

The K3 is an amazing radio, and it can do a lot of things. Most of which are pretty easy to figure out. You have to think with a logical mind when you go through the menus. I would suggest that you sit down with the manual and the rig in front of you (that's the most important part) and you look at the back section that talks about what each of the menu settings actually do. Once you read the description and you have an idea for each one (one at a time) move the knob on the K3 to change the setting.. See what it actually does. You can't make a mistake. All of the defaults are listed in the manual with the settings. So if you forget where it was, just look on the page. This is the best way to learn something. If you can't hear a change than maybe it's not worth changing.

First, lets start with understanding what the K3 does, and how to make use of your filters to the best of your ability! Read on.

In brief:

Notch:

The Notch has an Auto (for SSB use) and a manual setting for CW. This can be used to take out a tone (carrier) or other noise that is sitting in the middle or near your pass band area (the freq. you're listening to). It can also be used in CW mode to reduce the amount of noise you hear in the upper or lower part of the pass band area. Setting it up to do this takes SOME understanding of what a notch filter does, and how to adjust it. You may not hear any difference between having it on, and off depending on the noise, and on the settings that you have selected. Along with turning it on you also have to adjust the Freq. manually when using it in CW mode.

Sometimes Notching out (CUTTING out) a selected signal can help with reception. For example if you are on CW and you have a lot of LOW end rumbling in headphones and you want to get rid of it, depending on your PITCH freq. you can turn on the NOTCH filter and set it to 300Hz for example. This will NOTCH out (cut out) all of the sound on and around the 300Hz freq. area.

One thing you have to watch out for is setting the Notch freq in the menu to match, or come too close to your PITCH freq. If you do you will have essentially Notched out your Target freq that you're listening for. Not good.

NR:

The NR is used to reduce noise. As you've noticed it has settings as well. Settings 1-1 through 4-1 are normally used with CW, because of the "long hallway" effect that you've probably already experienced on SSB. Settings 5-1 through 8-4 are generally used with SSB because they don't tend to cause this kind of effect on the voices.

You should always try to use the LEAST (or lowest) NR value you can IE 5-1 or 1-1... If it helps at 1-1 and is good enough, there is no need to process more than you need. Too much of ANYTHING is a bad thing.

The RF gain is another one of your BEST noise reducing tools you have... When used in conjunction with the NR filter. For example, if you reduce your RF gain down to 4 or even 5 bars on the scale when the nose is 4 bars high you will notice that your NR works exponentially

better! This is because the DSP no longer has to process nearly as much noise along with signal.

Don't worry, you will find that even when you turn the RF gain down on a signal that is S5 along with an S4 (4 bars) noise level you will NOT make the signal you're listening for go away. Just turn it down slowly as to hear when the person starts to get too low. If you start reducing their signal by more than the NR is reducing your noise level you know you've gone too far. You'll have to play around with this one some..

It's all about technique.

Keep in mind that it may take 10 seconds or so before your NR starts to clean up the noise as you drop the RF gain, so try only dropping it as much as 1 bar less than the noise level at first, if you need to drop the RF gain lower then go ahead and then listen again for a few second more.

Please read my "NR Analyzer" document for a full understanding on what the NR is doing, and how it works.

NB:

The NB generally works for Electrical noise and other pulsing type noises... You may have already noticed that when you turn it on it can drop your S meter by as much as 1 S unit. With the proper settings (DSP/IF) you may be able to get that down to as much as 3 S units (bars) of noise reduction. However, keep in mind, with the reduction of noise with this method you will also have adverse affects on the signals you're trying to listen to. Such as a clicky sound on the CW tones, or flutter on a voice.

Again, like the NR you always want to use as little as you can get away with. Starting with the lower numbers for DSP, and the Narrow modes for IF.

Just for a starting spot, in my area I find that 2-5 with Med 2 seems to work very well at reducing the QRM/QRN. However, if I move it to 2-7, Med 2 I find that the noise level drops down 3 bars, but trying to have a QSO with a weak station is almost impossible. As well as the noise it tends to "remove" the target signal as well.

Try NOT to use your S meter as your gauge of where you should have your NB set to. For example, Turn off the IF NB, start with the DSP (because this seems to work best at removing noise) Next, Close your eyes and start to VERY slowly turn the DSP part of the NB starting at the lowest number (setting). LISTEN to when the noise is reduced to your satisfaction. It may take some going back and forth to get this right, or even hear a difference. When you are done, if you are not completely satisfied with the noise reduction continue this process using the IF part of the settings. Keep the DSP portion exactly where you found it to work best. When you find the best IF noise reduction you will have your combination set.

