

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of)
MARK MILLER)
Petition for Rule Making Regarding Amendment of) RM-11392
Part 97 of Commission's Rules Governing the)
Amateur Radio Service to Implement Changes to)
Sections 97.3(c)(2), 97.221 Automatically)
Controlled Digital Stations, 97.305 Authorized)
Emission Types, 97.307 Emission Standards, and)
97.309 RTTY and Data Emission Codes)

ORDER

Adopted: May 6, 2008

Released: May 7, 2008

By the Deputy Chief, Mobility Division, Wireless Telecommunications Bureau:

I. INTRODUCTION

1. In this Order, we address a petition for rulemaking¹ filed by Mark Miller (Miller), requesting amendment of the Commission's Amateur Radio Service rules to revise the operating privileges for amateur radio service stations that transmit data emission types. Specifically, the Petition requests that Sections 97.3, 97.221, 97.305, and 97.307 of the Commission's Rules² be amended to revise various definitions and frequency privileges. Based upon the record before us, we deny the Petition.

II. BACKGROUND

2. On March 27, 2007, Miller requested that the Commission amend various rules that relate to use of amateur service spectrum by stations transmitting data and other narrow bandwidth emissions. Specifically, the petition requests that the Commission (1) amend the definition of data in Section 97.3(c)(2) to delete language added in the Commission's 2006 Omnibus Report and Order,³ (2) amend Section 97.221 to limit the subbands on which unattended operation of automatically controlled digital stations is permitted, and (3) amend Sections 97.305 and 97.307 to establish maximum necessary

¹ See RM-11392, Mark Miller, Petition for Rule Making (filed Mar. 27, 2007) (Petition).

² 47 C.F.R. §§ 97.3, 97.221, 97.305, 97.307. While Section 97.309, 47 C.F.R. § 97.309, is listed in its caption, the petition does not propose any changes to that section.

³ See Amendment of Part 97 of the Commission's Rules Governing the Amateur Radio Services, WT Docket No. 04-140, Report and Order, 21 FCC Rcd 11643 (2006) (Omnibus Report and Order).

bandwidths for radioteletype (RTTY)⁴ and data emissions in the amateur high frequency (HF) bands.

3. As Miller notes, adoption of these proposed changes would result in “a small number of wider bandwidth modes,” including Factor III, not being authorized.⁵ In support of these requests, the petition states that “[e]missions have crept into the narrowband RTTY/Data subbands in the 80 through 10-meter bands that are not appropriate for the RTTY/Data subbands,” and that “[s]tations under automatic control have taken advantage of loopholes created by terminology in the commission’s rules.”⁶ We received over 650 comments and reply comments, most of which oppose the petition.⁷

III. DISCUSSION

A. Definition of data

4. In the 2006 *Omnibus Report and Order*, the Commission revised the definition of data to include certain image emission types, in order to permit amateur stations to transmit both image and data emission types in the same frequency segments.⁸ The Commission proposed this change in response to a rulemaking petition filed by Miller in 2003.⁹ The Commission agreed with commenters, including Miller,¹⁰ who argued that permitting images to be transmitted on data emission frequency segments would allow amateur radio to make the most of new software programs, thereby advancing amateur radio technology, which would be consistent with one of the purposes of amateur service, namely, to contribute

⁴ RTTY is defined as narrow-band direct-printing telegraphy with specific emission designators. See 47 C.F.R. § 97.3(c)(7).

⁵ See Petition at 13.

⁶ *Id.* at 2.

⁷ The petition was first placed on public notice on August 22, 2007. See *Public Notice*, Report No. 2828 (rel. Aug. 22, 2007). No comments were received. That public notice contained an erroneous note indicating that the petition was part of a different proceeding. Consequently, a corrected public notice was released on December 18, 2007. See *Public Notice*, Report No. 2828-Correction (rel. Dec. 18, 2007). We note that most of the comments in the docket appear to have been generated via a third-party website that enabled interested parties to select from pre-packaged statements opposing the petition, see <http://www.activeham.com/hamaction/>, and that the comments were not served on the petitioner as required by our Rules. See 47 C.F.R. § 1.405(a). We have taken this into account in determining how much weight to afford these comments.

