

Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION  
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In the Matter of )  
)  
1998 Biennial Regulatory Review— )  
47 C.F.R. Part 90—Private Land Mobile )  
Radio Services )  
)  
Replacement of Part 90 by Part 88 to Revise )  
the Private Land Mobile Radio Services and )  
Modify the Policies Governing Them )  
and )  
Examination of Exclusivity and Frequency )  
Assignment Policies of the Private Land )  
Mobile Services )

WT Docket No. 98-182  
RM-9222

PR Docket No. 92-235

REPLY COMMENTS OF MOTOROLA, INC.

Motorola, Inc. ("Motorola") hereby submits this reply to the opening comments filed in response to the Notice of Proposed Rulemaking issued by the Commission in the above-captioned proceeding.<sup>1</sup> As discussed below, the record generally supports implementation of Motorola's suggestions for making the Part 90 Private Mobile Land Radio Service ("PMLRS") rules more user-friendly and commercially practical.

I. Introduction and Summary

In its opening comments in this proceeding, Motorola advanced a number of suggested rule changes designed to simplify, streamline, and update the regulations governing Part 90

<sup>1</sup> 1998 Biennial Regulatory Review—47 C.F.R. Part 90—Private Land Mobile Radio Services, Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them and Examination of Exclusivity and Frequency Assignment Policies of the Private Land Mobile Services, FCC 98-251 (rel. Oct. 20, 1998) ("Notice").

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PMLRS operations. In particular, Motorola suggested: (1) that Section 90.35(c)(60)(i) be amended to allow use of the so-called “dock” or “cargo” frequencies at any location for voice and non-voice operation; (2) that the limitation requiring “dock” or “cargo” frequencies to be used “for communications concerned with cargo handling from a dock, or a cargo handling facility, to a vessel alongside” be eliminated; (3) that the license term for all stations authorized under Part 90 be extended to ten years; (4) that the time in which all Part 90 stations must be placed in operation be extended to one year; (5) that the Commission eliminate the licensing requirements for specific “color dot” frequencies; (6) that Section 90.155 be amended to permit wide-area public safety systems below 800 MHz to apply for extended implementation authority under terms and conditions similar to those available to public safety systems above 800 MHz; (7) that the definitions of “centralized” and “decentralized” trunking be clarified to incorporate all types of trunking protocols that fit within these distinctions; and (8) that the Commission direct the Telecommunications Industry Association (“TIA”) to promote an industry-wide effort to develop specific recommendations concerning the introduction of the Adjacent Channel Coupled Power (“ACCP”) approach for limiting out-of-band emissions in appropriate PLMRS frequency bands. Most other commenters expressed support for these suggestions, generally agreeing that the public interest would be served by simplifying and streamlining the rules at issue.

Rather than reiterate in detail the record support for each of the specific suggestions advanced in its opening comments, Motorola is focusing this reply on two issues that require further discussion. First, in its opening comments, Motorola supported elimination of the licensing requirements for specific “color dot” frequencies in the VHF and UHF bands. This proposal was generally well received, with the possible exception of the American Petroleum

Institute (“API”), which stresses that four of the UHF channels in question are important to its members’ communications needs. Because these channels will continue to be available for use by API members and in view of the fact that eliminating the licensing requirements will actually expedite their availability, Motorola continues to urge delicensing of the frequencies in question. In addition, Motorola notes that the availability of UHF channels for these purposes is particularly important because the propagation characteristics of UHF waves allow for better in-building penetration and coverage, which is required by the many on-site entities currently using these frequencies.

Motorola further supports elimination of the licensing requirements for four additional VHF channels, as such action will enable users, and small businesses in particular, to tailor their channel usage to local conditions without cumbersome channel coordination and licensing. Motorola also agrees that 151.625 MHz and 151.955 MHz should be license-free under low power operation only, and submits that the permitted power applicable to the channels 151.820 MHz, 151.880 MHz, and 151.940 MHz should be increased from one watt to two watts. Finally, in response to an issue raised by Tandy Corporation (“Tandy”), Motorola notes that the Commission’s existing rules already permit manufacturers to provide external controls that allow users to select from specific frequencies programmed into a radio by the manufacturer.

Second, in its opening comments, Motorola endorsed the introduction of the ACCP method for limiting out-of-band emissions in appropriate PLMR frequency bands after the industry reaches consensus on the technical standards governing use of this technique. Ericsson also strongly supports the use of ACCP as a technically superior means of measurement. To provide the industry time to consider fully the implementation of ACCP, Motorola suggests that

the Commission defer consideration of this issue until an industry group—such as TIA—develops the necessary recommendations.

