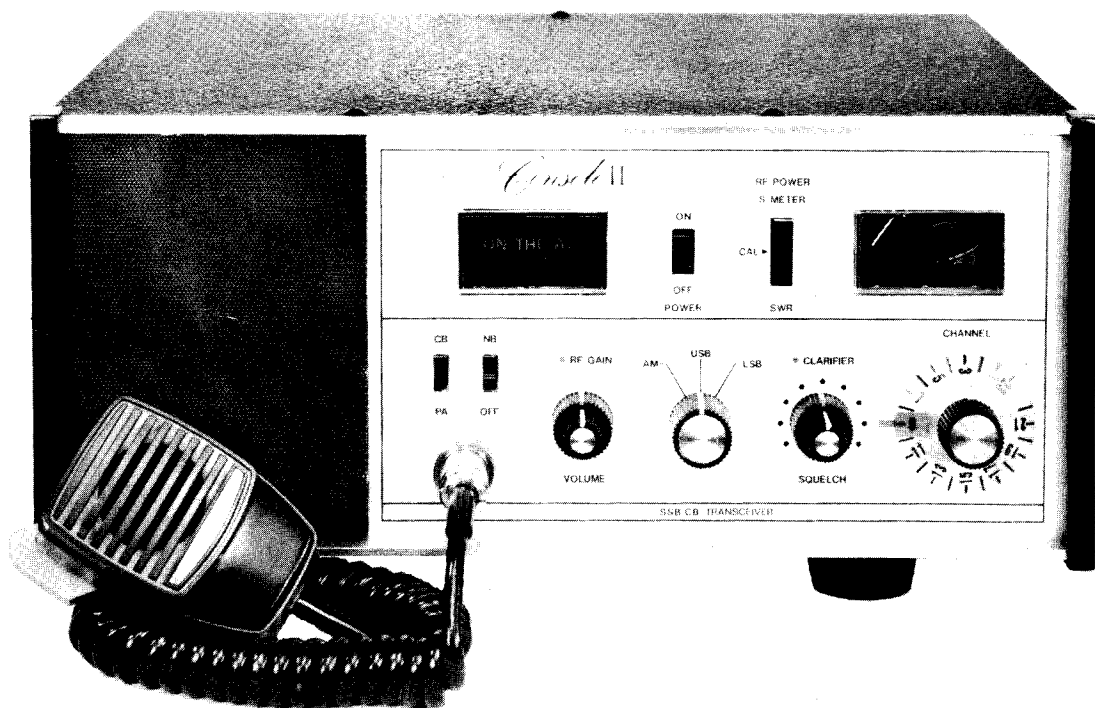




Console II

(SBE-16CB)



**23 CHANNEL AM/SSB
CITIZENS BAND TRANSCEIVER**

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SBE
220 Airport Blvd.
Watsonville, Ca., 95076

SBE-16CB CONSOLE II INSTRUCTION MANUAL

The SBE Console II transceiver is designed and engineered for licensed Class D operation on any of the 23 channels designated as Citizens Band frequencies by the Federal Communications Commission. You are required to read and understand Part 95 of the F.C.C. regulations prior to operation of this unit. Copies of Part 95 covering regulations for the Citizens Band Radio Service are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

You must also obtain a license and call sign before operating your Console II. If you do not have a Class D station license, request an application for a Class D station license for the Citizens Radio Service (F.C.C. Form 505) obtainable from any F.C.C. Field Office.

WARNING: Transmitter section adjustments must be performed by a qualified technician holding a valid first or second class F.C.C. radiotelephone license.

1.0 GENERAL DESCRIPTION AND SPECIFICATIONS

The SBE Console II transceiver is a fully solid state two-way radio intended for use as a Class D station in the Citizens Radio Service. The unit will operate in both a standard full carrier AM mode, as well as fully suppressed carrier, A3J, single sideband mode, upper or lower sideband. The Console II features fully synthesized 23 channel operation, proportional output indicator, crystal lattice filter and single conversion receiver for both SSB and AM. The equipment comes complete with microphone, power cable and crystals installed for all 23 channels.

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1.1 General

Channels	23
Frequency Range	26.965 to 27.255 MHz
Frequency Control	Synthesizer
Frequency Tolerance	0.0025%
Frequency Stability	0.001%
Operating Temperature Range	-20°C to +50°C
Humidity	95%
Microphone	Dynamic w/p.t.t. switch and coil cord
Input Voltage	117VAC, $\pm 10\%$ 13.8VDC, $\pm 10\%$
Curent Drain @ 13.8VDC	
Transmit:	AM, no mod., 1.2A SSB, full PEP output, 2.2 A. Squelched, .3A
Receive:	2W audio output, .6A
Size	5"H, 12"W, 10-1/4"D
Weight	12-3/4 pounds
Antenna Connector	UHF, SO239

1.2 Transmitter

Power Input	AM, 5 watts SSB, 15 watts, PEP
Modulation	AM, high and low level Class B
Modulation Capability	AM, 100%
Intermodulation Distortion	SSB: 3rd order -25db 5th order -30db
Carrier Suppression	SSB: -40db
Unwanted Sideband	-50db
Frequency Response	AM and SSB: 350 - 2500 Hz
Output Impedance	50 ohms, unbalanced
Automatic Load Control	Adjustable, Holds PEP to 1db increase w/10db increase of input
SSB Filter	7.8 MHz, crystal lattice type 6db @ 2.1 KHz - 50db @ 5.5 KHz

Output Indicator

Meter

1.3 Receiver

Sensitivity

SSB: Less than 0.5uV for 10db S+N/N

AM: Less than 1.0uV for 10db S+N/N

Selectivity

SSB: 6db @ 2.1 KHz, 50db @ 5.5 KHz

AM: 6db @ 5 KHz, 40db @ 20 KHz,
60db @ 60 KHz.

