

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

In the Matter of	)	
	)	
Allocation of Electromagnetic Spectrum Pursuant to Title III of the Balanced Budget Act of 1997 and Amendment of Part 90 of the Rules to Establish a New Subpart Y – Personal Location and Monitoring Service	)	RM-9797
	)	
	)	
Amendment of Parts 2 and 97 of the Commission’s Rules Regarding the 2300-2305 MHz band	)	RM-10165
	)	
	)	
Co-Primary Allocation of 2300-2305 MHz to the Amateur Radio Service and the Miscellaneous Wireless Communications Service	)	RM-10166

**ORDER**

**Adopted: October 9, 2002**

**Released: October 10, 2002**

By the Chief, Office of Engineering and Technology:

**I. INTRODUCTION**

1. By this action, we dismiss three Petitions for Rulemaking that request changes to the entry for the 2300-2305 MHz band in the Table of Frequency Allocations. Microtrax, Inc.<sup>1</sup> (“Microtrax”) requests that the Commission issue a comprehensive Notice of Proposed Rulemaking for the bands reallocated under the Omnibus Budget Reconciliation Act of 1993<sup>2</sup> (“OBRA-93”) and the Balanced Budget Act of 1997<sup>3</sup> (“BBA-97”), including the 2300-2305 MHz band,<sup>4</sup> to provide at least 5 megahertz for its proposed personal location and monitoring service (“PLMS”). AeroAstro, Inc. (“AeroAstro”) requests a primary allocation in the 2300-2305 MHz band for the fixed and mobile services under the Part 27 miscellaneous wireless communications service (“MWCS”) rules, and a co-primary allocation in this band for the amateur service.<sup>5</sup> AeroAstro proposes to operate a satellite-based location and messaging service. Lastly, the American Radio Relay League, Inc. (“ARRL”), requests that the existing secondary amateur service

<sup>1</sup> See *Petition for Rulemaking of Microtrax*, (filed November 22, 1999), *Public Notice* January 7, 2000, Report No. 2376.

<sup>2</sup> See Pub. L. 105-261, 112 Stat. 1920, (codified at 47 U.S.C. §923(c)(3)(B)).

<sup>3</sup> See Balanced Budget Act of 1997, Title III, Pub L. No.105-33, 111 Stat. 251 (1997) (codified at 47 U.S.C. § 923(c)(1)(C)(iii)).

<sup>4</sup> The *Microtrax Petition* requested the *Notice* consider spectrum in the bands 1385-1390 MHz, 1390-1400 MHz, 1427-1432 MHz, 1432-1435 MHz, 1670-1675 MHz, 1710-1755 MHz, 1990-2110 MHz, 2110-2150 MHz, 2300-2305 MHz, 2385-2390 MHz and 4635-4660 MHz.

<sup>5</sup> See *Petition for Rulemaking of AeroAstro, Inc.*, (filed April 9, 2001), *Public Notice* July 2, 2001, Report No. 2491.

allocation at 2300-2305 MHz be upgraded to a primary allocation.<sup>6</sup> As a result of this action, the 2300-2305 MHz band will remain in reserve, consistent with the *Spectrum Policy Statement* (“*Policy Statement*”),<sup>7</sup> and the secondary allocation for the amateur service will be maintained.

## II. BACKGROUND

2. Internationally, the 2300-2305 MHz band is allocated to the fixed and mobile services on a primary basis and to the amateur service on a secondary basis in all three International Telecommunications Union (“ITU”) Regions.<sup>8</sup> In addition, the radiolocation service has a secondary allocation in Region 1 and a primary allocation in Regions 2 and 3 in this band.