⁸ See *Omnibus Report and Order*, 21 FCC Rcd at 11654 ¶¶ 15-18. Specifically, the Commission added the italicized language to Section 97.3(c)(2): “Data. Telemetry, telecommand and computer communications emissions having (i) designators with A, C, D, F, G, H, J or R as the first symbol, 1 as the second symbol, and D as the third symbol; (ii) emission type J2D; and (iii) emissions *A1C, F1C, F2C, J2C, and J3C having an occupied bandwidth of 500 Hz or less when transmitted on an amateur service frequency below 30 MHz. Only a digital code of a type specifically authorized in this part may be transmitted.*” See *Erratum*, 21 FCC Rcd 13763, 13764 (WTB MD 2006).

⁹ See Amendment of Part 97 of the Commission’s Rules Governing the Amateur Radio Services, WT Docket No. 04-140, *Notice of Proposed Rulemaking and Order*, 19 FCC Rcd 7293, 7301-03 ¶¶ 15-16 (2004) (citing Mark Miller Petition For Rule Making at 1 (filed Feb. 25, 2003) (2003 Petition)).

¹⁰ See *Omnibus Report and Order*, 21 FCC Rcd at 11655 ¶¶ 18-19.

to the advancement of the radio art.¹¹

5. In his 2007 Petition, Miller argues that Section 97.3(c)(2) should be amended to return to the pre-2006 definition of data because “the necessary tests have not been performed to ensure that this mixing [of data and image emissions] will not cause interference because of an increase in traffic” on certain bands by upgraded licensees after the elimination of telegraphy proficiency as an examination requirement in the 2006 *No Code Report and Order*.¹² This assertion conflicts with the Commission’s conclusion in the *Omnibus Report and Order* and the record in that proceeding,¹³ and Miller’s assertion in his 2003 Petition,¹⁴ that permitting amateur stations to transmit both image and data emission types in the same frequency segments would not result in interference. Nothing in the present record indicates that increased activity by upgraded licensees, or any other changed circumstance, provides a basis for revisiting the Commission’s 2006 conclusion. We disagree with Miller’s unsupported assertion that the elimination of telegraphy proficiency as an examination requirement for operator licensees that may use these bands to transmit both image and data emission types in the same frequency segments requires corresponding action to restrict permissible emission types. Rather, we believe that some upgraded licensees will choose to engage in these types of communications, but others will select different operating activities. Moreover, rescinding the 2006 amendment would conflict with the Commission’s conclusion that permitting amateur stations to transmit both image and data emission types in the same frequency segments would contribute to the advancement of the radio art. For these reasons, we conclude that Miller has not set forth sufficient reasons for the Commission to propose to delete the 2006 addition to the definition of data. Should future experience substantiate Miller’s concerns, he may file a new, factually supported petition for rulemaking.

B. Automatically controlled digital stations

6. Section 97.221 permits automatic control¹⁵ of amateur stations transmitting a RTTY or data

¹¹ *Id.* at 11651-52 ¶¶ 15, 17.

¹² See Petition at 5; see also *id.* at 2 (arguing that “the expected surge in operators authorized to operate in the High Frequency (HF) bands due to the changes outlined in FCC 06-178 require[s] us to look again at the current division between wide bandwidth and narrow bandwidth emissions to reduce interference among stations using narrow bandwidth communications, thereby benefiting all licensees”) (citing Amendment of Part 97 of the Commission’s Rules to Implement WRC-03 Regulations Applicable to Requirements for Operator Licenses in the Amateur Radio Service, WT Docket No. 05-235, *Report and Order and Order on Reconsideration*, 21 FCC Rcd 14797 (2006) (*No Code Report and Order*)).

¹³ See *Omnibus Report and Order*, 21 FCC Rcd at 11655 ¶ 18 (“We also note that no commenter has claimed that any interference occurs between these different types of emissions and that many commenters support allowing narrow bandwidth analog image emissions in digital frequency segments.”).

¹⁴ See 2003 Petition at 2 (stating that such emissions coexist “without harmful interference and without complaint to the FCC”).