## **II. The Commenters Broadly Support the Elimination of the Licensing Requirement for the Identified Low Power Channels, Including UHF Channels**

In its comments, Motorola supported removal of licensing requirements for five so-called “color dot” frequencies<sup>2</sup> in the VHF band (151.820 MHz, 151.880 MHz, 151.940 MHz, 154.570 MHz, and 154.600 MHz) and four additional “dot” frequencies in the UHF band (467.850 MHz, 467.875 MHz, 467.900 MHz, and 467.925 MHz). Motorola demonstrated that removal of the licensing requirement as applied to these frequencies will serve the public interest because there is significant consumer demand for unlicensed *business* frequencies. In addition, the requested rule changes will benefit on-site customers who require low-cost radio communications solutions.

As discussed in Motorola’s opening comments, it is also essential that the frequencies in question be reallocated to Part 95 and included in a new unlicensed radio service category, the “Low Power Industrial/Business Service,” that will be designated for business users *only* and clearly distinguishes itself from the Family Radio Service and the Low Power Radio Service frequencies in the Citizens Band Radio Service. In this regard, Motorola suggests that the needs of affected business users should play a pivotal role in the Commission’s decision-making process.

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<sup>2</sup> This name refers to a frequency identification code developed by equipment manufacturers to signal the frequencies on which various radio products operate. Each of the “dot” frequencies is referred to by a color name, such as the “brown dot” or the “yellow dot,” so that consumers know the frequencies used by radio devices they purchase.

All commenters addressing this issue support elimination of individual licensing for the VHF channels.<sup>3</sup> API is the sole commenter that raises concerns about licensing the low power UHF frequencies by rule,<sup>4</sup> while Tandy suggests additional frequencies suitable for license-free operations along with relaxation of frequency selection capabilities.<sup>5</sup>

API indicates that the four UHF channels suggested by Motorola for licensing by rule are used to support important functions for some API members. On this basis, API urges that these channels remain subject to the existing licensing requirements.<sup>6</sup> In response to API's concern, Motorola notes that these channels will remain available for use by API members. In addition, elimination of the licensing requirement as applied to these frequencies will speed the availability of the channels for API members and other users. Furthermore, there is a vital need to include UHF frequencies in the channel pool because the propagation of UHF frequencies allows for better in-building penetration and coverage essential to on-site business users. Finally, given the low power restrictions applicable to the frequencies at issue and the fact that the station licenses do not identify operational service areas, licensing serves little, if any, purpose.<sup>7</sup> Accordingly, Motorola continues to recommend that the licensing requirements applicable to the UHF dot channels be eliminated.

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<sup>3</sup> See API Comments at ¶ 10, Blooston, Mordkofsky, Jackson & Dickens Comments at 4-5, Land Mobile Communications Council ("LMCC") Comments at 8-9, Personal Communications Industry Association ("PCIA") Comments at 7-8, Tandy Comments at 2-3.

<sup>4</sup> See API Comments at ¶ 11.

<sup>5</sup> See Tandy Comments at 3-4.

<sup>6</sup> See API Comments at ¶ 11.

<sup>7</sup> See Notice, ¶ 32.

Tandy joins in Motorola's request that the Commission remove licensing requirements for specific "color dot" frequencies and, in addition, encourages relaxation of these requirements for four other VHF frequencies.<sup>8</sup> Motorola, in turn, endorses Tandy's suggestion that elimination of licensing for these VHF channels will enable users to seek out the best channel for their local conditions without cumbersome channel coordination and foster benefits to small businesses overwhelmed by current licensing requirements. Motorola further agrees that two of the frequencies—151.625 MHz and 151.955 MHz—should be license-free only under low power operation and suggests that these channels would continue to be available for high power use (*i.e.* 110 watt) when licensed as Part 90 frequencies.<sup>9</sup> Similarly, Motorola endorses the suggestion that the permitted power applicable to the 151.820 MHz, 151.880 MHz, and 151.940 MHz channels be increased from one watt to two watts.<sup>10</sup>

Finally, in response to Tandy's request that consumers be able to select directly among any of the nine unlicensed frequencies using easily accessed external controls,<sup>11</sup> Motorola notes that such designs are permitted under current FCC regulations. In particular, Sections 90.203(f) and (g) of the Commission's rules simply restrict operators from using external controls to *program the transmitter's operating frequency*.<sup>12</sup> If, however, the frequencies are programmed

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<sup>8</sup> The four additional VHF frequencies that Tandy recommends for delicensing are 151.625 MHz, 151.700 MHz, 151.760 MHz, and 151.955 MHz. *See* Tandy Comments at 3.

<sup>9</sup> Tandy Comments at 3.