3. In the U.S. prior to 1995, the 2300-2305 MHz band was allocated for Federal Government radiolocation services on a primary basis, and for the amateur service on a secondary basis.<sup>9</sup> In 1993, Congress passed OBRA-93, which directed the Secretary of Commerce to identify at least 200 megahertz of Federal Government primary spectrum below 5 GHz for transfer to non-Federal Government services. Congress also instructed the Secretary of Commerce to minimize the disruption of amateur uses of the bands and to determine the extent to which commercial users could share the frequency bands with amateur radio licensees.<sup>10</sup> Lastly, Congress instructed the Commission to maintain a significant portion of the transferred spectrum for allocation and assignment beginning after the end of a ten-year period that was to begin on the date of submission of that plan to the Congress and the President. This period began on March 22, 1996.<sup>11</sup>

4. As a result of OBRA-93, NTIA identified 235 megahertz of Federal Government spectrum for transfer for non-Federal Government use, including the 2300-2310 MHz band. This band was transferred by NTIA effective August 1995, but the secondary allocation to the amateur service in the 2300-2305 MHz band was maintained in the Table of Allocations. In its final spectrum reallocation report, NTIA indicated that it was transferring the 2300-2310 MHz band for exclusive non-Federal Government use subject to several constraints to protect the Deep Space Network (“DSN”).<sup>12</sup> In addition, NTIA also suggested that commercial or public-safety terrestrial operations with low duty cycle transmissions could share with amateur operations.<sup>13</sup>

5. On November 22, 1999, the Commission released a *Spectrum Policy Statement* (“*Policy Statement*”), which set forth guiding principles for reallocation of spectrum to encourage the development of telecommunications technology for the new millennium.<sup>14</sup> In the *Policy Statement*, the Commission

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<sup>6</sup> See *Petition for Rulemaking of ARRL*, (filed May 7, 2001), *Public Notice* July 2, 2001, Report No. 2491.

<sup>7</sup> See *Policy Statement*, 14 FCC Rcd 19868, 19878 (1999).

<sup>8</sup> See 47 CFR §§ 2.104 and 2.106. The U.S. is located in ITU Region 2.

<sup>9</sup> The amateur radio service under Part 97 of the Commission’s Rules provides spectrum for amateur radio service licensees to participate in a voluntary noncommercial communication service which allows experimentation with various radio techniques and technologies to further the understanding of radio use and the development of new technologies. See 47 C.F.R. § 97.1.

<sup>10</sup> See Pub. L. 105-261, 112 Stat. 1920, §113(c)(1)(C)(iii) and 113(c)(3)(C).

<sup>11</sup> See Pub. L. 105-261, 112 Stat. 1920, (codified at 47 U.S.C. §923(c)(3)(B)), Section 6001(a).

<sup>12</sup> See NTIA Special Publication 95-32, *Spectrum Reallocation Final Report, Response to Title VI-Omnibus Reconciliation Act of 1993*, February 1995, Section 4.

<sup>13</sup> See NTIA Special Publication 95-32, *Spectrum Reallocation Final Report, Response to Title VI-Omnibus Reconciliation Act of 1993*, February 1995, Appendix B.

<sup>14</sup> See *Policy Statement*, *supra*, at para. 28.

stated that it was holding the 2300-2305 MHz band in reserve because commercial operations would be subject to significant constraints in order to protect the DSN. In addition, the *Policy Statement* noted the statutory requirement to maintain a spectrum reserve until 2006.<sup>15</sup>

6. Subsequent to the adoption of the *Policy Statement*, we received the instant petitions for rulemaking from Microtrax, AeroAstro and ARRL.

### III. MICROTRAX PETITION FOR RULEMAKING

7. Microtrax requests that the Commission issue a comprehensive Notice of Proposed Rulemaking for the 1385-1390 MHz, 1390-1400 MHz, 1427-1432 MHz, 1432-1435 MHz, 1670-1675 MHz, 1710-1755 MHz, 1990-2110 MHz, 2110-2150 MHz, 2300-2305 MHz, 2385-2390 MHz and 4635-4660 MHz, bands recently transferred from Federal Government to non-Federal Government use by OBRA-93 and BBA-97. Microtrax further requests that the Commission consider designating 5 megahertz of this spectrum to establish a new PLMS that could be used to locate missing children, Alzheimer patients or pets, and to monitor persons on house arrest.<sup>16</sup> Microtrax specifically pointed out that several of the bands such as 1385-1390 MHz, 1390-1400 MHz, 1427-1432 MHz, 1432-1435 MHz, 1670-1675 MHz, 2300-2305 MHz and 2385-2390 MHz would be useful for its proposed PLMS.<sup>17</sup> In addition, Microtrax indicates that at least two 5 megahertz bands should be allocated to the PLMS to ensure competition. Microtrax also proposes service and technical rules for such a new service, including in-band and out-of-band (“OOB”) emission limits to protect Federal Government systems operating in adjacent bands. Microtrax further proposed that the systems be available nationwide, and suggested that the Commission consider nationwide licensing.<sup>18</sup>

