

VOICE SIGNAL BOOSTER

(VSB-1 INSTALLATION)

You have just purchased one of the most unique and effective methods of speech processing for communications gear available on the market today. It incorporates amplitude expansion on the receiver portion of your radio, and amplitude compression of the transmitted voice signal, while at the same time giving you improved signal-to-noise ratio. The waveform is essentially unmodified and, thus, undistorted. Because of the low distortion, the compressor can be left in the circuit at all times, unless you wish to demonstrate to someone else the effectiveness of the circuit. The compressor will give you more talk power than most power mikes or other speech processors on the market today.

With the expander, you will have up to 16 dB improvement in the signal-to-noise ratio of the received signal, no matter what type of rig is transmitting. You will also be able to pull distant stations in that no one else in your area is able to hear, because you don't have to contend with the noise that everyone else is receiving along with the transmitted signal. However, the expander won't help if the audio peaks are no higher than the noise. If this is the case, the noise and audio will be expanded equally. If the signal is lower than the noise level, it can make reception worse with the expander switched in, but so far we haven't found this to be the case. Most of the time the expander makes an improvement varying from the noticeable to the spectacular. A signal strong enough to actuate the avc will produce a S/N ratio in excess of 30 dB with the expander in circuit.

Although you have probably purchased this unit for CB gear, it will work in any communications equipment, whether it is AM, SSB, FM, UHF or VHF. It is only illegal, in that if it is installed internally in the radio, it will void the FCC type acceptance.

INSTALLATION

I. CONNECTING THE EXPANDOR CABLE:

- A. Locate the first audio amplifier which is connected to the output of the AM detector diode. Refer to Fig. 1.
 1. Remove the coupling capacitor which is connected to the output of this amplifier.
 2. Insert the black lead from the expander coax cable into the hole on the side which is connected to the collector of the amplifier.
 3. Insert the white lead from the expander coax cable into the other hole.
 4. Connect the shield wire of expander coax to the nearest common ground (usually a transformer shield).

VOICE SIGNAL BOOSTER INSTALLATION (Cont'd):

- B. Connecting the expander cable when there is no coupling capacitor between the first audio amplifier and the volume control:
 - 1. If there is not a coupling capacitor as indicated in Figure 1, remove the shielded cable which connects from the first audio amplifier to the volume control as indicated in Figure 1.
 - 2. Insert the black lead of the expander coax into the hole left open by the removal of the shielded cable conductor.
 - 3. Connect the white lead of the expander coax to the cable which was removed from the radio.
 - 4. Connect the shield wire from expander coax to the nearest common ground.

II. CONNECTING THE COMPRESSOR CABLE: (Blue coded leads)

- A. Remove the coupling capacitor which is located between the microphone preamplifier stage and the following audio amplifier stage.
- B. Insert the black lead of compressor cable into one of the holes which was left open by the removal of the coupling capacitor. The black lead must connect to the output of the preamplifier stage which is usually the collector of the transistor.
- C. Connect the white lead of the compressor cable in the other hole.
- D. Connect the coax shield wire to the nearest transformer shield.

