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June 5, 1997

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Federal Communications Commission  
Office of Secretary

William F. Caton, Acting Secretary  
Federal Communications Commission  
1919 M Street, N.W., Room 222  
Washington, D.C. 20554

Re: CellNet Data Systems, Inc.  
WT Docket No. 97-12

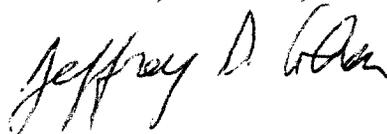
Dear Mr. Caton:

Please find enclosed, on behalf of CellNet Data Systems, Inc., an original and four copies of its Reply Comments in the above-referenced proceeding.

Should you have any questions regarding this submission, please contact the undersigned.

Sincerely,

WILKINSON, BARKER, KNAUER & QUINN



By: Lawrence J. Movshin  
Jeffrey S. Cohen

Enclosures

No. of Copies rec'd 074  
List A B C D E

BEFORE THE  
**Federal Communications Commission**  
WASHINGTON, DC 20554

In the Matter of )  
 ) WT Docket No. 97-12  
Amendment of the Amateur Service Rules to )  
Provide For Greater Use of Spread Spectrum ) RM-8737  
Communication Technologies )

**RECEIVED**  
**JUN - 5 1997**  
Federal Communications Commission  
Office of Secretary

To: The Commission

**REPLY COMMENTS OF  
CELLNET DATA SYSTEMS, INC.**

CellNet Data Systems, Inc. ("CellNet"), by its attorneys, and pursuant to Section 1.415 of the Commission's Rules, hereby replies to the comments filed by interested parties on the Commission's *Notice of Proposed Rule Making* (FCC 97-10, released March 3, 1997) (the "*NPRM*") in the above-referenced proceeding.<sup>1</sup> As discussed more fully below, CellNet generally agrees with the positions taken by members of the Part 15 community and believes that the Commission should retain the status quo with respect to the current permitted uses of spread spectrum technologies by Amateur Service licensees.

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<sup>1</sup> CellNet has spent more than eight years developing a low-cost, highly efficient wireless automated metering and data monitoring system using in part a spread spectrum technology, primarily targeted to the metering needs of the electric, gas, and water utilities. Since the Commission's 1989 decision in Gen Docket No. 87-389, 4 FCC Rcd. 3493, to encourage development of the ISM bands for low cost, low-power transmissions by Part 15 devices, CellNet has concentrated its primary development efforts in the 902-928 MHz band, and the local area network component of its CellNet™ system currently operates on a micro-cellular configuration in that band. CellNet is therefore extremely interested in the outcome of any proceeding that could threaten the future viability of this band for spread spectrum devices operating on a low power, unlicensed basis under Part 15 of the Commission's rules.

CellNet, in its own right and as an active member of the Part 15 Coalition, has previously participated in FCC proceedings increasing spectrum efficiency in the design of licensed and unlicensed devices, while providing opportunities for the expanded development of products and services useful to the consuming public. However, rather than continuing to advance these goals, the proposals in the instant proceeding to permit Amateur Service stations to transmit spread spectrum emissions utilizing additional spreading sequences could hinder Part 15 operations and thus reduce the value of the ISM bands for Part 15 devices.

In this regard, CellNet agrees with Metricom that the Commission's proposal to require Amateur stations using spread spectrum technology to also employ automatic power control circuitry that reduces the signal to the lowest level needed to complete communications will not adequately protect Part 15 users from interference.<sup>2</sup> It must be remembered that Amateur stations will be operating at a power level of 100 Watts output, with unlimited antenna gain, while Part 15 devices are limited to 1 Watt, with a 6 dB antenna gain. Automatic power control circuitry, while often reducing the output power below the 100 Watt level, will not likely reduce the output level so far as to avoid interference to the Part 15 low power devices in the area. Instead, Amateur Radio operators operating in the ISM bands which are shared with Part 15 such as the 902-928 MHz channels, should be limited to the Part 15 power limits when transmitting spread spectrum emissions.<sup>3</sup>

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<sup>2</sup> Comments of Metricom, Inc. at pp. 1-2.

<sup>3</sup> See Comments of the Part 15 Coalition, at p. 2.

Not surprisingly, the Amateur community suggests that the concerns of the Part 15 community can be ignored, since Part 15 devices are not licensed and therefore are always subject to receiving interference from licensed devices. But the Commission has already gone well beyond this antiquated spectrum policy in encouraging, and indeed crafting rules for, the development of low power, unlicensed technologies, and now recognizes the benefit of Part 15 uses and the need to protect such uses in shared bands.<sup>4</sup> It is simply no longer good enough for the licensed services like the Amateur Radio to ascribe second class citizenry status to Part 15 devices and ignore their interference concerns.

Instead, the proponents of new regulations in these shared bands must develop rules and power limits that can accommodate the existing use of the band, and future growth in the band, by both the licensed and unlicensed services authorized to use it. The Amateur Radio Service licensees urging the adoption of more liberalized rules for spread spectrum technologies have simply failed to meet this burden in this instance. To the contrary, CellNet also agrees with the concerns raised by both Metricom and the Part 15 Coalition<sup>5</sup> that allowing amateur operation of high power spread spectrum transmitters would undermine the current, delicate balance which has been achieved among shared spectrum users.

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<sup>4</sup> See, e.g., the LMS proceeding.

<sup>5</sup> Comments of Metricom, Inc. at pp. 3-6; Comments of the Part 15 Coalition at pp. 2-3. Further, as Metricom correctly points out, amateurs do have other bands available to employ high power spread spectrum transmissions without affecting the ISM bands. Comments of Metricom, Inc. at pp. 7-8.

Unless they are willing to limit their operations to the output power allowed to Part 15 devices, amateur radio operators should not be authorized to take over the band with the higher power limits proposed in the *NPRM*. Simply stated, although CellNet is supportive of efforts by the Commission to afford amateur radio operators greater flexibility and encourage further experimentation, such efforts should not be made at the expense of the valuable benefits the Part 15 community provides to the public.

In light of the fact that valuable Part 15 operations could experience very high levels of interference caused by the operation of amateur spread spectrum transmitters, and that higher powered operations could be limited to other bands, CellNet urges the Commission to retain the current restrictions on amateur operations with respect to spread spectrum transmissions in the ISM bands, or adopt power limits equivalent to Part 15 levels.

Respectfully submitted,

**CELLNET DATA SYSTEMS, INC.**



By: Lawrence J. Movshin  
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