INFORMATION TECHNOLOGY INDUSTRY COUNCIL

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September 21, 2001

Magalie Roman Salas
Office of the Secretary
Federal Communications Commission
445 12th Street, S.W. (TW-A325)
Washington, D.C. 20554

Re: Spread Spectrum Devices; ET Docket 99-231

Dear Ms. Salas:

The Information Technology Industry Council (ITI) represents the leading U.S. providers of information technology and telecom products and services with worldwide revenues that exceeded $668 billion in 2000. ITI promotes the global competitiveness of its members and is focused on policies aimed at opening foreign markets to U.S. firms worldwide.

ITI welcomes this opportunity to provide comments concerning the Federal Communication Commission's (the Commission or the FCC) proposed rulemaking for spread spectrum devices, 66 FR 31585 (June 12, 2001). ITI supports amending the FCC rules to improve spectrum sharing by unlicensed devices operating in the 2.4 GHz band (2400-2483.5 MHz), provide for introduction of new digital transmission technologies, and eliminate unnecessary regulations for spread spectrum systems. Moreover, ITI applauds the FCC's continued efforts to facilitate development and deployment of new wireless devices for businesses and consumers.

I. Summary of Further Notice of Proposed Rulemaking and Order

ITI supports the FCC's Further Notice of Proposed Rulemaking and Order (FNPRM), 64 FR 38877 (July 20, 1999) to amend Part 15 of the Commission's rules to improve spectrum sharing by unlicensed devices operating in the 2.4 GHz band (2400-2483.5 MHz), provide for introduction of new digital transmission technologies, and eliminate unnecessary regulations for spread spectrum systems. Specifically, ITI supports the Commission's

proposal to revise the rules for frequency hopping spread spectrum systems operating in the 2.4 GHz band to reduce the amount of spectrum that must be used with certain types of operation and to allow new digital transmission technologies to operate pursuant to the same rules as spread spectrum systems.

ITI strongly supports the Commission's proposal to eliminate the processing gain requirement for direct sequence spread spectrum systems providing increased flexibility and regulatory certainty in the design of these devices. ITI also supports the Commission's Original Notice of Proposed Rulemaking initiated by a request from the Home RF working group to amend the Commission's rules to allow frequency hopping spread spectrum systems operating in the 2.4 GHz band to use hopping channel bandwidths wider than 1 MHz. These proposals will facilitate the development and deployment of new wireless devices for businesses and consumers.

Frequency Hopping Spread Spectrum Systems

ITI agrees with the Commission's First Report and Order, 65 FR 57557 (September 25, 2000) amending the spread spectrum rules to allow frequency hopping spread spectrum transmitters in the 2.4 GHz band to use bandwidths between 1 MHz and 5 MHz at a reduced power output of up to 125 mW. Accordingly, ITI agrees that frequency hopping systems with a bandwidth of up to 1 MHz should not be required to use 75 hopping frequencies since the 2.4 GHz band provides only 83.5 megahertz of spectrum. Reducing the number of frequency hops for this technology will lead to a more effective and efficient use of the limited spectrum for these devices.

However, the Commission's rules should not prescribe a minimum number of frequency hops for systems using a bandwidth greater than 1 MHz but less than or equal to 5 MHz. The Commission's intent to modify its rules requiring these systems to use at least 15 non-overlapping channels will restrict design and innovation of wireless devices. While a reduction to fifteen frequency channels is a significant improvement from the current rules, this requirement for a prescribed number of hops remains arbitrary. A prescribed number and type of frequency hops is also contrary to the Commission's intent to provide flexibility to manufacturers to develop and deploy new wireless products and will undoubtedly lead to frequent rule changes to address specific new technologies. Products can already be designed to operate effectively using less than fifteen channels without interfering with other nearby devices.

Manufacturers have a market and regulatory incentive to design wireless devices that do not interfere with other devices whether they utilize adaptive hopping techniques or other technologies. Furthermore, many manufacturers will include technologies or techniques voluntarily to reduce any noticeable causes of interference from transmissions. ITI, therefore, recommends that adaptive hopping techniques remain voluntary.

Digital Transmission Systems

ITI concurs with the FCC's findings that digital transmission technologies have been developed that have spread spectrum characteristics similar to spread spectrum systems. We also concur that digital transmission systems have been developed which meet the processing gain requirements of 47 C.F.R. 15.247 for direct spread spectrum systems. The FCC's rules currently only provide for specific types of spread spectrum technologies and do not provide the necessary latitude to permit other types of technologies that have similar spectrum characteristics. The FCC should modify its rules to permit the operation of these alternative digital technologies. These modifications should apply for operations, including digital technologies, in the current spread spectrum bands at 915 MHz, 2.4 GHz, and 5.7 GHz. These modifications will provide manufacturers more flexibility and allow more diverse and non-interfering products to utilize those frequency bands. These changes will also make frequent rule changes unnecessary in order to keep pace with new technologies.

