

PEARCE-SIMPSON

DIVISION OF **GLADDING** CORP.



BENGAL SSB

SECTION 1

GENERAL INFORMATION

DESCRIPTION

Your new PEARCE-SIMPSON PANTHER SSB is a compact, all-transistorized, 23 channel Citizens Band SSB/AM Transceiver. This radio is ideally suited for base and or mobile operation from 115 VAC or 12.6 VDC power source, either negative or positive. A 12 VDC power cord, a 117 VAC power cord and a mounting cradle are included with your PANTHER SSB. To provide the crystal-controlled, 23-channel operation, PEARCE-SIMPSON utilizes an all-transistor HetroSync™ circuit.

The receiver is a sensitive superheterodyne circuit featuring: Dual conversion, low noise RF stage, slide-o-tune, adjustable squelch, noise blanker, external speaker jack, and instantaneous selection of any of the 23 crystal controlled channels.

The transmitter section is designed around highly reliable silicon transistors and the HetroSync™ circuit. This circuit makes use of the output of three crystal-controlled oscillators which are beat together to produce the desired frequency. The transmitter final is a conservatively rated high gain RF power transistor.

Both transmitter and receiver work on upper sideband and lower sideband.

SPECIFICATIONS

GENERAL :

| | |
|-----------------------------|--|
| Channels | : 23 Channels, Crystal-Controlled AM, Upper Side Band and Lower Side Band |
| Frequency Range | : 26.965 MHz. to 27.255 MHz. |
| Frequency Control | : Synthesizer |
| Frequency Tolerance | : 0.025% |
| Frequency Stability | : 0.001% |
| Operating Temperature Range | : -20°C to +50°C |
| Primary Power | : Input Voltage— 13.8 VDC (EIA Standard) /117 VAC |
| Antenna | : 52-ohm Coaxial |
| Size | : 12-7/8" W × 5" H × 9-13/16" D |
| Weight | : 10 pounds |

RECEIVER :

| | |
|--------------------|---|
| Sensitivity | : S.S.B.- Less than 0.3μV for 10db S+N/N A.M.- Less than 0.8μV for 10db S+N/N |
| Selectivity | : S.S.B.- 6db at 2.0 KHz., 60db at 5.5 KHz. A.M.- 6db at 10KHz., 50db at 20 KHz. |
| Spurious Rejection | : 50db minimum |

Squelch Range : S.S.B.- Adjustable from 0.5 μ V to 1,000 μ V
 A.M.- Adjustable from 0.5 μ V to 1,000 μ V
 1st I.F. Frequency : S.S.B.- 7.8 MHz.
 A.M.- 7.8 MHz.
 2nd I.F. Frequency : A.M.- 455 KHz.
 Noise Blanker : Series gate type (uses F.E.T.)
 Slide-O-Tune Range : \pm 600 Hz.
 Audio Output Power : 3.5W

TRANSMITTER :

Power : S.S.B.-15 watts, p.e.p.
 A.M.- 3.5 watts
 Modulation Capability : A.M.- 100%
 Spurious Harmonic Suppression : 50db minimum
 Carrier Suppression : S.S.B.- -40 db
 Unwanted Side Band : -40db
 Frequency Response : S.S.B.- 350 Hz. to 2,500 Hz.
 A.M.- 250 Hz. to 2,000 Hz.
 Output Impedance : 50 ohms (unbalanced)
 S.S.B. Filter : 7.8 MHz, Crystal lattice type, 6db
 at 2.1 KHz., 60db at 5.5 KHz.
 Automatic Load Control : Holds p.e.p. to 1 db increase w/10db
 (in case of Input)

DO NOT TRANSMIT WITH YOUR EQUIPMENT UNTIL YOU HAVE RECEIVED YOUR LICENSE FROM THE FCC. Illegal operation can result in severe penalties. Be sure that you have read and understand Part 95 of the FCC Rules and Regulations before operating your station.

FREQUENCIES AVAILABLE FOR CLASS D OPERATION

| Channel | mc/s | Channel | mc/s | Channel | mc/s |
|---------|--------|---------|---------|---------|---------|
| 1 | 26.965 | 9 | 27.065* | 17 | 27.165 |
| 2 | 26.975 | 10 | 27.075* | 18 | 27.175 |
| 3 | 26.985 | 11 | 27.085* | 19 | 27.185 |
| 4 | 27.005 | 12 | 27.105* | 20 | 27.205 |
| 5 | 27.015 | 13 | 27.115* | 21 | 27.215 |
| 6 | 27.025 | 14 | 27.125* | 22 | 27.225 |
| 7 | 27.035 | 15 | 27.135 | 23 | 27.255* |
| 8 | 27.055 | 16 | 27.155 | | |

*Channels available for communications between units of different stations.
 (In accordance with FCC Part 95 .41 (d) (2))

SECTION 2

INSTALLATION & INITIAL ADJUSTMENT

IMPORTANT

BEFORE DISCARDING ANY OF THE PACKING MATERIALS, EXAMINE THEM CAREFULLY FOR ITEMS YOU MAY HAVE OVERLOOKED.

INSTALLING FIXED STATION

For fixed station operation, plug the AC power cable into the back of the unit. Connect the antenna to the terminal on the back of the unit.

MOBILE STATION INSTALLATION

For mobile installation, the mounting cradle serves as a means of mounting your BENGAL SSB in any position and attitude which will be convenient to the user. After you have determined the most convenient location in your vehicle, hold the BENGAL SSB mounted in the cradle, in the exact location desired. If nothing will interfere with mounting it in the desired position, remove the cradle from the BENGAL SSB and use it as a template to mark the location for the mounting bolts. Before drilling the holes, make sure nothing will interfere with the installing of the mounting bolts.

POWER CONNECTION

The BENGAL SSB is constructed to be used in vehicles using both negative and positive grounds. The red power lead is to be connected to the positive terminal of the battery. The black lead is to be connected to ground. If the existing wiring is used, be sure that it is heavy enough to prevent voltage drop to the radio. A good source of positive battery voltage is at the accessory connection on the ignition switch. Using this as a power source insures the radio will be off when the ignition switch is turned "OFF", and power will be supplied to the radio when it is in the "ON" or "ACCESSORY" position.

