

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

In the Matter of	)	
	)	
Review of the Commission’s Part 95 Personal Radio Services Rules	)	WT Docket No. 10-119
	)	
Petition for Rulemaking of Garmin International, Inc.	)	RM-10762
	)	
Petition for Rulemaking of Omnitronics, L.L.C.	)	RM-10844

**REPORT AND ORDER**

**Adopted: May 18, 2017**

**Released: May 19, 2017**

By the Commission: Chairman Pai and Commissioners Clyburn and O’Rielly issuing separate statements.

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## I. INTRODUCTION

1. By this *Report and Order (R&O)*, we effect a comprehensive reorganization of and update to the Commission's Part 95 Personal Radio Services (PRS) rules.<sup>1</sup> Personal Radio Services provide for a wide variety of wireless devices that are used by the general public to satisfy personal telecommunications requirements. These devices generally employ low-power transmitters that communicate using shared spectrum, and the Commission has, with few exceptions, authorized their operation by rule rather than by issuing an individual license for each user.<sup>2</sup>

2. The Commission previously adopted a *Notice of Proposed Rule Making (NPRM)* looking to simplify, streamline, and update the Part 95 rules to reflect technological advances and changes in the way the American public uses the various Personal Radio Services.<sup>3</sup> The revisions we adopt in this *Report and Order* will result in numerous benefits to the public, including simplifying and streamlining the rules, making the rules easier to use and understand, and eliminating certain existing regulatory burdens on PRS users and equipment manufacturers.<sup>4</sup> We also make changes herein in the interest of public safety, such as prohibiting the inclusion of voice obscuring features that could hinder emergency communications in PRS equipment designed to be used on shared channels and prohibiting use of the terms "Personal Locator Beacon" and "PLB" to market any rescue beacon device that does not meet appropriate technical standards. On the whole, the actions we take in this *Report and Order* are common sense, practical measures that will benefit the public in numerous ways while recognizing the 21<sup>st</sup> Century uses of the Personal Radio Services.

## II. BACKGROUND

3. The Personal Radio Services under Part 95 include various short-range, low-power radio services generally for personal use. As the Commission noted in the *NPRM*, the scope of applications in the Personal Radio Services has expanded over time beyond its original purposes – which was mobile voice communications for individuals and radio control devices used by hobbyists for control of model aircraft.<sup>5</sup> Today, Part 95 includes rules for devices used to locate lost persons, retrieve data from implanted medical devices, provide auditory assistance for hearing-impaired persons, track property for law enforcement purposes, and increase highway safety through vehicle electronics that are integrated with Intelligent Transportation Systems.

4. The Personal Radio Services currently consist of the eleven communication services listed below.<sup>6</sup>

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<sup>1</sup> 47 C.F.R. Part 95.

<sup>2</sup> Recognizing that the public interest benefits of individually licensing large numbers of relatively low-powered stations in certain radio services used by the general public are insufficient to justify the administrative cost of such licensing, the Congress, in 1982, amended the Communications Act of 1934 to permit the Commission to grant authority to operate certain radio stations "by rule" without individual licenses. See Public Law (Pub. L.) 97-259, Section 113(a), enacted September 13, 1982. See also 47 U.S.C. § 307(e). A licensed-by-rule approach means that authorized users can access the entire available spectrum without individual station licenses. Thus, no one has exclusive rights to any of the spectrum and all spectrum use is shared.

<sup>3</sup> Review of the Commission's Part 95 Personal Radio Services Rules, WT Docket No. 10-119, *Notice of Proposed Rule Making and Memorandum Opinion and Order on Reconsideration*, 25 FCC Rcd 7651 (2010) (*NPRM*).

<sup>4</sup> For example, we revise our Part 95 rules to employ uniformly the phrase "public switched network" when referring to that network. See, e.g., new § 95.349.

<sup>5</sup> See *NPRM*, 25 FCC Rcd at 7653.

<sup>6</sup> Some of the definitions have been added or contain minor updates to their definition to reflect current uses and actions taken in this document.

- General Mobile Radio Service (GMRS) - GMRS is a mobile two-way voice communication service, with limited data applications, for facilitating activities of individual licensees and their family members, including, but not limited to, voluntary provision of assistance to the public during emergencies and natural disasters.
- Family Radio Service (FRS) - FRS is a short-distance two-way voice communication service, with limited data applications, between low power hand-held radios, for facilitating individual, family, group, recreational and business activities.
- Radio Control Radio Service (RCRS) - RCRS is a non-commercial short-distance radio service for wirelessly controlling the operation of devices, including, but not limited to, model vehicles such as aircraft and surface craft.
- CB Radio Service (CBRS) - CBRS is a mobile and fixed two-way voice communication service for facilitating personal, business or voluntary public service activities, including communications to provide assistance to highway travelers.
- 218–219 MHz Service - The 218–219 MHz Service allows licensees to provide fixed and mobile telemetry and other telecommunications services on a commercial or private basis in specific service areas.
- Low Power Radio Service (LPRS) - LPRS is a short-distance voice and data communication service for providing auditory assistance to persons with disabilities (and others), health care related communications, law enforcement tracking, and for certain other purposes.
- Wireless Medical Telemetry Service (WMTS) - WMTS is a short-distance data communication service for the transmission of physiological parameters and other patient medical information via radiated electromagnetic signals.
- Medical Device Radiocommunications Service (MedRadio) - MedRadio is an ultra-low power radio service for the transmission of non-voice data for the purpose of facilitating diagnostic and/or therapeutic functions involving implanted and body-worn medical devices.
- Multi-Use Radio Service (MURS) - MURS is a two-way, short-distance voice or data communication service for facilitating personal or business activities of the general public.
- Personal Locator Beacons (PLBs) and Maritime Survivor Locating Devices (MSLDs)<sup>7</sup> - PLBs are small transmitters that provide a means for individuals in remote areas to alert others of an emergency situation and to aid search and rescue personnel to locate those in distress. MSLDs are devices intended to aid in the location of persons in the water.
- DSRCS On-Board Units (OBUs) - OBUs are low-power devices on vehicles that transfer data to roadside units in the Dedicated Short-Range Communications Service, to improve traffic flow and safety, and for other intelligent transportation system purposes.

5. Each Personal Radio Service has its own subpart under Part 95. These subparts have unique requirements, as well as general operating and administrative rules that are similar and often identical both in language and effect to other subparts. For example, of the eleven Personal Radio Services, most have similar rule language governing authorized locations, station identification, station

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<sup>7</sup> The Commission adopted Part 95 rules authorizing MSLDs subsequent to the release of the *NPRM* in this proceeding. See Amendment of the Commission's Rules Regarding Maritime Radio Equipment and Related Matters, *Report and Order*, WT Docket No. 14-36, 31 FCC Rcd 10300, 10307-08 ¶¶ 18-20 (2016) (*Maritime Equipment Report and Order*). We here incorporate those rule changes into the new organization of Part 95.

inspection, and operator responsibility. Also, the transmitters for most of these services are mass marketed and used by millions of Americans, and have traditionally been licensed by rule.<sup>8</sup>

6. The *NPRM* proposed over twenty specific rule changes and sought comment on related issues for which the Commission did not make specific proposals. In response to the *NPRM*, we received more than two hundred comments and reply comments, most pertaining to GMRS.<sup>9</sup> While the *NPRM* proposed to redesignate the 218-219 MHz Service as a Part 27 Miscellaneous Wireless Communications Service<sup>10</sup> and explored changes to those service rules, we take no action on those proposals and leave the 218-219 MHz service in Part 95.<sup>11</sup> We have carefully considered the views expressed in the record in formulating our decisions in this proceeding.

### III. DISCUSSION

#### A. Overall Reorganization of Part 95

##### 1. Organization of Subparts and Rule Topics

7. In the *NPRM*, the Commission proposed to reorganize Part 95 to make it easier to use for the general public. Specifically, the Commission proposed to consolidate similar or duplicative administrative rules currently found in the various service subparts into a new Subpart A, and likewise to consolidate similar technical rules into a new Subpart B.<sup>12</sup>

8. After considering the suggestions and comments in the record, we are reorganizing and rewriting Part 95, but using an organizational structure somewhat different from that proposed in the *NPRM*. Commenters generally support the goals of streamlining, clarity and eliminating duplication.<sup>13</sup> Some commenters observe, however, that differences in the requirements for some services – such as the MedRadio service and PLBs, which follow industry standards – would be difficult to integrate with the technical rules for the rest of the Personal Radio Services,<sup>14</sup> and argue that consolidating them would result in a more confusing rule, not greater ease of use.<sup>15</sup>

9. After considering the arguments, we agree that there are not enough common technical rules to warrant an entire technical subpart. Consequently, we are eliminating duplication by consolidating identical or essentially similar administrative rules that apply broadly to all or most of the Personal Radio Services into Subpart A, as proposed. We are also consolidating similar or identical technical rules that apply broadly to all or most of the Personal Radio Services into Subpart A instead of into a new Subpart B.

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<sup>8</sup> The 218–219 MHz Service is not licensed by rule, but instead is subject to the requirements and conditions for the grant of authorizations set forth in Part 1, Subpart F of the Commission’s rules. *See* 47 C.F.R. § 95.811. The General Mobile Radio Service is not licensed by rule, but by individual licensing.

<sup>9</sup> Also, a few *ex parte* showings, petitions and late-filed comments have been submitted into the record. On the Commission’s website, the Electronic Comment Filing System (ECFS) provides access to these submissions.

<sup>10</sup> 47 C.F.R. Part 27.

<sup>11</sup> *See NPRM*, 25 FCC Rcd at 7674-75. We leave the existing 218-219 MHz rules unchanged in subpart F, but due to the renumbering of all Part 95 rules the 218-219 MHz rules will now be numbered in the range 95.1900-95.1999.

<sup>12</sup> *See NPRM*, 25 FCC Rcd at 7655-56.

<sup>13</sup> *See, e.g.*, Comments of Christopher Ebert at 1, Stanton Walters at 1. Some commenters, however, believe that the current rules do not need revision. *See e.g.*, Comments of Ross Snyder (Snyder) at 49.

<sup>14</sup> *See, e.g.*, Comments of David K. Sterrett (Sterrett) at 1, City of Seattle Office of Emergency Management and the Seattle Auxiliary Communications Services (Seattle OEM/ACS) at 6.

<sup>15</sup> *See, e.g.*, Comments of Personal Radio Steering Group (PRSG) at 4-5, American Society for Healthcare Engineering of the American Hospital Association (ASHE) at 3.

10. Each subpart following Subpart A will contain rules that apply to a specific Personal Radio Service. The GMRS rules must be moved from existing Subpart A to make way for the common PRS rules, so we are moving them to Subpart E, which is being vacated by placing the common technical rules in Subpart A. Other service-specific subparts will retain their current enumeration and the service-specific technical rules will be placed in the appropriate subparts for various services. In addition, we are not re-using existing rule section numbers for new rules, in order to prevent confusion when reference is made to new or previous rules.<sup>16</sup> We also generally reserve even numbers for use with future rules. The new arrangement of subparts, as compared to the existing arrangement, is as follows:

Subpart	Old Topic	Old Rules	New Topic	New Rules
A	General Mobile Radio Service (GMRS)	1-183	Personal Radio Services	300-399
B	Family Radio Service (FRS)	191-194	Family Radio Service (FRS)	500-599
C	Radio Control (R/C) Radio Service	201-225	Radio Control Radio Service (RCRS)	700-799
D	Citizens Band (CB) Radio Service	401-428	CB Radio Service (CBRS)	900-999
E	Technical Regulations	601-673	General Mobile Radio Service (GMRS)	1700-1799
F	218–219 MHz Service	801-861	218-219 MHz Service	1900-1999
G	Low Power Radio Service (LPRS)	1001-1019	Low Power Radio Service (LPRS)	2100-2199
H	Wireless Medical Telemetry Service (WMTS)	1101-1129	Wireless Medical Telemetry Service (WMTS)	2300-2399
I	Medical Device Radiocommunication Service (MedRadio)	1201-1225	Medical Device Radiocommunication Service (MedRadio)	2500-2599
J	Multi-Use Radio Service (MURS)	1301-1317	Multi-Use Radio Service (MURS)	2700-2799
K	Personal Locator Beacons (PLB)	1400-1402	Personal Locator Beacons (PLBs)	2900-2999
L	Dedicated Short Range Communications Service On-Board Units (DSRCS-OBUs)	1501-1511	DSRCS On-Board Units (OBUs)	3100-3199

<sup>16</sup> We also note that any new services added to Part 95 would be placed into the new format, including the recently proposed 76-81 GHz Radar Service, which could be designated as Subpart M and consist of rules in the 3300-3399 range. See Amendment of Parts 1, 2, 15, 90 and 95 of the Commission's Rules to Permit Radar Services in the 76-81 GHz Band, *Notice of Proposed Rulemaking*, ET Docket 15-26, 30 FCC Rcd 1625, 1645 ¶ 69 (2015).

11. Currently, our Part 95 rules appear in an inconsistent, *ad hoc* order in each subpart. In order to make it easier to find rules addressing a particular topic in Part 95, we are arranging the rules in each subpart using, to the extent possible, a common template as follows:

Administrative Rules	Operating Rules	Technical Rules	Marketing Rules
1 scope	31 permissible uses	61 equipment certification	91 marketing limitations
3 definitions	33 prohibited uses	63 frequencies, channels	93 labeling
5 authority to operate	35 use of certified equip.	65 frequency accuracy	95 disclosures
7 station locations	37 modified equipment	67 transmitting power limits	
9 coordination procedures	39 external equipment	69 field strength limits	
11 FCC correspondence	41 antenna height limit	71 emission types	
13 violations, penalties	43 operator responsibility	73 emission bandwidths	
15 <i>reserved</i>	45 remote control	75 modulation limits	
17 antenna registration	47 automatic control	77 tones and signals	
19 station maintenance	49 network connection	79 unwanted emissions	
21 <i>reserved</i>	51 station identification	81 voice obscuring features	
23 station inspection	53 false communications	83 <i>reserved</i>	
25 interference	55 <i>reserved</i>	85 RF exposure	
27 restricted operation	57 duration of transmissions	87 additional requirements	
29 how to contact FCC	59 channel sharing	89 industry technical standard	

12. The current operating rules for the CBRS, Radio Control Radio Service and Family Radio Service are written in a plain language “question and answer” format that is intended to clearly convey what these rules require to operators in these services. The Commission noted in the *NPRM*, however, that this format is not used for any other Personal Radio Service, and asked whether it should continue to use the question and answer format for these radio services, and if so, whether it should write rules for the other Part 95 services using that format.<sup>17</sup> Commenters are generally supportive of the plain language, without a “question and answer,” format as outlined in the proposed rules in the *NPRM*<sup>18</sup> and suggest that such “question and answer” information can be provided by way of informal, informative, public material outside the rules.<sup>19</sup>

13. We note that the question and answer format has generally worked well with the *operating* rules of the CBRS, RCRS and FRS. The question becomes whether we should write all of our PRS rules, including *technical* rules, in the same format. Many of our rules are complex, and refer to electronic measurements and equipment specifications. Furthermore, the wording of rule headers as questions is sometimes awkward. For example, we could write “[h]ow accurate must the frequency tolerance of my CB transmitter be?” and answer this with “[t]he frequency tolerance of your CB transmitter must not be more than 50 parts per million.” Although the language is plain and understandable, it is not the type of question we would expect to be asked by the public, and such a rule does not make it clear who is responsible for compliance (the manufacturer). Rather than trying to force all of our PRS rules into the “question and answer” format, we believe that it would be more productive to use the “question and answer” format only for the type of questions that the public actually asks. Moreover, we conclude that it is preferable to provide information in this format by other means, such as

<sup>17</sup> See *NPRM*, 25 FCC Rcd at 7656.

<sup>18</sup> See, e.g., Comments of Academy of Model Aeronautics (AMA) at 8 supporting the removal of the “question and answer” format for RCRS rules stating the new rules are “straightforward and easy to understand.” See also, Comments of Knowles at 10-11 supporting the current format of GMRS rules as being understandable and no need to convert to “question and answer” format.

<sup>19</sup> Comments of Seattle OEM/ACS at 6 stating that FRS, RCRS and CBRS rules should be converted to a format consistent with the rest of Part 95, while maintaining “question and answer” format for fact sheets, annex to the rules and/or other information formats on the Commission’s website.

the Commission's website, rather than in our codified rules. Accordingly, the rules we adopt herein use a standard regulatory format.<sup>20</sup>

## 2. Technical Issues

14. In the *NPRM*, the Commission also proposed to revise certain technical rules to use the same parameters across the Personal Radio Services, in place of the disparate criteria currently in use.<sup>21</sup> Specifically, the Commission proposed to establish channel numbers across the PRS; to use consistent and up-to-date technical units of measure for frequency tolerance, power limits, and unwanted emissions for all PRS; and to conform and clarify the rules pertaining to voice obscuring in PRS devices.

15. *Channel numbers.* Currently, the channels in the FRS, CBRS, LPRS, and DSRCs are identified by channel numbers specified in the Commission's rules. In the *NPRM*, the Commission proposed to assign channel numbers to the frequencies in the other Personal Radio Services where spectrum is not channelized,<sup>22</sup> based on its understanding that the public preferred to use channel numbers rather than frequencies and would find it more convenient to use channel numbers if the Commission established them in the rules.<sup>23</sup> The record indicates, however, that assigning channel numbers is either unnecessary because it is not useful in non-voice services where users do not communicate with each other,<sup>24</sup> or premature because different means of channel identification currently are in use and there is no consensus regarding which system is superior.<sup>25</sup> Consequently, we do not adopt the channel numbering proposed in the *NPRM*, and we simply continue to list the frequencies in the rules as we have in the past.

16. *Frequency tolerance and stability.* In the *NPRM*, the Commission noted that older PRS rules express frequency tolerance and stability<sup>26</sup> limits in terms of percent, but more recent rules, in light of improvements in technology and manufacturing processes that allow much greater accuracy, express the limits in terms of parts per million (ppm)<sup>27</sup>. Therefore, the Commission proposed to express all such Part 95 limits in terms of ppm.<sup>28</sup> We adopt this proposal. We are also using the term "frequency accuracy" in the headings for our rules governing either frequency tolerance or frequency stability or both.

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<sup>20</sup> Although not in the question and answer format, the new rules we adopt today were drafted using the principles illustrated in the Federal Plain Language Guidelines, <http://www.plainlanguage.gov/howto/guidelines/bigdoc/fullbigdoc.pdf>. For example, to the extent possible, we use short direct sentences and the active voice. We also avoid the use of jargon and we minimize industry terminology to the extent possible in what is necessarily technical subject material.

<sup>21</sup> See *NPRM*, 25 FCC Rcd at 7657-59.

<sup>22</sup> *I.e.*, GMRS, WMTS, RCRS, and MURS.

<sup>23</sup> See *NPRM*, 25 FCC Rcd at 7656.

<sup>24</sup> See, *e.g.*, Comments ASHE at 18, G. Kris Harrison at 3.

<sup>25</sup> See, *e.g.*, Comments of Knowles at 11, PRSG at 5, Sterrett at 1.

<sup>26</sup> Frequency tolerance standards specify the maximum allowable amount that the transmit frequency of any individual transmitter may differ from the assigned reference frequency as a result of variations in the manufacturing process. Frequency stability standards specify the maximum allowable amount that the transmit frequency of any transmitter may change during operation as a result of changes in the ambient temperature and/or power supply voltage. See *NPRM*, 25 FCC Rcd at 7657 n.25.

<sup>27</sup> *Id.* at 7657.

<sup>28</sup> The Commission also asked whether any of the existing limits should be tightened, given the capabilities of modern manufacturing processes. *Id.* Specific limits will be discussed as appropriate in the sections *infra* regarding specific services.

17. We also conclude that our frequency accuracy requirements alone are sufficient to promote stable on-frequency operation, so we remove the current requirement<sup>29</sup> that the transmit frequency of transmitters in the Personal Radio Services, with certain exceptions, be controlled by a quartz crystal.<sup>30</sup> Most commenters addressing this issue support this update to the rules.<sup>31</sup> Given the current state of technology, we find that it is now unnecessarily prescriptive to require manufacturers to use a specific circuit, method or electrical component in their radio designs to meet our frequency accuracy requirements. Although we believe that many of our frequency accuracy requirements can currently be met only by use of a crystal frequency reference source, we do not wish to preclude the development of other equally or more effective methods.

18. *Power limits.* The Commission observed in the *NPRM* that transmitting power rules in Part 95 were adopted at different times and are expressed variously as limits on average, peak or carrier output power, radiated power, or field strength at a given distance.<sup>32</sup> While understanding that the differences are unavoidable in some instances, it sought comment on possible simplification and consolidation of power limits in Part 95.<sup>33</sup> While a few commenters suggested specific changes to power measurement units for certain services,<sup>34</sup> other commenters suggest that current power measurement specifications are adequate and do not need to be changed.<sup>35</sup> On the whole, the record does not indicate that the variety of differing measurement units is a problem, and we conclude that it is appropriate to continue specifying power measurement units for each of the Personal Radio Services that take into consideration the type and configuration of transmitting equipment and how it is used.<sup>36</sup>

19. *Unwanted emissions.* In view of our decision to place the technical rules for each service in the individual subpart for that service, we are not going to reorganize the unwanted emissions rule as proposed in the *NPRM*.<sup>37</sup> We have revised the wording of some service-specific rules where possible to simplify the language without making any substantive changes.

20. *Voice-obscuring features.* Because the Personal Radio Services users typically share all the channels authorized for the service, it is important that all users be able to hear and understand each other in order to share channels and pass emergency messages. However, some manufacturers of Part 95 voice devices have implemented voice scrambling or obscuring features such that the sound of the user's voice is altered in such a way that it is understandable only to individuals using a similar unit that reverses the process on the receiving end, such that the voice again becomes intelligible. Certain Part 95 rules already require communications to be in plain language and prohibit coded messages to facilitate the

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<sup>29</sup> 47 C.F.R. § 95.651.

<sup>30</sup> See *NPRM*, 25 FCC Rcd at 7659.

<sup>31</sup> See, e.g., Comments of Cobra at 2, Snyder at 95-96, and Seattle OEM/ACS at 10. Whereas comments of Knowles, at 14, urge more study before the requirement is removed.

<sup>32</sup> See *NPRM*, 25 FCC Rcd at 7657.

<sup>33</sup> *Id.* The Commission also asked whether any of the existing limits should be changed. *Id.* Specific limits will be discussed as appropriate in the sections *infra* regarding specific services.

<sup>34</sup> See, e.g., Comments of Thomas Brock at 3, and myGMRS.com at 5.

<sup>35</sup> See, e.g., Comments of AMA at 6, and PRSG at 1.

<sup>36</sup> In particular, we will not at this time adopt the proposal to change the Multi-Use Radio Service power limit from 2 Watts transmitter output power to 2 Watts ERP. See *NPRM*, 25 FCC Rcd at 7705.

<sup>37</sup> *NPRM*, 25 FCC Rcd at 7658.



sharing of the channels,<sup>38</sup> therefore, the Commission proposed in the *NPRM* to clarify that the voice-obscuring features incorporated into certain PRS devices are inappropriate for these services.<sup>39</sup>

21. Some commenters support voice-obscuring techniques, arguing that there are consumer benefits and desire for some level of privacy.<sup>40</sup> For example, Uniden contends that FRS was created to allow families, friends and associates to communicate with each other over a short distance, not to facilitate communications between disparate groups; therefore, voice obscuring features intended to isolate groups from each other's communications is within the scope of how the service was envisioned.<sup>41</sup> Commenters also contend that voice obscuring could discourage malicious behavior, such as intentional interference to communications, identity theft and other harmful acts based on the revelation of information.<sup>42</sup> For example, the Northern California GMRS Users Group (NCGUG) contends that permitting "voice security" features would allow family members to safely communicate their location, as well as communicate financial or personal information securely.<sup>43</sup>

22. Most of the commenters, however, contend that voice-obscuring features could hinder communications during emergencies and hamper effective channel sharing.<sup>44</sup> For example, Mark Pomeroy states that the token privacy gained by voice-obscuring techniques is not worth degrading the channel sharing ability of GMRS users.<sup>45</sup> Carl Guse points out that those that need truly secure communications should use other communication services and that voice obscuring is not compatible with shared use channels.<sup>46</sup> Cobra, an FRS manufacturer, would allow existing products that include such features to continue to be used, but believes that the FCC should immediately stop issuing equipment authorizations for such products and cease importation after 18 months.<sup>47</sup> Knowles, on the other hand, argues that the potential for interference from voice obscuring devices is substantial, so grandfathering of such devices is not appropriate.<sup>48</sup>

23. We agree that voice-obscuring features are not compatible with the commons nature of the Personal Radio Services. One of the bedrock principles of the Personal Radio Services is that the channels are shared among users and that the FCC will not assign these channels for the exclusive use of any specific person.<sup>49</sup> Services that function on shared channels in this fashion rely on operators following a "listen before talk" etiquette and are essentially self-policed in that someone that may be operating in an inappropriate manner is informed by others of the appropriate use of the channels. Voice obscuring features as implemented may prevent users from readily understanding each other's

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<sup>38</sup> See, e.g., 47 C.F.R. §§ 95.181 (e), 95.412(a).

<sup>39</sup> *NPRM*, 25 FCC Rcd. at 7659.

<sup>40</sup> See, e.g., Comments of Uniden at 2, Garmin at 21-22, and Northern California GMRS Users Group (NCGUG) at 5.

<sup>41</sup> Reply Comments of Uniden at 5.

<sup>42</sup> See, e.g., Further Comments of Uniden at 2, Comments of Ross Snyder at 62, Garmin at 21-22.

<sup>43</sup> Comments of the NCGUG at 5.

<sup>44</sup> See, e.g., Comments of Cobra at 2, Mark Pomeroy at 1, Ranger at 2, Carl Guse at 1, North Georgia GMRS Group at 3, Reply Comments of Knowles at 4-7, PRSG 1.

<sup>45</sup> Comments of Mark Pomeroy at 1.

<sup>46</sup> Comments of Carl Guse at 1.

<sup>47</sup> Comments of Cobra at 2.

<sup>48</sup> Reply comments of Knowles at 8.

<sup>49</sup> See current rules 47 C.F.R. §§ 95.7, 95.191(b), 95.207(b), 95.407(e)-(g), 95.1011(a), 95.1115(d)(3), 95.1211(a), 95.1309(a), 95.1511(b) and the one new rule § 95.359, applicable to all Personal Radio Services, that replaces all of these existing rules.

conversations complicating the sharing etiquette, hindering self-policing and communicating with others in calls for help; yet do not provide true security against eavesdropping.

24. Commenting parties offered different views regarding equipment authorization and restrictions on sales of devices that would be impacted by any changes to our rules. They also offered these suggestions of implementation of new rules while addressing different issues in this proceeding. As indicated above regarding voice obscuring features, Cobra suggests that the FCC should immediately stop issuing equipment authorizations for these products and cease importation after 18 months. While initially Motorola suggested it would take one year to liquidate inventories of devices not meeting the new rules,<sup>50</sup> they recently requested five years to sell off devices due to low turnover and longer development timelines.<sup>51</sup> With regard to GMRS/FRS combination radios, Uniden initially requested that manufacturers be allowed 18 months after the effective date of any rule changes to manufacture and import devices under the old rules,<sup>52</sup> but later suggested that the industry will need about two years to implement changes.<sup>53</sup> We find that it is in the interest of all to have a single implementation schedule for all changes to our rules that impact equipment authorization and sales of PRS devices.

25. For the foregoing reasons, we take the following steps to phase out the use of voice-obscuring features in the Personal Radio Services. First, 90 days after the effective date of new section 95.381 adopted herein we will no longer allow equipment to be certified under Part 95 of our rules for transmitter types that incorporate voice obscuring features.<sup>54</sup> Second, two years after the effective date of new sections 95.391(b) and (c) adopted herein no person shall be permitted to manufacture, import, sell or offer for sale any radio equipment that incorporates voice scrambling or other obscuring features where such radio is intended for use in any of the Personal Radio Services, regardless of whether the Commission has previously certified that radio.<sup>55</sup> While this implementation schedule is shorter than suggested by some manufacturers, we believe it is important to quickly transition the manufacturing and sale of PRS devices to the new rules, and we think the two year period after the effective date of the relevant rules is an adequate time for manufacturers to make this transition and sell equipment in inventory that is not compliant with the new rules. We also believe that existing implementation of voice-obscuring features to date has been largely limited to GMRS and FRS radios.

26. We understand that some confusion existed regarding the applicable rules,<sup>56</sup> and that prohibiting voice-obscuring features in the Personal Radio Services will result in some cost to the few manufacturers that currently include such features in their radios. Nevertheless, we find that an expeditious transition to compliant equipment is in the public interest and our schedule is reasonable in terms of encouraging manufacturers to rapidly redesign their radios, while also allowing a period to manufacture, import or sell noncompliant models.<sup>57</sup> It is our belief that the costs of implementing this clarification are outweighed by the benefit of having all PRS devices using consistent communication techniques. We also believe that costs of implementing this rule could be minimized in the short term if

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<sup>50</sup> June 8, 2015 *ex parte* of Motorola at 2.

<sup>51</sup> May 10, 2017 *ex parte* of Motorola at 2. Similarly, while Garmin initially suggested a period of one year after the effective date for manufacturers to “stop marketing” devices that do not meet the new rules (Comments of Garmin at 21), they recently filed an *ex parte* supporting Motorola’s *ex parte*. May 10, 2017 *ex parte* of Garmin at 1.

<sup>52</sup> Comments of Uniden at 9.

<sup>53</sup> June 11, 2015 *ex parte* of Uniden at 1.

<sup>54</sup> See new rule § 95.381, applicable to all Personal Radio Services.

<sup>55</sup> See new rule § 95.391(b), (c).

<sup>56</sup> See, e.g., Comments of Garmin at 17-22.

<sup>57</sup> Moreover, the record suggests that the current, limited use of voice-obscuring features does not create an unmanageable problem. See, e.g., Comments of Cobra at 1-2, Uniden at 7.

manufacturers could disable the feature in the equipment firmware<sup>58</sup> without requiring a total redesign of the radio. Further, we do not at this time prohibit the continued use of existing radios with voice-obscuring features to minimize the burden of this rule on consumers, but we suggest that operators refrain from using such features, and advise them not to rely upon such features for security in communicating private information. We believe that prohibiting the use of the older units would place a significant burden on consumers and manufacturers, while also creating an enforcement challenge. While allowing the continued use of older models with voice obscuring features may complicate channel sharing and self-policing in some instances, we are hopeful consumers will not rely on this feature and the devices will eventually be replaced by compliant models. We find that the public interest benefits of phasing out equipment with these features, as described above, outweigh these one-time costs.

## **B. General Mobile Radio Service**

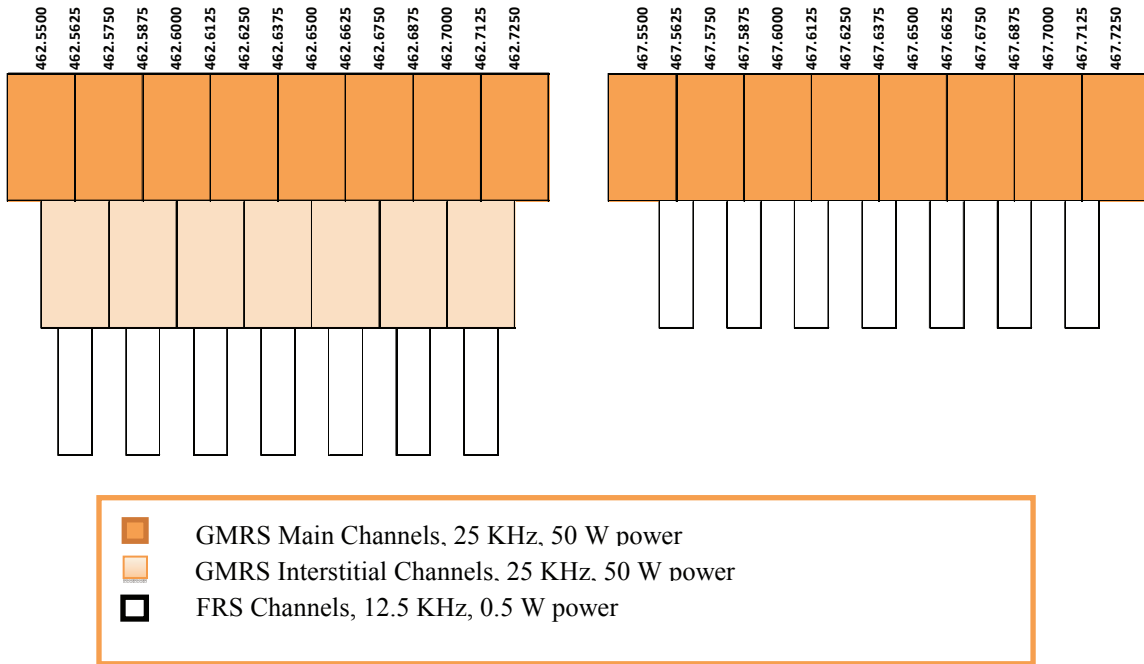
27. The General Mobile Radio Service (GMRS) is the successor to the Citizens Class A Radio Service that the Commission created in the late 1940s, with a regulatory structure grounded in the assumption that GMRS systems are designed like traditional business land mobile systems, *i.e.*, comprised of mobile stations, base stations, repeaters and control stations.<sup>59</sup> Repeater stations are fixed stations with antennas in favorable locations that greatly extend the communications range of mobile and hand-held portable units by receiving their signals on one channel and simultaneously retransmitting these signals on another channel. Control stations are fixed stations that communicate with mobile stations (and other control stations) through repeater stations in a similar fashion. Base stations are fixed stations that communicate directly with mobile stations and with other base stations. Currently, the GMRS is allotted 400 kilohertz (0.4 megahertz) of spectrum consisting of sixteen 25 kilohertz main channels (eight main channels in the 462 MHz band and eight main channels in the 467 MHz band). These channels may be used in pairs by GMRS licensees for repeater operations (one 462 MHz channel for the repeater to transmit and one 467 MHz channel for mobile or control stations to transmit). Between (and partially overlapping) the 462 MHz main GMRS channels are seven interstitial channels designated for GMRS use (25 kilohertz bandwidth). As illustrated in the following table, the GMRS spectrum has been shared with the Family Radio Service (FRS), which is allotted 14 interstitial channels (12.5 kilohertz bandwidth and only 0.5 Watts power) between (and partially overlapping) the GMRS main channels in the 462 MHz and 467 MHz bands.

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<sup>58</sup> Consumer radio units typically contain a microprocessor that defines the features of the unit in accordance with firmware (software that is stored in memory in the unit).

<sup>59</sup> Amendment of Subparts A and E of Part 95 to Improve the General Mobile Radio Service (GMRS), PR Docket 87-265, *Report and Order*, 3 FCC Rcd 6554, 6554 ¶ 3 (1988) (*GMRS R&O*).

Previous Channel Allotment for GMRS and FRS<sup>60</sup>



28. Currently, an individual license is required before operating any station in the GMRS.<sup>61</sup> However, lightweight portable radio units widely available to the general public in retail stores appear to have become the most popular type of GMRS equipment available.<sup>62</sup> Several manufacturers have designed inexpensive radios that feature GMRS capabilities combined with FRS capabilities<sup>63</sup> in the same unit. GMRS/FRS radios are typically sold in pairs and as such are primarily intended to allow individuals to communicate with each other over short distances, as in the FRS. Further, the devices are often advertised as “walkie talkies,” implying that they are appropriate for children to use with no obvious labeling to notify purchasers of eligibility or licensing requirements. Although these combination units have the technical capability (in terms of more power and additional channels) of GMRS devices, they do not appear to be marketed as devices intended to interact with traditional land mobile type GMRS systems because retail outlets and manufacturers do not readily advise consumers that a license is needed to legally operate the devices while using the GMRS frequencies.<sup>64</sup>

<sup>60</sup> A table illustrating the new channel allotment being adopted in this R&O is provided below.

<sup>61</sup> 47 C.F.R. § 95.3.

<sup>62</sup> *NPRM*, 25 FCC Rcd at 7660.

<sup>63</sup> As explained above, FRS devices are lower powered handheld devices intended for short range voice communications with limited data applications.

<sup>64</sup> The Commission sought comment in the *NPRM* on whether GMRS base and repeater operations are still needed in light of commercial communications services that are now available. *See* 25 FCC Rcd at 7664. We conclude, based on the comments, that GMRS base and repeater operations still are common and serve important purposes, and should continue to be authorized. *See, e.g.*, comments of myGMRS.com at 5. Accordingly, we are retaining the rules providing for base and repeater stations in the GMRS. We are also retaining the existing rule that allows cooperative use (cost sharing) of GMRS stations, which had been inadvertently omitted from the proposed rules.

## 1. Station Licensing

29. In the *NPRM*, the Commission noted that the GMRS, as it is used by most operators, more closely resembles the Personal Radio Services that are licensed by rule than it does the Part 90 land mobile services.<sup>65</sup> For example, all GMRS channels are available to all GMRS licensees on a shared “commons” basis anywhere in the country without the need for frequency coordination and no expectation of exclusive use of the channels. Whereas, Part 90 licensees obtain authorization for specific channels in specific areas through a frequency coordination process designed to avoid the “commons” sharing method used in GMRS.<sup>66</sup> The Commission also noted that licensing compliance for the GMRS/FRS radios appears to be weak.<sup>67</sup> Consequently, the Commission proposed to eliminate the requirement for individual licensing in the GMRS (either entirely or just for hand-held units), and to authorize such operations by rule without individual licenses pursuant to our authority under Section 307(e)(1) of the Communications Act of 1934.<sup>68</sup> Alternatively, in the event that the individual license requirement was fully or partially retained, the Commission asked whether the minimum age for obtaining a GMRS license should be lowered or eliminated,<sup>69</sup> and it also proposed to extend the license term from five years to ten.<sup>70</sup>

30. *Individual licensing.*<sup>71</sup> There is support in the record for a range of measures, from requiring an individual license to operate all types of GMRS stations,<sup>72</sup> to licensing hand-held GMRS stations by rule while maintaining the individual licensing requirement for other types of stations,<sup>73</sup> to eliminating the individual licensing requirement altogether.<sup>74</sup> Most commenters, however, oppose eliminating the requirement<sup>75</sup> due to concerns that it would result in a decline in the operating etiquette that is essential to successful channel sharing or due to the unique flexibility that GMRS allows licensees to operate higher powered land mobile systems.<sup>76</sup>

31. We note that traditional GMRS system use is significantly different from the other Personal Radio Services that are licensed by rule in that the use of GMRS base stations and repeaters extends the range of communications beyond the very short distances that are possible with, for example, FRS and MURS. If a repeater station under automatic control malfunctions, it can render one of the eight

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<sup>65</sup> See *NPRM*, 25 FCC Rcd at 7660.

<sup>66</sup> Part 90 operators that do not have exclusive use of their licensed frequencies are also expected to share the frequencies with co-channel licensees to avoid causing harmful interference. See *e.g.* 47 CFR §§ 90.187(b), 90.403(e).

<sup>67</sup> See *NPRM*, 25 FCC Rcd at 7660-61.

<sup>68</sup> *Id.* at 7661-62 (citing 47 U.S.C. § 307(e)(1)).

<sup>69</sup> *Id.* at 7663.

<sup>70</sup> *Id.* at 7662.

<sup>71</sup> GMRS licenses are granted only to individuals, but non-individual GMRS licensees that were authorized before this limitation was enacted are grandfathered. The *NPRM* did not specifically propose to terminate the grandfathered licenses, and we retain these provisions in our revised rules. See Comments of Robert Riechel at 1.

<sup>72</sup> See, *e.g.*, Comments of Joe Leikhim at 3.

<sup>73</sup> Comments of Sterrett at 2-3. Sterrett also states that license by rule should be limited to handheld radios not exceeding 2 Watts ERP and with a “fixed antenna permanently attached.”

<sup>74</sup> See, *e.g.*, Comments of West Marin Disaster Council at 2.

<sup>75</sup> We note that many of the commenters addressing GMRS license requirements listed their GMRS call signs on their comments. Further, among the myGMRS.com survey respondents, 99% said repeaters should be allowed, 78% said that they use repeaters, and 40% own a GMRS repeater. Comments of myGMRS.com at 2 and appendix.

<sup>76</sup> See, *e.g.*, Comments of Brian Tanaka at 1, Motorola at 4, NCGUG at 6, Reply Comments of the PRSG at 1.

GMRS channel pairs unusable over a wide area. In such a situation, it is necessary to identify the operator of that repeater station in a timely fashion. The most practical way to identify the person responsible for operation of a remotely-controlled GMRS repeater or base station is to note the call sign transmitted over the air and look that up in the Commission's ULS data base to find the licensee's contact information.

32. In addition, we understand the view expressed by some commenters that establishing differing licensing requirements for various types of GMRS stations might be confusing. We do not wish to create a situation in which the requirement for an individual license is ambiguous. Accordingly, we will continue to require individual licenses for all GMRS stations. However, as addressed below in the discussion of issues pertaining to the FRS, we are revising the rules to reclassify many GMRS/FRS hand-held radios as FRS units that do not require an individual license.

33. *Eligibility.* Most commenters favor retaining a minimum age for obtaining a GMRS license, though some support lowering it from the current age of eighteen.<sup>77</sup> For example, Seattle OEM/ACS argues that lowering the age requirement would allow Boy Scouts to obtain GMRS licenses.<sup>78</sup> Because GMRS licenses will continue to authorize the operation of repeater stations, we will maintain the typical age of majority (18 years) as an eligibility condition for licensing in GMRS. GMRS repeater stations usually support a whole community of users and provide communications capability over a relatively wide geographic area, and their operation involves a significant degree of responsibility and potential liability that we find supports an eligibility requirement. Nevertheless, we note that any individual GMRS licensee may allow family members of any age to operate GMRS stations under the authority of his or her license.<sup>79</sup> We also note that, with the exception of some grandfathered entities, we are maintaining the other eligibility requirements for GMRS that the service be licensed to individuals.

34. *License term.* In the *NPRM*, the Commission proposed to extend the GMRS license term from five years to ten in order to conform the GMRS license term to that of most other services and reduce the administrative burden on GMRS licensees and Commission staff.<sup>80</sup> Some commenters oppose the proposal because the annual regulatory fee which, at the time the comments were filed, GMRS licensees were required to pay in advance throughout the license term would substantially increase the amount due at the time of licensure and renewal to cover ten years instead of five years.<sup>81</sup> Subsequently, however, the Commission has eliminated the regulatory fee for GMRS licenses,<sup>82</sup> which renders the concern about payment of regulatory fees moot. Moreover, concerns about licensing fees were directed primarily toward users of inexpensive GMRS/FRS combination radios, the cost of which is a fraction of what the required fee for a ten-year license would be, and who, it is asserted, are deterred by the fees from properly licensing their GMRS operations. As discussed below, however, we are reclassifying many of the existing GMRS/FRS combination radios as FRS units for which no individual license is required, so the initial license and renewal application fees are no longer a concern for users of those FRS units. Although following this reclassification, the remaining GMRS community will likely be persons willing to invest in more expensive equipment with longer range capabilities and desiring a longer license term to recoup their investment, we will also lessen the financial and administrative burden on GMRS licensees

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<sup>77</sup> See, e.g., Comments of George E. Henry at 2, myGMRS.com at 3.

<sup>78</sup> Comments of Seattle OEM/ACS at 11, PRSG at 10-11.

<sup>79</sup> In response to an *ex parte* filing by myGMRS.com, we clarify that the responsibility of an individual GMRS license holder for the proper operation of its station extends to operation by an individual under the age of 18 operating that licensee's station as permitted by the rules. See May 2, 2017 Comments of myGMRS.com at 6.

<sup>80</sup> See *NPRM*, 25 FCC Rcd at 7662.

<sup>81</sup> See, e.g., Comments of PRSG at 7-10.

<sup>82</sup> See Assessment and Collection of Regulatory Fees for Fiscal Year 2015, *Report and Order and Further Notice of Proposed Rulemaking*, MD Docket No. 15-121, 30 FCC Rcd 10268, 10276 ¶ 26 (2015).

by changing the normal term for new and renewed GMRS licenses from five years to ten years.<sup>83</sup> myGMRS.com states that almost all of the 350 GMRS entities that filled out its survey support extending the license term from five to ten years, which would reduce the costs applicable to GMRS licensees.<sup>84</sup> We concur that the benefits of a longer license term will exceed the costs<sup>85</sup> for most licensees and the administrative costs for Commission.

