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

AUG 12 1996

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

In the Matter of)	
)	
Petition for Rulemaking by)	RM No. 8837
DSC Communications Corporation)	
for Allocation of Radio Spectrum)	
in the 2 GHz Band for the)	
Provision of Wireless Fixed)	
Access Local Loop Services)	

To: The Commission

**PARTIAL OPPOSITION
OF
METRICOM, INC.**

Metricom, Inc. ("Metricom"), pursuant to the provisions of Section 1.415 of the Commission's Rules, by its attorneys, hereby submits these Comments in opposition to portions of the above-referenced Petition for Rulemaking ("Petition") filed by DSC Communications Corporation ("DSC").

1. In its Petition, DSC proposes that the Commission designate certain spectrum between 1.3 GHz and 2.7 GHz for wireless fixed access-local loop ("WFALL") service. Metricom is opposed to those portions of the DSC Petition dealing with the 2400-2483.5 MHz frequency band because this band is allocated for the operation of low-power, unlicensed devices pursuant to Part 15 of the Commission's rules, as well as Industrial, Scientific and Medical ("ISM") operations and Amateur operations. Metricom is a member of the Part 15 Coalition which is also filing an Opposition to DSC's Petition for Rulemaking. Metricom supports that Opposition and is

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filing this Partial Opposition to supplement the Part 15 Coalition's filing.

I. BACKGROUND

2. Metricom is a young, rapidly growing, technologically innovative company based in Silicon Valley. In accordance with the encouragement of the Commission in various Part 15 proceedings, Metricom is a pioneer in the development of state-of-the-art spread spectrum, packet radio systems. Metricom has invested significant sums of money, time and energy to develop, manufacture and market sophisticated RF devices which operate on an unlicensed basis pursuant to Part 15 of the Commission's Rules. Operating at a gross over-the-air transmission rate of 100 kbps and actual user data rates of up to 28.8 kbps, Metricom's Ricochet service is the fastest, most easily deployable, and least expensive wide area (regional) wireless data network available today.

3. Metricom was able to develop this system primarily because it was allowed to operate a spread spectrum system in an unlicensed environment that provided maximum flexibility with minimal rules, thus encouraging its engineers to be creative. Through the application of innovative technology, as encouraged by the Commission, Metricom's Part 15 devices offer a unique license-free wireless solution providing cost-effective, intelligent and flexible local and wide area data communications for a variety of applications.

4. While Metricom's current operations are in the 902-928 MHz band, it does have plans to expand into the 2.4 GHz unlicensed band. The Commission has recently held that the 2.4 GHz band should be maintained for unlicensed, ISM and Amateur operations, and the Commission must not disturb the current allocation.

II. COMMISSION POLICY PRECLUDES THE MIXING OF LICENSED AND UNLICENSED SERVICES IN THE 2.4 GHz BAND

5. In verifying its long standing support of Part 15 operations in the 2400-2483.5 MHz band, the Commission recently refused to reallocate the 2402-2417 MHz portion of the 2.4 GHz band for a licensed service. The Commission held that "eliminating Part 15 use of 2402-2417 MHz would severely reduce the amount of spectrum available to Part 15 devices, and would significantly impair the ability of Part 15 devices to operate in the 2400-2483.5 MHz band"^{1/}

6. Both the Commission and the Department of Commerce's National Telecommunications and Information Administration ("NTIA")

^{1/}In the Matter of Allocation of Spectrum Below 5 GHz Transferred from Federal Government Use, First Report and Order and Second Notice of Proposed Rule Making, 10 FCC Rcd 4769 (1995) ("Spectrum Order"), at ¶ 32.

The Commission's Rules require unlicensed devices operating at 2.4 GHz to employ spread spectrum techniques. For frequency hopping systems, a minimum of 75 hopping frequencies is required, and a maximum bandwidth of 1 MHz per channel (which is required for high data rate applications) is allowed. Therefore, 75 MHz of spectrum is necessary for these types of operations. Accordingly, as the Commission has recognized, "it is unlikely that a licensed service would be able to share this band with these devices...." Report to Ronald H. Brown, Secretary, Department of Commerce, Regarding the Preliminary Spectrum Reallocation Report, FCC 94-213 (rel. August 9, 1994) ("Preliminary Spectrum Reallocation Report") at ¶ 39 (emphasis added).

have stressed the importance of allowing the continued operation of Part 15 devices in the 2.4 GHz band. For example, the Commission has stated:

Part 15 devices provide a variety of consumer and business oriented services that benefit individuals, commercial services, and private spectrum users, and they also have applications for public safety and medical needs Considering the universal benefits provided by part 15 equipment, the potential growth for new technologies in this area, and the difficulty of implementing commercial services in this band, we find that the public is best served by providing for the continued availability of this band for Part 15 equipment.^{2/}

Likewise, NTIA has stated that the "critical importance of [unlicensed Part 15] wireless systems to the future development of the National Information Infrastructure ("NII") is well recognized and supported," and the availability of unlicensed bands provides "significant opportunities for innovators and small companies to make contributions to the overall mix of products and services available through the NII."^{3/}

7. A reallocation of the type proposed by DSC for the 2.4 GHz band would severely hamper Part 15 development and operation in the Part 15, 2.4 GHz band.^{4/} In addition to the Part 15 devices operating in the band, ISM devices, particularly the millions of

^{2/}Spectrum Order at ¶ 32.

^{3/}Letter from Larry Irving, NTIA Administrator, to Reed Hundt, FCC Chairman (Dec. 12, 1994) relating to, *inter alia*, PR Dkt. No. 93-61, at 1.

^{4/}It should also be noted that many Part 15 products and services are looking toward use of the 2.4 GHz band because of the RF congestion which will be caused in the 902-928 MHz unlicensed band as a result of the Commission's decision in PR Docket No. 93-61, *Automatic Vehicle Monitoring Systems*, 10 FCC Rcd 4695 (1995).

microwave ovens operating in the band, generate an enormous amount of RF noise in the band. In fact, the Commission has recognized that, "[i]t will be extremely difficult to provide a licensed service in this band because of its heavy use by ISM equipment."^{5/} Other ISM technologies, especially microwave lighting devices, are also expected to proliferate in the 2.4 GHz band. Accordingly, a licensed system, such as that proposed by DSC, cannot be accommodated in the band.

III. THE ALLOCATION OF A LICENSED SERVICE IN THE 2.4 GHz BAND, BASED SOLELY ON DSC'S RATIONALE, IS NOT CONSISTENT WITH COMMISSION POLICY

8. The placement of a licensed service in the Part 15, 2.4 GHz band is antithetical to the Commission's long standing policy of encouraging and promoting Part 15 unlicensed operations. This factor, coupled with the stated fact that unlicensed and licensed services cannot successfully share the 2.4 GHz spectrum allocation, leads to the inescapable conclusion that DSC's proposal should not be implemented. DSC has failed to provide any well-articulated reasoning as to why the Commission should abandon its existing policies.

9. The Commission has previously declined to allocate the 2.4 GHz spectrum utilized by Part 15 unlicensed devices for other uses.^{6/} In so doing, the Commission declared that the proposal to use this band for licensed services would result in relatively

^{5/}Preliminary Spectrum Reallocation Report, ¶ 50.

^{6/}See Spectrum Order, 10 FCC Rcd at 4787, ¶ 35.

limited benefits to the public when compared to the amount and types of use provided by Part 15 devices operating in this band.^{7/} Furthermore, the Commission stated that "the public is benefitted more by allowing the greatest number of possible uses of this band under Part 15 of the Rules rather than by restricting use to one type of application."^{8/} Consequently, because DSC has failed to provide adequate justification for the Commission to change its policies, the agency should not now embark on a proposal to modify the existing 2.4 GHz allocation.

IV. CONCLUSION

Prior precedent and publicly policy demonstrate that the Commission must retain the 2400-2483.5 MHz allocation as it currently exists. The operation of WFALL services in this band would unreasonably limit the use of the Part 15 band for unlicensed devices, thereby limiting a great number of recognized consumer, business and public safety services that unlicensed devices regularly provide.

^{7/}*Id.*

^{8/}*Id.*

For the foregoing reasons, Metricom respectfully requests that the Commission deny DSC's request to operate WFALL services in the 2400-2483.5 MHz band.

Respectfully submitted,

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Dated: August 12, 1996

CERTIFICATE OF SERVICE

I, Joan Mattingly, a secretary in the law offices of Ginsburg, Feldman & Bress, Chtd., hereby certify that a copy of the foregoing Partial Opposition was served this 12th day of August, 1996, by U.S. mail, first-class postage, prepaid to:

James L. Donald
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Joan Mattingly