Image Rejection

50db

I. F. Frequency

7.8 MHz

Automatic Gain Control

(AGC): Less than 10db change in audio
output for inputs from 10 to 50,000
microvolts

Squelch

Adjustable, Threshold less than 1uV

Noise Blanker

Series gate type

Clarifier Range

+700 Hz minimum

Audio Output Power

3 watts @ 10% distortion

Frequency Response

300 - 2500 Hz

Hum and Noise

35db

Built-in Speaker

8 ohms, 3" round

External Speaker (not supplied)

8 ohms, Disables internal speaker
when connected.

1.4 PA System

Power Output

10 watts into external speaker 8 ohms.

When PA/CB switch is in PA, the PA
speaker also monitors the receiver.

The Console II complies fully with Part 95 of Volume VI Rules and Regulations of the F. C. C. for Class D mobile operation in the Citizens Radio Service.

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2.0 INSTALLATION

2.1 Antennas

One of the most important keys to achieve optimum system performance is the installation of a good antenna system. Only a properly matched antenna system will allow maximum power transfer from the 52 ohm transmission line to the radiating element. Most quality antennas previously suitable for use on AM will also be satisfactory for SSB. Due to the nature of an SSB transmitter, the VSWR must be less than 2:1 to insure linear operation of the final amplifier.

The recommended method of antenna tuning is to use an in-line watt-meter or the built-in VSWR meter in the Console II to adjust the antenna for minimum reflected power on channel 11 in the AM mode. When the antenna system is adjusted for proper matching in the AM mode, no further adjustment for SSB will be necessary.

A good ground plane vertical antenna will provide the most uniform horizontal coverage. This type of antenna is best suited for communications with a mobile unit. For point-to-point operation where both stations are fixed, a directional beam antenna will usually increase communication range since this type of antenna concentrates transmitted energy in one direction. The beam antenna will also allow the receiver to "listen" in only one direction thus reducing interfering signals.

Antenna height is an important factor when maximum range is desired. Keep the antenna clear of surrounding structures or foliage. F. C. C. regulations limit antenna height to 20 feet above an existing structure.

2.2 Emergency DC Power

If it is anticipated that the Console II may be used in the event of a power failure, a 12 volt storage battery may be connected to the terminal strip on the rear panel. Connect the negative and positive battery terminals to the corresponding points on the terminal strip using #14 or larger wire. In the event of AC power failure, the Console II will automatically draw primary power from the battery source. When AC power is restored, the Console II will automatically return to normal AC operation. It is not necessary to disconnect the emergency DC power source when the AC line is being used. It is recommended that a means to keep the storage battery fully charged be provided.

2.3 Public Address

An external 8 ohm, 10 watt speaker may be connected to the phono jack located on the rear panel of the Console II when it is to be used as a public address system. The speaker should be directed away from the microphone to

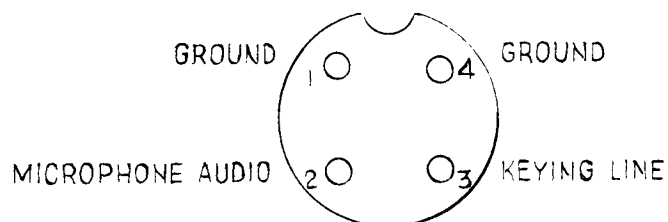
prevent acoustic feedback. NOTE: Speakers with less than 10 watt power capability may be damaged.

2.4 Remote Speaker

The external speaker jack on the rear panel of the Console II may be used to connect a remote speaker. The external speaker should have an 8 ohm impedance and be able to handle at least 3 watts. When the external speaker is plugged in, the internal speaker is disabled.

2.5 Alternate Microphones and Installation

For best results, the user should select a low impedance dynamic type microphone or a transistorized preamplified microphone. Wiring connections for the alternate microphones are shown in figure 1 below.



FEMALE MICROPHONE PLUG
REAR VIEW

3.0 CONTROL FUNCTIONS

3.1 ON/OFF Switch

A two position slide switch which applies primary power to the transceiver. This switch controls either the AC or DC input.

3.2 Volume

Used to adjust the unit's audio output to a desirable listening level.

3.3 RF Gain

Used to adjust the sensitivity of the receiver during AM or SSB reception. When the control is at its extreme counterclockwise position, the receiver sensitivity will be minimum. At this setting on the gain control, only the very strongest signals will be heard. As the control is rotated clockwise, weaker signals and noise will be heard. When the control is at its full clockwise position, sensitivity of the receiver will be maximum.

