

I support the ARRL's well thought out proposal but would like to have digital spread spectrum emissions allowed as long as they do not exceed the ARRL recommended limit of 2800 cycles of bandwidth.

Many popular digital modes such as Olivia and Contestia are designed for keyboard to keyboard chat with the lowest possible signal to noise ratio. They do an admirable job of getting through tough conditions. They do this by skillfully encoding the text as well as by adding redundancy to the signal.

Another way to accomplish the same thing is to start with a narrow signal and spread it at the transmitter and despread it at the receiver.

When done with emissions such as SSB or FM the result is a very wide signal that may cause problems to other users on the band.

However, if you start with a signal that is say 50hz wide and spread it by a factor of say 20. You only have a 1000 cycle wide signal, yet you add a significant processing gain as well as redundancy so that the signal will still be usable with a much lower signal to noise level.

When the rules prohibiting spread spectrum on HF were written it was before the really narrow hf digital modes were around and before we had the ability to spread them.

The goal of prohibiting spread spectrum on HF was to prevent interference caused by a wide bandwidth mode used on the small HF bands.

We can now produce spread spectrum signals that are as narrow as some of the popular digital modes and thus are unlikely to cause interference by being too wide.

The changes that I am asking for are in the spirit of the ARRL proposal and propose to remove some outdated rules that are an impediment to experimentation. Therefore it makes sense to add them to the ARRL petition as opposed to filing a new petition.

The ARRL proposal points out quite nicely that what is important is the bandwidth of the emission and not the number of bauds. I suggest taking this one step further by allowing digital signals that have started with a narrow baseband signal but have been spread to obtain a processing gain and make the signal more robust provided that the bandwidth of the resulting digital signal does not exceed the 2800 cycles proposed by the ARRL.

In other words, the fact that the signal is a spread spectrum signal doesn't matter, as long as the bandwidth of the signal does not exceed 2800 cycles.

I therefore ask that the following additions be made to the ARRL proposal.

1. 97.305(C) be changed to allow spread spectrum digital emissions wherever digital emissions are allowed on MF and HF provided that such emissions do not exceed 2800 cycles.
2. Narrowband digital SS emissions should be exempted from 97.311(a), (b), (c), (1), (2), and (3) because the narrow nature of the signals makes them no different from any other digital signal.
3. 97.313j should not apply to the narrowband digital SS emissions for the same reason as above.

Thank you for your consideration.

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