8. We note that the Commission has completed or has underway rulemaking proceedings addressing all of the transferred Federal Government frequency bands Microtrax suggests for PLMS except for the 2300-2305 MHz band.<sup>19</sup> Most significantly, the Commission adopted a *Report and Order and Memorandum Opinion and Order* in December 2001 concerning the bands 216-220 MHz, 1390-1395 MHz, 1427-1435 MHz, 1670-1675 MHz and 2385-2390 MHz.<sup>20</sup> In that action, the Commission specifically considered Microtrax’s request for spectrum for PLMS. The bands 1670-1675 MHz and 2385-2390 MHz were reallocated to the fixed and mobile services on an unpaired basis with service rules to be developed.<sup>21</sup> The Commission stated that these bands could be used for

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<sup>15</sup> See *Policy Statement*, 14 FCC Rcd 19868, 19878 (1999) at footnote 26.

<sup>16</sup> See *Microtrax Petition* at 12-13.

<sup>17</sup> See *Microtrax Petition* at 1 and 10.

<sup>18</sup> See *Microtrax Petition* at 16.

<sup>19</sup> See ET Docket 00-221, ET Docket 00-258 and WT Docket 00-32. ET Docket 00-258 addresses fixed and mobile uses of the bands 1710-1755 MHz, 1990-2110 MHz, and 2110-2150 MHz which Microtrax also requested. WT Docket 00-32 noted that the 4635-4660 MHz band was reclaimed by the Federal Government in March 1999. It was replaced by the 4940-4990 MHz band which was allocated to the fixed and mobile (except aeronautical mobile) services for public safety use in *Second Report and Order and Further Notice of Proposed Rulemaking*, WT Docket 00-32, 17 FCC Rcd 3955 (2002).

<sup>20</sup> See *Report and Order and Memorandum Opinion and Order*, ET Docket 00-221, 17 FCC Rcd 368 (2002).

<sup>21</sup> We note that the 2385-2390 MHz band may be the subject of further proceedings in conjunction with the Advanced Wireless Service proceeding. See National Telecommunications and Information Administration’s Report “*An Assessment of the Viability of Accommodating Advanced Mobile Wireless (3G) Systems in the 1710-1770 MHz and 2110-2170 MHz Bands*,” Final Report, released July 23, 2002 in ET Docket 00-258. Nonetheless, this possibility does not alter our analysis here.

services such as the PLMS proposed by Microtrax.<sup>22</sup> While the Commission did not specifically set spectrum aside for Microtrax's proposed PLMS,<sup>23</sup> the general allocation would allow such operations. Microtrax has not demonstrated that an additional allocation is warranted, and we are dismissing its petition.

#### IV. AEROASTRO PETITION FOR RULEMAKING

9. In its Petition for Rulemaking ("AeroAstro Petition"), AeroAstro requests that the Commission allocate the 2300-2305 MHz band to the amateur service, fixed service and mobile service on a co-primary basis, subject to technical and service rules. AeroAstro proposes that the fixed and mobile allocations be designated for the MWCS which would allow its Satellite Enabled Notification System ("SENS"), a messaging service that would allow users to transmit short data messages in real-time. The SENS mobile terminal would transmit a low-power,<sup>24</sup> spread-spectrum signal to a satellite which would relay the data to the nearest ground receiver station. AeroAstro states that the SENS system can also operate as a terrestrial service using towers instead of satellites.<sup>25</sup> AeroAstro proposes to use the 2300-2305 MHz band for uplinks to the satellite or tower only.

10. AeroAstro proposes that the technical rules for the MWCS incorporate the NTIA recommendations needed to protect the DSN, but that the out-of-band limits in these recommendations be modified to specify average power instead of peak power as suggested by NTIA. To accommodate sharing with the amateur service, AeroAstro also proposes technical limits for amateur operations.