<sup>10</sup> *Id.*

<sup>11</sup> *Id.*

<sup>12</sup> *See* 47 C.F.R. §§ 90.203(f) and 90.203(g).

by the manufacturer and are *selectable* by an operator, such a configuration is certainly acceptable under the Commission's rules.

### **III. The Record Supports the Introduction of the Adjacent Channel Coupled Power Approach for Limiting Out-Of-Band Emissions in Appropriate PLMR Frequency Bands After Industry-Wide Consensus is Established**

In the *Notice*, the Commission sought comment on whether it should apply the concept of ACCP measurements in lieu of emission masks for all Part 90 frequency bands.<sup>13</sup> ACCP is an alternative approach to emission masks for limiting out-of-band emissions, and relies on calculating the amount of radio energy directly inserted into the adjacent channel spectrum. In Motorola's view, direct measurements of interfering energy are more meaningful than relying on emission masks and eliminate the bias that traditional emission masks have in favor of analog transmissions versus digital modulation techniques.<sup>14</sup>

As indicated in its comments, Motorola strongly supports the extension of this policy into other Part 90 frequency bands after an industry group, such as TIA, has had an opportunity to develop a set of recommendations on the necessary protection required by all types of receivers

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<sup>13</sup> *Notice*, ¶ 35.

<sup>14</sup> The Commission's traditional emission masks typically require analog emissions to begin attenuating while still within the channel bandwidth in order to provide adequate interference protection to adjacent channel receivers. Digital modulations, however, can be filtered such that more of the available channel bandwidth can be used while still providing adequate protection to adjacent channel operations. Providing digital modulations with a broader "flat top" emission within the channel improves spectrum efficiency. These facts led the FCC to adopt a new emission mask for 800 MHz wide-area systems that does not require any attenuation within the channel bandwidth. *See Amendment of Part 90 of the Commission's Rules to Facilitate Future Development of SMR Systems in the 800 MHz Frequency Band*, 11 FCC Rcd 1463, 1518 (1995) (First Report and Order, Eighth Report and Order, and Second Further Notice of Proposed Rule Making).

as well as the proper measurement techniques to be used in the Commission's equipment authorization process.<sup>15</sup> Ericsson also strongly supports the technical superiority of ACCP and provides representative values for 6.25 kHz, 12.5 kHz, and 25 kHz mobile and base station transmitters, while indicating that additional discussion under the auspices of the National Coordinating Committee or other appropriate engineering body would be appropriate.<sup>16</sup> By contrast, API expresses reservations about use of ACCP for Part 90 services and indicates that the rationale for changing the out-of-band emissions requirements should be based on improved adjacent channel system performance as opposed to a more convenient measurement process.<sup>17</sup>

In Motorola's view, debate about specific measurements, such as those provided by Ericsson, is best handled in an industry forum where parties can reach consensus on such requirements, rather than through the Commission's rule making process. Additionally, the goal of ACCP use is not to degenerate current adjacent channel protection enjoyed by Part 90 licensees as feared by API. Rather, ACCP more accurately reflects the potential for harmful interference in adjacent bands than does the traditional emission mask used by the Commission. Because it measures actual interfering energy within the band and provides flexibility in the design of equipment, ACCP is a superior emission measurement technique. In contrast, current emission mask restrictions require emissions to begin attenuating within the assigned channel. Use of ACCP therefore provides a more efficient use of the scarce PLMRS spectrum while continuing to provide full adjacent channel protection.

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<sup>15</sup> See Motorola Comments at 14-15.

<sup>16</sup> See Ericsson Comments at 11-14.

<sup>17</sup> See API Comments at ¶¶ 13-14.

Motorola continues to be a strong proponent of the use of ACCP. Because of the diverse nature of the technologies and products manufactured for the PLMRS bands in question, however, further debate on this issue is warranted. Accordingly, Motorola reiterates its suggestion that the Commission defer adoption of specific ACCP protection requirement until after an industry group has an opportunity to develop recommendations on the necessary protection required by all types of receivers and measurement techniques to be used in the equipment authorization process.<sup>18</sup> This approach will ensure that all manufacturers participate in the development of new rules that directly affect whether their products remain in compliance with FCC requirements.

#### **IV. Conclusion**

In its opening comments in this proceeding, Motorola advanced several recommendations designed to streamline the rules applicable to PLMRS systems, clarify confusing rules, and eliminate unnecessary regulatory requirements. Motorola submits that adoption of its initial recommendations and the additional suggestions set forth in this reply will serve the public

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<sup>18</sup> See American Mobile Telecommunications Association, Inc. (“AMTA”) Comments at 8 (supporting the limitation of out-of-band emissions but deferring specific comment on the ACCP approach).

interest by improving the efficiency of PLMRS operations and easing the administrative burden on licensees and the Commission staff.

Respectfully submitted,

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