3.4 Noise Blanker Switch

This is a dual purpose control designed to tailor receiver performance for a wide range of operating extremes. When the AM mode is in use, the noise blanker switch is placed in the NB position to eliminate impulse and atmospheric noise so that very weak signals may be copied. The switch may normally be expected to be left in the NB position during AM operation. The AM receiver sensitivity is the same in both positions of the switch, however, when the noise blanker is energized in AM, a very slight loss of high voice tones might be noticed.

In the SSB mode the noise blanker has no effect on receiver fidelity but instead has the effect of enhancing receiver performance by reduction of incoming noise. During normal operation the NB switch in the SSB mode is always left in the NB position.

3.5 Channel

Selects the desired channel for transmission and reception in both AM and SSB. Channels 10 thru 15 and 23 may be used for communications between stations operating under different licenses and between units sharing the same licenses. All other channels, except channel 9, may be used only between units operating under the same license. Channel 9 has been reserved by the F.C.C. for emergency communications or immediate protection of property. Channel 9 may also be used to render assistance to a motorist; it is commonly called the HELP channel. This is an F.C.C. rule and applies to both

AM and SSB modes of transmission.

3.6 Mode

Selects either of the SSB modes (USB or LSB) or standard double sideband AM. Unless the station with which communications is desired is equipped with SSB, the AM mode is normally used. The mode selector switch changes the mode of operation of both transmitter and receiver simultaneously. An explanation of how to determine which mode to use is contained in paragraph 4.1 under Operating Procedure.

3.7 Clarifier

Allows variation of both the transmitter and receiver operating frequencies above and below the assigned frequency. Although this control is intended primarily to tune in SSB signals, it may be used to optimize AM signals as described in the Operating Procedure paragraphs.

3.8 Squelch

Blanks out unwanted noise when no signals are present. Turn fully counterclockwise then slowly clockwise until the receiver noise disappears. Any signal to be received must now be slightly stronger than the average received noise. Further clockwise rotation will increase the threshold level which a signal must overcome in order to be heard. Only strong signals will be heard at a maximum clockwise setting.

3.9 PA-CB Switch

Selects the mode of operation. The PA function should not be used unless an external speaker is connected as described in the Installation Section of this manual. In the CB position, the PA function is disabled and the unit will transmit and receive on the selected frequency.

3.10 Press-To-Talk Microphone

The receiver and transmitter are controlled by the press-to-talk switch on the microphone. Press the switch and the transmitter is activated; release the switch to receive. When transmitting, hold the microphone two inches from the mouth and speak clearly in a normal tone of voice.

3.11 Meter

Indicates received signal strength, relative output power in AM and SSB modes. In conjunction with the meter switch and SWR cal potentiometer (located on the rear panel of the unit), the front panel meter will indicate rela-

tive VSWR.

3.12 Meter Switch

RF power/S meter, CAL, SWR switch selects the mode of meter operation. The RF/S meter position of the switch connects the front panel meter to show RF power output and the "S" strength of an incoming signal. When the switch is placed in the CAL mode of operation and the transceiver is keyed on AM, the SWR CAL potentiometer (located on the rear panel of the unit) should be adjusted for full scale meter deflection. The switch may be then placed in the SWR position to indicate the relative VSWR of the antenna system.

4.0 OPERATING PROCEDURE

4.1 There are three types of signals presently in use for communications in the Citizens Band. The Console II receiver is capable of receiving any of these types when the proper mode of operation is selected. When the Console II mode switch is placed in the AM position, standard double sideband full carrier signals will be detected. An SSB signal may be recognized while in the AM mode by its characteristic intermittent pulsing or fluttering and the inability of the AM receiver to produce an intelligible output.

The SSB modes will detect upper sideband and lower sideband to produce an intelligible signal. An SSB transmitted signal consists only of the upper or the lower sideband and no carrier is transmitted. A double sideband (DSB) signal consists of two sidebands, each sideband being equal in amplitude and equally distant in frequency above and below the operating frequency of the transmitter. The operating frequency is defined as the frequency where the carrier would normally be during AM operation. In AM operation a carrier or reference signal is transmitted along with two sidebands; each sideband being of equal amplitude and equal distance above and below the carrier frequency.

It can be seen that since a single sideband receiver requires only one of the sidebands and no carrier, all modes of transmission may be received since all modes contain at least one sideband. The SSB receiver selects only the required portion of the signal (the sideband) and rejects the carrier and opposite sideband of a DSB signal. The method of tuning AM and DSB signals in the SSB mode is explained later on in this chapter.

An SSB signal may only be received when the listening receiver is functioning in the same mode. In other words, an upper sideband signal (USB) may be made intelligible only if the receiver is functioning in the USB position. A lower sideband (LSB) signal will be heard when the receiver is in the USB mode, however, no amount of tuning will make the signal intelligible. The reason for this may be understood if you consider that when in the USB mode, a transmitter's output frequency is in direct proportion to the modulation tone whereas in the LSB mode the transmitter's output frequency is in inverse proportion to the modulating tone. When modulation is applied to the transmitter's microphone in the USB mode, the transmitter's output frequency is increased whereas in the LSB mode the transmitter's output frequency is decreased. The result in listening to the receiver is that when the mode switch is in the proper position (either USB or LSB), a true reproduction of a single tone of modulation will result, and if the tone is increased in frequency, such as a low pitched whistle to a high pitched whistle, the increase in the output tone of the receiver can be heard. If the incorrect mode is selected, a increase in tone of a whistle applied to the transmitter will cause a decrease in the resultant tone from the receiver. Thus when a voice is used in place of

a whistle or tone, in the proper listening mode the voice will be received correctly, whereas in the incorrect mode the voice will be translated backwards and cannot be made intelligible by the clarifier control. When listening to an AM or DSB transmission, a correct sideband is heard in either mode since both an upper and lower sideband are received.