ANTENNAS

BASE STATION

The directional beam type of antenna, used within its limitations, is the most effective type to deliver the stronger signals in a particular direction. Gain in one direction is achieved by concentrating the radiated energy into a beam much as the reflector in a flashlight in all other directions. This effect is also true when the antenna is used for receiving, resulting in reducing the signal strength of stations from other directions which might interfere with communications. This type of antenna is very desirable for communications with stations in a particular area. By the addition of rotator, you will be able to beam your signals in any direction.

NOTE : The reference of antenna efficiency is a standard dipole antenna. For example, a beam antenna listed as having 6 db gain means that it has 6 db of gain over a dipole (in the direction it is pointed). Each 3 db of gain is equal to doubling the power, therefore, 6 db would equal 4 times the power. A transmitter with 3 watts output would produce as strong a signal, with 6 db gain beam, as would a 12 watt transmitter feeding a dipole. Besides the gain achieved by the beaming of the signal, additional efficiency is obtained from the added, tuned elements.

When 360-degree coverage is needed for communicating with several stations in different directions, the ground plane type of antenna is very effective. This type affords excellent coverage for communicating with mobile stations which are constantly moving from one area to another.

A modification of this antenna is the colinear ground plane which is actually a form of a beam. This beaming effects of the antenna are in a vertical direction concentrating the energy nearer the ground and reducing the sky wave which would otherwise be lost.

For a base station, the whip antenna is the least desirable type and should be used only for very short range or when no other antenna can be installed in the space available. If it is necessary that the antenna be installed on, or adjacent to the equipment, a "V" or rabbit ear type is much more desirable.

POLARIZATION

For the most efficient communications, the antennas at each station should be mounted in the same plane, i.e. both should be vertical or both should be horizontal. Since a major use of Citizens Band Radio is communicating with mobile units which are equipped with vertically mounted whip antenna, the vertical plane is preferred.

TYPICAL AUTOMOBILE INSTALLATION

MOBILE INSTALLATION

Your BENGAL SSB has been adjusted at the factory to give optimum performance using a 52-ohm antenna. There are a number of 52-ohm antennas available for mobile citizens band use.

For an automobile installation, a whip may be used with good efficiency because the automobile acts as a counterpoise and reduces detuning effects. The mounting location also has a great effect on the efficiency.

The most efficient and practical installation is a full quarter wave whip mounted on the left rear deck of fender top midway between the rear window and bumper.

The so-called "short whip" is a less efficient antenna because the radiation area is reduced. However, full use of its capability may be achieved since a shorter antenna may be mounted in a more advantageous position on a automobile, such as in the middle of the top.

There are also newer mobile antennas on the market which are made to replace the entertainment radio antenna and are similar in appearance. These antennas serve three purposes: AM and FM entertainment broadcast reception and Citizens Band transmission and reception. With some of these antennas, it is possible to simultaneously transmit on CB and receive on AM broadcast with interaction. These antennas are quite efficient for all three types of operation when properly adjusted.

For a marine installation, the full-length quarter wave whip antenna is very efficient, however, it requires radials which make it hard to mount in small boats. Another excellent antenna is the coaxial sleeve type which requires no radial. A similar antenna is the centerloaded 1/2 wave which is about the same as the full length 1/4 wave whip and it requires no radials. Care must be used when choosing one of the shorted type antennas as considerable variation in efficiency will be found between the various makes and models. As a general rule, avoid those with short radiating elements because the greater the radiating area, the stronger the radiated signal will be.

Your PEARCE-SIMPSON dealer is prepared to offer advice and will help you choose the most desirable antenna for your needs.

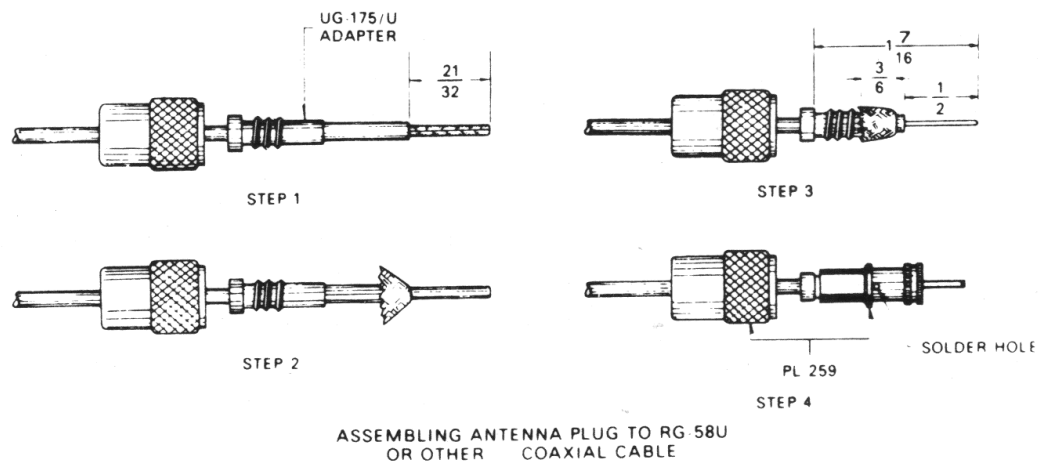


Figure 1

TRANSMISSION LINE

To connect an antenna to the transceiver, a 52-ohm coaxial transmission line is required. RG-8/U coax is recommended for length in excess of 50 feet and RG-58/U coax is recommended for length less than 50 feet to connect to the transceiver. The RG-8/U requires a PL-259 type connector and the RG-58/U coax requires a PL-259 connector with a UG-175/U adaptor. (See Figure 1 for assembling connector to RG-58/U.)

INSTALLATION ADJUSTMENTS

The output circuit of the **BENGAL SSB** transmitter has been factory adjusted to operate into any good 52-ohm antenna. No attempt should be made to tune the transmitter to the antenna. Instead, the antenna should be adjusted to present the lowest possible SWR (Standing Wave Ratio). A very low SWR means that the antenna is operating at maximum efficiency and will also mean that it is adjusted to 52 ohms. An improperly adjusted antenna causes standing waves to appear on the feed line. Since this feed line is a fixed 52 ohms, and cannot be adjusted, this mismatch appears at the transmitter. If the transmitter is adjusted to compensate for this mismatch, both it and the antenna will no longer be operating at peak efficiency. Since the transmitter has already been adjusted for 52 ohms output and the coaxial feed line has a fixed 52-ohm value, the only remaining element to be adjusted to this value is the antenna itself. When received, the antenna is probably cut as near as is possible to this value. The mounting location on the vehicle or building and surrounding objects affect the antenna however, and requires that it be adjusted to compensate for them. Many of the newer Citizens Band antennas provide means of adjusting them for lowest SWR. Instructions for doing so are included with the antenna. For such antennas as the full quarter wave length whip, it is necessary to carefully vary the length until the lowest SWR is obtained. For The built-in SWR bridge is ideal for this type of adjustment.

