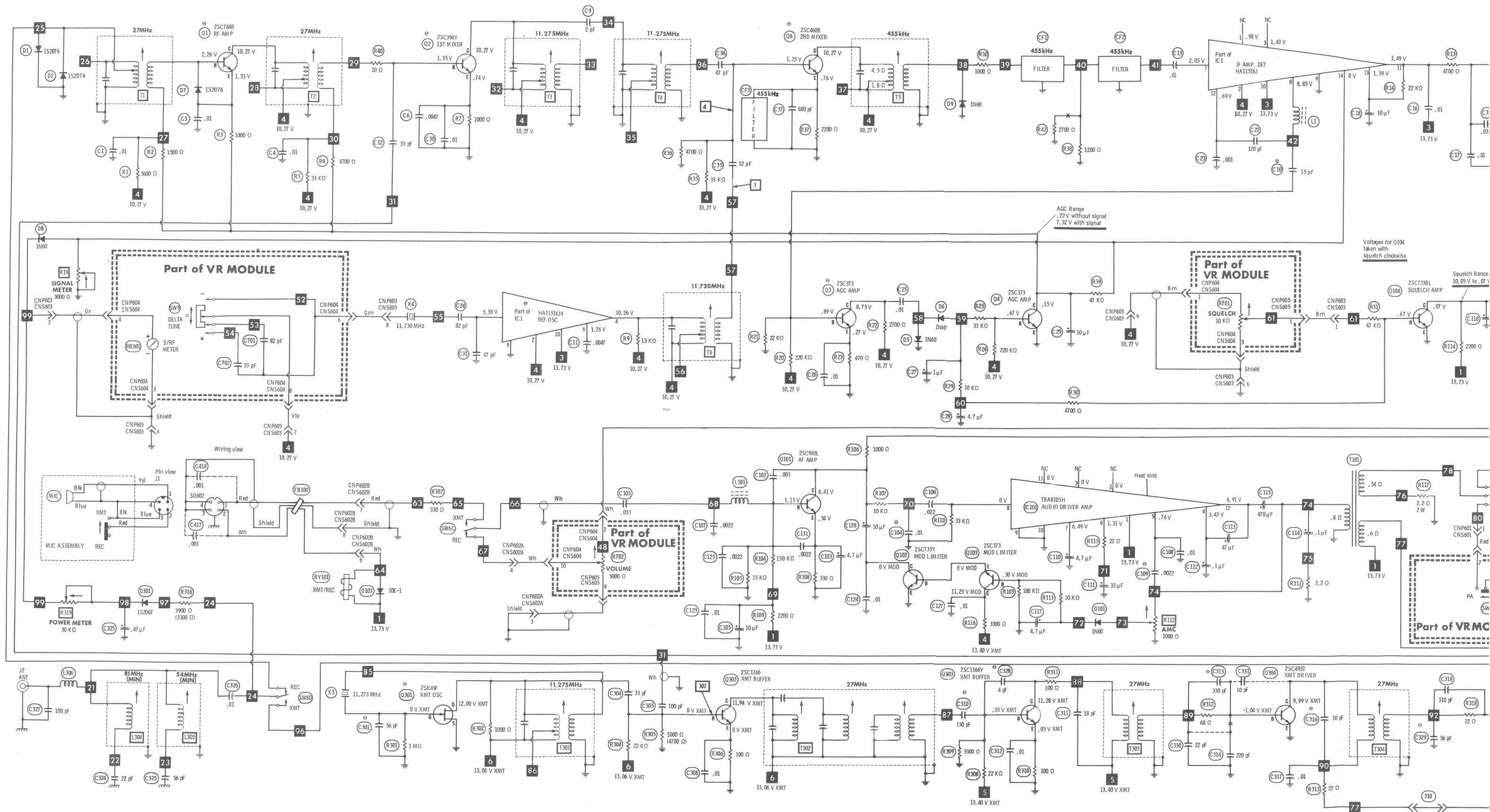
Resistors are 1/2W or less, 5% unless noted.

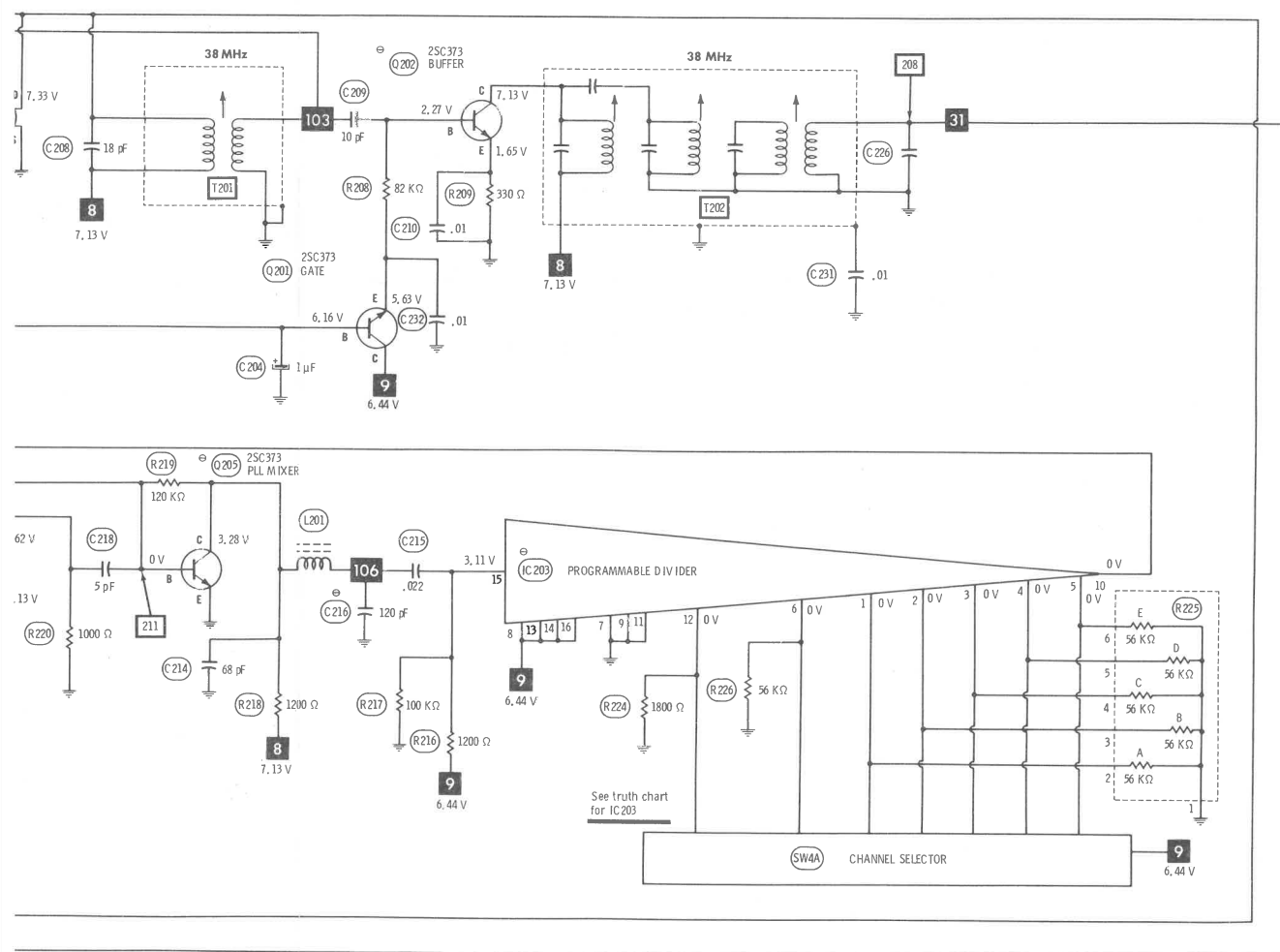
Value in ( ) used in some versions.

