

BEFORE THE
Federal Communications Commission
WASHINGTON, DC 20554

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Federal Communications Commission
Office of Secretary

In the Matter of)
) ET Docket No. 96-102
Amendment of the Commission's Rules to) RM-8648
Provide for Unlicensed NII Devices in the 5 GHz) RM-8653
Frequency Range)

**OPPOSITION OF
AIRTOUCH COMMUNICATIONS, INC. TO
PETITIONS FOR RECONSIDERATION**

Pursuant to Rule 1.429(f) of the Commission's Rules, AirTouch Commu-
nications, Inc. ("AirTouch")¹ hereby submits its Opposition to Petitions for Recon-
sideration challenging the Commission's recent *U-NII Order*.²

I. INTRODUCTION

On January 9, 1997, the Commission issued its *U-NII Order* making
available 300 MHz of spectrum at 5.15-5.35 GHz and 5.725-5.825 GHz for use by
Unlicensed National Information Infrastructure ("U-NII") devices.³ The Commission
allocated three bands of 100 MHz each — 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.725-
5.825 GHz — each with distinct power and operational parameters.⁴ This three band
allocation scheme was adopted specifically to protect existing licensed operations in the

¹ AirTouch filed Reply Comments in this matter on August 14, 1996.

² *Amendment of the Commission's Rules to Provide for Operation of Unlicensed NII Devices in the 5 GHz Frequency Range*, ET Docket No. 96-102, *Report and Order*, FCC 97-5 (rel. Jan. 9, 1997)(*"U-NII Order"*).

³ *Id.* at ¶¶ 1, 27.

⁴ *Id.*

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relevant spectrum including mobile satellite service (“MSS”) feeder links from interference from the proposed U-NII devices.⁵

With regard to U-NII transmitters operating in the 5.15-5.25 GHz band, the Commission established a maximum peak output power limit of 50 mW with up to 6 dB antenna gain.⁶ In addition the Commission required that “all emissions within the frequency range 5.14-5.15 GHz and 5.35-5.36 GHz must be attenuated by a factor of at least 27 dB; within the frequency range outside these bands by a factor of at least 37 dB.”⁷ Further, under new Section 15.407(e) of the Commission’s Rules, U-NII devices transmitting in the 5.15-5.25 GHz band are restricted to indoor operations.⁸

AirTouch strongly supports all of these power and operational parameters for U-NII devices in the 5.15-5.25 GHz band. AirTouch demonstrated in its Reply Comments that the operation of U-NII devices at 5.15-5.35 GHz will interfere with MSS feeder links operating in the spectrum allocated at the 1995 World Radiocommunications Conference (“WRC-95”).⁹ AirTouch estimated that such interference would reduce the capacity of its GlobalStar satellite system in the United States by over 27.4%, resulting in significant and unacceptable service degradation.¹⁰

⁵ *Id.*

⁶ *Id.* at ¶ 43.

⁷ *Id.* at ¶ 53.

⁸ 47 C.F.R. § 15.407(e).

⁹ AirTouch Reply Comments at 6-10.

¹⁰ *Id.*, Appendix A.

Service degradation to MSS would clearly contravene the public interest.

As the Commission has recognized, MSS:

can offer an almost limitless number of services, including ubiquitous voice and data mobile services, position location services, search and rescue communications, disaster management communications, environmental monitoring, paging services, facsimile transmission services, cargo tracking, and industrial monitoring and control. Domestically, this service will help meet the demand for a seamless nationwide and eventually global communications system that is available to all¹¹

Given the significance of feeder links to MSS systems, the power and operational parameters adopted by the Commission serve an important function in protecting MSS feeder links from interference and thereby preventing a substantial reduction in capacity for this important service.

On March 3, 1997, Hewlett-Packard Company ("HP"), Apple Computer, Inc. ("Apple"), and Wireless Information Networks Forum ("WINForum") each petitioned the Commission for reconsideration of the *U-NII Order*. Aspects of each of these petitions for reconsideration, if granted, would effectively undo the important interference protections established by the Commission for MSS feeder links. None of the petitions, however, demonstrate a compelling public interest justification for undermining the protections accorded to existing licensed uses, including MSS feeder links. Therefore, on balance, the public interest is better served by the Commission continuing to protect the important MSS systems from interference. Accordingly, AirTouch opposes all three petitions to the extent that they ask the Commission to eliminate or reduce the

¹¹ *Amendment of the Commission's Rules to Establish Rules and Policies Pertaining to a Mobile Satellite Service in the 1610-1626.5/2483.5-2500 MHz Frequency Bands*, 9 FCC Rcd 5936, 5940 (1994) (footnote omitted); *see also* AirTouch Reply Comments at 4-5.

power and operational limitations established for U-NII devices in a manner that will increase interference to MSS feeder links.