## 2. Garmin International, Inc. Petition for Rulemaking

35. In response to a petition for rulemaking<sup>86</sup> filed by Garmin International, Inc. (Garmin), the Commission proposed in the *NPRM* to amend the GMRS rules to allow the transmission of Global Positioning System (GPS) location information and user-generated text messages subject to certain equipment design requirements that currently apply to such operation in the FRS.<sup>87</sup> Such operations have been permitted by a waiver that has permitted Garmin to manufacture and market hand-held units that use digital data transmissions for the aforementioned purposes since 2004<sup>88</sup> and we have not received reports of any interference or congestion problems as a result of the operation of the Garmin units. In advocating for this change, Garmin asserts that the use of its units may actually reduce channel congestion because digital data transmissions are very brief compared to relaying the same information by voice communications. Garmin also states that its units have life-saving applications at home and abroad.<sup>89</sup>

36. A few commenters oppose Garmin's request to allow GPS and limited data applications on GMRS channels, asserting that the interference would be significant and that there are other services where such use would be compatible.<sup>90</sup> Other commenters are also concerned with some level of nuisance interference that may result from Garmin's proposal, but most of the commenters addressing this issue are willing to support Garmin's petition with conditions, such as only if individual licensing is maintained for GMRS or only if these data capabilities are limited to the 462 MHz interstitial channels or have other technical limitations to reduce interference potential.<sup>91</sup> Motorola supports the Garmin proposal

<sup>83</sup> The expiration date of licenses issued before this rule change takes effect will not change. Only licenses granted or renewed on or after the effective date will have ten-year terms.

<sup>84</sup> Comments of myGMRS.com at Appendix page 2.

<sup>85</sup> As indicated above, this action will reduce the overall cost for a GMRS license over a ten year period because the application fee will only be paid once in that period as opposed to twice. This change will not impact the users of inexpensive GMRS/FRS radios that are being reclassified and will benefit the remaining GMRS licensees that are making an investment in higher power and more expensive GMRS equipment to recoup their investment over a longer period.

<sup>86</sup> See Garmin International, Inc. Petition for Rulemaking, RM-10762 (filed July 22, 2003) (Garmin Petition); *Public Notice*, Report No. 2619 (rel. Aug. 6, 2003).

<sup>87</sup> See *NPRM*, 25 FCC Rcd at 7666-67.

<sup>88</sup> See Garmin International, Inc., *Order*, 20 FCC Rcd 982 (WTB PSCID 2004); Garmin International, Inc., *Order*, 21 FCC Rcd 15072 (WTB MD 2006); Garmin International, Inc., *Order*, 23 FCC Rcd 18325 (WTB MD 2008); and Garmin International, Inc., *Order*, 25 FCC Rcd 14614 (WTB MD 2010).

<sup>89</sup> Comments of Garmin at 4-7.

<sup>90</sup> See, e.g., Comments of Stanton Walters at 3, George Henry at 2, Reply Comments of Knowles at 9. For example, Knowles contends that Garmin's request will cause substantial interference to GMRS and limiting the burst time is not sufficient to address the interference potential. Knowles also contends that the need for text has not been shown and it is incompatible with the voice messaging service within GMRS.

<sup>91</sup> See, e.g., Comments of PRSG at 15, NCGUG at 12, Thomas Woodward at 6, Eric Simmons at 2. We also note that PRSG objects to Garmin's submission of testimonials relating to incidents involving the beneficial use of Garmin units by federal agents in the U.S. and by U.S. Armed Forces abroad. See Reply Comments of PRSG at 6. It is true that such operations are not authorized under the provisions of Part 95 of the Commission's Rules because they are outside of the Commission's jurisdiction. Use of Garmin devices, however, could be authorized by NTIA (in the case of federal agents) or the Department of Defense (in the case of overseas deployment in a war zone).

with the condition that GMRS eligibility restrict business use arguing that the interference concerns of GPS and text messages are not insignificant, but they are manageable and justified by the public benefit as long as it is limited to use by individuals.<sup>92</sup>

37. Commenters supporting Garmin's proposal argue that the GPS location and short message capabilities have personal safety applications, are popular within the FRS community, and will not appreciably increase interference with voice GMRS communications.<sup>93</sup> Hampton Technologies supports allowing data transmissions up to 2 seconds in length and states that transmission of digital status information should also be allowed.<sup>94</sup>

38. We conclude that the benefits of allowing this type of digital transmission exceed the minimal risk of any increase in interference or congestion in the GMRS. Granting Garmin's request extends to GMRS the limited data applications currently available under the FRS rules. Specifically, digital data transmissions in the GMRS: will be limited to location information, requests for location information from other units, and brief text messages to another specific unit; must be initiated by a manual action or command of a user, except that a unit receiving a location request from another unit may automatically respond with its location; must not exceed one second in duration; and must not be sent more frequently than one digital data transmission within any thirty-second period, excluding automatic responses to location requests. Moreover, GMRS transmitters capable of digital data transmissions: must have integrated (*i.e.*, non-detachable) antennas; and may make digital data transmissions only on the 462 MHz GMRS channels and the new 467 MHz interstitial GMRS channels shared with the FRS. In addition to these requirements, we limit the occupied emission bandwidth of digital data transmissions to 12.5 kilohertz on the 462 MHz and 467 MHz interstitial channels, but allow up to 20 kHz on the 462 MHz main GMRS channels to be consistent with other GMRS emissions that may be using those channels. While Garmin requested that GMRS portables with these data capabilities be permitted to use detachable antennas,<sup>95</sup> we decline to allow detachable antennas for these devices at this time. Our decision not to permit detachable antennas for GMRS portable units is based upon a concern that an in-line amplifier from a detachable antenna port could allow 467 MHz interstitial operations greatly exceeding the 0.5 Watt power limit and could interfere with repeater operations. We believe that the equipment requirements set forth above are sufficient to ensure robust digital applications with minimal hindrance to voice communications and we add them to the GMRS technical rules so they will be equipment authorization requirements for GMRS transmitters that have location and text message digital data transmission capability.

39. We note that we are not adopting certain suggestions that were very recently filed in this proceeding because of the lack of an adequate record on which to consider them at this time. These relate to allowing automatic or periodic GPS and data transmissions on GMRS devices,<sup>96</sup> allowing expansion of the GMRS data capabilities to include mobile and portable devices without integrated antennas and allowing the transmissions over repeater input channels to expand the range of such data applications.<sup>97</sup>

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<sup>92</sup> Comments of Motorola at 8. As mentioned above, we are maintaining the current GMRS eligibility requirement that the service be licensed to individuals, not businesses as Motorola is concerned.

<sup>93</sup> See, *e.g.*, Comments of Seattle OEM/ACS at 4, Hampton Technologies at 5, Further Comments of Uniden at 9.

<sup>94</sup> Comments of Hampton Technologies at 5.

<sup>95</sup> May 29, 2015 *ex parte* Presentation of Garmin at 1.

<sup>96</sup> April 17, 2017 *ex parte* of Motorola at 1, and June 8, 2015 *ex parte* of Motorola at 2. See contrary views at June 11, 2015 *ex parte* of Uniden at 2.

<sup>97</sup> May 2, 2017 Comments of myGMRS.com at 2-3, and May 8, 2017 Comments of Leikhim & Associates LLC (Leikhim) at 6. See contrary views at May 8, 2017 Comments of Leikhim at 6; May 5, 2017 Comments of Jeffrey Kardos Jr.



### 3. Other GMRS Issues

40. *Transmitting power.* The Commission sought comment in the *NPRM* on whether the current fifty-Watt transmitter power limit for most GMRS operations should be lowered, and proposed to adopt a limit of two Watts for hand-held portable radios for which there has previously been no specific power limit in the rules.<sup>98</sup> Commenters uniformly oppose this proposal, which they argue is unnecessary and would hinder GMRS communications.<sup>99</sup> Because we are maintaining the individual licensing requirement for GMRS, we agree with commenters that a reduction in GMRS power limits is unnecessary. Accordingly, we will not change the power limit for any class of GMRS station.<sup>100</sup>

41. *Narrowbanding.* The *NPRM* proposed<sup>101</sup> to phase in narrowbanding of the 25-kilohertz GMRS main channels by setting a deadline after which equipment capable of operating with a bandwidth greater than 12.5 kilohertz could not be certified, manufactured, or imported.<sup>102</sup> Most commenters oppose the proposal. For example, myGMRS.com points out that, unlike when narrowbanding was mandated for Part 90 frequencies,<sup>103</sup> no additional channels would become available as a result of GMRS narrowbanding because the interstitial channels are already in use.<sup>104</sup> Commenters also argue that many GMRS licensees use surplus Part 90 equipment that is not narrowband compatible and would be expensive to replace and that narrowband transmissions would reduce the quality of GMRS communications.<sup>105</sup> Nevertheless, some other commenters support narrowbanding of GMRS channels over a longer transition period with the caveat that GMRS would benefit from the additional channels or that new digital modulation techniques should be permitted to maintain service quality.<sup>106</sup> We agree with the commenters who argue that the costs associated with requiring narrowbanding, such as reconfiguring repeater systems by a date certain, would outweigh any benefit at this time.<sup>107</sup> With the use of interstitial channels already in place and an established base of 25 kHz equipment held by individuals, any orderly switch to 12.5 kHz channels would be difficult, costly in lost equipment investments, and would not result in a material increase in spectrum efficiency. Consequently, we find that the record does not support a transition to a narrowbanding requirement for GMRS, and so we decline to establish such a requirement at this time.

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<sup>98</sup> See *NPRM*, 25 FCC Rcd at 7663-64. The proposed rules in the *NPRM* would have limited all GMRS stations in the Canadian coordination zone to no more than five Watts effective radiated power. See *id.* at 7703. This was inadvertent; the limitation was intended to apply only to small base stations and small control stations. As discussed *infra*, we are eliminating those station classes.

<sup>99</sup> See, e.g., Comments of Hampton Technologies, Inc. at 10, Garmin at 8, NCGUG at 4.

<sup>100</sup> As addressed below in the discussion of issues pertaining to the FRS, however, we are revising the rules to adopt a 0.5 Watt effective radiated power (ERP) limit for the new 467 MHz interstitial channels, because these channels will be shared with FRS.

<sup>101</sup> See *NPRM*, 25 FCC Rcd at 7665.

<sup>102</sup> FRS transmissions on the interstitial channels already are limited to narrowband (12.5 kilohertz bandwidth) emissions, but GMRS transmissions on 462 MHz interstitial channels can use a 20 kHz emission bandwidth.

<sup>103</sup> See Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended; Promotion of Spectrum Efficient Technologies on Certain Part 90 Frequencies, WT Docket No. 99-87, *Second Report and Order and Second Further Notice of Proposed Rule Making*, 18 FCC Rcd 3034 (2003); Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended; Promotion of Spectrum Efficient Technologies on Certain Part 90 Frequencies, WT Docket No. 99-87, *Third Memorandum Opinion and Order and Third Notice of Proposed Rulemaking and Order*, 19 FCC Rcd 25045 (2004).

<sup>104</sup> See, e.g., Comments of myGMRS.com at 6.

<sup>105</sup> See, e.g., Comments of Kevin Kennedy at 2, Motorola at 6-7, Garmin at 12-14, Craig Rosevear at 2.

<sup>106</sup> See, e.g., Comments of Thomas Woodward at 5, NCGUG at 10, Reply Comments of Midland at 3.

<sup>107</sup> See, e.g., Comments of Motorola at 6-7, Reply Comments of Garmin at 9.

42. After the initial comment period closed, several parties requested rule changes regarding the types of devices and modulation techniques that should be permitted under GMRS. For instance, some commenters have very recently requested that we permit the use of Part 90 certified equipment on GMRS channels without requiring that it also be certified under Part 95,<sup>108</sup> and that we permit digital voice modulation equipment, currently permitted in Part 90, in the GMRS.<sup>109</sup> We also note that seven parties filed petitions for rulemaking requesting that we allow a time division multiple access (TDMA) modulation technique (*i.e.*, 7K60FXE 2-slot DMR TDMA) on GMRS frequencies to facilitate digital emissions and narrowbanding to increase capacity on GMRS channels.<sup>110</sup> The few comments addressing digital voice on GMRS are split; some parties suggesting it should be allowed outright,<sup>111</sup> one party suggesting it could be migrated in on a secondary basis,<sup>112</sup> one suggesting new channels be made available for digital voice that avoid existing analog channels,<sup>113</sup> and another suggesting that certain GMRS channels be set aside for “digital only” or “digital primary.”<sup>114</sup> We take no action on these requests at this time because we find the record is insufficient to establish whether and how these changes should be made and their potential impact. For example, regarding the use of Part 90 equipment that is not also certified under Part 95, we note that many Part 90 certified radios have no technical similarity to GMRS. While some radios are certified under both Part 90 and Part 95, Part 90 covers a wide range of services with varying modulation techniques, so such a broad exemption to our standard practice of requiring a Part 95 equipment authorization would lead to unknown effects on the service. Similarly, we find the record insufficient to make a determination on the allowance of digital voice in GMRS at this time. As explained above, some had a concern of interference to analog voice communications from even the one-second duration data transmissions we are allowing through this action; they could not have anticipated at the time that the issue would expand into whether a variety of new digital voice operations would be allowed and their potential impact on the “listen before talk” etiquette, self-policing, and emergency calls that occur on these shared channels. Indeed introducing a new modulation technique that is inconsistent with existing equipment would complicate the shared environment of GMRS channels without a record on how it could be done or whether to limit it to certain channels. Further, with the use of the interstitial channels by GMRS and FRS units, we do not feel that the gains achieved by implementing narrowband digital techniques outweigh the losses in equipment investments and complications of introducing a new modulation scheme for GMRS radios.

43. *Section 95.29(g)*. In the *NPRM*, the Commission proposed to delete Section 95.29(g), which pertains to certain GMRS systems authorized before March 18, 1968.<sup>115</sup> The consensus in the

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<sup>108</sup> May 2, 2017 Comments of myGMRS.com at 5, May 5, 2017 Comments of Kevin Smith at 1, and May 8, 2017 Comments of Leikhim at 7.

<sup>109</sup> May 2, 2017 Comments of myGMRS.com at 3, and May 8, 2017 Comments of Leikhim at 6.

<sup>110</sup> *See* Petitions for Rulemaking, WT Docket No. 10-119, filed by Kirk D. Becker, Corey S. Becker, Ricky L. Usinger, Brett Seifert, John Shagath, Mike Waschbisch, and Cole Weiss. While the filing of Cole Weiss was submitted as an “application,” we are treating the filing as a petition for rulemaking consistent with the other requests seeking to allow TDMA operations in the GMRS. Inasmuch as the substance of these requests was covered by the call for comment in the *NPRM*, 25 FCC Rcd at 7665, para. 37, parties have had ample time to advocate for the adoption of the proposals covered by their filings. To this extent, we have granted their requests for consideration of these proposals within this rulemaking proceeding. The record, however, is insufficient to justify adopting these proposals and, on that basis, we decline to allow TDMA operations in the GMRS.

<sup>111</sup> *See, e.g.*, March 23, 2016 Comments of Bradley D. Berry at 2, March 25, 2016 Comments of Ronnie Drummond at 1, and May 2, 2017 Comments of myGMRS.com at 3-4.

<sup>112</sup> May 8, 2017 Comments of Leikhim at 6.

<sup>113</sup> May 5, 2017 Comments of Jeffrey Kardos Jr. at 1.

<sup>114</sup> May 8, 2017 Comment of Todd Dugdale at 1.

<sup>115</sup> *See NPRM*, 25 FCC Rcd at 7664.

record is that this rule is obsolete and should be removed, and no commenter identified any GMRS system that is still operating pursuant to this provision.<sup>116</sup> We conclude that there is no further need for the provision and, accordingly, we remove it.

44. *Small base stations and small control stations.* One of the goals of this proceeding is to streamline the Part 95 rules to increase clarity and reduce potential confusion, and the Commission asked commenters to address whether any rule changes beyond those set forth in the *NPRM* would be appropriate in that regard.<sup>117</sup> Two commenters suggest that the references in the GMRS rules to “small” base and control stations<sup>118</sup> be eliminated, and that such stations be regulated like other base and control stations.<sup>119</sup> The provisions for small base and control stations in the GMRS rules are a remnant of the former site-by-site GMRS licensing regime under which the Commission collected data on the location and operating parameters of every GMRS land station.<sup>120</sup> The collection of location specific data in the GMRS application process was discontinued in 1988,<sup>121</sup> and a modification application is no longer required to add or modify any kind of GMRS station having any permissible power or antenna height.<sup>122</sup> Consequently, there is no longer any purpose for or benefit from maintenance of the small station classes. Accordingly, we remove them and the restrictions associated with them from our GMRS rules.

45. *Additional issues.* We recently received comments raising additional issues, such as the suggestion of myGMRS.com that Canada should be excluded from the foreign station communication prohibition for FRS and GMRS stations because they use the same frequencies for similar personal radio services in Canada.<sup>123</sup> Some parties sought changes to or clarification of the network connection prohibitions in the GMRS rules.<sup>124</sup> Finally, a commenter requested that we delete the GMRS prohibition on messages that are both conveyed by a wireline control link and transmitted by a GMRS station.<sup>125</sup> We find there is insufficient record in the proceeding to make a determination on these issues at this time.

### C. Family Radio Service

46. *Background.* The Family Radio Service (FRS) provides very short-range two-way voice communications between compact hand-held radios to facilitate the activities of families and other groups. Additionally, some businesses find FRS units to be useful for business communications. FRS operates with a 12.5 kHz bandwidth on the interstitial frequencies between the GMRS 462 MHz

<sup>116</sup> See, e.g., Comments of Knowles at 19.

<sup>117</sup> *NPRM*, 25 FCC Rcd at 7655.

<sup>118</sup> Specifically, 47 C.F.R. §§ 95.25, 95.29, 95.51, 95.135, 95.139. By use of the word “small,” the rules mean that these stations have an antenna height not exceeding 6.1 meters (20 feet) above ground level (or the building or tree on which it is mounted) and transmit with no more than five Watts effective radiated power.

<sup>119</sup> Comments of John Marcel at 2, Robert Carter at 2.

<sup>120</sup> The Commission created the “small” GMRS station classes to facilitate the implementation of stations that did not require FAA notification or Canadian coordination.

<sup>121</sup> See *GMRS R&O*, 3 FCC Rcd at 6554.

<sup>122</sup> We note that 47 C.F.R. § 95.25, still contains some requirements of the former site-by-site licensing system. For example, § 95.25(a)(1)-(a)(2) contain language which implies that the locations of land stations are “an exact point as shown on the license” or within an area defined by a radius around a point “shown on the license.” GMRS licenses today do not show any such points. Also, § 95.25(f) requires that “[e]ach base station and each control station with an antenna height greater than 6.1 meters (20 feet) must be separately identified on Form 605.” There is no way to identify stations on the current Form 605. We remove these obsolete rule provisions from Part 95.

<sup>123</sup> May 2, 2017 Comments of myGMRS.com at 5.

<sup>124</sup> May 8, 2017 Comments of Kevin J. Smith at 2, Todd Dugdale at 1, and May 5, 2017 Comments of Jeffrey Kardos Jr at 1.

<sup>125</sup> May 8, 2017 Comments of Leikhim at 5.

frequencies (FRS channels 1-7), which it shares with the GMRS, and the interstitial channels between the GMRS 467 MHz frequencies (FRS channels 8-14). The power limit is 0.5 Watts.

47. In the *NPRM*, the Commission proposed changes to the FRS rules to address issues arising from the development of FRS combination radios. In particular, it proposed to eliminate the GMRS individual licensing requirement in part to accommodate the unlicensed use of GMRS/FRS combination radios.<sup>126</sup> The Commission also expressed concern that FRS units are being combined with radios for other radio services for which a license is required, and with radios used for safety of life services (*e.g.*, VHF Marine Radio service), which could lead to inappropriate or improper operation on non-FRS frequencies.<sup>127</sup> Accordingly, the Commission proposed to prohibit future authorization of PRS equipment (including equipment that operates in the FRS) that has the capability of transmission on frequencies in licensed services regulated under Parts 80, 87, 90 and 97 of our rules.<sup>128</sup> It also asked whether this proposal should be more narrowly tailored within the Personal Radio Services.<sup>129</sup>

### 1. GMRS/FRS Combination Radios

48. Most FRS radios sold today are relatively inexpensive combination GMRS/FRS radios, sometimes referred to as “bubble pack” radios due to how they often are packaged. These radios typically have the capability to transmit on twenty-two channels (the seven shared GMRS/FRS channels between the GMRS 462 MHz channels, the seven FRS channels between the GMRS 467 MHz channels, and the eight GMRS 462 MHz channels) with an ERP of two Watts on the GMRS channels and 0.5 Watts on the FRS channels. The record indicates that the vast majority of people who use these radios do not obtain a GMRS license.<sup>130</sup>

49. The majority of commenters support our proposal to no longer certify FRS units that have the capability of transmitting on channels in land mobile or safety services.<sup>131</sup> Although our proposal encompassed all of the Personal Radio Services, the commenters generally believe that the problem primarily arises due to the expansion of channels, features and transmit power for FRS units. For example, Donald Barton Best comments that combined licensed-by-rule and licensed service radios are an “end run” around the FCC’s rules to allow higher powered devices that will lead to the “destruction of the licensed service.”<sup>132</sup> Knowles states that radios containing licensed frequencies require the discipline and responsibility that licensing connotes and should be marketed and sold as such.<sup>133</sup>

50. However, several commenters point out that there are advantages to combination radios and argue that there is a lack of evidence that combination radios cause an increase in interference.<sup>134</sup> In

<sup>126</sup> See *NPRM*, 25 FCC Rcd at 7660-61.

<sup>127</sup> See *id.* at 7669.

<sup>128</sup> *Id.*

<sup>129</sup> *Id.*

<sup>130</sup> Garmin alone claims to have sold over 500,000 GMRS radios, yet our licensing database lists approximately 45,000 active GMRS licenses. Comments of Garmin at 2. Because the radios are combination GMRS/FRS radios, the FRS capabilities of such combination radios may be used without a license. Operation of a GMRS/FRS combination radio on FRS channels 8 through 14, or on channels FRS 1 through 7 using only the *low power* setting, is authorized by rule and does not require an individual GMRS license. Operation of a GMRS/FRS combination radio on the eight GMRS 462 MHz channels, or on FRS channels 1 through 7 using the *high power* setting, however, requires an individual GMRS license.

<sup>131</sup> See, *e.g.*, Comments of Peter Viscarola at 3, Kevin Kennedy at 1, Bennett Kobb at 2-3, Robert Stevens at 6, Mark Pomeroy at 1, Reply Comments of Knowles at 13.

<sup>132</sup> Comments of Donald Barton Best at 6.

<sup>133</sup> Reply Comments of Knowles at 13.

<sup>134</sup> See, *e.g.*, Comments of Ross Synder at 88-90, Motorola at 8, Garmin at 15, Reply Comments of Uniden at 2.

particular, Garmin and Motorola contend that GMRS/FRS combination radios are highly useful and are not causing interference problems, and therefore contend that licensed users of GMRS should not be precluded from obtaining combination radios.<sup>135</sup>

51. It is important to address the fact that many current users of GMRS/FRS combination radios do not obtain licenses to operate over the GMRS frequencies in those radios. Much of this problem likely arises as a result of the mass consumer marketing of combination devices for sale to the public in large quantities to users who do not know about or do not understand the licensing requirements attached to such radios and obligations associated with operating in the GMRS (such as rules for the use of higher power equipment and repeater stations, as well as eligibility restrictions). As discussed below, we believe that the best long term solution to this problem is to cease certification of FRS devices that incorporate GMRS capabilities, as well as other services as discussed below. At the same time, in order to enable FRS-only devices to continue to have the benefits of the additional range and channels currently provided by existing GMRS/FRS combination devices with two Watt GMRS channels, we will permit FRS-only devices to have the capability to transmit with a maximum ERP of two Watts. In the shorter term, we concur with commenters who suggest that the best solution to the problem of GMRS/FRS combination radios already in operation is to reclassify existing GMRS/FRS combination radios which operate at power levels under two Watts ERP as FRS units for which no individual license is required, and GMRS/FRS radios that operate above that power level as GMRS, with the latter continuing to require an individual license.<sup>136</sup>

52. In order to accommodate these existing lower power combination devices in the FRS, we are increasing the maximum authorized radiated power limit for FRS channels 1-7 from 0.5 Watts to two Watts, and making the GMRS 462 MHz main channels available to the FRS for use on a shared basis with GMRS. The new channels will be numbered FRS channels 15 through 22, and the FRS power limit for these channels will be two Watts ERP. In addition, we redesignate FRS channels 8 through 14 (the interstitial channels between the GMRS 467 MHz channels, which formerly were designated exclusively for FRS) to GMRS for use on a shared basis with FRS. They will be available to GMRS operators under the same technical limits that currently apply to FRS.<sup>137</sup> We retain the five Watts ERP limit for GMRS operation on the 462 MHz interstitial channels.<sup>138</sup> Consequently, all FRS frequencies will now be shared with GMRS, while the eight GMRS 467 MHz main channels (repeater input channels) will remain exclusively GMRS.

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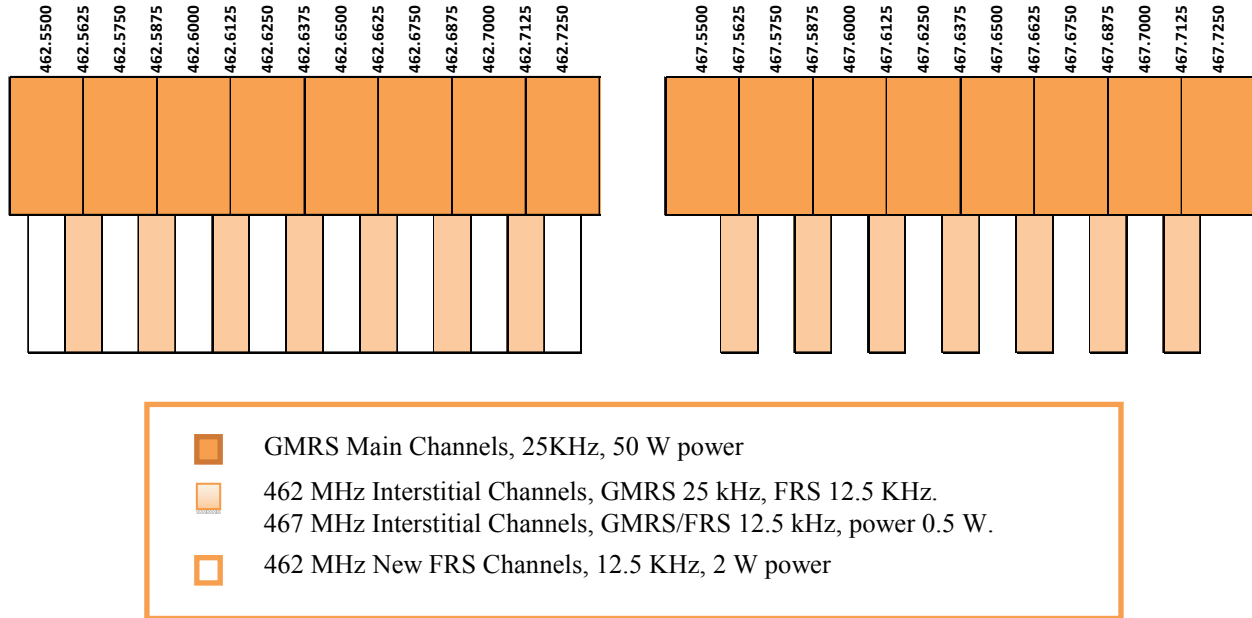
<sup>135</sup> Comments of Garmin at 15, Motorola at 8.

<sup>136</sup> See Comments of Vernon Reed, Jr. at 1, James Edwin Whedbee at 2, Uniden at 8.

<sup>137</sup> Specifically, only hand-held units with integral antennas may transmit on these channels, transmitting power on these channels will be limited to 0.5 Watts ERP, emission bandwidth on these channels will be limited to 12.5 kilohertz, and frequency tolerance on these channels will be held to within 2.5 parts per million (ppm).

<sup>138</sup> See 47 C.F.R. § 95.29(f) in the old rules, 95.1767 in the new rules adopted here.

New Channel Allotment for GMRS and FRS



53. GMRS/FRS combination radios that are capable of operating on the shared GMRS/FRS frequencies with a higher power than the FRS rules permit, and/or of operating on the 467 MHz GMRS main channels, will be reclassified only as GMRS radios. Furthermore, as we explained *supra*, we agree with commenters that operation of radios capable of transmission on GMRS repeater input channels should continue to be licensed individually and not by rule. Combination GMRS/FRS radio users that operate with a power level at or below two watts ERP under the revised FRS rules adopted herein, however, will no longer be required to obtain a license. We believe the two watt limit for FRS is appropriate because many of the existing combination GMRS/FRS radios already operate under that level with no significant complaints about interference or other problems, and it provides a reasonable balance between the desire for increased range over the prior FRS power levels and battery life. We also observe that the two watt limit is the power used for Part 95 MURS devices which are also licensed by rule,<sup>139</sup> both MURS and FRS facilitate various applications (*e.g.*, voice and data) for the general public in the VHF frequency range with comparable spectral environments, and use of this power limit has worked safely and appropriately in this analogous service. It is our predictive judgment that this will continue to be the case, though we may revisit that if circumstances change. Thus, we find that adoption of consistent power levels across these comparable services would be appropriate. We also note that Canada’s license-exempt radios operating in this band are similarly limited to two watts,<sup>140</sup> as are devices which also operate in this frequency range under the Part 90 low power radio rules.<sup>141</sup> We understand that this use has worked well and furthermore find that this power level will promote economies of scale for manufacturers.

54. We find this reclassification of existing GMRS/FRS combination devices as either GMRS or FRS and, going forward, our decision to no longer certify devices that combine FRS with GMRS, is in the best interest of the casual and business user that wishes to operate FRS devices with more range and additional channels without licensing and eligibility restrictions, as well as the GMRS

<sup>139</sup> See 47 C.F.R. § 95.639(h) in the old rules, 95.1767 in the new rules adopted here.

<sup>140</sup> See Industry Canada Radio Standards Specification RSS-210 at A6.2.4.

<sup>141</sup> 47 C.F.R. § 90.267.

community that wishes to continue to operate land mobile type systems using higher powered handheld, mobile, fixed and repeater equipment. It also removes the confusion of whether a purchaser needs a license to operate devices in this band because they will be classified as either FRS or GMRS, not under both services.

55. Accordingly, 90 days after the effective date of new section 95.1761(c) adopted herein we will no longer permit any hand-held portable radio transmitter type under both the GMRS and FRS to receive a grant of equipment certification.<sup>142</sup> Second, two years after the effective date of new sections 95.1791(a) and (b) adopted herein no person shall be permitted to manufacture or import, sell or offer for sale any radio equipment capable of operating under both subpart E (GMRS) and subpart B (FRS).<sup>143</sup> We also reclassify and grandfather the operation of any existing hand-held GMRS/FRS combination radios as set forth above, and remind operators of such existing devices that fit within the reclassified GMRS category that they must obtain a license before operating a GMRS device. By these actions, all radios operating in the 462/467 MHz frequency bands that are shared by FRS and GMRS will be classified as either GMRS or FRS, but not a combination of both and thereby eliminate the current confusion as to which rules apply to any particular radio, and whether an individual license is required or not. As explained above,<sup>144</sup> we find that this implementation schedule and grandfathering of existing devices will facilitate rapid compliance with our new rules, while minimizing the burden on stakeholders. Manufacturers should be able to quickly comply with this reclassification with minimal burden and existing models can continue to be used by consumers under the appropriate service designation. We find the minimal cost of implementing this change will potentially bring hundreds of thousands of consumers into compliance with our rules.

## 2. Other FRS Combination Radios

56. The majority of commenters agree with the proposal contained in the *NPRM* that we should no longer authorize FRS equipment that has the capability of transmission on frequencies in licensed services regulated under Parts 80, 87, 90 and 97 arguing that such devices create confusion for the consumer.<sup>145</sup> However, manufacturers that make these devices and some other commenters argue that such combination radios increase convenience by allowing users to carry fewer devices and provide desirable features to consumers.<sup>146</sup> For example, G. Kris Harrison notes that a software definable radio capable of operating in personal radio, maritime, aviation, and amateur services would reduce storage requirements and provide other benefits.<sup>147</sup> The Radio Technical Commission for Maritime Services (RTCM) supports prohibiting FRS units from transmitting on maritime frequencies, but suggests that the rules should allow radios certified under the maritime rules to operate on FRS channels in addition to maritime channels.<sup>148</sup> RTCM argues that this type of radio is convenient for many professional maritime personnel because it allows them to carry only one device capable of using FRS channels for onboard

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<sup>142</sup> See new rule § 95.1761(c).

<sup>143</sup> See new rule § 95.1791(a), (b).

<sup>144</sup> See discussions *supra* ¶¶ 25-26.

<sup>145</sup> See, e.g., Comments of Peter Viscarola at 3, Donald Barton Best at 6, Seattle OEM/ACS at 13, Reply Comments of Knowles at 13.

<sup>146</sup> Comments of Radio Technical Commission for Maritime Services at 2, Cobra at 3, Motorola at 8, Reply Comments of Uniden at 3, Midland at 3. On October 3, 2012, Jordan M. Nash (Nash) filed a petition for rulemaking proposing that amateur operators be permitted to operate on Part 95 frequencies. See Letter dated Sept. 27, 2012 from Jordan M. Nash to Chairman Genachowski, Federal Communications Commission. Because the petition is related to a proposal in the *NPRM*, we treat it as a comment in this proceeding.

<sup>147</sup> Comments of G. Kris Harrison at 1.

<sup>148</sup> Comments of RTCM at 2.

communications to staff and maritime channels for longer range communications. With the exception of Part 15 unlicensed devices, which allow accessories like wireless ear pieces, we conclude for the reasons set forth below that it is in the public interest to prevent continued incorporation of the technical capabilities of other radio services, particularly safety and licensed services, into FRS units.<sup>149</sup> Moreover, we note that the Commission recently amended the Part 80 rules to permit expanded use of handheld marine radios on land, which is responsive to RTCM's concerns.<sup>150</sup>

57. As discussed above, operation of FRS units is licensed by rule and they are marketed to and intended to be used by the general public as a simple and inexpensive communications solution. Because FRS units are intended to be operated by anyone, even young children, it is unrealistic to expect FRS users to know the channel assignments and operating procedures for other radio services. Further, because of the open eligibility to operate FRS devices, many businesses use the devices in their warehouses, retail stores and other locations, so widespread use of devices with capabilities to operate in licensed and safety related services could result in unintentional interference to safety communications. We therefore amend our FRS equipment authorization rules to limit the technical capabilities of FRS units, especially the channels on which they are capable of transmitting.<sup>151</sup> We make an exception for Part 15 unlicensed devices by continuing to allow the combination of equipment authorizations under both FRS and Part 15 to permit FRS devices to include features such as Bluetooth headsets or to allow Wi-Fi capabilities to download maps for hiking or other features. By imposing limits at the manufacturing stage, consumers can use FRS units fully without having to know which channels they can and cannot use, under what circumstances, with or without a license. This should also eliminate the risk of unintentional transmissions on channels designated for other services, which could result in interference to or improper use of those services. At the same time, the new channel allotments and increase in power levels permissible for FRS discussed above will mean that FRS devices can more readily satisfy the operational needs of consumers and businesses, therefore lessening the need to obtain a device that requires a license to operate or that comes with eligibility restrictions.

58. As noted above, RTCM supports the elimination of maritime frequencies from less expensive consumer devices certified jointly under FRS in Part 95 and Maritime Radio in Part 80, but supports the addition of FRS channels in Maritime radios certified under Part 80. We agree that it is clear that the potential for misuse and interference discussed above is of even greater concern when an FRS device is combined with maritime frequencies used for emergency maritime and ship to shore communications. We disagree, however, with RTCM's suggestion that we should conversely permit

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<sup>149</sup> Several commenters are concerned that the proposal to prohibit combination radios would prevent GMRS licensees from using surplus Part 90 equipment in GMRS. *See, e.g.,* Comments of Jerry Scott Parham at 3. This is not our intent. We will continue to certify equipment that meets the respective technical standards for Part 90 (land mobile) and Part 95 (GMRS) in both services, if requested. However, we are amending the language in new section 95.1761(c) to clarify the requirement in old section 95.655(a) that Part 95 GMRS radios will not be certified if they are equipped with the capabilities to operate in services that do not require equipment certification, such as the Amateur Radio Service.

<sup>150</sup> *See Maritime Equipment Report and Order*, 31 FCC Rcd at 10311 ¶ 27.

<sup>151</sup> We have also noticed the increasing availability of portable "walkie-talkies" with programmable capabilities to change frequencies across a broad range, power and bandwidth that are being marketed across a range of services including FRS, GMRS, Amateur Radio Service (ARS) and Part 90. These radios may be appropriate for the ARS community, but the Commission is getting inquiries from the general public who have purchased the radios and now wonder how they can legally operate them. It is our hope that our prohibition on radios that combine frequencies intended for the general public (FRS) with licensed service frequencies in one device will remove some of this confusion. We recognize that there are additional steps we could take such as marketing requirements to clearly warn consumers when a license is needed to operate a radio and software lock-down on certain PRS services. We will monitor compliance with our new rules and continue to follow developments in how equipment is designed and marketed. If further action is warranted – either in the context of a future Part 95-related proceeding or a more general review of the equipment authorization rules – we will consider such actions.



manufacturers to incorporate FRS capabilities into VHF marine radios that are certified under Part 80 for the convenience of maritime users.<sup>152</sup> We find that such convenience does not overcome our concerns with the possibility of interference with maritime safety and ship to shore communications, and note that it would be difficult to construct rules that adequately draw lines between the devices that can or cannot combine licensed and unlicensed capabilities since any such distinction would rest solely on how a device is characterized by the manufacturer. We therefore decline to distinguish between devices based on the intended primary use of the equipment.

59. With respect to previously approved equipment that combines FRS channels and channels for other services, we will allow the continued use of all units already in the possession of consumers provided they operate the devices consistent with applicable rules for the service. That is, if the combination device operates on licensed service frequencies, then the operator should be licensed accordingly and operating in compliance with applicable rules. This is the rule currently in effect, and there will be no cost of compliance for consumers that does not already exist. The implementation of this change to future device certifications will occur in two stages. First, beginning 90 days after the effective date of new section 95.561(c) adopted in this *Report and Order*, grants of equipment authorization under Part 95 will no longer be issued for hand-held portable radio equipment capable of operating in both the FRS and in any other radio services in this chapter (licensed or otherwise), with the exception of Part 15 unlicensed capabilities with an appropriate Part 15 equipment authorization.<sup>153</sup> Second, two years after the effective date of new sections 95.587(e) and 95.591 adopted herein, no person shall be permitted to manufacture or import, sell or offer for sale hand-held portable radio equipment capable of operating in both the FRS and in any other licensed or licensed-by-rule radio service (again, a combination of FRS with a Part 15 equipment authorization is permitted).<sup>154</sup> We believe that this phased-in approach will allow adequate time for manufacturers to bring their products into compliance with these new rules and will minimize the cost of compliance for them. Based on the comments we have no reason to believe that the costs of compliance to be incurred by manufacturers will be significant. However, we believe that the benefits of avoiding interference to safety and licensed services from improperly operated FRS units outweighs any such costs.

#### **D. CB Radio Service**

60. We are changing the name of the Citizens Band Radio Service to “CB Radio Service” (CBRS). The public usually refers to this service simply as “CB” or “CB radio.”<sup>155</sup> This change will avoid confusion with the term “citizens band radio service” used in the Communications Act of 1934, as amended, which encompasses all of the radio services in Part 95 that are licensed by rule except the Radio Control Radio Service.<sup>156</sup>

61. The CBRS is comprised of individual low-power mobile and base stations, operating in the upper high frequency (HF) range (27 MHz band). All CBRS stations are interoperable, and any CBRS station operator can communicate with any other CBRS station operator who is in range. Typically, CBRS stations can communicate over a distance of five to fifteen miles by direct wave

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<sup>152</sup> Comments of RTCM at 2. There are currently on the market GMRS high-capability portable units that are also VHF Marine Radios, certified for both of these services. These units are more expensive than FRS units, and an individual license is required to use them on the GMRS channels. A ship station license may also be required to use them aboard compulsory equipped vessels or vessels that make international voyages (see § 80.13).

<sup>153</sup> See new rule § 95.561(c).

<sup>154</sup> See new rules §§ 95.587(e), 95.591.

<sup>155</sup> See new subpart D to Part 95, 47 C.F.R. § 95.901, *et al.* Conforming edits to account for the service’s name change are made to 47 C.F.R. §§ 1.4000(a)(2), 15.3(g), 73.1207.

<sup>156</sup> 47 U.S.C. § 307(e)(3). Subsection 307(e)(3) of the Communications Act provides that the terms “citizens band radio service” and “radio control radio service” shall have the meanings given them by the Commission by rule.

propagation.<sup>157</sup> CBRS remains popular with certain segments of the public, such as long haul truck drivers, for use on the highways and in rural areas.

62. Over the years, the Commission adopted several rules intended to ensure efficient operating practices and thus maximize the utility of the CBRS channels being shared by a large number of operators, such as limits on the duration, content, and distance of CBRS transmissions. The Commission sought comment in the *NPRM* on whether these rules are still needed in order to ensure a reasonable spectrum sharing environment in the CBRS, given that the number of CBRS users has declined sharply from its peak as other means of communications have become available.<sup>158</sup>

### 1. CB Hands Free Microphones

63. Operation of CBRS stations is authorized by rule, and station identification is not required. Consequently, to identify the operator responsible for transmissions from a CBRS station, the operator must be at the same location as the station during transmissions (local control). In response to a petition for rule making filed by Omnitronics, LLC, the Commission proposed to amend the rules to allow the use of cordless microphones, including hands-free headsets, with mobile CBRS radio stations, notwithstanding the general prohibition on operating a CBRS radio by wireless remote control.<sup>159</sup>

64. As supported by the commenters,<sup>160</sup> we amend the rules to allow use of cordless microphones with CBRS radios. We find the record persuasive regarding the consumer demand for this feature and it will promote safety on the highways by reducing driver distraction for those using CBRS.<sup>161</sup> Further, Cobra indicates that this feature is already allowed by Canadian regulators,<sup>162</sup> so updating our rules will promote harmonization of the rules for manufacturers and truckers that serve the North American market. Commercial wireless service consumers now have a wide variety of hands-free devices that operate under Part 15 of our rules. Allowing such devices will provide more hands-free options for truck drivers and other motorists who use CBRS radios, which should increase driver safety. Accordingly, we amend the rules to provide that the use of Part 15-compliant cordless microphones and headsets with CBRS stations is considered to be local control, not remote control, of those stations. We find that the existing technical parameters in Part 15 are appropriate to allow operation within or adjacent to a truck or other vehicle, while not providing so much distance as to be considered remote control, and no additional technical restrictions are currently needed.<sup>163</sup> Cordless microphones and headsets used with CBRS transmitters must be certified to comply fully with Part 15 of our rules, and must not change any of the operating parameters of the CBRS transmitter or adversely affect the CBRS transmission.<sup>164</sup>

65. In the *NPRM*, we asked whether hands-free microphones should be certified only for the manufacturer of each specific model of a CBRS radio so that overall performance and operating levels can be more controlled.<sup>165</sup> Commenters are split on this issue.<sup>166</sup> We note this type of technology has

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<sup>157</sup> Direct wave propagation means that radio waves travel from one station to another over a direct path following the earth's surface.

<sup>158</sup> See *NPRM*, 25 FCC Rcd at 7671.

<sup>159</sup> See *id.*

<sup>160</sup> See, e.g., Comments of Stanton Walters at 3, Cobra Electronics Corporation (Cobra) at 3, Midland Radio Corporation at 4, Robert W. Stevens (Stephens) at 7.

<sup>161</sup> Comments of Uniden at 10, Reply Comments of Midland Radio Corporation at 4.

<sup>162</sup> Comments of Cobra at 3.

<sup>163</sup> See Comments of Cobra at 4.

<sup>164</sup> See generally 47 C.F.R. Part 15. The rules adopted herein do not preclude the manufacturer from using reliable wireless interfaces used in widely available hands-free accessories for cellular phones.