11. With respect to AeroAstro's proposed satellite based system in the 2300-2305 MHz band, we have several concerns about interference that the AeroAstro Petition did not address. Specifically, the *Petition* made no showing that the DSN would be protected by the modified out-of-band limits it proposes, nor did it explain how mobile terminals communicating with a satellite would avoid transmissions near sensitive DSN operations. AeroAstro also did not show that SENS could operate in the environment created by existing amateur operations. In addition, AeroAstro did not specify where its downlink spectrum would be. Since it is proposing to operate a mobile-satellite service ("MSS") system, both uplink and downlink spectrum would be necessary. Regarding AeroAstro's option of operating its SENS with terrestrial towers, we note that its proposed SENS operations could operate in the bands designated in Part 27 of the Commission's Rules.<sup>26</sup> Further, the Commission specifically considered AeroAstro's request for spectrum for its SENS operation in its decision on ET Docket 00-221.<sup>27</sup> This proceeding made spectrum available for various fixed and mobile applications.<sup>28</sup> AeroAstro has not demonstrated that an additional allocation is warranted, and we are dismissing its petition.

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<sup>22</sup> See *Report and Order and Memorandum Opinion and Order*, ET Docket 00-221, 17 FCC Rcd 368 (2002) at paras. 64 and 70-71.

<sup>23</sup> We note that the service rules for the bands addressed in ET Docket 00-221 were issued in *Report and Order*, WT Docket 02-8, 17 FCC Rcd 9980 (2002).

<sup>24</sup> AeroAstro claims that the mobile terminal would operate at 1 W or less in full compliance with Section 15.247 except for the frequency band. In general, the output RF power from the terminal would be approximately -33 dBm/Hz. See AeroAstro Petition, Appendix B, pages i and iii.

<sup>25</sup> See AeroAstro Petition, Appendix B, at Page i.

<sup>26</sup> See 47 CFR §§ 27.901-27.906 and 27.1001-27.1006.

<sup>27</sup> See *Report and Order and Memorandum Opinion and Order*, ET Docket 00-221, 17 FCC Rcd 368 (2002).

<sup>28</sup> See para 8 and footnotes 20 and 21, *supra*.

## V. ARRL PETITION FOR RULEMAKING

12. In its Petition for Rulemaking (“ARRL Petition”) in response to the Microtrax Petition, ARRL requests that the current secondary allocation to the amateur service in the 2300-2305 MHz band be upgraded to primary status. ARRL notes that there is no primary allocation in this band, and claims that the 2300 MHz band is of “extreme importance” to amateur radio operators for weak-signal communications. It further submits that the low noise levels in the band support propagation research such as beacon operations.<sup>29</sup> ARRL also claims that the amateur service cannot conduct certain types of communications in the high-noise, high-duty cycle environment of commercial operations.<sup>30</sup> It argues that a primary amateur allocation would provide needed stability for additional amateur radio use of the 2300-2305 MHz band and would protect the DSN from potentially incompatible commercial services.<sup>31</sup>

13. Since we are dismissing the Petitions for Rulemaking from Microtrax and AeroAstro for access to this spectrum, amateur operator’s weak signal communications in the 2300-2305 MHz band will be protected if the amateur allocation remains secondary. This band will remain in the Commission’s reserve, and the *status quo* in the band will be maintained until the Commission reevaluates the spectrum reserve at some future date. At that time the Commission can address any modifications to the allocation status for the amateur service that may be appropriate. Accordingly, we are also dismissing the ARRL Petition for a primary allocation to the amateur service in the 2300-2305 MHz band.

## VI. ORDERING CLAUSE

14. Accordingly, IT IS ORDERED that, pursuant to Section 4, of the Communications Act of 1934, as amended, 47 U.S.C. Section 154, and Sections 0.241(e) and 1.401 (e) of the Commission’s Rules, 47 CFR §0.241(e) and §1.401(e), the petitions for rulemaking filed by Microtrax, Inc. in RM-9797, ARRL in RM-10165, and AeroAstro, Inc. in RM-10166 are DISMISSED.

FEDERAL COMMUNICATIONS COMMISSION

Edmond J. Thomas  
Chief, Office of Engineering and Technology

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<sup>29</sup> See ARRL Petition at 2.

<sup>30</sup> See ARRL Petition at 10.

<sup>31</sup> See ARRL Petition at 11.