

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

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

In the Matter of)
)
Petitions for Rulemaking to Allocate)
the 5 GHz Band and Adopt)
Service Rules for a Shared Unlicensed)
Personal Radio Network)
RM-8648
RM-8653

To: The Commission

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COMMENTS

Pursuant to Section 1.405 of the Commission's Rules,¹ the Fixed Point-to-Point Communications Section, Network Equipment Division of the Telecommunications Industry Association ("TIA"),² hereby comments on the above-captioned Petitions for Rulemaking (the "Petitions").

In RM-8648, the Wireless Information Networks Forum ("WINForum") filed a Petition for Rulemaking ("WINForum Petition") requesting that the 5.10-5.35 GHz band be reallocated for a new high-speed, high-bandwidth, unlicensed radio service it calls the Shared Unlicensed Personal Radio Network ("SUPERNet"). Similarly, in RM-8653, Apple Computer, Inc. ("Apple") filed a Petition for Rulemaking ("Apple Petition") requesting that the 5.15-5.30 and 5.725-5.875 GHz bands be

¹47 C.F.R. Section 1.405 (1994).

²TIA is the principal industry association representing fixed point-to-point microwave ("FS") radio manufacturers. TIA members serve, among others, companies, including telephone carriers, utilities, railroads, state and local governments, and cellular carriers, licensed by the Commission to use private and common carrier bands for provision of important and essential telecommunications services.

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reallocated to establish a comparable unlicensed service, to be called the "NII Band." Given the similarity between the two proposals, the Commission has consolidated the Petitions.³

TIA fully supports any spectrum reallocation that promotes the development of new technologies and services; that enhances the ability of U.S. telecommunications equipment manufacturers and service providers to compete in international markets; and that protects existing services. The high-speed, high-bandwidth unlicensed radio services proposed by WINForum and by Apple potentially meet these criteria. However, as discussed below, the proposed 5 GHz band reallocations must not be adopted until: (i) restrictions on point-to-point paths are imposed; (ii) appropriate Effective Isotropic Radiated Power ("EIRP") limitations are established; and (iii) necessary band sharing with existing services is demonstrated to be attainable.

**USE OF LOW FREQUENCY, UNLICENSED MICROWAVE SPECTRUM FOR
POINT-TO-POINT APPLICATIONS SPECIFICALLY MUST BE EXCLUDED**

In their proposals, WINForum and Apple urge the Commission to establish the new services on an unlicensed basis.⁴ Apple would impose minimal technical requirements:

Unlike private networks, unlicensed spectrum is not dedicated to any particular user, but rather is shared by all users on a dynamic, instant-by-instant, MHz-by-MHz basis. This technique, which is the invariable operating characteristic of the Internet and other data networks, provides the most flexible and efficient means of maximizing the sharing of the spectrum resource.⁵

In this unlicensed, open access environment, Apple contemplates that the NII Band would be used to provide point-to-point and other services over distances of 10-15 km or more:

³See Order Extending Time (DA 95-1254, released June 8, 1995) in which the Chief, Office of Engineering and Technology, consolidated the WINForum Petition and the Apple Petition and established July 10, 1995, as the date for comments on both Petitions.

⁴WINForum Petition at 17-21; Apple Petition at 5-8.

⁵Apple Petition at 8.

[T]he NII Band rules will permit much larger distances for unlicensed operation outdoors. With NII Band devices, it will be possible to communicate at distances on the order of 10 to 15 km or more, depending, of course, on terrain, bandwidth, and other factors.⁶

Low frequency microwave spectrum is a precious national resource. Applicable FS rules (i.e., current Part 21 and Part 94 rules, as well as proposed Part 101 rules) significantly limit the use of this spectrum for relatively short point-to-point paths. These rules cause short point-to-point paths to use high frequency spectrum. The Commission has provided bands and manufacturers have provided equipment specifically for this application.

Given the considerable need of mobile users for low frequency spectrum, the creation of a new low frequency allocation for short-distance, fixed point-to-point service would be totally inappropriate and unnecessary. Indeed, there is more than adequate spectrum allocated for FS in the 18, 23, 28 and 38 GHz bands to satisfy such mobile user needs. Thus, the proposed unlicensed point-to-point application specifically must be excluded from the new mobile service contemplated in the Petitions.

EIRP LIMITATIONS MUST BE ESTABLISHED TO PROTECT EQUAL ACCESS TO THE 5 GHz BAND

Historically unlicensed bands have limited EIRP. This is for good technical reasons.

High power transmitters limit the collocation of receivers. The use of high power imposes significant expensive filtering requirements on equipment which is intended to be cost effective. In effect, if EIRP is not limited, the first high power transmitter will limit a location's use by others. Appropriate EIRP limitations must be established to ensure "open entry" to the frequencies by all potential users.

⁶Apple Petition at 18.

**THE FEASIBILITY OF BAND SHARING TO ACCOMMODATE
NEW UNLICENSED SERVICES MUST BE VERIFIED**

To accommodate the proposed new unlicensed services, certain band sharing would be necessary. WINForum believes that its SUPERNet could share spectrum with mobile-satellite service ("MSS") feeder uplinks, if pending allocations are adopted for such links at WRC-95, and with government radiolocation systems.⁷ Apple claims that its NII Band could be co-primary with Microwave Landing Systems, MSS feeder uplinks, amateur operators, existing Part 15 devices, and ISM products.⁸

Although WINForum and Apple claim co-primary band sharing is possible, no analysis from existing users of these bands is provided. Absent such documentation, the proposed reallocation must not be adopted.

⁷WINForum Petition at 15-16.

⁸Apple Petition at 28-33.

CONCLUSION

TIA does not oppose establishment of a formal rulemaking to determine if the 5 GHz band should be reallocated for the proposed unlicensed services. However, it is essential that the Commission include in this rulemaking necessary proposals for restrictions on point-to-point unlicensed links, appropriate EIRP limitations, and criteria to verify all necessary band sharing.

Respectfully submitted,

**FIXED POINT-TO-POINT COMMUNICATIONS
SECTION, NETWORK EQUIPMENT DIVISION
OF THE TELECOMMUNICATIONS
INDUSTRY ASSOCIATION**

George M. Kizer / 1997

**GEORGE M. KIZER, CHAIRMAN
DENIS COUILLARD, VICE CHAIRMAN
ERIC SCHIMMEL, VICE PRESIDENT OF TIA**

2500 Wilson Blvd., Suite 300
Arlington, Virginia 22201

(703) 907-7700

Of Counsel:

Robert J. Miller

**Robert J. Miller
Gardere & Wynne, L.L.P.
1601 Elm Street, Suite 3000
Dallas, Texas 75201
(214) 999-3000**

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing Comments was sent via first class mail, postage prepaid, to the following parties on the 7th day of July, 1995.

Henry Goldberg, Esq.
Goldberg, Godles, Wiener & Wright
1229 19th Street, N.W.
Washington, D.C. 20036
Counsel for Apple Computer, Inc.

R. Michael Senkowski, Esq.
Wiley, Rein & Fielding
1776 K Street, N.W.
Washington, D.C. 20006
Counsel for Wireless Information Networks Forum

July 7, 1995


Deborah Traugber

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