

Dear FCC:

Thank you for accepting these comments and for rejecting RM-11708. As an active licensed amateur radio operator, I ask the FCC to deny RM-11708, but also ask that you institute much needed narrowband bandwidth protections on the HF CW/Data subbands, so that CW, RTTY, and narrowband data operators (e.g., those who operate narrowband modes such as JT9 and JT65, and PSK31, etc.) would be immediately protected from existing Pactor 3 stations that fail to listen before transmission and fail to properly identify themselves, as well as from all future modulations proposed in RM-11708.

Before ruling on RM-11708, the FCC should acknowledge there are major problems with existing Pactor 3 and automated Winlink stations that need to be addressed, and these have been documented by hundreds of commenters in this Proceedings. As just a few examples, consider the well-articulated observations by Art Charette K6XT, Zbigniew Tyrlik, KU1T, Robert Underwood, KORU, Russell Woirhaye, KOVXU, Alan Kozakiwicz, AB2ZY, Salvatore Irato, IW1AYD, Terry Gerdes, AB5K, Gregory Thompson KC7GNM, Ken Hopper, N9VV, Volta Anders, KE5YGA, Robert Norris, W5KI, Ron Grossman, AF5Q, and dozens upon dozens of other active amateur radio operators who have given eye-witness accounts of interference from Winlink/Pactor 3 stations that fail to listen before transmission or that fail to properly identify themselves. As one of the myriad examples filed in this proceedings, consider the testimony by Thomas F. Giella, W4HM, who states: "Since getting into the digital modes in 2003 I've been interfered with 100's of times by automatic and Manual PACTOR stations on most every HF band."

The International community has also been plagued by these same interference issues. The IARU has been vocal about the ever-increasing interference from Pactor 3 and automated stations on 30 meters, as shown for example at:

http://uska.ch/fileadmin/download/iaru/interim_meetings/venna2013/VI E13-C4-04_NRRL.pdf and from comments file by Salvatore Irato, IW1AYD.

The IARU has in recent years been urging for the adoption of a "regulation by bandwidth" approach that ensures narrowband CW, RTTY and narrowband data users (with bandwidths less than 500 Hz) are given ample spectrum and are protected from wider band interference, globally in the lower end of the amateur radio HF bands (e.g. within the CW/data subbands that are the focus of RM-11708).

No doubt many future comments in this Proceedings will confirm the current interference problems that have caused deterioration of our hobby's founding principles of self-regulation, avoidance of interference, transparent non-encrypted communication, international goodwill, and compliance by Official Observers in the CW/data subbands. In addition to the huge problem of interference, many of the commenters have voiced their legitimate concern about the use of encrypted internet browsing and potentially illegal use of internet on the precious HF bands that may be occurring by the few wideband users of Pactor 3. They offer compelling arguments why allowing wider, denser, and faster operations as requested by RM-11708 in the CW/data subbands would be harmful to human-to-human narrowband amateur radio communications, and to the fabric of the hobby itself, not just in the US but throughout the world.

The FCC must not ignore the numerous and consistent observations in the public record that show the problems currently inflicted on the narrowband amateur operators of the HF bands by a very small number of wideband data operators, ever since the FCC authorized wider bandwidth automated data transmissions in the early 1990's, before the internet and email were popular. Thankfully, the FCC had the wisdom to keep in place the 300 baud limit on all CW/Data subband transmissions, and this has prevented the interference from wideband Pactor 3 offenders from making the bands unusable, although public comments show that problems clearly exist today.

Since wideband data signals such as Pactor 3 can occupy 2.4 kHz, the same spectrum as 10 to 14 CW or RTTY signals, or several dozen JT9 stations, a very small number of Pactor 3 stations can interfere with hundreds of amateur operators who use narrowband CW/data transmissions. Automated stations that fail to stay in their appointed frequencies have been documented by dozens of commenters in this Proceedings (as they fail to follow the rules specified by Petitioner's footnote 10). This "selfish" use of spectrum of just a few wideband users would be exacerbated terribly if RM 11708 were allowed to remove the 300 baud limit while increasing the bandwidth limit to 2.8 kHz for all stations (manual and automated) throughout the entire CW/Data subbands. This is why the FCC needs to put the genie back in the bottle, and immediately institute protections for narrowband data users from further Pactor 3/Winlink interference, and from misbehaving automated stations that not only fail to listen before transmission but also fail to properly identify themselves with a public, open method. The FCC must first deal with this existing and increasing problem in the US amateur radio service caused by today's Pactor 3 wideband data stations, so that incumbent narrowband amateur operators, who as shown below make up the majority of contacts among amateur operators, can be protected from future rulemakings such as RM 11708.

