

As others have stated, I appreciate the Commission continuing to allow comments to be posted on RM-11708 significantly after the comment period was to close. The petitioner, ARRL, has formed a committee to solicit input from its members on digital modes in Amateur Radio. This response is both a confirmation of the continuing popularity of digital modes for Radio Amateurs, along with the understanding that RM-11708 is somewhat controversial with its members and is worthy of additional discourse.

I have therefore taken this opportunity to share my input to ARRL with the Commission and with the larger audience that reads these filings. This is an enlargement of my previously submitted comments regarding RM-11708 and is not meant to replace them.

Respectfully submitted,

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The League's proposal for rule making that has become RM-11708 has precipitated a great deal of discussion in the ham community, both in the US and world wide. It is obvious that the impact of new and varied digital modulation schemes and their usage have the potential to greatly change the nature of Amateur Radio.

It is important to agree on some key aspects of Amateur Radio, so that the very nature of the service is not changed as a consequence of these changes. To me some of the basics are:

1. No one owns a frequency
2. Self policing is important
3. Amateur Radio does not compete with or replace commercial services
4. The qso, with a person on each end, in real time is the basic form of communication that amateur radio was built upon. The various technologies only facilitate this.
5. Interference between stations is mutually damaging, with both parties benefiting by mitigation.
6. Bandwidth is a better and more enforceable measurement than use of symbol rate. The rules pertaining to symbol rate should be removed from the regulations, so long as they are replaced by a meaningful bandwidth regulation.
7. Experimentation is a hallmark of Amateur Radio.

If these are agreed to, several important conclusions can be made.

1. Except for the 60M band, and limited repeater usage on 10M the HF spectrum is not conducive to channelization. Technologies such as ALE or unattended store and forward mail boxes or internet portals that require assigned channels obviously run counter to this and if allowed, will need to be rigidly constrained to limited sub bands. The concept of a 'control operator' accessing an unmanned station should not free unattended stations from this constraint.
2. It must be possible to decode and monitor any on the air amateur signal. Encryption or modulation schemes that do not allow third party monitoring should be prohibited.
3. Any attempt to use amateur radio frequencies to replace a commercial service, is prohibited. This is specifically targeted at not replacing services such as SailMail that provide regular, recurring service, such as email and position updates with an Amateur Radio equivalent.
4. Since there is no frequency ownership, interference can and does occur between stations. It is important that the interference is symmetrical, such that both parties act to mitigate it as both suffer from it. This implies not allowing modulation schemes where this is not the case to share the same sub bands. An example of this asymmetry of interference would be wide band data using adaptive channel equalization and any narrow band modulation like psk31 or cw. Segmentation by bandwidth of emission is a natural outcome of this.

There is an inherent responsibility to verify a frequency is not in use by others before transmitting.

5. In a like manner, real time human to human communications should not share the same frequencies with automated, unattended, stations (which should be relegated to a limited, restricted, sub band)
6. Some of the most exciting new modulation schemes have been narrow band with high spectral efficiency for keyboard to keyboard communications. (JT9, JT65, PSK31 among others). These are unique to the amateur service, rather than simply being clones of commercial offerings. These result from the unique aspects of the amateur service and the regulations covering it.

General Rules for Bandplans

1. Unattended stations, if allowed at all, shall be constrained to defined band segments. ALE stations that do not have monitor before transmit capability would be relegated here as well.
2. Segmentation by bandwidth continues to be the most effective means of allowing different modulation schemes in a band.
3. In all cases, bandplans shall be 'equitable' in that they do not serve any one mode or activity out of proportion to the number of hams using it.
4. All allowed modulation schemes shall allow monitoring by a third party.

Summary

1. Bands shall be segmented by allowed bandwidth. (Especially since the lines between digital, voice and image transmissions will continue to blur).
2. Automated stations shall be tightly constrained as to allowed sub band of operation. Such stations must have a demonstrated ability to reduce (un)intentional QRM to preexisting communications.
3. All transmissions shall be capable of being monitored by third parties.
4. Symbol rate should be dropped in favor of bandwidth regulation.

My background - Originally licensed in 1970 I currently hold an Amateur Extra Class License. As a graduate engineer, I have worked in the two-way and cellular communications industry for over 40 years, and hold several patents. I held a First Class Radiotelephone license, since replaced with a General Radiotelephone Operator License. I am currently a Life Member of ARRL having been a member since 1968. In my ham radio 'career' I have made close to 100,000 contacts, many of them using the various digital modes as well as cw and voice.

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