

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

In the Matter of	)	
	)	
Review of Part 15 and other Parts of the Commission's Rules.	)	ET Docket 01-278
	)	

**FIRST REPORT AND ORDER**

**Adopted: July 12, 2002**

**Released: July 19, 2002**

By the Commission:

**I. INTRODUCTION**

1. By this action, we are requiring that radar detectors comply with radiated emission limits in the 11.7-12.2 GHz band under Part 15 of the rules, and that all radar detectors be certified to demonstrate compliance with the emission limits before they can be marketed.<sup>1</sup> The requirements will become effective thirty days from the publication of the rules in the Federal Register for radar detectors being manufactured and imported, and sixty days after publication of the rules in the Federal Register for radar detectors being marketed. This action will significantly reduce interference from radar detectors to very small aperture satellite terminals (VSATs).<sup>2</sup>

**II. BACKGROUND**

2. Most receivers contain one or more oscillators that generate radio frequency signals intended to be used internally within the device in tuning the received signal. These generated signals can radiate from the receiver and have the potential to interfere with other nearby receivers. For this reason, Part 15 of the Commission's rules requires certain receivers to meet the radiated emission limits for "unintentional radiators" to minimize the possibility of interference.<sup>3</sup> The current rules require only receivers that tune in the range of 30-960 MHz and Citizen's Band receivers to comply with these limits.<sup>4</sup> Other receivers are not required to comply with the limits, but the rules require that any receiver that

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<sup>1</sup> Radar detectors are designed to warn motorists of the presence of police speed-measuring radars.

<sup>2</sup> VSATs are used for a number of purposes including linking retail establishments with remote computers for verifying credit card transactions and providing video, data and audio broadcast services to businesses. They typically operate with a 14 GHz satellite uplink frequency and an 11 GHz satellite downlink frequency. The downlink frequency is much more susceptible to interference than the uplink frequency.

<sup>3</sup> An unintentional radiator is defined in Section 15.3(z) of the rules as a device that intentionally generates radio frequency energy for use within the device, or that sends radio frequency signals by conduction to associated equipment via connecting wiring, but which is not intended to emit RF energy by radiation or induction. Examples of unintentional radiators include radio receivers, computers and VCRs. The radiated emission limits for unintentional radiators are set for in Section 15.109 of the rules. The requirement for certain receivers to meet these radiated emission limits is set forth in Section 15.101(a) of the rules.

<sup>4</sup> See 47 C.F.R. § 15.101(b).

causes interference must cease operation.<sup>5</sup> When these requirements were established, most consumer receivers tuned only below 960 MHz. Because there was less probability of receivers that tune above 960 MHz causing interference, the rules did not require such receivers to meet emission limits or to receive an equipment authorization. The emission limit that applies to unintentional radiators other than receivers at frequencies above 960 MHz is a field strength limit of 500  $\mu\text{V}/\text{m}$  measured at a distance of 3 meters.<sup>6</sup>

3. Radar detectors that warn of the presence of police speed-measuring radars are currently exempt from complying with the Part 15 emission limits because they are receivers that tune only above 960 MHz. They are designed to monitor for the presence of police radar in several frequency bands, including the 10.50-10.55 GHz, 24.05-24.25 GHz and 33.4-36.0 GHz bands.<sup>7</sup> Radar detectors contain a tuning oscillator that operates above the 10.50-10.55 GHz band. In older models this oscillator generally operated on frequencies below the 11.7-12.2 GHz VSAT downlink band, and we have not received complaints of interference to VSATs from such models. However, the potential for radar detectors to interfere with VSATs has recently increased because radar detector manufacturers have begun using oscillators at higher frequencies that place swept frequency emissions within the VSAT downlink band. The purpose of these changes was to enhance detection of police radar while making it more difficult for police to detect the presence of radar detectors in vehicles.<sup>8</sup>

4. On October 15, 2001, the Commission adopted a *Notice of Proposed Rule Making and Order* (“*Notice*”) that proposed to make a number of changes to Part 15 and other parts of the rules.<sup>9</sup> The *Notice* sought comment on whether there is a need to require radar detectors to comply with radiated emission limits to minimize the possibility of interference to authorized services including VSAT operations, and if so, the appropriate limits that should be applied.<sup>10</sup> The *Notice* also sought comments on whether there are other receivers that tune above 960 MHz that should be required to comply with emission limits, and if so, the appropriate limits and frequency bands where they should apply.<sup>11</sup> Further, the *Notice* sought comment concerning the timeframe for affected receivers that should be required to comply with any new emission limits.<sup>12</sup>

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<sup>5</sup> All devices operating under Part 15 of the rules are required to cease operation in the event they cause interference to an authorized radio service. *See* 47 C.F.R. § 15.5(b).

<sup>6</sup> *See* 47 C.F.R. § 15.109(a).

<sup>7</sup> *See* 47 C.F.R. § 90.103.