III. CONNECTING THE POWER SUPPLY LEADS TO 12 VOLT DC SOURCE:

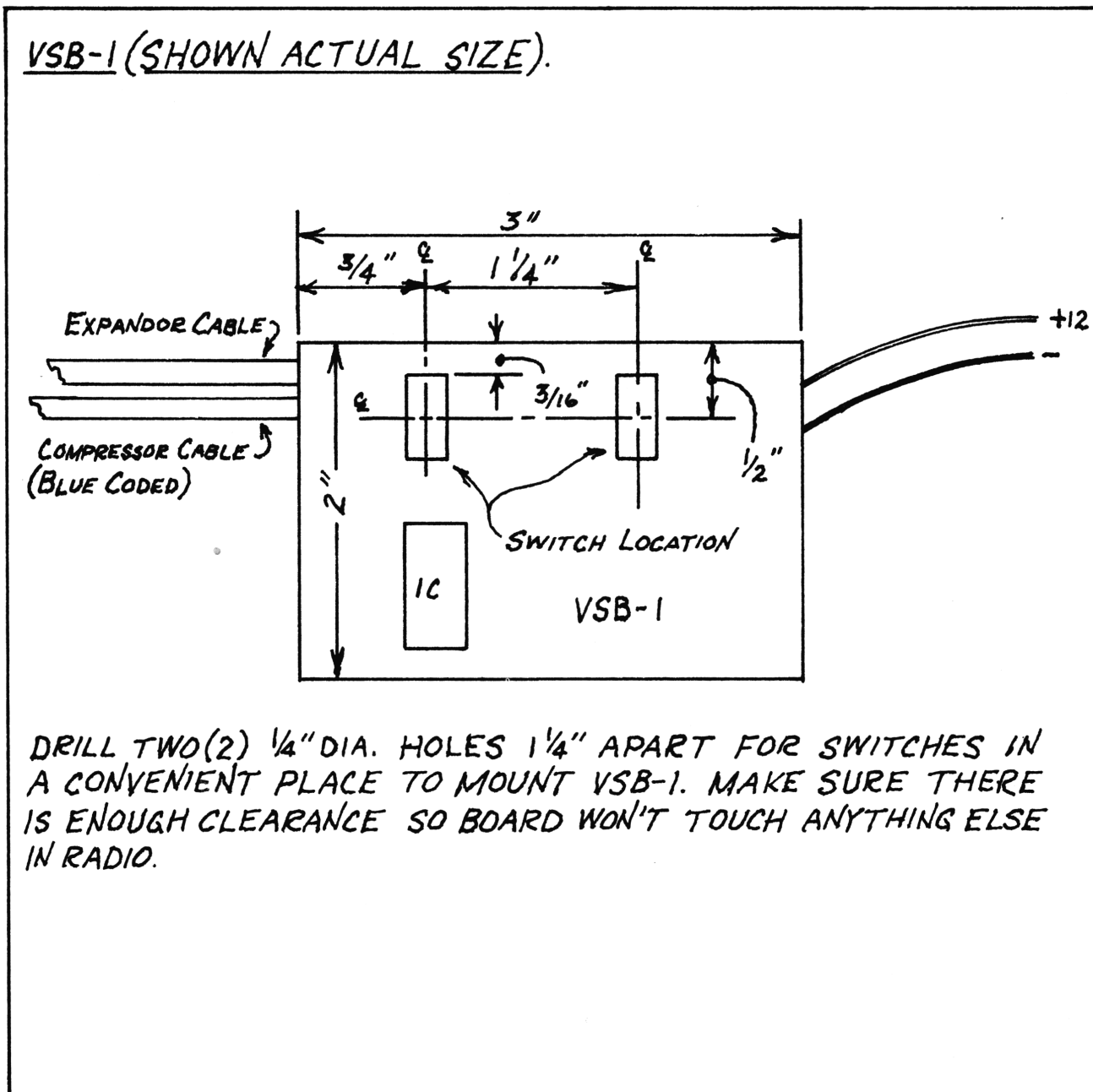
- A. Connect the red lead of the module to +12 volts DC.
 - 1. If you are installing this unit in a mobile radio, connect the red lead to the on-off switch on the radio.
 - 2. If you are installing this unit in a base station, connect the red lead to the closest +12 volt DC source.

VOICE SIGNAL BOOSTER INSTALLATION (Cont'd):

B. Connect black lead of VSB-1 to common ground of radio.

CAUTION: Common ground is not to be confused with chassis ground. Common ground can be found by locating any transformer shield, since these shields are usually connected to common ground.

NOTE: If you have any questions about the installation or operation of the module, call your supplier, or refer to volume 9 of Secret CB for more data.



VOICE SIGNAL BOOSTER INSTALLATION (Cont'd):

BLOCK DIAGRAM OF TYPICAL INSTALLATION