<sup>165</sup> See *NPRM*, 25 FCC Rcd at 7671.

been effectively designed and implemented for other radio services to be compatible with a wide variety of brands without unreasonable restrictions on the use of the devices. Moreover, we currently allow CBRS operators to use wired microphones of many competing manufacturers with their CBRS transmitters, and replacing the cord with a Part 15-compliant radio link does not present any new issues that suggest that a different treatment is required. We therefore conclude that it is unnecessary to limit the use of hands-free devices to those that are made by or certified to the manufacturer of the CBRS transmitter. To the contrary, such a requirement would seem to unnecessarily reduce competitive options and consumer choice.<sup>167</sup>

66. Finally, while one commenter is concerned that cordless microphones utilizing voice operated transmit (VOX) could inadvertently cause transmissions in noisy environments,<sup>168</sup> we do not believe we should prohibit the use of CBRS cordless microphones with this capability. We believe the technology is sufficiently developed that VOX microphones are able to effectively operate in a variety of noisy environments. Nevertheless, the sharing and interference avoidance requirements applicable to all PRS operations will continue to apply regardless of the type of microphone used on a CBRS station.<sup>169</sup>

## 2. Review of Operating Rules

67. *Duration and content of communications.* In the *NPRM*, the Commission compared the CBRS rule limiting the duration of communications to five minutes<sup>170</sup> with the more general GMRS and FRS rules requiring operators to cooperate in the selection and use of channels to reduce interference, and asked which approach is more appropriate for the CBRS.<sup>171</sup> Commenters generally support some form of duration limitation on CBRS transmissions, but there is no consensus on whether or how the existing limits should be modified.<sup>172</sup> We will, therefore, maintain the existing rule limiting conversations to five minutes with a one minute break before commencing another conversation. Ideally, a general requirement that all users minimize transmissions would apply and be adequate across all PRS operations, but we believe the existing additional measure is appropriate for the CBRS because of its longer range capabilities and its generally higher susceptibility to interference than other PRS operations that use higher frequencies.<sup>173</sup>

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<sup>166</sup> Compare, e.g., Comments of Cobra at 4 (arguing that only the manufacturers of certified CB radios should be permitted to make cordless hands-free devices) with Comments of Stephens at 7 (arguing that CB operators should be allowed to use cordless microphones from any manufacturer).

<sup>167</sup> We note that the Wireless Telecommunications Bureau granted a waiver filed by Uniden to allow a wireless CB microphone for Uniden CB radios subject to the outcome of this proceeding. We remind Uniden that the waiver grant is void as of the effective date of this Report and Order. See Letter from Roger Noel, Chief, Mobility Division, FCC, to Gregg Skall, Counsel for Uniden, 27 FCC Rcd 13071 (WTB MD 2012).

<sup>168</sup> See Comments of Cobra at 3-4. VOX refers to devices that activate the transmitter when the user begins to speak and terminates the transmission after a pause of sufficient time. It allows the operator to use a hands-free device without having to push a button to talk. *Id.* at 3.

<sup>169</sup> See new rules §§ 95.325 and 95.359.

<sup>170</sup> The communications duration rule currently requires that conversations not exceed five minutes and prohibits the participating stations from transmitting again for at least one minute afterward. See 47 C.F.R. § 95.416.

<sup>171</sup> *NPRM*, 25 FCC Rcd at 7672.

<sup>172</sup> See, e.g., Comments of Cobra at 4 (supporting a common approach to channel sharing across the GMRS, FRS and CBRS without a specific time limit for conversations, but limiting any single transmission to no more than a minute long unless it is an emergency), Stephens at 7 (contending that the current restrictions are no longer needed, but continuous transmissions should not exceed three minutes).

<sup>173</sup> We note that the CBRS is subject to more noise and interference than the MURS, GMRS and FRS because it uses amplitude modulation (AM) and operates in the upper HF band (27 MHz) while the latter three services use frequency modulation (FM) and operate in the VHF and UHF bands (150 and 460 MHz respectively). FM has

(continued....)

68. The Commission also sought comment on whether, if it relaxed the restrictions on the duration of CBRS transmissions, it also should modify or eliminate the restrictions on transmitting music, whistling, sound effects or any material to amuse or entertain or attract attention.<sup>174</sup> The record does not provide any reasonable basis for any such modification or elimination of these restrictions. Accordingly, we will retain these provisions.<sup>175</sup>

69. *Power limits and communication distance limitations.* When solar conditions permit, it is possible for CBRS stations to communicate over a distance of several hundred miles by sky wave propagation.<sup>176</sup> In the *NPRM*, the Commission suggested that this ability to communicate over long distances has tempted some CBRS users to use directional antennas and illegal linear amplifiers to see how far they can communicate, and it sought comment on whether any technical rules should be amended (such as lower power limits) to prevent such behavior.<sup>177</sup> In the alternative, it asked whether there is any harm in allowing CBRS users to communicate in sky wave mode and, if not, whether the current prohibition on communications or attempted communications with any CBRS station located more than 250 kilometers (155.3 miles) away should be eliminated.<sup>178</sup> Commenting parties overwhelmingly oppose lowering the power limit for the CBRS and do not believe sky wave propagation by CBRS operators is a problem.<sup>179</sup>

70. The record does not contain any convincing evidence that the current level of use of sky wave propagation by CBRS operators creates any increase in risk of harmful interference, or presents any other cause for concern. Accordingly, we will retain the current power limit and eliminate the restriction on long-range communications. We will not, as suggested by some commenters, increase the power limit, given the increased potential for interference to other services that would result.<sup>180</sup>

### 3. Other CBRS Issues

71. In the *NPRM*, the Commission generally proposed to streamline the Part 95 rules where practicable, and invited commenters to suggest rule changes needed to reflect current technology and conditions.<sup>181</sup> Commenters suggested a number of changes to particular CBRS rules.

72. Manufacturers argue that the rule requiring that the serial number of each CBRS radio be engraved into the transmitter chassis is no longer necessary and should be removed.<sup>182</sup> This requirement

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much greater immunity to static and impulse noise than AM. There is also much more noise from human sources in the HF band than in the VHF and UHF bands.

<sup>174</sup> See *NPRM*, 25 FCC Rcd at 7672.

<sup>175</sup> See, e.g., Comments of Stanton Walters at 3, Stevens at 7.

<sup>176</sup> Sky wave propagation (CB operators call this “skip”) means that radio waves travel from one station to another over a bending path in the ionosphere. In the 27 MHz band, sky wave propagation is possible during the daylight hours when there are sufficient sunspots to ionize the upper layers of the ionosphere.

<sup>177</sup> See *NPRM*, 25 FCC Rcd at 7673.

<sup>178</sup> *Id.*

<sup>179</sup> See, e.g., Comments of Cobra at 4, Ranger at 3, American Radio Relay League at 7, Stevens at 7.

<sup>180</sup> Individuals wanting to explore radio technology and long distance HF communications can obtain a license in the Amateur Radio Service instead. Those requiring more reliable local communications for personal uses may wish to use GMRS.

<sup>181</sup> See *NPRM*, 25 FCC Rcd at 7652, 7655.

<sup>182</sup> Comments of Uniden at 11, Cobra at 5. See also *NPRM*, 25 FCC Rcd at 7739 (Appendix C) (proposing elimination of current Section 95.671, which requires serial numbers to be engraved on CB radio transmitters).

was adopted in 1976 to help alleviate difficulties in identifying stolen CBRS equipment.<sup>183</sup> We agree with the commenters that, because theft of mobile CBRS equipment is no longer as large a problem as it once was, the cost of engraving serial numbers on such equipment now appears to exceed any resultant benefits, and the requirement seems to impose needless costs on the manufacturer and therefore on the consumer. Accordingly we remove this requirement from our rules.

73. Similarly, with our updating and streamlining of the CBRS rules, we are removing the requirement that manufacturers include a copy of the FCC operating rules with each new CBRS radio.<sup>184</sup> When this requirement originally was enacted,<sup>185</sup> CBRS licensees<sup>186</sup> were required to maintain a current copy of the rules.<sup>187</sup> This requirement was removed in 1982.<sup>188</sup> Our rules do not require inclusion of a copy of the relevant rules with other PRS equipment, and we conclude that such a requirement is no longer necessary for CBRS equipment. CBRS radio operators and other PRS users can obtain information from the FCC website and request assistance using our 800 number call center, and we encourage manufacturers to direct users to our web site [www.fcc.gov](http://www.fcc.gov) or call center 888-225-5322 (888-CALL FCC) to find information about operating requirements. These actions will reduce costs for manufacturers of CBRS radios and recognize that the public currently has ready access to operating requirements and other FCC information about CBRS radios.

74. We decline, however, to adopt other changes proposed by commenters that, rather than streamlining the CBRS rules, would expand or substantially change the character of the service. Specifically, we decline to adopt the proposal to allow CBRS radios to transmit data (other than the sub-audible tone squelch and selective calling that is already permitted)<sup>189</sup> for the purpose of short text messaging.<sup>190</sup> We also decline to adopt proposals to allow FM modulation or to add additional channels for FM modulation,<sup>191</sup> or to narrowband and digitize CBRS channels because 10 kilohertz channels are already relatively spectrally efficient and the alternative modulation techniques would be incompatible with the existing equipment base.<sup>192</sup> Further, we decline to adopt the proposal to transition the service to a band and modulation scheme that is more appropriate for short-range communications.<sup>193</sup> Such changes are beyond the scope of this proceeding, and we conclude that the proponents of such changes do not demonstrate sufficient potential for public benefits that would exceed the associated costs to merit further

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<sup>183</sup> See Class D Stations in Citizens Radio Service, Docket 20120, *Second Report and Order*, 60 F.C.C. 2d 762, 765 (1976) (*CB Radio Second Report and Order*).

<sup>184</sup> See *NPRM*, 25 FCC Rcd at 7739 (Appendix C) (proposing elimination of current Section 95.673, which requires a copy of Part 95, subpart D, to be included with each CB radio transmitter marketed).

<sup>185</sup> See *CB Radio Second Report and Order*, 60 F.C.C. 2d at 765.

<sup>186</sup> The CBRS was a licensed service until 1983. See *Elimination of Individual Licenses in Radio Control Radio Service and Citizens Band Radio Service*, 48 Fed. Reg. 24884 (1983).

<sup>187</sup> See 47 C.F.R. § 95.105 (1976).

<sup>188</sup> See *Citizens Radio Service; Requirements that Licensees in the Personal Radio Services Possess Current Copies of the Rules*, 47 Fed. Reg. 19367 (1982).

<sup>189</sup> Sub-audible data is data that is transmitted with a voice channel that uses frequencies that are outside of the range of the human ear (generally 300 Hz to 3000 Hz). Our rules permit sub-audible data for tone squelch and selective calling to allow the receiver to look for that desired signal while ignoring undesired noise.

<sup>190</sup> Comments of Cobra at 4; James Edwin Whedbee, Petition for Rulemaking (filed Apr. 11, 2011).

<sup>191</sup> May 5, 2017 Comments of Jeffery Kardos Jr. at 1.

<sup>192</sup> See Petition for Rulemaking filed on December 21, 2015, by Terry Coyle that we are placing the record here and treating as a comment.

<sup>193</sup> Comments of Brian R. Chapman at 3.

consideration at this time.<sup>194</sup>

#### **E. Radio Control Radio Service**

75. We are changing the abbreviation for the Radio Control Radio Service from “R/C” to “RCRS” to be consistent with our practice for the other Personal Radio Services. The RCRS is a one-way, short-distance, non-voice communications service for the wireless remote control of devices. It is principally used by hobbyists for flying model aircraft and controlling other types of model vehicles such as boats and cars. The RCRS rules designate fifty channels in the 72 MHz band to operate model aircraft devices, thirty channels in the 75 MHz band to operate model surface craft devices, and six channels in the 27 MHz band to operate any kind of device, except for another RCRS transmitter.

76. In the *NPRM*, the Commission sought comment on whether the rule limiting RCRS transmissions to three minutes unless the device requires changes at least once per minute remains needed, or if the more general requirement that transmissions be limited to the minimum practical time is sufficient.<sup>195</sup> The Academy of Model Aeronautics, Inc. (AMA), a national organization for model aircraft hobbyists, suggests that we eliminate the entire rule concerning the duration of continuous RCRS communications, advising that this rule is no longer required in current RCRS operational practice.<sup>196</sup> We find the general requirement to limit transmissions to the minimum practical time is more appropriate for the RCRS going forward because it will not unnecessarily limit applications that may not fit within the prior prescribed limitation. For example, if an RCRS communication session does not make a change within any given minute, but multiple changes in the subsequent minute, we see no reason why its communication should be limited to three minutes.<sup>197</sup> Moreover, prescribing specific limitations based on whether a communication is changed at least once a minute is not supported by the community most familiar with RCRS operations and could hinder innovation in the development of future RCRS operations. Accordingly, we remove the specific limit on the duration of such transmissions. RCRS channels will continue to be used on a shared basis, however, and RCRS operators must cooperate in the selection and use of the channels and limit transmissions to the minimum practical time that is necessary.

77. The *NPRM* also proposed to remove the prohibition on receiving payment for transmitting with an RCRS station.<sup>198</sup> AMA submits that the rule should be retained, arguing that RCRS operations are primarily recreational, and wireless remote control of models for commercial purposes belongs in the Private Land Mobile Radio Services (Part 90 of the FCC Rules).<sup>199</sup> We find the AMA comments persuasive and will retain the prohibition in the rules to ensure the RCRS is not overtaken by commercial operations, which should operate in other bands. Further, while new section 95.333(c) prohibiting the transmission of “messages for hire” applies to all PRS, including the RCRS, we will retain the prohibition on pay for operation of RCRS stations, as AMA requests, to ensure that there is no confusion as to whether RCRS transmissions are “messages.”<sup>200</sup>

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<sup>194</sup> We also want to correct an apparent misinterpretation of prior section 95.655(a) by Midland Radio Corporation (Midland). Midland requests that we change this rule to remove the prohibition against combining CB radios with other services in the same device. Reply Comments of Midland Radio Corporation (Midland) at 3. However, prior section 95.655(a) merely required that CB radios that included the capability to transmit in other services to also have an equipment authorization for those services as well as the CBRs. *See* 47 C.F.R. § 95.987(a).

<sup>195</sup> *See NPRM*, 25 FCC Rcd at 7673.

<sup>196</sup> Comments of AMA at 3.

<sup>197</sup> That is, if a model surface craft receives a command to maintain the same course and does not receive a change within each subsequent minute, the old rule could be read as unnecessarily requiring the device to end its communication session.

<sup>198</sup> *See NPRM*, 25 FCC Rcd at 7721-23.

<sup>199</sup> Comments of AMA at 7-8.

<sup>200</sup> *See* new §§ 95.333(c) and 95.733(c).

78. AMA also submitted detailed comments in response to the Commission's request for suggestions to change Part 95 rules to reflect current technology and conditions. As suggested by AMA,<sup>201</sup> we remove the grandfather rule provisions that allowed (1) continued manufacturing and importing of 50 ppm RCRS equipment<sup>202</sup> until March 1, 1992, and (2) continued marketing of 50 ppm RCRS equipment until March 1, 1993, because these dates have long passed.<sup>203</sup> By removing the grandfather rule, however, we are not prohibiting the further use of 50 ppm equipment that was FCC certified and marketed before March 1, 1993, if any still exists.

79. The AMA suggests certain clarifications of the rules addressing permissible actions an RCRS operator may take in regard to servicing an RCRS transmitter.<sup>204</sup> We are incorporating some of these suggestions into the general rule that addresses service and maintenance responsibilities and the RCRS rule that covers user replaceable parts.<sup>205</sup>

#### F. Personal Locator Beacons

80. Personal Locator Beacons (PLBs) operate in the frequency band 406.0-406.1 MHz (406 MHz) to provide individuals in remote areas a means to alert others of an emergency situation and to aid search and rescue (SAR) personnel to locate those in distress. 406 MHz PLBs provide worldwide alerting capability with distress alerts automatically routed, through the international COSPAS/SARSAT satellite system, to the SAR authorities for a specific geographic region.<sup>206</sup> In the *NPRM*, the Commission proposed to amend Part 95 to prohibit the marketing of devices that do not operate in the 406 MHz band and are not supported by the COSPAS/SARSAT satellite system as "Personal Locator Beacons" or "PLBs."<sup>207</sup> The Radio Technical Commission for Maritime Services (RTCM) supports this clarification

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<sup>201</sup> Comments of AMA at 5.

<sup>202</sup> AMA is referring to older equipment that met a frequency stability of 50 parts-per-million (ppm). Frequency stability is a measure of how an oscillator's frequency deviates compared to the intended frequency over the defined operating temperature range (e.g., 0°C to +70°C). Stability tolerance is typically expressed as a percentage of frequency deviation or as ppm. The conversion is as follows: .01% = 100 ppm, .005% = 50 ppm, .001% = 10 ppm, etc. For example, a transmitter may be specified as having a frequency stability tolerance of ±50 ppm over an operating temperature of 0°C to +85°C, and having a frequency tolerance of ±50 ppm at +25°C.

<sup>203</sup> Section 553(b)(B) of the APA, 5 U.S.C. § 553(b)(B), establishes exceptions to the notice-and-comment requirement, one of which is for cases in which the Commission finds good cause for concluding that notice and comment are "unnecessary." The "unnecessary" exception to the notice requirement is "confined to those situations in which the administrative rule is a routine determination, insignificant in nature and impact, and inconsequential to the industry and to the public." *Utility Solid Waste Activities Grp. v. EPA*, 236 F.3d 749, 755 (D.C. Cir. 2001), citing *Texaco v. FPC*, 412 F.2d 740, 743 (3d Cir. 1969). "'Unnecessary' refers to the issuance of a minor rule or amendment in which the public is not particularly interested." *Texaco*, 412 F.2d at 743 n.3. We find good cause for concluding that notice and opportunity for comment for elimination of this 50 ppm requirement is "unnecessary" within the meaning of Section 553(b) because the requirement has become obsolete.

<sup>204</sup> Specifically, AMA requests that the rules be clarified regarding permissible maintenance to transmitters including replacement of damaged antenna, replacement of batteries, ensuring proper operation of transmitters and conditions for emitting test signals during equipment tests. Comments of AMA at 6-7.

<sup>205</sup> See new §§ 95.319 and 95.719. Section 553(b)(A) of the Administrative Procedure Act, 5 U.S.C. § 553(b)(A), creates an exception to the notice-and-comment requirement for interpretive rules. We conclude that the clarifications to the maintenance and parts requirements we adopt here fall within that exception, because we are clarifying our existing requirements rather than establishing new ones.

<sup>206</sup> COSPAS is an acronym for a Russian phrase meaning "space system for search and distress vessels." SARSAT is an acronym for "search and rescue satellite-aided tracking." In the United States, the United States Air Force is responsible for distributing 406 MHz PLB distress alerts to the state and local authorities that might be called upon to conduct the SAR response.

<sup>207</sup> See *NPRM*, 25 FCC Rcd at 7677.

and notes that it has established a Special Committee on Satellite Emergency Notification Devices (SC 128) to develop standards for devices other than PLBs that have emergency functions operating through commercial satellite services.<sup>208</sup> We therefore amend the rules to clarify that beacons marketed or otherwise referred to as Personal Locator Beacons or PLBs must meet the requirements set forth in 47 C.F.R. Part 95, Subpart K for 406 MHz PLBs. Other changes to the PLB rules discussed in the *NPRM* or the comments thereto were addressed recently in another proceeding.<sup>209</sup>

### G. Other Part 95 Services

81. In the *NPRM*, the Commission also invited commenters to suggest changes to the rules governing the other Personal Radio Services.<sup>210</sup> We are reorganizing the rules for all of those services to fit the new subpart template. We discuss below only those services regarding which we received substantive comments that have not been addressed earlier. Other than the reorganization of the rules to fit the new template, we make no substantive changes to the MedRadio Service,<sup>211</sup> Low Power Radio Service, and Multi Use Radio Service.

82. *Wireless Medical Telemetry Service.* The American Society for Healthcare Engineering of the American Hospital Association (ASHE) suggests some changes to the WMTS rules, many of which are editorial or administrative in nature.<sup>212</sup> We adopt some of the changes requested by ASHE, such as updating the frequency coordinator mailing address, but we again decline ASHE's suggestion that we require manufacturers to include a written notice with WMTS devices stating that prior coordination is required before a WMTS device is activated.<sup>213</sup> As the Commission concluded previously, the rules already set this requirement forth clearly.<sup>214</sup> Moreover, the Office of Engineering and Technology plans to work with ASHE and other parties as necessary to remind hospitals and other health care providers that use WMTS equipment of their obligation to register with the designated frequency coordinator and to ensure that such registration information is accurate.<sup>215</sup>

83. ASHE also suggests that we modify new section 95.325 requiring Part 95 entities to first attempt to resolve interference by means of mutually satisfactory arrangements, so as to limit the mutual resolution efforts to other Part 95 licensees, and exclude efforts with unlicensed users causing interference to WMTS systems.<sup>216</sup> We reject this suggestion because it would overly limit the scope of the rule and would not address possible interference between a Part 95 device and a primary allocation service in adjacent spectrum. We do, however, clarify that this rule does not require negotiations between services of unequal status (such as licensed and unlicensed services) to resolve interference. Further, ASHE requests that we exclude WMTS and MedRadio from the requirement in new section 95.319(b) that

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<sup>208</sup> Comments of RTCM at 3.

<sup>209</sup> See *Maritime Equipment Report and Order*, 31 FCC Rcd at 10304-06 ¶¶ 8-13.

<sup>210</sup> See *NPRM*, 25 FCC Rcd at 7677-78.

<sup>211</sup> As a ministerial update, we replace an outdated reference in section 95.2569(c) to an Office of Engineering and Technology (OET) document that is no longer available with a reference to the replacement documentation in the Commission's Laboratory Division Knowledge Database (KDB).

<sup>212</sup> See Comments of ASHE at Appendix.

<sup>213</sup> See Comments of ASHE at 5.

<sup>214</sup> See Amendment of Part 90 of the Commission's Rules, WP Docket No. 07-100, *Second Report and Order and Second Further Notice of Proposed Rule Making*, 25 FCC Rcd 2479, 2491-92 (2010). Manufacturers may of course include such notice if they choose.

<sup>215</sup> See Amendment of Part 15 of the Commission's Rules for Unlicensed Operations in the Television Bands, Repurposed 600 MHz Band, 600 MHz Guard Bands and Duplex Gap, and Channel 37, *et al.*, ET Docket 14-165, GN Docket No. 12-268, *Notice of Proposed Rulemaking*, 29 FCC Rcd 12248, 12301 ¶ 173 (2014).

<sup>216</sup> May 9, 2017 Comment of ASHE at 1.



internal repairs or modifications to Part 95 devices be made by technically qualified personnel.<sup>217</sup> We disagree with ASHE that anyone should be able to make internal repairs to WMTS and MedRadio transmitters, but we will modify the rule to make clear that a person making repairs need not be qualified to repair private land mobile services equipment specifically.

84. *DSRC On-Board Units.* We are reducing the size of the subpart heading for On-Board Units (OBUs) in the Dedicated Short-Range Communications Service (DSRCS) by using only the acronym for the service name. The rules for the DSRCS, a sub-service within the Intelligent Transportation Systems Radio Service, are found in Part 90 of the Commission's Rules.<sup>218</sup> Our use of the shorter acronym "OBU" instead of "DSRCS-OBU" in our revised Part 95 rules is consistent with the existing Part 90 rules.

#### IV. PROCEDURAL MATTERS

##### A. Final Regulatory Flexibility Certification

85. The Commission issued an Initial Regulatory Flexibility Certification in its *Notice of Proposed Rule Making* in this proceeding. One commenter raises regulatory flexibility issues in response to our certification. To address these issues, and as required by the Regulatory Flexibility Act of 1980 ("RFA"),<sup>219</sup> the Commission has included a Final Regulatory Flexibility Certification ("FRFC") with this *Report and Order*.

86. The Regulatory Flexibility Act of 1980, as amended (RFA),<sup>220</sup> requires that a regulatory flexibility analysis be prepared for rulemaking proceedings, unless the agency certifies that "the rule will not, if promulgated, have a significant economic impact on a substantial number of small entities."<sup>221</sup> The RFA generally defines "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction."<sup>222</sup> In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act.<sup>223</sup> A small business concern is one which (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA).<sup>224</sup>

87. The two statutorily-mandated criteria to be applied in determining the need for RFA analysis are (1) whether the proposed rules, if adopted, would have a *significant economic effect*, and (2)

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<sup>217</sup> *Id.*

<sup>218</sup> 47 C.F.R. §§ 90.371-90.377. All DSRCS stations other than OBUs are individually licensed under Part 90. Rules for OBUs appear in Part 95 because their operation is authorized by rule, as a "citizens band radio service."

<sup>219</sup> *See* 5 U.S.C. § 604.

<sup>220</sup> The RFA (5 U.S.C. § 601 *et seq.*) has been amended by the Small Business Regulatory Enforcement Fairness Act of 1996, (SBREFA) Pub. L. No. 104-121, Title II, 110 Stat. 857 (1996).

<sup>221</sup> 5 U.S.C. § 605(b).

<sup>222</sup> 5 U.S.C. § 601(6).

<sup>223</sup> 5 U.S.C. § 601(3) (incorporating by reference the definition of "small business concern" in Small Business Act, 15 U.S.C. § 632). Pursuant to 5 U.S.C. § 601(3), the statutory definition of a small business applies "unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment, establishes one or more definitions of such term which are appropriate to the activities of the agency and publishes such definition(s) in the Federal Register."

<sup>224</sup> Small Business Act, § 15 U.S.C. § 632.

if so, whether the economic effect would *directly affect a substantial number of small entities*.<sup>225</sup> Upon application of these criteria, Commission certified in the initial regulatory flexibility certification (IRFC) to the *NPRM* that the proposed rules, if adopted, would not have a significant economic effect on a substantial number of small entities.<sup>226</sup> One commenter, Ross Snyder, objects to the Commission's conclusion in the *NPRM* that the proposed rules would not have a significant economic effect on a substantial number of small entities. We address his comments below. In addition, we now find it appropriate to certify that the final rules adopted in the accompanying *Report and Order* will not have a significant economic effect on a substantial number of small entities.

88. As contemplated by the *NPRM*, the Commission reorganizes and revises Part 95 of its Rules governing Personal Radio Services (PRS). Specifically, it takes the following steps, among others: reorganizing and revising Part 95 by consolidating similar or duplicative rules; placing rules generally unique to each Service in separate subparts; organizing all rule topics, where possible, into four categories (administrative, operating, technical, marketing) and listing them in a consistent pattern in each subpart; reformatting the Part 95 rules; replacing, where used before, the "Question and Answer" presentation of certain rules; removing certain rules that have had only an informative role; and deleting or correcting in those rules certain outdated references. Most of the rule changes made in this *Report and Order* are editorial and organizational in nature rather than substantive, and, as such, will not have any economic effect on any entities, regardless of size.

89. Of the remaining rule changes made in this *Report and Order*, many will directly affect only either certain operators of PRS stations or only certain entities that seek Commission certification of equipment for use in the PRS. As the Commission observed in the IRFC, the former typically are individual persons, which are not considered to be small entities for purposes of the RFA. Snyder argues that individual persons should be considered "small entities" for purposes of the RFA, first because, as SBA notes, some businesses are sole proprietorships.<sup>227</sup> That a sole proprietorship qualifies as a "small entity" does not equate to an SBA determination that a single individual always qualifies as a "small entity," because sole proprietorships can have any number of employees. Snyder also submits Congress included in the Small Business Act references to "small business concerns" that mention individual "persons."<sup>228</sup> While Congress passed that Act to improve the economic condition of certain groups of individuals, we do not find any Congressional intent to include "individual persons" within the definition of "small entities."

90. With respect to entities that seek Commission certification of equipment for use in the PRS, the Commission observed in the IRFC that they typically are large manufacturing organizations, and thus are not considered to be small entities for purposes of the RFA. The PRS equipment market is both large and nationwide and most devices are manufactured and mass-marketed as consumer goods. This necessitates a large-volume manufacturing capability that small entities typically do not have. Snyder argues that this conclusion is inconsistent with the Commission's finding in another proceeding that the majority of firms in the Census Bureau category of "Radio and Television Broadcasting and Wireless

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<sup>225</sup> 5 U.S.C. § 603, *et seq.* See also *Mid-Tex Electric Cooperative, Inc., v. FERC*, 773 F.2d 327, 342-343 (D.C. Cir. 1985) (*Mid-Tex Electric*).

<sup>226</sup> Review of the Commission's Part 95 Personal Service Rules, WT Docket No. 10-119, *Notice of Proposed Rulemaking and Memorandum Opinion and Order on Reconsideration*, 25 FCC Rcd 7651, 7684 (2010) (*NPRM*).

<sup>227</sup> See Snyder Comments at 12-13, 22 (*citing* SBA website (<http://www.sba.gov/contractingopportunities/officials/size/index.html>)).

<sup>228</sup> Snyder Comments at 22 (*citing* Section 2(f)(1) of the Small Business Act, Pub. L. 85-536, July 18, 1958, 72 Stat. 384 (codified at 15 U.S.C. § 631 *et seq.*) which provides that "the Congress finds – (A) that the opportunity for full participation in our free enterprise system by socially and economically disadvantaged persons is essential if we are to obtain social and economic equality for such persons. . .").

Communications Equipment Manufacturing” can be considered to be small.<sup>229</sup> We disagree. First, in the *NPRM*, the Commission noted the involvement of small entities in the PRS, for example, those that make accessory devices. However, the Commission found that none of the proposed rules in the *NPRM* would directly affect any of them. Second, we note the Commission found, in the *NPRM*, that none of its proposed rules would have a significant economic effect on manufacturers of PRS devices regardless of their size. Accordingly, the IRFC in the *NPRM*, and this FRFC, do not depend solely on a finding that PRS device makers are typically large manufacturing organizations that are not considered to be small. Third, we recognize that changes in the various compliance requirements adopted in this *Report and Order* will necessitate the use of some engineering, technical, operational, accounting, billing, and legal skills. However, the entities affected by those changes already possess these skills. Accordingly, given the nature of those requirements and the skills of the entities to which they will apply, we are unable to find that compliance will result in a significant economic impact on a substantial number of such entities.

91. Snyder also argues that the *NPRM* overlooked other affected entities that are small entities, such as those that make accessory devices for PRS radios and sell PRS radios and related equipment, and non-individual entities that the Commission has authorized to operate PRS radios.<sup>230</sup> Snyder claims the Commission has a statutory duty to address the economic impact of its proposed rules on all small entities affected by any new rule, whether that impact involves reporting, record keeping, or otherwise.<sup>231</sup> However, we find nothing in the comments of Snyder or other items in the record in this proceeding to demonstrate that the rules adopted in the *Report and Order* will have a direct and significant economic effect on individuals or non-individuals, whether licensed individually or by rule. We conclude, therefore, that the rules adopted in this *Report and Order* will not directly affect many, if any, of the small entities identified by Snyder. Thus, even assuming, *arguendo*, a significant economic effect on some small entities, we conclude that changes adopted in this *Report and Order* will not have such an effect on a substantial number of such entities.

92. More specifically, this *Report and Order* adopts certain rule changes, which Snyder suggests will impact PRS device manufacturers: (1) the prohibition on voice scrambling or other obscuring features, and (2) the FCC no longer certifying Part 95 combination radios with transmitting capability in other services licensed under 47 CFR. These rule changes involve the design or testing of future equipment, as currently certified equipment would remain unaffected by this item. However, we reaffirm our earlier finding that none of these new provisions would have a significant economic impact on device manufacturers.

93. First, the prohibition on equipment with voice scrambling or other obscuring features will not affect a substantial number of small entity device manufacturers. Only “several” GMRS and FRS radios with this capability have been certified,<sup>232</sup> and this prohibition will not impact manufacturers that have already had such equipment certified as the provision is forward looking only. In addition, the rule change will not significantly impact the few affected small entity manufacturers. Because these small entities typically manufacture many types of radios and wireless communications equipment, disallowing just one product, among many, will not significantly impact them. Thus, this small design change, on just one device among the many produced, will not have a significant economic impact on these manufacturers. Moreover, contrary to Snyder’s suggestion, this is not a rule change at all, for the

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<sup>229</sup> See Snyder Comments at 21-22 *citing* Investigation of the Spectrum Requirements for Advanced Medical Technologies, ET Docket No. 06-135, and Amendments of Parts 2 and 95 of the Commission’s Rules to Establish the Medical Device Radio Communications Service at 401-402 and 405-406 MHz, *Memorandum Opinion and Order*, 25 FCC Rcd 10414, 10428 (2010).

<sup>230</sup> See Snyder Comments at 14-15, 18.

<sup>231</sup> See *id.* at 29.

<sup>232</sup> See *NPRM*, 25 FCC Rcd at 7659 ¶ 20.

Commission only clarified that its rules already prohibit voice-obscuring features in these Personal Radio Services.

94. Similarly, the prohibition on certain combination radios will not have a significant economic impact on a substantial number of small entities. The majority of device models produced lack this capability so only a few companies, and an even fewer number of small entities, currently produce these devices. Therefore, because this provision is forward looking — meaning already certified equipment will not be affected — and because few companies even manufacture this product, a substantial number of small entities will not even be affected by this provision. Assuming *arguendo*, however, that a substantial number of small entities will be affected by future compliance, this prohibition involves just one design change that will not substantially impact device manufacturers. In addition, we believe that changing the design of a PRS device to disallow transmitting capability in the other services is a small change relative to the overall cost of producing the device. As a result, this rule provision will not have a significant economic impact on PRS device manufacturers.

95. With respect to the second statutory criterion, we note that, under the RFA, the Commission and other Federal agencies need only consider the direct economic impact of their proposed rules on a substantial number of small entities regulated under those rules.<sup>233</sup> Accordingly, such agencies need not consider indirect impacts. Snyder identifies a number of indirect economic impacts that might arise from the adoption of certain rule changes in this *Report and Order*. For example, he argues that granting operators in one radio service flexibility to use spectrum in another can burden existing users of that finite allocation of spectrum.<sup>234</sup> In addition, because the forthcoming compliance requirements may prevent new manufactured equipment from meeting users' communication preferences, Snyder speculates that such users may stop purchasing such equipment, such that manufacturers, distributors, and dealers of PRS equipment will suffer lost sales.<sup>235</sup> Because such economic impacts are indirect, it was not necessary to address them in association with the *NPRM*. Also, because the final rules adopted in this *Report and Order* do not cause any of these impacts to become more direct, it is not necessary to address them in association with this *Report and Order*.

96. We also find no merit in Snyder's contentions that the Commission failed to comply with *Executive Order 13272*<sup>236</sup> by failing to provide the SBA with advance notice of its proposed rules and that the Commission did not satisfy a statutory obligation to identify significant alternatives to those proposals that would accomplish the stated objectives while minimizing any significant economic impact on small entities.<sup>237</sup> Setting aside the question of whether a multi-member, independent Federal agency, such as the Commission, must comply with that *Order*,<sup>238</sup> we note it found its proposed rules would not, if adopted, have a significant economic impact on a substantial number of small entities. Where an agency makes such a finding it is not necessary for it, under the RFA or that *Order* to provide SBA with advance notice of its proposals or to identify significant alternatives.<sup>239</sup>

97. Therefore, we certify that the requirements of this *Report and Order* will not have a significant economic impact on a substantial number of small entities.

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<sup>233</sup> See *Mid-Tex Electric*, 773 F.2d at 342-343.

<sup>234</sup> See Snyder Comments at 26.

<sup>235</sup> See *id.* at 28.

<sup>236</sup> Executive Order No. 13272, 67 Fed. Reg. 53461 (Aug. 16, 2002) (*Executive Order 13272*).

<sup>237</sup> See Snyder Comments at 29-30.

<sup>238</sup> See, e.g., Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, CC Docket No. 01-338, *et al.*, *Report and Order and Order on Remand and Further Notice of Proposed Rulemaking*, 18 FCC Rcd 16978, 17421 (2003).

<sup>239</sup> See, e.g., 5 U.S.C. § 603(c).

98. The Commission will send a copy of this *Report and Order*, including a copy of this Final Regulatory Flexibility Certification, in a report to Congress pursuant to the Small Business Regulatory Enforcement Fairness Act of 1996, *see* 5 U.S.C. § 801(a)(1)(A). In addition, this *Report and Order* and this final certification will be sent to the Chief Counsel for Advocacy of the Small Business Administration, and will be published in the Federal Register. *See* 5 U.S.C. § 605(b).

#### **B. Paperwork Reduction Analysis**

99. This document contains modified information collection requirements subject to the Paperwork Reduction Act of 1995 (PRA), Public Law 104-13. It will be submitted to the Office of Management and Budget (OMB) for review under Section 3507(d) of the PRA. OMB, the general public, and other Federal agencies are invited to comment on the modified information collection requirements contained in this proceeding. We note that, pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, *see* 44 U.S.C. 3506(c)(4), the Commission previously sought specific comment on how it might “further reduce the information collection burden for small business concerns with fewer than 25 employees.” In the present document, we have assessed the potential effects of the various policy changes, and find that they do not change the burden on businesses with fewer than 25 employees.

#### **C. Congressional Review Act**

100. The Commission will send a copy of this *Report and Order* to Congress and the Government Accountability Office, pursuant to the Congressional Review Act, *see* 5 U.S.C. § 801(a)(1)(A).

### **V. ORDERING CLAUSES**

101. Accordingly, IT IS ORDERED, pursuant to the authority contained in Sections 1, 4(i), 4(j), 301, 303, 304, 309, 316, and 332 of the Communications Act of 1934, as amended, and Section 706 of the Telecommunications Act of 1996, as amended, 47 U.S.C. §§ 151, 154(i), 154(j), 301, 303, 304, 309, 316, 332, and 1302, that this REPORT AND ORDER in WT Docket No. 10-119 IS HEREBY ADOPTED.

102. IT IS FURTHER ORDERED that Parts 1, 15, 73 and 95 of the Commission’s rules, 47 C.F.R. Parts 1, 15, 73 and 95, are AMENDED as set forth in Appendix, and such rule amendments shall be effective, except as otherwise noted, 30 days after the date of publication of the text thereof in the *Federal Register*.

103. IT IS FURTHER ORDERED that the amendments adopted above regarding the removal of sections 95.671, 95.673 [old rules] (removing requirement of engraved serial number on CB radio chassis and removing the requirement to include CB operating rules in owner’s manual, respectively), which qualify as modified information collections that requires approval by the Office of Management and Budget under the Paperwork Reduction Act, WILL BECOME EFFECTIVE on the date specified in a public notice that the Commission will publish in the Federal Register, announcing such approval and the relevant effective date.

104. IT IS FURTHER ORDERED that, pursuant to Section 1.401(e) of the Commission’s rules, the petition of James Edwin Whedbee is dismissed without prejudice. IT IS FURTHER ORDERED that, pursuant to Section 1.407 of the Commission’s rules, the petitions of Kirk D. Becker, Corey S. Becker, Ricky L. Usinger, Brett Seifert, John Shagath, Mike Waschbisch, and Cole Weiss are granted to the extent described herein and are otherwise denied.

105. IT IS FURTHER ORDERED that the Commission’s Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this REPORT AND ORDER, including the Final Regulatory Flexibility Certification, to the Chief Counsel for Advocacy of the Small Business Administration.

106. IT IS FURTHER ORDERED that the Commission SHALL SEND a copy of this

REPORT AND ORDER in a report to be sent to Congress and the Government Accountability Office pursuant to the Congressional Review Act, *see* 5 U.S.C. § 801(a)(1)(A).

107. IT IS FURTHER ORDERED that, if no petitions for reconsideration or applications for review are timely filed, this proceeding SHALL BE TERMINATED and the docket CLOSED.

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch  
Secretary

## APPENDIX

The Federal Communications Commission amends Parts 1, 15, 73 and 95 of Title 47 of the Code of Federal Regulations (CFR) as set forth below:

I. Part 1 of Chapter 1 of Title 47 of the Code of Federal Regulations is amended as follows:

### PART 1 – PRACTICE AND PROCEDURE

1. The authority citation for Part 1 is revised to read as follows:

**AUTHORITY:** 47 U.S.C. 151, 154(i), 154(j), 155, 157, 160, 201, 225, 227, 303(r), 309, 332, 1403, 1404, 1451, 1452, and 1455.

2. Section 1.1307 is amended by revising paragraphs (b)(2)(iii) and (b)(2)(iv) to read as follows:

**§ 1.1307 Actions that may have a significant environmental effect, for which Environmental Assessments (EAs) must be prepared.**

\* \* \* \* \*

(b) \* \* \*

(2) \* \* \*

(iii) Portable transmitting equipment for use in the Wireless Medical Telemetry Service (WMTS) is subject to routine environmental evaluation as specified in §§ 2.1093 and 95.2385 of this chapter.

(iv) Equipment authorized for use in the Medical Device Radiocommunication Service (MedRadio) as a medical implant device or body-worn transmitter (as defined in subpart I of part 95 of this chapter) is subject to routine environmental evaluation for RF exposure prior to equipment authorization, as specified in §§ 2.1093 and 95.2585 of this chapter by finite difference time domain (FDTD) computational modeling or laboratory measurement techniques. Where a showing is based on computational modeling, the Commission retains the discretion to request that supporting documentation and/or specific absorption rate (SAR) measurement data be submitted.

\* \* \* \* \*

3. Section 1.4000 is amended by revising paragraph (a)(2) to read as follows:

**§ 1.4000 Restrictions impairing reception of television broadcast signals, direct broadcast satellite services or multichannel multipoint distribution services.**

\* \* \* \* \*

(a) \* \* \*

(2) For purposes of this section, “fixed wireless signals” means any commercial non-broadcast communications signals transmitted via wireless technology to and/or from a fixed customer location. Fixed wireless signals do not include, among other things, AM radio, FM radio, amateur (“HAM”) radio, CB radio, and Digital Audio Radio Service (DARS) signals.

\* \* \* \* \*

II. Part 15 of Chapter 1 of Title 47 of the Code of Federal Regulations is amended as follows:

### PART 15 – RADIO FREQUENCY DEVICES

2. The authority citation for Part 15 continues to read as follows:

AUTHORITY: 47 U.S.C. 154, 302a, 303, 304, 307, 336, 544a, and 549.

3. Section 15.3 is amended by revising paragraph (g) to read as follows:

§ 15.3 Definitions.

\* \* \* \* \*

(g) CB receiver. Any receiver that operates in the Personal Radio Services on frequencies designated for CB Radio Service stations, as well as any receiver provided with a separate band specifically designed to receive the transmissions of CB stations in the Personal Radio Services. This includes the following: (1) A CB receiver sold as a separate unit of equipment; (2) the receiver section of a CB transceiver; (3) a converter to be used with any receiver for the purpose of receiving CB transmissions; and, (4) a multiband receiver that includes a band labelled "CB" or "11-meter" in which such band can be separately selected, except that an Amateur Radio Service receiver that was manufactured prior to January 1, 1960, and which includes an 11-meter band shall not be considered to be a CB receiver.

\* \* \* \* \*

III. Part 73 of Chapter 1 of Title 47 of the Code of Federal Regulations is amended as follows:

**PART 73 – RADIO BROADCAST SERVICES**

4. The authority citation for Part 73 continues to read as follows:

AUTHORITY: 47 U.S.C. 154, 303, 334, 336, and 339.

5. Section 73.1207 is amended by revising paragraphs (c)(1) and (c)(3) to read as follows:

§ 73.1207 Rebroadcasts.

\* \* \* \* \*

(c) \* \* \*

(1) Messages originated by privately-owned non-broadcast stations other than those in the Amateur and CB Radio Services may be broadcast only upon receipt of prior permission from the non-broadcast licensee. Additionally, messages transmitted by common carrier stations may be rebroadcast only upon prior permission of the originator of the message as well as the station licensee.

\* \* \* \* \*

(3) Messages originated by stations in the Amateur and CB Radio Services may be rebroadcast at the discretion of broadcast station licensees.

\* \* \* \* \*

IV. Part 95 of Chapter 1 of Title 47 of the Code of Federal Regulations is amended, in its entirety, to read as follows:

The authority citation for Part 95 continues to read as follows:

AUTHORITY: 47 U.S.C. 154, 301, 302(a), 303, and 307(e).

The editorial note for Part 95 continues to read as follows:

EDITORIAL NOTE: Nomenclature changes to part 95 appear at 63 FR 54077, Oct. 8, 1998.



## PART 95 – PERSONAL RADIO SERVICES

### Subpart A – General Rules for the Personal Radio Services

Sec.

