

Project	<b>IEEE 802 Regulatory Group</b>	
Title	<b>Proposal concerning NPRM – 99-231 / FCC 01-158</b>	
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Source(s)	Marianna Goldhammer BreezeCOM  21, HaBarzel Street Tel Aviv, 61131, Israel	Voice: +972 3 6456241 Fax: +972 3 6456290 <a href="mailto:mariannag@breezecom.co.il">mailto: mariannag@breezecom.co.il</a>
Re:	Tentative Report of Radio Regulations Tele-conference, held June 21, 2001	
Abstract	Proposed text for par. 14-18	
Purpose	Include in IEEE 802 response to FCC 01-158	
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## Proposal concerning NPRM – 99-231 / FCC 01-158

*Marianna Goldhammer*

BreezeCOM

### Comments to pct. 14

We fully agree with your view that the minimum number of hopping frequencies need not be decreased below 75 in 5.7GHz band. We also think that sharing between Digital Transmission or Direct Sequence systems and wide-band Frequency Hopping systems (1..5MHz) is not desired in 5.7GHz.

### Comments to pct. 15-16

We welcome the decision of FCC to introduce the Digital Transmission systems and align their power and spectral density limitations with those of the previously defined Direct Sequence system. We see it as a recognition of the fact that the modulation methods constitute a continuum which starts at Spread Spectrum systems exhibiting high robustness at expense of data rate, through less robust, higher capacity systems. Both Direct Sequence and Digital Modulation (DM) systems should be judged by the interference they generate, rather than their robustness to interference (being the responsibility of the vendor to create a system which can accept interference). Given this argument, we see no need to differentiate between DS and DM systems in any respect – power, power density, antenna gains etc.. Moreover, treating DS and DM systems as part of a continuum of methods aimed at the same goal, the whole discussion of the DS processing gain measurement method is obviated.

### Comments to pct. 17

The IEEE 802 Community considers that same limitations used for Direct Sequence Systems can be applied in case of Digital Transmission systems, namely 8dBm in any 3kHz band and 1W maximum conducted power, as you proposed.

Nevertheless, we would like to comment about the power limitations used in the current ISM regulations. We understand that the 5.7GHz bands is used in both its ISM and U-NII variants mainly for outdoor applications. Those applications of the outdoor systems include both point-to-point links and point-to-multipoint access. In the last year, the IEEE 802 has recognized the market demand for point-to-multipoint access applications in license-exempt bands, by approving the PAR for the interoperability standard in these bands - 802.16.b. We would like to note that in Europe there are also two distinct HIPERLAN bands – one with lower allowed EIRP, targeted at indoor applications and another one, targeted at outdoor applications in which higher EIRP is allowed.

We consider that the following differentiation should be made, depending of application and antenna aperture:

#### 1. Point-to-point links

The P-P links benefit of higher EIRP power. The Rules do not specify the antenna aperture in these applications. In the benefit of wireless community, we propose to characterize the P-P links in correlation with antenna aperture, by replacing the wording in 15.247 (b)(3)(ii) with:

**“Digital Transmission systems, using transmitting antennas with apertures smaller than 30deg., may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter peak output power.”**

#### 2. Point-to-multipoint links

- A. We agree with the spirit of the Rules for omnidirectional applications and multiple co-located intentional radiators transmitting the same information.
- B. We consider that clarifications and modifications should be made in the Rules, regarding the point-to-multipoint systems, with the view that these systems may be used in out-door deployment:

- a. The remote side of a P-MP link, when transmitting with a directional antenna, uses the spectrum even less than a P-P link. Generally, the information will be transmitted in bursts, the produced interference being of short duration and low duty-cycle. The central side of the point-to-multipoint link will receive equivalent information with a P-P link. We propose that the power allowance for the remote side of a P-MP link will be the same as for P-P links:

**“Digital Transmission systems, used in the remote location of a point-to-multipoint link, and using transmitting antennas with apertures smaller than 30deg., may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter peak output power.”**

- b. The central site of a P-MP link can use sectorized antennae. The caused interference will be lower as compared with omnidirectional antennae, so more allowance can be made for the transmitted power. We propose the following modifications of the Rules:

**“The central transmitter of a point-to-multipoint system, sending the same information in only 1 sector and using transmitting antenna apertures lower than 120deg., may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum peak output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.”**

## **Comments to pct. 18**

We agree that the U-NII band should be expanded to 5.850GHz. We consider that 900MHz and 2.4GHz bands are quite crowded, preferring to restrict the use of the U-NII rules for 5GHz bands only.