Posted by: "Jim Moen"
Mon Oct 29, 2007 11:31 am (PST)

I really like the technique described by N0AN when you want to eliminate strong adjacent signals during PSK operation, and felt another re-post may be worthwhile for new subscribers to this reflector. This technique allows you to narrow down the bandwidth to 50 Hz. A simpler approach has been described by many people -- Mike G8XDX wrote "if you turn on Menu 50A you will find the DSP bandwidth knobs give you a choice of filter settings, one of which is a PSK filter. It just means you have to tune the rig to put the
required station in the passband of the filter."

But when you really, really want to narrow it down, the attached technique is the way to go. Our TS-2000's are extremely versatile!

Jim - K0ZXU

----- Original Message -----
From: "rocketradio2002"
To: <KenwoodTS-2000@yahoogroups.com>
Sent: Wednesday, April 12, 2006 9:43 PM
Subject: [KenwoodTS-2000] Repost of PSK tuning technique by N0AN

I've reposted this written by N0AN. This technique works very well for PSK. It allows you to use the much more versatile CW filtering rather than the USB.

George
N7BUI

The DSP filtering in the TS-2K is quite good. One trick that a lot of people don't seem to use or know about is for superb reception of psk31/rtty etc.

Run the radio in split mode. Here is how to do it.

0. Select your favorite psk31 freq on the "A" vfo (left side, receive, USB)
1. Select SPLIT vfo's.
2. Make "A" your left VFO (arrow points to left by the "A")
3. Make "B" your right VFO (arrow points to the right by the "B")
4. Hit the A=B button to put both vfos on the same freq and mode.
5. Select CW for your receive mode (hit cw button)
6. Set your bandwidth control to 2000 Hz for now
7. Set your shift control to 900 Hz for now

7a. Turn XIT on and set it to -800 Hz (this puts your transmit and rx on the same freq, even though you have different modes selected (cw on rx, usb on tx)

8. Press and hold the TF-set button, and while holding it, hit the SSB button..this sets the transmit vfo in the SSB mode.

This may sound like a lot, but it is actually quite simple, and you only have to do it once!

You are now set to receive on VFO A (left side) in CW and to transmit on VFO B(right side) in SSB. Due to setting XIT to -800 Hz, they are on EXACTLY the same frequency.

Now...as long as you use the receive window of your software (like MixW) to change frequency by selecting different signals on the waterfall/spectrum by clicking with the mouse, you don't have to do any retuning! You have approximately 1500 hertz of bandwidth to play with, without touching any knobs.

So...what does this get you? You can now use the filter width and shift controls (lower left side of front panel) to allow you to receive in any bandwidth from 2000 Hz down to 50 Hz!!! You have virtual privacy when you narrow the receive filter down to 50 Hz, believe me.

I set my shift control to about 900 Hz, because I want to be able to copy psk31 signals down to about 350 Hz and up to about 1500 Hz. If you choose 900 Hz for your shift, you can still copy most of the band. You can click anywhere in the waterfall/spectrum on a signal and instantly begin copying, no knobs, no messing around, but perfect reception. Then it is a simple matter to start closing down the rx bandwidth with the left knob. Reduce it one click and you drop from 2000 Hz wide to 1000 Hz....all the way down to 50 Hz if you want.

Now...as you start reducing the bandwidth significantly with the left knob, you will need to adjust your shift to correspond to what the station you are listening to tone freq's actually are...in other words, if you reduce things from 2000 to 600 Hz, and you were listening at 1100 Hz, you will lose the rx signal until you adjust the shift knob to a bit closer to 600 Hz (assuming the station you are listening to is on 600 Hz in the waterfall/spectrum display.)

While all this might sound overwhelming, it is really quite simple and one gets good at it.

--------- Addendum ----
From follow-up notes by N0AN
Simply put, two things control how you receive a signal with this setup:

a. The receive bandwidth (left knob)
b. The receive shift (right knob)

The ideal is to set the receive shift to the center freq of the signal you are listening to, BUT, the wider you have you bandwidth set, the more tolerant things are to having your shift off. When things are "wide open" at 2000 Hz, you can set the shift to 900 Hz and forget it. When you start to tighten down the bandwidth, you need to move the shift center freq (right knob) to more closely agree with where you are actually listening.

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If you find it necessary to change the radio receiver VFO frequency, just do this after tuning the radio to a new frequency:

Hit A=B button
Press and hold TF-Set
Hit the SSB button (while holding the TF-Set button...let up on the TF-Set after you have tapped the SSB button.

You have now done the following:

Set the A and B VFOs to the same freq and mode
Reset the B vfo to USB (it got changed to CW when you hit the A=B button)

I find I don't have to do this very often as 99% of the psk31 activity is on a specific band of frequencies centered at about 14.070 or 14.071 (cw receive). At 50 Hz wide, that couple of kilohertz is a LOT of bandwidth, so you don't have to retune very often...you just use the waterfall/spectrum display and your mouse click for tuning.

I've used this trick successfully with both a TS-870 and the new TS-2000, and it works beautifully. QRM on psk31 is

a thing of the past with the outstanding DSP filtering in this radio. Once one learns the method for setting things up that I described above, it is psk31 heaven! At 50 Hz bandwidth (and your shift set right on the money), there is no qrm.

73,

.hasan, N0AN..

p.s., notice when you close down the rx bandwidth your waterfall/spectrum display changes dramatically, showing the actual shape factor of your received bandwidth....a nice indication of how well the DSP filtering is working in the TS-2000

----- Original Message -----
From: n4hra_lew
To: KenwoodTS-2000@yahoogroups.com
Sent: Saturday, October 27, 2007 3:45 PM
Subject: [KenwoodTS-2000] PSK Filter

Does anyone know if the TS2000 has a filter for PSK
I heard it does and can not find how to set it up

Lew N4HRA