The **BENGAL SSB** will work into an antenna system having an SWR as high as 3:1. For best communications, you will want this figure as near 1:1 as possible so that the antenna will be operating at its best efficiency.

NOISE SUPPRESSION

The **BENGAL SSB** contains built-in automatic noise limiter on AM and noise blanker on AM and SSB, and input power filtering. In most vehicular installations, the noise suppression for the entertainment radio will be sufficient. Vehicles and boats not having this suppression may require that it be installed. In most cases, installation of distributor suppressors and generator condensers will be sufficient. In severe cases, the service of a qualified technician may be required. See your **PEARCE-SIMPSON** dealer for advice.

SECTION 3

OPERATING INSTRUCTIONS

Your BENGAL SSB operates on sixty-nine different channels. There are 23 AM channels, 23 upper sideband and 23 lower sideband. When in the AM mode, the BENGAL SSB will hear only signals being transmitted on double sideband with full carrier (AM). The unit may also receive SSB signals when on the AM mode but you will not be able to understand them. When operating in either of the SSB modes, strong AM signals may also be heard. It is recommended that you return to the AM mode if you wish to listen to these signals.

So that you will better understand the difference between AM, upper sideband and lower sideband, a simplified explanation of their characteristics is in order.

An AM signal consists of a carrier frequency and two sidebands, an upper and lower. Each sideband is an exact duplicate of the other. An AM receiver, when it detects an AM signal, filters out the carrier so that you hear only the intelligence on the sideband. If you listen to an AM signal when your receiver is in the sideband mode, the receiver will not reject the carrier frequency (unless the clarifier is tuned exactly right) and a steady tone will be heard as well as the intelligence. Therefore, for best reception of AM, your mode selector should be in the AM position.

When transmitting on single sideband, no carrier and only one sideband, either upper or lower, is being transmitted. When on AM, your receiver cannot take just this one sideband and change it into usable intelligence. You can recognize a sideband signal coming in on AM by its fluttering characteristic and its unintelligible sound. A signal transmitted on upper sideband can only be properly heard by a receiver tuned to the upper sideband. Such a signal will not be intelligible.

When listening to a sideband signal on the proper mode, it may sound either too high pitched or too low pitched. The reason for this is that your receiver may not be tuned to the exact same frequency as the transmitter it is listening to. For this reason, BENGAL SSB is equipped with a Clarifier. By turning this Clarifier, you slightly change the frequency of both your transmitter and receivers (within legal limits) so that reception will be in a normal tone.

CONTROLS AND INDICATORS

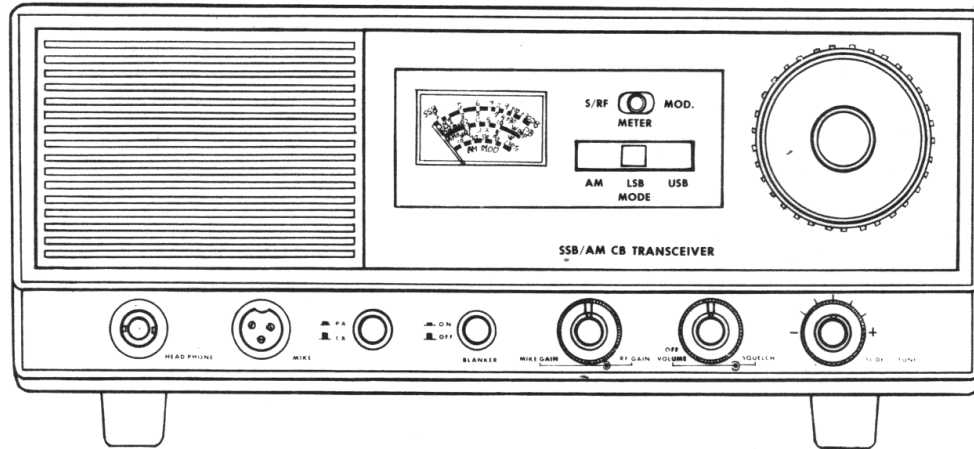


Figure 2

CHANNEL SELECTOR

The channel selector switch has 23 operating positions. This switch sets both transmit and receive frequencies simultaneously by switching the proper crystals into the PEARCE-SIMPSON HetroSync™ circuit for any of the 23 CB channels.

MODE SELECTOR

This selector enables you to select either of SSB modes (upper sideband or lower sideband) or AM. This switch changes both transmit and receive simultaneously on each mode.

VOLUME CONTROL AND ON-OFF SWITCH

This control turns the power ON and OFF, and adjust the loudness of received signal.

SQUELCH CONTROL

The squelch control is used to silence background noise (atmospheric or man-made noise) in the absence of a received radio signal. In the full counterclockwise position, the radio is un-squelched (no noise silencing at all). In the fully clockwise position, the unit is squelched for very strong signals.

RF GAIN CONTROL

This switch selects the strength of incoming signal. If too strong signal comes in, turn the control to counterclockwise. If you are listening weak signal, turn the control to clockwise.

NOISE BLANKER SWITCH

The noise blanker is desired to reduce excessive noise as electrical interference, ignition noise, etc. To operate, simply set the switch to "ON" position.

SLIDE-O-TUNE

This control allows you to vary the operating frequencies of both transmitter and receiver below and above the assigned frequency. This may be used for optimum tuning of both SSB and AM signals.

MIKE GAIN CONTROL

This control is used to vary the amount of modulation in transmit.

PA-CB SWITCH

This switch is to select the operating mode of either CB or PA.