A PHOTOFACIT STANDARD NOTATION SCHEMATIC

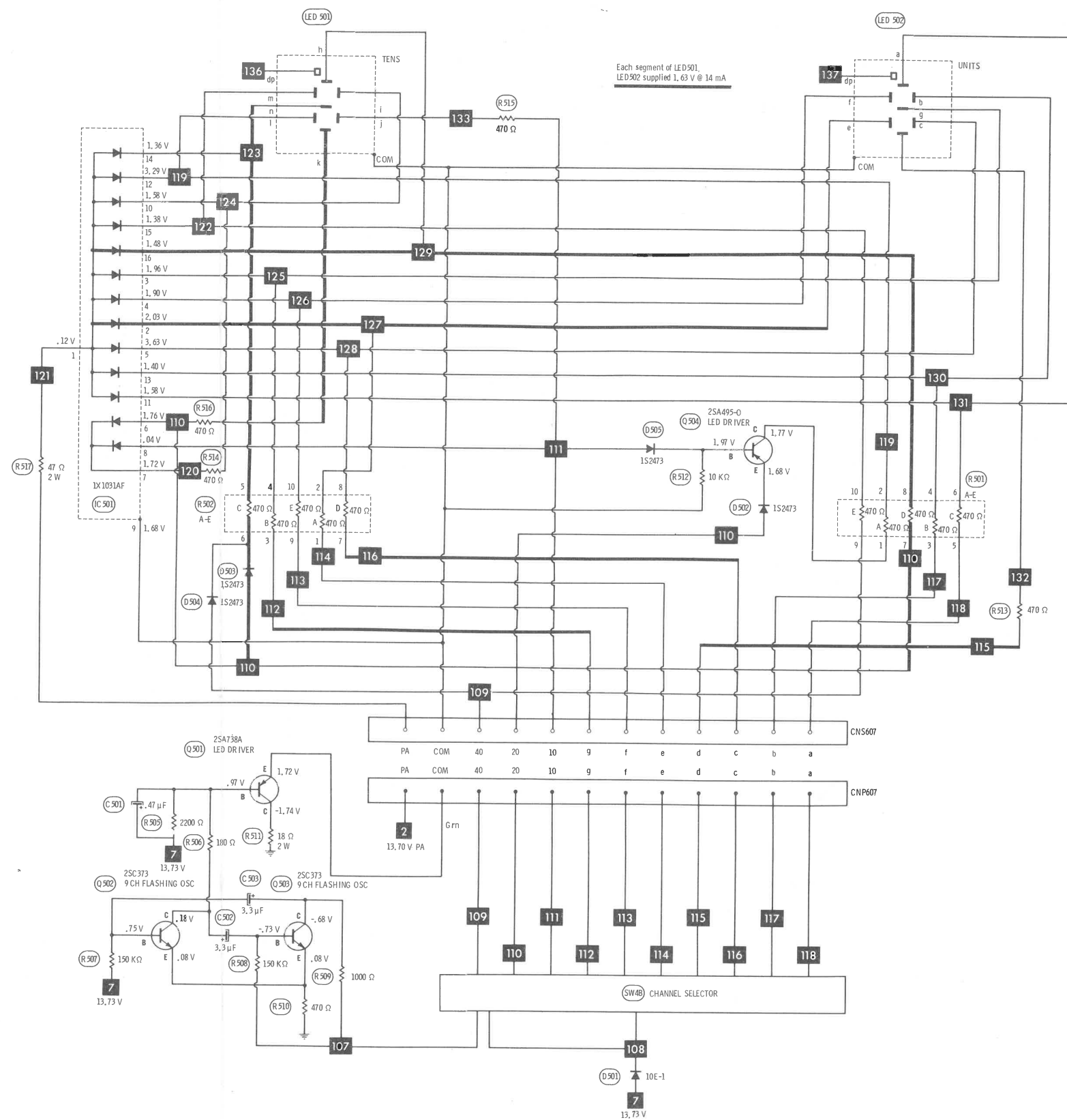
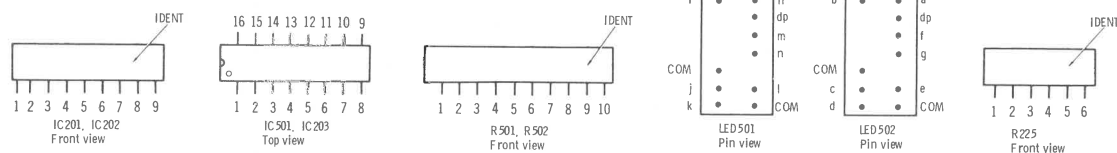
WITH **CIRCUITRACE®**