<sup>8</sup> Police in some states use a special receiver to determine whether motorists are using radar detectors. This receiver is designed to detect the presence of radar detector oscillator signals in certain bands. If the frequency of a radar detector oscillator is moved outside the range of this receiver, the police radar detector receivers will no longer be able to detect the presence of that radar detector.

<sup>9</sup> *See Notice of Proposed Rule Making and Order* in ET Docket No. 01-278, 16 FCC Rcd 18205 (2001).

<sup>10</sup> *See Notice* at ¶ 14.

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

<sup>12</sup> *Id.*

### III. DISCUSSION

5. We have found that radar detectors being marketed emit high level radio signals that can cause interference to VSATs. Accordingly, we are adopting rules that will protect VSATs from interference caused by radar detectors. As defined below, a radar detector is a receiver that signals the presence of radio signals used for determining the speed of motor vehicles.

6. Comments from the satellite industry strongly support imposing emission limits on radar detectors. Spacenet, Inc. and StarBand Communications Inc. (Spacenet/StarBand), PanAmSat Corporation (PanAmSat), and Comsearch claim that radar detectors cause interference to VSAT operations, including both digital data and video.<sup>13</sup> PanAmSat and the Satellite Industry Association (SIA) state that interference is also caused to telemetry, tracking and control (TT&C) stations, which could potentially cause permanent loss of satellite control.<sup>14</sup> Loral Skynet (Loral) and Hughes Network Systems (Hughes) state that they have investigated several cases of interference to VSATs reported to them and determined that the interference was caused by radar detectors.<sup>15</sup> Loral, Hughes, SIA, Comsearch and Spacenet/StarBand all believe that the Commission should require radar detectors to comply with radiated emission limits to reduce interference to VSATs.<sup>16</sup> Loral recommends that these devices be required to comply with the current Part 15 limit of 500  $\mu\text{V}/\text{m}$  at 3 meters; Hughes recommends 30  $\mu\text{V}/\text{m}$  at 3 meters; SIA recommends 85  $\mu\text{V}/\text{m}$  at 3 meters; Comsearch recommends 60  $\mu\text{V}/\text{m}$  at 3 meters; and Spacenet/Starband recommends -154 dBm/100 kHz.<sup>17</sup> PanAmSat recommends that emission limits apply in all bands where satellites operate and Comsearch recommends that the limits apply in the 11.7-12.2 GHz band used by earth stations.<sup>18</sup> SIA recommends that the limits apply in the 10.7-12.2 GHz band.<sup>19</sup>

7. Uniden America Corporation (Uniden), Shure, Inc. (Shure) and Cisco Systems, Inc. (Cisco) support the adoption of radiated emission limits on all receivers that operate above 960 MHz. Uniden states that singling out radar detectors as the only receiver subject to emission limits merely addresses one potential interference problem without addressing future issues.<sup>20</sup> It states that the adoption of a universal emission standard for all unlicensed devices operating above 960 MHz is more equitable and more likely to promote innovation by manufacturers because it will provide certainty by setting forth a definitive technical standard.<sup>21</sup> Shure states that because there are now more receivers operating above 960 MHz than in the past, the Commission should impose radiated emission limits on all types of unintentional

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<sup>13</sup> See Spacenet/Starband comments at 8, 10-11, PanAmSat comments at 1-2 and Comsearch comments at 2.

<sup>14</sup> See PanAmSat comments at 2 and SIA comments at 2-3.

<sup>15</sup> See Loral comments at 4 and Hughes comments at 4.

<sup>16</sup> See Loral comments at 4, Hughes comments at 4 and Spacenet/Starband comments at 16-17.

<sup>17</sup> See Loral comments at 4, Hughes comments at 4, SIA *ex parte* submission dated May 31, 2002 at 1, Comsearch comments at 3, and Spacenet/Starband comments at 16-17.

<sup>18</sup> See PanAmSat comments at 3 and Comsearch comments at 3.

<sup>19</sup> See SIA comments at 4 and SIA *ex parte* submission dated May 31, 2002.

<sup>20</sup> See Uniden comments at 3.

<sup>21</sup> See Uniden comments at 3.

radiators, as well as receivers such as radar detectors.<sup>22</sup> Cisco believes that cheap receivers with high levels of radiated emissions could cause interference with high-tech transceivers used in bands above 1000 MHz.<sup>23</sup> Interlogix, Inc. (Interlogix) disagrees with Uniden and Cisco, stating that the consequences of over-regulation could be disastrous to other, non-offending products.<sup>24</sup> The Short Range Automotive Radar Frequency Allocation Group (SARA) states that the Commission should not require all receivers operating above 960 MHz to comply with the Part 15 emission limits because an overly broad rule could impact the ability of manufacturers to deploy affordable short range radar devices.<sup>25</sup>

8. Cobra Electronics Corporation (Cobra) and Escort, Inc./BEL, Inc. (Escort/BEL) claim that there is insufficient evidence of harmful interference caused by radar detectors.<sup>26</sup> RADAR Members (RADAR) state that the VSAT community may have exacerbated the problem through unwise siting of its antennas or poor receiver or antenna design.<sup>27</sup> However, SES Americom disagrees, stating that there is little a VSAT operator can do to prevent radar detector interference.<sup>28</sup>

