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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Dale N. Hatfield, Chief
Office of Engineering & Technology
Federal Communications Commission
445 12th Street, S.W., 7th Floor
Washington, D.C. 20554

Re: ET Docket No. 99-231,
Amendment of Part 15 of the Commission's Rules Regarding Spread Spectrum Devices
--- *Ex Parte Filing*

Dear Mr. Hatfield:

On April 10, 2000, representatives of Intersil Corporation and Lucent Technologies on behalf of the Wireless Ethernet Compatibility Alliance (WECA) submitted a self-styled "compromise" proposal to the Commission, which, they said, is intended to "resolve differences among the parties to the proceeding." As Proxim shows below, the WECA proposal is no compromise at all, but, if adopted by the Commission, would preclude widespread deployment of low cost solutions for broadband Internet voice and data networking in the United States.

The WECA proposal is as follows:

1) A minimum number of 20 non-overlapping hopping channels should be employed with a minimum channel width of 4 MHz to prevent overlapping channels.

2) Maximum transmit power should be reduced from 1000 mW for 1 MHz FH systems to 60 mW for any FH system above 1 MHz.

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3) There should be a minimum hopping rate of 2.5 Hz and a maximum rate of 100 Hz (for channel bandwidth > 1 MHz) due to the sensitivity of DS systems to fast hopping FH interference.

4) There should be performance testing for FH receivers.

With respect to points 3 and 4 in the list of WECA proposals, the supporters of the Commission's initiative already have compromised on the hopping rate issue by proposing to leave the minimum hopping rate unchanged from the existing rules governing FH spread spectrum devices. Although Proxim is not categorically opposed to either limiting FH hopping rates or introducing FH receiver input bandwidth testing, these issues are not appropriate for resolution in this proceeding, since they were never proposed by the Commission or discussed by the parties. In any event, Proxim cannot understand why such requirements would apply solely to WBFH systems. Compliance with the Commission's rules should apply to all systems equally. The remaining points area addressed below.

A. THE COMMISSION CAN ADDRESS WECA'S CONCERN WITH NON-OVERLAPPING CHANNELS WITHOUT COMPROMISING ITS ORIGINAL PROPOSAL

WECA urges the Commission to require a minimum channel width of 4 MHz and at least 20 hopping channels, *i.e.*, 80 MHz of bandwidth must be spanned. This is inconsistent with the Commission's existing rules for 1 MHz channel bandwidth FH systems under which 75 MHz is the required span. Though at first glance the difference may seem to be slight, the implications are severe because of the Commission's longstanding restrictions on spurious emissions at the upper band edge of 2483.5 MHz (which is very different from what is required under the ETSI standard).[1]

Intel, Motorola, Siemens, Compaq and Proxim already have addressed the perceived problems with partially overlapping channels by proposing non-overlapping channels. This true compromise proposal was submitted by Proxim for the record on February 23, 2000 in an *ex parte* filing. Under this proposal, manufacturers would be allowed to use up to 3 MHz or 5 MHz of channel bandwidth so long as the channels never overlap and the channels contiguously span at least 75 MHz of bandwidth. This is consistent with the Commission's existing rules for 1 MHz channel bandwidth FH

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[1] Furthermore, WECA makes the curious recommendation that channel bandwidth be *at least* 4 MHz instead of *at most* 3 MHz or 5 MHz, as in the Commission's proposal. This subtle difference also has serious implications. For example, if a manufacturer chooses to build a 2.4 GHz WBFH system with 1.7 MHz of channel bandwidth - a common choice for bringing digital cordless telephony to market - WECA would require such manufacturers to waste about 60% of the available bandwidth.

systems and completely addresses WECA's exaggerated concern regarding overlapping channels.

B. THE COMMISSION ALREADY HAS COMPLETELY ADDRESSED THE ISSUE OF REDUCED TRANSMIT POWER FOR WBFH SYSTEMS.

As the Commission is well aware, the rules governing FH systems in Europe and Japan do not require any reductions in transmit power whatsoever for systems operating at the maximum channel bandwidth versus the minimum channel bandwidth. Yet, out of an excess of caution, the Commission proposed substantial limitations on transmit power for WBFH systems in the U.S. Under the Commission's proposal, for systems up to 3 MHz wide, transmit power must be three times less than that allowed for 1 MHz systems and for systems up to 5 MHz wide, transmit power must be five times less.

In WECA's April 10th filing, a single hard limitation of 60 mW, or 16.7 times less, is proposed. The justification for this is given as being the square of the recommended minimum channel bandwidth for WBFH. However, Proxim, Intel, Motorola and Siemens have submitted detailed measurements that show that WECA's high speed IEEE802.11b DS systems should experience no increased interference relative to existing 1 MHz FH systems and, thus, no decrease in power whatsoever is required.[2]

WECA has specifically agreed with these measurements in a prior filing and stated explicitly that the wider channel profile of WBFH does not concern them - only the effects of partially overlapping channels that might lead to greater re-transmissions of WBFH packets.[3] Thus by adopting a consistent non-overlapping channel approach as recommended by Proxim and others, the Commission can address WECA's previously-stated concerns without jeopardizing the utility of WBFH systems to consumers by unwarranted reductions in transmit power.

The Commission's proposed transmit power reductions for WBFH would still allow U.S. consumers to get the full benefits of low-cost, broadband home networking, but further reductions, including adoption of the ETSI standard of 100 mW EIRP for all

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[2] See CUBE Reply Comments, Table 2.

[3] See WECA *Ex Parte* Filing, Jan. 18, 2000, pp. 64,65, e.g. "It must be reiterated that the concerns of the DS manufacturers are not related to the PSD [Power Spectral Density] of the WBFH signal per se, but rather to the degree of compatibility of the to [sic] radio technologies."

FH products, would limit the utility and increase the price of such networks. Proxim notes that Japan allows transmit power (about 250 mW) nearly identical to that proposed for WBFH by the Commission.

In summary, detailed measurements have shown conclusively that the Commission's proposed transmit power restrictions would eliminate any danger of increased interference to existing users of the 2.4 GHz band relative to interference that can be caused by devices permitted under the existing FH and DS rules. WECA's recent filing presents no new evidence to the contrary. Proxim strongly urges the Commission to maintain, but not increase, the transmit power restrictions imposed on WBFH.

Respectfully submitted,

Henry Goldberg
Attorney for Proxim, Inc.

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