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Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

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In the Matter of	)	
	)	
1998 Biennial Regulatory Review —	)	ET Docket No. 98-42
	)	
Amendment of Part 18 of the	)	
Commission's Rules to Update	)	
Regulations For RF Lighting Devices	)	

**REPLY COMMENTS OF THE PART 15 COALITION**

The Part 15 Coalition ("the Coalition"), by its attorneys, submits this reply to the comments filed in response to the above-referenced Notice of Proposed Rulemaking ("NPRM").

**DISCUSSION**

Many of the comments filed in this proceeding, including those filed by the Coalition, caution against allowing the widespread distribution of microwave lighting products without significantly limiting their in-band and out-of-band emissions. Although a few parties filed comments opposing FCC requirements designed to protect other users of the ISM bands, those comments proceeded from faulty premises and should be discounted accordingly.

**1. Part 15 Suppliers And Users Did Not "Come To The Nuisance" By Choosing To Operate In The ISM Bands.**

The International Microwave Power Institute ("IMPI") opposes in-band power limitations on ISM devices because "devices that willfully choose to operate within long-established ISM frequencies do so with a long-standing knowledge that ISM interference must be accepted. To change the rules for the ISM industry (which cannot seek refuge in other frequencies) to accommodate devices that could select multiple bandwidths as a home, would be unconscionable."<sup>1</sup> In essence, IMPI's

<sup>1</sup> IMPI Comments at 3.

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view is that, communications services that operate in ISM bands cannot complain that ISM emissions are a nuisance, no matter how much radio noise they generate, because the communications services “willfully” came to, and remain in proximity to, the nuisance.

In fact, at least with respect to Part 15 technologies, the ISM bands were not the spectrum of choice. Indeed, almost since its inception, the Coalition has advocated a permanent allocation of frequencies in various regions of the radio spectrum for unlicensed technologies and the establishment of a “Part 16” to govern use of the proposed “unlicensed band.”<sup>2</sup>

It is also not the case that Part 15 technologies can “select multiple bandwidths as a home.” Indeed, spread spectrum Part 15 technologies, which represent the segment of the industry with the greatest growth potential, currently have very few spectrum options and invariably those options involve sharing with ISM devices. It is no more “unconscionable” to require ISM devices sharing these bands to be good spectrum neighbors (rather than noise polluters) than it is to further limit the availability of spectrum for unlicensed services by allowing ISM operations to crowd out all others in the 2.4 GHz band.

## **2. Microwave Lighting Systems Will Not Be Used To Reheat Lasagna.**

Fusion Lighting (“Fusion”) and General Electric Company (“GE”) mistakenly equate microwave lighting products with microwave ovens. Fusion opposes suggestions that microwave lighting systems should include filters to limit RF emissions “given that millions of microwave ovens ... using the same magnetron technology, produced virtually no reported cases of harmful interference.”<sup>3</sup> Similarly, GE opposes in-band radiation limits because “there are many more devices already in existence ... that operate in the 2450 MHz ISM band that do not have limits on in-band radiated emissions.”<sup>4</sup>

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<sup>2</sup> See, e.g., Amendment of Parts 2 and 15 of the Commission’s Rules Regarding Spread Spectrum Transmitters, ET Docket No. 96-8, Comments of the Part 15 Coalition (filed May 15, 1996) at 2-5; Allocation of Spectrum in the 5 GHz Band to Establish a Wireless Component of the National Information Infrastructure, RM-8653, Comments of the Part 15 Coalition (filed June 24, 1995) at 3-6; Amendment of Part 90 of the Commission’s Rules to Adopt Regulations for Automatic Vehicle Monitoring Systems, PR Docket No. 93-61, Petition for Reconsideration of the Part 15 Coalition (filed Apr. 18, 1995) at 2 n.3.

<sup>3</sup> Fusion Comments at 4.

<sup>4</sup> GE Comments at 7-8.