95.100 Basis and purpose.

#### ADMINISTRATIVE RULES

95.301 Scope.

95.303 Definitions.

95.305 Authorization to operate Personal Radio Services stations.

95.307 Authorized station locations.

95.309 Coordination procedures and other restrictions for operation in certain locations.

95.311 Correspondence and notices from the FCC.

95.313 Penalties for violations of the Communications Act or FCC rules.

95.317 Registration of antenna structures that may constitute a menace to air navigation.

95.319 Malfunctioning transmitting equipment.

95.323 FCC inspection of station.

95.325 Interference.

95.327 Restricted operation.

95.329 How to contact the FCC.

#### OPERATING RULES

95.331 Permissible uses.

95.333 Prohibited uses.

95.335 Operation of non-certified transmitters prohibited.

95.337 Operation of impermissibly modified equipment prohibited.

95.339 Operation of transmitter with external device causing rule violation prohibited.

95.343 Station operator responsibility and requirements.

95.345 Remote control.

95.347 Automatic control.

95.349 Network connection.

95.351 Station identification.

95.353 False distress signals.

95.357 Duration of transmissions.

95.359 Sharing of channels.

#### TECHNICAL RULES

95.361 Transmitter Certification

95.363 Channels available for use.

95.367 Transmitting power.

95.371 Emission types.

95.377 Tones and signals.

95.381 Voice obscuring features.

95.385 RF exposure evaluation.

#### MARKETING RULES

95.391 Manufacturing, importation and sales of non-certified equipment prohibited.

95.393 Instructions and Warnings.

### Subpart B – Family Radio Service

#### ADMINISTRATIVE RULES

95.501 Scope.

95.503 Definitions, FRS.

95.519 FRS replacement parts.

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95.531 Permissible FRS uses.

95.533 Prohibited FRS uses.

#### TECHNICAL RULES

95.561 FRS transmitter certification.

95.563 FRS channels.

95.565 FRS frequency accuracy.

95.567 FRS transmit power.

95.571 FRS emission types.

95.573 FRS authorized bandwidth.

95.575 FRS modulation limits.

95.577 FRS tone requirements.

95.579 FRS unwanted emissions limits.

95.587 FRS additional requirements.

#### MARKETING RULES

95.591 Sales of FRS combination radios prohibited.

### Subpart C – RC Radio Service

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95.701 Scope.

95.703 Definitions, RCRS.

95.719 RCRS replacement parts.

95.725 Interference, RCRS.

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95.731 Permissible RCRS uses.

95.733 Prohibited RCRS uses.

95.735 RCRS equipment certification exception.

95.741 RCRS antenna height limit.

95.745 Operation of an RCRS transmitter by remote control.

95.757 Duration of RCRS Communications.

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95.761 RCRS transmitter certification.

95.763 RCRS channel frequencies.

95.765 RCRS frequency accuracy.

95.767 RCRS transmitter power.

95.771 RCRS emission types.

95.773 RCRS authorized bandwidth.

- 95.779 RCRS unwanted emissions.  
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- 95.901 Scope.  
95.903 Definitions, CBRS.  
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95.919 CBRS replacement parts.  
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95.925 CBRS harmful interference.  
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#### OPERATING RULES

- 95.931 Permissible CBRS uses.  
95.933 Prohibited CBRS uses.  
95.935 Unauthorized use of non-CBRS transmitters.  
95.939 External radio frequency power amplifiers prohibited.  
95.941 CBRS antenna height limits.  
95.945 Remote control of a CBRS station.  
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95.957 Duration of CBRS transmissions.

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- 95.961 CBRS transmitter certification.  
95.963 CBRS channel frequencies.  
95.965 CBRS transmit frequency accuracy.  
95.967 CBRS transmitter power limits.  
95.971 CBRS emission types.  
95.973 CBRS authorized bandwidth.  
95.975 CBRS modulation limits.  
95.977 CBRS tone transmissions.  
95.979 CBRS unwanted emissions limits.  
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- 95.991 CBRS marketing limitations.

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- 95.1701 Scope.  
95.1703 Definitions, GMRS.  
95.1705 Individual license required; eligibility; who may operate; cooperative use.  
95.1723 GMRS station inspection.

#### OPERATING RULES

- 95.1731 Permissible GMRS uses.  
95.1733 Prohibited GMRS uses.  
95.1741 GMRS antenna height limits.  
95.1743 Minor GMRS operators.  
95.1745 GMRS remote control.

- 95.1747 GMRS automatic control.  
95.1749 GMRS network connection.  
95.1751 GMRS station identification.

#### TECHNICAL RULES

- 95.1761 GMRS transmitter certification.  
95.1763 GMRS channels.  
95.1765 GMRS frequency accuracy.  
95.1767 GMRS transmitting power limits.  
95.1771 GMRS emission types.  
95.1773 GMRS authorized bandwidths.  
95.1775 GMRS modulation requirements.  
95.1777 GMRS tone transmissions.  
95.1779 GMRS unwanted emissions limits.  
95.1787 GMRS additional requirements.

#### MARKETING RULES

- 95.1791 Sales of GMRS/FRS combination radios prohibited.

### Subpart F – 218-219 MHz Service

#### ADMINISTRATIVE RULES

- 95.1901 Scope.  
95.1903 218-219MHz Service description.  
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- 95.1951 Transmitter Certification.  
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- 95.2101 Scope.
- 95.2103 Definitions, LPRS
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- 95.2109 Notification to affected TV stations required for AMTS use.
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- 95.2131 Permissible LPRS uses.
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- 95.2141 LPRS antenna height and directivity requirements.

## TECHNICAL RULES

- 95.2161 LPRS transmitter certification.
- 95.2163 LPRS channels.
- 95.2165 LPRS frequency accuracy.
- 95.2167 LPRS transmitting power.
- 95.2173 LPRS authorized bandwidths.
- 95.2179 LPRS unwanted emissions limits.

## MARKETING RULES

- 95.2191 LPRS marketing limitations.
- 95.2193 LPRS labeling requirements.
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**Subpart H – Wireless Medical Telemetry Service**

## ADMINISTRATIVE RULES

- 95.2301 Scope.
- 95.2303 Definitions, WMTS.
- 95.2305 WMTS operator eligibility.
- 95.2309 WMTS frequency coordination.
- 95.2325 WMTS interference.

## OPERATING RULES

- 95.2331 Permissible WMTS uses.
- 95.2333 Prohibited WMTS uses.
- 95.2347 WMTS automatic control.
- 95.2357 WMTS duration of transmissions.

## TECHNICAL RULES

- 95.2361 WMTS transmitter certification.
- 95.2363 WMTS frequency bands and channels.
- 95.2365 WMTS frequency accuracy.
- 95.2369 WMTS field strength limits.
- 95.2379 WMTS unwanted emissions limits.
- 95.2385 WMTS RF exposure evaluation.

## MARKETING RULES

- 95.2393 WMTS labeling requirements.

- 95.2395 WMTS disclosure.

**Subpart I – Medical Device Radio Communications Service**

## ADMINISTRATIVE RULES

- 95.2501 Scope.
- 95.2503 Definitions, MedRadio.
- 95.2505 MedRadio operator eligibility.
- 95.2507 MBAN devices restricted to indoor operation within a health care facility.
- 95.2509 MBAN registration and frequency coordination.
- 95.2523 MedRadio transmitter inspection.
- 95.2525 MedRadio interference.

## OPERATING RULES

- 95.2531 Permissible MedRadio uses.
- 95.2533 Prohibited MedRadio uses.
- 95.2535 MedRadio equipment certification exception.
- 95.2541 MedRadio outdoor antenna restrictions.
- 95.2547 MedRadio automatic control.
- 95.2549 MedRadio network connection.
- 95.2557 MedRadio duration of transmissions.
- 95.2559 MedRadio channel access requirements.

## TECHNICAL RULES

- 95.2561 MedRadio transmitter certification.
- 95.2563 MedRadio frequency bands.
- 95.2565 MedRadio frequency accuracy.
- 95.2567 MedRadio radiated power limits.
- 95.2569 MedRadio field strength measurements.
- 95.2571 MedRadio emission types.
- 95.2573 MedRadio authorized bandwidth.
- 95.2579 MedRadio unwanted emission limits.
- 95.2585 MedRadio RF exposure evaluation.
- 95.2587 MedRadio additional requirements.

## MARKETING RULES

- 95.2591 MedRadio marketing limitations.
- 95.2593 MedRadio labeling requirements.
- 95.2595 MedRadio disclosures.

**Subpart J – Multi-Use Radio Service**

## ADMINISTRATIVE RULES

- 95.2701 Scope.
- 95.2703 Definitions, MURS.
- 95.2705 Grandfathered MURS stations.
- 95.2707 Airborne use of MURS not authorized.
- 95.2719 MURS replacement parts.
- 95.2725 MURS interference.

## OPERATING RULES

- 95.2731 Permissible MURS uses.
- 95.2733 Prohibited MURS uses.

- 95.2741 MURS antenna height limit.  
 95.2749 MURS network connection.  
 95.2757 MURS duration of transmissions.

#### TECHNICAL RULES

- 95.2761 MURS transmitter certification.  
 95.2763 MURS channels.  
 95.2765 MURS frequency accuracy.  
 95.2767 MURS transmitting power limit.  
 95.2771 MURS emission types.  
 95.2773 MURS authorized bandwidths.  
 95.2775 MURS audio filter.  
 95.2779 MURS unwanted emissions limits.

### Subpart K – Personal Locator Beacons and Maritime Survivor Locating Devices

#### ADMINISTRATIVE RULES

- 95.2901 Scope.  
 95.2903 Definitions, PLBs and MSLDs.  
 95.2905 PLB registration.

#### OPERATING RULES

- 95.2931 Permissible use of PLBs.  
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#### TECHNICAL RULES

- 95.2961 PLB certification requirements.  
 95.2963 PLB frequency band.  
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 95.2987 Additional PLB certification requirements.  
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#### MARKETING RULES

- 95.2991 PLB and MSLD marketing limitations.  
 95.2993 PLB identification plate or label and registration card.

### Subpart L – DSRCS On-Board Units

#### ADMINISTRATIVE RULES

- 95.3101 Scope.  
 95.3103 Definitions, OBUs.

#### OPERATING RULES

- 95.3131 Permissible uses, OBUs.  
 95.3159 OBU channel sharing and priority of use.

#### TECHNICAL RULES

- 95.3161 OBU transmitter certification.  
 95.3163 OBU channels.  
 95.3167 OBU transmit power limit.  
 95.3189 OBU technical standard.

#### APPENDIX TO PART 95 -- CROSS REFERENCE TO PREVIOUS RULES

**AUTHORITY: 47 U.S.C. 154, 303, 307**

### Subpart A – General Rules for the Personal Radio Services

#### § 95.100 Basis and purpose.

This section contains a concise general statement of the basis and purpose of the rules in this part, pursuant to 5 U.S.C. 553(c).

(a) *Basis.* These rules are issued pursuant to the Communications Act of 1934, as amended, 47 U.S.C. 151 *et. Seq.*

(b) *Purpose.* The purpose of these rules is to establish the requirements and conditions under which stations and devices incorporating radio transmitters may be designed, manufactured, certified, marketed, operated and used in the Personal Radio Services.

#### ADMINISTRATIVE RULES

#### § 95.301 Scope.

This subpart contains rules that apply generally to all of the Personal Radio Services.

#### § 95.303 Definitions.

The following terms and definitions apply only to the rules in this part.

*Antenna.* A device that converts radio frequency electrical energy from a transmitter to radiated electromagnetic energy.

*Authorized bandwidth.* The maximum permissible occupied bandwidth of an emission.

*Automatic control.* Operational control of a Personal Radio Services station by automated means, such that the operator does not have to be located at a control point and monitoring communications in order to share channels and avoid interference and rule violations.

*Base station.* A station at a fixed location that communicates directly with mobile stations and other base stations.

*Carrier power output.* The average power supplied at the radio frequency output of a transmitter during one radio frequency cycle, measured under the condition of no modulation.

*Certified transmitter.* A transmitter of a type for which a grant of equipment certification, pursuant to part 2, subpart J of this chapter, has been issued for the Personal Radio Service(s) in which it is intended to be operated.

*Citizens band radio service.* Pursuant to 47 U.S.C. 307(e)(3), the term “citizens band radio service” means any radio service or other specific classification of radio stations used primarily for wireless telecommunications for which the FCC has determined that it serves the public interest, convenience and necessity to authorize by rule the operation of radio stations in that service or class, without individual licenses, pursuant to 47 U.S.C. 307(e)(1).

*Citizens Broadband Radio Service.* The rules for this service, including technical rules, are contained in Part 96 of this chapter. Only Citizens Broadband Radio Service Devices authorized on a General Authorized Access basis, as those terms are defined in section 96.3, are considered part of the Citizens Band Radio Services.

*Communications Act.* The Communications Act of 1934, as amended; 47 U.S.C. 151 *et. seq.*

*Control point.* Any location where the operator of a Personal Radio Services station may reliably operate that station.

*Control station.* A station at a fixed location that communicates with mobile stations and other control stations through repeater stations, and may also be used to control the operation of repeater stations.

*dB.* Decibels.

*EIRP.* Equivalent Isotropically Radiated Power. Antenna input power times gain for free-space, or in-tissue measurement configurations required by MedRadio, expressed in Watts, where the gain is referenced to an isotropic radiator.

*Emergency messages.* Communications concerning the immediate safety of life or protection of property.

*Emission.* Radiated electromagnetic energy from a station.

*External radio frequency power amplifier.* Any device which, when used with a transmitter as a signal source, is capable of amplification of that

signal, and is not an integral part of a radio transmitter as manufactured. *See* § 2.815 of this chapter.

*FCC.* The Federal Communications Commission.

*Feedline.* A cable or transmission line that conveys radio frequency electrical energy from a transmitter to an antenna.

*Fixed station.* A station at a fixed location that directly communicates with other fixed stations only.

*Frequency accuracy.* A technical requirement comprising the frequency tolerance, frequency stability, or both.

*Frequency tolerance.* A design requirement specifying the maximum amount that carrier frequencies of newly manufactured transmitters may normally differ from the frequency or frequencies set forth in the FCC rules.

*Frequency stability.* A design requirement specifying the maximum amount that carrier frequencies of transmitters may normally change from their nominal value as a result of changes in ambient temperature, power supply voltages, or other external factors.

*Hand-held portable unit.* A physically small mobile station that can be operated while being held in the operator’s hand.

*Harmful interference.* Any transmission, radiation, or induction that endangers the functioning of a radionavigation service or of other safety services or seriously degrades, obstructs, or repeatedly interrupts a radiocommunication service operating in accordance with applicable laws, treaties, and regulations.

*Individual.* A human being, *e.g.* one man or one woman.

*Individual license.* An authorization to operate a Personal Radio Service station, granted by the FCC to a specific person.

*Interference.* The effect of unwanted energy due to one or a combination of emissions, radiations, or inductions upon reception in a radiocommunication system, manifested by any performance degradation, misinterpretation, or loss of information which could be extracted in the absence of such unwanted energy.

*Licensee.* A person that has been granted an individual license by the FCC.

*Mean power output.* The average power supplied at the radio frequency output of a transmitter during a time interval of at least 0.1 seconds, taken under normal operating conditions.

*Mobile station.* A station, intended to be used while in motion or during halts at unspecified locations, that communicates directly with base stations and other mobile stations, and with control stations and other mobile stations through repeater stations.

*Modulation.* A process of altering the amplitude, frequency and/or phase of a radio frequency carrier wave generated within a Personal Radio Service transmitter, for the purpose of impressing onto the carrier wave information to be transmitted.

*Necessary bandwidth.* For a given class of emission, the width of the frequency band which is just sufficient to ensure the transmission of information at the rate and with the quality required under specified conditions.

*Occupied bandwidth.* For an emission, the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to 0.5 % of the total mean power of the emission.

*One-way communications.* Communications where information always flows in one pre-arranged direction through a communications channel.

*Operate.* Control the functioning of a Personal Radio Service station; in particular, cause a Personal Radio Service station to begin, continue or cease transmitting.

*Operator.* An individual who operates a Personal Radio Service station.

*Out-of-band emissions.* Unwanted emissions that result from the modulation process and whose frequencies are immediately outside of the necessary bandwidth.

*Person.* An individual, a corporation, a partnership, an association, a joint stock company, a trust, a state, territorial or local government unit, or other legal entity.

*Personal Radio Services station.* Any transmitter, with or without an incorporated antenna or receiver, which is certified by the FCC to be operated in one or more of the Personal Radio Services.

*Personal Radio Services.* The Personal Radio Services are the citizens band radio services, radio control radio services, the 218-219 MHz Service and individually licensed services comprising all of the radio services and other classifications of radio stations governed by the rules in this part (47 CFR part 95).

*Plain language voice communications.* Voice communications without codes or coded messages intended to provide a hidden meaning. Foreign languages and commonly known radio operating words and phrases, such as “ten four” and “roger,” not intended to provide a hidden meaning, are not considered codes or coded messages.

*Radio control radio service.* Pursuant to 47 U.S.C. 307(e)(3), the term “radio control radio service” means any radio service or other specific classification of radio stations used primarily for wireless telecommand and/or wireless telemetry purposes, for which the FCC has determined that it serves the public interest, convenience and necessity to authorize by rule the operation of radio stations in that service or class, without individual licenses, pursuant to 47 U.S.C. 307(e)(1).

*Remote control.* Operation of a Personal Radio Services station from a location that is not in the immediate vicinity of the transmitter. Operation of a Personal Radio Services station from any location on the premises, vehicle or craft where the transmitter is located is not considered to be remote control.

*Repeater station.* A station in a fixed location used to extend the communications range of mobile stations, hand-held portable units and control stations by receiving their signals on one channel (the input channel) and simultaneously retransmitting these signals on another channel (the output channel), typically with higher transmitting power from a favorable antenna location (typically high above the surrounding terrain).

*Spurious emissions.* Unwanted emissions, the level of which may be reduced without affecting the corresponding transmission of information,

including harmonic emissions, parasitic emissions, intermodulation products and frequency conversion products, but excluding out-of-band emissions.

*Network connection.* Connection of a Personal Radio Services station to the public switched network, so that operators of other stations in that service are able to make (and optionally to receive) telephone calls through the connected station.

*Transmit.* Radiate electromagnetic energy.

*Transmitter.* A device which supplies radio frequency electrical energy to an antenna, either directly or through a feedline.

*Transmitter type.* A sample transmitter submitted for testing to evaluate compliance with the technical and design rules in this part, for the purpose of FCC certification pursuant to part 2, subpart J of this chapter. The sample transmitter is identical to (as defined in § 2.908 of this chapter) and representative of all other transmitters of the same type.

*Two-way communications.* Communications where information flows in both directions through a communications channel, either simultaneously (duplex operation) or alternately (simplex operation).

*Unwanted emissions.* Emissions whose frequencies are outside of the necessary bandwidth; comprising out-of-band emissions and spurious emissions.

*User.* Any person who uses or benefits from the operation of a Personal Radio Service station.

*Voice obscuring feature.* A feature incorporated into a Personal Radio Service telephony transmitter that alters the sound of the user's voice in such a way that the communications are intended to be understandable only to individuals using a similar unit that reverses the process on the receiving end, so that the voice again becomes intelligible.

### **§ 95.305 Authorization to operate Personal Radio Services stations.**

Pursuant to 47 U.S.C. 307(e)(1), this rule section authorizes eligible persons to operate Part 95 Personal Radio Service stations and Part 96 Citizens Broadband Radio Service stations without individual licenses, except as provided in

paragraph (a). Such operation must comply with all applicable rules in this part.

(a) *Individual licenses.* A valid individual license may be required under this part to operate or use stations in a particular service, certain types of stations, stations transmitting on certain channels or frequency bands, or stations transmitting with power above a certain level. Any such requirements applicable to stations in any of the Personal Radio Services are set forth in the subpart governing that specific service. *See e.g.* § 95.1705. Otherwise, the FCC does not require or accept applications for an individual license to operate any type of Personal Radio Service station.

(b) *Operator eligibility.* Some of the Personal Radio Services have specific operator eligibility requirements, which are set forth in the subparts governing those services. Otherwise, any person is eligible to operate a Personal Radio Service station, except as stated in paragraphs (c) and (d) of this section.

(c) *Foreign government operator.* No entity that is a foreign government or which is acting in its capacity as a representative of a foreign government is authorized by this section to operate Personal Radio Service stations.

(d) *Cease and desist order.* No person subject to a cease and desist order issued pursuant to § 95.313(d) is authorized by this section to operate Personal Radio Service stations.

(e) *Federal station.* No person is authorized by this section to operate a United States Government radio station.

(f) *Foreign station.* No person is authorized by this section to operate a foreign government radio station.

### **§ 95.307 Authorized station locations.**

Personal Radio Service stations generally may be operated in any location included within the descriptions in the following paragraphs in this section. In certain specific locations, however, coordination procedures or operating restrictions may apply, as set forth in § 95.309. Operation of Personal Radio Service stations in any location outside of those described in the following paragraphs is not authorized by this part.

(a) *Within the United States and its territories.* Those areas include the fifty United States and the District of Columbia, the Commonwealth of Puerto Rico, Navassa Island, the United States Virgin Islands (50 islets and cays), American Samoa (seven islands), Baker Island, the Commonwealth of Northern Mariana Islands, Guam Island and Howland Island, Jarvis Island, Johnston Island (Islets East, Johnston, North and Sand), Kingman Reef, Midway Island (Islets Eastern and Sand), Palmyra Island (more than 50 islets), and Wake Island (Islets Peale, Wake and Wilkes).

(b) *Aboard any vessel or aircraft registered in the United States.* With the permission of the captain, while the vessel or aircraft is within or over the United States or its territories, U.S. territorial waters, or upon or over international waters.

(c) *Aboard any unregistered vessel or aircraft owned or operated by a United States citizen or company.* While that vessel or aircraft is within or over the United States or its territories, U.S. territorial waters or upon or over international waters.

(d) Any other area of the world, except within the territorial limits of areas where radio services are regulated by:

(1) An agency of the United States other than the FCC. (You are subject to its rules.)

(2) Any foreign government. (You are subject to its rules.)

**§ 95.309 Coordination procedures and other restrictions for operation in certain locations.**

The operator of a Personal Radio Service station may be required to coordinate operation in advance and/or may be subject to operating restrictions if the station is to be operated in certain locations, described in the following paragraphs in this section.

(a) *In a Quiet Zone or near a protected FCC field office.* Rules for these locations are set forth in § 1.924 of this chapter.

(b) *Near a US border or in an area that is or may be subject to an international treaty or*

*agreement.* Treaties and agreements may be viewed or downloaded from the FCC website:

<http://www.fcc.gov/ib/sand/agree/>

(c) *At an environmentally sensitive site, or in a manner that may raise environmental concerns.* Rules for these locations are set forth in part 1, subpart I of this chapter (Procedures Implementing the National Environmental Policy Act of 1969).

(d) *In an area administered by the United States Government.* For example, the Department of Defense may impose restrictions on a station transmitting on land under its jurisdiction. Before operating a station at such a point, the operator should consult with the commanding officer in charge of the land.

(e) *Near the Arecibo Observatory.* Anyone planning to operate a Personal Radio Services station on the islands of Puerto Rico, Desecheo, Mona, Vieques, or Culebra in a manner that could pose an interference threat to the Arecibo Observatory must notify the observatory at least 45 days in advance of the planned operation, by mail or e-mail, to the following address:

Interference Office  
Arecibo Observatory  
HC3 Box 53995  
Arecibo, Puerto Rico 00612  
e-mail: [prcz@naic.edu](mailto:prcz@naic.edu)

(1) To determine whether a planned operation could pose an interference threat to the Arecibo Observatory, operators may consult interference guidelines provided by Cornell University.

(2) The notification must include the geographical coordinates of the station, if it is a fixed or base station.

(3) After receipt of such notifications, the FCC will allow the Arecibo Observatory 20 days to comment on or object to the proposed operation. The operator must make reasonable efforts to resolve or mitigate any potential interference concern with the Arecibo Observatory. If the FCC determines that an operator has made reasonable efforts to protect the Observatory from interference, the operator may be allowed to operate the station.



### § 95.311 Correspondence and notices from the FCC.

Operators of Personal Radio Service stations must respond to and comply with official communications from the FCC.

(a) The FCC may send a letter to the operator of a Personal Radio Service station requesting specific information about the Personal Radio Service station or its operation. Upon receipt of such a letter, the operator must respond in writing to the FCC office that sent the letter, within the time period stated in the letter. The written response must contain the information requested by the FCC, must be complete in itself, and should not rely on references to other communications or notices.

(b) If it appears to the FCC that the operator of a Personal Radio Services station has violated the Communications Act or the FCC's rules, the FCC may send that operator an official notice concerning the apparent violation. Upon receipt of such official notice, the operator must respond in writing to the FCC office that sent the letter, within the time period stated in the letter and comply with all instructions in the notice concerning the response. The written response must contain a complete written statement that fully addresses each violation, reports any action that the operator has taken to correct the violation and to prevent it from happening again, and any other pertinent information, such as other operators or stations that may have caused the violation.

(c) If the FCC notifies the operator of a Personal Radio Service station that the station is causing interference for technical reasons, the operator must follow all instructions in the official notice. The operator must comply with restricted hours of station operation if so specified in the official notice. The notice may require the operator to stop operating the station until technical adjustments or repairs have been made to the station equipment, such that the technical problem is corrected.

### § 95.313 Penalties for violations of the Communications Act or FCC rules.

Operators of Personal Radio Service stations may be assessed penalties for violations of the Communications Act and the FCC Rules.

(a) If a federal court finds that a Personal Radio Service station operator has willfully and knowingly violated any provision of the Communications Act, that operator may be fined up to \$10,000 or be imprisoned for a period not exceeding one year, or both. Upon a subsequent violation, the imprisonment may be for a period not exceeding two years. *See* § 501 of the Communications Act (47 U.S.C. 501).

(b) If a federal court finds that a Personal Radio Service station operator has willfully and knowingly violated any FCC rule, the operator may be fined up to \$500 for each violation, or in the case of a continuing violation, \$500 for each day that the violation continued. *See* § 502 of the Communications Act (47 U.S.C. 502).

(c) If the FCC finds that a Personal Radio Service station operator has willfully or repeatedly violated one or more sections of the Communications Act or of the FCC Rules, that operator may be liable for forfeiture. *See* § 1.80 of this chapter for details about the forfeiture procedures and amounts.

(d) If the FCC finds that a Personal Radio Service station operator is using a Personal Radio Service station in a way that violates one or more sections of the Communications Act or of the FCC Rules, the FCC may order the operator to cease and desist (*i.e.* immediately stop operating the station). *See* § 312(b) of the Communications Act (47 U.S.C. 312(b)).

### § 95.317 Registration of antenna structures that may constitute a menace to air navigation.

Each antenna structure used for a Personal Radio Service station is subject to the antenna structure rules set forth in part 17 of this chapter. In particular, the owner of an antenna structure that is more than 60.96 m (200 ft) in height above ground level (*see* § 17.7 of this chapter for specific criteria) may be required to notify the FAA and register the antenna structure with the FCC.

Further, stations located on or near a military or public-use airport with an antenna structure that is more than 6.10 meters (20 feet) high may have to obey additional restrictions. The highest point of the antenna must not exceed one meter above the airport elevation for every hundred meters of distance from the nearest point of the nearest

airport runway. Differences in ground elevation between the antenna and the airport runway may complicate this formula. For stations near an airport, *see* <http://appsint.fcc.gov/UlsApp/AsrSearch/towairSearch.jsp> to figure the maximum allowable height of the antenna. Consult Part 17 of the FCC's Rules for more information.

### **§ 95.319 Malfunctioning transmitting equipment.**

If the operator of a Personal Radio Services station becomes aware that the transmitting equipment is no longer functioning properly, he or she must stop making transmissions (except for emergency communications) using the malfunctioning transmitting equipment until it has been adjusted and/or repaired, as necessary, to restore proper operation.

(a) *FCC request to discontinue operation.* If an FCC representative informs a Personal Radio Services station operator that the technical characteristics of his or her transmitted signals are not in compliance with the applicable rules (e.g. regarding power, unwanted emissions, frequency accuracy), he or she must immediately stop making transmissions with the transmitter producing the non-compliant signals.

(b) *Internal repairs.* Internal adjustments and repairs to Personal Radio Services transmitters must be performed by or under the supervision of an individual who is qualified to maintain and repair transmitters.

(c) *Test transmissions.* The operator of any Personal Radio Services station may make brief test transmissions to verify the functional status of the transmitting equipment at any time, provided that such transmissions do not cause interference to the communications of other stations. A qualified individual maintaining or repairing a Personal Radio station transmitter in accordance with paragraph (b) of this section may make test transmissions as necessary to maintain or repair the transmitter, provided that such transmissions do not cause interference to communications of other stations.

### **§ 95.323 FCC inspection of station.**

If an authorized FCC representative requests to inspect any station in the Personal Radio Services, the station operator or licensee must make the station and any applicable records available for inspection.

### **§ 95.325 Interference.**

Operators of Personal Radio Service stations experiencing or causing interference must first attempt to eliminate the interference by means of mutually satisfactory arrangements. If the operators are unable to resolve an interference problem, the FCC may impose restrictions including specifying the channels, maximum transmitting power, maximum antenna height and geographic area or hours of operation of the stations concerned.

### **§ 95.327 Restricted operation.**

The FCC may deny or restrict the use by any operator(s) of any specified channel(s) in a specified geographic area if, in the judgment of the FCC, such use is not in the public interest. Furthermore, the FCC may restrict the use by any particular operator(s) of any channel as to geographical area of operation, transmitting power, or other operating conditions.

### **§ 95.329 How to contact the FCC.**

For information about the Personal Radio Services, see the FCC's internet web site ([www.fcc.gov](http://www.fcc.gov)). To speak with an FCC representative about the Personal Radio Services, call the FCC's information line 888-CALL-FCC (888-225-5322). To write the FCC about these services, address the Federal Communications Commission, Attention: Mobility Division, Wireless Telecommunications Bureau, 445 12th Street, S.W., Washington, DC 20554.

#### OPERATING RULES

### **§ 95.331 Permissible uses.**

Personal Radio Services stations may be used only for the purposes set forth in the rules applicable to each specific Personal Radio Service.

### **§ 95.333 Prohibited uses.**

No person shall use a Personal Radio Service station:

(a) In connection with any activity which is against federal, state or local law;

(b) To transmit advertisements or program material associated with television or radio broadcasting;

(c) To transmit messages for hire or provide a common carrier service;

(d) To intentionally interfere with the communications of another station;

(e) To transmit obscene, profane or indecent words, language or meaning; or

(f) To transmit a false or deceptive communication.

**§ 95.335 Operation of non-certified transmitters prohibited.**

Except as provided in paragraph (a), no person shall operate a transmitter in any Personal Radio Service unless it is a certified transmitter; that is, a transmitter of a type which has obtained a grant of equipment certification for that service, pursuant to part 2, subpart J of this chapter. Use of a transmitter that is not FCC-certified voids the user's authority to operate that station. *See* §§ 302(a), (b) and (e) of the Communications Act (47 U.S.C. 302(a), (b), and (e)).

(a) *Exceptions.* Under certain exceptions, non-certified Personal Radio Service transmitters, or transmitters certified for use in the land mobile radio services may be operated. Any such exceptions applicable to stations in a Personal Radio Service are set forth in the subpart governing that specific service. *See e.g.* §§ 95.735, 95.1735.

(b) *Revoked or withdrawn certification.* In the event that the FCC revokes or withdraws a grant of equipment certification for a type of Personal Radio Service transmitter, existing transmitters already in service may continue to be operated unless and until the FCC determines otherwise and gives Public Notice of that decision.

(c) *Grantee permissible modifications.* Only the grantee of the equipment certification may modify the design of a certified Personal Radio Service transmitter type, and then only pursuant to and in full compliance with the requirements and procedures for permissible changes and

modifications in part 2 of this chapter. *See* §§ 2.932 and 2.1043 of this chapter.

**§ 95.337 Operation of impermissibly modified equipment prohibited.**

No person shall modify any Personal Radio Service transmitter in a way that changes or affects the technical functioning of that transmitter such that operation of the modified transmitter results in a violation of the rules in this part. This includes any modification to provide for additional transmit frequencies, increased modulation level, a different form of modulation, or increased transmitter output power (either mean power or peak envelope power or both). Any such modification voids the certified status of the modified transmitter and renders it unauthorized for use in the Personal Radio Services. Also, no person shall operate any Personal Radio Service transmitter that has been so modified.

**§ 95.339 Operation of transmitter with external device causing rule violation prohibited.**

No person shall operate any Personal Radio Service transmitter to which an external device or accessory has been added such that operation of the combination results in a violation of the rules.

**§ 95.343 Station operator responsibility and requirements.**

Each Personal Radio Services station must have an operator whenever the station is transmitting. The operator of a Personal Radio Services station is responsible for proper operation of the station in compliance with all applicable rules in this part.

(a) Unless the station is operating under automatic control, the operator of a Personal Radio Services station must be located at a control point and monitoring communications while the station is transmitting.

(b) For Personal Radio Services stations operating under the authority of an individual license, the licensee is responsible for proper operation of the station in compliance with all applicable rules in this part, regardless of who is operating the station.

(c) For Personal Radio Services stations operating under the authority of an individual license, the licensee must maintain station records.

If no individual license is required for a particular Personal Radio Service, the station operator must maintain the station records. Station records include copies of any FCC violation notices or other FCC letters received by the licensee or operator, any responses to such letters, each written permission received from the FCC, and other documents as the FCC may require be included.

#### **§ 95.345 Remote control.**

Operation of Personal Radio Services stations by remote control is prohibited, unless otherwise allowed for a particular Personal Radio Service by rules in the subpart governing that specific service. *See e.g.* §§ 95.945, 95.1745.

#### **§ 95.347 Automatic control.**

Operation of Personal Radio Services stations under automatic control is prohibited, unless otherwise allowed for a particular Personal Radio Service by rules in the subpart governing that specific service. *See e.g.* §§ 95.1747, 95.2347, 95.2547.

#### **§ 95.349 Network connection.**

Operation of Personal Radio Services stations connected with the public switched network is prohibited, unless otherwise allowed for a particular Personal Radio Service by rules in the subpart governing that specific service. *See e.g.* § 95.949, § 95.2749.

#### **§ 95.351 Station identification.**

Operators of Personal Radio Services stations are not required to transmit any form of station identification, unless otherwise required for a Personal Radio Service by rules in the subpart governing that specific service. *See e.g.* § 95.1751.

#### **§ 95.353 False distress signals.**

No person shall transmit or cause to be transmitted by a Personal Radio Services station any false or fraudulent signals of distress, or communication relating thereto. *See* § 325(a) of the Communications Act (47 U.S.C. 325(a)).

#### **§ 95.357 Duration of transmissions.**

Except as otherwise provided, the operator of a Personal Radio Services station must generally limit transmissions to the minimum duration necessary. *See e.g.* § 95.2357. Some Personal

Radio Services have specific duration limits, which are set forth in the subparts governing those services. *See e.g.* § 95.957.

#### **§ 95.359 Sharing of channels.**

Unless otherwise provided in the subparts governing the individual services, all channels designated for use in the Personal Radio Services are available for use on a shared basis, and are not assigned by the FCC for the exclusive use of any person or station. Operators of Personal Radio Service stations must cooperate in the selection and use of channels in order to avoid interference and make efficient use of these shared channels.

### TECHNICAL RULES

#### **§ 95.361 Transmitter Certification.**

(a) Unless otherwise provided in the subpart governing that service or in other parts of this chapter, each transmitter that operates or is intended to operate in a service of the Personal Radio Service must be certified in accordance with the governing subpart and part 2 of this Chapter.

(b) A copy of the instruction manual specified in § 95.393 must be forwarded to the FCC with each request for certification of the relevant transmitter. If a final copy of that manual is not available when the certification application is submitted, the applicant may include with its application a draft or preliminary copy provided it forwards a final copy to the FCC when such a copy becomes available.

(c) Equipment certification will not be issued for transmitter types where any control, switch or other type of adjustment – which, when manipulated, can result in a violation of the rules - is accessible to the user.

#### **§ 95.363 Channels available for use.**

Operators of Personal Radio Stations may transmit only on the channels or frequency bands designated for the specific Personal Radio Service being used, as listed in the individual subpart governing that service. Transmissions on any channel or frequency not designated for the service being used constitutes a violation of Section 301 of the Communications Act (47 U.S.C. 301).

**§ 95.367 Transmitting power.**

For transmission of emergency messages, where operators of Personal Radio Services stations have the ability to select transmitting power levels, the highest transmitting power available may be used. In all other circumstances, the minimum amount of transmitting power necessary to carry out the desired communications must be used. *See* § 324 of the Communications Act (47 U.S.C. 324).

**§ 95.371 Emission types.**

In general, Personal Radio Services stations may transmit any emission type that is appropriate for the permissible uses of the specific service, provided that it does not exceed the authorized bandwidth for that service and is in full compliance with the modulation limits (if any) and unwanted emission limits for the specific service.

(a) *Exceptions.* In some of the Personal Radio Services, stations may transmit only certain specific emission types. Any such limits are set forth in the emission types rule in the subpart governing that service. *See e.g.* §§ 95.971, 95.2971.

(b) *Emission type designators.* Emission type designators are defined in § 2.201 of this chapter. Designators for emissions commonly used in the Personal Radio Services are as follows:

Description	Designator
Voice, AM.....	A3E
Voice, SSB.....	J3E
Voice, FM.....	F3E
Voice, PM.....	G3E
Data, FSK.....	F1D
Data, AFSK.....	F2D
Data, PSK.....	G1D
Test, no modulation...	N0N

**§ 95.377 Tones and signals.**

Personal Radio Service stations that transmit voice emissions may also transmit audible or subaudible tones or other signals for the purpose of selective calling and/or receiver squelch activation. These tones and signals are ancillary to voice communications and are considered to be included within the voice emission types, *e.g.* A3E, F3E, G3E.

(a) Tones that are audible (having a frequency higher than 300 Hertz), must last no longer than 15 seconds at one time.

(b) Tones that are subaudible (having a frequency of 300 Hertz or less), may be transmitted continuously during a communication session.

**§ 95.381 Voice obscuring features.**

A grant of equipment certification will not be issued for any transmitter type that incorporates one or more voice scrambling or other obscuring features for any of the Personal Radio Services that provide for voice (telephony) communications on shared channels (*see* § 95.359), if the application for such grant is filed on or after [INSERT DATE 90 DAYS AFTER EFFECTIVE DATE OF THE RULES ADOPTED IN THIS REPORT AND ORDER].

**§ 95.385 RF exposure evaluation.**

(a) Personal Radio Services devices are subject to the radio frequency radiation exposure requirements specified in §§ 1.1307(b), 2.1091 and 2.1093 of this chapter, as appropriate.

(b) FCC certification (*see* § 95.335) of transmitter types that are “portable devices,” as defined in § 2.1093(b) of this chapter, and are designed to operate in certain Personal Radio Services, is subject to rules requiring radiofrequency radiation exposure routine evaluation pursuant to §§ 1.1307(b) and 2.1093 of this chapter. *See* §§ 95.2385 and 95.2585.

MARKETING RULES

**§ 95.391 Manufacturing, importation and sales of non-certified equipment prohibited.**

No person shall manufacture, import, sell or offer for sale non-certified equipment for the Personal Radio Services. *See* § 302(b) of the Communications Act (47 U.S.C. 302a(b)). *See also* part 2, subpart I (§ 2.801 *et. seq.*) of this chapter for rules governing marketing of radiofrequency devices.

(a) *Revoked or withdrawn certification.* In the event that the FCC revokes or withdraws a grant of equipment certification for a type of Personal Radio Service transmitter, the FCC will provide specific instructions and dates for cessation of

manufacturing, importation and sales of the affected equipment.

(b) *External radio frequency power amplifiers.* No person shall manufacture, import, sell or offer for sale any external radio frequency power amplifier that is capable of operation on any frequency below 144 MHz and is intended for use in the Personal Radio Services. *See also* § 2.815 of this chapter.

(c) *Voice obscuring radios.* Effective [INSERT DATE TWO YEARS AFTER THE EFFECTIVE DATE OF THE RULES ADOPTED IN THIS REPORT AND ORDER], no person shall manufacture, or import, sell or offer for sale any radio that incorporates one or more voice scrambling or other obscuring features where such radio is intended for use in any of the Personal Radio Services that provide for voice (telephony) communications on shared channels (*see* § 95.359) regardless of whether the Commission has previously certified that radio.

#### **§ 95.393 Instructions and warnings.**

(a) A user's instruction manual must be supplied with each transmitter that can be used in a Personal Radio Service.

(b) The manual described in (a) must contain all information necessary for the proper installation and operation of the transmitter including:

(1) Instructions concerning all controls, adjustments and switches that may be operated or adjusted without resulting in a violation of FCC rules;

(2) Warnings concerning any adjustment that could result in a violation of FCC rules or that is recommended to be performed only by or under the immediate supervision and responsibility of a person certified as technically qualified to perform transmitter maintenance and repair duties in the relevant radio service by an organization or committee representative of users of that service;

(3) Warnings concerning the replacement of any transmitter component (crystal, semiconductor, etc.) that could result in a violation of FCC rules; and

(4) For a transmitter that can only be operated with an FCC license, warnings concerning compliance with applicable licensing requirements

and information concerning license application procedures.

### **Subpart B – Family Radio Service (FRS)**

#### ADMINISTRATIVE RULES

#### **§ 95.501 Scope.**

This subpart contains rules that apply only to the Family Radio Service (FRS).

#### **§ 95.503 Definitions, FRS.**

*Family Radio Service (FRS).* A short-distance two-way voice communication service, with limited data applications, between low power hand-held radios, for facilitating individual, family, group, recreational and business activities.

*FRS unit.* A transceiver for use in the FRS.

#### **§ 95.519 FRS replacement parts.**

The operator of a FRS unit may replace the batteries in the FRS unit with batteries of a type specified by the manufacturer. All other internal maintenance and repairs must be carried out in accordance with § 95.319.

#### OPERATING RULES

#### **§ 95.531 Permissible FRS uses.**

FRS units are primarily used for short-distance two-way voice communications between individuals.

(a) *Digital data.* In addition to voice conversations, FRS units may transmit digital data containing location information, or requesting location information from one or more other FRS or GMRS units, or containing a brief text message to another specific GMRS or FRS unit. Digital data transmissions must be initiated by a manual action of the operator, except that a FRS unit receiving an interrogation request may automatically respond with its location. *See also* § 95.587(c).

(b) *One-way communications.* FRS units may be used for one-way communications that are emergency messages, traveler assistance communications, voice pages or brief equipment tests.

(c) *GMRS stations.* FRS units normally communicate with other FRS units, but may also

be used to communicate with General Mobile Radio Service (GMRS) stations.

**§ 95.533 Prohibited FRS uses.**

FRS units must not be used for one-way communications other than those listed in § 95.531(b). Initial transmissions to establish two-way communications and data transmissions listed in § 95.531(a) are not considered to be one-way communications for the purposes of this section.

TECHNICAL RULES

**§ 95.561 FRS transmitter certification.**

(a) Each FRS unit (a transmitter that operates or is intended to operate in the FRS) must be certificated for use in the FRS in accordance with this subpart and subpart J of part 2 of this chapter.

(b) A grant of equipment certification for the FRS will not be issued for any FRS transmitter type that fails to comply with all of the applicable rules in this subpart.

(c) A grant of equipment certification will not be issued for hand-held portable radio units capable of operating under both this subpart (FRS) and under any other subparts of this chapter (except Part 15) if the application for such grant is filed on or after [INSERT DATE 90 DAYS AFTER EFFECTIVE DATE OF THE RULES ADOPTED IN THIS REPORT AND ORDER].

**§ 95.563 FRS channels.**

The FRS is allotted 22 channels, each having a channel bandwidth of 12.5 kHz. All of the FRS channels are also allotted to the General Mobile Radio Service (GMRS) on a shared basis. The FRS channel center frequencies are set forth in the following table:

Channel No.	Center frequency (MHz)
1.....	462.5625
2.....	462.5875
3.....	462.6125
4.....	462.6375
5.....	462.6625
6.....	462.6875
7.....	462.7125
8.....	467.5625
9.....	467.5875
10.....	467.6125

Channel No.	Center frequency (MHz)
11.....	467.6375
12.....	467.6625
13.....	467.6875
14.....	467.7125
15.....	462.5500
16.....	462.5750
17.....	462.6000
18.....	462.6250
19.....	462.6500
20.....	462.6750
21.....	462.7000
22.....	462.7250

**§ 95.565 FRS frequency accuracy.**

Each FRS transmitter type must be designed such that the carrier frequencies remain within  $\pm 2.5$  parts-per-million of the channel center frequencies specified in § 95.563 during normal operating conditions.

