

# Theory of PropnetPSK

I am sorry I was unable to participate in today's event, but I believe there was someone from just across town that was providing RF from Tucson. My electron radiator just does not like to load up on 30 meters, or 17 for that matter. I do hope to have a complete new antenna system up in the very near future.

Since we seem to have a tremendous amount of new folks on the band, I want to do a little "theory of operations" for you new comers.

The PropNetPSK Software is basically a wrapper around the PSKCORE.DLL which is a Windows library created by Moe Wheatly AE4JY. The DLL does all the sound processing and all I do is access the numerous public properties and functions of this DLL to produce a program.

The Auto capture routine is basically a routine that looks for a signal peak within the defined channel. This signal peak could be anything, noise, PSK signal, SSB, PACTOR, etc.... The function, for each channel is called every 425 milliseconds ( or what every timing factor you have selected). Each time the frequency cursor lands on a "spot of interest" it begins computing to determine if the signal is a PSK signal. If this is a PSK signal AND the signal level is GREATER than the defined squelch threshold, the auto capture function for that specific channel will not run again until the signal level drops below the squelch threshold. ( And see, all that Boolean algebra you learned as a freshmen is actually good for something!!)

All of this looks good on paper, but in reality, it has a few flaws. It is quite possible that you might land to the side of a very strong signal that is outside of the AFC area, but you still have a good signal level. The AFC is fine enough that the processor will not fine tune it. Opening up the AFC to a wider value, is not really a good idea as you might find yourself walking into an adjacent channel.

Overdriven signals from the transmitting site will cause all kinds of havoc with the FFT processing routines. Just because you have a booming signal on the station, it will not copy much at all because it is overdriven. You can see this more and more down on 20 meters. Properly setting your radios drive from the computer has been covered quite well in the archives of this list.

Check to make sure you are not getting any RF back into the shack. If you do, it will probably couple itself into your computer and when that happens all bets on program operation are off. I know this first hand from a poorly tuned antenna on 10 meters.

DO NOT rely on the audio setting you have for other PSK/digital software to be compatible with this software. If you change between different software and use the same sound card, make sure you record the setting so you can return to them in the future.

If you are experiencing problems or have an error, please post your problem directly to the Propnet Online list. Provide a good description or the problem, such that I or someone else can try to duplicate your problem. If you get an error message, post the contents of that message, especially the error address. I will also need the software version you are using and are you using this on a Windows machine, Linux machine under WINE or the Apple on the Windows partition. At the present time, I do not have a Revision Control System in place, so the only error addresses I can really trace and those from the current version. I am evaluating systems at the present time, but it will probably be after the first of the year before I can have one in place and working.

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