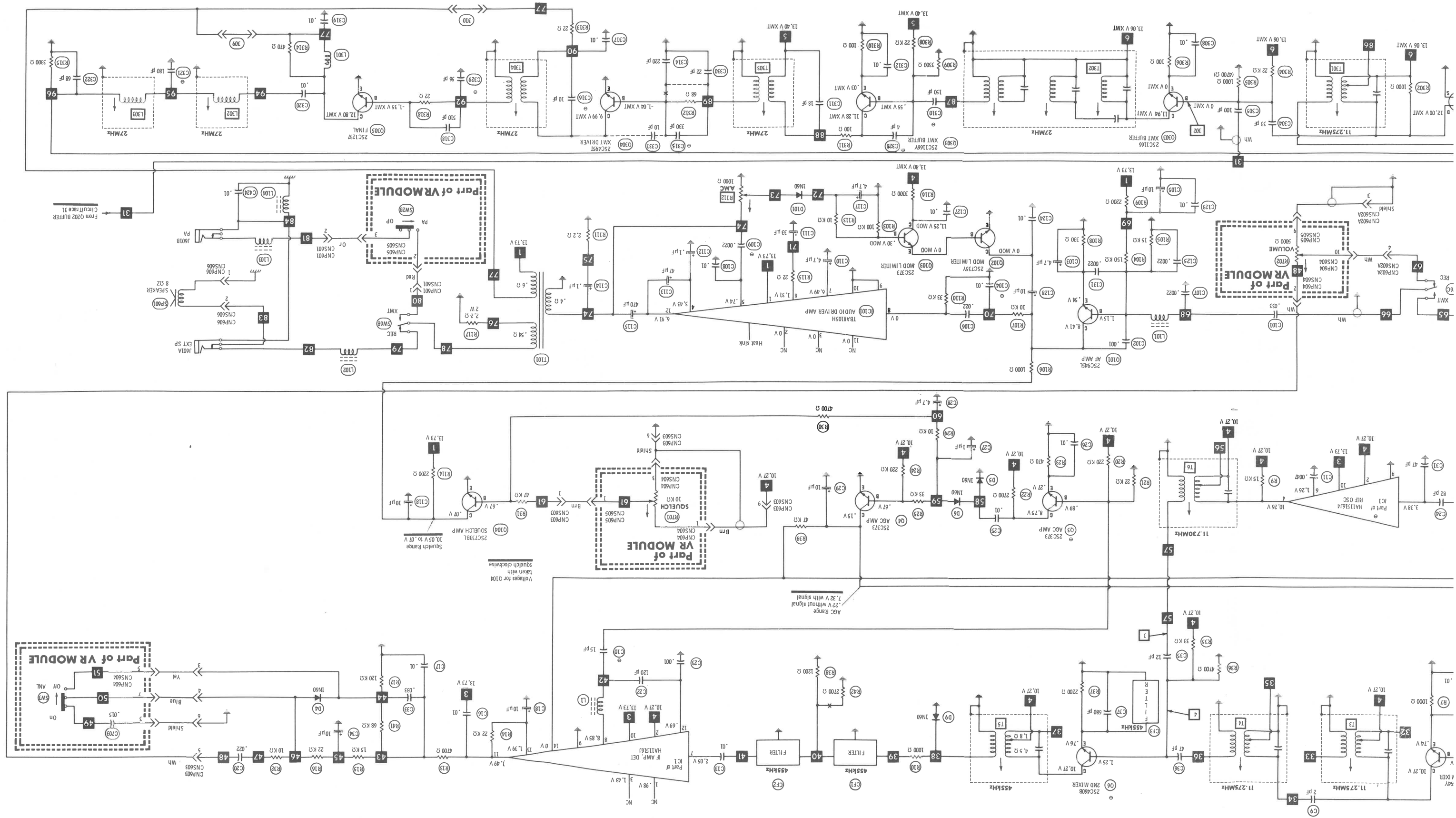
© Howard W. Sams & Co., Inc. 1978

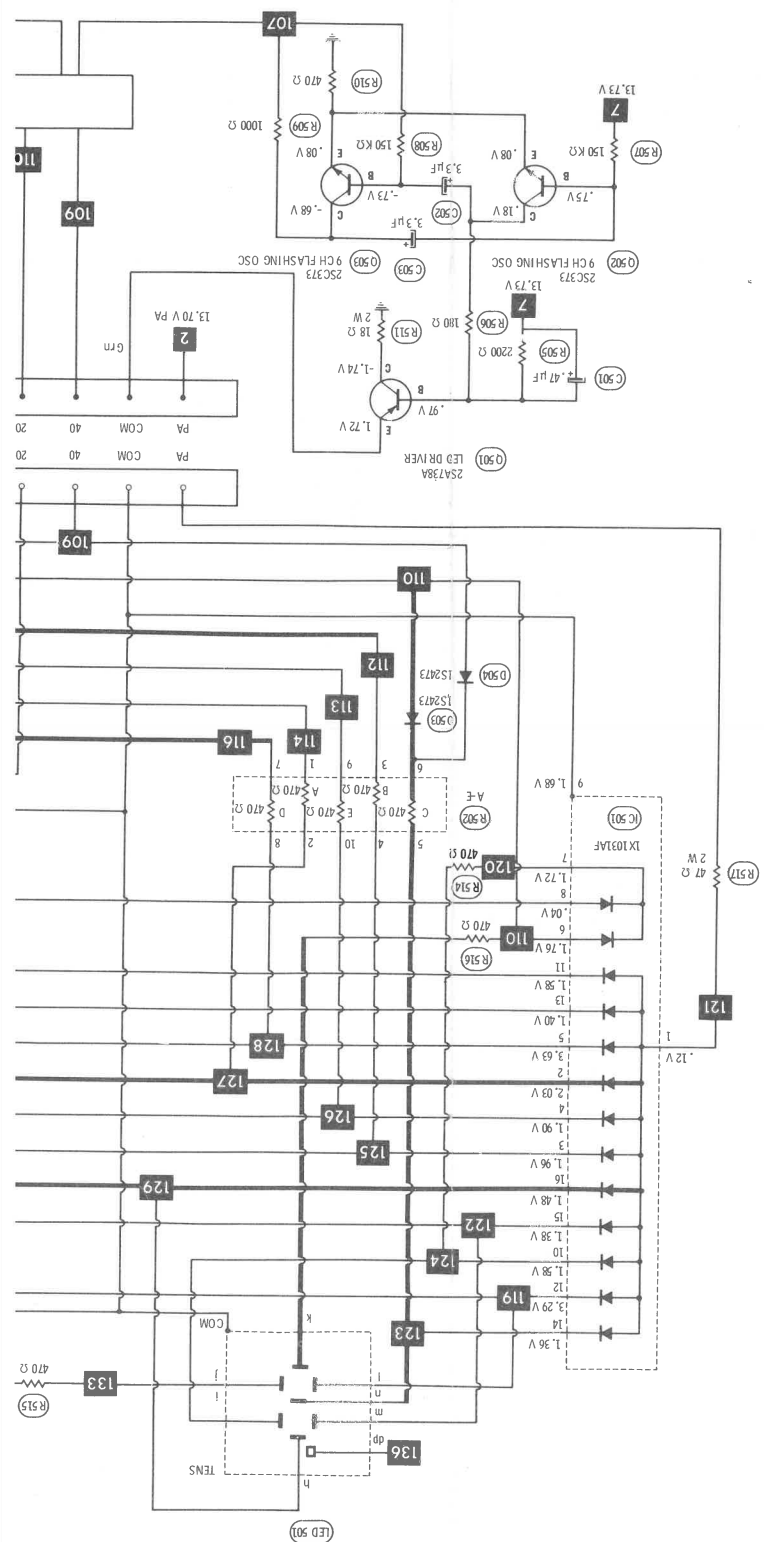
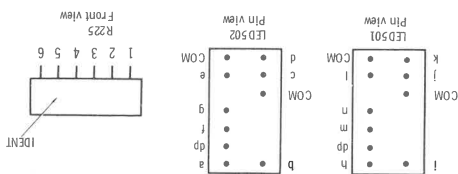




