

SBE OWNERS

This is a retraction of information in SECRET CB Volume 18, page 34 in regards to source of SBE parts. Please do not contact SBE, Inc. of Emeryville, California as they do not have parts and/or manuals. Per our conversation with them and a letter from them, they no longer have any parts and do not know of any source for original parts, in fact, they say there are none available.

Quote from their letter:

RE: Inquiries about CB radios and scanners

Due to overseas competition, SBE was reorganized under Chapter II proceedings in 1980. At that time the federal court excused SBE from further responsibility for CB radio and scanner products.

Consequently, SBE no longer maintains a parts or manual inventory for the following products: CB's, Scanners, Amature (HAM) Equipment, Model Del Mar 225 Marine Radio, Tempus 10, 25 Land Mobile Tranceivers.

End of quote.

SORRY!

- - - - EARS - - - -

There are many tricks and ways to improve or boost a receiver's gain or sensitivity. I'm not saying I know them all. No one person could, but we (all of us CB'ers and technicians) collectively could come up with most of them, I'm sure.

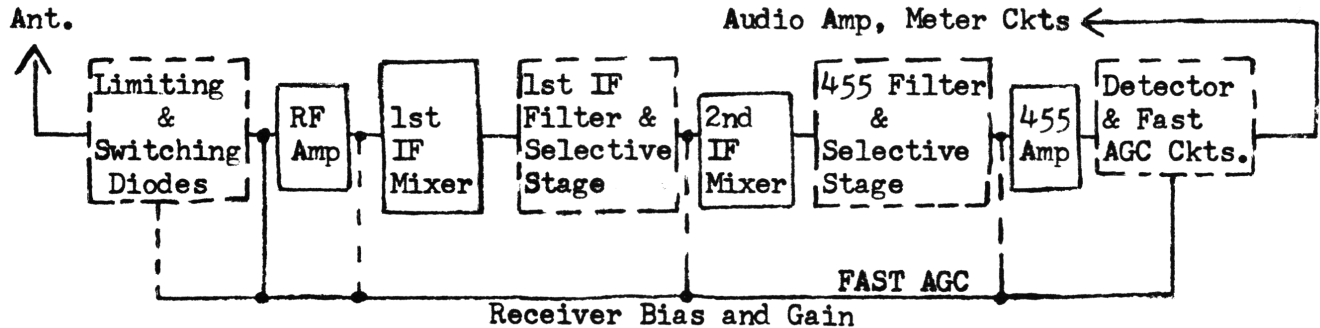
I have been doing some research and I've found volumes of print on how to improve the "mouth" on CB's but surprisingly I can not find one article on how to improve the "ears" of CB's. That is, excluding the normal tuning procedures.

I have talked with Doris at SECRET CB about this. She is willing, if enough interest is shown, to devote a volume of SECRET CB to this subject. It would be nice, from the standpoint of reference, to have all of this information in one volume.

So how about it fellow CB'ers and technicians? How about sharing your tricks with the rest of us? We can all benefit.

This thought from the Air Force Instructors' hand book: PERSON'S WHO SHARE THEIR KNOWLEDGE WITH OTHERS, EXTENDS THEMSELVES, EVEN BEYOND THEIR MORTAL EXISTANCE.

In order to improve the ears on any CB, we must first consider how the amplifier as a whole is designed. Also, so we might all use the same terminology when describing how to improve certain makes and models' ears, let us run through a basic modern C.B. receiver block diagram...



The open circuit gain of an amplifier is far above the gain used. You can prove this to yourself by adding all hfe for all of the transistors in an amplifier. An open circuit gain amplifier would be very noisy.