PEARCE-SIMPSON'S EXCLUSIVE FIVE-WAY METER

This meter is exclusively designed by Pearce-Simpson to work in five different ways. Those functions are as follow:

1. S Meter: A change of one S unit indicates a change of 6 dB in signal level. The metering circuit is calibrated so that for 100 microvolts, the S meter will read S9. To operate, set the S/RF-MOD switch to "S/RF" position.
2. RF Output Meter: This shows relative RF power when transmitting. To operate, set the S/RF-MOD switch to "S/RF" position.
3. Modulation Meter: This shows relative transmitting modulation. To operate, set the S/RF-MOD switch to "MOD" position.
4. A receiver-on indicator: When the receiver is on, the meter lights up in amber color.
5. A transmitter-on indicator: When the transmitter is on, the meter lights up in red color.

SECTION 4 REPLACEMENT PARTS

SEMI CONDUCTORS

| SYMBOL | DESCRIPTION | PARTS NUMBER |
|----------|--|--------------|
| FET-1 | 2SK30-Y Noise Amplifier for N.B. | |
| FET-2 | 3SK22-Y RF Amplifier | |
| TR-1 | 2SC839H AM 2nd Local | |
| TR-2 | 2SC839H AM Mixer | |
| TR-3 | 2SC839H AM 455 KHz. 1st Amplifier | |
| TR-4 | 2SC839H AM 455 KHz. 2nd Amplifier | |
| TR-5 | 2SC839H RX 1st Mixer | |
| TR-6,8 | 2SC945R SSB AGC Amplifier | |
| TR-7 | 2SA733Q SSB AGC Amplifier | |
| TR-9,10 | 2SC945R Squelch Amplifier | |
| TR-11 | 2SC945R AM AGC Amplifier | |
| TR-12 | 2SC839H 1st Local Amplifier | |
| TR-13 | 2SC839H SSB TX/RX 7.8 MHz. Amplifier | |
| TR-14 | 2SC839H AM TX 7.8 MHz. Amplifier | |
| TR-15 | 2SC839H SSB/RX 7.8 MHz. Amplifier | |
| TR-16 | 2SC945QL 1st AF Amplifier | |
| TR-17 | 2SC945R SSB AGC Amplifier & S-Meter Amplifier | |
| TR-18 | 2SC839H 11 MHz. Local OSC | |
| TR-19 | 2SC839H AM/USB 7 MHz. Local OSC | |
| TR-20 | 2SC839H LSB 7 MHz. Local OSC | |
| TR-21 | 2SC839H Carrier OSC | |
| TR-22 | 2SC839H Buffer | |
| TR-23 | 2SC945R 3rd Mike Amplifier | |
| TR-24 | 2SC945R 2nd Mike Amplifier | |
| TR-25 | 2SC1307 TX Final Amplifier | |
| TR-26 | 2SC1306 TX Driver | |
| TR-27 | 2SC710C TX Pre-Driver | |
| TR-28 | 2SC945R AM RF Power Control | |
| TR-29 | 2SC1096M AM RF Power Control | |
| TR-30,31 | 2SC1096M AF Power Amplifier | |
| TR-32 | 2SC735Y AF Driver | |
| TR-33 | 2SC945R AF Pre-Amplifier | |
| TR-34 | 2SC945R 1st Mike Amplifier | |
| TR-35 | 2SD180M AC Stabilizer | |
| TR-36 | 2SC1096M AC Stabilizer | |
| TR-37 | 2SC945R AC Stabilizer | |
| I.C. | TA7045M 7.8 MHz./19 MHz. Mixer | |

REPLACEMENT PARTS

DIODES

| SYMBOL | DESCRIPTION | PART NUMBER |
|---|--------------------|-------------|
| D-1,2,6,7,8,9,10,23,24, 45,46,50,51,52 | IN-60 | |
| D-3,11 | IN-60 4448 | |
| D-4,5,16,17,18,20,21, 22,29,30,35,36,38,39, 48,49 | IS2473, Horizontal | |
| D-12,19,25,26,27,28,31, 32,33,34 | IN60P | |
| D-13 | ZE1.5 | |
| D-14,15,41,42,43,44 | IS1007 | |
| D-37,53 | IS2473, Vertical | |
| D-40,56,57 | BZ-090 | |
| D-54,59,62,63,64,65 | SR1K-2 | |
| D-55 | CD-37 | |
| D-58 | WZ-081 | |
| D-60 | WZ-061 | |
| D-61 | BZ-162 | |
| D-66 | KB-262 | |

INDUCTANCES

| SYMBOL | DESCRIPTION | PART NUMBER |
|------------|---------------------------------|-------------|
| L-1,10,12 | TC71024 27MHz./54MHz. Trap | |
| L-2 | LF1, 100 μ H Micro Inductor | |
| L-3 | LF4, 8.2 μ H Micro Inductor | |
| L-4 | LF4, 3.9 μ H Micro Inductor | |
| L-5,6,7 | LF1, 470 μ H Micro Inductor | |
| L-8,9 | NS1367 TX 27 MHz. Filter | |
| L-11,13,14 | NS1515B Choke | |
| L-15 | NS1516 Choke | |

TRANSFORMERS

| SYMBOL | DESCRIPTION | PART NUMBER |
|-----------|------------------------|-------------|
| T-1,14,15 | TKAC22015A 7.8 MHz. | |
| T-2 | LPN5944BM AM 455 KHz. | |
| T-3 | LLC3657 AM 455 KHz. | |
| T-4 | LLC4990A2 AM 455 KHz. | |
| T-5 | TKXC22019GN RX Antenna | |
| T-6,7 | TKXC22017AO RX RF | |
| T-8 | TKAC22526N RX 1st IF | |

REPLACEMENT PARTS

TRANSFORMERS

| SYMBOL | DESCRIPTION | PART NUMBER |
|---------------|---|-------------|
| T-9 | TKXN21017ZVI 11 MHz. | |
| T-10,11,12,13 | KXN6711BM 19 MHz. | |
| T-16 | 113CC2804AC 7.8 MHz. Carrier OSC | |
| T-17 | TKAN21016AO 7.8 MHz. Balance Modulator | |
| T-18 | TKXC2344N TX 27 MHz. | |
| T-19 | TKXN21014AO TX 27 MHz. | |
| T-20 | TKXN21379UH TX 27 MHz. | |
| T-21 | TKAC23360ZVI TX 27 MHz. | |
| P.T. | UT-123E Power Transformer | |
| I.P.T. | N24A-8580A AF Input Transformer | |
| O.P.T. | N35-8579B AF Output Transformer | |