¹⁵ Automatic control requires that the station licensee use devices and procedures for control when the station is transmitting so that compliance with the FCC Rules is achieved without the control operator being present at a control point. See 47 C.F.R. § 97.3(a)(6). Only stations specifically designated in Part 97 may be automatically controlled. See 47 C.F.R. § 97.109(d).

emission on very high frequency (VHF) and higher amateur bands; on nine specific HF subbands¹⁶; and on any other amateur frequency authorized for RTTY or data emissions¹⁷ if the station is responding to interrogation by a station under local or remote control and no transmission from the automatically controlled station occupies a bandwidth of more than 500 hertz.¹⁸ In the Petition, Miller proposes that Section 97.221 be amended to permit automatically controlled digital stations to transmit only on VHF and higher amateur bands and the nine specific HF subbands.¹⁹ He states that automatically controlled digital stations utilize bandwidth modes that are incompatible with the amateur service because such stations do not analyze the propagation conditions and amount of traffic in the spectrum.²⁰ He argues that such modulation modes should not be permitted because other modes offer greater spectral efficiency while occupying less bandwidth.²¹ He also contends that interference from automatically controlled digital stations will increase in the wake of the *No Code Report and Order*, as upgraded licensees receive new HF privileges.²²

7. Based on our review of the petition, we are not persuaded that Miller has set forth sufficient reasons for the Commission to propose to amend the rules to prohibit automatically controlled stations from transmitting on frequency segments other than those specified in Section 97.221(b). As an initial matter, we again reject as speculative Miller's contention that upgraded licensees' HF operations will result in increased interference from automatically controlled digital stations. As noted above, it is not currently clear which operating activities will be chosen by these licensees or whether they will impact other amateur stations.

8. In addition, we are not persuaded that automatically controlled stations transmitting in response to interrogation by a station under local or remote control will cause increased interference to other stations in the HF RTTY/data bands outside the nine subbands. We note that such transmissions are limited to a maximum bandwidth of 500 hertz,²³ which is less than the limit Miller proposes for the RTTY/data subbands.²⁴ We believe, therefore, that transmissions by an automatically controlled station on a frequency outside the subbands specified in Section 97.221(b) will cause no more interference to other amateur station's transmissions than transmissions by other amateur stations on these frequencies.

9. We also note that when the Commission has previously addressed the issue of interference

¹⁶ See 47 C.F.R. § 97.221(b). Specifically, 28.120-28.189 MHz, 24.925-24.930 MHz, 21.090-21.100 MHz, 18.105-18.110 MHz, 14.0950-14.0995 MHz, 14.1005-14.112 MHz, 10.140-10.150 MHz, 7.100-7.105 MHz, and 3.620-3.635 MHz.

¹⁷ See 47 C.F.R. § 97.305(c).

¹⁸ See 47 C.F.R. § 97.221(c).

¹⁹ See Petition at 2, 12-13.

²⁰ *Id.* at 13-14.

²¹ *Id.* at 15-18.

²² *Id.* at 12.

²³ See 47 C.F.R. § 97.221(c)(2).

²⁴ See Petition at 2-3, 10-11; see also *infra*, paras. 10-11.

between amateur stations engaging in different operating activities, it has declined to revise the rules to prevent one emission type from being transmitted in a frequency band on the basis that it may interfere with the operating activities of other amateur service licensees.²⁵ Rather, the Commission noted that interference between amateur stations is already addressed by Section 97.101(b) and (d), which require amateur licensees to cooperate in selecting transmitting channels and in making the most effective use of amateur frequencies, provide that no amateur frequency will be assigned for the exclusive use of any station allocated to the Amateur Radio Service, and prohibit operators from willfully or maliciously interfering with or causing interference to any radio communication or signal.²⁶ In the absence of a showing that Section 97.101 no longer serves its purpose, we believe that cooperation between licensees and compliance with Section 97.101 is sufficient to minimize interference.

