From: Pete Smith
To: skimmertalk@contesting.com; dxatlas_group@yahoogroups.com; SDR-IQ@yahoogroups.com;
Subject: [Skimmertalk] More on Skimmer CPU Utilization
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Thanks, everyone, for your repoorts.

This morning I went to restart my computer after some Windows updates, and "bang", Skimmer was back up to using 70 percent of resources on an almost-empty band. After a lot of parameter switching and program stopping and starting, with no discernible magic pattern, I finally got it to settle down. Currently, with 92 out of 453 decoders running across 14000-14096 KHz bandwidth, and Skimmer minimized, Skimmer is using a total of 17 percent of my 2.66 GHz Celeron. With Skimmer full-screen, utilization jumps to ~40 percent across the two processes, and Skimmer reports 41 percent; if the abnormally high CPU utilization were present, the task manager CPU value Would have been 85-100 percent.

What does this say? To me it clearly indicates the presence of a subtle and darned difficult-to-find bug in the initialization process somewhere, that can affect you adversely any time the Skimmer is running on a PC with other applications. Until that is found and fixed, I'd recommend the following to minimize impact on other programs, such as loggers, running at the same time:

* keep Skimmer minimized whenever possible, or at least keep it as small as possible. Use Skimmer's Telnet command function to control band changes from inside your logging program, or use WD5EAE's script-based control program to do that for you.

* keep your Scan Rate as low as possible - don't use 192 unless you are running Skimmer on a dedicated machine. 96 is plenty - you can set the Skimmer frequency 38 KHz above the bottom band edge and cover 000-096, which is all you need.

* if it comes up in a condition where the task manager says that CPU usage is significantly higher than Skimmer itself reports, try changing the Sample rate, Switching to SoftRock and back to SDR-IQ, or vice versa, stopping and starting the waterfall, and stopping and starting Skimmer. Try doing parameter changes both with the waterfall running and after pausing it.1 After each activity check the task manager and see if the CPU utilization has reverted to being less than what Skimmer reports. Be sure to wait a few seconds each time for Skimmer to settle

down before you reach a conclusion. Eventually, if it reverts to normal, don't stop and restart Skimmer. Set your Sampling rate back to what you want, if it isn't already, and hopefully it won't go nuts again.

* Adjust your choice of bandplans on the Misc tab, as necessary edit your band plans in the bandplan.ini file, and be sure that you have "Decode only in CW Segments" checked. If you look in the bandplan.ini file, you'll see ways to improve on the number of spurious decoders that Skimmer attempts to deploy on RTTY and SSB signals.

This is important because a large share of Skimmer's CPU demand is due to efforts to determine whether each candidate decoder that is deployed is actually seeing anything that is decode-able. For example, I edited my CW Contest bandplan to stop 40 CW at 7040 and 20 CW at 14070. With that limitation, under essentially the same conditions as reported above, Skimmer is displaying 94 of 94 decoders, reporting its own utilization as 36-38 percent, and task manager reports it as only 11-16 percent. Sure does make my other programs run better!

73, Pete N4ZR
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