Once the desired SSB mode has been selected, frequency adjustment may be necessary in order to make the incoming signal intelligible. The clarifier control allows the operator to vary frequency above and below the exact center frequency of the received signal. If the sound of the incoming signal is high or low pitched, adjust the clarifier to produce the correct sound. In order to understand the operation of the clarifier, consider it as performing the same function as a phonograph speed control. When the speed is set too high, voices will be high pitched and if set too low, voices will be low pitched. There is only one correct speed that will make a particular record produce the same sound that was recorded. If the record is playing on a turntable that rotates in the wrong direction (opposite sideband), no amount of speed control (clarifier) will produce an intelligible sound.

An AM signal received while listening in one of the SSB modes will produce a steady tone (carrier) in addition to the intelligence unless the SSB receiver is tuned to exactly the same frequency by the clarifier control. For simplicity it is recommended that the AM mode be used to listen to AM signals.

DSB signals may be received in either SSB mode and the clarifier control is adjusted in the same manner as in true single sideband operation.

4.2 Operating Procedure to Receive

1. Place the ON/OFF switch in the ON position.
2. Place CB/PA switch in CB position.
3. Advance the volume control to a desirable listening level.
Rotate the RF gain control to its full clockwise position.
4. Select the desired operating channel.
5. Select the desired mode (AM - USB - LSB).
6. Place the noise blanker switch in the "NB" position.
7. Rotate squelch control clockwise slightly beyond the point where noise disappears.
8. When a signal is heard (SSB only) adjust clarifier for correct voice sound.
9. If the signal is very strong, rotate the RF gain control counterclockwise to reduce interfering weaker signals.

4.3 To Transmit

1. Select the desired channel and mode of transmission.
2. Set clarifier control to the center position.

3. If the channel is clear, depress the push-to-talk switch on the microphone and speak in a normal tone of voice. The output meter will indicate true output power.
4. Release the push-to-talk switch to receive.

4.4 Operating Procedure To Check VSWR

1. Place the meter switch in the CAL position.
2. Place the mode switch in the AM position. Key the transmitter and adjust the SWR CAL potentiometer for full scale meter deflection.
3. Place the meter switch in the SWR position. The antenna standing wave ratio may now be read directly on the SWR meter scale.

5.0 SERVICE MAINTENANCE

Should your Console II fail to perform as stated in this manual, it is recommended that SBE be contacted in writing. SBE will either authorize return of the unit to the factory or refer you to an authorized SBE repair agency in your area. DO NOT SHIP EQUIPMENT WITHOUT PRIOR WRITTEN AUTHORIZATION FROM SBE. Your letter to SBE must include the following:

1. Model number and serial number of equipment.
2. Date of purchase of equipment.
3. Nature of trouble.
4. Cause of trouble if known.
5. Name of distributor from whom the equipment was purchased.
6. Your return address.
7. Method of shipment by which the equipment should be returned.

In addition, include any information that you feel will be helpful in locating or correcting the problem.

6.0 PARTS ORDERING INFORMATION

When ordering replacement parts, you should direct your order to an SBE distributor, or SBE Replacement Parts Department, 220 Airport Boulevard, Watsonville, California 95076. Please furnish the following information:

1. Quantity required.
2. SBE part number and description.
3. Item or symbol number obtained from parts list, schematic, component location drawings.
4. SBE model number and serial number.

SBE-16CB CONSOLE II

<u>SYM.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
C101	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C102	8000-00004-041	Cap., Fixed, 150pfd, 50V, Mica
C103	8000-00004-007	Cap., Fixed, 10pfd, 50V, Mica
C104	8000-00004-027	Cap., Fixed, 220pfd, 50V, Mica
C105	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C106	8000-00004-021	Cap., Fixed, 47pfd, 50V, Mica
C107	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C108	8000-00011-100	Cap., Fixed, 0.1mfd, 16V, Elect.
C109	8000-00011-010	Cap., Fixed, 170pfd, 50V, Mica
C110	8000-00004-040	Cap., Fixed, 3pfd, 50V, Mica
C111	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C112	8000-00004-042	Cap., Fixed, 1.0mfd, 16V, Elect.
C113	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C114	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C115	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C116	8000-00004-007	Cap., Fixed, 10pfd, 50V, Mica
C117	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C118	8000-00004-020	Cap., Fixed, 100pfd, 50V, Mica
C119	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C120	8000-00004-011	Cap., Fixed, .001mfd, 50V, Cer.
C121	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C122	8000-00004-011	Cap., Fixed, .001mfd, 50V, Cer.
C123	8000-00004-011	Cap., Fixed, .001mfd, 50V, Cer.
C124	8000-00004-040	Cap., Fixed, 3pfd, 50V, Mica
C125	8000-00004-011	Cap., Fixed, .001mfd, 50V, Cer.
C126	8000-00004-042	Cap., Fixed, 1.0mfd, 16V, Elect.
C127	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C128	8000-00004-042	Cap., Fixed, 1.0mfd, 16V, Elect.
C129	8000-00004-003	Cap., Fixed, .04mfd, 50V, Mylar
C130	8000-00004-018	Cap., Fixed, .1mfd, 50V, Mylar
C131	8000-00011-008	Cap., Fixed, 5pfd, 50V, Mica
C132	8000-00011-008	Cap., Fixed, 5pfd, 50V, Mica
C133	8000-00011-002	Cap., Fixed, 2.2mfd, 16V, Elect.
C134	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C135	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C136	8000-00004-007	Cap., Fixed, 10pfd, 50V, Mica
C137	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C138	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C139	8000-00004-003	Cap., Fixed, .04mfd, 50V, Mylar
C140	8000-00011-012	Cap., Fixed, 1pfd, 50V

