

Before the  
**FEDERAL COMMUNICATIONS COMMISSION**  
Washington, DC 20554

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

**REPLY COMMENTS OF THE  
TELECOMMUNICATIONS INDUSTRY ASSOCIATION**

The Telecommunications Industry Association (TIA), pursuant to Sections 1.415 and 1.419 of the Commission's Rules,<sup>1</sup> hereby comments in response to the Further Notice of Proposed Rulemaking (*FNPRM*) in the above-captioned proceeding.<sup>2</sup>

**I. INTRODUCTION**

TIA is the leading trade association representing the communications and information technology industry, with approximately 1,000 member companies that manufacture or supply the products and services used in global communications. Among their numerous lines of business, TIA member companies design, produce and deploy commercial wireless network and terminal equipment.

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<sup>1</sup> See 47 C.F.R. §§ 1.415, 1.419.

## II. DISCUSSION

### ***FREQUENCY HOPPING SPREAD SPECTRUM SYSTEMS***

TIA believes that frequency hopping spread spectrum systems in the 2.4 GHz band that have a bandwidth of more than 1 MHz should be permitted to use as few as fifteen non-overlapping hops.<sup>3</sup> The Commission thus should modify its rules to specify a minimum of fifteen non-overlapping hopping channels. The power limit of 125 mW proposed by the Commission would reduce the potential for interference between systems sufficiently so that mandating adaptive frequency hopping becomes unnecessary.

### ***DIGITAL TRANSMISSION SYSTEMS***

TIA supports the Commission's proposal to amend Section 15.247 of its rules to provide for the use of spread spectrum or digital technologies.<sup>4</sup> TIA agrees that this change would allow more diverse products to utilize the 915 MHz, 2.4 GHz and 5.7 GHz bands and thereby increase consumer choice. In addition, this would reduce the need for frequent rule changes to address each specific new technology that may be deployed in these bands.

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<sup>2</sup> Further Notice of Proposed Rulemaking and Order, FCC 01-158 (released May 11, 2001) (*FNPRM*).

<sup>3</sup> See *FNPRM* at ¶ 13.

<sup>4</sup> *Id.* at ¶ 16.

In the *FNPRM*, the Commission requests comment on whether digital transmission systems should be allowed the same power levels as direct sequence spread spectrum (DSSS) systems, namely 8 dBm in any 3 kHz band.<sup>5</sup> TIA shares the concern of the majority of commentors that allowing such power concentration for digital transmission systems (DTS), transmission of 1 Watt output power in 500 kHz channels or 33 dBm/MHz, would cause severe interference not only to the systems currently occupying the band, but also to systems currently being standardized by established standards bodies. TIA is confident that the solution proposed by many commentors of establishing an additional limit expressed in dBm/MHz would adequately address this concern and may resolve the objection of applying the U-NII rules to the 915 MHz and 2.4 GHz bands.

TIA notes that a variety of limits are being proposed by the commentors, ranging from around 11 dBm/MHz by current DSSS market leaders to 22 dBm/MHz by fixed wireless access (FWA) interests. TIA believes that the arguments for allowing a power spectral density (PSD) for DTS significantly lower than allowed for the incumbent technologies are technically unjustified, as the type of modulation is generally irrelevant to the severity of interference caused, as already stated in the Joint Comments of 3Com Corporation and Clearwire Technologies, Inc. It generally also is contrary to the public interest, as it would *de facto* discourage research and development of more interference resilient and spectrally efficient systems since, especially for practical outdoor applications, 11 dBm/MHz would be far from sufficient.

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<sup>5</sup> *Id.* at ¶ 17.

TIA concurs with the Comments of the OFDM Forum and the Comments of Texas Instruments on a consensus limit of 20 dBm/MHz. This would be sufficient to reasonably limit interference and adequate to provision practical outdoor applications.

#### Power limit for DTS

TIA agrees with the Commission and the majority of commentors addressing the issue on allowing a maximum of 1 watt peak power for DTS.<sup>6</sup> Restricting the peak power as suggested by a few commentors would effectively prevent the usage of this spectrum for outdoor applications such as residential access provisioning (where high horizontally directional antennas and large masts are impractical), a result that would be against the public interest.

The Commission invites comment on any detrimental impacts to manufacturers of aligning Section 15.247 of its rules with the U-NII bandplan restrictions.<sup>7</sup> TIA agrees with the Commission and many commentors that this alignment would not have a severe impact on the industry. With the addition of a 20 dBm/MHz limit as discussed above, the rules as proposed by the Commission should be adequate, and further study as suggested by some commentors would be unnecessary and only result in significant delay. Like all parties commenting on this issue, TIA favors extending the 5.725-5.825 GHz U-NII band by 25 MHz to 5.850 GHz, with application of the U-NII rules currently applicable to the 5.725-5.825 GHz band.

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<sup>6</sup> *Id.*

<sup>7</sup> *Id.* at ¶ 18.

TIA notes that the Comments of Western Multiplex Corp. suggest allowing higher EIRP (than 36 dBm) for Point-to-Multipoint systems using more directional gain antennas such as sectors. TIA concurs with the observation in the Comments of the OFDM Forum that the differentiation between Point-to-Point (“PtP”) and Point-to-Multipoint (“PMP”) systems used by the Commission to determine the allowed EIRP is ineffective, as this differentiation does not address the beamwidth (and hence the gain) of the antennas used, and therefore does not address the interference caused. Under the current rules, a PMP system and a PtP system using the same antenna can introduce vastly different amounts of interference as the PtP system is allowed a significantly higher EIRP. TIA hence supports the suggestion contained in the Comments of OFDM Forum to distinguish allowed EIRP solely on the antenna gain used and not on the network configuration.

### **III. CONCLUSION**

TIA member companies design, develop and manufacture communications equipment, including spread spectrum devices that are subject to Part 15 of the Commission's rules. TIA therefore has a substantial interest in the outcome of this proceeding. TIA requests that the Commission take into consideration the views expressed above.

Respectfully submitted,

**TELECOMMUNICATIONS INDUSTRY  
ASSOCIATION**

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September 25, 2001