CAPACITORS

| SYMBOL | DESCRIPTION | PART NUMBER |
|---|-----------------------------------|-------------|
| C-18 | 0.47 μ F 50 VDC Electrolytic | |
| C-2,6,88,89,145,183, 187,189,192,212 | 1 μ F 50 VDC Electrolytic | |
| C-52,155 | 2.2 μ F 25 VDC Electrolytic | |
| C-57,58,134,139,140, 141,172 | 4.7 μ F 25 VDC Electrolytic | |
| C-5,25,53,136,138 | 10 μ F 16 VDC Electrolytic | |
| C-54 | 22 μ F 16 VDC Electrolytic | |
| C-14,70,124,143,195, 197 | 47 μ F 10 VDC Electrolytic | |
| C-86 | 330 μ F 10 VDC Electrolytic | |
| C-174,179,184,201 | 220 μ F 16 VDC Electrolytic | |
| C-87,90,142 | 33 μ F 6.3 VDC Electrolytic | |
| C-188 | 33 μ F 16 VDC Electrolytic | |
| C-180,185 | 220 μ F 6.3 VDC Electrolytic | |
| C-178 | 470 μ F 16 VDC Electrolytic | |
| C-199 | 1,000 μ F 25 VDC Electrolytic | |
| C-203 | 2,200 μ F 25 VDC Electrolytic | |
| C-137 | 1 μ F 10 VDC Dip Tantal | |
| C-29,34,181 | 0.1 μ F 25 VDC Alminum | |
| C-200 | 1,000 pF 50 WV Tubra | |
| C-151 | 650 pF 50 WV Silvered Mica | |
| C-63,149 | 400 pF 50 WV Silvered Mica | |
| C-148,153,211 | 250 pF 50 WV Silvered Mica | |
| C-9,107,110,113 | 150 pF 50 WV Silvered Mica | |

REPLACEMENT PARTS

CAPACITORS

| SYMBOL | DESCRIPTION | PART NUMBER |
|--|-----------------------------------|-------------|
| C-60,61,62,127,147 | 100pF 50 WV Silvered Mica | |
| C-66,68,69,154 | 60 pF 50 WV Silvered Mica | |
| C-109,111 | 40 pF 50 WV Silvered Mica | |
| C-1,7,27,59,165 | 30 pF 50 WV Silvered Mica | |
| C-167 | 25 pF 50 WV Silvered Mica | |
| C-10,97,98,99,100,101, 102,103,104 | 20 pF 50 WV Silvered Mica | |
| C-128,130,131,170 | 10 pF 50 WV Silvered Mica | |
| C-3,11 | 5 pF 50 WV Silvered Mica | |
| C-37,67,75,158,166,208 | 2 pF 50 WV Silvered Mica | |
| C-150 | 1 pF 50 WV Silvered Mica | |
| C-39 | 15 pF 50 WV Silvered Mica | |
| C-12,13,16,19,21,22, 24,36,41,45,55,56, 65,76,77,79,85,108, 114,115,116,117,120, 125,146,152,156,162, 169,194,196,198,213 | 0.04 μ F 50 WV SL Ceramic | |
| C-202,204,205 | 0.01 μ F 50 WV SL Ceramic | |
| C-135,173,207 | 0.001 μ F 50 WV SL Ceramic | |
| C-175 | 390 pF 50 WV SL Ceramic | |
| C-106 | 150 pF 50 WV SL Ceramic | |
| C-4,33,64,72,74,78,129, 161,163,164,168,171 | 0.02 μ F 50 WV AK Ceramic | |
| C-26,32,42,43,44,46,47, 49,50,71,73,81,132, 133,144,159,160,182, 186,193,209 | 0.01 μ F 50 WV AK Ceramic | |
| C-35,38 | 0.005 μ F 50 WV AK Ceramic | |
| C-91,92,93,94,95,96 | 20 pF 50 WV N1200 | |
| C-118,121 | 20 pF 50 WV N750 | |
| C-105 | 10 pF 50 WV N470 | |
| C-48,80,157 | 0.1 μ F 25 WV Semi-conductive | |
| C-206 | 0.22 μ F 50 WV Mylar | |
| C-15,20,23,40,51,83, 176,177 | 0.04 μ F 50 WV Mylar | |
| C-31,82,84 | 0.01 μ F 50 WV Mylar | |
| C-30 | 0.002 μ F 50 WV Mylar | |
| C-8,28,112,119,122,126, 190,191,123,210 | 0.001 μ F 50 WV Mylar | |
| C-17 | 500 pF 50 WV Styrol | |

REPLACEMENT PARTS

RESISTORS

| SYMBOL | DESCRIPTION | PART NUMBER |
|---|-----------------------|-------------|
| R-1,23 | 1 M Ohm 1/4W Carbon | |
| R-24 | 560 K Ohm 1/4W Carbon | |
| R-13,33,60 | 330 K Ohm 1/4W Carbon | |
| R-25,26 | 220 K Ohm 1/4W Carbon | |
| R-27,45 | 150 K Ohm 1/4W Carbon | |
| R-162 | 120 K Ohm 1/4W Carbon | |
| R-2,11,29 | 100 K Ohm 1/4W Carbon | |
| R-16,47 | 56 K Ohm 1/4W Carbon | |
| R-22,36,38,65 | 47 K Ohm 1/4W Carbon | |
| R-9,50,80 | 33 K Ohm 1/4W Carbon | |
| R-6,113,119,156 | 27 K Ohm 1/4W Carbon | |
| R-19,69,84,91,94,97, 101,104,144,152 | 22 K Ohm 1/4W Carbon | |
| R-55,78 | 15 K Ohm 1/4W Carbon | |
| R-28,31,44,51,58,59,64, 90,93,96,121,128,134, 137,163,173 | 10 K Ohm 1/4W Carbon | |
| R-49 | 8.2 K Ohm 1/4W Carbon | |
| R-8,99,138 | 6.8 K Ohm 1/4W Carbon | |
| R-5,18,52,66,70,79,100, 109,112,120,151,157 | 5.6 K Ohm 1/4W Carbon | |
| R-74,116,133,153,160 | 4.7 K Ohm 1/4W Carbon | |
| R-30,46,54,82,83,87,103 108,114,154,158 | 3.3 K Ohm 1/4W Carbon | |
| R-4 | 2.7 K Ohm 1/4W Carbon | |
| R-14,52 | 2.2 K Ohm 1/4W Carbon | |
| R-37,39,40,41,42,43 | 1.5 K Ohm 1/4W Carbon | |
| R-125 | 1.2 K Ohm 1/4W Carbon | |
| R-7,10,15,20,34,67,71, 81,88,89,92,95,102, 110,149,155 | 1 K Ohm 1/4W Carbon | |
| R-75,76,86,105,117,122 | 470 Ohm 1/4W Carbon | |
| R-129 | 39 K Ohm 1/4W Carbon | |
| R-146 | 270 Ohm 1/4W Carbon | |
| R-12,17,21,35,62,68,72, 85,111,115,130,145, 159,171,172,118 | 220 Ohm 1/4W Carbon | |
| R-126 | 180 Ohm 1/4W Carbon | |
| R-63 | 150 Ohm 1/4W Carbon | |
| R-3,32,56,57,61,135, 136,150,161 | 100 Ohm 1/4W Carbon | |

