

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington DC 20554

In the Matter of)
)
Amendment of Part 15 of the Commission's) ET Docket No. 99-231
Rules Regarding Spread Spectrum Devices)
)
Wi-LAN, Inc.)
Application for Certification of an Intentional) DA 00-2317
Radiator Under Part 15 of the Commission's)
Rules)

**COMMENTS OF THE
WIRELESS COMMUNICATIONS ASSOCIATION INTERNATIONAL, INC.**

The Wireless Communications Association International, Inc. ("WCA"), by its attorneys, hereby submits its comments with respect to the *Further Notice of Proposed Rulemaking* ("FNPRM") issued in the above-captioned proceeding.¹

WCA supports the Commission's proposal to permit frequency hopping spread spectrum systems in the 2.4 GHz band to use as few as 15 hops regardless of the bandwidth utilized, provided that such systems limit output power to 125 mW and utilize adaptive hopping techniques in accordance with Section 15.247(h) of the Commission's Rules.² WCA believes that the adaptive hopping limitation should substantially reduce potential interference that such systems may cause to other users of the 2.4 GHz band. In addition, WCA supports the Commission's proposal to permit Part 15 operation of

¹ FCC 01-158 (rel. May 11, 2001). WCA is the trade association of the wireless broadband industry. Its members include entities that provide or support the provision of wireless broadband services using the 2.4 GHz band. Accordingly, WCA has a direct and immediate interest in the Commission's resolution of the issues raised in the *FNPRM*.

² See *FNPRM* at ¶¶ 10-13.

alternative digital technologies that have spectrum characteristics similar to spread spectrum systems, provided that such technologies otherwise comply with the Commission's technical requirements for spread spectrum systems.³ As the Commission observes, adoption of this proposal will promote consumer choice by facilitating the introduction of a broader variety of products that use the 2.4 GHz band, and will eliminate the need for the Commission to rewrite its rules every time a new alternative digital technology is eligible to be regulated as a spread spectrum system under Part 15.⁴

At paragraph 17 of the *FNPRM*, the Commission requests comment on whether it should permit systems employing digital modulation techniques to operate at the same power levels as direct sequence spread spectrum systems, *i.e.*, 1 watt maximum output power with power spectral density not exceeding 8 dBm/3 kHz. WCA supports this proposal, but, for the reasons set forth below, believes that the Commission should go further and adopt a maximum power spectral density of 22 dBm/MHz for the 2.4 GHz band.

The Commission's existing rules for direct sequence spread spectrum systems require the digital signal to be spread by a pseudo random code. Because this mode of operation spreads power over a wider frequency band, the power level spectral density of the transmitted signal is significantly lower than that achieved with normal modulations. Importantly, the power levels proposed in the *FNPRM* are based on digital transmission with the same characteristics. For instance, all modulations in compliance with the

³ *FNPRM* at ¶16. Of course, any rule modifications adopted pursuant to the *FNPRM* must remain subject to the overriding principle that Part 15 systems must not cause interference to licensed operations, and must accept any interference received from licensed or other unlicensed operations. *See Amendment of Part 15 of the Commission's Rules Regarding Spread Spectrum Devices (First Report and Order)*, 15 FCC Rcd 16244, 16252 (2000).

⁴ *Id.*

Direct Sequence Spread Spectrum specifications (1, 2, 5.5 and 11 Mbit/s data rate) in the IEEE 802.11 standard would have, if they were to use the full transmit power level of 30 dBm, a peak power spectral density of 20 dBm/MHz and a 23 dB bandwidth of 22 MHz. The Commission is already proposing in the *FNPRM* to permit alternative digital systems to operate with a peak power spectral density of 8 dBm/3 kHz, which is the equivalent of 33 dBm/MHz, or 13 dB *more* than what is currently practiced for direct sequence spread spectrum systems. Accordingly, to mitigate the potential for harmful interference to other users of the 2.4 GHz band, WCA recommends that the Commission modify its rules to limit the permitted peak power spectral density for alternative digital systems to 22 dBm/MHz, in addition to the proposed limit of 8 dBm/3 kHz.

Finally, WCA supports the Commission's proposal to eliminate the processing gain requirement for direct sequence spread spectrum systems.⁵ For the reasons set forth in the *FNPRM*, the requirement is no longer necessary and may actually create an artificial barrier to introduction of new technologies for users of the 2.4 GHz band.

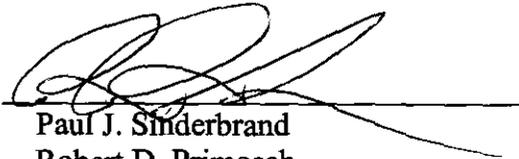
⁵ *Id.* at ¶ 22.

WHEREFORE, for the reasons set forth above, WCA requests that the Commission amend its Part 15 rules in accordance with the recommendations set forth in these comments.

Respectfully submitted,

THE WIRELESS COMMUNICATIONS
ASSOCIATION INTERNATIONAL, INC.

By:



Paul J. Sinderbrand
Robert D. Primosch

WILKINSON BARKER KNAUER, LLP
2300 N Street, NW
Suite 700
Washington, DC 20037-1128
202.783.4141

Its Attorneys

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