The Petitioner fails to acknowledge the existing interference and encryption problems that occur from Pactor 3 users today. Further, the fails to offer a solution in its proposal that ensures protections for current CW/RTTY/narrowband data users from the existing interference from present-day Pactor 3 (wideband) operations. The willful neglect of the Petitioner in reflecting the realities of harmful interference in its proposed rulemaking is evidenced by the fact that the Petitioner never once uses the word "interference" in its 16 page filing! Instead, the petitioner asks to dramatically increase the existing interference problem by first suggesting the abolishment of the FCC's 300 baud limit (a key regulation that currently keeps a bound on interference in the CW/data subband) and then asking for a widening of all automated and manual wideband data signals to 2.8 kHz, despite the well-documented global interference problems with Pactor 3. The Petitioner displays a complete disregard for the vast number of US amateur radio operators who use the narrowband CW/data modes in the amateur radio service, and also shows a lack of consideration of the global HF amateur community (as highlighted by IARU recommendations and increasing global complaints of interference). The request by the Petitioner in Section IV, "A Maximum Bandwidth of 2.8 kHz Should be Applied to Locally or Remotely Controlled Digital Data Stations at HF," without first giving any consideration for the current-day problems and without requesting some protected subbands for amateurs using less than 500 Hz of bandwidth is not responsible, and is not in keeping with the amateur radio service tenants of interference avoidance, the ability to promote international goodwill, or to ensure that narrowband operations by amateur operators with modest low power stations would be available for use in natural disasters of other emergencies.

The Petitioner fails to give any concrete rationale or hard evidence for why RM 11708 should be authorized for the amateur service, and does not provide an unmet

need or sufficient cost-benefit analysis that justifies the need for wider band transmissions in the HF bands. Just because military and commercial services offer wider band modems for paid internet/commercial (e.g. SailMail) and military traffic (see Para. 10-11 of Petitioner's filing) does not mean that the amateur radio service, with a unique mission to foster technical expertise, international goodwill, and a reservoir of citizens with ability to provide emergency communications, should adopt commercial modulations that provide commercial services over HF. As hundreds of commenters have noted, the amateur radio community has made great advances by developing new modulations with *less* bandwidth within the existing FCC regulations of a 300 baud protection, and the Petitioner has completely failed to document a compelling technical need for greater bandwidth in the HF bands. There is no clear evidence for a need, and there is no careful study of the impact the proposal will have on existing amateur radio operators, in the US or across the globe.

The Petitioner attempts to justify its request for 2.8 kHz wideband data signals in Para. 3 of its petition by citing current FCC rules for the relatively new and underutilized 60 meter band (a band that is currently only available to a few countries in the world, is channelized, and is very lightly used, since stock equipment generally does not support 60 meters). The Petitioner attempts to apply the existing special "channelization" rules made by the FCC in 2012 for 60 meters as a rationale to allow 2.8 kHz wide digital data in the other well-established amateur HF CW/data subbands. This is a completely off base, apple-to-oranges comparison, since the 60 m band is extremely underutilized, only allows 100 Watts PEP, and is a vastly different operating scenario in the amateur radio hobby, as it experiences much less usage and much less interference when compared to the long-standing HF subbands that allow up to 1500 Watts PEP, involves tens of thousands of active US amateur operators, and would impact the global amateur radio community across many bands.

