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

In the Matter of	)	
	)	
SIERRA DIGITAL COMMUNICATIONS, INC.	)	RM-9189
	)	
Petition for Rulemaking to Accommodate Point-to-Point Operations in the 24 GHz Band Under Part 15 of the Commission's Rules	)	

REPLY COMMENTS OF THE AMERICAN RADIO RELAY LEAGUE, INCORPORATED

The American Radio Relay League, Inc., (the League), the national association of amateur radio operators, by counsel and pursuant to 47 C.F.R. §1.405(b), hereby respectfully submits its reply comments in the captioned proceeding. Specifically, the League replies to those December 5, 1997 comments of Metricom, Inc. (Metricom), in support of the Sierra Digital Communications, Inc. (Sierra) Petition for Rule Making. For its comments, the League states as follows:

1. Metricom states its unconditional support of the proposed high-power narrowband point-to-point microwave use of the 24 GHz segment (24.00-24.25 GHz) under Part 15 as per the Sierra Petition. Metricom disagrees, however, with Sierra's proposed limitation on use of the 24.00-24.25 GHz segment, intended by Sierra to limit interference to the Amateur Satellite Service. Metricom suggests that there should be no limitation on Part 15 devices' use of spectrum allocated to licensed services, and no protection for licensed services in the band. It refers to Sierra's "technically innovative operations" in the band, and asserts that "in the unlikely

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event that harmful interference does occur (to licensed services in the band) it could be easily remedied in the field."

2. Metricom compounds the problems that Sierra's petition creates, and itself offers no solutions. First of all, there is nothing "innovative" whatsoever about narrowband, directionalized point-to-point microwave facilities. The microwave technology proposed by Sierra and touted by Metricom has been around for decades. Sierra's petition is devoid of any indication that any "innovative" uses or applications are envisioned. Sierra merely proposes plain, ordinary, point-to-point links. The only twist on an old theme is that Sierra and Metricom would have the devices available for sale to unlicensed, untrained persons, with no demonstrated ability or interest whatsoever to cause the cessation of operation of the devices in the field in the face of an interference incident.

3. The sum total of the interference avoidance plan of Metricom is that it "believes" that interference would be "negligible". No technical analysis supports Metricom's contention that field strengths of 2.5 volts per meter in the main lobe of the high-gain, directional antenna used in the Part 15 narrowband transmissions will not impair extant and future Amateur and Amateur Satellite communications[1]. Nor does Metricom explain how or why it believes that incidents of interference to licensed services can be "easily remedied" in the field. In fact, Sierra offers neither station identification, nor any centralized database of users and locations of operations. It would be difficult to locate, much less resolve, Part 15 interference sources in this context.

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[1] As noted in the League's comments, the 24.00-24.05 GHz segment is to be used for downlinks from the Phase 3D amateur satellite, to be launched shortly. The Commission has previously acknowledged that services that require the reception of very low signal levels, and thus require protection from terrestrial interference, include satellite downlinks and radio astronomy. *See,* the *First Report and Order*, 4 FCC 3493, at 3554, n.22.

Indeed, interference source identification and interference avoidance *ab initio* are two principal reasons why Part 101 point-to-point microwave links are licensed, and why frequency coordination studies are required as an incident of licensing for Private Operational Fixed Microwave and Common Carrier Fixed Microwave facilities.

4. Metricom's main point, however, is that it opposes even Sierra's ineffective "bow" to interference protection for the Amateur Satellite Service. Sierra proposes, by means of frequency-agile transmitters (presumably to be operated by unlicensed persons) to avoid use of the Amateur Satellite segment at 24.00-24.05 GHz except "as a last resort". The "last resort" condition would apparently be invoked if all portions of the 24.05-24.25 GHz segment are occupied at a given time. In the League's comments in this matter, it was noted that this is illusory as an interference protection mechanism. Perhaps that is why Metricom objects to it: it is an implicit acknowledgement by Sierra of the interference potential of Part 15 devices operating at the high RF field strengths proposed in the Sierra petition in this band. Metricom offers no other justification for its opposition to the restriction proposed by Sierra than that Part 15 regulations "must be simple and flexible, with no unnecessary regulation" in order to allow technology to develop. Metricom's vague justification for unfettered Part 15 operation fails to acknowledge much of the premise for having unlicensed devices in the first place. There must be a base-level finding that a Part 15 application will not interfere with licensed radio services in order for operation on allocated frequencies to be permitted. Sierra has not shown this in the context of its proposal, and Metricom simply fails to acknowledge the obligation.

5. The history of Part 15 regulation of devices above 960 MHz, however, is quite clear. In General Docket 86-422, the Commission adopted rules for protection of authorized services

from interference from Part 15 control and security alarm devices operating above 960 MHz. *See,* the *Report and Order*, 3 FCC Rcd. 1702 (1988). When the Commission revisited its Part 15 regulations *in toto* in 1989 in General Docket 87-389, it incorporated those protections in the revised Part 15 regulations. In the *First Report and Order,* 4 FCC Rcd. 3493 (1989), the Commission stated:

> For frequencies above 960 MHz, the proposed limit is the same as that which the Commission recently adopted in GEN Docket No. 86-422 to ensure that emissions from Part 15 devices do not interfere with safety and other sensitive services operating on the exist(ing frequencies) (footnote citation omitted). In view of the Commission's finding that this limit is adequate for protecting sensitive services from interference by Part 15 operations, we believe this same limit also is appropriate to minimize the probability of interference by Part 15 devices to any authorized service above 960 MHz.
>
> 4 FCC Rcd. at 3497