9. The Whistler Group, Inc. (Whistler) opposes emission limits on radar detectors, stating that a substantial redesign would be required for anything more than trivial emission reductions, which would cripple the industry and result in a significant loss of jobs and retail sales.<sup>29</sup> RADAR states that any significant reduction in local oscillator emissions applied to a wide region of spectrum would require a redesign that would yield a product that is too expensive for its market.<sup>30</sup> Nevertheless, RADAR acknowledges that there are reports of interference from radar detectors to VSAT receivers.<sup>31</sup> RADAR, Whistler, Escort/BEL and Cobra state that the radar detector industry has developed a plan to reduce radar detector emissions to 500  $\mu\text{V}/\text{m}$  at 3 meters in the 11.7-12.2 GHz VSAT band by June 1, 2003.<sup>32</sup> Under this plan, RADAR members would redesign their equipment so that the oscillator frequencies fall in the 10.7-11.7 GHz band, and would cease the manufacture and importation of radar detectors with emissions above the Class B limit in the 11.7-12.2 GHz band by June 1, 2003. RADAR states that manufacturers are already implementing these changes, and that compliance will be essentially complete by January 2003.<sup>33</sup> RADAR alleges that the *Notice* did not provide adequate information for meaningful comment

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<sup>22</sup> See Shure comments at 1-2.

<sup>23</sup> See Cisco comments at 3-5.

<sup>24</sup> See Interlogix reply comments at 2.

<sup>25</sup> See SARA comments at 9-10.

<sup>26</sup> See Cobra comments at 1 and Escort/BEL comments at 2.

<sup>27</sup> See RADAR comments at 4.

<sup>28</sup> See SES Americom reply comments at 6.

<sup>29</sup> See Whistler comments at 2-3.

<sup>30</sup> See RADAR comments at 4-5.

<sup>31</sup> See RADAR *ex parte* submission dated June 11, 2002.

<sup>32</sup> See Whistler comments at 2, Escort/BEL comments at 3-4, Cobra comments at 5, and RADAR comments at 5.

<sup>33</sup> See RADAR *ex parte* submission dated June 11, 2002.

because it did not propose regulations, but merely asks whether regulations are necessary. It therefore believes that a Further Notice of Proposed Rule Making is needed before the adoption of rules.<sup>34</sup>

10. We conclude that there is a need for limits on the radiated emissions from radar detectors to protect VSATs from interference. Tests on several radar detectors at the Commission's laboratory found emission levels ranging from 33,000  $\mu\text{V}/\text{m}$  to 231,000  $\mu\text{V}/\text{m}$  at 3 meters within the VSAT band.<sup>35</sup> The information in the record in this proceeding claims that some radar detector emissions exceed 100,000  $\mu\text{V}/\text{m}$  at 3 meters in the VSAT band, which is consistent with our measurements.<sup>36</sup> These levels are far greater than the satellite receive signal levels in the 11.7-12.2 GHz band. These levels are also greater than the levels Part 15 permits for some transmitters operating in Industrial, Scientific and Medical (ISM) bands, and are over 200 times greater than the Part 15 limit for spurious emissions above 960 MHz.<sup>37</sup> Such levels have a high potential for causing interference to satellite operations, and the information in the record does in fact document many instances of harmful interference caused by radar detectors to satellite operations. VSATs use relatively small receive antenna dishes, on the order of one to two meters, which are less directional and less able to reject signals outside the main receive axis than larger antenna dishes. Also, VSATs are commonly used by small businesses such as stores and gas stations, so they are typically located close to the ground and in close proximity to automobiles. For these reasons, they can not tolerate the levels of interfering signals being emitted by radar detectors.

11. Part 15 requires the operator of an unlicensed device (in this case, the user of a radar detector) to cease operation in the event the device causes harmful interference, even if that device is not subject to specific emission limits.<sup>38</sup> However, identifying each individual source of interference from radar detectors is not practical for a satellite operator because these devices are mobile and therefore interfere intermittently. Further, these interference sources are not under the control of the satellite operator, so in most cases it is not possible for the satellite operator to remedy the interference even if the source could be identified. Under Section 302 of the Communications Act, the Commission has authority to make reasonable regulations governing the interference potential of devices which in their operation are capable of emitting radio frequency radiation in sufficient degree to cause harmful interference to radio communications, and to require devices marketed to comply with these regulations.<sup>39</sup> We conclude that the only reasonable solution to this interference situation is to require radar detectors to comply with emission limits before they are marketed.

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<sup>34</sup> See RADAR comments at 6-7 and RADAR reply comments at 8.

<sup>35</sup> See memorandum of test results by the Commission's Laboratory dated June 25, 2002.

<sup>36</sup> See PanAmSat/SIA *ex parte* submission dated April 16, 2002 at 17-20.