The FCC must consider that the US ham population makes up about 25% of the global amateur population. The US and Japan, together, make up about 2/3 of the global amateur population. Japan, the country with the world's largest ham population, has resisted proposals such as RM-11708 given the global nature of RF propagation in the HF bands. Instead, Japan's amateur radio regulations ensure narrowband CW and RTTY/data operators are protected by narrow bandwidth signal limits throughout that country's CW/Data HF bands. This helps ensure harmony across the globe as it protects narrowband emissions from wide band interference. The International Amateur Radio Union has urged all countries throughout the world to similarly protect narrowband CW and RTTY/data operations with 200 Hz and 500 Hz bandwidth regulations for CW and RTTY/data stations, and Japan and the US make up a majority of the world's hams. Thanks to Japan and the US, current regulations have prevented the HF bands from becoming more crowded with interference from automated and wideband data stations. Now, RM-11708 threatens to destroy that global harmony.

As shown by comments filed in this Proceeding by Joe Subich, W4TV, a survey of all logged contacts on eQSL, (a popular amateur radio logging tool) revealed that over 58% of all amateur radio contacts are made with narrowband (less than 500 Hz) modes, thus proving the immense popularity and growing interest in CW, RTTY, and narrowband data (despite the lack of a Morse code licensing requirement for over 30 years). Current clubs such as Straight Key Century Club and CW Ops have tens of thousands of morse code enthusiasts as members, and recent published reports show CW and RTTY contest activity has ramped, not diminished, in recent years. In the study by W4TV, existing wideband data modes such as Pactor 3 make up much less than 1% of the logged contacts. This makes clear that Morse Code (CW) and narrowband modes are exceedingly popular and are growing in the US, and the interest in wideband digital data modes is insignificant, despite the large amount of interference that one such

user can create globally. The Petitioner fails to acknowledge any of these facts in its Petition, and does not consider the harm that currently exists to these users under today's rules, let alone the terrible situation that would occur if RM-11708 were passed. Thus, it should be clear that the RM-11708 was not prepared in a thoughtful or constructive manner.

As articulated by comments by Charles Moizeau, W2SH, and Professional Engineer Walter Fair, W5ALT,, there are a great many flaws in the Petitioner's request, and a proper justification and accurate account of resulting interference has not been given or ever considered by the Petitioner. For example, the Petitioner creates a strawman excuse for RM-11708, claiming in Paragraph 9 that "The adoption of the [300 baud limit] was prompted by assumptions that are no longer valid." In essence, the Petitioner simply attempts to argue that just because the ARRL was able to push Pactor 3 through the FCC rules with the 300 baud limitation, that despite the real-world problems that currently exist, the FCC should open the floodgate further by eliminating the 300 baud safeguard and adopt commercial modulations used for Internet/email traffic, despite not giving any proof of need, and with no study of the impact of interference of such a proposal.

The Petitioner, in Para. 9, neglects the important fact that 300 baud is an upper limit of human-to-human communication sent by hand, through typewriter or hand keyer, used by international amateur radio operators in the transmission of CW or RTTY (typically 75 or 100 baud is the upper limit), and further neglects the fact that the amateur service is strictly prohibited from providing a substitute for commercial services such as internet or email providers, as cited in FCC Part 97.221 and 97.113(a)(5). Thus, contrary to the Petitioner's statements in Para. 9, the FCC's 300 baud limit serves as a safe and generous upper limit that not only supports human communication of today, but has also allowed wideband Pactor 3 and certain automated stations to come under the FCC rules, despite the much greater bandwidth of Pactor 3 (2.4 kHz as specified by the Petitioner in 9). The FCC should realize that allowing these wideband data signals was now a mistake, and must put the genie back in the bottle in light of the request of RM-11708, and should immediately follow the lead of Japan and the requests of the IARU, and should maintain a 500 Hz and 300 baud bandwidth protection of US amateur operators in the HF CW/data subbands. The 300 baud limit has successfully prevented the much denser modulations that have "brick wall" power spectral densities with greater ability to suppress (e.g. interfere with) narrowband signals (e.g. to resist jamming), such as STANAG and Pactor 4, and RM-11708 would remove the existing regulations that currently keep the present Pactor 3 situation from becoming dramatically worse. The FCC 300 baud limit has preserved the hobby aspect of the amateur radio service and has kept out wideband data signals that can carry much faster data for internet-quality communication, such as offered by commercial systems to boaters such as SailMail.