**§ 95.567 FRS transmit power.**

Each FRS transmitter type must be designed such that the effective radiated power (ERP) on channels 8 through 14 does not exceed 0.5 Watts and the ERP on channels 1 through 7 and 15 through 22 does not exceed 2.0 Watts.

**§ 95.571 FRS emission types.**

Each FRS transmitter type must be designed such that it can transmit only the following emission types: F3E, G3E, F2D, and G2D.

**§ 95.573 FRS authorized bandwidth.**

Each FRS transmitter type must be designed such that the occupied bandwidth does not exceed 12.5 kHz.

**§ 95.575 FRS modulation limits.**

Each FRS transmitter type must be designed such that the peak frequency deviation does not exceed 2.5 kHz, and the highest audio frequency contributing substantially to modulation must not exceed 3.125 kHz.

**§ 95.577 FRS tone requirements.**

In addition to the tones permitted under § 95.377, FRS transmitter types may be designed to transmit brief tones to indicate the end of a transmission.

**§ 95.579 FRS unwanted emissions limits.**

Each FRS transmitter type must be designed to satisfy the applicable unwanted emissions limits in this paragraph.

(a) *Attenuation requirements.* The power of unwanted emissions must be attenuated below the carrier power output in Watts (P) by at least:

(1) 25 dB (decibels) in the frequency band 6.25 kHz to 12.5 kHz removed from the channel center frequency.

(2) 35 dB in the frequency band 12.5 kHz to 31.25 kHz removed from the channel center frequency.

(3)  $43 + 10 \log(P)$  dB in any frequency band removed from the channel center frequency by more than 31.25 kHz.

(b) *Measurement bandwidths.* The power of unwanted emissions in the frequency bands specified in paragraphs (a)(1) and (a)(2) is measured with a reference bandwidth of 300 Hz. The power of unwanted emissions in the frequency range specified in paragraph (a)(3) is measured with a reference bandwidth of at least 30 kHz.

(c) *Measurement conditions.* The requirements in this section apply to each FRS transmitter type both with and without the connection of permitted attachments, such as an external speaker, microphone and/or power cord.

**§ 95.587 FRS additional requirements.**

Each FRS transmitter type must be designed to meet the following additional requirements.

(a) *Transmit frequency capability.* FRS transmitter types must not be capable of transmitting on any frequency or channel other than those listed in § 95.563.

(b) *Antenna.* The antenna of each FRS transmitter type must meet the following requirements.

(1) The antenna must be a non-removable integral part of the FRS transmitter type.

(2) The gain of the antenna must not exceed that of a half-wave dipole antenna.

(3) The antenna must be designed such that the electric field of the emitted waves is vertically

polarized when the unit is operated in the normal orientation.

(c) *Digital data transmissions.* FRS transmitter types having the capability to transmit digital data must be designed to meet the following requirements.

(1) FRS units may transmit digital data containing location information, or requesting location information from one or more other FRS or GMRS units, or containing a brief text message to another specific FRS or GMRS unit or units.

(2) Digital data transmissions must be initiated by a manual action or command of the operator, except that FRS units may be designed to automatically respond with location data upon receiving an interrogation request from another FRS unit or a GMRS unit.

(3) Digital data transmissions must not exceed one second in duration.

(4) Digital data transmissions must not be sent more frequently than one digital data transmission within a thirty-second period, except that an FRS unit may automatically respond to more than one interrogation request received within a thirty-second period.

(d) *Packet mode.* FRS transmitter types must not be capable of transmitting data in the store-and-forward packet operation mode.

(e) Effective [INSERT DATE TWO YEARS AFTER THE EFFECTIVE DATE OF THE RULES ADOPTED IN THIS REPORT AND ORDER], no person shall manufacture or import hand-held portable radio equipment capable of operating under this subpart (FRS) and other licensed or licensed-by-rule services in this chapter (Part 15 unlicensed equipment authorizations are permitted if consistent with Part 15 rules).

## MARKETING RULES

**§ 95.591 Sales of FRS combination radios prohibited.**

Effective [INSERT DATE TWO YEARS AFTER THE EFFECTIVE DATE OF RULES ADOPTED IN THIS REPORT AND ORDER], no person shall sell or offer for sale hand-held portable radio equipment capable of operating under this subpart (FRS) and under any other



licensed or licensed-by-rule radio services in this chapter (devices may be authorized under this subpart with Part 15 unlicensed equipment authorizations).

### Subpart C – Radio Control Radio Service

#### ADMINISTRATIVE RULES

#### § 95.701 Scope.

This subpart contains rules that apply only to the Radio Control Radio Service (RCRS).

#### § 95.703 Definitions, RCRS.

*Model aircraft.* A small imitation of an aircraft, such as an airplane or a helicopter.

*Model surface craft.* A small imitation of a boat, car, or other type of vehicle for carrying people or objects, other than an aircraft.

*Radio Control Radio Service (RCRS).* A non-commercial short-distance radio service for wirelessly controlling the operation of devices, including, but not limited to, model vehicles such as aircraft and surface craft.

*RCRS transmitter.* A transmitter that is used or intended to be used in the RCRS.

#### § 95.719 RCRS replacement parts.

The operator of an RCRS transmitter may replace parts of an RCRS transmitter as indicated in this section. All other internal maintenance and repairs must be carried out in accordance with § 95.319.

(a) A damaged antenna may be replaced by another antenna of the same or a compatible similar type.

(b) Batteries in the RCRS transmitter may be replaced with batteries of a type specified by the manufacturer.

(c) To change plug-in modules which were certified as part of the RCRS transmitter.

#### § 95.725 Interference, RCRS.

RCRS operations must not cause interference to, and must accept interference from, certain other radio service operations, as follows:

(a) RCRS stations must not cause interference to:

(1) Authorized radio operations in the 72–76 MHz band, including radio remote control of industrial equipment on the same or adjacent channels; or,

(2) Broadcast television reception on TV Channels 4 or 5.

(b) RCRS operations are not afforded protection from interference caused by the operation of:

(1) Industrial, scientific or medical devices (*see* part 18 of this chapter) operating in the 26–28 MHz band; and,

(2) Fixed and mobile stations in other services operating on the same or adjacent channels.

#### OPERATING RULES

#### § 95.731 Permissible RCRS use.

RCRS transmitters may only be used to transmit one-way communications and only for the purposes set forth in this section. (One-way communications are transmissions which are not intended to establish communications with another station.)

(a) *Control of model crafts and devices.* When an RCRS transmitter is used to control a model craft or device, the RCRS channels in specific frequency bands must be used, based on the type of model craft or device being controlled, as follows:

(1) RCRS channels in the 72 MHz frequency band may be used only to control and operate model aircraft.

(2) RCRS channels in the 75 MHz frequency band may be used only to control and operate model surface craft.

(3) RCRS channels in the 26–28 MHz frequency band may be used to control or operate any kind of device.

(b) *Telecommand.* Any RCRS channel may be used by the operator to turn on and/or off a device at a remote location.

(c) *Telemetry.* Any RCRS channel in the 26–28 MHz frequency band may be used to transmit a signal from a sensor at a remote location that turns on and/or off an indicating device for the operator.

**§ 95.733 Prohibited RCRS use.**

The rules in this section restrict certain uses of RCRS transmitters.

(a) *Simultaneous use of multiple channels.* An RCRS station must not transmit simultaneously on more than one RCRS channel in the 72–76 MHz band when such operation would cause harmful interference to other RCRS operations.

(b) *Data transmission.* No person shall use a RCRS transmitter to transmit data. Tones or other types of signal encoding are not considered to be data for the purposes of this paragraph, when used only for the purpose of identifying the specific device among multiple devices that the operator intends to turn on/off or the specific sensor among multiple sensors intended to turn on/off an indicating device for the operator.

(c) *Pay for operation prohibited.* RCRS stations must not be used for commercial purposes. An RCRS operator must not accept direct or indirect payment for operating an RCRS transmitter. An RCRS operator may use an RCRS transmitter to help him or her provide a service and be paid for rendering that service, provided that the payment is only for the service and not for operation of the RCRS transmitter.

(d) *Limited transmission.* No person shall use an RCRS station to transmit any message other than for the operation of devices at remote locations. Accordingly, the transmission of other messages by an RCRS operator, such as voice, telegraphy, etc. is prohibited.

**§ 95.735 RCRS equipment certification exception.**

Notwithstanding the general requirement of § 95.335, a non-certified RCRS transmitter that transmits only in the 26–28 MHz band and complies with the applicable technical requirements in this subpart may be operated in the RCRS for the purpose of controlling a remote device.

**§ 95.741 RCRS antenna height limit.**

If the antenna of a RCRS station operating on a channel in the 26–28 MHz frequency band (whether receiving, transmitting) is installed at a fixed location, the highest point of the antenna

must not be more than 6.10 meters (20 feet) higher than the highest point of the building or tree on which it is mounted; or 18.3 meters (60 feet) above the ground. RCRS station antennas must also meet the requirements in § 95.317 regarding menaces to air navigation. See 47 C.F.R. § 95.317 and consult Part 17 of the FCC's Rules for more information.

**§ 95.745 Operation of an RCRS transmitter by remote control.**

This section sets forth the conditions under which an RCRS station may be operated by remote control, pursuant to the exception in § 95.345.

(a) *Wireless remote control.* No person shall operate a RCRS station by wireless remote control.

(b) *Wired remote control.* Before operating an RCRS station by wired remote control, the operator must obtain specific approval from the FCC. To obtain FCC approval, the operator must explain why wired remote control is needed.

**§ 95.757 Duration of RCRS Communications.**

Communications on RCRS channels shall be limited to the minimum practicable time that is necessary.

## TECHNICAL RULES

**§ 95.761 RCRS transmitter certification.**

(a) Except as provided in § 95.735, each RCRS transmitter (a transmitter that operates or is intended to operate as a station in the RCRS) must be certified in accordance with this subpart and part 2 of this chapter.

(b) A grant of equipment certification for the RCRS will not be issued for any RCRS transmitter type that fails to comply with all of the applicable rules in this subpart.

**§ 95.763 RCRS channel frequencies.**

The channels listed in this section are allotted for shared use in the RCRS. Each RCRS channel is designated by its center frequency in megahertz.

(a) *26–28 MHz frequency band.* The 26-28 MHz RCRS channel center frequencies are 26.995, 27.045, 27.095, 27.145, 27.195 and 27.255 MHz.

(b) *72 MHz frequency band.* The 72 MHz RCRS channel center frequencies are 72.01, 72.03, 72.05, 72.07, 72.09, 72.11, 72.13, 72.15, 72.17, 72.19,

72.21, 72.23, 72.25, 72.27, 72.29, 72.31, 72.33, 72.35, 72.37, 72.39, 72.41, 72.43, 72.45, 72.47, 72.49, 72.51, 72.53, 72.55, 72.57, 72.59, 72.61, 72.63, 72.65, 72.67, 72.69, 72.71, 72.73, 72.75, 72.77, 72.79, 72.81, 72.83, 72.85, 72.87, 72.89, 72.91, 72.93, 72.95, 72.97 and 72.99 MHz.

(c) *75 MHz frequency band.* The 75 MHz RCRS channel center frequencies are 75.41, 75.43, 75.45, 75.47, 75.49, 75.51, 75.53, 75.55, 75.57, 75.59, 75.61, 75.63, 75.65, 75.67, 75.69, 75.71, 75.73, 75.75, 75.77, 75.79, 75.81, 75.83, 75.85, 75.87, 75.89, 75.91, 75.93, 75.95, 75.97 and 75.99 MHz.

#### § 95.765 RCRS frequency accuracy.

Each RCRS transmitter type must be designed to satisfy the frequency accuracy requirements in this section.

(a) Each RCRS transmitter type capable of transmitting on channels in the 72 or 75 MHz frequency band must be designed such that the carrier frequencies remain within  $\pm 20$  parts-per-million (ppm) of the channel center frequencies listed in § 95.763(b) and (c) during normal operating conditions.

(b) Except as allowed under paragraph (c), each RCRS transmitter type capable of transmitting in the 26–28 MHz frequency band must be designed such that the carrier frequencies remain within  $\pm 50$  ppm of the channel center frequencies listed in § 95.763(a) during normal operating conditions.

(c) Each RCRS transmitter type that transmits in the 26–28 MHz frequency band with a mean transmitter power of 2.5 W or less and is used solely by the operator to turn on and/or off a device at a remote location, other than a device used solely to attract attention, must be designed such that the carrier frequencies remain within  $\pm 100$  ppm of the channel center frequencies listed in § 95.763(a) during normal operating conditions.

#### § 95.767 RCRS transmitter power.

Each RCRS transmitter type must be designed such that the transmitter power does not exceed the limits in this section.

(a) *72 and 75 MHz frequency bands.* For an RCRS transmitter operating in the 72 and/or 75 MHz frequency bands, the mean transmitter output power must not exceed 0.75 Watts.

(b) *26–28 MHz frequency band.* For an RCRS transmitter operating on 27.255 MHz, the mean transmitter output power must not exceed 25 Watts. For an RCRS transmitter operating on 26.995, 27.045, 27.095, 27.145 or 27.195 MHz, the mean transmitter output power must not exceed 4 Watts.

#### § 95.771 RCRS emission types.

Each RCRS transmitter type must be designed to satisfy the emission limitations in this section.

(a) *Permitted emission types.* RCRS transmitter types may transmit any type of non-voice emission that is technically appropriate for radio control use.

(b) *Voice emissions prohibited.* RCRS transmitter types must be incapable of transmitting telephony (voice communications).

#### § 95.773 RCRS authorized bandwidth.

Each RCRS transmitter type must be designed such that the occupied bandwidth does not exceed 8 kHz for any emission type.

#### § 95.779 RCRS unwanted emissions.

Each RCRS transmitter type must be designed to satisfy the applicable unwanted emissions limits in this paragraph.

(a) *26–28 MHz frequency band.* For an RCRS transmitter operating in the 26–28 MHz frequency band, the power of unwanted emissions must be attenuated below the transmitter output power in Watts (P) by at least:

(1) 25 dB (decibels) in the frequency band 4 kHz to 8 kHz removed from the channel center frequency;

(2) 35 dB in the frequency band 8 kHz to 20 kHz removed from the channel center frequency;

(3)  $43 + 10 \log(P)$  dB in any frequency band removed from the channel center frequency by more than 20 kHz.

(b) *72 and 75 MHz frequency bands.* For an RCRS transmitter operating in the 72 and/or 75 MHz frequency bands, the power of unwanted emissions must be attenuated below the transmitter output power in Watts (P) by at least:

(1) 25 dB (decibels) in the frequency band 4 kHz to 8 kHz removed from the channel center frequency;

(2) 45 dB in the frequency band 8 kHz to 10 kHz removed from the channel center frequency;

(3) 55 dB in the frequency band 10 kHz to 20 kHz removed from the channel center frequency; and

(4)  $56 + 10 \log(P)$  dB in any frequency band removed from the channel center frequency by more than 20 kHz.

(c) *Measurement bandwidths.* The power of unwanted emissions in the frequency bands specified in paragraphs (a)(1), (a)(2), (b)(1), (b)(2) and (b)(3) is measured with a reference bandwidth of 300 Hz. The power of unwanted emissions in the frequency ranges specified in paragraph (a)(3) and (b)(4) is measured with a reference bandwidth of at least 30 kHz.

#### **§ 95.787 RCRS additional requirements.**

Each RCRS transmitter type must be designed to satisfy all of the following additional requirements:

(a) *Antenna.* The antenna of an RCRS station transmitting in the 72 and/or 75 MHz frequency bands must meet the following requirements:

(1) The antenna must be an integral part of the transmitter;

(2) The gain of the antenna must not exceed that of a half-wave dipole; and

(3) The antenna must be designed such that the electric field of the emitted radio waves is vertically polarized when the transmitter is held in the normal orientation.

(b) Each RCRS transmitter type must be designed to transmit only on one or more of the channels listed in § 95.763.

(c) For RCRS transmitter types incorporating plug-in frequency-determining modules that are intended to be changed by the operator, the modules must be submitted for certification together with the transmitter type. Each module must contain all of the frequency determining circuitry including the oscillator. Plug-in crystals are not considered modules and must not be accessible to the user.

## **Subpart D – CB Radio Service**

### ADMINISTRATIVE RULES

#### **§ 95.901 Scope.**

This subpart contains rules that apply only to the CB Radio Service.

#### **§ 95.903 Definitions, CBRS.**

*CB Radio Service (CBRS).* A mobile and fixed two-way voice communication service for facilitating personal, business or voluntary public service activities, including communications to provide assistance to highway travelers.

*CBRS station.* Any transmitter, with or without an incorporated antenna or receiver, which is certified by the FCC to be operated in the CBRS.

*Conversation.* An exchange of transmissions between two CBRS stations.

*Wireless remote control.* Operation of a CBRS station from a remote location using a wireless link.

#### **§ 95.905 Authority to operate CBRS stations voided by violation of operating rules.**

A person's authorization to operate a CBRS station without an individual license pursuant to § 95.305 is voided if that person violates any of the operating rules in this subpart, this part, or other parts of this chapter.

#### **§ 95.919 CBRS replacement parts.**

The operator of a CBRS transmitter may replace parts of the CBRS transmitter as stated in this section. All other internal maintenance and repairs must be carried out in accordance with § 95.319.

(a) A damaged antenna on a hand-held portable CBRS transmitter may be replaced by another antenna of the same or a compatible similar type.

(b) Batteries in a hand-held portable CBRS transmitter may be replaced with batteries of a type specified by the manufacturer.

(c) A detachable external microphone may be replaced with any external microphone that does not alter the modulation characteristics in a way that results in a violation of §§ 95.967, 95.973, 95.975 or 95.979.

(d) Changing plug-in modules which were certified as part of the CBRS transmitter.

**§ 95.923 CBRS station inspection.**

If an authorized FCC representative requests to inspect a CBRS station, the operator must make the station and any station records available for inspection.

(a) A CBRS station includes all of the equipment used in connection with that station.

(b) Station records include the following documents, as applicable:

(1) A copy of each response to an FCC violation notice or an FCC letter.

(2) Each written permission received from the FCC.

**§ 95.925 CBRS harmful interference.**

If harmonic or other spurious emissions result in harmful interference, the FCC may require appropriate technical changes in the CBRS station equipment to alleviate the interference, including the use of a low pass filter between the transmitter antenna terminals and the antenna feed line.

**§ 95.927 CBRS quiet hours.**

If a CBRS station causes harmful interference to broadcast or communications services received by the public, and such harmful interference can not be eliminated by technical means (*i.e.* filters), the FCC may, by written notice to the CBRS station operator, impose limits on the hours of operation of the CBRS station.

OPERATING RULES

**§ 95.931 Permissible CBRS uses.**

The operator of a CBRS station may use that station to transmit two-way plain language voice communications to other CBRS stations and to other stations that are authorized to transmit on CBRS frequencies.

(a) *Emergency communications.* Any CBRS channel may be used for emergency communications or for traveler assistance.

(1) Operators of CBRS stations must, at all times and on all channels, give priority to emergency communications.

(2) CBRS Channel 9 may be used only for emergency communications or traveler assistance. It must not be used for any other purpose.

(b) *One-way communications.* The operator of a CBRS station may use that station to transmit one-way communications for the following purposes:

(1) To call for help or transmit other emergency communications;

(2) To provide warnings of hazardous road conditions to travelers;

(3) To make brief test transmissions (“radio checks”); or,

(4) To transmit voice paging.

(c) *Travelers assistance communications.* The operator of a CBRS station may transmit communications necessary to assist a traveler to reach a destination or to receive necessary services.

**§ 95.933 Prohibited CBRS uses.**

In addition to the prohibited uses set forth in § 95.333, the operator of a CBRS station must not use a CBRS station:

(a) To transmit one-way communications other than those permitted in § 95.931(b) (transmissions to seek to initiate two-way communications with another station are not considered to be one-way communications);

(b) To advertise or solicit the sale of any goods or services;

(c) To advertise a political candidate or political campaign (a CBRS station may be used for the business or organizational aspects of a campaign);

(d) To communicate with stations in other countries, except General Radio Service stations in Canada;

(e) To transmit communications for live or delayed broadcast on a radio or television broadcast station (a CBRS station may be used to gather news items or to prepare programs);

(f) To transmit music, whistling, sound effects or any other audio material to amuse or entertain; or

(g) To transmit any sound effects solely to attract attention.

**§ 95.935 Unauthorized use of non-CBRS transmitters.**

The operator of a CBRS station must not use a non-CBRS transmitter to communicate with or attempt to communicate with stations in the CBRS.

(a) *Non-CBRS transmitters.* For the purposes of this section, “non-CBRS transmitters” are transmitters that are technically capable of operation in the 26–30 MHz frequency range, but are intended for use in the Amateur Radio Service (see part 97 of this chapter) or other government or non-government radio services, and are not certified for use in the CBRS.

(b) *Unlicensed operation.* The operation of non-CBRS transmitters on the CBRS channels is not authorized by § 95.305 of this part. Accordingly, the FCC considers any such operation to be a violation of Section 301 of the Communications Act (47 U.S.C. 301).

**§ 95.939 External radio frequency power amplifiers prohibited.**

The operator of a CBRS station must not use an external radio frequency power amplifier to increase the transmitting power of that CBRS station under any circumstances. There are no exceptions to this rule.

(a) The FCC will presume that the operator of a CBRS station has used an external radio frequency power amplifier in violation of this section if it is in the operator’s possession or on the operator’s premises and there is other evidence that the CBRS station has been operated with more transmitting power than allowed by § 95.967.

(b) The operator of a CBRS station must not attach an external radio frequency power amplifier to a certified CBRS transmitter.

**§ 95.941 CBRS antenna height limits.**

The operator of a CBRS station must ensure that the transmitting antenna for the station is not higher than 18.3 meters (60 feet) above the ground, or 6.1 meters (20 feet) higher than the highest point of the building or tree on which it is mounted, whichever is higher. CBRS station antennas must also meet the requirements in § 95.317 regarding menaces to air navigation. See § 95.317 and

consult Part 17 of the FCC’s Rules for more information.

**§ 95.945 Remote control of a CBRS station.**

This section sets forth the conditions under which a CBRS station may be operated by remote control, pursuant to the exception in § 95.345. Operation of a CBRS station using a hands-free or other type of cordless microphone or headset authorized under Part 15 is not considered to be remote control.

(a) *Wireless remote control.* No person shall operate a CBRS station by wireless remote control.

(b) *Wired remote control.* Before operating an CBRS station by wired remote control, the operator must obtain specific approval from the FCC. To obtain FCC approval, the operator must explain why wired remote control is needed. See § 95.329 regarding contacting the FCC.

**§ 95.949 CBRS network connection.**

A CBRS station may be connected, acoustically or electrically, to the public switched network, subject to the rules in this section. The purpose of this is to allow operators of other CBRS stations to speak to and hear individuals on the telephone through the connected CBRS station.

(a) The operator of the connected CBRS station must:

- (1) Manually make the connection;
- (2) Continue to control the station while it is connected;
- (3) Listen to each conversation during the connection; and
- (4) Stop transmissions immediately if any violation of the CBRS rules occurs.

(b) If a CBRS station is directly (electrically) connected to the public switched network, the connection, including the interface device used, must be in full compliance with all applicable rules in part 68 of this chapter.

**§ 95.957 Duration of CBRS Transmissions.**

(a) Except as specified in (b) and (c) of this section below, the operator of a CBRS station must limit each on-air conversation with the operators of other CBRS stations to no more than five minutes. After an on-air conversation has ended, the

operator of a CBRS station must not transmit again on the same channel for at least one minute.

(b) When a CBRS operator is directly participating in emergency communications, it does not have to comply with subsection (a) regarding length of transmissions and pauses between transmissions. However, the operator must obey all other rules.

(c) When an operator is using its CBRS station to assist a traveler, it does not have to comply with subsection (a) regarding length of transmissions and pauses between transmissions. However, the operator must obey all other rules.

TECHNICAL RULES

**§ 95.961 CBRS transmitter certification.**

(a) Each CBRS transmitter (a transmitter that operates or is intended to operate at a station in the CBRS) must be certified in accordance with this subpart and part 2 of this chapter.

(b) A grant of equipment certification for the CBRS will not be issued for any CBRS transmitter type that fails to comply with all of the applicable rules in this subpart.

**§ 95.963 CBRS channel frequencies.**

The channels listed in this section are allotted for shared use in the CBRS. Each CBRS channel is designated by its center frequency in Megahertz (MHz).

CBRS Channel No.	Center frequency (MHz)
1.....	26.965
2.....	26.975
3.....	26.985
4.....	27.005
5.....	27.015
6.....	27.025
7.....	27.035
8.....	27.055
9.....	27.065
10.....	27.075
11.....	27.085
12.....	27.105
13.....	27.115
14.....	27.125
15.....	27.135
16.....	27.155
17.....	27.165

CBRS Channel No.	Center frequency (MHz)
18.....	27.175
19.....	27.185
20.....	27.205
21.....	27.215
22.....	27.225
23.....	27.255
24.....	27.235
25.....	27.245
26.....	27.265
27.....	27.275
28.....	27.285
29.....	27.295
30.....	27.305
31.....	27.315
32.....	27.325
33.....	27.335
34.....	27.345
35.....	27.355
36.....	27.365
37.....	27.375
38.....	27.385
39.....	27.395
40.....	27.405

**§ 95.965 CBRS transmit frequency accuracy.**

Each CBRS transmitter type must be designed such that the transmit carrier frequency (or in the case of SSB transmissions, the reference frequency) remains within 50 parts-per-million of the channel center frequencies specified in § 95.963 under all normal operating conditions.

**§ 95.967 CBRS transmitter power limits.**

Each CBRS transmitter type must be designed such that the transmitter power can not exceed the following limits:

(a) When transmitting amplitude modulated (AM) voice signals, the mean carrier power must not exceed 4 Watts.

(b) When transmitting single sideband (SSB) voice signals, the peak envelope power must not exceed 12 Watts.

**§ 95.971 CBRS emission types.**

Each CBRS transmitter type must be designed such that its capabilities are in compliance with the emission type rules in this section.

(a) *Permitted emission types.* CBRS transmitter types may transmit only AM voice emission type

A3E and SSB voice emission types J3E, R3E or H3E.

(b) *SSB requirements.* Each CBRS transmitter type that transmits emission type J3E, R3E or H3E must be capable of transmitting only the upper sideband with suppressed, reduced or full carrier, respectively, but may additionally be capable of transmitting only the lower sideband, with suppressed, reduced or full carrier, respectively.

**§ 95.973 CBRS authorized bandwidth.**

Each CBRS transmitter type must be designed such that the occupied bandwidth does not exceed the authorized bandwidth for the emission type under test.

(a) *AM.* The authorized bandwidth for emission type A3E is 8 kHz.

(b) *SSB.* The authorized bandwidth for emission types J3E, R3E and H3E is 4 kHz.

**§ 95.975 CBRS modulation limits.**

Each CBRS transmitter type must be designed such that the modulation characteristics are in compliance with the rules in this section.

(a) When emission type A3E is transmitted with voice modulation, the modulation percentage must be at least 85%, but not more than 100%.

(b) When emission type A3E is transmitted by a CBRS transmitter having a transmitter output power of more than 2.5 W, the transmitter must contain a circuit that automatically prevents the modulation percentage from exceeding 100%.

**§ 95.977 CBRS tone transmissions.**

In addition to the tones permitted under § 95.377, CBRS transmitter types may be designed to transmit brief tones to indicate the beginning or end of a transmission.

**§ 95.979 CBRS unwanted emissions limits.**

Each CBRS transmitter type must be designed to comply with the applicable unwanted emissions limits in this section.

(a) *Attenuation requirements.* The power of unwanted emissions must be attenuated below the transmitter output power in Watts (P) as specified in the applicable paragraphs listed in the following table:

Emission Type	Paragraph
A3E	(1), (3), (5), (6).
H3E, J3E, R3E	(2), (4), (5), (6).

(1) 25 dB (decibels) in the frequency band 4 kHz to 8 kHz removed from the channel center frequency;

(2) 25 dB in the frequency band 2 kHz to 6 kHz removed from the channel center frequency;

(3) 35 dB in the frequency band 8 kHz to 20 kHz removed from the channel center frequency;

(4) 35 dB in the frequency band 6 kHz to 10 kHz removed from the channel center frequency;

(5)  $53 + 10 \log(P)$  dB in any frequency band removed from the channel center frequency by more than 250% of the authorized bandwidth.

(6) 60 dB in any frequency band centered on a harmonic (*i.e.* an integer multiple of two or more times) of the carrier frequency.

(b) *Measurement bandwidths.* The power of unwanted emissions in the frequency bands specified in paragraphs (a)(1) through (a)(4) is measured with a reference bandwidth of 300 Hz. The power of unwanted emissions in the frequency ranges specified in paragraphs (a)(5) and (a)(6) is measured with a reference bandwidth of at least 30 kHz.

(c) *Measurement conditions and procedures.* Subject to additional measurement standards and procedures established pursuant to part 2, subpart J, the following conditions and procedures must be used.

(1) The unwanted emissions limits requirements in this section must be met both with and without the connection of permitted attachments, such as external speakers, microphones, power cords and/or antennas.

(2) Either mean power output or peak envelope power output may be used for measurements, as appropriate for the emission type under test, provided that the same type of power measurement



is used for both the transmitter output power and the power of the unwanted emissions.

### § 95.987 CBRS additional requirements.

Each CBRS transmitter type must be designed to satisfy all of the additional requirements in this section.

(a) *Transmit frequency capability.* Each CBRS transmitter type must be designed to transmit only on one or more of the channels listed in § 95.963. No CBRS transmitter type will be certified for use in the CBRS service if it is capable of transmitting on any frequency or channel other than those listed in § 95.963, unless such transmitter type is also certified for use in another radio service for which the frequency capability is authorized and for which FCC certification is also required.

(b) *Frequency determining circuitry.* All frequency determining circuitry (including crystals) and programming controls in each CBRS transmitter type must be internal to the transmitter and must not be accessible from the operating panel or from the exterior of the transmitter enclosure.

(c) *Final amplifier component ratings.* The dissipation rating of all the semiconductors or electron tubes which supply RF power to the antenna terminals of each CB transmitter must not exceed 10 Watts. For semiconductors, the dissipation rating is the greater of the collector or device dissipation value established by the manufacturer of the semiconductor. These values may be temperature de-rated by no more than 50°C. For an electron tube, the dissipation rating is the Intermittent Commercial and Amateur Service plate dissipation value established by the manufacturer of the electron tube.

(d) *External controls.* Only the external transmitter controls, connections or devices listed in this paragraph are allowed to be incorporated in a CBRS transmitter type. The FCC, however, may authorize additional controls, connections or devices after considering the functions to be performed by such additions.

(1) Primary power connection. External power supplies may be used.

(2) Microphone connection.

(3) Antenna connection.

(4) Headphone and speaker output connections and related selector switch.

(5) On-off switch for primary power to the transmitter. This switch may be combined with receiver controls such as the receiver on-off switch and volume control.

(6) Upper / lower sideband selector switch (for a transmitter that is capable of transmitting SSB emissions).

(7) Carrier level selector control (for a transmitter that is capable of transmitting SSB emissions). This control may be combined with the sideband selector switch.

(8) Channel selector switch.

(9) Transmit / receive selector switch.

(10) Meter(s) and selector switch(es) for monitoring transmitter performance.

(11) Pilot lamp(s), meter(s), light emitting diodes, liquid crystal devices or other types of visual display devices to indicate the presence of RF output power or that the transmitter control circuits are activated to transmit.

### MARKETING RULES

### § 95.991 CBRS marketing limitations.

Marketing of devices that could be used with CBRS stations resulting in violation of the rules in this part is prohibited.

(a) *External radio frequency power amplifiers.* No person shall manufacture, import, sell or offer for sale any external radio frequency power amplifier capable of operation below 144 MHz and intended for use in the CBRS. See § 2.815 of this chapter.

(b) *External frequency determining devices.* No person shall manufacture, import, sell or offer for sale, any add-on device, whether internal or external, the function of which is to extend the transmitting frequency capability of a CBRS transmitter beyond that allowed by §§ 95.963 and 95.965.

**Subpart E– General Mobile Radio Service**

## ADMINISTRATIVE RULES

**§ 95.1701 Scope.**

This subpart contains rules that apply only to the General Mobile Radio Service (GMRS).

**§ 95.1703 Definitions, GMRS.**

*General Mobile Radio Service (GMRS).* A mobile two-way voice communication service, with limited data applications, for facilitating activities of individual licensees and their family members, including, but not limited to, voluntary provision of assistance to the public during emergencies and natural disasters.

*Grandfathered GMRS license.* A GMRS license held by a non-individual person (*i.e.* a partnership, corporation, association or governmental unit) as a result of renewals of a GMRS license issued prior to July 31, 1987.

**§ 95.1705 Individual licenses required; eligibility; who may operate; cooperative use.**

A valid individual license is required to operate a GMRS station. To obtain an individual license, an applicant must be eligible and follow the applicable rules and procedures set forth in this subpart and in part 1 of this chapter, and must pay the required application and regulatory fees as set forth in part 1, subpart G of this chapter.

(a) *Eligibility.* This paragraph contains eligibility requirements for individual licenses in the GMRS.

(1) Only an individual who is at least 18 years old and who meets the requirements of § 95.305 is eligible to obtain a new individual GMRS license.

(2) Any person that holds a valid individual license is eligible to obtain a renewed license, or a modified license to reflect a change of name or address.

(b) *Individual licensee responsibility.* The holder of an individual license to operate GMRS stations is responsible at all times for the proper operation of the stations in compliance with all applicable rules in this part.

(c) *Individuals who may operate a GMRS station.* This paragraph establishes who may

operate a GMRS station under the authority of an individual license.

(1) Any individual who holds an individual license may operate his or her GMRS stations.

(2) Any individual who holds an individual license may allow his or her immediate family members to operate his or her GMRS station or stations. Immediate family members are the licensee's spouse, children, grandchildren, stepchildren, parents, grandparents, stepparents, brothers, sisters, aunts, uncles, nieces, nephews and in-laws.

(3) Any individual who holds an individual license may allow anyone to operate his or her GMRS station if necessary to communicate an emergency message.

(4) Any non-individual person that holds a grandfathered GMRS license may allow individuals to operate its grandfathered GMRS station(s) only in accordance with the following paragraphs:

(i) A partnership may allow its partners and employees to operate its GMRS station(s).

(ii) A corporation may allow its officers, directors, members and employees to operate its GMRS station(s).

(iii) An association may allow its members and employees to operate its GMRS station(s).

(iv) A governmental unit may allow its employees to operate its GMRS station(s).

(d) *Individual licensee duties.* The holder of an individual license:

(1) Shall determine specifically which individuals, including family members, are allowed to operate (*i.e.* exercise operational control over) its GMRS station(s) (*see* paragraph (c));

(2) May allow any person to use (*i.e.* benefit from the operation of) its GMRS repeater, or alternatively, may limit the use of its GMRS repeater to specific persons;

(3) May disallow the use of its GMRS repeater by specific persons as may be necessary to carry out its responsibilities under this section.

(e) *Individual license term.* Each individual license in the GMRS will normally have a term of

ten years from the date of grant or renewal, and may be renewed pursuant to the procedures in part 1 of this chapter. The FCC may grant a shorter license term at renewal as a sanction for violation of the FCC rules.

(f) *Cooperative use of GMRS stations.* GMRS licensees may share the use of their stations with other persons eligible in the GMRS, subject to the conditions and limitations in this paragraph.

(1) The GMRS station to be shared must be individually owned by the licensee, jointly owned by the participants and the licensee, leased individually by the licensee, or leased jointly by the participants and the licensee.

(2) The licensee must maintain access to and control over all stations authorized under its license.

(3) A station may be shared only:

(i) Without charge;

(ii) On a non-profit basis, with contributions to capital and operating expenses including the cost of mobile stations and paging receivers prorated equitably among all participants; or

(iii) On a reciprocal basis, *i.e.*, use of one licensee's stations for the use of another licensee's stations without charge for either capital or operating expenses.

(4) All sharing arrangements must be conducted in accordance with a written agreement to be kept as part of the station records.

(g) *Limitations on grandfathered GMRS licenses.* GMRS licenses that were issued prior to July 31, 1987 authorized GMRS station operation at specified locations, on specified channels, and with specified antenna height and transmitter power. Grandfathered GMRS licenses authorize only continued operation of those specific stations by these licensees, at the specified locations, channels, antenna heights and transmitting power. The FCC does not accept applications to modify, assign or transfer grandfathered GMRS licenses (other than administrative updates to change contact information).

#### § 95.1723 GMRS station inspection.

If an authorized FCC representative requests to inspect a GMRS station, the operator must make

the station and any station records available for inspection.

(a) A GMRS station includes all of the equipment used in connection with that station.

(b) Station records include the following documents, as applicable:

(1) A copy of each response to an FCC violation notice or an FCC letter.

(2) Each written permission received from the FCC.

(3) Any written agreement regarding sharing arrangements pursuant to § 95.1705(f)(4) of this part.

#### OPERATING RULES

#### § 95.1731 Permissible GMRS uses.

The operator of a GMRS station may use that station for two-way plain language voice communications with other GMRS stations and with FRS units concerning personal or business activities.

(a) *Emergency communications.* Any GMRS channel may be used for emergency communications or for traveler assistance. Operators of GMRS stations must, at all times and on all channels, give priority to emergency communications.

(b) *One-way communications.* The operator of a GMRS station may use that station to transmit one-way communications:

(1) To call for help or transmit other emergency communications;

(2) To provide warnings of hazardous road conditions to travelers; or,

(3) To make brief test transmissions.

(c) *Travelers assistance.* The operator of a GMRS station may transmit communications necessary to assist a traveler to reach a destination or to receive necessary services.

(d) *Digital data.* GMRS hand-held portable units may transmit digital data containing location information, or requesting location information from one or more other GMRS or FRS units, or containing a brief text message to another specific GMRS or FRS unit.

**§ 95.1733 Prohibited GMRS uses.**

(a) In addition to the prohibited uses outlined in § 95.333 of this chapter, GMRS stations must not communicate:

- (1) Messages in connection with any activity which is against Federal, State, or local law;
- (2) False or deceptive messages;
- (3) Coded messages or messages with hidden meanings (“10 codes” are permissible);
- (4) Music, whistling, sound effects or material to amuse or entertain;
- (5) Advertisements or offers for the sale of goods or services;
- (6) Advertisements for a political candidate or political campaign (messages about the campaign business may be communicated);
- (7) International distress signals, such as the word “Mayday” (except when on a ship, aircraft or other vehicle in immediate danger to ask for help);
- (8) Messages which are both conveyed by a wireline control link and transmitted by a GMRS station;
- (9) Messages (except emergency messages) to any station in the Amateur Radio Service, to any unauthorized station, or to any foreign station;
- (10) Continuous or uninterrupted transmissions, except for communications involving the immediate safety of life or property; and
- (11) Messages for public address systems.
- (12) The provision of § 95.333 apply, however, if the licensee is a corporation and the license so indicates, it may use its GMRS system to furnish non-profit radio communication service to its parent corporation, to another subsidiary of the same parent, or to its own subsidiary.

(b) GMRS stations must not be used for one-way communications other than those listed in § 95.1731(b). Initial transmissions to establish two-way communications and data transmissions listed in § 95.1731(d) are not considered to be one-way communications for the purposes of this section.

**§ 95.1741 GMRS antenna height limits.**

GMRS station antennas must meet the requirements in § 95.317 regarding menaces to air navigation. *See* § 95.317 and consult Part 17 of the FCC’s Rules for more information.

**§ 95.1743 Minor GMRS operators.**

Operators under the age of 18 will not be held personally responsible, pursuant to § 95.343, for improper operation of a GMRS repeater or base station. The holder of the individual license under which the minor operates is solely responsible for any improper operation that occurs while an individual under the age of 18 is operating the station.

**§ 95.1745 GMRS remote control.**

Notwithstanding the prohibition in § 95.345, GMRS repeater, base and fixed stations may be operated by remote control.

**§ 95.1747 GMRS automatic control.**

Notwithstanding the prohibition in § 95.347, GMRS repeater stations may be operated by automatic control.

**§ 95.1749 GMRS network connection.**

Operation of a GMRS station with a telephone connection is prohibited, as in § 95.349. GMRS repeater, base and fixed stations, however, may be connected to the public switched network or other networks for the sole purpose of operation by remote control pursuant to § 95.1745.

**§ 95.1751 GMRS station identification.**

Each GMRS station must be identified by transmission of its FCC-assigned call sign at the end of transmissions and at periodic intervals during transmissions except as provided in paragraph (c) of this section. A unit number may be included after the call sign in the identification.

(a) The GMRS station call sign must be transmitted:

- (1) Following a single transmission or a series of transmissions; and,
- (2) After 15 minutes and at least once every 15 minutes thereafter during a series of transmissions lasting more than 15 minutes.

(b) The call sign must be transmitted using voice in the English language or international Morse code telegraphy using an audible tone.

(c) Any GMRS repeater station is not required to transmit station identification if:

(1) It retransmits only communications from GMRS stations operating under authority of the individual license under which it operates; and,

(2) The GMRS stations whose communications are retransmitted are properly identified in accordance with this section.

#### TECHNICAL RULES

#### § 95.1761 GMRS transmitter certification.

(a) Each GMRS transmitter (a transmitter that operates or is intended to operate in the GMRS) must be certified in accordance with this subpart and part 2 of this chapter.

(b) A grant of equipment certification for the GMRS will not be issued for any GMRS transmitter type that fails to comply with the applicable rules in this subpart.

(c) No GMRS transmitter will be certified for use in the GMRS if it is equipped with a frequency capability not listed in § 95.1763, unless such transmitter is also certified for use in another radio service for which the frequency is authorized and for which certification is also required. No GMRS transmitter will be certified for use in the GMRS if it is equipped with the capabilities to operate in services that do not require equipment certification, such as the Amateur Radio Service. All frequency determining circuitry (including crystals) and programming controls in each GMRS transmitter must be internal to the transmitter and must not be accessible from the exterior of the transmitter operating panel or from the exterior of the transmitter enclosure.

(d) Effective [INSERT DATE 90 DAYS AFTER THE EFFECTIVE DATE OF RULES ADOPTED IN THIS REPORT AND ORDER], the Commission will no longer issue a grant of equipment authorization for hand-held portable unit transmitter types under both this subpart (GMRS) and subpart B of this part (FRS).

(e) Effective [INSERT DATE 90 DAYS AFTER EFFECTIVE DATE OF RULES ADOPTED IN

THIS REPORT AND ORDER], the Commission will no longer issue a grant of equipment authorization under this subpart (GMRS) for hand-held portable units if such units meet the requirements to be certified under subpart B of this part (FRS).

#### § 95.1763 GMRS channels.

The GMRS is allotted 30 channels -- 16 main channels and 14 interstitial channels. GMRS stations may transmit on any of the channels as indicated below.

(a) *462 MHz main channels.* Only mobile, hand-held portable, repeater, base and fixed stations may transmit on these 8 channels. The channel center frequencies are: 462.5500, 462.5750, 462.6000, 462.6250, 462.6500, 462.6750, 462.7000 and 462.7250 MHz.

(b) *462 MHz interstitial channels.* Only mobile, hand-held portable and base stations may transmit on these 7 channels. The channel center frequencies are: 462.5625, 462.5875, 462.6125, 462.6375, 462.6625, 462.6875, and 462.7125 MHz.

(c) *467 MHz main channels.* Only mobile, hand-held portable, control and fixed stations may transmit on these 8 channels. Mobile, hand-held portable and control stations may transmit on these channels only when communicating through a repeater station or making brief test transmissions in accordance with § 95.319(c). The channel center frequencies are: 467.5500, 467.5750, 467.6000, 467.6250, 467.6500, 467.6750, 467.7000 and 467.7250 MHz.

(d) *467 MHz interstitial channels.* Only hand-held portable units may transmit on these 7 channels. The channel center frequencies are: 467.5675, 467.5875, 467.6125, 467.6375, 467.6625, 467.6875, and 467.7125 MHz.

#### § 95.1765 GMRS frequency accuracy.

Each GMRS transmitter type must be designed to comply with the frequency accuracy requirements in this section under normal operating conditions. Operators of GMRS stations must also ensure compliance with these requirements.