Terminal Guides







# TRUTH CHART

| 1 = <u>6.44</u> Volts      0 = <u>0</u> Volts |                          |   |   |   |   |   |  |                                                                           |
|-----------------------------------------------|--------------------------|---|---|---|---|---|--|---------------------------------------------------------------------------|
| C<br>H<br>A<br>N<br>N<br>E<br>L               | IC203<br>PROGRAM DIVIDER |   |   |   |   |   |  | REC &<br>XMT<br>VCO<br>OUTPUT<br>IN MHz<br>AT 208<br>(T202,<br>Secondary) |
|                                               | PINS                     |   |   |   |   |   |  |                                                                           |
|                                               | 6                        | 5 | 4 | 3 | 2 | 1 |  |                                                                           |
| 1                                             | 0                        | 0 | 0 | 0 | 0 | 0 |  | 38.240MHz                                                                 |
| 2                                             | 0                        | 0 | 0 | 0 | 0 | 1 |  | 38.250                                                                    |
| 3                                             | 0                        | 0 | 0 | 0 | 1 | 0 |  | 38.260                                                                    |
| 4                                             | 0                        | 0 | 0 | 1 | 0 | 0 |  | 38.280                                                                    |
| 5                                             | 0                        | 0 | 0 | 1 | 0 | 1 |  | 38.290                                                                    |
| 6                                             | 0                        | 0 | 0 | 1 | 1 | 0 |  | 38.300                                                                    |
| 7                                             | 0                        | 0 | 0 | 1 | 1 | 1 |  | 38.310                                                                    |
| 8                                             | 0                        | 0 | 1 | 0 | 0 | 1 |  | 38.330                                                                    |
| 9                                             | 0                        | 0 | 1 | 0 | 1 | 0 |  | 38.340                                                                    |
| 10                                            | 0                        | 0 | 1 | 0 | 1 | 1 |  | 38.350                                                                    |
| 11                                            | 0                        | 0 | 1 | 1 | 0 | 0 |  | 38.360                                                                    |
| 12                                            | 0                        | 0 | 1 | 1 | 1 | 0 |  | 38.380                                                                    |
| 13                                            | 0                        | 0 | 1 | 1 | 1 | 1 |  | 38.390                                                                    |
| 14                                            | 0                        | 1 | 0 | 0 | 0 | 0 |  | 38.400                                                                    |
| 15                                            | 0                        | 1 | 0 | 0 | 0 | 1 |  | 38.410                                                                    |
| 16                                            | 0                        | 1 | 0 | 0 | 1 | 1 |  | 38.430                                                                    |
| 17                                            | 0                        | 1 | 0 | 1 | 0 | 0 |  | 38.440                                                                    |
| 18                                            | 0                        | 1 | 0 | 1 | 0 | 1 |  | 38.450                                                                    |
| 19                                            | 0                        | 1 | 0 | 1 | 1 | 0 |  | 38.460                                                                    |
| 20                                            | 0                        | 1 | 1 | 0 | 0 | 0 |  | 38.480                                                                    |

| 1 = <u>6.44</u> Volts      0 = <u>0</u> Volts |                          |   |   |   |   |   |  |                                                                           |
|-----------------------------------------------|--------------------------|---|---|---|---|---|--|---------------------------------------------------------------------------|
| C<br>H<br>A<br>N<br>N<br>E<br>L               | IC203<br>PROGRAM DIVIDER |   |   |   |   |   |  | REC &<br>XMT<br>VCO<br>OUTPUT<br>IN MHz<br>AT 208<br>(T202,<br>Secondary) |
|                                               | PINS                     |   |   |   |   |   |  |                                                                           |
|                                               | 6                        | 5 | 4 | 3 | 2 | 1 |  |                                                                           |
| 21                                            | 0                        | 1 | 1 | 0 | 0 | 1 |  | 38.490                                                                    |
| 22                                            | 0                        | 1 | 1 | 0 | 1 | 0 |  | 38.500                                                                    |
| 23                                            | 0                        | 1 | 1 | 1 | 0 | 1 |  | 38.530                                                                    |
| 24                                            | 0                        | 1 | 1 | 0 | 1 | 1 |  | 38.510                                                                    |
| 25                                            | 0                        | 1 | 1 | 1 | 0 | 0 |  | 38.520                                                                    |
| 26                                            | 0                        | 1 | 1 | 1 | 1 | 0 |  | 38.540                                                                    |
| 27                                            | 0                        | 1 | 1 | 1 | 1 | 1 |  | 38.550                                                                    |
| 28                                            | 1                        | 0 | 0 | 0 | 0 | 0 |  | 38.560                                                                    |
| 29                                            | 1                        | 0 | 0 | 0 | 0 | 1 |  | 38.570                                                                    |
| 30                                            | 1                        | 0 | 0 | 0 | 1 | 0 |  | 38.580                                                                    |
| 31                                            | 1                        | 0 | 0 | 0 | 1 | 1 |  | 38.590                                                                    |
| 32                                            | 1                        | 0 | 0 | 1 | 0 | 0 |  | 38.600                                                                    |
| 33                                            | 1                        | 0 | 0 | 1 | 0 | 1 |  | 38.610                                                                    |
| 34                                            | 1                        | 0 | 0 | 1 | 1 | 0 |  | 38.620                                                                    |
| 35                                            | 1                        | 0 | 0 | 1 | 1 | 1 |  | 38.630                                                                    |
| 36                                            | 1                        | 0 | 1 | 0 | 0 | 0 |  | 38.640                                                                    |
| 37                                            | 1                        | 0 | 1 | 0 | 0 | 1 |  | 38.650                                                                    |
| 38                                            | 1                        | 0 | 1 | 0 | 1 | 0 |  | 38.660                                                                    |
| 39                                            | 1                        | 0 | 1 | 0 | 1 | 1 |  | 38.670                                                                    |
| 40                                            | 1                        | 0 | 1 | 1 | 0 | 0 |  | 38.680                                                                    |

SHARP MODEL CB-2460

## PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

### ELECTROLYTIC CAPACITORS

| ITEM No. | RATING   | REPLACEMENT DATA |                           |                  |                  |              |
|----------|----------|------------------|---------------------------|------------------|------------------|--------------|
|          |          | MFR. PART No.    | CORNELL-DUBILIER PART No. | MALLORY PART No. | SPRAGUE PART No. |              |
|          |          |                  |                           |                  | Q-LINE           | GENERAL LINE |
| C14      | 100 10V  | VCEAAU1AW107Y    | PC100-10                  | VTT100E10        | QV1-93           | EV-1130      |
| C18      | 10 16V   | VCEAAU1CW106Y    | PC10-25                   | VTT10B25         | QV1-41           | EV-1222      |
| C27      | 1 50V    | VCEAAU1HW105A    | PC1-50                    | VTT1A50          | QV1-11           | EV-1615      |
| C28      | 4.7 25V  | VCEAAU1EW475A    | PC5-50                    | VTT4R7B50        | QV1-27           | EV-1319      |
| C29      | 10 16V   | VCEAAU1CW106Y    | PC10-25                   | VTT10B25         | QV1-41           | EV-1222      |
| C34      | 10 16V   | VCEAAU1CW106Y    | PC10-25                   | VTT10B25         | QV1-41           | EV-1222      |
| C103     | 4.7 25V  | VCEAAU1EW475A    | PC5-50                    | VTT4R7B50        | QV1-27           | EV-1319      |
| C105     | 10 16V   | VCEAAU1CW106Y    | PC10-25                   | VTT10B25         | QV1-41           | EV-1222      |
| C110     | 4.7 16V  | VCEAAU1CW476Y    | PC5-50                    | VTT4R7B50        | QV1-27           | EV-1319      |
| C111     | 33 10V   | VCEAAU1AW336Y    | PC30-25                   | VTT33B10         | QV1-61           | EV-1125      |
| C112     | .1 16V   | VCEAAU1CA104M    |                           | TDC104M050EL     | QDT1-2           | SD50-R109    |
| C113     | 47 16V   | VCEAAU1CW476Y    | PC50-16                   | VTT47D16         | QV1-73           | EV-1226      |
| C114     | .1 16V   | VCEAAU1CA104M    |                           | TDC104M050EL     | QDT1-2           | SD50-R109    |
| C115     | 470 10V  | VCEAAU1AW477Y    | PC500-16                  | VTT470K16        | QV1-149          | EV-1150      |
| C116     | 1000 16V | VCEAAU1CW108Y    | PC1000-16                 | VTT1000L16       | QV1-183          | EV-1260      |
| C117     | 4.7 25V  | VCEAAU1EW475A    | PC5-50                    | VTT4R7B50        | QV1-27           | EV-1319      |
| C118     | 10 16V   | VCEAAU1CW106Y    | PC10-25                   | VTT10B25         | QV1-41           | EV-1222      |
| C128     | 10 16V   | VCEAAU1CW106Y    | PC10-25                   | VTT10B25         | QV1-41           | EV-1222      |
| C204     | 1 50V    | VCEAAU1HW105A    | PC1-50                    | VTT1A50          | QV1-11           | EV-1615      |
| C212     | .1 10V   | VCEAAU1AB104M    |                           | TDC104M050EL     | QDT1-2           | SD50-R109    |
| C217     | 10 16V   | VCEAAU1CW106Y    | PC10-25                   | VTT10B25         | QV1-41           | EV-1222      |
| C225     | 100 10V  | VCEAAU1AW107Y    | PC100-10                  | VTT100E10        | QV1-93           | EV-1130      |
| C229     | 1000 10V | VCEAAU1AW108Y    | PC1000-16                 | VTT1000L10       | QV1-179          | EV-1160      |
| C323     | .47 6.3V | VCEAAU1XW474M    |                           | TDC474M050EL     | QDT1-19          | SD50-R479    |
| C413     | 10 16V   | VCEAAU1CW106Y    | PC10-25                   | VTT10B25         | QV1-41           | EV-1222      |
| C501     | .47 6.3V | VCEAAU1XW474M    |                           | TDC474M050EL     | QDT1-19          | SD50-R479    |
| C502     | 3.3 25V  | VCEAAU1EW335A    | PC5-50                    | VTT3R3A50        | QV1-23           | EV-1318      |
| C503     | 3.3 25V  | VCEAAU1EW335A    | PC5-50                    | VTT3R3A50        | QV1-23           | EV-1318      |