SBE-16CB Console II Cont.

<u>SYM.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
C141	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C142	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C143	8000-00004-003	Cap., Fixed, .04mfd, 50V, Mylar
C144	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C145	8000-00004-021	Cap., Fixed, 47pfd, 50V, Mica
C146	8000-00004-011	Cap., Fixed, .001mfd, 50V, Cer.
C147	8000-00004-042	Cap., Fixed, 1.0mfd, 16V, Elect.
C148	8000-00004-020	Cap., Fixed, 100pfd, 50V, Mica
C149	8000-00011-007	Cap., Fixed, .001mfd, 50V, Mylar
C150	8000-00004-018	Cap., Fixed, .1mfd, 50V, Mylar
C151	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C152	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C153	8000-00004-007	Cap., Fixed, 10pfd, 50V, Mica
C154	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C155	8000-00004-042	Cap., Fixed, 1.0mfd, 16V, Elect.
C156	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C157	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C158	8000-00004-020	Cap., Fixed, 30pfd, 50V, Mica
C159	Not Used	
C160	8000-00004-003	Cap., Fixed, .04mfd, 50V, Mylar
C161	8000-00004-003	Cap., Fixed, .04mfd, 50V, Mylar
C162	8000-00004-016	Cap., Fixed, 20pfd, 50V, Mica
C201	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C202	8000-00004-010	Cap., Fixed, N750, 22pfd, 50V, Cer.
C203	8000-00004-010	Cap., Fixed, N750, 22pfd, 50V, Cer.
C204	8000-00004-010	Cap., Fixed, N750, 22pfd, 50V, Cer.
C205	8000-00004-010	Cap., Fixed, N750, 22pfd, 50V, Cer.
C206	8000-00004-022	Cap., Fixed, N470, 30pfd, 50V, Cer.
C207	8000-00004-022	Cap., Fixed, N470, 30pfd, 50V, Cer.
C208	8000-00004-022	Cap., Fixed, N470, 30pfd, 50V, Cer.
C209	8000-00004-022	Cap., Fixed, N470, 30pfd, 50V, Cer.
C210	8000-00004-022	Cap., Fixed, N470, 30pfd, 50V, Cer.
C211	8000-00004-022	Cap., Fixed, N470, 30pfd, 50V, Cer.
C212	8000-00004-011	Cap., Fixed, .001mfd, 50V, Cer.
C213	8000-00011-011	Cap., Fixed, 300pfd, 50V, Mica
C214	8000-00004-020	Cap., Fixed, 100pfd, 50V, Mylar
C215	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C216	8000-00011-008	Cap., Fixed, 5pfd, 50V, Mica
C217	8000-00011-011	Cap., Fixed, 300pfd, 50V, Mica
C218	8000-00004-020	Cap., Fixed, 100pfd, 50V, Mica

SBE-16CB Console II Cont.

<u>SYM.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
C219	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C220	8000-00011-008	Cap., Fixed, 5pfd, 50V, Mica
C221	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C222	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C223	8000-00004-027	Cap., Fixed, 220pfd, 50V, Mica
C224	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C225	8000-00004-013	Cap., Fixed, 2pfd, 50V, Mica
C226	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C227	8000-00004-040	Cap., Fixed, 3pfd, 50V, Mica
C228	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C229	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C230	8000-00011-011	Cap., Fixed, 300pfd, 50V, Mica
C231	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C232	8000-00011-009	Cap., Fixed, 56pfd, 50V, Mica
C233	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C234	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C235	8000-00011-012	Cap., Fixed, 1pfd, 500V
C236	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C237	8000-00011-013	Cap., Fixed, 2pfd, 500V
C238	8000-00004-007	Cap., Fixed, 10pfd, 50V, Mica
C239	8000-00004-002	Cap., Fixed, 15pfd, 50V, Mica
C240	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C241	8000-00004-017	Cap., Fixed, 500pfd, 50V, Mica
C242	8000-00004-041	Cap., Fixed, 150pfd, 50V, Mica
C243	8000-00004-010	Cap., Fixed, N750, 22pfd, 50V, Cer.
C244	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C245	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C246	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C247	8000-00004-077	Cap., Fixed, 10pfd, 50V, Mica
C301	8000-00004-024	Cap., Fixed, 30pfd, 50V, Mica
C302	8000-00004-016	Cap., Fixed, 20pfd, 50V, Mica
C303	8000-00004-001	Cap., Fixed, .01mfd, 50V, Mica
C304	8000-00011-013	Cap., Fixed, 2pfd, 500V
C305	8000-00004-027	Cap., Fixed, 220pfd, 50V, Mica
C306	8000-00004-020	Cap., Fixed, 100pfd, 50V, Mica
C307	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C308	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C309	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C310	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C311	8000-00004-043	Cap., Fixed, .047mfd, 50V, Cer.