(a) The carrier frequency of each GMRS transmitter transmitting an emission with an

occupied bandwidth greater than 12.5 kHz must remain within 5 parts-per-million (ppm) of the channel center frequencies listed in § 95.1763 under normal operating conditions.

(b) The carrier frequency of each GMRS transmitter transmitting an emission with an occupied bandwidth of 12.5 kHz or less must remain within 2.5 ppm of the channel center frequencies listed in § 95.1763 under normal operating conditions.

#### § 95.1767 GMRS transmitting power limits.

This section contains transmitting power limits for GMRS stations. The maximum transmitting power depends on which channels are being used and the type of station.

(a) *462 / 467 MHz main channels.* The limits in this paragraph apply to stations transmitting on any of the 462 MHz main channels or any of the 467 MHz main channels. Each GMRS transmitter type must be capable of operating within the allowable power range. GMRS licensees are responsible for ensuring that their GMRS stations operate in compliance with these limits.

(1) The transmitter output power of mobile, repeater and base stations must not exceed 50 Watts.

(2) The transmitter output power of fixed stations must not exceed 15 Watts.

(b) *462 MHz interstitial channels.* The effective radiated power (ERP) of mobile, hand-held portable and base stations transmitting on the 462 MHz interstitial channels must not exceed 5 Watts.

(c) *467 MHz interstitial channels.* The effective radiated power (ERP) of hand-held portable units transmitting on the 467 MHz interstitial channels must not exceed 0.5 Watt. Each GMRS transmitter type capable of transmitting on these channels must be designed such that the ERP does not exceed 0.5 Watt.

#### § 95.1771 GMRS emission types.

Each GMRS transmitter type must be designed to satisfy the emission capability rules in this section. Operation of GMRS stations must also be in compliance with these rules.

(a) Each GMRS transmitter type must have the capability to transmit F3E or G3E emissions.

(b) Only emission types A1D, F1D, G1D, H1D, J1D, R1D, A3E, F3E, G3E, H3E, J3E, R3E, F2D, and G2D are authorized for use in the GMRS. Equipment for which certification is sought under this subpart may have capabilities to transmit other emission types intended for use in other services, provided that these emission types can be deactivated when the equipment is used in the GMRS.

#### § 95.1773 GMRS authorized bandwidths.

Each GMRS transmitter type must be designed such that the occupied bandwidth does not exceed the authorized bandwidth for the channels used. Operation of GMRS stations must also be in compliance with these requirements.

(a) *Main channels.* The authorized bandwidth is 20 kHz for GMRS transmitters operating on any of the 462 MHz main channels (*see* § 95.1763(a)) or any of the 467 MHz main channels (*see* § 95.1763(c)).

(b) *Interstitial channels.* The authorized bandwidth is 20 kHz for GMRS transmitters operating on any of the 462 MHz interstitial channels (*see* § 95.1763(b)) and is 12.5 kHz for GMRS transmitters operating on any of the 467 MHz interstitial channels (*see* § 95.1763(d)).

(c) *Digital data transmissions.* Digital data transmissions are limited to the 462 MHz main channels and interstitial channels in the 462 MHz and 467 MHz bands.

#### § 95.1775 GMRS modulation requirements.

Each GMRS transmitter type must be designed to satisfy the modulation requirements in this section. Operation of GMRS stations must also be in compliance with these requirements.

(a) *Main channels.* The peak frequency deviation for emissions to be transmitted on the main channels must not exceed  $\pm 5$  kHz.

(b) *462 MHz interstitial channels.* The peak frequency deviation for emissions to be transmitted on the 462 MHz interstitial channels must not exceed  $\pm 5$  kHz.

(c) *467 MHz interstitial channels.* The peak frequency deviation for emissions to be transmitted

on the 467 MHz interstitial channels must not exceed  $\pm 2.5$  kHz, and the highest audio frequency contributing substantially to modulation must not exceed 3.125 kHz.

(d) *Overmodulation.* Each GMRS transmitter type, except for a mobile station transmitter type with a transmitter power output of 2.5 W or less, must automatically prevent a higher than normal audio level from causing overmodulation.

(e) *Audio filter.* Each GMRS transmitter type must include audio frequency low pass filtering, unless it complies with the applicable paragraphs of § 95.1779 (without filtering).

(1) The filter must be between the modulation limiter and the modulated stage of the transmitter.

(2) At any frequency ( $f$  in kHz) between 3 and 20 kHz, the filter must have an attenuation of at least  $60 \log(f/3)$  dB more than the attenuation at 1 kHz. Above 20 kHz, it must have an attenuation of at least 50 dB more than the attenuation at 1 kHz.

**§ 95.1777 GMRS tone transmissions.**

In addition to audible and subaudible tones used for receiver squelch activation and selective calling, to establish or maintain communications with specific stations or to access repeater stations (see § 95.377), GMRS transmitters may also transmit audio tones for station identification (see § 95.1751).

**§ 95.1779 GMRS unwanted emissions limits.**

Each GMRS transmitter type must be designed to comply with the applicable unwanted emissions limits in this section.

(a) *Emission masks.* Emission masks applicable to transmitting equipment in the GMRS are defined by the requirements in the following table. The numbers in the attenuation requirements column refer to rule paragraph numbers under paragraph (b).

Emission Types Filter	Attenuation Requirements
A1D, A3E, F1D, G1D, F2D, F3E, G3E with audio filter.....	(1), (2), (7)

Emission Types Filter	Attenuation Requirements
A1D, A3E, F1D, G1D, F3E, G3E without audio filter..	(3), (4), (7)
H1D, J1D, R1D, H3E, J3E, R2E	(5), (6), (7)

(1) Filtering noted for GMRS transmitters refers to the requirement in § 95.1775(e).

(2) Unwanted emission power may be measured as either mean power or peak envelope power, provided that the transmitter output power is measured the same way.

(b) *Attenuation requirements.* The power of unwanted emissions must be attenuated below the transmitter output power in Watts (P) by at least:

(1) 25 dB (decibels) on any frequency removed from the center of the authorized bandwidth by more than 50% up to and including 100% of the authorized bandwidth.

(2) 35 dB on any frequency removed from the center of the authorized bandwidth by more than 100% up to and including 250% of the authorized bandwidth.

(3)  $83 \log(f_d \div 5)$  dB on any frequency removed from the center of the authorized bandwidth by a displacement frequency ( $f_d$  in kHz) of more than 5 kHz up to and including 10 kHz.

(4)  $116 \log(f_d \div 6.1)$  dB or  $50 + 10 \log(P)$  dB, whichever is the lesser attenuation, on any frequency removed from the center of the authorized bandwidth by a displacement frequency ( $f_d$  in kHz), of more than 10 kHz up to and including 250% of the authorized bandwidth.

(5) 25 dB on any frequency removed from the center of the authorized bandwidth by more than 50 % up to and including 150 % of the authorized bandwidth.

(6) 35 dB on any frequency removed from the center of the authorized bandwidth by more than 150 % up to and including 250 % of the authorized bandwidth.

(7)  $43 + 10 \log(P)$  dB on any frequency removed from the center of the authorized bandwidth by more than 250%.

(c) *Measurement bandwidths.* The power of unwanted emissions in the frequency bands specified in paragraphs (b)(1) through (b)(4) is measured with a reference bandwidth of 300 Hz. The power of unwanted emissions in the frequency range specified in paragraph (b)(5) is measured with a reference bandwidth of at least 30 kHz.

(d) *Measurement conditions.* The requirements in this section apply to each GMRS transmitter type both with and without the connection of permitted attachments, such as an external speaker, microphone, power cord and/or antenna.

#### **§ 95.1787 GMRS additional requirements.**

Each hand-held portable unit transmitter type submitted for certification under this subpart is subject to the rules in this section.

(a) *Digital data transmissions.* GMRS hand-held portable units that have the capability to transmit digital data must be designed to meet the following requirements.

(1) Digital data transmissions must only be initiated by a manual action by the operator, except that GMRS units may automatically respond with location data upon receiving an interrogation request from another GMRS or FRS unit.

(2) Digital data transmissions must not exceed one second in duration.

(3) Digital data transmissions must not be sent more frequently than one digital data transmission within a thirty-second period, except that a GMRS unit may automatically respond to more than one interrogation request received within a thirty-second period.

(4) The antenna must be a non-removable integral part of the GMRS unit.

(5) GMRS units must not be capable of transmitting digital data on the 467 MHz main channels.

#### MARKETING RULES

#### **§ 95.1791 Sales of GMRS/FRS combination radios prohibited.**

(a) Effective [INSERT DATE TWO YEARS AFTER THE EFFECTIVE DATE OF THE RULES ADOPTED IN THIS REPORT AND ORDER], no person shall be permitted to

manufacture or import, sell or offer for sale any radio equipment capable of operating under both this subpart (GMRS) and subpart B (FRS) of this chapter.

#### **Subpart F – 218-219 MHz Service**

##### **§ 95.1901 Scope.**

This subpart sets out the regulations governing the licensing and operation of a 218-219 MHz system. This subpart supplements part 1, subpart F of this chapter, which establishes the requirements and conditions under which commercial and private radio stations may be licensed and used in the Wireless Telecommunications Services. The provisions of this subpart contain additional pertinent information for current and prospective licensees specific to the 218-219 MHz Service.

##### **§ 95.1903 218-219MHz Service description.**

(a) The 218-219 MHz Service is authorized for system licensees to provide communication service to subscribers in a specific service area.

(b) The components of each 218-219 MHz Service system are its administrative apparatus, its response transmitter units (RTUs), and one or more cell transmitter stations (CTSs). RTUs may be used in any location within the service area. CTSs provide service from a fixed point, and certain CTSs must be individually licensed as part of a 218-219 MHz Service system. See § 95.1911.

(c) Each 218-219 MHz Service system service area is one of the cellular system service areas as defined by the Commission, unless modified pursuant to § 95.1923.

##### **§ 95.1905 Permissible communications.**

A 218-219 MHz Service system may provide any fixed or mobile communications service to subscribers within its service area on its assigned spectrum, consistent with the Commission's rules and the regulatory status of the system to provide services on a common carrier or private basis.

##### **§ 95.1907 Requesting regulatory status.**

(a) Authorizations for systems in the 218-219 MHz Service will be granted to provide services on



a common carrier basis or a private (non-common carrier and/or private internal-use) basis.

(1) *Initial applications.* An applicant will specify on FCC Form 601 if it is requesting authorizations to provide services on a common carrier, non-common carrier or private internal-use basis, or a combination thereof.

(2) *Amendment of pending applications.* Any pending application may be amended to:

(i) Change the carrier status requested; or

(ii) Add to the pending request in order to obtain both common carrier and private status in a single license.

(3) *Modification of license.* A licensee may modify a license to:

(i) Change the carrier status authorized; or

(ii) Add to the status authorized in order to obtain both common carrier and private status in a single license. Applications to change, or add to, carrier status in a license must be submitted on FCC Form 601 in accordance with § 1.1102 of this chapter.

(4) *Pre-existing licenses.* Licenses granted before April 9, 2001 are authorized to provide services on a private (non-common carrier) basis. Licensees may modify this initial status pursuant to paragraph (a)(3) of this section.

(b) An applicant or licensee may submit a petition at any time requesting clarification of the regulatory status required to provide a specific communications service.

#### SYSTEM LICENSE REQUIREMENTS

##### § 95.1911 License requirements.

(a) Each 218-219 MHz Service system must be licensed in accordance with part 1, subpart F of this chapter.

(b) Each CTS where the antenna does not exceed 6.1 meters (20 feet) above ground or an existing structure (other than an antenna structure) and is outside the vicinity of certain receiving locations (see § 1.924 of this chapter) is authorized under the 218-219 MHz System license. All other CTSs must be individually licensed.

(c) All CTSs not meeting the licensing criteria under paragraph (b) of this section are authorized under the 218-219 MHz Service system license.

(d) Each component RTU in a 218-219 MHz Service system is authorized under the system license or, if associated with an individually licensed CTS, under that CTS license.

(e) Each CTS (regardless of whether it is individually licensed) and each RTU must be in compliance with the Commission's environmental rules (see part 1, subpart I of this chapter) and the Commission's rules pertaining to the construction, marking and lighting of antenna structures (see part 17 of this chapter).

##### § 95.1912 License term.

(a) The term of each 218-219 MHz service system license is ten years from the date of original grant or renewal.

(b) Licenses for individually licensed CTSs will be issued for a period running concurrently with the license of the associated 218-219 MHz Service system with which it is licensed.

##### § 95.1913 Eligibility.

(a) An entity is eligible to hold a 218-219 MHz Service system license and its associated individual CTS licenses if:

(1) The entity is an individual who is not a representative of a foreign government; or

(2) The entity is a partnership and no partner is a representative of a foreign government; or

(3) The entity is a corporation organized under the laws of the United States of America; or

(4) The entity is a trust and no beneficiary is a representative of a foreign government.

(b) An entity that loses its 218-219 MHz Service authorization due to failure to meet the construction requirements specified in § 95.1933 of this part may not apply for a 218-219 MHz Service system license for three years from the date the Commission takes final action affirming that the 218-219 MHz Service license has been canceled.

##### § 95.1915 License application.

(a) In addition to the requirements of part 1, subpart F of this chapter, each application for a 218-219 MHz Service system license must include a plan analyzing the co- and adjacent channel interference potential of the proposed system, identifying methods being used to minimize this interference, and showing how the proposed system will meet the service requirements set forth in § 95.1931 of this part. This plan must be updated to reflect changes to the 218-219 MHz Service system design or construction.

(b) In addition to the requirements of part 1, subpart F of this chapter, each request by a 218-219 MHz Service system licensee to add, delete, or modify technical information of an individually licensed CTS (*see* § 95.1911(b) of this part) must include a description of the system after the proposed addition, deletion, or modifications, including the population in the service area, the number of component CTSs, and an explanation of how the system will satisfy the service requirements specified in § 95.1931 of this part.

#### **§ 95.1916 Competitive bidding proceedings.**

(a) Mutually exclusive initial applications for 218-219 MHz Service licenses are subject to competitive bidding. The general competitive bidding procedures set forth in part 1, subpart Q of this chapter will apply unless otherwise provided in this part.

(b) *Installment payments.* Eligible Licensees that elect resumption pursuant to Amendment of part 95 of the Commission's Rules to Provide Regulatory Flexibility in the 218-219 MHz Service, *Report and Order and Memorandum Opinion and Order*, FCC 99-239 (released September 10, 1999) may continue to participate in the installment payment program. Eligible Licensees are those that were current in installment payments (*i.e.* less than ninety days delinquent) as of March 16, 1998, or those that had properly filed grace period requests under the former installment payment rules. All unpaid interest from grant date through election date will be capitalized into the principal as of Election Day creating a new principal amount. Installment payments must be made on a quarterly basis. Installment payments will be calculated based on new principal amount as of Election Day and will fully amortize over the

remaining term of the license. The interest rate will equal the rate for five-year U.S. Treasury obligations at the grant date.

(c) *Eligibility for small business provisions.* (1) A small business is an entity that, together with its affiliates and controlling interests, has average gross revenues not to exceed \$15 million for the preceding three years.

(2) A very small business is an entity that, together with its affiliates and controlling interests, has average gross revenues not to exceed \$3 million for the preceding three years.

(d) *Bidding credits.* A winning bidder that qualifies as a small business, as defined in this subsection, or a consortium of small businesses may use the bidding credit specified in § 1.2110(f)(2)(ii) of this chapter. A winning bidder that qualifies as a very small business, as defined in this section, or a consortium of very small businesses may use the bidding credit specified in accordance with § 1.2110(f)(2)(i) of this chapter.

(e) Winning bidders in Auction No. 2, which took place on July 28-29, 1994, that, at the time of auction, met the qualifications under the Commission's rules then in effect, for small business status will receive a twenty-five percent bidding credit pursuant to Amendment of part 95 of the Commission's Rules to Provide Regulatory Flexibility in the 218-219 MHz Service, *Report and Order and Memorandum Opinion and Order*, FCC 99-239 (released September 10, 1999).

#### **§ 95.1919 License transferability.**

(a) A 218-219 MHz Service system license, together with all of its component CTS licenses, may be transferred, assigned, sold, or given away only in accordance with the provisions and procedures set forth in § 1.948 of this chapter. For licenses acquired through competitive bidding procedures (including licenses obtained in cases of no mutual exclusivity), designated entities must comply with §§ 1.2110 and 1.2111 of this chapter (*see* § 1.948(a)(3) of this chapter).

(b) If the transfer, assignment, sale, or gift of a license is approved, the new licensee is held to the construction requirements set forth in § 95.1933.

#### **§ 95.1923 Geographic partitioning and**

**spectrum disaggregation.**

(a) *Eligibility.* Parties seeking Commission approval of geographic partitioning or spectrum disaggregation of 218-219 MHz Service system licenses shall request an authorization for partial assignment of license pursuant to § 1.948 of this chapter.

(b) *Technical standards—(1) Partitioning.* In the case of partitioning, requests for authorization of partial assignment of a license must include, as attachments, a description of the partitioned service area and a calculation of the population of the partitioned service area and the licensed geographic service area. The partitioned service area shall be defined by coordinate points at every 3 seconds along the partitioned service area unless an FCC-recognized service area (*i.e.* Economic Areas) is utilized or county lines are followed. The geographic coordinates must be specified in degrees, minutes, and seconds, to the nearest second of latitude and longitude, and must be based upon the 1983 North American Datum (NAD83). In the case where an FCC-recognized service area or county lines are utilized, applicants need only list the specific area(s) (through use of FCC designations or county names) that constitute the partitioned area.

(2) *Disaggregation.* Spectrum maybe disaggregated in any amount.

(3) *Combined partitioning and disaggregation.* The Commission will consider requests for partial assignments of licenses that propose combinations of partitioning and disaggregation.

(c) *Provisions applicable to designated entities—*

(1) *Parties not qualified for installment payment plans.* (i) When a winning bidder (partitionor or disaggregator) that elected to pay for its license through an installment payment plan partitions its license or disaggregates spectrum to another party (partitioneer or disaggregatee) that would not qualify for an installment payment plan, or elects not to pay for its share of the license through installment payments, the outstanding principal balance owed by the partitionor or disaggregator shall be apportioned according to § 1.2111(e)(3) of this chapter. The partitionor or disaggregator is responsible for accrued and unpaid interest through and including the consummation date.

(ii) The partitioneer or disaggregatee shall, as a condition of the approval of the partial assignment application, pay its entire *pro rata* amount of the outstanding principal balance on or before the consummation date. Failure to meet this condition will result in cancellation of the grant of the partial assignment application.

(iii) The partitionor or disaggregator shall be permitted to continue to pay its *pro rata* share of the outstanding balance and, if applicable, shall receive loan documents evidencing the partitioning and disaggregation. The original interest rate, established pursuant to § 1.2110(g)(3)(i) of this chapter at the time of the grant of the initial license in the market, shall continue to be applied to the partitionor's or disaggregator's portion of the remaining government obligation.

(iv) A default on the partitionor's or disaggregator's payment obligation will affect only the partitionor's or disaggregator's portion of the market.

(2) Parties qualified for installment payment plans.

(i) Where both parties to a partitioning or disaggregation agreement qualify for installment payments, the partitioneer or disaggregatee will be permitted to make installment payments on its portion of the remaining government obligation.

(ii) Each party may be required, as a condition to approval of the partial assignment application, to execute loan documents agreeing to pay its *pro rata* portion of the outstanding principal balance due, as apportioned according to § 1.2111(e)(3) of this chapter, based upon the installment payment terms for which it qualifies under the rules. Failure by either party to meet this condition will result in the automatic cancellation of the grant of the partial assignment application. The interest rate, established pursuant to § 1.2110(f)(3)(i) of this chapter at the time of the grant of the initial license in the market, shall continue to be applied to both parties' portion of the balance due. Each party will receive a license for its portion of the partitioned market.

(iii) A default on an obligation will affect only that portion of the market area held by the defaulting party.

(d) *Construction requirements*—(1) *Partitioning*. Partial assignors and assignees for license partitioning have two options to meet construction requirements. Under the first option, the partitionor and partitionee would each certify that they will independently satisfy the applicable construction requirements set forth in § 95.1933 of this part for their respective partitioned areas. If either licensee failed to meet its requirement in § 95.1933 of this part, only the non-performing licensee's renewal application would be subject to dismissal. Under the second option, the partitionor certifies that it has met or will meet the requirement in § 95.1933 of this part for the entire market. If the partitionor fails to meet the requirement in § 95.1933 of this part, however, only its renewal application would be subject to forfeiture at renewal.

(2) *Disaggregation*. Partial assignors and assignees for license disaggregation have two options to meet construction requirements. Under the first option, the disaggregator and disaggregatee would certify that they each will share responsibility for meeting the applicable construction requirements set forth in § 95.1933 of this part for the geographic service area. If parties choose this option and either party fails to do so, both licenses would be subject to forfeiture at renewal. The second option would allow the parties to agree that either the disaggregator or the disaggregatee would be responsible for meeting the requirement in § 95.1933 of this part for the geographic service area. If parties choose this option, and the party responsible for meeting the construction requirement fails to do so, only the license of the non-performing party would be subject to forfeiture at renewal.

(3) All applications requesting partial assignments of license for partitioning or disaggregation must include the above-referenced certification as to which of the construction options is selected.

(4) Responsible parties must submit supporting documents showing compliance with the respective construction requirements within the relevant time periods set forth in § 95.1933 of this part.

#### SYSTEM REQUIREMENTS

##### § 95.1931 Service requirements.

Subject to the initial construction requirements of § 95.1933 of this subpart, each 218-219 MHz Service system license must demonstrate that it provides substantial service within the service area. Substantial service is defined as a service that is sound, favorable, and substantially above a level of service which might minimally warrant renewal.

##### § 95.1933 Construction requirements.

(a) Each 218-219 MHz Service licensee must make a showing of “substantial service” within ten years of the license grant. A “substantial service” assessment will be made at renewal pursuant to the provisions and procedures contained in § 1.949 of this chapter.

(b) Each 218-219 MHz Service licensee must file a report to inform the Commission of the service status of its system. The report must be labeled as an exhibit to the renewal application. At minimum, the report must include:

(1) A description of its current service in terms of geographic coverage and population served;

(2) An explanation of its record of expansion, including a timetable of new construction to meet changes in demand for service;

(3) A description of its investments in its 218-219 MHz Service systems;

(4) A list, including addresses, of all component CTSs constructed; and

(5) Copies of all FCC orders finding the licensee to have violated the Communications Act or any FCC rule or policy; and a list of any pending proceedings that relate to any matter described in this paragraph.

(c) Failure to demonstrate that substantial service is being provided in the service area will result in forfeiture of the license, and will result in the licensee's ineligibility to apply for 218-219 MHz Service licenses for three years from the date the Commission takes final action affirming that the 218-219 MHz Service license has been canceled pursuant to § 95.1913 of this part.

##### § 95.1935 Station identification.

No RTU or CTS is required to transmit a station identification announcement.

**§ 95.1937 Station inspection.**

Upon request by an authorized Commission representative, the 218-219 MHz Service system licensee must make any component CTS available for inspection.

## TEHCNICAL STANDARDS

**§ 95.1951 Certification.**

Each CTS and RTU transmitter must be certified for use in the 218-219 MHz Service in accordance with subpart J of part 2 of this chapter.

**§ 95.1953 Frequency segments.**

There are two frequency segments available for assignment to the 218-219 MHz Service in each service area. Frequency segment A is 218.000-218.500 MHz. Frequency segment B is 218.501-219.000 MHz.

**§ 95.1955 Transmitter effective radiated power limitation.**

The effective radiated power (ERP) of each CTS and RTU shall be limited to the minimum necessary for successful communications. No CTS or fixed RTU may transmit with an ERP exceeding 20 Watts. No mobile RTU may transmit with an ERP exceeding 4 Watts.

**§ 95.1957 Emission standards.**

(a) All transmissions by each CTS and by each RTU shall use an emission type that complies with the following standard for unnecessary radiation.

(b) All spurious and out-of-band emissions shall be attenuated:

(1) Zero dB on any frequency within the authorized frequency segment.

(2) At least 28 dB on any frequency removed from the midpoint of the assigned frequency segment by more than 250 kHz up to and including 750 kHz;

(3) At least 35 dB on any frequency removed from the midpoint of the assigned frequency segment by more than 750 kHz up to and including 1250 kHz;

(4) At least 43 plus 10 log (base 10) (mean power in Watts) dB on any frequency removed from the midpoint of the assigned frequency segment by more than 1250 kHz.

(c) When testing for certification, all measurements of unnecessary radiation are performed using a carrier frequency as close to the edge of the authorized frequency segment as the transmitter is designed to be capable of operating.

(d) The reference bandwidth of the instrumentation used to measure the emission power shall be 100 Hz for measuring emissions up to and including 250 kHz from the edge of the authorized frequency segment, and 10 kHz for measuring emissions more than 250 kHz from the edge of the authorized frequency segment. If a video filter is used, its bandwidth shall not be less than the reference bandwidth. The power level of the highest emission within the frequency segment, to which the attenuation is referenced, shall be remeasured for each change in reference bandwidth.

**§ 95.1959 Antennas.**

(a) The overall height from ground to topmost tip of the CTS antenna shall not exceed the height necessary to assure adequate service. Certain CTS antennas must be individually licensed to the 218-219 MHz System licensee (see § 95.1911(b) of this part). CTS antennas must also meet the requirements in § 95.317 regarding menaces to air navigation. See 47 C.F.R. § 95.317 and consult Part 17 of the FCC's Rules for more information.

(b) [Reserved]

(c) The RTU may be connected to an external antenna not more than 6.1 m (20 feet) above ground or above an existing man-made structure (other than an antenna structure). Connectors that are used to connect RTUs to an external antenna shall not be of the types generally known as "F-type" or "BNC type." Use of an external antenna is subject to § 95.1961.

**§ 95.1961 Interference.**

(a) When a 218-219 MHz Service system suffers harmful interference within its service area or causes harmful interference to another 218-219 MHz Service system, the licensees of both systems

must cooperate and resolve the problem by mutually satisfactory arrangements. If the licensees are unable to do so, the Commission may impose restrictions including, but not limited to, specifying the transmitter power, antenna height or area, duty cycle, or hours of operation for the stations concerned.

(b) The use of any frequency segment (or portion thereof) at a given geographical location may be denied when, in the judgment of the Commission, its use in that location is not in the public interest; the use of a frequency segment (or portion thereof) specified for the 218-219 MHz Service system may be restricted as to specified geographical areas, maximum power, or other operating conditions.

(c) A 218-219 MHz Service licensee must provide a copy of the plan required by § 95.1915 (a) of this part to every TV Channel 13 station whose Grade B predicted contour overlaps the licensed service area for the 218-219 MHz Service system. The 218-219 MHz Service licensee must send the plan to the TV Channel 13 licensee(s) within 10 days from the date the 218-219 MHz Service licensee submits the plan to the Commission, and the 218-219 MHz Service licensee must send updates to this plan to the TV Channel 13 licensee(s) within 10 days from the date that such updates are filed with the Commission pursuant to § 95.1915.

(d) Each 218-219 MHz Service system licensee must provide upon request, and install free of charge, an interference reduction device to any household within a TV Channel 13 station Grade B predicted contour that experiences interference due to a component CTS or RTU.

(e) Each 218-219 MHz Service system licensee must investigate and eliminate harmful interference to television broadcasting and reception, from its component CTSs and RTSs, within 30 days of the time it is notified in writing, by either an affected television station, an affected viewer, or the Commission, of an interference complaint. Should the licensee fail to eliminate the interference within the 30-day period, the CTS(s) or RTU(s) causing the problem(s) must discontinue operation.

(f) The boundary of the 218-219 MHz Service system, as defined in its authorization, is the limit

of interference protection for that 218-219 MHz Service system.

## Subpart G – Low Power Radio Service

### ADMINISTRATIVE RULES

#### § 95.2101 Scope.

This subpart contains rules that apply only to the Low Power Radio Service (LPRS).

#### § 95.2103 Definitions, LPRS.

*Automated maritime telecommunications system (AMTS).* An automatic maritime communications system administered under part 80 of this chapter.

*Individuals with disabilities.* Individuals with a physical or mental impairment that substantially limits one or more of the major life activities of such individuals. See Section 3(2)(A) of the Americans with Disabilities Act of 1990 (42 U.S.C. § 12102(2)(A)).

*Low Power Radio Service (LPRS).* A short-distance voice and data communication service for providing auditory assistance to persons with disabilities (and others), health care related communications, law enforcement tracking, and for certain other purposes.

#### § 95.2105 LPRS operator eligibility.

Subject to the requirements of §§ 95.305 and 95.307, any person is eligible to operate a station in the Low Power Radio Service, except that only a person that holds an AMTS license issued under part 80 of this chapter may operate an LPRS station for AMTS purposes (*see* § 95.2131(d)).

#### § 95.2109 Notification to affected TV stations required for AMTS use.

Prior to operating a LPRS transmitter with an AMTS, the AMTS licensee must notify, in writing, each television station that may be affected by such operations, as defined in § 80.215(h) of this chapter. The notification provided with the station's license application (under part 80 of this chapter) is sufficient to satisfy this requirement if no new television stations would be affected.

#### § 95.2125 LPRS interference.

Operation of LPRS stations must not cause harmful interference to the United States Air Force Space Surveillance system (operating in the

216.88–217.08 MHz frequency band) or to reception within the service contour of any type of DTV or TV Broadcast station operating on Channel 13.

OPERATING RULES

**§ 95.2131 Permissible LPRS uses.**

LPRS stations may be used to transmit voice, data, or tracking signals, as appropriate, to provide:

(a) Auditory assistance communications (including, but not limited to, applications such as assistive listening devices, audio description for the blind, and simultaneous language translation) for:

- (1) Individuals with disabilities;
- (2) Individuals who require language translation; or
- (3) Individuals who may otherwise benefit from auditory assistance communications in educational settings.

(b) Health care related communications for the ill;

(c) Law enforcement tracking signals (for homing or interrogation) including the tracking of persons or stolen goods under authority or agreement with a law enforcement agency (federal, state, or local) having jurisdiction in the area where the transmitters are placed;

(d) Point-to-point network control communications for AMTS licensed under part 80 of this chapter.

**§ 95.2133 Prohibited LPRS uses.**

LPRS stations must not be used for two-way voice communications.

**§ 95.2141 LPRS antenna height and directivity requirements.**

LPRS operators must ensure that their stations satisfy the antenna requirements in this section.

(a) For LPRS units where the antenna is an integral part of the unit, and for LPRS stations operating entirely within an enclosed structure, e.g., a building, there is no limit on antenna height.

(b) For all other LPRS units, the tip of the antenna must not exceed 30.5 meters (100 feet) above ground level. If harmful interference occurs,

the FCC may require that the LPRS station antenna height be reduced.

(c) Directional transmit antennas must be used for LPRS stations used with AMTS.

(d) LPRS antennas must also meet the requirements in § 95.317 regarding menaces to air navigation. See 47 C.F.R. § 95.317 and consult Part 17 of the FCC’s Rules for more information.

TECHNICAL RULES

**§ 95.2161 LPRS transmitter certification.**

(a) Each LPRS transmitter (a transmitter that operates or is intended to operate in the LPRS) must be certified in accordance with this subpart and part 2 of this chapter.

(b) A grant of equipment certification for the LPRS will not be issued for any LPRS transmitter type that fails to comply with all of the applicable rules in this subpart.

**§ 95.2163 LPRS channels.**

LPRS transmitters may operate on any channel listed in paragraphs (a), (b), and (c) of this section. Channels 19, 20, 50, and 151–160 are available exclusively for law enforcement tracking purposes. AMTS transmissions are limited to the 216.750–217.000 MHz frequency band for low power point-to-point network control communications by AMTS coast stations. Other AMTS transmissions in the 216–217 MHz frequency band are prohibited.

(a) *Standard band channels.* The following table lists the standard band channel numbers and corresponding center frequencies in Megahertz.

Channel No.	Center frequency (MHz)
1.....	216.0125
2.....	216.0375
3.....	216.0625
4.....	216.0875
5.....	216.1125
6.....	216.1375
7.....	216.1625
8.....	216.1875
9.....	216.2125
10.....	216.2375
11.....	216.2625
12.....	216.2875

Channel No.	Center frequency (MHz)
13.....	216.3125
14.....	216.3375
15.....	216.3625
16.....	216.3875
17.....	216.4125
18.....	216.4375
19.....	216.4625
20.....	216.4875
21.....	216.5125
22.....	216.5375
23.....	216.5625
24.....	216.5875
25.....	216.6125
26.....	216.6375
27.....	216.6625
28.....	216.6875
29.....	216.7125
30.....	216.7375
31.....	216.7625
32.....	216.7875
33.....	216.8125
34.....	216.8375
35.....	216.8625
36.....	216.8875
37.....	216.9125
38.....	216.9375
39.....	216.9625
40.....	216.9875

(b) *Extra band channels.* The following table lists the extra band channel numbers and corresponding center frequencies in Megahertz.

Channel No.	Center frequency (MHz)
41.....	216.025
42.....	216.075
43.....	216.125
44.....	216.175
45.....	216.225
46.....	216.275
47.....	216.325
48.....	216.375
49.....	216.425
50.....	216.475
51.....	216.525
52.....	216.575
53.....	216.625
54.....	216.675
55.....	216.725
56.....	216.775
57.....	216.825

Channel No.	Center frequency (MHz)
58.....	216.875
59.....	216.925
60.....	216.975

(c) *Narrowband channels.* The following table lists the narrowband channel numbers and corresponding center frequencies in Megahertz.

Channel No.	Center frequency (MHz)
61.....	216.0025
62.....	216.0075
63.....	216.0125
64.....	216.0175
65.....	216.0225
66.....	216.0275
67.....	216.0325
68.....	216.0375
69.....	216.0425
70.....	216.0475
71.....	216.0525
72.....	216.0575
73.....	216.0625
74.....	216.0675
75.....	216.0725
76.....	216.0775
77.....	216.0825
78.....	216.0875
79.....	216.0925
80.....	216.0975
81.....	216.1025
82.....	216.1075
83.....	216.1125
84.....	216.1175
85.....	216.1225
86.....	216.1275
87.....	216.1325
88.....	216.1375
89.....	216.1425
90.....	216.1475
91.....	216.1525
92.....	216.1575
93.....	216.1625
94.....	216.1675
95.....	216.1725
96.....	216.1775
97.....	216.1825
98.....	216.1875
99.....	216.1925
100.....	216.1975
101.....	216.2025
102.....	216.2075



Channel No.	Center frequency (MHz)	Channel No.	Center frequency (MHz)
103.....	216.2125	156.....	216.4775
104.....	216.2175	157.....	216.4825
105.....	216.2225	158.....	216.4875
106.....	216.2275	159.....	216.4925
107.....	216.2325	160.....	216.4975
108.....	216.2375	161.....	216.5025
109.....	216.2425	162.....	216.5075
110.....	216.2475	163.....	216.5125
111.....	216.2525	164.....	216.5175
112.....	216.2575	165.....	216.5225
113.....	216.2625	166.....	216.5275
114.....	216.2675	167.....	216.5325
115.....	216.2725	168.....	216.5375
116.....	216.2775	169.....	216.5425
117.....	216.2825	170.....	216.5475
118.....	216.2875	171.....	216.5525
119.....	216.2925	172.....	216.5575
120.....	216.2975	173.....	216.5625
121.....	216.3025	174.....	216.5675
122.....	216.3075	175.....	216.5725
123.....	216.3125	176.....	216.5775
124.....	216.3175	177.....	216.5825
125.....	216.3225	178.....	216.5875
126.....	216.3275	179.....	216.5925
127.....	216.3325	180.....	216.5975
128.....	216.3375	181.....	216.6025
129.....	216.3425	182.....	216.6075
130.....	216.3475	183.....	216.6125
131.....	216.3525	184.....	216.6175
132.....	216.3575	185.....	216.6225
133.....	216.3625	186.....	216.6275
134.....	216.3675	187.....	216.6325
135.....	216.3725	188.....	216.6375
136.....	216.3775	189.....	216.6425
137.....	216.3825	190.....	216.6475
138.....	216.3875	191.....	216.6525
139.....	216.3925	192.....	216.6575
140.....	216.3975	193.....	216.6625
141.....	216.4025	194.....	216.6675
142.....	216.4075	195.....	216.6725
143.....	216.4125	196.....	216.6775
144.....	216.4175	197.....	216.6825
145.....	216.4225	198.....	216.6875
146.....	216.4275	199.....	216.6925
147.....	216.4325	200.....	216.6975
148.....	216.4375	201.....	216.7025
149.....	216.4425	202.....	216.7075
150.....	216.4475	203.....	216.7125
151.....	216.4525	204.....	216.7175
152.....	216.4575	205.....	216.7225
153.....	216.4625	206.....	216.7275
154.....	216.4675	207.....	216.7325
155.....	216.4725	208.....	216.7375

Channel No.	Center frequency (MHz)
209.....	216.7425
210.....	216.7475
211.....	216.7525
212.....	216.7575
213.....	216.7625
214.....	216.7675
215.....	216.7725
216.....	216.7775
217.....	216.7825
218.....	216.7875
219.....	216.7925
220.....	216.7975
221.....	216.8025
222.....	216.8075
223.....	216.8125
224.....	216.8175
225.....	216.8225
226.....	216.8275
227.....	216.8325
228.....	216.8375
229.....	216.8425
230.....	216.8475
231.....	216.8525
232.....	216.8575
233.....	216.8625
234.....	216.8675
235.....	216.8725
236.....	216.8775
237.....	216.8825
238.....	216.8875
239.....	216.8925
240.....	216.8975
241.....	216.9025
242.....	216.9075
243.....	216.9125
244.....	216.9175
245.....	216.9225
246.....	216.9275
247.....	216.9325
248.....	216.9375
249.....	216.9425
250.....	216.9475
251.....	216.9525
252.....	216.9575
253.....	216.9625
254.....	216.9675
255.....	216.9725
256.....	216.9775
257.....	216.9825
258.....	216.9875
259.....	216.9925
260.....	216.9975

(d) LPRS stations operating as part of an AMTS may use the 216.750–217.000 MHz frequency range as a single 250 kHz bandwidth channel.

**§ 95.2165 LPRS frequency accuracy.**

Each LPRS transmitter type must be designed to satisfy the frequency accuracy requirements in this section.

(a) LPRS transmitters operating on standard band (25 kHz) or extra band (50 kHz) channels must be designed such that the carrier frequencies remain within  $\pm 50$  ppm of the channel center frequencies specified in § 95.2163(a) and (b), respectively, during normal operating conditions.

(b) LPRS transmitters operating on narrowband (5 kHz) channels must be designed such that the carrier frequencies remain within  $\pm 1.5$  ppm of the channel center frequencies specified in § 95.2163(c) during normal operating conditions.

**§ 95.2167 LPRS transmitting power.**

Each LPRS transmitter type not intended for use with an AMTS station must be designed to satisfy the transmitting power limits in paragraph (a) of this section. The licensee of each AMTS station is responsible for compliance with paragraph (b) of this section.

(a) The ERP of an LPRS transmitter, other than an LPRS transmitter used with an AMTS station, must not exceed 100 mW.

(b) The ERP of an LPRS transmitter used with an AMTS station must not exceed 1 Watt.

**§ 95.2173 LPRS authorized bandwidths.**

Each LPRS transmitter type must be designed such that the occupied bandwidth does not exceed the authorized bandwidth for the channel bandwidth used.

(a) The authorized bandwidth for emissions transmitted on the narrowband channels listed in § 95.2163(c) is 4 kHz.

(b) The occupied bandwidth for emissions transmitted on the standard band, extra band or AMTS channels listed in § 95.2163(a), (b), or (d), respectively, is limited through compliance with the unwanted emissions rule (§ 95.2179).

**§ 95.2179 LPRS unwanted emission limits.**

The requirements in this section apply to each LPRS transmitter type both with and without the connection of attachments, such as an external microphone, power cord and/or antenna.

(a) *Emission masks.* Emission masks applicable to transmitting equipment in the LPRS are defined by the requirements in the following table. The numbers in the paragraphs column refer to attenuation requirement rule paragraph numbers under paragraph (b) of this section.

Channels	Paragraphs
narrowband 5 kHz.....	(1), (2)
standard band 25 kHz...	(3), (4)
extra band 50 kHz.....	(5), (6)
AMTS 250 kHz.....	(7), (8)

(b) *Attenuation requirements.* The power of unwanted emissions must be attenuated below the transmitter output power in Watts (P) by at least:

(1)  $30 + 20(f_d - 2)$  dB,  $55 + 10 \log(P)$  dB, or 65 dB, whichever is the least attenuation, on any frequency removed from the center of the authorized bandwidth by a displacement frequency ( $f_d$ , in kHz) of more than 2 kHz, up to and including 3.75 kHz.

(2)  $55 + 10 \log(P)$  dB on any frequency removed from the center of the authorized bandwidth by more than 3.75 kHz.

(3) 30 dB on any frequency removed from the channel center frequency by 12.5 kHz to 22.5 kHz.

(4)  $43 + 10 \log(P)$  dB on any frequency removed from the channel center frequency by more than 22.5 kHz.

(5) 30 dB on any frequency removed from the channel center frequency by 25 kHz to 35 kHz.

(6)  $43 + 10 \log(P)$  dB on any frequency removed from the channel center frequency by more than 35 kHz.

(7) 30 dB on any frequency removed from the channel center frequency by 125 kHz to 135 kHz.

(8)  $43 + 10 \log(P)$  dB on any frequency removed from the channel center frequency by more than 135 kHz.

(c) *Measurement conditions and procedures.* The power of unwanted emissions in the frequency

bands specified in paragraphs (b)(1), (b)(3), (b)(5) and (b)(7) is measured with a reference bandwidth of 300 Hz. The power of unwanted emissions in the frequency ranges specified in paragraphs (b)(2), (b)(4), (b)(6) and (b)(8) is measured with a reference bandwidth of at least 30 kHz.

MARKETING RULES

**§ 95.2191 LPRS marketing limitations.**

Transmitters intended for operation in the LPRS may be marketed and sold only for those uses described in § 95.2131.

**§ 95.2193 LPRS labeling requirements.**

Each LPRS transmitting device must be labeled with the following statement in a conspicuous location on the device:

“This device may not interfere with TV reception or Federal Government radar.”

(a) Where the LPRS device is constructed in two or more sections connected by wire and marketed together, the statement specified in this section is required to be affixed only to the main control unit.

(b) When the LPRS device is so small or for such use that it is not practicable to place the statement specified in this section on it, the statement must be placed in a prominent location in the instruction manual or pamphlet supplied to the user or, alternatively, must be placed on the container in which the device is marketed.

**§ 95.2195 LPRS disclosures.**

Manufacturers of LPRS transmitters used for auditory assistance, health care assistance, and law enforcement tracking purposes must include with each transmitting device the following statement:

“This transmitter is authorized by rule under the Low Power Radio Service (47 C.F.R. Part 95) and must not cause harmful interference to TV reception or to the United States Air Force Space Surveillance System operating in the 216.88–217.08 MHz band. With the exception of automated maritime telecommunications system (AMTS) devices, you do not need an FCC license to operate this transmitter. This transmitter may only be used to provide: auditory assistance to persons with disabilities, persons who require language translation, or persons in educational

settings; health care services to the ill; law enforcement tracking services under agreement with a law enforcement agency; or AMTS network control communications. Two-way voice communications and all other types of uses not mentioned above are expressly prohibited.”

### **Subpart H – Wireless Medical Telemetry Service**

#### ADMINISTRATIVE RULES

#### **§ 95.2301 Scope.**

This subpart contains rules that apply only to the Wireless Medical Telemetry Service (WMTS) operating in the 608–614 MHz, 1395–1400 MHz and 1427–1432 MHz frequency bands.

#### **§ 95.2303 Definitions, WMTS.**

*Authorized health care provider.* A physician or other individual authorized under state or federal law to provide health care services, or any other health care facility operated by or employing individuals authorized under state or federal law to provide health care services, or any trained technician operating under the supervision and control of an individual or health care facility authorized under state or federal law to provide health care services.

*Health care facility.* A health care facility includes hospitals and other establishments that offer services, facilities and beds for use beyond a 24-hour period in rendering medical treatment, and institutions and organizations regularly engaged in providing medical services through clinics, public health facilities, and similar establishments, including government entities and agencies such as Veterans Administration hospitals; except the term health care facility does not include an ambulance or other moving vehicle.

*Wireless Medical Telemetry Service (WMTS).* A short-distance data communication service for the transmission of physiological parameters and other patient medical information via radiated electromagnetic signals.