<sup>37</sup> See 47 C.F.R. § 15.249, which permits 50,000  $\mu\text{V}/\text{m}$  at 3 meters for transmitters operating in the 5.8 GHz ISM band. See also 47 C.F.R. § 15.109 and 15.209, which permit a spurious emission level of 500  $\mu\text{V}/\text{m}$  at 3 meters from most Part 15 devices.

<sup>38</sup> See 47 C.F.R. §§ 15.5 and 15.101(b).

<sup>39</sup> Section 302(a) of the Communications Act states that, "The Commission may, consistent with the public interest, convenience and necessity, make reasonable regulations...governing the interference potential of devices which in their operation are capable of emitting radio frequency energy...in sufficient degree to cause harmful interference to radio communications." See 47 U.S.C. § 302(a). Section 302(b) of the Communications Act states that, "No person shall manufacture, import, sell, offer for sale, or ship devices...which fail to comply with the regulations promulgated pursuant to this section." See 47 U.S.C. § 302(b).

12. We will define a radar detector as a receiver designed to signal the presence of radio signals used for determining the speed of motor vehicles because that is the type of device that has caused interference to VSATs and this definition best covers the general range of these products. We do not intend for this definition to encompass the receiver incorporated within a radar transceiver certified under the Commission's rules such as a police radar gun or an anti-collision radar because those devices have not been a source of interference to VSATs.

13. We will require radar detectors to comply with the same limit in the 11.7-12.2 GHz VSAT band that applies to other unintentional radiators operating under Part 15 of the rules. This limit is 500  $\mu\text{V/m}$  measured at a distance of 3 meters, and is based on the use of measurement equipment with a 1 MHz measurement bandwidth and an average detector function.<sup>40</sup> As with other Part 15 devices, the emission levels measured with a peak detector function may not exceed the average limit by more than 20 dB.<sup>41</sup> This emission limit has a long and successful history of controlling interference to authorized services and will protect VSATs from harmful interference caused by radar detectors in virtually all cases. In those rare cases where radar detector emissions at that level cause harmful interference, the non-interference requirement of Section 15.5 will continue to apply.<sup>42</sup> We are applying emission limits in only the VSAT downlink band because the only complaints of interference that we have received are to VSAT receivers in the 11.7-12.2 GHz band. We expect that adopting these limits will result in manufacturers changing receiver local oscillators to frequencies outside this band, so as a practical matter only spurious emissions will fall within the VSAT downlink band. These emissions will typically be far below the emission limit we are adopting and are unlikely to result in harmful interference to VSATs.

14. As stated in Part 15 of the rules, we expect manufacturers to use good engineering practice in the design of their equipment and suppress emissions as much as practicable.<sup>43</sup> We will consider modifying the emission limits we are adopting for radar detectors if a need is shown for such changes, such as if interference to VSAT operations or other authorized services occurs. We are also willing to consider, in future proceedings, limiting radar detector primary oscillators to particular frequencies, should that prove necessary to avoid harmful interference.

15. Because many radar detectors being marketed today emit high level signals that can cause interference to VSATs, we conclude that the public interest is best served by requiring that all radar detectors marketed within the United States meet the new emission limits quickly. Accordingly, we are requiring that all radar detectors marketed beginning sixty days after publication of this decision and the associated rules in the Federal Register must comply with the new rules. This plan will provide a reasonable amount of time for manufacturers, wholesalers and retailers to be notified of the rule changes so they can cease marketing non-compliant units.<sup>44</sup> Furthermore, we are requiring that radar detectors imported into the United States or manufactured in this country for use within this country comply with the new rules beginning thirty days after publication of this decision and the associated rules in the

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<sup>40</sup> See 47 C.F.R. §§ 15.109 and 15.35(b).

<sup>41</sup> See 47 C.F.R. § 15.35(b).

<sup>42</sup> See 47 C.F.R. § 15.5.

<sup>43</sup> See 47 C.F.R. § 15.15(a).

<sup>44</sup> See 47 C.F.R. § 2.803 for a description of the marketing restrictions for devices subject to Commission authorization.

Federal Register.<sup>45</sup> In requiring that manufacturing and importation of radar detectors meet the new requirements before the marketing cut-off date, we are providing manufacturers time to introduce compliant models before the sixty-day marketing cutoff. This will also prevent the manufacture or importation of large numbers of non-compliant devices prior to the marketing cutoff date. The new rules will apply only to devices being imported, manufactured and marketed after the specified effective dates. We are not adopting specific rules concerning devices already sold, but such devices will continue to be subject to the non-interference requirement in Section 15.5 of the rules.<sup>46</sup>