ITI asserts that digital systems do not exhibit any more potential to cause interference to other devices than direct sequence systems. We encourage the Commission to allow digitally modulated systems to operate at the same power levels as direct sequence spread spectrum systems of 1 watt maximum output power with power spectral density not exceeding 8 dBm in any 3 kHz band. ITI members will provide the Commission with laboratory test data to confirm these assertions.

Direct Sequence Processing Gain

The FCC is correct in suggesting the processing gain requirements may no longer be necessary. These requirements were adopted more than ten years ago as a means to ensure that manufacturers would not utilize the higher power levels of spread spectrum devices by designing systems with wide bandwidths that much of the energy transmitted was not needed for communication purposes. However, since then, the spectrum industry has matured and manufacturers now have incentives to design their systems to include processing gains that operate properly when located near other radio frequency devices. The FCC's intention to eliminate the processing gain requirements for direct sequence spread spectrum systems will remove the uncertainties for manufacturers since it is difficult to determine the true processing gains of certain direct sequence spread spectrum systems. Uncertainties concerning the processing gain requirements are a significant impediment to the introduction of new direct sequence technologies.

II. Initial Regulatory Flexibility Analysis

ITI submits the following comments to the FCC's initial regulatory flexibility analysis as contained in the Further Notice of Proposed Rulemaking. These comments are submitted in accordance with the requirements as set forth in paragraph 8 of the Further Notice of Proposed Rulemaking for Spread Spectrum Devices.

ITI supports the FCC's proposal to remove unnecessary regulatory barriers to the introduction of new wireless devices using spread spectrum and other digital technologies. The proposals contained in the Further Notice of Proposed Rulemaking will significantly improve sharing of the spectrum by wireless devices operating in the 2.4 GHz band.

We generally support relaxing the frequency hopping spread spectrum rules in section 15.247 to reduce the number of frequency hops from 75 to 15. However, ITI encourages the FCC not to prescribed a specific number of frequency hops for these devices. Currently, wireless devices using less than 15 hops can be designed not to interfere other nearby radio frequency equipment. In fact, the FCC already prepares manufacturers intending to design products using only 15 hops to employ adaptive hopping techniques in order to avoid transmitting on occupied frequencies. These same adaptive hopping techniques could also be utilized for devices using less than 15 channels. Adopting a limit of frequency hops into regulation is contrary to the FCC's intent to provide flexibility for manufacturers to introduce new spread spectrum devices and not contribute to additional clarifying rulemakings. Therefore, ITI suggests the FCC not insist on a specific minimum number of frequency hops for spread spectrum devices.

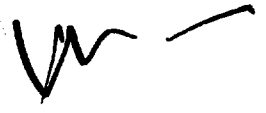
ITI supports the FCC to modify its rules for non-frequency hopping spread spectrum systems in the 915 MHz, 2.4 GHz, and 5.7 GHz bands to accommodate developing systems using digital modulation techniques while continuing to meet the same technical requirements as spread spectrum systems. This proposal will create flexibility and certainty for manufacturers leading to the introduction of new non-interfering products into the band. These changes will also reduce the need for frequent rule changes to address each new technology. Accordingly, the FCC should modify the U-NII rules to include 915 MHz and 2.4 GHz as well as the 5.7 GHz bands. The 5.7 GHz band should be included in this proposal to continue to make the these rules consistent and eliminate future rulemakings for modifications for this purpose. Adding the 5.7GHz band will be achieved the same positive results for the section 15.407 rules.

ITI fully supports the FCC's proposal to eliminate the processing gain requirement for direct sequence spread spectrum systems. The processing gain requirement is outdated since it was adopted more than ten years ago as a means to ensure manufacturers would not take advantage of higher power levels by spread spectrum devices. This was because manufacturers might have designed devices with wide bandwidths which used much of its energy to for uses other than the intended one of communication. This requirement is no

longer necessary since manufacturers have an incentive to include processing gains to ensure their devices operate properly when located near other radio frequency devices.

ITI appreciates this opportunity to provide these comments concerning the FCC's proposal to increase regulatory flexibility of spread spectrum devices to the Commission. We applaud the Commission for initiating this rulemaking. We believe these significant improvements will indeed achieve the FCC's intent to facilitate the continued development and deployment of new wireless devices for business and consumers. We look forward to working with the FCC to institute these proposed changes.

Respectfully submitted,



Rhett Dawson
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