*Wireless medical telemetry.* The measurement and recording of physiological parameters and other patient-related information via radiated bi-or unidirectional electromagnetic signals in the 608-

614 MHz, 1395-1400 MHz and 1427-1432 MHz frequency bands.

#### **§ 95.2305 WMTS operator eligibility.**

Only the following persons are eligible to operate transmitters in the Wireless Medical Telemetry Service:

(a) Authorized health care providers are eligible to operate transmitters in the WMTS without an individual license issued by the FCC provided the coordination requirements in § 95.2309 have been met.

(b) Manufacturers of wireless medical telemetry devices and their representatives are eligible to operate WMTS transmitters solely for the purpose of demonstrating such equipment to, or installing and maintaining such equipment for, authorized health care providers.

#### **§ 95.2309 WMTS frequency coordination.**

Operation of WMTS devices is subject to the frequency coordination procedures in this section.

(a) *Frequency coordinators.* The FCC designates one or more frequency coordinators to manage WMTS use of the frequency bands designated for the operation of WMTS devices.

(1) Contact information for the frequency coordinator can be obtained from the FCC’s website at: <https://www.fcc.gov/encyclopedia/wireless-medical-telemetry-service-wmts> or by calling the FCC at 1-888-CALL-FCC (1-888-225-5322).

(2) The duties of the frequency coordinators are to:

(i) Review and process coordination requests submitted by authorized health care providers as required by this section;

(ii) Maintain a database of WMTS use;

(iii) Notify users of potential conflicts;

(iv) Coordinate WMTS operation with radio astronomy observatories and Federal Government radar systems as specified in paragraphs (f) and (g).

(v) Notify licensees operating pursuant to § 90.259(b) of this chapter of the need to comply with the field strength limit of § 90.259(b)(11)

prior to initial activation of WMTS equipment in the 1427–1432 MHz band.

(vi) Notify licensees operating in the 1392–1395 MHz band (pursuant to subpart I of part 27 of this chapter) of the need to comply with the field strength limit of § 27.804 prior to initial activation of WMTS equipment in the 1395–1400 MHz band.

(b) *Initial registration.* Prior to first use of a WMTS device for wireless medical telemetry in a health care facility, the authorized health care provider shall register the device with a designated frequency coordinator. After April 14, 2010, no registrations may be accepted for frequencies where WMTS does not have primary status. Previously registered secondary facilities may continue to operate as registered.

(c) *Maintaining current information.* The authorized health care provider shall maintain the information contained in each registration current in all material respects, and shall notify the frequency coordinator when any material change is made in the location or operating parameters previously reported.

(d) *Discontinuation.* The authorized health care provider shall notify the frequency coordinator whenever a medical telemetry device is permanently taken out of service, unless the device is replaced with another transmitter utilizing the same technical characteristics as those reported on the effective registration.

(e) *Registration information.* Each registration includes the following information:

- (1) The specific frequency range(s);
- (2) The modulation scheme and/or emission type (including bandwidth);
- (3) The effective radiated power;
- (4) The number of WMTS devices in use at the health care facility as of the date of registration, including manufacturer name(s) and model numbers;
- (5) The legal name of the authorized health care provider;
- (6) The location of the WMTS device (e.g. coordinates, street address, building, as appropriate); and,

(7) Contact information for the authorized health care provider (e.g. name, title, office address, telephone number, fax number, e-mail address).

(f) *Specific requirements for WMTS devices in the 608–614 MHz frequency band.* For a wireless medical telemetry device operating within the frequency range 608–614 MHz that will be located near the radio astronomy observatories listed below, operation is not permitted until a WMTS frequency coordinator referenced in § 95.2309 has coordinated with, and obtained the written concurrence of, the director of the affected radio astronomy observatory before the equipment can be installed or operated--

(1) Within 80 kilometers of:

(i) National Astronomy and Ionosphere Center, Arecibo, Puerto Rico: 18°-20'-38.28" North Latitude, 66°-45'-09.42" West Longitude;

(ii) National Radio Astronomy Observatory, Socorro, New Mexico: 34°-04'-43" North Latitude, 107°-37'-04" West Longitude; or

(iii) National Radio Astronomy Observatory, Green Bank, West Virginia: 38°-26'-08" North Latitude, 79°-49'-42" West Longitude.

(2) Within 32 kilometers of any of the National Radio Astronomy Observatory (NRAO) facilities (Very Long Baseline Array Stations) centered on the following geographical coordinates:

NRAO Facilities	N. Lat.	W. Long.
Pie Town, NM.....	34°-18'	108°-07'
Kitt Peak, AZ.....	31°-57'	111°-37'
Los Alamos, NM.....	35°-47'	106°-15'
Fort Davis, TX.....	30°-38'	103°-57'
North Liberty, IA.....	41°-46'	91°-34'
Brewster, WA.....	48°-08'	119°-41'
Owens Valley, CA....	37°-14'	118°-17'
Saint Croix, VI.....	17°-46'	64°-35'
Mauna Kea, HI.....	19°-49'	155°-28'
Hancock, NH.....	42°-56'	71°-59'

(3) The National Science Foundation point of contact for coordination is:

Spectrum Manager  
 Division of Astronomical Sciences  
 NSF Room 1045  
 4201 Wilson Blvd.  
 Arlington, VA 22230  
 telephone: 703-292-8820.

(g) *Specific requirements for WMTS devices in the 1395–1400 and 1427–1432 MHz bands.* Due to the critical nature of communications transmitted under this part, the frequency coordinator in consultation with the National Telecommunications and Information Administration will determine whether there are any Federal Government systems whose operations could affect, or could be affected by, proposed WMTS operations in the 1395–1400 MHz and 1427–1432 MHz bands. The locations of government systems in these bands are specified in footnotes US351 and US352 of § 2.106 of this chapter.

#### § 95.2325 WMTS interference.

Authorized health care providers, in conjunction with the equipment manufacturers, must cooperate in the selection and use of frequencies in order to reduce the potential for interference with other wireless medical telemetry devices, or other co-primary users. However, WMTS operations in the 608–614 MHz band are not entitled to protection from adjacent band interference from broadcast television stations transmitting on TV Channels 36 and 38.

#### OPERATING RULES

#### § 95.2331 Permissible WMTS uses.

WMTS transmitters are used to transmit wireless medical telemetry, on a unidirectional or bidirectional basis. All transmissions must be related to the provision of medical care.

#### § 95.2333 Prohibited WMTS uses.

Operators of WMTS transmitters must not use them for any purpose not set forth in § 95.2331 or in a manner prohibited in this section.

(a) WMTS transmitters must not be operated in moving vehicles, such as ambulances, even if the vehicles are associated with a health care facility.

(b) The operation of a wireless medical telemetry transmitter under this part is authorized anywhere within a health care facility provided the facility is located anywhere Personal Radio Service station operation is permitted under § 95.307 and § 95.309. Operation in any other area outside of such health care facilities is prohibited.

(c) WMTS transmitters must not be used to transmit voice or video communications. Medical waveforms, such as electrocardiograms, are not considered to be video for the purpose of this section.

#### § 95.2347 WMTS automatic control.

Notwithstanding the provisions of § 95.347, WMTS operations may be conducted under manual or automatic control.

#### § 95.2357 WMTS duration of transmissions.

WMTS operations may be conducted on a continuous basis, notwithstanding the provisions of § 95.357.

#### TECHNICAL RULES

#### § 95.2361 WMTS transmitter certification.

(a) WMTS transmitters (transmitters that operate or are intended to operate in the WTMS) must be certified in accordance with this subpart and the provisions of part 2, subpart J of this chapter.

(b) A grant of equipment certification for the WMTS will not be issued for any WMTS transmitter type that fails to comply with the applicable rules in this subpart.

#### § 95.2363 WMTS frequency bands and channels.

The channels listed in this section are allotted for shared use in the WMTS and channels will not be assigned for exclusive use of any entity.

(a) WMTS transmitter types must operate in one or more of these frequency bands:

- (1) 608–614 MHz (co-primary);
- (2) 1395–1400 MHz (co-primary); or,
- (3) 1427–1429.5 MHz (co-primary) and 1429.5–1432 MHz (secondary), except at the locations listed in § 90.259(b)(4) of this chapter where WMTS transmitters may operate in the 1429–1431.5 MHz frequency band on a primary basis and in the 1427–1429 MHz and 1431.5–1432 MHz bands on a secondary basis. *See* note US350 to the Table of Frequency Allocations in § 2.106 of this chapter for additional details.

(b) WMTS transmitter types utilizing broadband technologies (such as spread spectrum modulation) in the 608–614 MHz frequency band must be

capable of using one or more of the following 1.5 MHz bandwidth channels (a maximum of 6 MHz bandwidth). Such transmitter types must be designed to use the minimum number of channels necessary to avoid harmful interference to other WMTS devices.

608.0–609.5 MHz  
 609.5–611.0 MHz  
 611.0–612.5 MHz  
 612.5–614.0 MHz

(c) In the 1395-1400 MHz and 1427-1432 MHz bands, no specific channels are specified. Wireless medical telemetry devices may operate on any channel within the bands authorized for wireless medical telemetry use in this part.

#### **§ 95.2365 WMTS frequency accuracy.**

Manufacturers of wireless medical telemetry devices are responsible for ensuring frequency accuracy such that all emissions are maintained within the designated bands of operation under all of the manufacturer's specified conditions.

#### **§ 95.2369 WMTS field strength limits.**

Each WMTS transmitter type must satisfy the field strength limits in this section.

(a) For WMTS transmitter types operating in the 608–614 MHz band, the field strength of the transmitted signal must not exceed 200 mV/m, measured at a distance of 3 meters, using instrumentation with a CISPR quasi-peak detector.

(b) For WMTS transmitter types operating in the 1395–1400 MHz and 1427–1432 MHz bands, the field strength of the transmitted signal must not exceed 740 mV/m, measured at 3 meters, using instrumentation with an averaging detector and a 1 MHz reference bandwidth.

#### **§ 95.2379 WMTS unwanted emissions limits.**

Each WMTS transmitter type must be designed to comply with the requirements in this paragraph.

(a) Unwanted emissions on frequencies below 960 MHz must not exceed 200  $\mu$ V/m, measured at a distance of 3 meters using measuring instrumentation with a CISPR quasi-peak detector.

(b) Unwanted emissions on frequencies above 960 MHz must not exceed 500  $\mu$ V/m, measured at a distance of 3 meters using measuring equipment

with an averaging detector and a 1 MHz measurement bandwidth.

#### **§ 95.2385 WMTS RF exposure evaluation.**

Portable devices as defined in § 2.1093(b) of this chapter operating in the WMTS are subject to radio frequency radiation exposure requirements as specified in §§ 1.1307(b) and 2.1093 of this chapter. Applications for equipment authorization of WMTS devices must contain a statement confirming compliance with these requirements. Technical information showing the basis for this statement must be submitted to the Commission upon request.

#### MARKETING RULES

#### **§ 95.2393 WMTS labeling requirements.**

Each WMTS device must be labeled with the following statement: “Operation of this equipment requires the prior coordination with a frequency coordinator designated by the FCC for the Wireless Medical Telemetry Service.”

#### **§ 95.2395 WMTS disclosure.**

Manufacturers, installers and users of WMTS equipment are cautioned that the operation of this equipment could result in harmful interference to other nearby medical devices.

### **Subpart I – Medical Device Radio Communications Service**

#### ADMINISTRATIVE RULES

#### **§ 95.2501 Scope.**

This subpart contains rules that apply only to the Medical Device Radio Communications (MedRadio) Service.

#### **§ 95.2503 Definitions, MedRadio.**

*Duly authorized health care professional.* A physician or other individual authorized under state or federal law to provide health care services.

*Medical Body Area Network (MBAN).* An MBAN is a low power network consisting of a MedRadio programmer/control transmitter and one or more medical body-worn devices all of which transmit or receive non-voice data or related device control commands for the purpose of measuring and recording physiological parameters and other patient information or performing diagnostic or

therapeutic functions via radiated bi-directional or uni-directional electromagnetic signals

*Medical body-worn device.* Apparatus that is placed on or in close proximity to the human body (e.g., within a few centimeters) for the purpose of performing diagnostic or therapeutic functions.

*Medical body-worn transmitter.* A MedRadio transmitter intended to be placed on or in close proximity to the human body (e.g., within a few centimeters) used to facilitate communications with other medical communications devices for purposes of delivering medical therapy to a patient or collecting medical diagnostic information from a patient.

*Medical Device Radio Communications (Med-Radio) Service.* An ultra-low power radio service for the transmission of non-voice data for the purpose of facilitating diagnostic and/or therapeutic functions involving implanted and body-worn medical devices.

*Medical implant device.* Apparatus that is placed inside the human body for the purpose of performing diagnostic or therapeutic functions.

*Medical implant event.* An occurrence or the lack of an occurrence recognized by a medical implant device, or a duly authorized health care professional, that requires the transmission of data from a medical implant transmitter in order to protect the safety or well-being of the person in whom the medical implant transmitter has been implanted.

*Medical implant transmitter.* A MedRadio transmitter in which both the antenna and transmitter device are designed to operate within a human body for the purpose of facilitating communications from a medical implant device.

*Medical Micropower Network (MMN).* An ultra-low power wideband network consisting of a MedRadio programmer/control transmitter and medical implant transmitters, all of which transmit or receive non-voice data or related device control commands for the purpose of facilitating functional electric stimulation, a technique using electric currents to activate and monitor nerves and muscles.

*MedRadio channel.* Any continuous segment of spectrum that is equal to the MedRadio emission

bandwidth of the device with the largest bandwidth that is to participate in a MedRadio communications session.

*MedRadio communications session.* A collection of transmissions, that may or may not be continuous, between MedRadio system devices.

*MedRadio emission bandwidth.* The difference in frequency between the nearest points on either side of the carrier center frequency where the emission power is at least 20 dB below the maximum level of the modulated carrier power, measured using instrumentation employing a peak detector function and a resolution bandwidth approximately equal to 1% of the emission bandwidth.

*MedRadio equivalent isotropically radiated power (M-EIRP).* Antenna input power times gain for free-space or in-tissue measurement configurations required for MedRadio equipment, expressed in Watts, where the gain is referenced to an isotropic radiator.

*MedRadio programmer/control transmitter.* A MedRadio transmitter that operates or is designed to operate outside of a human body for the purpose of communicating with a receiver, or for triggering a transmitter, connected to a medical implant device or to a medical body-worn device used in the MedRadio Service; and which also typically includes a frequency monitoring system that initiates a MedRadio communications session.

#### **§ 95.2505 MedRadio operator eligibility.**

Only the following persons are eligible to operate transmitters in the MedRadio Service:

(a) Duly authorized health care professionals are permitted to operate MedRadio transmitters.

(b) Individuals may also operate MedRadio transmitters that they use at the direction of a duly authorized health care professional. This includes medical devices that have been implanted in or placed on the body of the individual by, or under the direction of, a duly authorized health care professional.

(c) Manufacturers of medical devices that include MedRadio transmitters, and their representatives, are eligible to operate MedRadio transmitters for the purpose of demonstrating such



equipment to duly authorized health care professionals.

**§ 95.2507 MBAN devices restricted to indoor operation within a health care facility.**

Use of Medical Body Area Network (MBAN) devices in the 2360–2390 MHz band is restricted to indoor operation within a health care facility registered with the MBAN frequency coordinator under § 95.2509. For the purposes of this subpart, health care facilities are limited to hospitals and other establishments, both Federal and non-Federal, that offer services, facilities and beds for use beyond a 24 hour period in rendering medical treatment.

**§ 95.2509 MBAN registration and frequency coordination.**

Operation of Medical Body Area Network (MBAN) devices is subject to the frequency coordination procedures in this section.

(a) The FCC will designate a frequency coordinator(s) to manage the operation of medical body area networks by eligible health care facilities.

(b) The frequency coordinator shall perform the following functions:

(1) Register health care facilities that operate MBAN transmitters, maintain a database of these MBAN transmitter locations and operational parameters, and provide the FCC with information contained in the database upon request;

(2) Determine if an MBAN is within line-of-sight of an Aeronautical Mobile Telemetry (AMT) receive facility in the 2360–2390 MHz band and coordinate MBAN operations with the designated AMT frequency coordinator, as specified in § 87.305 of this chapter;

(3) Notify a registered health care facility when an MBAN has to change frequency within the 2360–2390 MHz band or to cease operating in the band, consistent with a coordination agreement between the MBAN and AMT frequency coordinators;

(4) Develop procedures to ensure that registered health care facilities operate an MBAN consistent with the coordination requirements under this section; and,

(5) Identify the MBAN that is the source of interference in response to a complaint from the AMT coordinator and notify the health care facility of alternative frequencies available for MBAN use or to cease operation consistent with the rules.

(c) *Registration.* Prior to operating MBAN devices that are capable of operation in the 2360–2390 MHz band, a health care facility must register with a frequency coordinator designated under § 95.2509. Operation of MBAN devices in the 2360–2390 MHz band is prohibited prior to the MBAN coordinator notifying the health care facility that registration and coordination (to the extent coordination is required under paragraph (e)) is complete. The registration must include the following information:

(1) Specific frequencies or frequency range(s) within the 2360–2390 MHz band to be used, and the capabilities of the MBAN equipment to use the 2390–2400 MHz band;

(2) Equivalent isotropically radiated power;

(3) Number of MedRadio programmer/control transmitters in use at the health care facility as of the date of registration, including manufacturer name(s) and model number(s) and FCC identification number(s);

(4) Legal name of the health care facility;

(5) Location of MedRadio programmer/control transmitters (*e.g.*, geographic coordinates, street address, building);

(6) Point of contact for the health care facility (*e.g.*, name, title, office address, phone number, fax number, e-mail address); and,

(7) In the event that an MBAN has to cease operating in all or a portion of the 2360–2390 MHz band due to interference under § 95.2525 or changes in coordination under paragraph (e) of this section, a point of contact (including contractors) for the health care facility that is responsible for ensuring that this change is effected whenever it is required (*e.g.*, name, title, office address, phone number, fax number, e-mail address). The health care facility also must state whether, in such cases, its MBAN operation is capable of defaulting to the 2390–2400 MHz band and that it is responsible for ceasing MBAN operations in the 2360–2390 MHz band or defaulting traffic to other hospital systems.

(d) *Notification.* A health care facility shall notify the MBAN frequency coordinator whenever an MBAN programmer/control transmitter in the 2360–2390 MHz band is permanently taken out of service, unless it is replaced with transmitter(s) using the same technical characteristics as those reported on the health care facility’s registration, which will cover the replacement transmitter(s). A health care facility shall keep the information contained in each registration current and shall notify the MBAN frequency coordinator of any material change to the MBAN’s location or operating parameters. In the event that the health care facility proposes to change the MBAN’s location or operating parameters, the MBAN coordinator must first evaluate the proposed changes and comply with paragraph (e) of this section as appropriate before the health care facility may operate the MBAN in the 2360-2390 MHz band under changed operating parameters.

(e) *Coordination procedures.* The MBAN coordinator will determine if an MBAN is within the line-of-sight of an AMT receive facility in the 2360-2390 MHz band and notify the health care facility when it may begin MBAN operations under the applicable procedures below.

(1) If the MBAN is beyond the line-of-sight of an AMT receive facility, it may operate without prior coordination with the AMT coordinator, provided that the MBAN coordinator provides the AMT coordinator with the MBAN registration information and the AMT frequency coordinator concurs that the MBAN is beyond the line-of-sight prior to the MBAN beginning operations in the band.

(2) If the MBAN is within line-of-sight of an AMT receive facility, the MBAN coordinator shall achieve a mutually satisfactory coordination agreement with the AMT coordinator prior to the MBAN beginning operations in the band. Such coordination agreement shall provide protection to AMT receive stations consistent with International Telecommunication Union (ITU) Recommendation ITU-R M.1459, "Protection criteria for telemetry systems in the aeronautical mobile service and mitigation techniques to facilitate sharing with geostationary broadcasting-satellite and mobile-satellite services in the bands 1452 – 1525 and 2310 – 2360 MHz," adopted May 2000, as adjusted

using generally accepted engineering practices and standards that are mutually agreeable to both coordinators to take into account the local conditions and operating characteristics of the applicable AMT and MBAN facilities, and shall specify when the device shall limit its transmissions to segments of the 2360–2390 MHz band or must cease operation in the band. This ITU document is incorporated by reference in accordance with 5 U.S.C. § 552(a) and 1 CFR part 51 and approved by the Director of Federal Register. Copies of the recommendation may be obtained from ITU, Place des Nations, 1211 Geneva 20, Switzerland, or online at <http://www.itu.int/en/publications/Pages/default.aspx>. You may inspect a copy at the Federal Communications Commission, 445 12th Street, SW, Washington, DC 20554, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA call 202-741-6030 or go to [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html). “Generally accepted engineering practices and standards” include, but are not limited to, engineering analyses and measurement data as well as limiting MBAN operations in the band by time or frequency.

(3) If an AMT operator plans to operate a receive site not previously analyzed by the MBAN coordinator to determine line-of-sight to an MBAN facility, the AMT operator shall consider using locations that are beyond the line-of-sight of a registered health care facility. If the AMT operator determines that non-line-of-sight locations are not practical for its purposes, the AMT coordinator shall notify the MBAN coordinator upon no less than 7 days notice that the registered health care facility must cease MBAN operations in the 2360–2390 MHz band, unless the parties can achieve a mutually satisfactory coordination agreement under paragraph (e)(2) of this section.

(f) *Coordinator Functions.* The MBAN frequency coordinator shall:

(1) Provide registration and coordination of MBAN operations to all eligible health care facilities on a non-discriminatory basis;

(2) Provide MBAN registration and coordination services on a not-for-profit basis;

(3) Notify the FCC of its intent to no longer serve as frequency coordinator at least six months prior to ceasing to perform these functions; and

(4) Transfer the MBAN registration data in usable form to a frequency coordinator designated by the FCC if it ceases to be the coordinator.

#### **§ 95.2523 MedRadio transmitter inspection.**

Any non-implanted MedRadio transmitter must be made available for inspection upon request by an authorized FCC representative. Persons operating implanted or body-worn MedRadio transmitters shall cooperate reasonably with duly authorized FCC representatives in the resolution of interference.

#### **§ 95.2525 MedRadio interference.**

(a) To reduce interference and make the most efficient use of the authorized facilities, MedRadio transmitters must share the spectrum in accordance with § 95.2559.

(b) MedRadio operations must not cause harmful interference to, and must accept any interference from, stations operating in the 400.150–406.000 MHz band in the Meteorological Aids, Meteorological Satellite or Earth Exploration Satellite Services, and other authorized stations operating in the 413–419 MHz, 426–432 MHz, 438–444 MHz, 451–457 MHz and 2360–2400 MHz bands. MedRadio programmer/control transmitters must have the ability to operate in the presence of primary and secondary users in the 413–419 MHz, 426–432 MHz, 438–444 MHz, 451–457 MHz and 2360–2400 MHz bands.

### OPERATING RULES

#### **§ 95.2531 Permissible MedRadio uses.**

MedRadio programmer/control transmitters may be operated only for the uses set forth in this section.

(a) MedRadio programmer/control transmitters may transmit only non-voice data containing operational, diagnostic and therapeutic information associated with a medical implant device or medical body-worn device that has been implanted or placed on the person by or under the direction of a duly authorized health care professional.

(b) MedRadio programmer/control transmitters may be operated for the purposes of testing and

demonstrating MedRadio operation to health care professionals.

#### **§ 95.2533 Prohibited MedRadio uses.**

MedRadio Service transmitters must not be operated for uses other than those set forth in § 95.2531.

(a) Voice communications are prohibited in the MedRadio Service.

(b) MedRadio programmer/control transmitters may not be used to relay information in the 401–406 MHz band to a receiver that is not included with a medical implant or medical body-worn device. Wireless retransmission of information intended to be transmitted by a MedRadio programmer/control transmitter or information received from a medical implant or medical body-worn transmitter shall be performed using other radio services that operate in spectrum outside of the 401–406 MHz band.

(c) MedRadio programmer/control transmitters and medical implant transmitters may not be used to relay information in the 413–419 MHz, 426–432 MHz, 438–444 MHz, and 451–457 MHz bands to a receiver that is not a part of the same Medical Micropower Network (MMN). Wireless retransmission of information to a receiver that is not part of the same MMN must be performed using other radio services that operate in spectrum outside of the 413–419 MHz, 426–432 MHz, 438–444 MHz, and 451–457 MHz bands. Notwithstanding the above restrictions, a MedRadio programmer/control transmitter of an MMN may communicate with a MedRadio programmer/control transmitter of another MMN to coordinate transmissions, so as to avoid interference between the two MMNs.

(d) Medical body-worn transmitters may relay only information in the 2360–2400 MHz band to a MedRadio programmer/control transmitter or another medical body-worn transmitter device that is part of the same Medical Body Area Network (MBAN). A MedRadio programmer/control transmitter must not be used to relay information in the 2360–2400 MHz band to other MedRadio programmer/control transmitters. Wireless retransmission of all other information from an MBAN transmitter to a receiver that is not a part of the same MBAN shall be performed using other

radio services that operate in spectrum outside of the 2360–2400 MHz band. Notwithstanding the above restriction, a MedRadio programmer/control transmitter in the 2360-2400 MHz band may communicate with another MedRadio programmer/control transmitter in the 2360-2400 MHz band to coordinate transmissions so as to avoid interference between the two MBANs.

(e) Except as provided in § 95.2559(b), no MedRadio implant or body-worn transmitter shall transmit except in response to (i) a transmission from a MedRadio programmer/control transmitter or (ii) a non-radio frequency actuation signal generated by a device external to the body with respect to which device the MedRadio implant or body-worn transmitter is used.

**§ 95.2535 MedRadio equipment certification exception.**

Non-certified medical implant or medical body-worn transmitters that are not marketed for use in the United States, but which otherwise comply with the technical requirements in this subpart, may be used by individuals who travel to the United States.

**§ 95.2541 MedRadio outdoor antenna restrictions.**

The antenna for a MedRadio transmitter, other than a MedRadio transmitter operating in the 2390–2400 MHz band, must not be configured for permanent outdoor use. Furthermore, except for MedRadio operations in the 2390-2400 MHz band, any MedRadio antenna used outdoors must not be affixed to any structure for which the height to the tip of the antenna would exceed three meters (9.8 feet) above ground level.

**§ 95.2547 MedRadio automatic control.**

Notwithstanding the provisions of § 95.347, MedRadio transmitters may be operated under automatic control or manual control.

**§ 95.2549 MedRadio network connection.**

MedRadio programmer/control transmitters may be interconnected with other telecommunications systems including the public switched network.

**§ 95.2557 MedRadio duration of transmissions.**

For the purpose of facilitating MedRadio system operation during a MedRadio communications

session, the duration of transmissions is to be limited in accordance with this section.

(a) MedRadio transmitters may transmit in the 401–406 MHz band in accordance with the provisions of § 95.2559(a) for no more than 5 seconds without the communications of data.

(b) MedRadio transmitters may transmit in the 401–406 MHz band in accordance with the provisions of § 95.2559(b)(2) and § 95.2559(b)(3) for no more than 3.6 seconds in total within a one hour time period without the communications of data.

(c) MedRadio transmitters may transmit in the 401–406 MHz band in accordance with the provisions of § 95.2559(b)(4) for no more than 360 milliseconds in total within a one hour time period without the communications of data.

(d) MedRadio programmer/control transmitters operating in the 413-419 MHz, 426-432 MHz, 438-444 MHz, and 451-457 MHz bands shall not transmit with a duty cycle greater than 3 percent.

**§ 95.2559 MedRadio channel access requirements.**

To reduce interference and make the most effective use of the MedRadio frequency bands, MedRadio transmitter types must be designed to operate in accordance with the rules in this section.

(a) *Frequency monitoring in the 401–406 MHz band.* Except as provided in paragraph (b) below, all MedRadio programmer/control transmitters operating in the 401–406 MHz band must operate under the control of a monitoring system that incorporates a mechanism for monitoring the channel or channels that the MedRadio system devices intend to occupy. The monitoring system antenna shall be the antenna normally used by the programmer/control transmitter for a MedRadio communications session. Before the monitoring system of a programmer/control transmitter initiates a MedRadio communications session, the following access criteria must be met:

(1) The monitoring system bandwidth, measured at its 20 dB down points, must be equal to or greater than the MedRadio emission bandwidth of the intended transmission.

(2) Within 5 seconds prior to initiating a MedRadio communications session, circuitry associated with a MedRadio programmer/control transmitter must monitor the channel or channels the system devices intend to occupy for a minimum of 10 milliseconds per channel.

(3) The monitoring threshold power level,  $P_{MT}$ , in dBm, is calculated using the following formula.

$$P_{MT} = 10 \log B - 150 \text{ (dBm/Hz)} + G$$

where:

(i) B is the MedRadio emission bandwidth in Hertz of the MedRadio communications session transmitter having the widest emission; and,

(ii) G is the MedRadio programmer/control transmitter monitoring system antenna gain, in decibels, relative to the gain of an isotropic antenna (dBi).

(4) For the purposes of showing compliance with the above provisions, the above calculated threshold power level must be increased or decreased by an amount equal to the monitoring system antenna gain above or below the gain of an isotropic antenna, respectively.

(5) If no signal above the monitoring threshold power level is detected in a MedRadio channel, the MedRadio programmer/control transmitter may initiate on that channel a MedRadio communications session involving transmissions to and from a medical implant or medical body-worn device. The MedRadio communications session may continue as long as any silent period between consecutive data transmission bursts does not exceed 5 seconds. If no channel meeting the requirements in paragraphs (a)(3) and (a)(4) of this section is available, MedRadio transmitters that are capable of operating on multiple channels may transmit on the alternate channel accessible by the device with the lowest monitored ambient power level.

(6) When a channel is selected prior to a MedRadio communications session, it is permissible to select an alternate authorized channel for use if communications are interrupted, provided that the alternate channel selected is the next best choice using the above criteria. The alternate channel may be accessed in the event a communications session

is interrupted by interference. The following criteria must be met:

(i) Before transmitting on the alternate channel, the channel must be monitored for a period of at least 10 milliseconds.

(ii) The detected power level during this 10 millisecond or greater monitoring period must be no higher than 6 dB above the power level detected when the channel was chosen as the alternate channel.

(iii) In the event that this alternate channel provision is not used by the MedRadio system, or if the criteria in sub-paragraphs (i) and (ii) above are not met, any alternate authorized channel must be selected using the access criteria specified in paragraphs (a)(1) through (a)(5) of this section.

(7) Except as provided in paragraph (b) of this section, MedRadio transmitters that operate on a single channel and thus do not have the capability of operating on alternate channels may not transmit unless no signal on the single channel of operation exceeds the monitoring threshold power level.

(b) *Exceptions to frequency monitoring in the 401–406 MHz band.* MedRadio devices or communications sessions that meet any one of the following criteria are not required to be operated in accordance with the access rules set forth in paragraph (a) of this section:

(1) MedRadio communications sessions that are initiated by a medical implant event.

(2) MedRadio devices operating in either the 401–401.85 MHz or 405–406 MHz bands, provided that the transmit power is not greater than 250 nanowatts EIRP and the duty cycle for such transmissions does not exceed 0.1 %, based on the total transmission time during a one-hour interval, and a maximum of 100 transmissions per hour.

(3) MedRadio devices operating in the 401.85–402 MHz band, provided that the transmit power is not greater than 25 microwatts EIRP and the duty cycle for such transmissions does not exceed 0.1%, based on the total transmission time during a one-hour interval, and a maximum of 100 transmissions per hour.

(4) MedRadio devices operating with a total emission bandwidth not exceeding 300 kHz,

centered at 403.65 MHz, provided that the transmit power is not greater than 100 nanowatts EIRP and the duty cycle for such transmissions does not exceed 0.01 %, based on the total transmission time during a one-hour interval and a maximum of 10 transmissions per hour.

(c) *Shared access.* The provisions of this section shall not be used to extend the range of spectrum occupied over space or time for the purpose of denying fair access to spectrum for other MedRadio systems.

(d) *Frequency monitoring in the 413–419 MHz, 426–432 MHz, 438–444 MHz, and 451–457 MHz bands.* MedRadio programmer/control transmitters must incorporate a mechanism for monitoring the authorized bandwidth of the frequency band that the MedRadio transmitters intend to occupy. The monitoring system antenna shall be the same antenna used by the programmer/control transmitter for a communications session.

(1) The MedRadio programmer/control transmitter shall be capable of monitoring any occupied frequency band at least once every second and monitoring alternate frequency bands within two seconds prior to executing a change to an alternate frequency band.

(2) The MedRadio programmer/control transmitter shall move to another authorized frequency band within one second of detecting a persistent (*i.e.*, lasting more than 50 milliseconds) signal level greater than –60 dBm as received by a 0 dBi gain antenna in any 12.5 kHz bandwidth within the authorized bandwidth.

(3) The MedRadio programmer/control transmitter shall be capable of monitoring the authorized bandwidth of the occupied frequency band to determine whether either direction of the communications link is becoming degraded to the extent that communications is likely to be lost for more than 45 milliseconds. Upon making such a determination the MedRadio programmer/control transmitter shall move to another authorized frequency band.

(e) *System shutdown.* MedRadio transmitters shall incorporate a programmable means to implement a system shutdown process in the event of communication failure, on command from the MedRadio programmer/control transmitter, or

when no authorized alternate frequency band is available. The shutdown process shall commence within 45 milliseconds after loss of the communication link or receipt of the shutdown command from the MedRadio programmer/control transmitter. This requirement does not apply to MedRadio operations in the 401–406 MHz band.

(f) *Requirements for MBAN Networks.* A MedRadio programmer/control transmitter and its associated medical body-worn transmitters shall not commence operating in, and shall automatically cease operating in, the 2360–2390 MHz band if the programmer/control transmitter does not receive, in accordance with the protocols specified by the manufacturer, a control message permitting such operation. Medical body-worn transmitters shall cease operating in 2360–2390 MHz if they lose communication with their associated programmer/control transmitter. Additionally, a MedRadio programmer/control transmitter and its associated medical body-worn transmitters operating in the 2360–2390 MHz band shall comply with a control message that notifies the devices to limit transmissions to segments of the 2360–2390 MHz band or to cease operation in the band.

#### TECHNICAL RULES

##### **§ 95.2561 MedRadio transmitter certification.**

(a) Except as provided § 95.2535, each MedRadio transmitter (a transmitter that operates or is intended to operate as a station in the MedRadio Service) must be certified in accordance with this subpart and part 2 of this chapter.

(b) A grant of equipment certification for the MedRadio Service will not be issued for any MedRadio transmitter type that fails to comply with all of the applicable rules in this subpart.

##### **§ 95.2563 MedRadio frequency bands.**

MedRadio transmitters operate in the 401–406 MHz, 413–419 MHz, 426–432 MHz, 438–444 MHz, 451–457 MHz and 2360–2400 MHz bands. The FCC does not specify a channeling scheme for MedRadio systems.

(a) MedRadio transmitters associated with medical implant devices, which incorporate a frequency monitoring system as set forth in

§ 95.2559(a), may transmit on any frequency in the 401–406 MHz band.

(b) MedRadio transmitters associated with medical implant devices, which do not incorporate a frequency monitoring system as set forth in § 95.2559(a), may transmit on any frequency in the 401–402 MHz or 405–406 MHz bands, or on the frequency 403.65 MHz in the 402–405 MHz band.

(c) MedRadio transmitters associated with medical body-worn devices, regardless of whether a frequency monitoring system as set forth in § 95.2559(a) is employed, may transmit on any frequency in the 401–402 MHz or 405–406 MHz bands.

(d) MedRadio transmitters that are used externally to evaluate the efficacy of a more permanent medical implant device, regardless of whether a frequency monitoring system as set forth in § 95.2559(a) is employed, may operate on any frequency in the 402–405 MHz band, provided that:

(1) Such external body-worn operation is limited solely to evaluating with a patient the efficacy of a fully implanted permanent medical device that is intended to replace the temporary body-worn device;

(2) RF transmissions from the external device must cease following the patient evaluation period, which may not exceed 30 days, except where a health care practitioner determines that additional time is necessary due to unforeseen circumstances;

(3) The maximum output power of the temporary body-worn device must not exceed 200 nW EIRP; and

(4) The temporary body-worn device must comply fully with all other MedRadio rules applicable to medical implant device operation in the 402–405 MHz band.

(e) Only MedRadio transmitters that are part of a Medical Micropower Network (MMN) may operate in the 413–419 MHz, 426–432 MHz, 438–444 MHz, and 451–457 MHz bands. Each MedRadio transmitter that is part of an MMN must be capable of operating in each of the following bands: 413–419 MHz, 426–432 MHz, 438–444 MHz and 451–457 MHz. All MedRadio

transmitters that are part of a single MMN must operate in the same band.

(f) Only MedRadio transmitters that are part of a Medical Body Area Network (MBAN) may operate in the 2360–2400 MHz band.

#### § 95.2565 MedRadio frequency accuracy.

Each MedRadio transmitter type must be designed to maintain a frequency stability of  $\pm 100$  ppm of the operating frequency over the applicable temperature range set forth in this section. Frequency stability testing shall be performed over the appropriate temperature range.

(a) 25°C to 45°C in the case of medical implant transmitters; and

(b) 0°C to 55°C in the case of MedRadio programmer/control transmitters and medical body-worn transmitters.

#### § 95.2567 MedRadio radiated power limits.

Each MedRadio transmitter type must be designed such that the MedRadio equivalent isotropically radiated power (M-EIRP) does not exceed the limits in this section. Compliance with these limits must be determined as set forth in § 95.2569.

(a) *Transmitters subject to frequency monitoring – 401–406 MHz.* For MedRadio transmitters that are not excepted under § 95.2559(b) from the frequency monitoring requirements of § 95.2559(a):

(1) The M-EIRP within any 300 kHz bandwidth within the 402–405 MHz band must not exceed 25 microwatts.

(2) The M-EIRP within any 100 kHz bandwidth within the 401–402 MHz or 405–406 MHz bands must not exceed 25 microwatts.

(b) *Transmitters excepted from frequency monitoring – 401–402 MHz and 405–406 MHz.* For MedRadio transmitters that are excepted under § 95.2559(b)(2) or § 95.2559(b)(3) from the frequency monitoring requirements of § 95.2559(a):

(1) The M-EIRP of any transmitter operating in the 401–401.85 MHz or 405–406 MHz bands must not exceed 250 nanowatts in any 100 kHz bandwidth.

(2) The M-EIRP of any transmitter operating in the 401.85–402 MHz band must not exceed 25 microwatts in any 150 kHz bandwidth.

(c) *Transmitters excepted from frequency monitoring – 403.65 MHz.* For MedRadio transmitters that are excepted under § 95.2559(b)(4) from the frequency monitoring requirements of § 95.2559(a), the M-EIRP must not exceed 100 nanowatts in the 300 kHz bandwidth centered at 403.65 MHz.

(d) *Transmitters – other frequency bands.* For MedRadio transmitters operating in the 413–419 MHz, 426–432 MHz, 438–444 MHz, or 451–457 MHz bands:

(1) The peak M-EIRP over the frequency bands of operation must not exceed the lesser of zero dBm (1 mW) or  $10 \log(B) - 7.782$  dBm, where B is the MedRadio 20 dB emission bandwidth in megahertz.

(2) The peak power spectral density must not exceed 800 microwatts per megahertz in any one megahertz band.

(e) *Transmitters – 2360–2390 MHz band.* For MedRadio transmitters operating in the 2360–2390 MHz band, the M-EIRP over the bands of operation must not exceed the lesser of zero dBm (1 mW) or  $10 \log(B)$  dBm, where B is the MedRadio 20 dB emission bandwidth in megahertz.

(f) *Transmitters – 2390–2400 MHz band.* For MedRadio transmitters operating in the 2390–2400 MHz band, the M-EIRP over the bands of operation must not exceed the lesser of 13 dBm (20 mW) or  $16 + 10 \log(B)$  dBm, where B is the MedRadio 20 dB emission bandwidth in megahertz.

#### § 95.2569 MedRadio field strength measurements.

Compliance with MedRadio equivalent isotropic radiated power (M-EIRP) limits can be determined by measuring the radiated field strength from the transmitter type, in accordance with the rules in this section.

(a) Radiated field strength values corresponding to the M-EIRP limits in § 95.2567 are given in the table in this paragraph, for an open area test site,

and for a test site equivalent to free space, such as a fully anechoic test chamber. Field strength is measured at a distance of 3 meters from the equipment under test.

M-EIRP Limit	Open Area (mV/m)	Free Space (mV/m)
1 mW...	115.1	57.55
25 $\mu$ W...	18.2	9.1
250 nW..	1.8	0.9
100 nW..	1.2	0.6

(b) Compliance with the maximum transmitter power requirements in § 95.2567 is based on measurements using a peak detector function and measured over an interval of time when transmission is continuous and at its maximum power level. In lieu of using a peak detector function, measurement procedures that have been found to be acceptable to the FCC in accordance with § 2.947 of this chapter may be used to demonstrate compliance.

(c) For a MedRadio transmitter intended to be implanted in a human body, radiated emissions and M-EIRP measurements for transmissions by stations authorized under this section may be made in accordance with an FCC-approved human body simulator and test technique. Guidance regarding SAR measurement techniques dielectric parameters for the tissue-equivalent material can be found in the Office of Engineering and Technology (OET) Laboratory Division Knowledge Database (KDB).

#### § 95.2571 MedRadio emission types.

A MedRadio station may transmit any emission type appropriate for communications in this service. Voice communications, however, are prohibited

#### § 95.2573 MedRadio authorized bandwidths.

Each MedRadio transmitter type must be designed such that the MedRadio emission bandwidth does not exceed the applicable authorized bandwidth set forth in this section.

(a) For MedRadio transmitters operating in the 402–405 MHz band, the maximum authorized bandwidth is 300 kHz. Such transmitters must not use more than 300 kHz of bandwidth (total) during a MedRadio communications session. This provision does not preclude full duplex or half



duplex communications provided that the total bandwidth of all of the channels employed in a MedRadio communications session does not exceed 300 kHz.

(b) For MedRadio transmitters operating in the 401–401.85 MHz band or the 405–406 MHz band, the maximum authorized bandwidth is 100 kHz. Such transmitters must not use more than 100 kHz of bandwidth (total) during a MedRadio communications session. This provision does not preclude full duplex or half duplex communications provided that the total bandwidth of all of the channels employed in a MedRadio communications session does not exceed 100 kHz.

(c) For MedRadio transmitters operating in the 401.85–402 MHz band, the maximum authorized bandwidth is 150 kHz. Such transmitters must not use more than 150 kHz of bandwidth (total) during a MedRadio communications session. This provision does not preclude full duplex or half duplex communications, provided that the total bandwidth of all of the channels employed in a MedRadio communications session does not exceed 150 kHz.

(d) For MedRadio transmitters operating in the 413–419 MHz, 426–432 MHz, 438–444 MHz or 451–457 MHz bands, the maximum 20 dB authorized bandwidth is 6 MHz.

(e) For MedRadio transmitters operating in the 2360–2400 MHz band, the maximum authorized bandwidth is 5 MHz.

(f) Lesser emission bandwidths may be employed, provided that the unwanted emissions are attenuated as provided in § 95.2579. See also § 95.2567 regarding maximum radiated power limits, § 95.2565 on frequency accuracy, § 95.2569 on field strength measurements, and § 95.2585 on RF exposure.

**§ 95.2579 MedRadio unwanted emissions limits.**

Unwanted emission field strength limits and attenuation requirements apply to each MedRadio transmitter type, as set forth in this section and part 2.

(a) *Field strength limits.* The field strengths of unwanted emissions from each MedRadio transmitter type, measured at a distance of

3 meters, must not exceed the field strength limits shown in the table in this paragraph for the indicated frequency ranges, if the frequencies of these emissions are:

(1) More than 250 kHz outside of the 402–405 MHz band (for devices designed to operate in the 402–405 MHz band);

(2) More than 100 kHz outside of either the 401–402 MHz or 405–406 MHz bands (for devices designed to operate in the 401–402 MHz or 405–406 MHz bands);

(3) In the 406.000–406.100 MHz band (for devices designed to operate in the 401–402 MHz or 405–406 MHz bands); or

(4) More than 2.5 MHz outside of the 413–419 MHz, 426–432 MHz, 438–444 MHz or 451–457 MHz bands (for devices designed to operate in these four bands).

(5) More than 2.5 MHz outside of the 2360–2400 MHz band (for devices designed to operate in the 2360–2400 MHz band).