16. We will require that radar detectors be authorized under our certification procedure because they have been found to emit spurious RF energy at levels that can cause harmful interference to authorized radio services. The certification procedure provides a higher level of oversight of equipment compliance prior to marketing than either the Declaration of Conformity (DoC) or the verification self-approval procedures.<sup>47</sup> As we noted previously, equipment with the potential to create significant interference to communication services requires a higher level of oversight than manufacturer's self-approval.<sup>48</sup> In view of the fact that the new rules we are establishing for radar detectors are clear and the testing methods used to determine compliance with the rules are straightforward, we will permit Telecommunication Certification Bodies (TCBs) to certify them.<sup>49</sup> Allowing TCBs to certify radar detectors will permit manufacturers to obtain an equipment approval in an expeditious manner because manufacturers will have more than one approval body to choose from. The tests that will be required for radar detectors are field strength measurements over a single frequency band, which TCBs accredited to make radiated measurements above 1 GHz are already capable of performing. The staff of the Office of Engineering and Technology will work with TCBs to promptly address any implementation issues which may arise.

17. We recognize that requiring radar detectors to be certified within thirty days after publication of the new rules in the Federal Register may pose some logistical problems for manufacturers. Many radar detectors may already comply with the new emission limits and could thus be certified quickly. However, because many of these units may already be in transit from the manufacturer to wholesalers and retailers, it would be difficult for manufacturers to bring these devices into compliance with the administrative requirements for certified devices within this timeframe. Specifically, all equipment authorized under the certification procedure is required to be labeled with an FCC identification number.<sup>50</sup> In addition, Part 15 requires a warning label stating that the device may not cause harmful interference and must accept any interference received, and requires the user's manual to contain a statement that unauthorized changes or

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<sup>45</sup> Equipment manufactured in this country solely for export is exempt from compliance with the requirements promulgated under Section 302 of the Communications Act. *See* 47 U.S.C. § 302(c).

<sup>46</sup> *See* 47 C.F.R. § 15.5.

<sup>47</sup> The certification procedure requires filing an application with and having it approved by either the Commission or a designated Telecommunication Certification Body (TCB) before the equipment may be marketed. DoC is a self-approval procedure which requires having the equipment tested at an accredited laboratory, but does not require the filing of an application before the equipment may be marketed. Verification is similar to the DoC procedure, but the laboratory testing the equipment does not have to be accredited.

<sup>48</sup> *See Report and Order* in GEN Docket No. 98-68, 13 FCC Rcd 24687, 24692 (1999).

<sup>49</sup> *See* 47 C.F.R. § 2.962(f)(5)(i), which states that TCBs may not certify equipment for which the Commission's rules and requirements do not exist, or for which the application of the rules and requirements is unclear.

<sup>50</sup> *See* 47 C.F.R. § 2.925.

modifications could void the user's authority to operate the equipment.<sup>51</sup> It is unlikely that manufacturers could comply with these administrative requirements within thirty days because the time needed to make changes on the assembly line and ship products would generally be greater than thirty days. We believe that the rules' intention to notify customers can be satisfied by other means without causing delays to manufacturers. We will therefore permit radar detectors manufactured or imported within 180 days of the publication of the new rules in the Federal Register to be labeled with the FCC identification number and Part 15 warning statement on the individual equipment carton rather than on the device itself, so long as certification has been obtained for those units. In addition, we will not require the statement about unauthorized changes to be placed in the user's manual during this time period. This approach will eliminate the need for manufacturers to cease manufacturing and importing equipment to implement the new labeling requirements, and will provide a practical means to label products that comply with the technical requirements but that were produced without labels.

18. Radar detector manufacturers have offered to provide the Commission with lists of radar detector serial numbers to assist in identifying products manufactured before and after the date on which equipment authorization is required.<sup>52</sup> We believe that such lists could assist us in determining whether radar detectors being marketed were legally manufactured and imported. Accordingly, we will require all parties that manufacture or import radar detectors as of the manufacturing and importation cutoff date we are adopting to supply such lists. The Office of Engineering and Technology will issue a public notice that will ask parties to supply this information once the necessary Office of Management and Budget (OMB) approval to collect this information has been obtained.

19. We disagree with RADAR's assertion that a Further Notice of Proposed Rule Making is needed before we can adopt emission limits for radar detectors because the *Notice* did not propose specific regulations. Under the Administrative Procedure Act, it is not necessary for the *Notice* to propose specific regulations. Rather, it must include either the terms or substance of the proposed rules, or a description of the subjects and issues involved.<sup>53</sup> The *Notice* clearly described the subject and issues involved, which is that we were considering adopting emission limits for radar detectors, and sought comment on the appropriate limits.<sup>54</sup> The large number of comments received from both the satellite industry and the radar detector industry show that parties had adequate notice of potential rule changes, so a Further Notice of Proposed Rule Making is unnecessary.

20. Finally, we decline to adopt emission limits for other receivers operating above 960 MHz as recommended by Uniden, Shure and Cisco. There is not sufficient information in the record in this proceeding to justify emission limits for receivers above 960 MHz other than radar detectors. We are adopting emission limits for radar detectors because they have been found to emit high level signals that can cause interference to VSATs. No information was provided to show that similar circumstances exist with other receivers operating above 960 MHz. Therefore, we find that requiring other receivers operating above 960 MHz to comply with emission limits is not necessary at this time. This does not preclude our ability to impose such limits in the future if the need becomes apparent.