SBE-16CB Console II Cont.

<u>SYM.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
C312	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C313	8000-00011-009	Cap., Fixed, 56pfd, 50V, Mica
C314	8000-00004-041	Cap., Fixed, 150pfd, 50V, Mica
C315	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C316	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C317	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C318	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C319	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C320	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C321	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C401	8000-00004-015	Cap., Fixed, .05mfd, 50V, Mylar
C402	8000-00004-018	Cap., Fixed, .1mfd, 50V, Mylar
C403	8000-00004-047	Cap., Fixed, 10mfd, 16V, Elect.
C404	8000-00004-011	Cap., Fixed, .001mfd, 50V, Cer.
C405	8000-00004-044	Cap., Fixed, 220mfd, 16V, Elect.
C406	Not Used	
C407	Not Used	
C408	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C409	8000-00004-009	Cap., Fixed, 47mfd, 16V, Elect.
C410	8000-00004-009	Cap., Fixed, 47mfd, 16V, Elect.
C411	8000-00011-015	Cap., Fixed, 470mfd, 35V, Elect.
C412	8000-00011-014	Cap., Fixed, 4.7mfd, 35V, Elect.
C413	8000-00004-030	Cap., Fixed, 4.7mfd, 16V, Elect.
C414	8000-00004-047	Cap., Fixed, 10mfd, 16V, Elect.
C415	8000-00004-042	Cap., Fixed, 1.0mfd, 16V, Elect.
C416	8000-00004-042	Cap., Fixed, 1.0mfd, 16V, Elect.
C417	8000-00004-045	Cap., Fixed, .22mfd, 16V, Elect.
C418	8000-00011-003	Cap., Fixed, 33mfd, 16V, Elect.
C419	8000-00004-003	Cap., Fixed, .04mfd, 50V, Mylar
C501	8000-00004-042	Cap., Fixed, 1.0mfd, 16V, Elect.
C502	8000-00011-006	Cap., Fixed, .1mfd, 12V
C503	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C504	8000-00004-009	Cap., Fixed, 47mfd, 16V, Elect.
C505	8000-00004-011	Cap., Fixed, .001mfd, 50V, Cer.
C506	8000-00011-003	Cap., Fixed, 33mfd, 16V, Elect.
C507	8000-00004-042	Cap., Fixed, 1.0mfd, 16V, Elect.
C508	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C509	8000-00004-042	Cap., Fixed, 1.0mfd, 16V, Elect.

SBE-16CB Console II Cont

<u>SYM.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
C510	Not Used	
C511	8000-00004-042	Cap., Fixed, 1.0mfd, 16V, Elect.
C512	8000-00004-009	Cap., Fixed, 47mfd, 16V, Elect.
C513	8000-00004-042	Cap., Fixed, 1.0mfd, 16V, Elect.
C514	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C515	Not Used	
C516	8000-00004-020	Cap., Fixed, 100pfd, 50V, Mica
C517	8000-00004-011	Cap., Fixed, .001mfd, 50V, Cer.
C518	8000-00004-047	Cap., Fixed, 10mfd, 16V, Elect.
C601	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C602	8000-00004-044	Cap., Fixed, 220 mfd, 16V, Elect.
C603	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C604	8000-00011-101	Cap., Fixed, 470mfd, 16V, Elect.
C605	8000-00004-049	Cap., Fixed, 1000mfd, 16V, Elect.
C606	8000-00004-009	Cap., Fixed, 47mfd, 16V, Elect.
C607	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C608	8000-00004-048	Cap., Fixed, .001mfd, Feed-Thru
C609	8000-00004-001	Cap., Fixed, .01mfd, 50V, Cer.
C701	8000-00004-046	Cap., Fixed, 100mfd, 16V, Elect.
C702	8000-00011-102	Cap., Fixed, 3300mfd, 35V, Elect.
C703	8000-00011-113	Cap., Fixed, .0022mfd, 150V
C704	8000-00011-113	Cap., Fixed, .0022mfd, 150V
CV1	8000-00004-050	Capacitor, 20pfd, Variable
CV2	8000-00004-050	Capacitor, 20pfd, Variable
CV3	8000-00004-050	Capacitor, 20pfd, Variable
CV4	8000-00004-050	Capacitor, 20pfd, Variable
CV5	8000-00004-050	Capacitor, 20pfd, Variable
CV6	8000-00004-051	Capacitor, 30pfd, Variable
CV7	8000-00004-051	Capacitor, 30pfd, Variable
CV8	8000-00004-051	Capacitor, 30pfd, Variable
CV9	8000-00004-051	Capacitor, 30pfd, Variable
CV10	8000-00004-051	Capacitor, 30pfd, Variable
CV11	8000-00004-051	Capacitor, 30pfd, Variable
CV12	8000-00004-204	Capacitor, 10pfd, Variable
CV13	8000-00004-205	Capacitor, 10pfd, Variable

SBE-16CB Console II Cont.