Yet, the Commission in that same proceeding permitted Part 15 operation in certain bands, including the ISM band at 24.00-24.25 GHz, at considerably higher emission levels than those generally permitted. These bands could be used for Part 15 consumer devices which emit RF energy at higher levels without significant interference concerns relative to licensed services. Thus, the Commission established substantially relaxed RF emission levels for these bands, with the assumption that even the relaxed restrictions on RF in this band would not lead to significant interference problems. However, it specifically refused to further liberalize the field strengths permitted in those bands:

> As for requests from SEIA that Part 15 devices be permitted to operate with additional field strength in the bands allocated for ISM operation under Part 18, we note that Part 18 is an authorized service. Part 18 devices are permitted to radiate without a limit on the level of radiation only in those frequency bands in which ISM operation is the primary authorized service. Part 18 devices are not

> required to provide any protection from interference to other authorized services located within the ISM bands. For this reason and the potential for such Part 15 devices to cause interference to authorized radio services located in the ISM bands, we are denying SEIA's request. Further, we find that the request by the manufacturers of control and security alarm devices to establish a special classification under the Part 15 rules permitting higher emissions is beyond the scope of this proceeding. We also note that, in many instances, the need for higher emissions levels (sic) can be met through operation under one of the authorized services. In view of the absence of interference protection for Part 15 devices it would appear that, wherever possible, operation under the authorized services would be preferable to operation under the Part 15 rules. We therefore encourage parties with need to operate RF equipment at higher emissions levels (sic) than those permitted herein to seek authorization under other provisions of our rules.
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> 4 FCC Rcd. at 3502

6. Thus, the Commission long ago cautioned Part 15 manufacturers that it established a reasonable accommodation for higher-power Part 15 devices in the ISM bands, and warned them at the same time that higher power operations should be conducted by means of authorized services. Sierra Digital has offered nothing by way of justification that would cause the Commission to abandon its regulatory plan for Part 15 operation established in 1989. In addition to licensed services as an alternative to the Sierra proposal, however, and completely unaddressed by Metricom in its comments, the Commission has created other opportunities for short-range, microwave point-to-point communications. As noted in the League's comments in this proceeding, existing alternatives include 2 GHz PCS facilities, millimeter-wave facilities, U-NII facilities, or wireline service providers. Given the foregoing, there is no regulatory justification for the relief proposed in the Sierra Petition, and Metricom has offered nothing supplementary thereto.

Therefore, for the foregoing reasons, the American Radio Relay League, Inc., hereby again requests that the Petition for Rule Making be denied without further consideration.

Respectfully submitted,

THE AMERICAN RADIO RELAY LEAGUE, INC.

225 Main Street
Newington, CT 06111-1494

By: Christopher D. Imlay
Its General Counsel

BOOTH FRERET IMLAY & TEPPER, P.C.
5101 Wisconsin Avenue, NW
Suite 307
Washington, DC 20016-4120
(202) 686-9600

December 22, 1997

CERTIFICATE OF SERVICE

I, Christopher D. Imlay, do hereby certify that on this 22nd day of December, 1997, copies of the foregoing Comments in Support of the Petition for Rulemaking filed by Sierra Digital Communications, Inc. were served upon the following:

Mitchell Lazarus, Esquire
Fletcher, Heald & Hildreth
1300 North 17th St., 11th Floor
Rosslyn, VA 22209

Richard M. Smith, Chief
Office of Engineering and Technology
Federal Communications Commission
Room 480 - Stop Code 1300
2000 M Street, N.W.
Washington, D.C. 20554

Bruce A. Franca, Deputy Chief
Office of Engineering and Technology
Federal Communications Commission
Room 480 - Stop Code 1300
2000 M Street, N.W.
Washington, D.C. 20554

Karen Rackly
Wireless Telecommunications Bureau
Federal Communications Commission
Room 5126-E - Stop Code 2000-E
2025 M Street, N.W.
Washington, D.C. 20554

Dr. Michael J. Marcus
Associate Chief for Technology
Office of Engineering and Technology
Federal Communications Commission
Room 480 - Stop Code 1300
2000 M Street, N.W.
Washington, D.C. 20554

Julius P. Knapp, Chief
Equipment Authorization Division
Office of Engineering and Technology
Federal Communications Commission
Room 480 - Stop Code 1300F
2000 M Street, N.W.
Washington, D.C. 20554

John A. Reed
Office of Engineering and Technology
Federal Communications Commission
Room 480 - Stop Code 1300
2000 M Street, N.W.
Washington, D.C. 20554

Mr. Norbert Schroeder
National Telecommunications Info.
Administration (IRAC)
U.S. Dept. of Commerce
Room 1609
Washington, D.C. 20230

Henry M. Rivera
Ginsburg, Feldman & Bress, Chtd.
1250 Connecticut Ave., N.w.
Washington, D.C. 20036

Julius P. Knapp, Chief
Equipment Authorization Division
Office of Engineering and Technology
Federal Communications Commission
Room 480 - Stop Code 1300F
2000 M Street, N.W.
Washington, D.C. 20554

Christopher D. Imlay