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<sup>51</sup> See 47 C.F.R. § 15.19(a). The warning statement that applies to radar detectors is in paragraph (a)(3) of this section. See also 47 C.F.R. § 15.21.

<sup>52</sup> See July 11, 2002 *ex parte* submission filed by Mitchell Lazarus.

<sup>53</sup> See 5 U.S.C. § 553(b)(3).

<sup>54</sup> See *Notice* at ¶ 14.



#### IV. PROCEDURAL MATTERS

21. Final Regulatory Flexibility Analysis. The Final Regulatory Flexibility Analysis for this First Report and Order, pursuant to the Regulatory Flexibility Act, 5 U.S.C. § 604, is contained in Appendix C.

22. Paperwork Reduction Act of 1995 Analysis. This Report & Order contains new information collections 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 new or modified information collection contained in this proceeding.

23. To make cited sources more easily available to the readers, we are testing the use of hyperlinks to some FCC documents that are cited in this document. The World Wide Web addresses/URLs that we give here were correct at the time this document was prepared but may change over time. We also advise that the only definitive text of FCC documents is the one that is published in the FCC Record. In case of discrepancy between the electronic documents cited here and the FCC Record, the version in the FCC Record is definitive.

#### V. ORDERING CLAUSES

24. Accordingly, IT IS ORDERED that pursuant to the authority contained in Sections 4(i), 301, 302, 303(e), 303(f), 303(r), 304 and 307 of the Communications Act of 1934, as amended, 47 USC Sections 154(i), 301, 302, 303(e), 303(f), 303(r), 304, and 307, Part 15 of the Commission's Rules is amended as set forth in Appendix A.

25. 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 Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

26. IT IS FURTHER ORDERED that, when requested by Public Notice, all parties that manufactured or imported radar detectors as of thirty days after publication of these rules in the Federal Register shall supply a list of radar detector models and information on their serial numbers which permits identification of their manufacturing date to the Office of Engineering and Technology. This requirement is subject to OMB review and approval and will become effective after such approval is obtained.

27. For further information regarding this First Report and Order, contact Mr. Hugh L. Van Tuyl, Office of Engineering and Technology, (202) 418-7506, e-mail [hvantuyl@fcc.gov](mailto:hvantuyl@fcc.gov).

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch  
Secretary

**APPENDIX A: FINAL RULE CHANGES**

Part 15 of Title 47 of the Code of Federal Regulations is amended as follows:

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

**AUTHORITY: 47 U.S.C. 154, 302, 303, 304, 307 and 544A.**

2. Section 15.3 is amended by adding a new paragraph (ee) to read as follows:

**§ 15.3 Definitions**

\* \* \* \* \*

(ee) *Radar detector.* A receiver designed to signal the presence of radio signals used for determining the speed of motor vehicles. This definition does not encompass the receiver incorporated within a radar transceiver certified under the Commission’s rules.

3. Section 15.37 is amended by adding a new paragraph (k) to read as follows:

**§ 15.37 Transition provisions for compliance with the rules.**

\* \* \* \* \*

(k) Radar detectors manufactured or imported after **[30 days from publication in Federal Register]** and marketed after **[60 days from publication in Federal Register]** shall comply with the regulations specified in this part. Radar detectors manufactured or imported prior to **[180 days from publication in Federal Register]** may be labeled with the information required by §§ 2.925 and 15.19(a) of this chapter on the individual equipment carton rather than on the device, and are exempt from complying with the requirements of § 15.21.

4. Section 15.101, paragraph (a) is amended by adding a new entry to the table following the entry for “Scanning receiver”, and by revising paragraph (b) to read as follows:

**§ 15.101 Equipment authorization of unintentional radiators.**

(a) \* \* \*

Type of device	Equipment authorization required
* * *	
Radar detector.....	Certification.
* * *	

(b) Only those receivers that operate (tune) within the frequency range of 30-960 MHz, CB receivers and radar detectors are subject to the authorizations shown in paragraph (a) of this section. However, receivers indicated as being subject to Declaration of Conformity that are contained within a transceiver, the transmitter portion of which is subject to certification, shall be authorized under the verification procedure. Receivers operating above 960 MHz or below 30 MHz, except for radar detectors and CB receivers, are exempt from complying with the technical provisions of this part but are subject to § 15.5.

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5. Section 15.109 is amended by adding a new paragraph (h) to read as follows:

**§ 15.109 Radiated emission limits.**

\* \* \* \* \*

(h) Radar detectors shall comply with the emission limits in paragraph (a) of this section over the frequency range of 11.7-12.2 GHz.