<u>SYM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
D1	8000-00011-041	Diode, 10D-4
D2	8000-00011-041	Diode, 10D-4
D3	8000-00004-060	Diode, 1N34A
D4	8000-00004-060	Diode, 1N34A
D5	8000-00004-060	Diode, 1N34A
D6	8000-00004-060	Diode, 1N34A
D7	8000-00011-046	Diode, 1S-1007
D8	8000-00004-063	Diode, 1N60P
D9	8000-00004-060	Diode, 1N34A
D10	8000-00004-060	Diode, 1N34A
D11	8000-00004-060	Diode, 1N34A
D12	8000-00011-042	Diode, 1S-2472
D13	8000-00011-042	Diode, 1S-2472
D14	8000-00011-042	Diode, 1S-2472
D15	8000-00004-060	Diode, 1N34A
D16	8000-00011-042	Diode, 1S-2472
D17	8000-00004-060	Diode, 1N34A
D18	8000-00004-060	Diode, 1N34A
D19	8000-00011-042	Diode, 1S-2472
D20	8000-00004-060	Diode, 1N34A
D21	8000-00004-060	Diode, 1N34A
D22	8000-00011-046	Diode, 1S-1007
D23	8000-00004-248	Diode, 1S-352M
D24	8000-00011-042	Diode, 1S-2472
D25	8000-00004-060	Diode, 1N34A
D26	8000-00011-042	Diode, 1S-2472
D27	8000-00011-042	Diode, 1S-2472
D28	8000-00011-042	Diode, 1S-2472
D29	8000-00004-184	Diode, 1S-990S
D30	8000-00004-184	Diode, 1S-990S
D31	8000-00011-045	Diode, 1S-1211
D32	8000-00011-041	Diode, 10D-4
D33	8000-00011-041	Diode, 10D-4
D34	8000-00004-060	Diode, 1N34A
D35	8000-00011-044	Diode, VD-121C
D36	8000-00011-042	Diode, 1S-2472
D37	8000-00011-042	Diode, 1S-2472
D38	8000-00011-042	Diode, 1S-2472
D39	8000-00011-042	Diode, 1S-2472
D40	8000-00004-063	Diode, 1N60P
D41	8000-00004-063	Diode, 1N60P

SBE-16CB Console II Cont.

<u>SYM.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
D42	8000-00004-063	Diode, 1N60P
D43	8000-00004-063	Diode, 1N60P
D44	8000-00011-043	Diode, BZ-090
D45	8000-00011-042	Diode, 1S-2472
D46	8000-00011-043	Diode, BZ-090
D47	8000-00011-043	Diode, BZ-090
D48	8000-00011-103	Diode, BZ-071
D49	8000-00011-103	Diode, BZ-071
D50	8000-00011-104	Diode, V03C
D51	8000-00011-104	Diode, V03C
D52	8000-00011-104	Diode, V03C
D53	8000-00011-104	Diode, V03C
D54	8000-00011-105	Diode, V05B
FL1	8000-00011-071	Filter, 7.8 MHz
J1	8000-00004-069	Connector, Socket, Antenna
J2	8000-00004-070	Connector, Microphone, Chassis Mount
J3	8000-00004-072	Connector, External Jack, Speaker
J4	8000-00004-071	Connector, P. A. Jack
L1	8000-00011-023	Coil, 27 MHz
L2	8000-00011-024	Coil, 34 MHz
L3	8000-00011-025	Coil, 19 MHz
L4	8000-00011-026	Coil, 15 MHz
L5	8000-00004-075	Coil, 27 MHz
L6	8000-00011-027	Coil, 27 MHz
L7	8000-00004-077	Coil, 27 MHz
L8	8000-00004-078	Coil, 27 MHz
L9	8000-00004-053	Choke, 22 uh
L10	8000-00004-059	Choke, 0.85 uh
L11	8000-00011-018	Choke, RF 150 uh
L12	8000-00011-018	Choke, RF, 150 uh
L13	Not Used	
L14	8000-00011-020	Choke, RF 470 uh
L15	8000-00011-020	Choke, RF 470 uh
L16	8000-00011-017	Choke, 5.5 uh
L17	8000-00011-016	Choke, 0.22 uh
L18	8000-00011-020	Choke, RF 470 uh
L19	Not Used	
L20	8000-00004-025	Choke, 1uh
L21	8000-00011-016	Choke, 0.22 uh

SBE-16CB Console II Cont.

