

APF De-Ringing suggestion

The APF is an easy tool to use.. However, one of the main concerns people are talking about now is the fact that the filter seems to be a bit tight, and tends to ring. This of course is normal for an APF (IIR type filter), but not everyone wants to hear ringing on their CW signal when they use it. Others just can't copy the CW signal when the ringing is at the same exact frequency as their CW tone. For this reason I have written this little tutorial on how to remove the ringing from your APF filter while still getting the most out of it.

Lets start by centering your SHIFT (before you turn on the APF) and make sure you see the * next to your PITCH/center IF frequency. Next, spot the CW signal in. (IE hit the SPOT button when you're trying to copy someone) or use the VFO to center the line on the CWT display. Now you can be sure that the CW station is in the center of the your IF passband. Next, adjust the width setting to your liking... It almost doesn't matter once the APF is on what you choose. However, what it will help with is blocking noise from the sides of the signal you're listening too. This can be helpful if you have other stations that are very close to the CW signal your trying to peak. The lower you set your Width filter the more you will reject to the sides. Any signals (including noise) that are left over on the sides will be compounded into the center of your IF passband and cause more ringing noise. So I would suggest that you keep your WIDTH from 250Hz to 100Hz setting. You can play more with the WIDTH control once you have the APF on.

Turn on the RIT control (tap the RIT button). Next, lower the RIT frequency -20 Hz. (You must have CONFIG:PB CTRL in the config menu set to .01 in order to move in 10Hz steps) If your pitch is set to 500Hz, than the tone of the CW should now be 480Hz. Next, turn on the APF by HOLDING the DUAL PB button. Adjust the APF using the SHIFT Fc Knob (now APF control). Move the APF down -20Hz to match the CW signal. Once you have the signal in the center of the new 480Hz tone you should hear that the CW signal pops up about 5 or 6 dB.

What you should also notice is that CW tone is now centered at a different frequency than your IF passband center. This also allows you to avoid peaking the Ringing sounds that live in the center of your selected IF area. Your brain is now free to discriminate the two different tones instead of having to copy code at the same frequency as all the ringing noise.

If and When the K3 has a variable Q adjustment you will then be able to avoid the ringing by opening up the tightness of the PEAK Filter width and allowing a little more signal to pass. Of course you also compromise the "sharpness" of the current APF operation.. but if you feel that you don't need as much peaking on the signal then you will be able to control it a little more accurately. Having a Variable Q control would be best used on signal that is 'less' weak than those hard to copy signals in the noise floor.

Another great feature of the APF is being able to use it on either/or filter position I or II. If you like, you can set filter I for APF off, and filter II to APF on. Switching between the two filters is as easy as HOLDING the SHIFT knob in. Once you set either filter

position with the APF on or off the K3 will remember how you have it set.

I hope that this little bit of extra information helps you out in getting that APF to work right, and you can now snag those DX stations you were having a hard time coping before! Good luck and 73. Be sure to email me off the reflector if you have any other questions.