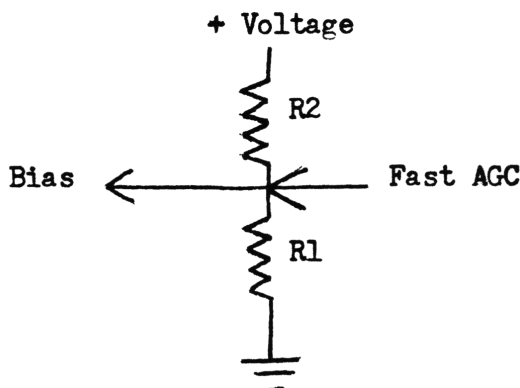
Each stage is set to a given operation gain both in DC and RF by the associated circuit components. D.C. bias is set by voltage level on the base. Self bias is established by resistance in the emitter circuit and/or current limiting resistors in the base. RF gain is established by by-pass capacitors in the emitter, other coupling capacitors and the load in the collector. These gains collectively are still well above the over all amplifiers required gain.

The most controlling and over all gain establishing signal is the close loop gain control. This consist of both a D.C.set or controllable bias, and fast AGC (Automatic Gain Control). They are generally mixed together. (Fast AGC decreasing the D.C. Bias level).

Through closed circuit gain an amplifier can be changed in linearity of gain, limited, clamped, clipped or manually controlled.

The later is the most common way of changing receiver sensitivity. If a unit does not have a pot for the purpose, there are two common easy ways to change the sensitivity.

1. Series R1 with another resistor of approximately the same R1 value.
2. Parallel R2 with another resistor of approximately 10 times R2 value.



When possible it is better to use the close circuit biasing of feedback to change the gain of a receiver. Sometimes, however, it is desirable to increase the gain on one particular stage of a receiver.

EARS (Cont.)

There are two common methods of doing this.

1. If it is using set biasing on the base simply increase it slightly.
2. If it is using controlled biasing but it has a resistor in the emitter for self biasing parallel that resistor with another of approximately the same value.

Other ways are changing the transistor to one with high (hfe) gain, adding capacitors, or changing collector loads.

Now a couple of CAUTIONS.

1. Generally it is not desirable to change biasing on a FET. They are low gain stages to start with and they are basically used for mixing or load isolation. There's not much to be gained in such a stage.
2. Generally it is not desirable to increase the gain of a tandem amplifier. (These are often found in the receiver as 455 amplifiers.) Most times they are designed to operate just below run-away state. If you should have a receiver that each time it receives a strong signal the needle goes to the upper limit and stays there, the tandem amp will be the culprit. The most common problem: Break down of the tantalum capacitor.

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Now how about it technicians and CB enthusiasts? Don't you think we can use at least one volume devoted to the receiver? To make it a success we need your input...

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Give the brand and models that you use special tricks on. Give the number on the components and detail the change. Most times all units listed in the same block on the CARD-KIT A & B kit can be included as a group. I will start it off as a sample: (Being first I get to pick an easy most used trick.)

- Cobra 21, 25LTD/GTL; President AR/AX-44, 711, Andrew J.; Craig L-104.
To increase the receiver gain after installing a 'B' Kit by CARD-KIT modification:
1. Use the 4.7K resistor that was removed from R-58.
 2. Lift the leg end of R-1.
 3. Insert one end of the 4.7K in the place where R1's leg was soldered.
 4. Solder the two ends together.

This will bring the receiver sensitivity back to approximately the same level as original. If more gain is desired.

5. Parallel C7, C8, and C11; on the printed circuit side, with another 0.01mf capacitor. This will give you another db or two.

If your customer likes the quietness but wants a strong signal on units that are close, here is another easy, quick trick.

6. Instead of using the 4.7K resistor removed from R-58, use a 2.2K and do steps 1-4, omit 5.
7. Raise the cathode of D4 in the detector and fast AGC circuit off ground.
8. Use a 1N914 or 1N4148 (any similar fast switching diode).
9. Solder the 1N914's cathode where D4 was.
10. Solder the anode of the 1N914 and the cathode of D4 together. This changes the AGC voltage's linearity.

WELL, HOW ABOUT IT ?? - WANT SOME INPUT ON THIS BEFORE VOLUME 20....