**APPENDIX B: LIST OF PARTIES FILING COMMENTS ON  
RECEIVERS OPERATING ABOVE 960 MHZ****Comments**

1. Uniden America Corporation
2. Shure Incorporated
3. The Whistler Group, Inc.
4. Loral Skynet
5. Spacenet, Inc. and StarBand Communications, Inc.
6. Hughes Network Systems, Inc.
7. RADAR Members
8. PanAmSat Corporation
9. Cobra Electronics Corporation
10. Short Range Automotive Radar Frequency Allocation Group
11. Interlogix, Inc.
12. Satellite Industry Association
13. SES Americom, Inc.
14. Comsearch
15. Escort, Inc. and BEL, Inc.
16. Cisco Systems, Inc.

**Reply comments**

1. Interlogix, Inc.
2. Satellite Industry Association
3. SES Americom, Inc.
4. Hughes Network Systems, Inc.
5. RADAR Members
6. Short Range Automotive Radar Frequency Allocation Group
7. Escort Incorporated and BEL Incorporated

## APPENDIX C: FINAL REGULATORY FLEXIBILITY ANALYSIS

As required by the Regulatory Flexibility Act (RFA),<sup>55</sup> an Initial Regulatory Flexibility Analysis (IRFA) was incorporated in the *Notice of Proposed Rule Making, Review of Part 15 and other Parts of the Commission's Rules (Notice)*.<sup>56</sup> The Commission sought written public comments on the proposals in the Notice, including comment on the IRFA.<sup>57</sup> This present analysis conforms to the RFA.<sup>58</sup>

### A. Need for, and Objectives of, the First Report and Order

Section 11 of the Communications Act of 1934, as amended, and Section 202(h) of the Telecommunications Act of 1996 require the Commission (1) to review biennially its regulations pertaining to telecommunications service providers and broadcast ownership; and (2) to determine whether economic competition has made those regulations no longer necessary in the public interest. The Commission is directed to modify or repeal any such regulations that it finds are no longer in the public interest.

As part of the biennial review for the year 2000, the Commission reviewed its regulations pertaining to telecommunications service providers and broadcast ownership and recommended a number of changes to those rules. While not specifically required by statute, the Commission also reviewed Parts 2, 15 and 18 of the Commission's Rules as part of this process.<sup>59</sup>

The First Report and Order requires radar detectors, which have been currently exempt from complying with emission limits, to meet the Part 15 limits in the 11.7-12.2 GHz band to avoid causing interference to satellite services.

### B. Summary of Significant Issues Raised by Public Comments in Response to the IRFA

Comments on the IRFA were received from radar detector manufacturers, who state they are small entities. RADAR Members, a trade association, argues that the adoption of limits across a wide band of spectrum would eliminate radar detectors from the consumer market, and that some companies would be unable to survive in the face of such a regulation. It states that as an alternative, manufacturers will voluntarily reduce emission in the 11.7-12.2 GHz band where interference to satellite operations was actually reported. Cobra Electronics Corporation states that it is a small entity that deserves consideration under the Regulatory Flexibility Act. It states that redesigning its product line, especially considering the very real possibility that doing so would eliminate the market for this product, obviously would be detrimental to small businesses such as Cobra. It further states that there is evidence that the industry is already addressing the satellite interference complaints.

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<sup>55</sup> See 5 U.S.C. § 603. The RFA, *see* 5 U.S.C. § 601 *et. seq.*, has been amended by the Contract With America Advancement Act of 1996, Pub. L. No. 104-121, 110 Stat. 847 (1996) (CWAAA). Title II of the CWAAA is the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA).

<sup>56</sup> See *Notice of Proposed Rule Making and Order* in ET Docket No. 01-278, 66 FR 59209 (November 27, 2001).

<sup>57</sup> See *id.*

<sup>58</sup> See generally 5 U.S.C. § 604.

<sup>59</sup> See 47 C.F.R. Parts 2, 15, 18.

**C. Description and Estimate of the Number of Small Entities To Which the Proposed Rules Will Apply**

The RFA directs agencies to provide a description of and, where feasible, an estimate of the number of small entities that may be affected by the proposed rules, if adopted.<sup>60</sup> The RFA generally defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction."<sup>61</sup> In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act.<sup>62</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 SBA.<sup>63</sup>

Our present action will affect some manufacturers of radio frequency equipment (RF manufacturers). The U.S. Small Business Administration (SBA) has designated a small business size standard for entities engaged in Radio and Television Broadcasting or Wireless Communications Equipment Manufacturing.<sup>64</sup> According to SBA, such a manufacturer must have 750 or fewer employees in order to qualify as a small business.<sup>65</sup> According to Census Bureau data from 1992, there were 858 such firms in the United States, and 778 had 750 or fewer employees.<sup>66</sup>

**D. Description of Projected Reporting, Recordkeeping, and Other Compliance Requirements**

The First Report and Order requires radar detectors used on vehicles to meet the Part 15 emission limits in the 11.7-12.2 GHz band to prevent interference to satellite services. It requires that radar detectors be certified to show that they comply with these requirements before they can be imported or marketed. Certification requires the manufacturer to have the equipment tested for compliance with the rules, and then file an application with the test data and information on the product with the Commission or a designated Telecommunication Certification Body (TCB). The manufacturer must wait until the application is granted before the equipment can be imported or marketed. Equipment that is certified must also be labeled with an FCC identification number and warning label stating that operation of the equipment must cease in the event it causes harmful interference to authorized radio services.