### CAPACITORS

| ITEM No. | RATING      | MFR. PART No.                        | REPLACEMENT DATA   |                           |                  |                     |                                                          |
|----------|-------------|--------------------------------------|--------------------|---------------------------|------------------|---------------------|----------------------------------------------------------|
|          |             |                                      | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | MALLORY PART No. | SPRAGUE PART No.    |                                                          |
|          |             |                                      |                    |                           |                  | Q-LINE              | GENERAL LINE                                             |
| C1       | .01         | VCCSPUIHL2R0C<br>VCCSPUIHL150J       | UK50-103           | GP4700                    | MAG5011          |                     | HY-725<br>5GA-D47<br>HY-725                              |
| C2       | .01         |                                      | UK50-103           |                           | MAG5011          |                     |                                                          |
| C3       | .01         |                                      | UK50-103           |                           | MAG5011          |                     |                                                          |
| C4       | .01         |                                      | UK50-103           |                           | MAG5011          |                     |                                                          |
| C5       | .022        |                                      | UK25-223           |                           |                  |                     |                                                          |
| C6       | .0047 10%   |                                      | DD-472             |                           |                  |                     |                                                          |
| C7       | .022        |                                      | UK25-223           |                           | GP247            |                     |                                                          |
| C8       | .01         |                                      | UK50-103           |                           | MAG5011          |                     |                                                          |
| C9       | 2 +.25      |                                      |                    |                           |                  |                     |                                                          |
| C10      | 15 N220 5%  |                                      |                    |                           | *                |                     |                                                          |
|          | 10-22       |                                      |                    |                           |                  |                     |                                                          |
| C11      | .0047 10%   |                                      | DD-472             | GP4700                    | GP247            | QFT2-91<br>QFT2-127 | 1FT-S10<br>1FT-S22<br>10TCC-T12<br>10TS-D10<br>10TCC-Q82 |
| C12      | 33 5%       |                                      | DTZ-33             | NP033                     | CN0433           |                     |                                                          |
| C13      | .01         |                                      | UK50-103           |                           | MAG5011          |                     |                                                          |
| C15      | .01         |                                      | UK50-103           |                           | MAG5011          |                     |                                                          |
| C16      | .01         |                                      | UK50-103           |                           | MAG5011          |                     |                                                          |
| C17      | .01 50V 10% |                                      |                    |                           | EWFA1A110        |                     |                                                          |
| C20      | .022 50V    |                                      |                    |                           | M192P2239R8      |                     |                                                          |
| C22      | 120 5%      |                                      | DTZ-120            |                           | CN0312           |                     |                                                          |
| C23      | .001        |                                      | DD-102             | NP082                     | GP210            |                     |                                                          |
| C24      | 82 5%       |                                      | DTZ-82             |                           | CN0482           |                     |                                                          |
| C25      | .01         | UK50-103                             |                    | MAG5011                   | QFT2-149         |                     |                                                          |
| C26      | .01         | UK50-103                             |                    | MAG5011                   |                  |                     |                                                          |
| C30      | .01         | UK50-103                             |                    | MAG5011                   |                  |                     |                                                          |
| C31      | 47 5%       | DTZ-47                               | NP047              | CN0447                    |                  |                     |                                                          |
| C32      | .01         | UK50-103                             |                    | MAG5011                   |                  |                     |                                                          |
| C33      | .033 50V    |                                      |                    | M192P3339R8               |                  |                     |                                                          |
| C35      | 12 5%       |                                      |                    | CN0412                    |                  |                     |                                                          |
| C36      | 47 5%       | DTZ-47                               | NP047              | CN0447                    |                  |                     |                                                          |
| C37      | 680 5%      | DD-681                               | GP680              | GP368                     |                  |                     |                                                          |
| C101     | .033 50V    |                                      |                    | M192P3339R8               |                  | QFT2-149            |                                                          |
| C102     | .001 50V    |                                      |                    | EWFA1A210                 | QFT2-1           |                     |                                                          |
| C104     | .01 50V     |                                      |                    | EWFA1A110                 | QFT2-91          |                     |                                                          |
|          | .01-.022    |                                      |                    |                           |                  |                     |                                                          |
| C106     | .022 50V    | RC-KZ1009AFZZ(2)<br>RC-KZ1009AFZZ(2) |                    |                           | M192P2239R8      | QFT2-127            | 1FT-S22                                                  |
| C107     | .0022 50V   |                                      |                    |                           | M192P2229R8      | QFT2-27             | 1FT-D22                                                  |
| C108     | .01 50V     |                                      |                    |                           | EWFA1A110        | QFT2-91             | 1FT-S10                                                  |
| C109     | .0022 50V   |                                      |                    |                           | M192P2229R8      |                     |                                                          |
| C119     | .1          |                                      |                    | CK-104                    | MAG5001          |                     |                                                          |
| C120     |             |                                      |                    |                           |                  |                     |                                                          |
| C121     |             |                                      |                    |                           |                  |                     |                                                          |
| C122     | .1          |                                      |                    | CK-104                    | MAG5001          |                     |                                                          |
| C123     | .01         |                                      |                    |                           | EWFA1A110        | QFT2-91             | 1FT-S10                                                  |
| C124     | .01         |                                      |                    | UK50-103                  | MAG5011          |                     |                                                          |
| C125     | .0022       |                                      |                    | M192P2229R8               | QFT2-27          | 1FT-D22             |                                                          |
| C126     | .033        |                                      |                    | M192P3339R8               | QFT2-149         | 1FT-S33             |                                                          |
| C127     | .01         |                                      | UK50-103           | MAG5011                   |                  |                     |                                                          |
| C131     | .0022       |                                      |                    | GP222                     |                  | 10TS-D22            |                                                          |
| C201     | 15 NPO 5%   |                                      | DTZ-15             | NP015                     | CN0415           |                     | 10TCC-Q15                                                |
|          | 10-47       |                                      |                    |                           |                  |                     |                                                          |

# PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

## CAPACITORS (cont)

| ITEM No. | RATING     | MFR. PART No. | REPLACEMENT DATA   |                           |                  |                  |              |
|----------|------------|---------------|--------------------|---------------------------|------------------|------------------|--------------|
|          |            |               | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | MALLORY PART No. | SPRAGUE PART No. |              |
|          |            |               |                    |                           |                  | Q-LINE           | GENERAL LINE |
| C202     |            | RT0-H1009AFZZ |                    |                           |                  |                  |              |
| C203     | 10 NPO     |               | DTZ-10             | NP010                     | CN0410           |                  | 10TCC-Q10    |
| C205     | 10-47      |               |                    |                           |                  |                  |              |
| C206     | .01        |               | UK50-103           |                           | MAG5011          |                  |              |
| C207     | .01        |               | UK50-103           |                           | MAG5011          |                  |              |
| C208     | 18 NPO 5%  |               |                    |                           | CN0418           |                  | 10TCC-Q18    |
| C209     | 10 NPO     |               | DTZ-10             | NP010                     | CN0410           |                  | 10TCC-Q10    |
| C210     | .01        |               | UK50-103           |                           | MAG5011          |                  |              |
| C211     | 15 N750 5% |               | DTN-15             | N15                       | CN7415           |                  | 10TCU-Q15    |
| C213     | 22 NPO 5%  |               | DTZ-22             | NP022                     | CN0422           |                  | 10TCC-Q22    |
| C214     | 68         |               | DTZ-68             | NP068                     | CN0468           |                  | 10TCC-Q68    |
| C215     | .022       |               | UK25-223           |                           |                  |                  | HY-725       |
| C216     | 120 5%     |               | DTZ-120            |                           | CN0312           |                  | 10TCC-T12    |
|          | 120-330    |               |                    |                           |                  |                  |              |
| C218     | 5 NPO      |               | DTZ-4R7            | NP04P7                    | CN0547           |                  | 10TCC-V47    |
| C219     | .01        |               | UK50-103           |                           | MAG5011          |                  |              |
| C220     | 5 NPO      |               | DTZ-4R7            | NP04P7                    | CN0547           |                  | 10TCC-V47    |
|          | 2-5        |               |                    |                           |                  |                  |              |
| C221     | 10         |               |                    |                           |                  |                  |              |
|          | 0-10       |               |                    |                           |                  |                  |              |
| C222     |            | RT0-H1009AFZZ |                    |                           |                  |                  |              |
| C223     | .01        |               | UK50-103           |                           | MAG5011          |                  |              |
| C224     | .01        |               | UK50-103           |                           | MAG5011          |                  |              |
| C226     | 39 5%      |               |                    |                           | CN0439           |                  | 10TCC-Q39    |
| C227     | .001       |               | DD-102             |                           | GP210            |                  | 10TS-D10     |
| C228     | 5 NPO +.25 | VCCCPU1HH5ROC |                    |                           |                  |                  |              |
| C230     | 10 N750 5% | VCCCPU1HL120J | DTN-10             | N10                       | CN7410           |                  | 10TCU-Q10    |
|          | 10-18      |               |                    |                           |                  |                  |              |
| C231     | .01        |               | UK50-103           |                           | MAG5011          |                  |              |
| C232     | .01        |               | UK50-103           |                           | MAG5011          |                  |              |
| C233     | 68 5%      |               | DTZ-68             | NP068                     | CN0468           |                  | 10TCC-Q68    |
|          | 56-68      |               |                    |                           |                  |                  |              |
| C301     | 56 5%      |               |                    |                           | CN0456           |                  | 10TCC-Q56    |
| C302     | .01        |               | UK50-103           |                           | MAG5011          |                  |              |
| C304     | 33 5%      |               | DTZ-33             | NP033                     | CN0433           |                  | 10TCC-Q33    |
| C305     | 100 5%     |               | DTZ-100            | NP0100                    | CN0310           |                  | 10TCC-T10    |
| C308     | .01        |               | UK50-103           |                           | MAG5011          |                  |              |
| C309     | .01        |               | UK50-103           |                           | MAG5011          |                  |              |
| C310     | 150 5%     |               | DTZ-150            |                           | CN0315           |                  | 10TCC-T15    |
|          | 100-220    |               |                    |                           |                  |                  |              |
| C311     | 18 N750    |               | DTN-15             | N15                       | CN7415           |                  | 10TCU-Q15    |
| C312     | .01        |               | UK50-103           |                           | MAG5011          |                  |              |
| C313     | .01        |               | UK50-103           |                           | MAG5011          |                  |              |
| C314     | 220 5%     |               |                    | CD15FD221J03              | SX322            | QW1-35           | MMA-221      |
|          | 220-330    |               |                    |                           |                  |                  |              |
| C315     | 470 5%     |               | DD-471             | GP470                     | GP347            |                  | 10TS-T47     |
|          | 330-470    |               |                    |                           |                  |                  |              |
| C316     | 22 5%      |               | DTZ-22             | NP022                     | CN0422           |                  | 10TCC-Q22    |
|          | 10-39      |               |                    |                           |                  |                  |              |
| C317     | .01        |               | UK50-103           |                           | MAG5011          |                  |              |
| C318     | 510 5%     |               | DD-501             | GP500                     | GP350            |                  | 10TS-T50     |
| C319     | .01        |               | UK50-103           |                           | MAG5011          |                  |              |
| C320     | .01        |               | UK50-103           |                           | MAG5011          |                  |              |
| C321     | 180 5%     |               | DTZ-180            |                           |                  |                  | 10TCC-T18    |
|          | 100-220    |               |                    |                           |                  |                  |              |
| C322     | 68 5%      |               | DTZ-68             | NP068                     | CN0468           |                  | 10TCC-Q68    |
| C324     | 22 5%      |               | DTZ-22             | NP022                     | CN0422           |                  | 10TCC-Q22    |
| C325     | 56 5%      |               |                    |                           | CN0456           |                  | 10TCC-Q56    |
| C326     | .01        |               | UK50-103           |                           | MAG5011          |                  |              |
| C327     | 100 5%     |               | DTZ-100            | NP0100                    | CN0310           |                  | 10TCC-T10    |
| C328     | 4 +.25     | VCCCPU1HL4ROC |                    |                           |                  |                  |              |
|          | 0-4        |               |                    |                           |                  |                  |              |
| C329     | 56 5%      |               |                    |                           | CN0456           |                  | 10TCC-Q56    |
|          | 33-68      |               |                    |                           |                  |                  |              |
| C330     | 22 5%      |               | DTZ-22             | NP022                     | CN0422           |                  | 10TCC-Q22    |
| C402     | .01        |               | UK50-103           |                           | MAG5011          |                  |              |
| C404     | .01        |               | UK50-103           |                           | MAG5011          |                  |              |
| C405     | .01        |               | UK50-103           |                           | MAG5011          |                  |              |
| C406     | .022       |               | UK25-223           |                           |                  |                  |              |
| C407     | .01        |               | UK50-103           |                           | MAG5011          |                  | HY-725       |
| C408     | .01        |               |                    |                           |                  |                  |              |
| C409     | .01        |               | UK50-103           |                           | MAG5011          |                  |              |
| C410     | .01 10%    |               | UK50-103           |                           | MAG5011          |                  |              |
| C411     | .01        |               | UK50-103           |                           | MAG5011          |                  |              |
| C412     | .01        |               | UK50-103           |                           | MAG5011          |                  |              |
| C414     | .01        |               | UK50-103           |                           | MAG5011          |                  |              |
| C417     | .001       | (1)           |                    |                           |                  |                  |              |
| C418     | .001       | (1)           |                    |                           |                  |                  |              |
| C419     | .001       | (1)           |                    |                           |                  |                  |              |
| C420     | 150 5%     |               | DTZ-150            |                           | CN0315           |                  | 10TCC-T15    |
| C421     | 150 5%     |               | DTZ-150            |                           | CN0315           |                  | 10TCC-T15    |
| C422     | 150 5%     |               | DTZ-150            |                           | CN0315           |                  | 10TCC-T15    |
| C423     | 150 5%     |               | DTZ-150            |                           | CN0315           |                  | 10TCC-T15    |
| C424     | .01        |               | UK50-103           |                           | MAG5011          |                  |              |
| C601     | .01        |               | UK50-103           |                           | MAG5011          |                  |              |
| C602     | 220 5%     |               | DTZ-220            |                           |                  |                  | 10TCC-T22    |
| C603     | 220 5%     |               | DTZ-220            |                           |                  |                  | 10TCC-T22    |
| C604     | .01        |               | UK50-103           |                           | MAG5011          |                  |              |
| C701     | 82 5%      |               | DTZ-82             | NP082                     | CN0482           |                  | 10TCC-Q82    |
| C702     | 33 5%      |               | DTZ-33             | NP033                     | CN0433           |                  | 10TCC-Q33    |
| C703     | .015 10%   |               |                    |                           | EWFTA115         | QFT2-105         | 1FT-S15      |

## PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

### CONTROLS (All wattages 1/2 watt, or less, unless listed)

| ITEM No. | FUNCTION            | RESISTANCE | REPLACEMENT DATA |                    |                    |                  |              |
|----------|---------------------|------------|------------------|--------------------|--------------------|------------------|--------------|
|          |                     |            | MFGR. PART No.   | CENTRALAB PART No. | CLAROSTAT PART No. | MALLORY PART No. | TRW PART No. |
| R19      | Signal Meter        | 5000       | RVR-M0119AFZZ    |                    |                    |                  | X260R502B    |
| R112     | AMC                 | 1000       | RVR-M0116AFZZ    |                    |                    |                  | U260R102B    |
| R319     | Power Meter         | 30K        | RVR-M0010AFZZ    |                    |                    |                  | X260R503B    |
| R701     | Squeich/PA Switch   | 10K        | RVR-B0131AFZZ    |                    |                    |                  |              |
| R702     | Volume/Power Switch | 5000       | RVR-D0103AFZZ    |                    |                    |                  |              |

### RESISTORS (Power and Special)

| ITEM No. | RATING           | REPLACEMENT DATA |                  | ITEM No. | RATING           | REPLACEMENT DATA |                  |
|----------|------------------|------------------|------------------|----------|------------------|------------------|------------------|
|          |                  | WORKMAN PART No. | MFGR. PART No.   |          |                  | WORKMAN PART No. | MFGR. PART No.   |
| R225     | Resistor Network |                  | RMPTC0003AFZZ(1) | R502     | Resistor Network |                  | RMPTC0004AFZZ(2) |
| R501     | Resistor Network |                  | RMPTC0004AFZZ(2) |          |                  |                  |                  |

(1) Consists of five 56K-ohm resistors.

(2) Consists of five 470-ohm resistors.

### COILS (RF-IF)

| ITEM No. | FUNCTION             | REPLACEMENT DATA |                      |                 | REMARKS |
|----------|----------------------|------------------|----------------------|-----------------|---------|
|          |                      | PART No.         | OTHER IDENTIFICATION | MILLER PART No. |         |
| L1       | RF Choke             | RCILX0014AGZZ    |                      |                 |         |
| L101     | RF Choke             | RCILC0023AFZZ    |                      |                 |         |
| L102     | RF Choke             | RCILC0011AFZZ    |                      | 9230-32         |         |
| L103     | RF Choke             | RCILC0011AFZZ    |                      | 4610            |         |
| L104     | RF Choke             | RCILC0011AFZZ    |                      | 4610            |         |
| L201     | RF Choke             | RCILC0024AFZZ    |                      | 4610            |         |
| L301     | RF Choke             | RCILC0011AFZZ    |                      | 4610            |         |
| L302     | Final Amp (27MHz)    | RCILR0135AFZZ    |                      | CB144           |         |
| L303     | Pi Filter (27MHz)    | RCILR0055AFZZ    |                      |                 |         |
| L304     | 81MHz Trap           | RCILR0055AFZZ    |                      |                 |         |
| L305     | 54MHz Trap           | RCILR0055AFZZ    |                      |                 |         |
| L306     | RF Choke             | RCILR0310AFZZ    |                      |                 |         |
| L601     | RF Choke             | RCILC0059AFZZ    |                      |                 |         |
| L602     | RF Choke             | RCILC0059AFZZ    |                      |                 |         |
| T1       | Rec Ant (27MHz)      | RCILA0377AFZZ    |                      |                 |         |
| T2       | RF Amp (27MHz)       | RCILR0304AFZZ    |                      |                 |         |
| T3       | IF (11.275MHz)       | RCILIO210AFZZ    |                      |                 |         |
| T4       | IF (11.275MHz)       | RCILIO210AFZZ    |                      |                 |         |
| T5       | IF (455kHz)          | RCILIO154AFZZ    |                      |                 |         |
| T6       | Rec Osc (11.730MHz)  | RCILO1210AFZZ    |                      |                 |         |
| T201     | VCO (38MHz)          | RCILB0383AFZZ    |                      |                 |         |
| T202     | VCO (38MHz)          | RCILIO226AFZZ    |                      |                 |         |
| T203     | Down Osc (36.960MHz) | RCILB0383AFZZ    |                      |                 |         |
| T301     | XMT OSC (11.275MHz)  | RCILB0378AFZZ    |                      |                 |         |
| T302     | XMT Mixer (27MHz)    | RCILIO225AFZZ    |                      |                 |         |
| T303     | XMT Buffer (27MHz)   | RCILB0221AFZZ    |                      |                 |         |
| T304     | XMT Driver (27MHz)   | RCILR0037AFZZ    |                      |                 |         |