In Para. 9, the Petitioner also incorrectly states that technology today has "effectively divorced the bandwidth of a digital signal from the symbol rate." This is incorrect, as fundamental communication theory states that occupied bandwidth is proportional to symbol rate, and this is why the 300 baud limit (e.g. 300 symbols/second) by the FCC has served CW, RTTY, and narrowband amateur operators well, and must be kept in place. Pactor 3 is inefficient compared to modern STANAG and Pactor 4 modems that occupy 2.8 kHz because it has a smaller baud rate (only 100 baud - see Para. 9). More modern modulations, used for commercial internet browsing and email traffic, have much greater baud rates than 300 baud, with much more sophisticated anti-jamming processing, and in turn have much greater power spectral densities and will offer much greater "walls" of interference than today's Pactor 3 signals. The crest factor of modern military/commercial waveforms such as Pactor 4 are at least 2.2 dB better (and thus offers greater power spectral density) and are

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used by commercial services such as SailMail. In footnote 16, the Petitioner makes a reference to wideband transmissions, and then again claims that RM-11708 offers a bounded bandwidth of 2.8 kHz where none exists today (See Paragraph 11), but in making this claim to offer a bandwidth cap, the Petitioner fails to acknowledge that such wideband transmissions are ****not legal in the first place****, since Part 97 amateur radio service regulations prohibit spread spectrum on HF, and further require any legal signal to first obey FCC rules 97.101 and 97.307. Today's wideband Pactor 3 transmissions are simply not efficient for internet traffic, thanks to the 300 baud limit that caps the data rate to human-to-human communications.

In filing RM-11708, the petitioner conveniently ignores the fact that Part 97.101 and 97.307 of the FCC regulations ***already*** prohibit all amateur radio stations from causing interference or using excessive bandwidth, and that rules ***already exist*** to prohibit data rates beyond 300 baud. Thus, the Petitioner's claim on its public website (see ARRL FAQ for RM-11708) that there could someday be mythical 300 baud signals that occupies a very large, almost infinite, bandwidth in the HF spectrum is a mere allusion, a straw man argument used to divert attention from the actual facts of a debate.

The implicit bandwidth-defined character of the sub-bands in the HF region has long been recognized and reinforced by the FCC over many decades. In WT Docket no. 04-140, FCC-149, dated October 6, 2006, the FCC writes, "We believe that separation of emission types by bandwidth is accepted in the amateur service as a reasonable means to minimize interference on shared frequencies and bands", (para. 19, lines 5-7).

The FCC's continued vigilance to protect narrowband users from wideband users is vital for continued practice of the amateur radio service, both within the US and for management of global interference. For the sake of the amateur radio hobby, I ask you to please institute narrowband protections such as 200 Hz (for CW) or 500 Hz protections (for CW and RTTY/Data users) in all of today's HF CW/Data subbands, before taking any action on RM-11708.

The current Pactor 3 wideband data stations are running amuck, with many automated stations outside of their authorized band segments and running encryption. This must be solved by the FCC. While the Petitioner has chosen to ignore this important fact out of convenience, hundreds of comments in RM-11708 should make clear the necessity for the FCC to provide protections, similar to what Japan has instituted in its amateur radio spectrum.

The FCC should put the genie back in the bottle with regard to Pactor 3 and automated stations on HF, and should maintain and institute protection for all incumbent CW, RTTY and narrow band data mode users who would otherwise be overrun by much greater (10 to 14 times as wide) interference from wideband data modes such as PACTOR 3, and who would be literally crushed and run off the band by the wider, denser modulations proposed in RM 11708, such as PACTOR 4 and STANAG. I urge the Commission to maintain the 300 baud limit ***and*** impose a 500 Hz bandwidth restriction in all HF CW/Data subbands today, while allowing CW/RTTY/data and Pactor 3, and the new modulations proposed by RM 11708 to operate with up to 2.8 KHz bandwidth in the existing wideband Phone/Image parts of the amateur HF bands, where 2.8 kHz bandwidths are already permitted by FCC regulations.

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Thank you for rejecting RM-11708, and for providing interference protections for the majority US amateurs who rely on narrowband CW/Data subbands to enjoy the hobby of amateur radio.

Sincerely,

Dan White
W5DNT