

Effects of RM-11708 on Forty Meters

This analysis looks at the current Winlink spectrum consumption on 40 meters and provides an estimate of future spectrum Winlink consumption due to proposed bandwidth changes of RM-11708.

The analysis simply divides the spectrum into 100 Hz bins and totals the current number of Winlink stations operating in each 100 Hz bin. The result is a visual spectrum usage plot that displays current Winlink spectrum consumption and estimates future spectrum expansion if expanded to 2.8 KHz bandwidths proposed by RM-11708.

The lower part of the 40 meter band was analyzed as this band not only supports legacy CW and RTTY waveforms but it also supports international SSB operations. During the recent FT5ZM DX-Expedition, the 40 meter SSB station was QRM'ed by an automated packet station for over one hour.

Analysis details and assumptions are outlined at the end of this report.

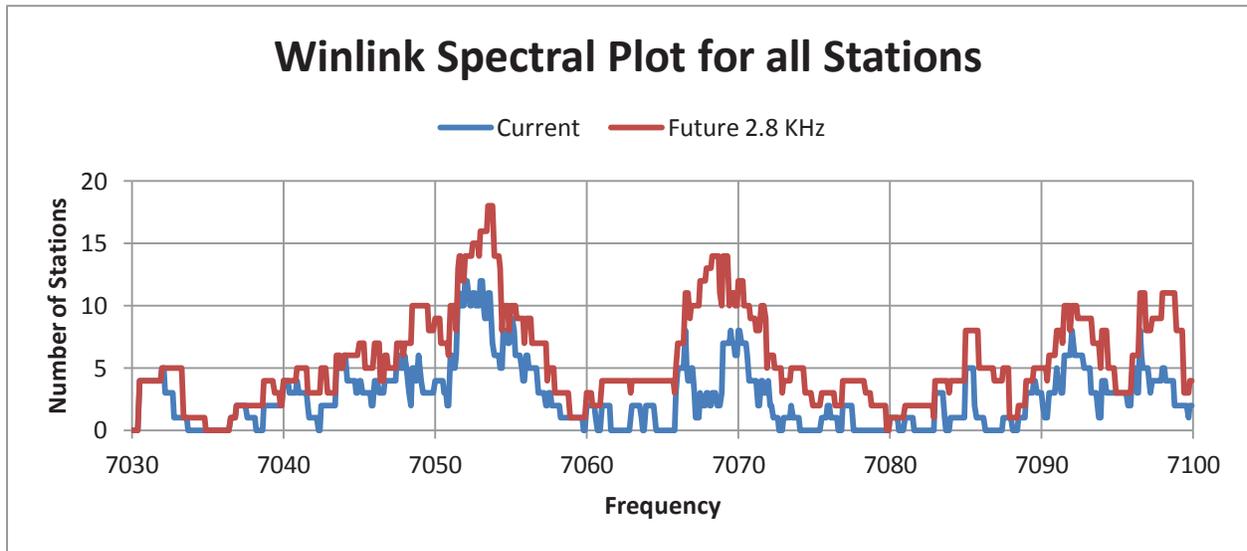
Considerate Operator or Deliberate Interference?

The ARRL publishes a "Considerate Operators Guide" that says: *"It's good practice--and plain old common sense--for any operator, regardless of mode, to check to see if the frequency is in use prior to engaging operation. If you are there first, other operators should make an effort to protect you from interference to the extent possible..."*

The Winlink stations operate 24 hours a day and do not have operational busy frequency detectors. Winlink stations simply fire up at will causing interference to other existing stations on the frequency. Some now call the bottom of the 40 meter ham band "the ghetto". Winlink operations are definitely not considerate operators and many feel their operations should be classified as **"Deliberate Interference"**.