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<sup>60</sup> 5 U.S.C. § 604.

<sup>61</sup> 5 U.S.C. § 601(6).

<sup>62</sup> 5 U.S.C. § 601(3) (incorporating by reference the definition of "small business concern" in 15 U.S.C. § 632). Pursuant to the RFA, 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." 5 U.S.C. § 601(3).

<sup>63</sup> Small Business Act, 15 U.S.C. § 632 (1996).

<sup>64</sup> See 13 C.F.R. § 121.201, North American Industrial Classification System (NAICS) code 334220.

<sup>65</sup> *Id.*

<sup>66</sup> See U.S. Department of Commerce, 1992 Census of Transportation, Communications and Utilities (issued May 1995). These data have been updated for year 1997, but without the small business breakout. See Summary, Economic Census, Subject Series: Manufacturing at 1-19 (issued June 2001). By 1997, the census total for firms in this category had increased to 1,096. *Id.*

As a result of the rule change, some manufacturers will be required to redesign radar detectors to reduce emissions in the 11.7-12.2 GHz band. This could be accomplished by a change in the internal oscillator frequencies. Radar detector manufacturers state that 73 percent of units currently marketed can meet the emission limits in the 11.7-12.2 GHz band, and that the remainder will meet the limit by January 2003.

Because many radar detectors being marketed today emit high level signals that can cause interference to VSATs, the First Report and Order requires that all radar detectors marketed within the United States meet the new emission limits beginning sixty days after publication of this decision and the associated rules in the Federal Register must comply with the new rules. This plan will provide a reasonable amount of time for manufacturers, wholesalers and retailers to be notified of the rule changes so they can cease marketing non-compliant units. The First Report and Order also requires that radar detectors imported into the United States or manufactured within this country comply with the new rules beginning thirty days after publication of this decision and the associated rules in the Federal Register. This will provide manufacturers time to introduce compliant models before the sixty-day marketing cutoff. This will also avoid the manufacture or importation of large numbers of non-compliant devices prior to the marketing cutoff date. Manufacturers will be permitted to label radar detectors on the individual carton, rather than on the device itself, for a period of 180 days. In addition, manufacturers will not be required to place a statement about “unauthorized changes” in the instruction manuals until after this time period. These new rules will apply only to devices being imported, manufactured and marketed after the specified effective dates.

We are also requiring a one-time filing of radar detector serial numbers to aid in our enforcement of the new rules.<sup>67</sup>

**E. Steps Taken to Minimize Significant Economic Impact on Small Entities, and Significant Alternatives Considered**

The RFA requires an agency to describe any significant alternatives that it has considered in reaching its proposed approach, which may include the following four alternatives (among others): (1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance or reporting requirements under the rule for small entities; (3) the use of performance, rather than design, standards; and (4) an exemption from coverage of the rule, or any part thereof, for small entities.<sup>68</sup>

The First Report and Order requires emission limits on radar detectors, which will have an impact on small equipment manufacturers. We find that emission limits on radar detectors are necessary because manufacturers have been building them without any suppression on radiated emissions, and the radiated signals have been found to cause interference to satellite radio services. Because interference has been reported only in the 11.7-12.2 GHz satellite band, and in light of comments filed by small businesses in this proceeding, we are requiring radiated emission limits in only the one band. This will minimize the impact on small manufacturers, because emission limits applied across a wide band would require significant redesign of the equipment, which would substantially increase its cost.

The effective dates for our actions are necessary for an orderly transition to compliance. Alternative time frames might assist small businesses to comply, yet would be inconsistent with the goal of reducing interfering equipment. Because many radar detectors may already comply with the new

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<sup>67</sup> See ¶ 18, *supra*.

<sup>68</sup> See 5 U.S.C. § 603(c).

emission limits, the requirement to obtain certification within 30 days is not expected to have a significant impact on manufacturers. The impact on small manufacturers will be further reduced by allowing labeling to appear on the individual equipment carton rather than the device for a period of 180 days, because that will permit manufacturers to obtain certification for, and label equipment already in shipment.

Finally, we are requiring a one-time filing of serial numbers to aid in our enforcement efforts, and believe that this is a minimal compliance burden.

*Report to Congress:* The Commission will send a copy of the *First Report and Order*, including this FRFA, in a report to be sent to Congress pursuant to the Congressional Review Act, *see* 5 U.S.C. § 801(a)(1)(A). In addition, the Commission will send a copy of the *First Report and Order*, including FRFA, to the Chief Counsel for Advocacy of the Small Business Administration. A copy of the *First Report and Order* and FRFA (or summaries thereof) will also be published in the Federal Register. *See* 5 U.S.C. § 604(b).