Frequency Range (MHz)	Field strength (µV/m)
30-88.....	100
88-216.....	150
216-960.....	200
960 and above.....	500

Note to Table: At the boundaries between frequency ranges, the tighter limit (lower field strength) applies. Below 1 GHz, field strength is measured using a CISPR quasi-peak detector. Above 1 GHz, field strength is measured using an average detector with a minimum reference bandwidth of 1 MHz. See also part 2, subpart J of this chapter.

(b) *Harmonic emissions.* Radiated unwanted emissions from a MedRadio transmitter type must be measured to at least the tenth harmonic of the highest fundamental frequency emitted.

(c) *Attenuation requirements, 402–405 MHz.* For MedRadio transmitter types designed to operate in the 402–405 MHz band, unwanted emissions must be attenuated below the maximum permitted transmitter output power by at least:

(1) 20 dB, on any frequency within the 402–405 MHz band that is more than 150 kHz away

from the center frequency of the occupied bandwidth;

(2) 20 dB, on any frequency between 401.750 MHz and 402.000 MHz, and on any frequency between 405 MHz and 405.250 MHz.

(d) *Attenuation requirements, 401–402 MHz, 405–406 MHz.* For MedRadio transmitter types designed to operate in the 401–402 MHz band or 405–406 MHz band, the power of unwanted emissions must be attenuated below the transmitter output power by at least:

(1) 20 dB, on any frequency within the 401–401.85 MHz or 405–406 MHz bands that is:

(i) More than 75 kHz away from the center frequency of the occupied bandwidth if the MedRadio transmitter type is operating on a frequency between 401.85 and 402 MHz; or,

(ii) More than 50 kHz away from the center frequency of the occupied bandwidth and 100 kHz or less below 401 MHz or above 406 MHz.

(2) 20 dB, on any frequency between 400.900 MHz and 401.000 MHz, and on any frequency between 406.000 MHz and 406.100 MHz.

(e) *Attenuation requirements, 413–419 MHz, 426–432 MHz, 438–444 MHz, and 451–457 MHz.* For MedRadio transmitter types designed to operate in the 413–419 MHz, 426–432 MHz, 438–444 MHz and 451–457 MHz bands: In the first 2.5 megahertz above or below any of the frequency bands authorized for Medical Micropower Network operation, the EIRP of any unwanted emission must be attenuated within a 1 megahertz bandwidth by at least 20 dB relative to the maximum EIRP within any 1 megahertz bandwidth of the fundamental emission.

(f) *Attenuation requirements, 2360–2400 MHz.* For MedRadio transmitter types designed to operate in the 2360–2400 MHz band: In the first 2.5 megahertz above or below any of the frequency bands authorized for MBAN operation, the EIRP of any unwanted emission must be attenuated within a 1 megahertz bandwidth by at least 20 dB relative to the maximum EIRP within any 1 megahertz bandwidth of the fundamental emission.

(g) *Measurements.* Compliance with the limits in paragraphs (c), (d) and (e) of this section is based on the use of measurement instrumentation using a peak detector function with an instrument reference bandwidth approximately equal to 1.0 percent of the emission bandwidth of the device under measurement.

#### **§ 95.2585 MedRadio RF exposure evaluation.**

A MedRadio medical implant device or medical body-worn transmitter is subject to the radiofrequency radiation exposure requirements specified in §§ 1.1307(b) and 2.1093 of this chapter, as appropriate. Applications for equipment authorization of devices operating under this section must demonstrate compliance with these requirements using either finite difference time domain (FDTD) computational modeling or laboratory measurement techniques. Where a showing is based on computational modeling, the Commission retains the discretion to request that supporting documentation and/or specific absorption rate (SAR) measurement data be submitted.

#### **§ 95.2587 MedRadio additional requirements.**

(a) The antenna associated with any MedRadio transmitter must be supplied with the transmitter and is considered part of the transmitter subject to equipment authorization.

(b) MedRadio transmitters shall be tested for frequency stability, radiated emissions and EIRP limit compliance in accordance with applicable rules.

### MARKETING RULES

#### **§ 95.2591 MedRadio marketing limitations.**

Transmitters intended for operation in the MedRadio Service may be marketed and sold only for the use in accordance with § 95.2531.

#### **§ 95.2593 MedRadio labeling requirements.**

MedRadio transmitters must be labeled in accordance with the requirements in this section.

(a) MedRadio programmer/control transmitters operating in the 401–406 MHz band shall be labeled as provided in part 2 of this chapter and shall bear the following statement in a conspicuous location on the device:

“This device may not interfere with stations operating in the 400.150–406.000 MHz band in the Meteorological Aids, Meteorological Satellite, and Earth Exploration Satellite Services and must accept any interference received, including interference that may cause undesired operation.”

(b) MedRadio programmer/control transmitters operating in the 413–419 MHz, 426–432 MHz, 438–444 MHz, and 451–457 MHz bands shall be labeled as provided in part 2 of this chapter and shall bear the following statement in a conspicuous location on the device:

“This device may not interfere with stations authorized to operate on a primary basis in the 413–419 MHz, 426–432 MHz, 438–444 MHz, and 451–457 MHz bands, and must accept any interference received, including interference that may cause undesired operation.”

(c) MedRadio programmer/control transmitters operating in the 2360–2400 MHz band shall be labeled as provided in part 2 of this chapter and shall bear the following statement in a conspicuous location on the device:

“This device may not interfere with stations authorized to operate on a primary basis in the 2360–2400 MHz band, and must accept any interference received, including interference that may cause undesired operation.”

(d) If it is not feasible to place the statement specified by paragraphs (a), (b), or (c) of this section on the device, it may be placed in the instruction manual for the transmitter instead.

(e) If a MedRadio programmer/control transmitter is constructed in two or more sections connected by wire and marketed together, the statement specified in this section is required to be affixed only to the main control unit.

(f) MedRadio transmitters shall be identified with a serial number on each device, except as noted below.

(1) For MedRadio transmitters that operate in the 2360–2400 MHz band, only the programmer/control transmitter shall be identified with a serial number.

(2) The FCC ID number associated with a medical implant transmitter and the information

required by § 2.925 of this chapter may be placed in the instruction manual for the transmitter and on the shipping container for the transmitter, in lieu of being placed directly on the transmitter.

#### § 95.2595 MedRadio disclosures.

Manufacturers of MedRadio transmitters must include with each transmitting device the statement set forth in this section that applies to the frequency bands in use.

(a) For MedRadio transmitters operating in the 401–406 MHz band, the following statement applies:

“This transmitter is authorized by rule under the Medical Device Radiocommunication Service (in part 95 of the FCC Rules) and must not cause harmful interference to stations operating in the 400.150–406.000 MHz band in the Meteorological Aids (*i.e.* transmitters and receivers used to communicate weather data), the Meteorological Satellite, or the Earth Exploration Satellite Services and must accept interference that may be caused by such stations, including interference that may cause undesired operation. This transmitter shall be used only in accordance with the FCC Rules governing the Medical Device Radiocommunication Service. Analog and digital voice communications are prohibited. Although this transmitter has been approved by the Federal Communications Commission, there is no guarantee that it will not receive interference or that any particular transmission from this transmitter will be free from interference.”

(b) For MedRadio transmitters operating in the 413–419 MHz, 426–432 MHz, 438–444 MHz and 451–457 MHz bands, the following statement applies:

“This transmitter is authorized by rule under the MedRadio Service (47 C.F.R. Part 95). This transmitter must not cause harmful interference to stations authorized to operate on a primary basis in the 413–419 MHz, 426–432 MHz, 438–444 MHz, and 451–457 MHz bands, and must accept interference that may be caused by such stations, including interference that may cause undesired operation. This transmitter shall be used only in accordance with the FCC Rules governing the MedRadio Service. Analog and digital voice communications are prohibited. Although this

transmitter has been approved by the Federal Communications Commission, there is no guarantee that it will not receive interference or that any particular transmission from this transmitter will be free from interference.”

(c) For MedRadio transmitters operating in the 2360–2400 MHz band, the following statement applies:

“This transmitter is authorized by rule under the MedRadio Service (47 C.F.R. Part 95). This transmitter must not cause harmful interference to stations authorized to operate on a primary basis in the 2360–2400 MHz band, and must accept interference that may be caused by such stations, including interference that may cause undesired operation. This transmitter shall be used only in accordance with the FCC Rules governing the MedRadio Service. Analog and digital voice communications are prohibited. Although this transmitter has been approved by the Federal Communications Commission, there is no guarantee that it will not receive interference or that any particular transmission from this transmitter will be free from interference.”

## **Subpart J – Multi-Use Radio Service**

### ADMINISTRATIVE RULES

#### **§ 95.2701 Scope.**

This subpart contains rules that apply only to the Multi-Use Radio Service (MURS).

#### **§ 95.2703 Definitions, MURS.**

*MURS.* A two-way, short distance voice or data communication service for facilitating personal or business activities of the general public.

#### **§ 95.2705 Grandfathered MURS stations.**

MURS stations that were licensed under part 90 of this chapter to operate on MURS frequencies as of November 13, 2000, are authorized by this rule to continue to operate under terms identical to those of such nullified part 90 authorizations, including any associated rule waivers.

#### **§ 95.2707 Airborne use of MURS not authorized.**

Notwithstanding the provisions of § 95.307, MURS operation is not authorized aboard aircraft in flight.

#### **§ 95.2719 MURS replacement parts.**

The operator of an MURS transmitter may replace parts of an MURS transmitter as indicated in this section. All other internal maintenance and repairs must be carried out in accordance with § 95.319.

(a) A damaged antenna may be replaced by another antenna of the same or a compatible similar type.

(b) Batteries in the MURS transmitter may be replaced with batteries of a type specified by the manufacturer.

#### **§ 95.2725 MURS interference.**

MURS station operators must take reasonable precautions to avoid causing harmful interference. This includes monitoring the transmitting frequency for communications in progress before transmitting, and other measures as may be necessary to minimize the potential for causing interference.

### OPERATING RULES

#### **§ 95.2731 Permissible MURS uses.**

The operator of a MURS station may use it for the purposes listed in this section.

(a) MURS stations may be used to transmit voice, data or image signals.

(b) MURS stations may be used for telecommand and telemetry functions.

#### **§ 95.2733 Prohibited MURS uses.**

MURS stations must not be operated as repeater stations or signal boosters. This prohibition includes store-and-forward packet operation.

#### **§ 95.2741 MURS antenna height limit.**

The highest point of any MURS station antenna must not be more than 18.3 meters (60 feet) above the ground or 6.10 meters (20 feet) above the highest point of the structure on which it is mounted. MURS station antennas must also meet the requirements in § 95.317 regarding menaces to air navigation. *See* 47 C.F.R. § 95.317 and consult Part 17 of the FCC’s Rules for more information.

**§ 95.2749 MURS network connection.**

MURS stations are prohibited from interconnection with the public switched network. *Interconnection Defined.* Connection through automatic or manual means of multi-use radio stations with the facilities of the public switched telephone network to permit the transmission of messages or signals between points in the wireline or radio network of a public telephone company and persons served by multi-use radio stations. Wireline or radio circuits or links furnished by common carriers, which are used by licensees or other authorized persons for transmitter control (including dial-up transmitter control circuits) or as an integral part of an authorized, private, internal system of communication or as an integral part of dispatch point circuits in a multi-use radio station are not considered to be interconnection for purposes of this rule part.

**§ 95.2757 MURS duration of transmissions.**

MURS stations may not be operated in the continuous carrier transmit mode.

## TECHNICAL RULES

**§ 95.2761 MURS transmitter certification.**

(a) Each MURS transmitter (a transmitter that operates or is intended to operate in MURS) must be certified in accordance with this subpart and part 2 of this chapter.

(b) A grant of equipment certification will not be issued for any MURS transmitter type that fails to comply with all of the applicable rules in this subpart.

(c) A grant of equipment certification will not be issued for MURS transmitters capable of operating under both this subpart (MURS) and under any other subparts of this chapter (except Part 15).

**§ 95.2763 MURS channels.**

Five VHF channels are allotted for shared use in the MURS. These channels, designated by their center frequencies in megahertz, are as follows: 151.820, 151.880, 151.940, 154.570 and 154.600 MHz. Each MURS transmitter type must be designed to transmit on one or more of these channels.

**§ 95.2765 MURS frequency accuracy.**

Each MURS transmitter type must be designed to meet the applicable frequency tolerance and stability requirements of this section.

(a) MURS transmitters that operate with an emission bandwidth of 6.25 kHz or less must be designed such that the carrier frequencies remain within  $\pm 2.0$  parts-per-million (ppm) of the channel center frequencies specified in § 95.2763 during normal operating conditions.

(b) MURS transmitters that operate with an emission bandwidth greater than 6.25 kHz must be designed such that the carrier frequencies remain within  $\pm 5.0$  ppm of the channel center frequencies specified in § 95.2763 during normal operating conditions.

**§ 95.2767 MURS transmitting power limit.**

Each MURS transmitter type must be designed such that the transmitter power output does not exceed 2 Watts under normal operating conditions.

**§ 95.2771 MURS emission types.**

A MURS transmitter must transmit only emission types A1D, A2B, A2D, A3E, F2B, F1D, F2D, F3E, and G3E. Emission types A3E, F3E and G3E may include selective calling or tone-operated squelch tones to establish or continue voice communications. MURS transmitters are prohibited from transmitting in the continuous carrier mode.

**§ 95.2773 MURS authorized bandwidths.**

Each MURS transmitter type must be designed to meet the emission bandwidth limitations in this section.

(a) The occupied bandwidth of emissions transmitted on the center frequencies 151.820 MHz, 151.880 MHz and 151.940 MHz must not exceed 11.25 kHz.

(b) The occupied bandwidth of emissions transmitted on the center frequencies 154.570 MHz and 154.600 MHz must not exceed 20.0 kHz.

(c) The occupied bandwidth of type A3E emissions must not exceed 8.0 kHz.

**§ 95.2775 MURS audio filter.**

The audio filter referenced in § 95.2779 must satisfy the requirements in this section.

(a) The audio filter must be between the modulation limiter and the modulated stage of the transmitter.

(b) At any frequency (f in kHz) between 3 and 15 kHz, the filter must have an attenuation of at least  $40 \log(f/3)$  dB more than the attenuation at 1 kHz. Above 15 kHz, it must have an attenuation of at least 28 dB more than the attenuation at 1 kHz.

**§ 95.2779 MURS unwanted emissions limits.**

The requirements in this section apply to each MURS transmitter type both with and without the connection of attachments, such as an external microphone, power cord and/or antenna.

(a) *Emission masks.* Emission masks applicable to transmitting equipment in the MURS are defined by the requirements in the following table. The numbers in the paragraphs column refer to attenuation requirement rule paragraph numbers under paragraph (b) of this section. The words “audio filter” refer to the audio filter described in § 95.2775.

Channel Center Frequencies (MHz)	Paragraphs
151.820, 151.880 and 151.940.....	(1), (2)
154.570 & 154.600, with audio filter .....	(3), (4), (7)
154.570 & 154.600, without audio filter .....	(5), (6), (7)

(1) Each MURS transmitter type that transmits F3E or G3E emissions on 154.570 MHz or 154.600 MHz and incorporates an audio filter satisfying the requirements of § 95.2775 in its design may comply with the less stringent unwanted emissions attenuation requirements set forth in paragraphs (b)(3), (b)(4) and (b)(7) of this section.

(2) Each MURS transmitter type that transmits on 154.570 MHz or 154.600 MHz, but does not incorporate an audio filter satisfying the requirements of § 95.2775 in its design, must comply with the unwanted emissions attenuation

requirements set forth in paragraphs (b)(5), (b)(6) and (b)(7) of this section.

(b) *Attenuation requirements.* The power of unwanted emissions must be attenuated below the transmitter output power in Watts (P) by at least:

(1)  $7.27(f_d - 2.88)$  dB on any frequency removed from the channel center frequency by a displacement frequency ( $f_d$  in kHz) that is more than 5.625 kHz, but not more than 12.5 kHz.

(2)  $50 + 10 \log(P)$  dB or 70 dB, whichever is the lesser attenuation, on any frequency removed from the channel center frequency by more than 12.5 kHz.

(3) 25 dB on any frequency removed from the channel center frequency by more than 10 kHz, but not more than 20 kHz.

(4) 35 dB on any frequency removed from the channel center frequency by more than 20 kHz, but not more than 50 kHz.

(5)  $83 \log(f_d \div 5)$  dB on any frequency removed from the center of the authorized bandwidth by a displacement frequency ( $f_d$  in kHz) that is more than 5 kHz, but not more than 10 kHz.

(6)  $29 \log(f_d^2 \div 11)$  dB or 50 dB, whichever is the lesser attenuation on any frequency removed from the channel center frequency by a displacement frequency ( $f_d$  in kHz) that is more than 10 kHz, but not more than 50 kHz.

(7)  $43 + 10 \log(P)$  dB on any frequency removed from the channel center frequency by more than 50 kHz.

(c) *Measurement bandwidths.* The power of unwanted emissions in the frequency bands specified in paragraphs (b)(1), (b)(3), (b)(4), (b)(5) and (b)(6) of this section is measured with a reference bandwidth of 300 Hz. The power of unwanted emissions in the frequency ranges specified in paragraphs (b)(2) and (b)(7) of this section is measured with a reference bandwidth of at least 30 kHz.

## Subpart K – Personal Locator Beacons and Maritime Survivor Locating Devices

### ADMINISTRATIVE RULES

#### § 95.2901 Scope.

This subpart contains rules that apply only to Personal Locator Beacons (PLBs) and Maritime Survivor Locating Devices (MSLDs).

#### § 95.2903 Definitions, PLBs and MSLDs.

*Identification code.* An identification code issued by the National Oceanic and Atmospheric Administration (NOAA) to establish a unique identification for each PLB.

*National Oceanic and Atmospheric Administration (NOAA).* The U.S. Government Agency that is the United States Program Manager for the 406 MHz COSPAS / SARSAT satellite system.

*Maritime Survivor Locating Device (MSLD).* A device intended to aid in the location of persons in the water.

*Personal Locator Beacon (PLB).* A small portable transmitter, compliant with all of the rules in this subpart, that is intended to provide individuals in remote areas a means to alert others of an emergency situation and to aid search and rescue personnel to locate those in distress.

#### § 95.2905 PLB registration.

Each PLB owner must initially register their PLB with National Oceanic and Atmospheric Administration (NOAA) and must advise NOAA of any subsequent change of ownership or other change in the registration information. Each PLB is registered by its identification code (*see* § 95.2987(b)).

(a) PLB owners are encouraged to register their PLBs through the internet using the following web site:

<http://www.beaconregistration.noaa.gov>

(b) PLB owners may also register their PLBs by mailing a completed registration card to the following address:

NOAA SARSAT Beacon Registration  
NSOF, E/SPO53  
1315 East West Hwy,

Silver Spring, MD 20910-9684

### OPERATING RULES

#### § 95.2931 Permissible use of PLBs and MSLDs.

(a) PLBs may be used only for transmission of distress and safety of life communications.

(b) MSLDs may be used only to aid in the location of persons in the water.

#### § 95.2933 Prohibited use of PLBs and MSLDs.

(a) PLBs must not be used for any purpose other than transmission of distress and safety of life communications.

(b) Use of MSLDs on land is not authorized.

### TECHNICAL RULES

#### § 95.2961 PLB and MSLD transmitter certification.

(a) Each PLB and MSLD transmitter must be certified in accordance with this subpart and part 2 of this chapter.

(b) A grant of equipment certification will not be issued for any PLB or MSLD transmitter type that fails to comply with all of the applicable rules in this subpart.

#### § 95.2963 PLB and MSLD frequency bands.

(a) The frequency band 406.0-406.1 MHz is an emergency and distress frequency band available for use by Personal Locator Beacons (PLBs). Use of these frequencies must be limited to transmission of distress and safety of life communications.

(b) MSLDs must:

(1) Transmit on at least one of the following frequencies: 121.5 MHz, 156.525 MHz, 156.750 MHz, 156.800 MHz, 156.850 MHz, 161.975 MHz, or 162.025 MHz; or

(2) Include a function intended to send a distress message directly to the U.S. Coast Guard or any other search and rescue organization.

**§ 95.2971 PLB emission type.**

PLB transmitter types must be designed to use emission type G1D on the frequency band 406.0-406.1 MHz.

**§ 95.2987 Additional PLB and MSLD certification requirements.**

(a) To be certified for use under this subpart, 406 MHz PLB transmitter types must be designed to satisfy the following additional requirements.

(1) *Certifications.* Beginning January 17, 2018, before submitting an application for FCC certification of a 406 MHz PLB transmitter type, the applicant must obtain:

(i) Certification from a test facility recognized by one of the COSPAS/ SARSAT Partners that the PLB transmitter type satisfies the standards in RTCM 11010; and,

(ii) Certification from an independent test facility that the PLB transmitter type complies with the electrical and environmental standards associated with RTCM 11010.

(2) *Identification code.* An identification code, recognized by the National Oceanic and Atmospheric Administration (NOAA), the United States Program Manager for the 406 MHz COSPAS/SARSAT satellite system, must be programmed into each PLB to establish a unique identification for that PLB.

(b) To be certified for use under this subpart, MSLD transmitter types must be designed to satisfy the following additional requirements.

(1) A test report from a test laboratory which shows that the MSLD complies with the electrical and environmental standards associated with RTCM 11901. The test laboratory must be accredited to ISO-IEC 17025 with a scope covering the applicable requirements and test procedures.

(2) After the MSLD has been certified by a test laboratory, the following information must be submitted in duplicate to the U.S. Coast Guard, 2703 Martin Luther King Jr. Ave., SE, Stop 7126, Washington, DC 20593-7126:

(i) The name of the manufacturer or grantee and model number of the MSLD;

(ii) Copies of the test report and test data showing that the MSLD complies with the electrical and environmental standards associated with RTCM 11901; and

(iii) Instruction manuals associated with the MSLD, description of the test characteristics of the MSLD including assembly drawings, electrical schematics, description of parts list, specifications of materials and the manufacturer's quality assurance program.

(3) After reviewing the information described in paragraph (b)(2) of this section, the U.S. Coast Guard will issue a letter stating whether the MSLD satisfies all RTCM Recommended Standards. In the case of an MSLD that includes a function intended to send a distress message directly to the U.S. Coast Guard or any other search and rescue organization, the letter will also state whether the U.S. Coast Guard endorses that function.

(4) A certification application for an MSLD must contain a copy of the U.S. Coast Guard letter stating that the device satisfies all RTCM Recommended Standards, a copy of the technical test data, and the instruction manual(s).

**§ 95.2989 PLB and MSLD technical standards.**

(a) PLB transmitter types must be designed to comply with the technical standard identified in paragraph (b) of this section. MSLD transmitter types must be designed to comply with the technical standard identified in paragraph (c) of this section. These technical standards are incorporated by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.

(b) The technical standard governing PLBs is the Radio Technical Commission for Maritime (RTCM) Service document "RTCM Standard 11010.2 for 406 MHz Satellite Personal Locator Beacons (PLBs)," dated July 10, 2008, with Amendment 1, dated August 23, 2010, and with Amendment 2, dated June 8, 2012 (RTCM 11010).

(c) The technical standard governing MSLDs is the RTCM document "RTCM Standard 11901.1 for Maritime Survivor Locating Devices (MSLD), dated June 4, 2012" (RTCM 11901).

(d) A printed copy of RTCM 11010 or RTCM 11901 may be viewed at FCC headquarters at



445 12<sup>th</sup> Street SW, Washington, DC 20554, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA call 202-741-6030 or go to [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

(e) A printed copy of RTCM 11010 or RTCM 11901 may be obtained from the Radio Technical Commission for Maritime Services, 1611 N. Kent St., Suite 605, Arlington, Virginia 22209-2128.

#### MARKETING RULES

#### § 95.2991 PLB and MSLD marketing limitations.

(a) No device may be marketed or sold in the United States as a “PLB” or “Personal Locator Beacon” unless it is compliant with all of the rules in this subpart. Previously approved PLBs that do not meet the requirements of RTCM 11010 shall not be manufactured, imported, or sold in the United States beginning January 17, 2020.

(b) No device may be marketed or sold in the United States as a “MSLD” or “Maritime Survivor Locating Device” unless it complies with the requirements of RTCM 11901. Previously approved devices intended to aid in the location of persons in the water that do not meet the requirements of this subpart shall not be manufactured, imported, or sold in the United States beginning January 17, 2018.

#### § 95.2993 PLB identification plate or label and registration card.

To enhance protection of life and property, it is mandatory that each 406 MHz PLB be registered with NOAA and that information be kept up-to-date.

(a) *Identification plate or label.* In addition to the identification plate or label requirements contained in §§ 2.925 and 2.926 of this chapter, each 406 MHz PLB must be provided on the outside with a clearly discernable permanent plate or label.

(1) The plate or label must contain the following statement:

“The owner of this 406 MHz PLB must register the identification code on this label with the National Oceanic and Atmospheric Administration (NOAA) whose address is: NOAA/SARSAT Beacon Registration, NSOF, E/SPO53, 1315 East West Hwy, Silver Spring, MD20910-9684.”

(2) For PLBs with identification codes that can be changed after manufacture, the identification code shown on the plate or label must be easily replaceable using commonly available tools.

(b) *Registration card.* With each marketable PLB unit, the manufacturer or equipment certification grantee must include a postage pre-paid registration card.

(1) The identification code of the PLB (*see* § 95.2987(c)) must be printed on the registration card.

(2) The registration card must be addressed to:

NOAA SARSAT Beacon Registration  
NSOF, E/SPO53,  
1315 East West Hwy,  
Silver Spring, MD 20910-9684.

(3) The registration card must request the owner’s name, address, telephone number and alternate emergency contact.

(4) The registration card must include the following statement:

“WARNING—failure to register this PLB with NOAA could result in a monetary forfeiture order being issued to the owner.”

#### Subpart L – DSRCS On-Board Units

##### ADMINISTRATIVE RULES

#### § 95.3101 Scope.

This subpart contains rules that apply only to On-Board Units (OBUs) transmitting in the 5850–5925 MHz frequency band in the Dedicated Short-Range Communications Services (DSRCS)(*see* § 90.371 of this chapter).

#### § 95.3103 Definitions, OBUs.

*Dedicated Short-range Communications Services (DSRCS).* A service providing for data transfer between various mobile and roadside transmitting units for the purposes of improving traffic flow, highway safety and performing other intelligent

transportation functions. *See* § 90.7 of this chapter for a more detailed definition.

*On-Board Unit (OBU).* OBUs are low-power devices on vehicles that transfer data to roadside units in the Dedicated Short-Range Communications Service (*see* §§ 90.371 – 90.383 of this chapter), to improve traffic flow and safety, and for other intelligent transportation system purposes. *See* § 90.7 of this chapter.

*Roadside Unit (RSU).* *See* § 90.7 of this chapter.

#### OPERATING RULES

#### § 95.3131 Permissible uses, OBUs.

On-Board Units (OBUs) may transmit signals to other OBUs and to Roadside Units (RSUs), which are authorized under part 90 of this chapter.

#### § 95.3159 OBU channel sharing and priority of use.

In general, the provisions of §§ 95.359, 95.325 and 95.327 apply to OBU operation, subject to the rules in this section governing access priority.

(a) *Priority communications.* OBU communications described in this paragraph are priority communications.

(1) OBU communications involving the safety of life have access priority over all other OBU communications.

(2) Subject to a Control Channel priority system management strategy (*see* ASTM E2213-03 DSRC Standard at § 4.1.1.2(4)), OBU communications involving public safety have access priority over all other OBU communications except those involving safety of life. OBUs operated by state or local governmental entities are presumed to be engaged in public safety (priority) communications.

(b) *Non-priority communications.* All OBU communications other than those described in paragraph (a) are non-priority communications. Disputes concerning non-priority OBU communications associated with Roadside Units (RSUs) are governed by the provisions of § 90.377(e) and (f) of this chapter. Disputes concerning non-priority OBU communications not associated with RSUs are governed by §§ 95.325, 95.327 and 95.359.

#### TECHNICAL RULES

#### § 95.3161 OBU transmitter certification.

(a) Each Dedicated Short Range Communications On-Board Unit (DSRCS-OBU) that operates or is intended to operate in the DSRCS must be certified in accordance with this subpart and subpart J of part 2 of this Chapter.

(b) A grant of equipment certification for this subpart will not be issued for any OBU transmitter type that fails to comply with all of the applicable rules in this subpart.

#### § 95.3163 OBU channels.

The following table lists the channels allotted for use by On-Board Units (OBUs):

Channel number	Channel use	Frequency range (MHz)
170.....	Reserved..	5850–5855
172.....	Service....	5855–5865
174.....	Service....	5865–5875
175.....	Service....	5865–5885
176.....	Service....	5875–5885
178.....	Control....	5885–5895
180.....	Service....	5895–5905
181.....	Service....	5895–5915
182.....	Service....	5905–5915
184.....	Service....	5915–5925

(a) Channels 174 and 176 may be combined to create a 20 MHz bandwidth channel designated as Channel 175.

(b) Channels 180 and 182 may be combined to create a 20 MHz bandwidth channel designated as Channel 181.

(c) Channels 172 and 184 are designated for public safety applications involving safety of life and property.

#### § 95.3167 OBU transmit power limit.

The maximum output power for portable On-Board Unit transmitter types is 1.0 mW. For purposes of this paragraph, a portable is a transmitting device designed to be used so that the radiating structure(s) of the device is/are within 20 centimeters of the body of the user.

#### § 95.3189 OBU technical standard.

On-Board Unit transmitter types operating in the 5850–5925 MHz band must be designed to comply

with the technical standard identified in paragraph (a) of this section.

(a) The technical standard governing OBUs is: American Society for Testing and Materials (ASTM) E2213-03, Standard Specification for Telecommunications and Information Exchange Between Roadside and Vehicle Systems—5 GHz Band Dedicated Short-range Communications (DSRC) Medium Access Control (MAC) and Physical Layer (PHY) Specifications published September 2003 (ASTM E2213-03). The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 C.F.R. Part 51.

(b) A printed copy of ASTM E2213-03 may be viewed at the National Archives and Records Administration (NARA) or the Federal Communications Commission, 445 12th Street, S.W., Washington, DC 20554. For information on the availability of this material at the NARA, call 202-741-6030.

(c) A printed copy of ASTM E2213-03 can be purchased from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959.

(d) An electronic copy of ASTM E2213-03 may be purchased and downloaded from the ASTM web site: <http://www.astm.org>

APPENDIX TO PART 95 --

CROSS REFERENCE TO PREVIOUS RULES

This table in this appendix to Part 95 shows the current subpart or section number(s) (or “removed” if the section was eliminated) of the CFR unit containing the corresponding subject material, for each of the Part 95 subparts, rules and appendices that, in general, were in effect prior to [ **Insert date 30 days after date of publication in Federal Register** ].

Previous CFR Unit	Current CFR Unit
Subpart A – General Mobile Radio Service (GMRS)....	Part 95, Subpart E
95.1 The General Mobile Radio Service (GMRS)...	95.1703
95.3 License required.....	95.1705
95.5 Licensee eligibility...	95.1705
95.7 Channel sharing.....	95.325, 95.327, 95.359

Previous CFR Unit	Current CFR Unit
95.21 GMRS system description.....	Removed
95.23 Mobile station description.....	Removed
95.25 Land station description.....	Removed
95.27 Paging receiver description.....	Removed
95.29 Channels available...	95.1763
95.33 Cooperative use of radio stations in the GMRS.....	95.1705(f)
95.45 Considerations on Department of Defense land and in other circumstances.....	95.309
95.51 Antenna height...	95.317
95.101 What the license authorizes.....	95.307, 95.331, 95.333, 95.1705, 95.1731
95.103 Licensee duties...	95.1705
95.105 License term.....	95.1705(e)
95.115 Station inspection.....	95.323
95.117 Where to contact the FCC.....	95.329
95.119 Station identification.....	95.1751
95.129 Station equipment.....	95.335, 95.1761
95.135 Maximum authorized transmitting power.....	95.367, 95.1767
95.139 Adding a small base station or a small control station.....	Removed
95.141 Interconnection prohibited.....	95.349, 95.1749
95.143 Managing a GMRS system in an emergency.....	95.1705(c), 95.1731
95.171 Station operator duties.....	95.305, 95.1705
95.179 Individuals who may be station operators.....	95.305, 95.1705
95.181 Permissible communications.....	95.331, 95.377, 95.381, 95.1731
95.183 Prohibited communications.....	95.333, 95.377, 95.381, 95.1733
APPENDIX A TO SUBPART A OF PART 95—LOCATIONS WHERE GMRS IS REGULATED BY THE FCC.....	95.307
Subpart B – Family Radio Service (FRS).....	Part 95, Subpart B

Previous CFR Unit	Current CFR Unit	Previous CFR Unit	Current CFR Unit
95.191 (FRS Rule 1) Eligibility and responsibility.....	95.305, 95.359	95.215 (R/C Rule 15) Do I have to limit the length of my communications?.....	95.357, 95.757
95.192 (FRS Rule 2) Authorized locations.....	95.307, 95.309	95.216 (R/C Rule 16) Do I identify my R/C communications?.....	95.351
95.193 (FRS Rule 3) Types of communications.	95.331, 95.333, 95.349, 95.377, 95.531, 95.533, 95.577, 95.587	95.217 (R/C Rule 17) May I operate my R/C station transmitter by remote control?.....	95.345, 95.745
95.194 (FRS Rule 4) FRS units.....	95.335, 95.337, 95.339, 95.519, 95.561, 95.587	95.218 (R/C Rule 18) What are the penalties for violating these rules?.....	95.313
Subpart C – Radio Control (R/C) Radio Service.....	Part 95, Subpart C	95.219 (R/C Rule 19) How do I answer correspondence from the FCC?.....	95.311
95.201 (R/C Rule 1) What is the Radio Control (R/C) Radio Service?.....	95.703	95.220 (R/C Rule 20) What must I do if the FCC tells me that my R/C station is causing interference?.....	95.311, 95.319
95.202 (R/C Rule 2) How do I use these rules?.....	Removed	95.221 (R/C Rule 21) How do I have my R/C transmitter serviced?.....	95.319, 95.719
95.203 (R/C Rule 3) Am I eligible to operate an R/C station?.....	95.305	95.222 (R/C Rule 22) May I make any changes to my R/C transmitter?.....	95.319, 95.337
95.204 (R/C Rule 4) Do I need a license?.....	95.305	95.223 (R/C Rule 23) Do I have to make my R/C station available for inspection?.....	95.323
95.205 (R/C Rule 5) Where may I operate my R/C station?.....	95.307	95.224 (R/C Rule 24) What are my station records?.....	95.311
95.206 (R/C Rule 6) Are there any special restrictions on the location of my R/C station?.....	95.309	95.225 (R/C Rule 25) How do I contact the FCC?.....	95.329
95.207 (R/C Rule 7) On what channels may I operate?.....	95.359, 95.725, 95.733, 95.763	Subpart D – Citizens Band (CB) Radio Service...	Part 95, Subpart D
95.208 (R/C Rule 8) How high may I put my antenna?.....	95.317, 95.741	95.401 (CB Rule 1) What are the Citizens Band Radio Services?.....	95.303, 95.503, 95.903, 95.2103, 95.2503, 95.2303, 95.2703, 95.3103
95.209 (R/C Rule 9) What equipment may I use at my R/C station?.....	95.335, 95.337, 95.361, 95.735, 95.761	95.402 (CB Rule 2) How do I use these rules?.....	95.305, 95.307
95.210 (R/C Rule 10) How much power may I use?.....	95.337, 95.767	95.403 (CB Rule 3) Am I eligible to operate a CB station?.....	95.305, 95.905
95.211 (R/C Rule 11) What communications may be transmitted?.....	95.731, 95.771	95.404 (CB Rule 4) Do I need a license?.....	95.305
95.212 (R/C Rule 12) What communications are prohibited?.....	95.333, 95.733, 95.745	95.405 (CB Rule 5) Where may I operate my CB station?.....	95.307, 95.309
95.213 (R/C Rule 13) May I be paid to use my R/C station?.....	95.333, 95.733(c)		
95.214 (R/C Rule 14) Who is responsible for R/C communications I make?.....	95.343		

Previous CFR Unit	Current CFR Unit	Previous CFR Unit	Current CFR Unit
95.406 (CB Rule 6) Are there any special restrictions on the location of my CB station?.....	95.309	95.423 (CB Rule 23) What must I do if the FCC tells me that my CB station is causing interference?.....	95.311, 95.319
95.407 (CB Rule 7) On what channels may I operate?.....	95.359, 95.363, 95.931, 95.963	95.424 (CB Rule 24) How do I have my CB transmitter serviced?.....	95.319, 95.919
95.408 (CB Rule 8) How high may I put my antenna?.....	95.317, 95.941	95.425 (CB Rule 25) May I make any changes to my CB transmitter?.....	95.337, 95.919
95.409 (CB Rule 9) What equipment may I use at my CB station?.....	95.337, 95.361, 95.935, 95.939, 95.961	95.426 (CB Rule 26) Do I have to make my CB station available for inspection?.....	95.323
95.410 (CB Rule 10) How much power may I use?.....	95.337, 95.967	95.427 (CB Rule 27) What are my station records?.....	95.311, 95.343
95.411 (CB Rule 11) May I use power amplifiers?.....	95.939	95.428 (CB Rule 28) How do I contact the FCC?.....	95.329
95.412 (CB Rule 12) What communications may be transmitted?.....	95.377, 95.931, 95.933	Subpart E – Technical Regulations.....	Distributed
95.413 (CB Rule 13) What communications are prohibited?.....	95.333, 95.933	95.601 Basis and Purpose...	Distributed
95.414 (CB Rule 14) May I be paid to use my CB station?.....	95.333, 95.933	95.603 Certification required.....	95.335, 95.561, 95.761, 95.961, 95.1761, 95.1951, 95.2161, 95.2361, 95.2561, 95.2761, 95.2961, 95.3161
95.415 (CB Rule 15) Who is responsible for communications I make?.....	95.343	95.605 Certification procedures.....	95.335, 95.2961, 95.3161
95.416 (CB Rule 16) Do I have to limit the length of my communications?.....	95.357, 95.359, 95.957	95.607 CB transmitter modification.....	95.335, 95.337, 95.339, 95.935, 95.939, 95.987
95.417 (CB Rule 17) Do I identify my CB communications?.....	95.351	95.621 GMRS transmitter channel frequencies.....	95.363, 95.1763, 95.1765
95.418 (CB Rule 18) How do I use my CB station in an emergency or to assist a traveler?.....	95.357, 95.931, 95.957	95.623 R/C transmitter channel frequencies.....	95.363, 95.763, 95.765
95.419 (CB Rule 19) May I operate my CB station transmitter by remote control?.....	95.303, 95.345, 95.945	95.625 CB transmitter channel frequencies.....	95.359, 95.363, 95.931, 95.963, 95.965
95.420 (CB Rule 20) May I connect my CB station transmitter to a telephone?.....	95.949	95.626 FRS unit channel frequencies.....	95.363, 95.563, 95.565
95.421 (CB Rule 21) What are the penalties for violating these rules?.....	95.313	95.627 Medradio transmitters in the 401-406 MHz band.....	95.2503, 95.2525, 95.2559, 95.2563, 95.2565, 95.2567, 95.2569, 95.2573, 95.2587
95.422 (CB Rule 22) How do I answer correspondence from the FCC?.....	95.311	95.628 Medradio transmitters in the 413-419 MHz, 426-432 MHz, 438-444 MHz, and 451-457 MHz bands.....	95.2525, 95.2559, 95.2563(e), 95.2565, 95.2567, 95.2569, 95.2573, 95.2587
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95.637 Modulation standards.....	95.575, 95.971, 95.975, 95.1775	95.813 Eligibility.....	95.1913
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95.1211 Channel use policy.....	95.359, 95.2525	95.1505 Authorized locations.....	95.307
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**STATEMENT OF  
CHAIRMAN AJIT PAI**

Re: *Review of the Commission's Part 95 Personal Radio Service Rules*, WT Docket Not. 10-119; *Petition for Rulemaking of Garmin International, Inc.*, RM-10762; *Petition for Rulemaking of Omnitronics, L.L.C.*, RM-10844.

There are a number of Citizens Band or CB radio codes that are relevant to our work at the FCC. "10-75" means "you are causing interference." "10-30" means "does not conform to FCC rules." And "10-11" means something I've been told I do from time to time: "talking too rapidly."

Over the decades, CB radio slang has changed. But the FCC's rules in this area have not. For instance, we still have on the books a requirement that manufacturers *engrave* the serial number into the transmitter chassis of each CB radio. Whatever the merits of this rule when it was adopted 40 years ago, those merits have faded into memory, just like "B.J. and the Bear." And the costs of complying with it today greatly exceed any benefit from theft prevention and the like.

So today, we reorganize, streamline, and eliminate regulations related to the Personal Radio Service. These rules govern use of devices like CB radios, remote-controlled toys, and walkie-talkies. For instance, we consolidate various repetitive sections of our rules into one place, where possible. We also reorganize these rules into categories that are easier to understand and easier to find.

This modernization effort will help anyone who uses a CB radio or other personal communications device to more easily understand and comply with our rules. Whether you're a truck driver who needs to communicate on the road or a remote control toy enthusiast, you'll be able to put down the engraving pen and the law books and focus on your handle.

Thank you to all those, past and present, who worked on this item. In particular, thank you to Tom Derenge, Nese Guendelsberger, Joyce Jones, Jean Kiddoo, Roger Noel, Matt Pearl, Becky Schwartz, Scot Stone, and Suzanne Tetreault in the Wireless Telecommunications Bureau; Martin Doczkat, Rashmi Doshi, Tim Harrington, Jamison Prime, and Bruce Romano from the Office of Engineering and Technology; Thomas Horan from the Media Bureau; Daniel Meyerson and Steven Spaeth from the Enforcement Bureau; and David Horowitz, Keith McCrickard, and Anjali Singh from the Office of General Counsel.

And to those who have been calling on the Commission for many years to modernize our rules in this area, I have one last thing to say: 10-4, over and out.



**STATEMENT OF  
COMMISSIONER MIGNON L. CLYBURN**

*Re: Review of the Commission's Part 95 Personal Radio Service Rules, WT Docket Not. 10-119; Petition for Rulemaking of Garmin International, Inc., RM-10762; Petition for Rulemaking of Omnitronics, L.L.C., RM-10844.*

With this item, the Commission updates, reorganizes and streamlines our Part 95 rules to not only reflect changes in technology, but how Personal Radio Services (PRS) devices are used by the public. PRS devices are used for a variety of applications, including by hobbyists of remote-control model aircraft, those with hearing difficulties, first responders to locate lost persons, medical professionals to retrieve data from implanted medical devices, and of course, by families and groups who use walkie-talkies to communicate.

This reorganization results in rules that are clear, and easier for consumers to understand. Notably, it makes clear that devices labelled Personal Locator Beacons and Maritime Survivor Locating Devices, which are used to aid in locating those who are lost on land or in water, must meet specified technical standards in order to be marketed as such. This clarification will help ensure that all devices advertised with these terms provide the expected level of emergency location capability.

As a former CB radio and walkie-talkie enthusiast (short lived as it was), I wish to thank the staff of the Wireless Telecommunications Bureau for your hard work on this item.

**STATEMENT OF  
COMMISSIONER MICHAEL O'RIELLY**

*Re: Review of the Commission's Part 95 Personal Radio Service Rules, WT Docket Not. 10-119; Petition for Rulemaking of Garmin International, Inc., RM-10762; Petition for Rulemaking of Omnitronics, L.L.C., RM-10844.*

I am fairly certain that when the notice for this item was released, back in June 2010, no one ever imagined it would be presented at a Commission meeting in May 2017. Seven years later and no one has a good reason for the delay, though it's clearly not the fault of the staff. This is exactly the type of situation that has caused the Chairman and Congress to push the Commission to establish deadlines for action on petitions and notices. Count me in as wholeheartedly supporting that effort, as things shouldn't languish due to inertia.

This notwithstanding, I am generally supportive of today's item to streamline our Personal Radio Services rules in a manner that should make them more user friendly. It is always a worthwhile exercise to review and consolidate rules, to the extent possible, and it is never bad to judiciously eliminate a few pages in the cumbersome Title 47 of the Code of Federal Regulations.

Additionally, the families and others that use the General Mobile Radio Service (GMRS) and Family Radio Service should benefit from the changes we adopt today, such as making additional channels available, providing longer GMRS license terms, and permitting GMRS users to transmit location data and text messages, among others.

I appreciate the Chairman's efforts to review the Commission's rules and look forward to future items that seek to modernize Commission rules and reduce regulatory burdens.