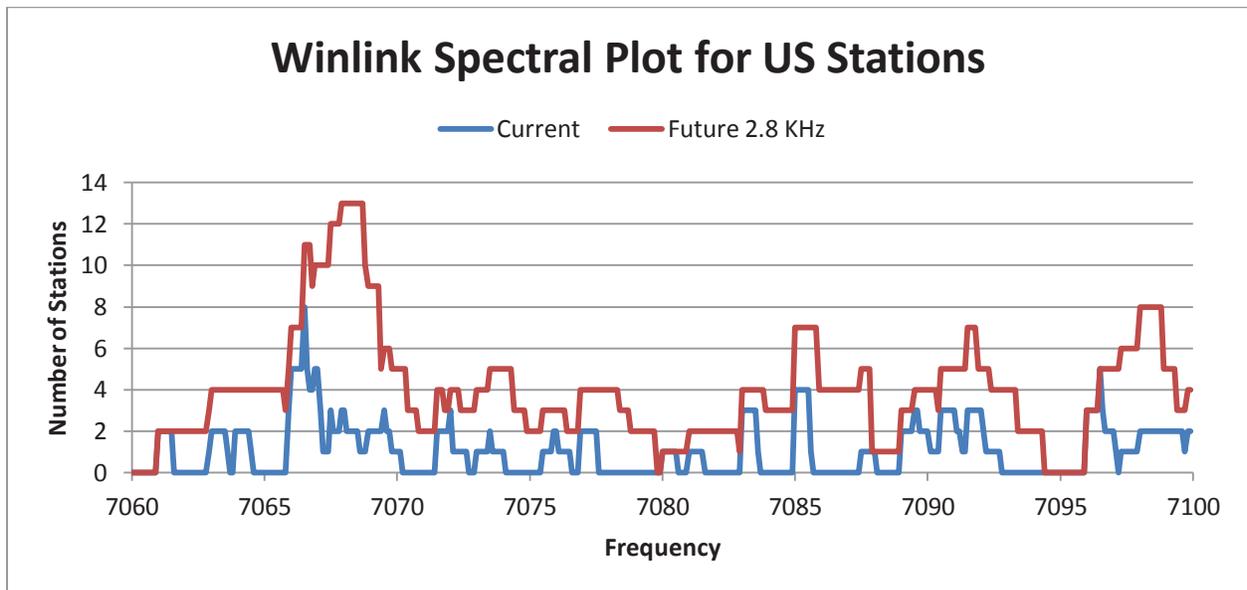
Forty Meter Interference from all Winlink Stations

This plot displays both US and foreign Winlink stations operating on the bottom of the 40 meter ham band. There is NO place to operate without the risk of interference from automated Winlink stations.



Forty Meter Interference from US Winlink Stations

This plot displays US Winlink stations operating on the bottom of the 40 meter ham band. The plot shows current spectral bandwidth (in blue) as well as future spectral bandwidth (in red) if expanded to 2.8 KHz bandwidths proposed by RM-11708. The expansion to 2.8 KHz bandwidths will result in up to a 3.66 times increase in spectrum usage.



Conclusion

The purpose of a band plan as defined on the ARRL web site is: *A band plan refers to a voluntary division of a band to avoid interference between incompatible modes.*

Automated digital operations do not follow the ARRL **considerate operators guide** and their current operations are causing serious interference across the CW/Data bands thus automated digital operations are **“incompatible”**.

The ARRL has been negligent in spectrum management and band planning as it has allowed these **“incompatible”** automated digital stations to spread across the CW/Data sub bands.

The interference on 40 meters will be up to 3.66 times greater if digital bandwidths expand to 2.8 KHz as proposed by RM-11708.

Until the ARRL can provide responsible spectrum management and band planning for current lower bandwidth automated digital operations, it should **NOT BE TRUSTED** to manage higher bandwidths as set forth in RM-11708.

Since automated digital operations are **“incompatible”** and since the ARRL has NOT been able to provide responsible spectrum management and band planning at current bandwidths nor has the ARRL demonstrated how they will manage the expanded 2.8 KHz bandwidths; the obvious conclusion is **RM-11708 should NOT be approved.**

Terry AB5K

Analysis details:

1. Take the published Winlink call/frequency/mode list. Determine the current station bandwidth and convert it into a spectral density format and total the maximum number of stations transmitting every 100 HZ.
2. Repeat step one using 2.8 KHz bandwidth for each station.
3. Import into Excel and plot results

Assumptions:

1. Only published Winlink frequencies were analyzed. There are other automated operations that also cause interference.
2. The model assumes a linear Power Spectral Density, PSD, for all waveforms
3. Current waveform bandwidths: Pactor 4: 2.2 KHz, Pactor 3: 2.2 KHz, Pactor 2: .6 KHz, WINMOR 1600: 1.6 KHz, WINMOR 500: .5 KHz and Robust Packet: .5 KHz.