<u>SYM.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
Q29	8000-00004-085	Transistor, 2SC458C
Q30	8000-00004-085	Transistor, 2SC458C
Q31	8000-00006-006	Transistor, 2SD180
R310	8000-00011-001	Res., Fixed, 2.2 ohm, 1/2 watt
R408	8000-00004-091	Res., Fixed, 1 ohm, 1 watt
R409	8000-00004-266	Res., Fixed, 10 ohm, 2 watt
RL1	8000-00004-141	Relay, 4P-2T
S1	8000-00011-105	Switch, Slide, 2P-2T
S2	8000-00011-106	Switch, Slide, 2P-2T
S3	8000-00011-107	Switch, Slide, 4P-2T
S4	8000-00011-058	Switch, Rotary, 24P
S5	8000-00004-102	Switch, Rotary, 8P-3T
S6	8000-00011-109	Switch, Slide, 2P-3T
SP1	8000-00011-057	Speaker, 8 ohms
T1	8000-00011-028	Transformer, 27 MHz
T2	8000-00011-029	Transformer, 7.8 MHz, IF
T3	8000-00011-029	Transformer, 7.8 MHz, IF
T4	8000-00011-029	Transformer, 7.8 MHz, IF
T5	8000-00011-030	Transformer, 7.8 MHz, Detector
T6	8000-00011-031	Transformer, 7.8 MHz, Detector
T7	8000-00011-032	Transformer, 34 MHz
T8	8000-00011-033	Transformer, 34 MHz
T9	8000-00011-034	Transformer, 19 MHz
T10	8000-00011-035	Transformer, 19 MHz
T11	8000-00011-026	Transformer, Z176, 15 MHz
T12	8000-00004-118	Transformer, 27 MHz
T13	8000-00011-036	Transformer, 27 MHz
T14	8000-00011-037	Transformer, 27 MHz
T15	8000-00011-039	Transformer, AF Driver
T16	8000-00011-040	Transformer, AF Output
T17	8000-00011-038	Transformer, 7.8 MHz
T701	8000-00011-110	Transformer, AC Power
VR1	8000-00004-096	Resistor, 10K ohm, Variable
VR2	8000-00004-094	Resistor, 100K ohm, Variable

SBE-16CB Console II Cont.

<u>SYM.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
VR3	8000-00011-083	Resistor, 20K ohm, Variable
VR4	8000-00011-083	Resistor, 20K ohm, Variable
VR5	8000-00004-097	Resistor, 10K ohm, Variable
VR6	8000-00011-084	Resistor, 100K ohm, Variable
VR7	8000-00011-082	Resistor, 1K ohm, Variable
VR8	8000-00004-256	Resistor, 10K x 2, Variable
VR9	8000-00004-256	Resistor, 10K x 2, Variable
VR10	8000-00011-111	Resistor, 2 sec., 10K-5K Variable
VR11	8000-00011-111	Resistor, 2 sec., 10K-5K Variable
VR12	Not Used	
VR13	8000-00011-112	Resistor, 500 ohm, screw driver, Var.
X1	8000-00011-059	Crystal, 7.8025 MHz
X2	8000-00011-060	Crystal, 7.5025 MHz
X3	8000-00011-061	Crystal, 7.4825 MHz
X4	8000-00011-062	Crystal, 7.4725 MHz
X5	8000-00011-063	Crystal, 7.4625 MHz
X6	8000-00011-064	Crystal, 11.700 MHz
X7	8000-00011-065	Crystal, 11.750 MHz
X8	8000-00011-066	Crystal, 11.800 MHz
X9	8000-00011-068	Crystal, 11.850 MHz
X10	8000-00011-069	Crystal, 11.900 MHz
X11	8000-00011-070	Crystal, 11.950 MHz
<u>Miscellaneous</u>		
	8000-00011-072	Heat Sink, Driver
	8000-00011-073	Heat Sink, Final
	8000-00011-074	Heat Sink, Audio
	8000-00011-114	Heat Sink, Regulator
	8000-00011-078	Fuse, 3 amp.
	8000-00004-213	Fuse, 1 amp.
	8000-00004-153	Microphone, Complete
	8000-00004-164	Microphone, Connector
	8000-00011-115	Cabinet
	8000-00011-116	Overlay Panel "Console II"
	8000-00011-117	Knob, Channel
	8000-00011-118	Knob, Mode
	8000-00011-119	Knob, Volume/SSB RF Gain
	8000-00011-120	Knob, Squelch/Clarifier
	8000-00011-121	Chassis, Bottom Cover
	8000-00011-122	Grill, Speaker

WARRANTY

SBE warrants equipment manufactured by it to be free from defects in material or workmanship and agrees to repair such equipment which under normal use and service develops defects arising from the fault of the manufacturer. Equipment must be returned transportation prepaid within 90 days from the date of original purchase, and unless the warranty card has been filled in and returned within 10 days of original purchase, the warranty shall be void.

This warranty does not apply to equipment which (1) has been repaired or altered by anyone in any way so as, in our judgement, to injure its stability or reliability, (2) has been subject to misuse, negligence, or accident, (3) has had the serial number altered, defaced or removed, or (4) has been connected, installed, or adjusted otherwise than in accordance with our written instructions.

The foregoing is in lieu of any other warranty or liability expressed, implied, or statutory and in no event shall SBE be liable for special or consequential damages. SBE neither assumes nor authorizes any person to assume for it any other obligation or liability in connection with this equipment.

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