It is important to listen to some signals and turn on and off the NB to make sure that you haven't over compensated for the noise and distorted the signal you are trying to receive. Be sure to test this with some weak signals as well, as they are not only distorted, but can be removed completely.

Width:

The width control is basically how much freq. you want to listen to at one time. Think about this one as if it were your hand was cupped over your ear. The wider you open your hand the more you're going to hear around the room.. The more you narrow in your hand over your ear the less you are going to hear from a broad range of area. So, for example, if you are trying to have a conversation with some one on 7.025 and there is someone at 7.026 you want to make sure that your (width) hand is closed by at least 800Hz... This way you are "focusing" specifically on those signals that are only within 800Hz of your target freq. By squeezing in your width (lower number) you will focus more on the signal that you're listening to.

When using CW the freq. you should tune your target to should match as close as possible to the Freq. that you have your "PITCH" set to. This would be what we call the CENTER of the IF passband. You almost always want to try to "center" your pass band with the other person. There is another useful feature on your display that will help you do this when the "CWT" mode is on. You will notice a little "Goal post", when you have CENTERED the signal with your Pitch you will see that little goal post move to the center of the graph display.

Returning to Width, when you get the Width down to 50, or 50Hz this means you are ONLY able to hear things 25Hz to top, and 25Hz to the bottom of the signal you are focusing on. Again, this would be like you have your hand cupped VERY tight around your ear as to focus on something right in front of your ear.

The reason that this helps clean up the noise, is because you are listening to a very selective area. With SSB this area inherently can not be too narrow. For this reason you will notice that your Width control will not go as low as it does on CW. With SSB you will find that about 1.8Khz is about as low as you will be able to go before you start distorting the sound of the signal you are listening to.

In case you feel like you've gotten yourself lost, you can always push and hold down the SHIFT button until it resets you into the "NORM" or normalization mode. This just puts your Shift and WIDTH back to the default positions so you can try again.

Shift:

Keeping in mind the Width control, and my description of your hand cupped over your ear, the Shift knob works like a turn table for your head... Okay, this sounds funny I'm sure. What I mean is, Now that you have your ear cupped, you have to be able to focus your hearing on a target. The Shift knob allows you to rotate your head to the left or the right so that your ear is pointed in a particular direction. For example, if you have your filter down to 50 (50Hz) and you move your shift knob to the left you will then start to focus your target on a lower in Freq. You have still maintained that same cup "width" over your ear, but you are "searching" for signals within that area below (as in my example) or if you turn it to the right you will be focusing above the CENTER pass band freq. The center is marked by a little * next to the number.

This would be very similar to moving the VFO knob up or down, but in this case, you will not change your Transmitting freq. The Shift will

only moves you a designated amount above or below, and ONLY effects what YOU hear (focus on). It will not affect your Transmit area. The same thing can be done by moving the RIT knob as well, but it's not always recommended.

The reason that you would want to focus on something that is NOT in your pass band is because you may find that you have noise that is not able to be reduced, and you find that you can SHIFT the passband (focus) to the side SLIGHTLY and find a clearer signal.

I find that when I have my Width set to 250Hz and I SHIFT my pass band area down about 20Hz I can more clearly hear the target signal. Again, this is technique and something you can experiment with. Put a signal in the CENTER of your pass band WIDTH, then narrow down to about 100 to 250Hz, and play with the shift moving up or down, you will hear what I'm talking about.

For SSB use there is a VERY helpful feature in combating noise. This is where you switch the WIDTH and SHIFT settings over to the "HI & LO" mode by pressing the Width or Shift buttons in quickly. Hi & Low will change how the voices sound just as they are labeled. The HI will adjust how much High freq. you can hear, and the LO will adjust how much Low Freq. you can here.

What you can't see in this mode, is that you are actually moving the pass band WIDTH and IF SHIFT around. If you exit the Hi & Lo mode and return to WIDTH and SHIFT you will see the changes that you have made. The best way to use this is to move the Hi & Lo settings around until you have removed as much noise from the audio as you can, while still keeping the sound of the voice from being too distorted. In most cases you will find that you can remove a lot of the High end of the voice while tightening in the Low end of the voice and still copy what the station is saying very clearly. You'll also note that when you change back to the WIDTH and SHIFT modes that you've probably done what I was describing in the above paragraph... IE, you will have changed the SHIFT to a Lower Freq. and tightened the WIDTH down to a narrow pass band somewhere around 1.5KHz.

I hope that I have given you a pretty good idea of what each of these things can do for you, and how to use them. Of course if you need more help please feel free to email the group again. I'm sure there will be many more explanation of how these things work.. Hopefully not overly technical as you may be a newbie. Have fun and 73