### FILTER CHOKE

| ITEM No. | RATINGS            |         |                              | REPLACEMENT DATA         |                     |                | NOTES               |
|----------|--------------------|---------|------------------------------|--------------------------|---------------------|----------------|---------------------|
|          | CURRENT (Measured) | DC RES. | INDUCTANCE (0 CURRENT 1000~) | MFGR. PART No.           | THORDARSON PART No. | TRIAD PART No. |                     |
| T102     | 1.1A               | .23     | 4.26mH                       | RTRNC0003AFZZ C0003AF(1) |                     |                | (1) Number on unit. |

### TRANSFORMER (Audio Output)

| ITEM No. | IMPEDANCE |           | REPLACEMENT DATA         |                     |                | NOTES               |
|----------|-----------|-----------|--------------------------|---------------------|----------------|---------------------|
|          | PRI.      | SEC.      | MFGR. PART No.           | THORDARSON PART No. | TRIAD PART No. |                     |
| T101     | 8         | 1 98 2 18 | RTRNM0050AFZZ M0050AF(1) |                     |                | (1) Number on unit. |

## PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

### SPEAKER

| ITEM No. | TYPE          | REPLACEMENT DATA |               | NOTES |
|----------|---------------|------------------|---------------|-------|
|          |               | MFR. PART No.    | QUAM PART No. |       |
| SP601    | 3" PM, 8 Ohms | VSP0080P-208A    | 30A05Z8       |       |

### FUSE DEVICES

| ITEM No. | DESCRIPTION       | REPLACEMENT DATA |               |               |        |                     |        |                  |
|----------|-------------------|------------------|---------------|---------------|--------|---------------------|--------|------------------|
|          |                   | PART No.         |               | BUSS PART No. |        | LITTELFUSE PART No. |        | WORKMAN PART No. |
|          |                   | DEVICE           | HOLDER        | DEVICE        | HOLDER | DEVICE              | HOLDER | DEVICE           |
| F1       | 2.3A Quick Acting | QFSA232AAFNA     | QFSAJ9052AFZZ |               | HDJ    |                     | 150145 |                  |

### MICROPHONE

| ITEM No. | REPLACEMENT DATA |             |                 |          | CONNECTION DATA |        |           |           |         |          |          |
|----------|------------------|-------------|-----------------|----------|-----------------|--------|-----------|-----------|---------|----------|----------|
|          | MFR. PART No.    | GC PART No. | GC NOISE CANCEL | GC POWER | GC CONNECTOR    | GC Red | GC Shield | GC Yellow | GC Blue | GC White | GC Black |
| MIC      | RMICD0205AFZZ    | 18-032      | 18-034          | 18-010   | 18-092          | 1      | 4         | 2         | NC      | NC       | 3        |

### MISCELLANEOUS

| ITEM No. | PART NAME             | PART No.      | NOTES                                |
|----------|-----------------------|---------------|--------------------------------------|
| CF1      | Filter                | RILFA0055AFZZ | 455kHz                               |
| CF2      | Filter                | RFILA0050AFZZ | 455kHz                               |
| CF3      | Filter                | RFILA0001AFZZ | 455kHz                               |
| CNP607   | Plug                  | QPLGZ1250AFZZ | LED Indicator, Printed Circuit Board |
| FB100    | Ferrite Core          | RCORF0050AFZZ |                                      |
| J601(A)  | Jack                  | OJAKB0050AFZZ | External Speaker                     |
| J601(B)  | Jack                  | OJAKB0050AFZZ | PA Speaker                           |
| LED501   | LED                   | UHPGL-8R04/-1 | Channel Indicator                    |
| LED502   | LED                   | UHPGL-8R04/-1 | Channel Indicator                    |
| ME601    | Meter                 | RHTRE0061AFZZ | S/Rf                                 |
| PL1      | Lamp                  | RLMPW0058AFZZ | (14V @ 80mA)                         |
| PG601    | Plug                  | QSOCZ2464AFZZ | Power Supply                         |
| RY101    | Relay                 |               | REC/XMT (Part of SW6 REC/XMT)        |
| SO601    | Socket                | QSOCZ2453AFZZ | External Antenna                     |
| SO602    | Socket                | QSOCZ2465AFZZ | Microphone                           |
| SW1      | Switch                |               | Power (Part of Volume Control)       |
| SW2A     | Switch                |               | PA (Part of Squelch Control)         |
| SW3      | Socket                | QSW-B0028AGZZ | ANL                                  |
| SW4      | Switch                | QSW-R0138AFZZ | Channel Selector                     |
| SW5      | Switch                | QSW-B0003AFZZ | Delta Tune                           |
| SW6      | Switch                | RRLYZ0007AFZZ | REC/XMT (Includes Relay RY101)       |
| X1       | Crystal               | RCRSB0053AFZZ | 10.240MHz                            |
| X2       | Crystal               | RCRSB0054AFZZ | 36.960MHz                            |
| X3       | Crystal               | RCRSB0015AFZZ | 11.275MHz                            |
| X4       | Crystal               | RCRSB0016AFZZ | 11.730MHz                            |
|          | Printed Circuit Board | QPWBE0076AFZZ | LED                                  |
|          | Printed Circuit Board | QPWBF0576AFZZ | Main                                 |
|          | Printed Circuit Board | QPWBF0577AFZZ | Volume                               |
|          | Printed Circuit Board | QPWBF0580AFZZ | Power Supply                         |

### CABINETS & CABINET PARTS (When ordering specify model, chassis & color)

| ITEM                    | PART No.      | ITEM                     | PART No.      |
|-------------------------|---------------|--------------------------|---------------|
| Cabinet, Top            | GCABA3432AFSA | Knob, ANL & Delta        | JKNBM0219AFSA |
| Cabinet, Bottom         | GCAB-3031AFSA | Knob, Channel Selector   | JKNBN0299AFSA |
| Front Panel             | GWAKP1063AFSA | Knob, Volume and Squelch | JKNBN0300AFSA |
| Mobile Mounting Bracket | JHNDM3051AF00 | Chassis, Front           | LCHSZ0054AFFC |
|                         |               | Hanger, Microphone       | PHAG-8001AFFC |

### WIRING DATA

|                                                  |                       |                                |                             |
|--------------------------------------------------|-----------------------|--------------------------------|-----------------------------|
| General-use Hook-up Wire (available in 5 colors) | BELDEN No. 8523       | Coiled Microphone Cable        |                             |
| Shielded Hook-up Wire (spiral wrapped)           | BELDEN No. 8421       | 3-conductor (1 shielded) 23AWG | BELDEN No. 9471 (5')        |
| (braided)                                        | BELDEN No. 8401       |                                | BELDEN No. 8497 (6')        |
| Speaker Cable (available in 4 colors)            | BELDEN No. 8782       |                                | BELDEN No. 9472 (7-1/2')    |
| Bonding Strap                                    | BELDEN No. 8672       |                                | 28AWG BELDEN No. 9466 (6')  |
| AC Power Cord                                    | (6') BELDEN No. 17106 |                                | 31AWG BELDEN No. 9468 (10') |
|                                                  | (9') BELDEN No. 17109 | 4-conductor (unshielded) 23AWG | BELDEN No. 8415 (6')        |
|                                                  |                       | 5-conductor (1 shielded) 28AWG | BELDEN No. 9467 (6')        |
|                                                  |                       |                                | BELDEN No. 9465 (7-1/2')    |

SHARP MODEL CB-2460