II. THE COMMISSION SHOULD DENY HP'S PETITION FOR RE-CONSIDERATION

HP requests an increase in the permitted power spectral density from 50mW/20MHz to 1W/20 MHz for U-NII devices operating in the 5.15-5.25 GHz band.¹² AirTouch strongly opposes any such increase in the power spectral density limitation. As discussed above, a reasonable combination of power and operational limitations is necessary to ensure that U-NII interference to MSS feeder links will not reach harmful levels.¹³ HP's proposal, however, represents a twenty-fold (or 13 dB) increase in the output power of U-NII devices. A power increase of this magnitude represents a directly proportional increase in the level of interference created by U-NII devices and a corresponding decrease in the capacity of AirTouch's GlobalStar satellite system in the United States. For the reasons set forth in its Reply Comments, AirTouch submits that such a result contravenes the requirements of Part 15 of the Commission's Rules and the public interest.

Further, HP offers no reasonable justification for its desired power increase. HP instead suggests that a power increase will not cause harm to MSS feeder links because "MSS systems will operate on a global basis and, therefore, will be required to operate harmoniously with European HIPERLAN systems."¹⁴ HP further

¹² HP Petition for Reconsideration at 1.

¹³ See AirTouch Reply Comments at 2-6

¹⁴ HP Petition for Reconsideration at 1-2.

suggests that "HIPERLAN devices using one watt of power could be approved and implemented" soon.¹⁵ In point of fact, Europe has not coalesced around a single limit and is considering adopting a level as low as 10 mW. Therefore, AirTouch urges the Commission to reject HP's Petition for Reconsideration in its entirety.

III. THE COMMISSION SHOULD REJECT PORTIONS OF ITEMS D AND E OF WINFORUM'S PETITION FOR RECONSIDERATION

AirTouch's opposition to WINForum's Petition for Reconsideration focusses exclusively on items D and E of the Petition. In item D, WINForum asks the Commission to redefine power spectral density as a function of frequency and to add 3 dB of tolerance to the power spectral density limits.¹⁶ In item E, WINForum proposes establishing a 3dB tolerance to be applied to out-of-band emissions.¹⁷

AirTouch does not object to redefining power spectral density *per se* and would find it acceptable to have the power spectral density be $4 \text{ dBm} + 10\log B$. However, AirTouch opposes the additional 3dB of tolerance for power spectral density and for out-of-band emissions because the proposal will in fact create additional interference from U-NII devices.

The addition of 3 dB of tolerance to the power spectral density limits could effectively raise the output power by 3 dB which in turn would double the interference to MSS feeder links from U-NII devices and proportionally reduce the capacity of the GlobalStar satellite system in the United States. Adding a 3 dB tolerance to out-of-

¹⁵ *Id.* at 2.

¹⁶ WINForum Petition for Reconsideration at 9.

¹⁷ *Id.* at 10.

band emissions would similarly increase the out-of-band emissions from U-NII devices into the 5.09-5.15 GHz or 5.15-5.25 GHz bands,¹⁸ also resulting in additional interference and a reduction in the capacity of the GlobalStar system. For the reasons set forth in AirTouch's Reply Comments, such results are contrary to the requirements of Part 15 of the Commission's Rules and do not serve the public interest.

Further, any proposed change to an individual operating parameter, such as tolerance, must be viewed in the context of its the potential impact upon aggregate interference. In other words, an increase in a given parameter may require a proportional decrease in another operational constraint in order to prevent an aggregate interference increase. Consequently, when considering a proposed change in an operational constraint of U-NII devices, the Commission must also consider whether that change, when taken in the aggregate, would result in an increase of interference from U-NII devices. Therefore, AirTouch urges the Commission to deny WINForum's proposal to add 3 dB of tolerance to the power spectral density limits and its proposal to add a 3 dB tolerance to out-of-band emissions.

IV. THE COMMISSION SHOULD REJECT OR MODIFY APPLE'S REQUEST FOR AN INCREASE IN POWER SPECTRAL DENSITY

Apple, among other things, urges the Commission to amend the peak power spectral density limit for U-NII devices operating in the 5.25-5.35 GHz band to 125 mW/MHz. This requested increase in the peak power spectral density limit is effectively a ten-fold or 10 dB increase in output power which will necessarily increase the out-of-band emissions from such U-NII devices into the adjacent 5.15-5.25 GHz

¹⁸ These bands are out-of-band for two of the three U-NII spectrum bands.

band. In short, the requested power increase will increase interference in the band upon which MSS feeder links operate.

For the reasons presented in its Reply Comments, AirTouch submits that the public interest requires that MSS feeder links be protected from out-of-band emissions from U-NII devices operating in the 5.25-5.35 GHz band. Therefore, AirTouch urges the Commission to reject this portion of Apple's Petition for Reconsideration. Nevertheless, if the Commission grants the requested increase in the power spectral density limit, AirTouch requests that the Commission increase the attenuation specified for out-of-band emissions from U-NII devices in the 5.25-5.35 GHz band by 10 dB in order to provide MSS feeder links the same level of protection from out-of-band emissions that is currently provided in the *U-NII Order*.

V. CONCLUSION

For the foregoing reasons, AirTouch urges the Commission to deny HP's Petition for Reconsideration. AirTouch further urges the Commission to deny or modify portions of WINForum's and Apple's Petitions for Reconsideration consistent with the discussion above.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I, Shelia L. Smith, do hereby certify that copies of the foregoing "Opposition of AirTouch Communications, Inc. to Petitions for Reconsideration" were served this 1st day of April, 1997 by first-class, U.S. mail, postage prepaid to the following:

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