These arguments rest on a faulty analogy. Even if it were a fact that microwave ovens operate in the band without causing harmful interference — a proposition that is debatable — it does not necessarily follow that microwave lighting devices, even using the same magnetron technology, would not cause harmful interference. As several parties pointed out in their comments, the use, operational characteristics, and distribution of microwave lighting devices will be vastly different from those associated with microwave ovens.<sup>5</sup>

Whereas microwave ovens typically are located indoors (often in residential environments), near ground level, and are operated for relatively short periods of time, microwave lighting devices will operate indoors and outdoors, in elevated, unshielded sites, often for long periods of time. The interference caused by microwave ovens simply is not indicative of the interference that will be caused by microwave lights.

**3. There Are No “Technical And Historic” Reasons To Oppose Emissions Limits.**

Fusion objects to the imposition of emissions limits for RF lighting for “technical and historic” reasons.<sup>6</sup> Fusion’s supposed technical and historic objections, however, are overstated.

First, the Coalition agrees with those parties that have questioned the technical basis for Fusion’s broad assertion that RF lighting will not present a threat of harmful interference. Although it is true that complaints regarding interference from microwave ovens rarely is reported by Part 15 users, as a practical matter — in an environment characterized by bursty, intermittent operations by ISM and Part 15 technologies alike — it often is impossible to detect the precise source of interference, should it occur, just as it is inefficient to mitigate the interference once the source is found.<sup>7</sup> Continuous operation by RF lighting devices, however, may change that equation.

Further, as CD Radio points out, “the interference environment will be characterized by tens or even hundreds of RF lighting devices” in any given area

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<sup>5</sup> See, e.g., Comments of the American Radio Relay League, Inc., at 5; Comments of Metricom at 3-4.

<sup>6</sup> Fusion Comments at 10.

<sup>7</sup> Cf. Comments of Satellite CD Radio, Inc. (“CD Radio”), at 8.

and “[n]either the RF lighting manufacturers nor the FCC have quantified and made public the effects of multiple interference” on other users.<sup>8</sup>

Finally, Fusion’s historical argument has elements of revisionism. Fusion complains that “[e]ven the suggestion that in-band limits are under consideration is damaging as it sends the wrong signal to communications users that ISM bands may be available for new services, threatening the 50-year balance that currently exists between ISM and those few in-band communications users.”<sup>9</sup>

Those “few in-band communications users” to which Fusion refers presumably includes users served by the Part 15 industry, which is expected to be generating one billion dollars per year in sales by the year 2000.<sup>10</sup> A significant number of those sales will be of new unlicensed communications services and technologies that are being developed for the 2.4 GHz band. Contrary to the implication in Fusion’s pleading, however, product development in this band by the Part 15 industry was not in contravention of the Commission’s rules and policies, but in furtherance of them.

For example, in the “Below 5 GHz” proceeding, the Commission concluded that “the public interest is best served by providing for the continued availability [of the 2402-2417 MHz] band for Part 15 equipment” because Part 15 operations in those bands would promote the “introduction of new services and devices and the enhancement of existing services and devices ... [which] will create new jobs, foster economic growth, and improve access to communications by industry and the American public.”<sup>11</sup> Unless and until the Commission creates a new Part 16 and sets aside dedicated spectrum for unlicensed services, it should continue to promote and encourage the development of new communications services operating under Part 15 in the 2.4 GHz band.

#### CONCLUSION

For the reasons set forth herein and in the Coalition’s comments, the Commission should adopt out-of-band radiation limits above 1 GHz for RF lighting

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<sup>8</sup> CD Radio Comments at 8.

<sup>9</sup> Fusion Comments at 14-15.

<sup>10</sup> Comments of 3Com Corporation at 3.

<sup>11</sup> Allocation of Spectrum Below 5 GHz Transferred from Federal Government Use, First Report and Order, ET Docket No. 94-32 (rel. Feb. 17, 1995) ¶¶ 1, 32.

devices and in-band limits at 2.4 GHz consistent with those applicable to Part 15 technologies.

Respectfully submitted,

THE PART 15 COALITION

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Aug. 24, 1998

CERTIFICATE OF SERVICE

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