C. Bandwidth limitations

10. Our rules do not specifically limit the permissible bandwidth for RTTY and data emissions in the amateur HF bands. Instead, Section 97.307(f) limits specified RTTY or data emissions to a symbol rate not to exceed 300 bauds (in the 80 to 12 meter bands) or 1200 bauds (in the 10 meter band); or for frequency-shift keying (FSK), to a maximum frequency shift of 1 kilohertz between mark and space.²⁷ In the Petition, Miller proposes that these limits be replaced with a maximum necessary bandwidth of 1.5 kilohertz (in the 80 to 12 meter bands) or 2.4 kilohertz (in the 10 meter band).²⁸ He notes that the current limitations were developed before phase-shift keying (PSK)²⁹ emissions generated by digital signal processors, such as personal computer sound cards, became available to amateur radio operators.³⁰ Miller contends that the current rules “no longer provide the separation of certain inharmonious emission types to different segments of the frequency band.”³¹

11. We are not persuaded that the petitioner has presented sufficient reason to justify the requested amendment. The present rules allow amateur stations to transmit PSK data emissions subject to the conditions that the station transmission shall occupy no more bandwidth than necessary for the

²⁵ See Amendment of the Amateur Service Rules to Provide For Greater Use of Spread Spectrum Communication Technologies, WT Docket No. 97-12, *Report and Order*, 15 FCC Rcd 1481, 1491 ¶ 25 (1999).

²⁶ *Id.* (citing 47 C.F.R. § 97.101(b), (d)).

²⁷ See 47 C.F.R. § 97.307(f)(3), (4). FSK is a form of frequency modulation in which the modulating signal shifts the output frequency between predetermined values. Commonly, the instantaneous frequency is shifted between two discrete values termed the “mark” and “space” frequencies. See Amendment of the Commission’s Rules to Provide for Operation of Unlicensed NII Devices in the 5 GHz Frequency Range, ET Docket No. 96-102, *Memorandum Opinion and Order*, 13 FCC Rcd 14355, 14376 n.68 (1998).

²⁸ See Petition at 10.

²⁹ PSK is a digital modulation scheme that conveys information by changing, or modulating, the phase of the reference carrier wave. See Annual Report and Analysis of Competitive Market Conditions with Respect to Domestic and International Satellite Communications Services, IB Docket No. 06-67, *First Report*, 22 FCC Rcd 5954, 5997 n.202 (2007).

³⁰ Petition at 8.

³¹ *Id.* at 8-9.

information rate and emission type being transmitted,³² and that emissions resulting from modulation must be confined to the band or segment available to the control operator.³³ We believe that these rules provide amateur service licensees the flexibility to develop new technologies within the spectrum authorized for the various classes of licensees, while protecting other users of the spectrum from harmful interference. We also believe that imposing a maximum bandwidth limitation on data emissions would result in a loss of flexibility to develop and improve technologies as licensees' operating interests change, new technologies are incorporated, and frequency bands are reallocated. Additionally, we believe that amending the amateur service rules to limit the ability of amateur stations to experiment with various communications technologies or otherwise impeding their ability to advance the radio art would be inconsistent with the definition and purpose of the amateur service. Moreover, we do not believe that changing the rules to prohibit a communications technology currently in use is in the public interest.³⁴

IV. CONCLUSION AND ORDERING CLAUSES

12. Based on the record before us, we conclude that Miller has not set forth sufficient reasons for the Commission to propose to delete the 2006 addition to the definition of data, amend the rules to prohibit automatically controlled stations from transmitting on frequency segments other than those specified in Section 97.221(b), or replace the symbol rate limits in Section 97.307(f) with bandwidth limitations. Consequently, we deny the Petition.

13. IT IS ORDERED that, pursuant to Section 1.407 of the Commission's Rules, 47 C.F.R. § 1.407, the Petition for Rule Making submitted by Mark Miller on March 27, 2007, RM-11392, IS DENIED.

14. This action is taken under delegated authority pursuant to Sections 0.131 and 0.331 of the Commission's Rules, 47 C.F.R. §§ 0.131, 0.331.

FEDERAL COMMUNICATIONS COMMISSION

Scot Stone
Deputy Chief, Mobility Division
Wireless Telecommunications Bureau

³² See 47 C.F.R. § 97.307(a).

³³ See 47 C.F.R. § 97.307(b).

³⁴ See Amendment of the Amateur Service Rules to Provide for Greater Use of Spread Spectrum Communication Technologies, *Notice of Proposed Rule Making*, WT Docket No. 97-12, 12 FCC Rcd 2591, 2595 ¶ 8 (1997).