REPLACEMENT PARTS

RESISTORS

| SYMBOL | DESCRIPTION | PART NUMBER |
|-------------------|------------------------|-------------|
| R-148 | 68 Ohm 1/4W Carbon | |
| R-48,123 | 47 Ohm 1/4W Carbon | |
| R-131 | 33 Ohm 1/4W Carbon | |
| R-127 | 2.2 Ohm 1/4W Carbon | |
| R-124 | 0.5 Ohm 1/4W Carbon | |
| R-139 | 10 K Ohm 1/4W Carbon R | |
| R-98,170 | 470 Ohm 1/4W Carbon R | |
| R-106,107,166,167 | 330 Ohm 1/4W Carbon R | |
| R-169 | 220 Ohm 1/4W Carbon R | |
| R-168 | 1 K Ohm 1/4W Carbon R | |
| R-77,164,165 | 56 Ohm 1/2W Carbon | |
| R-140,141 | 220 Ohm 1/2W Carbon | |
| R-147 | 1 Ohm 1W Metal | |
| R-142,143 | 10 Ohm 3W Metal | |

VARIABLE RESISTORS

| SYMBOL | DESCRIPTION | PART NUMBER |
|-----------------|--|-------------|
| VR-1 | KVSF10-5BM 100 K Ohm B, Semi-fixed | |
| VR-2 | KVSF10-6BM 500 K Ohm B, Semi-fixed | |
| VR-3 | KVSF10-6BM 200 K Ohm B, Semi-fixed | |
| VR-4,18/S-6-1.2 | DJ11A-SF21-10 K A/100 K B, Variable | |
| VR-8,13 | EVFBOARD01B14-10 K B X 2, Variable | |
| VR-5,16 | KVSF10-6BM 30 K Ohm B, Semi-fixed | |
| VR-6 | KVSF10-6BM 5 K Ohm B, Semi-fixed | |
| VR-7,9 | KVSF10-6BM 10 K Ohm B, Semi-fixed | |
| VR-10 | EVS-PIAAOOE12 100 Ohm B, Solid Volume | |
| VR-12 | KVSF10-5BM 5 K Ohm B, Semi-fixed | |
| VR-11,14 | KVSF10-6BM 100 K Ohm B, Semi-fixed | |

REPLACEMENT PARTS

VARIABLE RESISTORS

| SYMBOL | DESCRIPTION | PART NUMBER |
|--------|--------------------------------------|-------------|
| VR-15 | KVSF10-6BM 200 Ohm B, Semi-fixed | |
| VR-17 | KVSF10-6BM 20 K Ohm B, Semi-fixed | |
| VR-19 | KVSF10-5BM 200 Ohm B, Semi-fixed | |

CRYSTALS

| SYMBOL | DESCRIPTION | PART NUMBER |
|--------|---------------------|-------------|
| X-1 | 7.3435 MHz. HC-25/U | |
| X-2 | 11.805 MHz. HC-25/U | |
| X-3 | 11.855 MHz. HC-25/U | |
| X-4 | 11.905 MHz. HC-25/U | |
| X-5 | 11.955 MHz. HC-25/U | |
| X-6 | 12.005 MHz. HC-25/U | |
| X-7 | 12.055 MHz. HC-25/U | |
| X-8 | 7.3615 MHz. HC-25/U | |
| X-9 | 7.3715 MHz. HC-25/U | |
| X-10 | 7.3815 MHz. HC-25/U | |
| X-11 | 7.4015 MHz. HC-25/U | |
| X-12 | 7.3585 MHz. HC-25/U | |
| X-13 | 7.3685 MHz. HC-25/U | |
| X-14 | 7.3785 MHz. HC-25/U | |
| X-15 | 7.3985 MHz. HC-25/U | |
| X-16 | 7.7985 MHz. HC-25/U | |
| X-17 | 7.8015 MHz. HC-25/U | |

SWITCHES

| SYMBOL | DESCRIPTION | PART NUMBER |
|----------|------------------------------------|-------------|
| S-1-1 ~4 | AE3344 Relay | |
| S-2 | SL-2-2-2-14 Slide Switch | |
| S-3 | IFS-2U-11-1 Push Switch (blanker) | |
| S-4-1 ~8 | S15-393 2-8-3 Rotary Switch (mode) | |
| S-7-1 ~3 | R7ONO831B Rotary Switch (channel) | |
| S-8-1 ~4 | IFS-4U-7 Push Switch (PA selector) | |

REPLACEMENT PARTS

MISCELLANEOUS

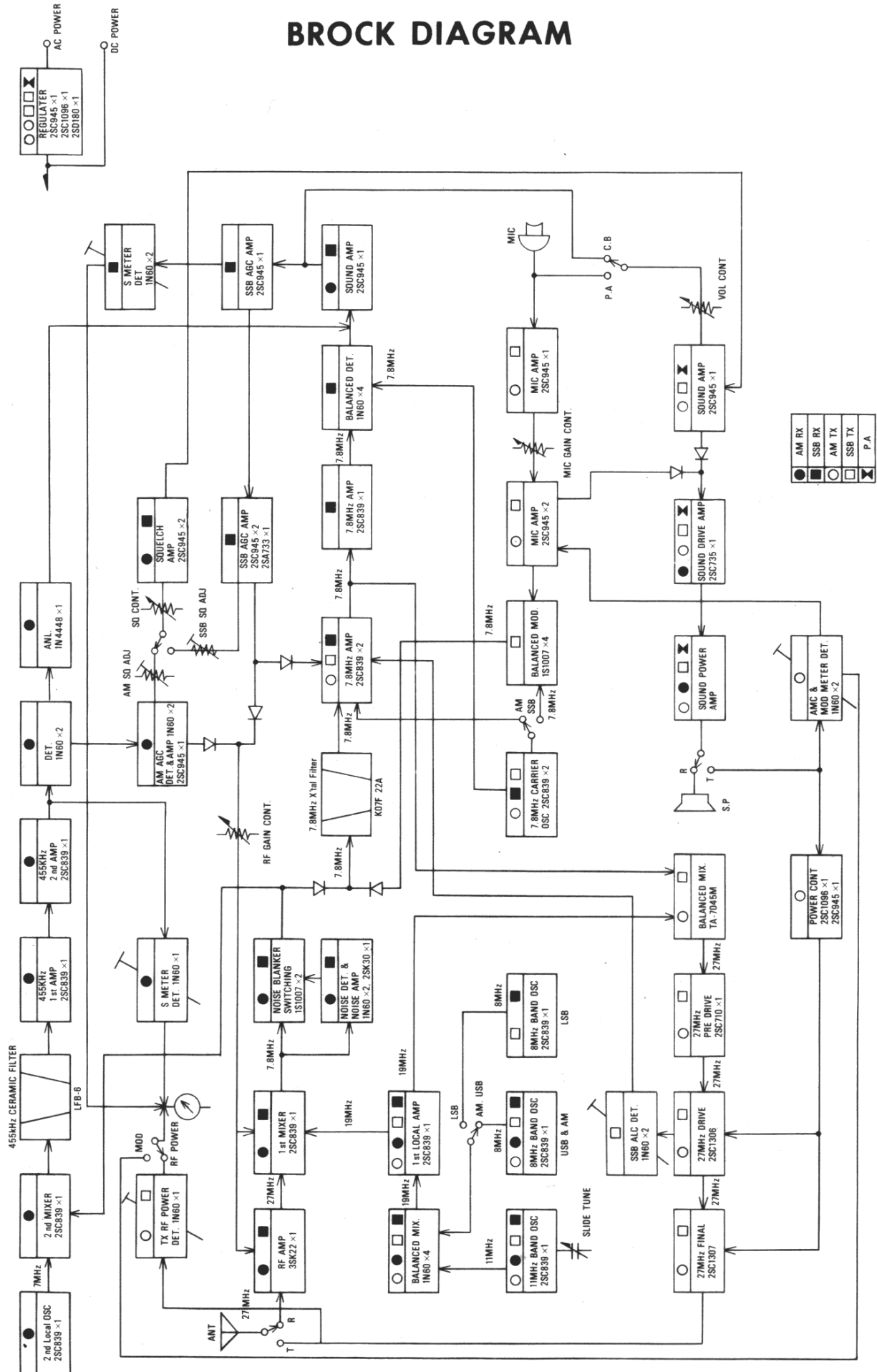
| SYMBOL | DESCRIPTION | PART NUMBER |
|----------|------------------------------------|-------------|
| PL-1 | Pilot Lamp 14 V 50 mA (yellow) | |
| PL-2 | Pilot Lamp 14 V 50 mA (red) | |
| PL-3 | Pilot Lamp 14 V 50 mA (blank) | |
| F-1 | LFB-6 Ceramic Filter | |
| F-2 | KO7F22A Crystal Filter | |
| TH | TD5-C246 Thermistor | |
| M | A-49 Meter | |
| VC | MTS-50F-20A Air-varicon | |
| CT-1 ~17 | ECV-1ZW20P-32 Ceramic Trimmer | |
| SPK | 9P10S Speaker 8 Ohm 1W | |
| ANT | M-R type Antenna Connector | |
| J-1 | LJ-035 Headphone Jack | |
| J-2 | SJ-296 Speaker Jack (external) | |
| J-3 | 3-P Microphone Jack | |
| J-5 | SJ-296 Speaker Jack (PA) | |
| J-4 | MD-60 DC Power Jack | |
| | SD-0105 Crystal Socket | |
| | RF-104 Fuse Holder (DC fuse) | |
| | AH-710 Fuse Holder (AC fuse) | |
| MIKE | 22-115-31 Microphone | |
| | Fuse 1-Amp. (AC) | |
| | Fuse 2-Amp. (DC) | |
| | 3-P Microphone Plug | |
| | PC-211 DC Power Plug | |
| | AC Power Cord w/Plug (UL approved) | |
| TP-1 ~7 | A4100-051 Test Terminal | |
| | Printed Circuit Board 123E-100-00 | |
| | Printed Circuit Board 123E-200-00 | |
| | Printed Circuit Board P-3001 A | |
| | M1-01970 Front Panel | |
| | M1-02140 Metal Chassis Complete | |
| | M1-02141 Metal Cabinet (top) | |
| | M3-02142 Bottom Plate | |
| | M3-02149 Heat-sink (A) | |
| | M4-02150 Heat-sink (B) | |
| | M4-01385 Bracket for Switch | |
| | M3-01375 Mounting Bracket (Right) | |
| | M3-01376 Mounting Bracket (Left) | |
| | M4-01299 Bracket for Transformer | |
| | M4-02073 Shield Board (0.5 t) | |

REPLACEMENT PARTS

MISCELLANEOUS

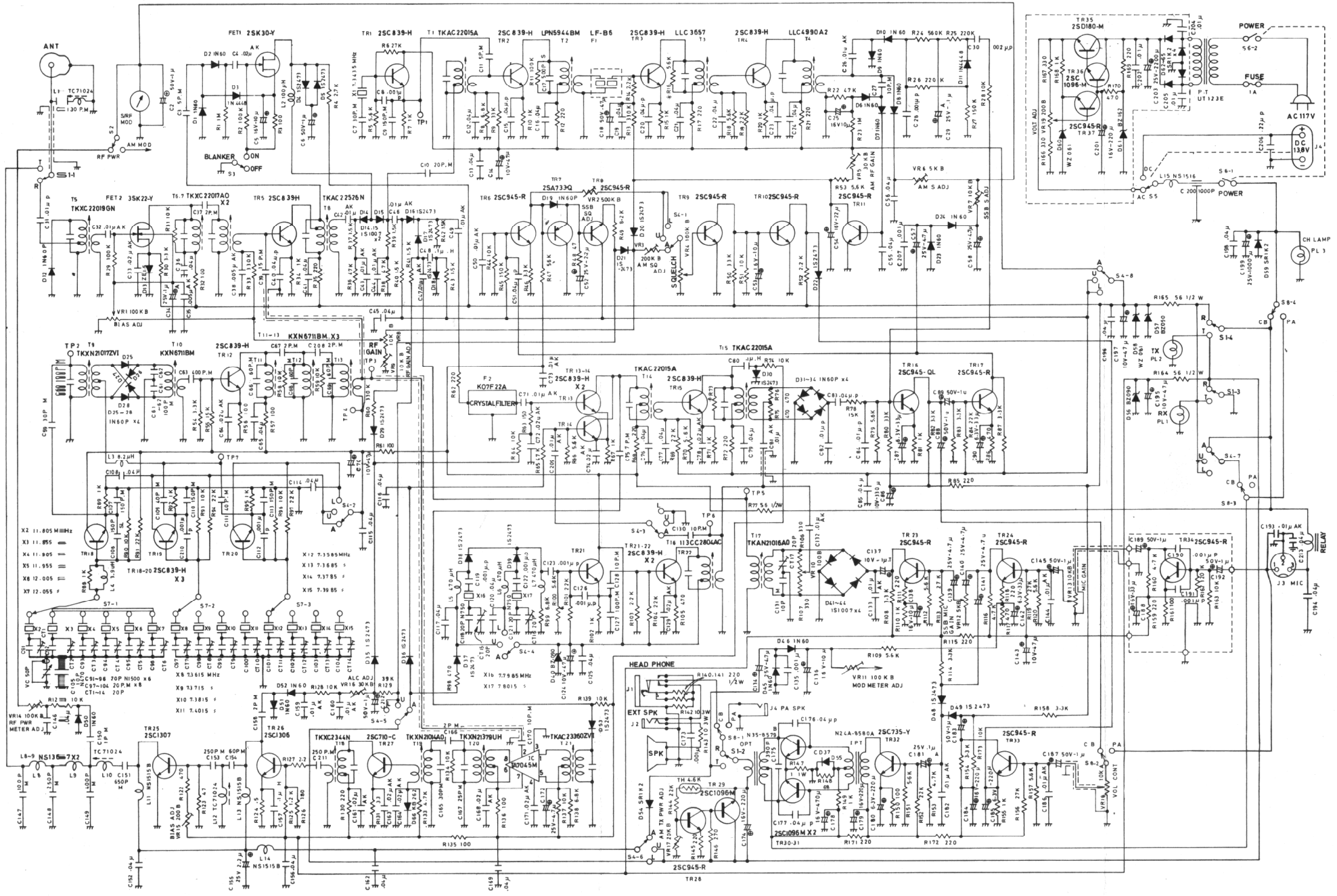
| SYMBOL | DESCRIPTION | PART NUMBER |
|--------|-----------------------------------|-------------|
| | M4-00627 Channel Knob (A) ABS | |
| | M4-02146 Squelch Knob | |
| | M4-02147 Volume Knob | |
| | M4-02148 Slide-O-Tune Knob | |
| | M4-00176 Delta Tune Knob | |
| | M4-00598 Power Switch Knob | |
| | M4-00628 Channel Knob (B) Acryl | |
| | M4-00630 Channel Dial | |
| | M3-02143 Control Plate (hairline) | |
| | M4-02145 Control Plate (black) | |
| | M3-02144 Brand Plate | |
| | M4-02158 FCC Plate | |
| | M4-00142 Microphone Plate | |
| | Instruction Booklet | |
| | Warranty Card w/envelop | |
| | FCC Application Card | |
| | Display Box | |
| | Styrofoam Box | |

BROCK DIAGRAM



| | |
|---|--------|
| ● | AM RX |
| ■ | SSB RX |
| ○ | AM TX |
| □ | SSB TX |
| ⊗ | P.A. |

SCHEMATIC DIAGRAM



FACTORY WARRANTY POLICY

This electronic equipment, manufactured by Pearce-Simpson, Inc., is warranted in accordance with the following terms and conditions —

A. PEARCE-SIMPSON, INC. WILL:

Replace any defective part of this equipment during the 90 day period following purchase.

Repair, at our factory, without charge, this equipment, if a defect develops during the first 90 days following purchase. (This repair service is free only at the factory. No reimbursements can be made for non-factory repair charges.)

B. THE PURCHASER WILL:

Return the warranty registration card within 10 days of purchase.

Pay all transportation charges involved when equipment is returned for factory repair, provide information regarding nature of failure, and accept freight collect shipment of repaired equipment.

The above is void if equipment is modified or repaired without authorization, subjected to misuse, abuse, accident, water damage or other neglect, or has its serial number defaced or removed, or if more than 9 months has elapsed since factory shipment date to dealer.

No obligation is assumed by Pearce-Simpson, Inc., to update previously manufactured equipment.

This warranty is in lieu of all other warranties expressed or implied and no representative or person is authorized to assume for us any other liability in connection with the sale of our products:

PEARCE-SIMPSON
DIVISION OF **GLADDING** CORP.

PEARCE-SIMPSON
DIVISION OF **GLADDING** CORP.
P.O. BOX 800 BISCAYNE ANNEX MIAMI, FLORIDA 33152

Other Gladding Outdoor Recreation Products Include: Gladding-Hedlund Water Skis; Gladding-Kalamazoo Sleds; Del-Rey Campers and Recreational Vehicles; Gladding-Ranger Sleeping Bags, Bowling, School, Club and Utility Bags; Gladding-South Bend Fishing Tackle; H-I Fishing Tackle; Gladding-Fishing Lines; Gladding-Marine Ropes and Cords; Pearce-Simpson Marine Communications Equipment; Del-Rey Campers and Travel Trailers; Omega Motor Homes and Travel Trailers; Aqua-Float Life Vests, Life Belts and Ring Buoys; Claricon Home Stereo Sets; Carter Sportswear and Outer Clothing.