

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Review of the Spectrum Sharing Plan Among)	
Non-Geostationary Satellite Orbit Mobile)	IB Docket No. 02-364
Satellite Service Systems in the 1.6/2.4 GHz)	
Bands)	
)	
Amendment of Part 2 of the Commission's)	
Rules to Allocate Spectrum Below 3 GHz for)	ET Docket No. 00-258
Mobile and Fixed Services to Support the)	
Introduction of New Advanced Wireless)	
Services, including Third Generation Wireless)	
Systems)	

To: The Commission

CONSOLIDATED OPPOSITION TO PETITIONS FOR RECONSIDERATION

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January 21, 2005

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SUMMARY

The Petitions for Reconsideration seek imposition of in-band power limits on industrial, scientific, and medical devices in the 2.4 GHz band. There is no merit to this request.

First, WCA and Sprint Petitions are untimely. The Petitioners failed to proffer any interference study relative to ISM devices, even while presenting detailed technical analyses of claimed interference from other Services. Indeed, to the extent they raised any ISM concerns at all prior to the Report and Order, they effectively withdrew those concerns in favor of securing a 2496-2500 MHz allocation for the Broadband Radio Service.

Even if they were not untimely and were considered on their merits, these two Petitions, as well as Nextel's, are deficient. None of the Petitions come to grips with numerous issues which would have a material bearing on the issue of interference from ISM to BRS and, if so, how frequent/significant it would be -- such as the fact that most ISM emissions are concentrated towards the center of the band, whereas the Petitioner's operations would be confined to the extreme top-end where ISM filtering effects will be most pronounced. Perhaps most significant, however, the Petitions fail to recognize the important distinctions between consumer ISM devices, such as microwave ovens, and non-consumer devices used in factories and other locations inaccessible to the general public.

Finally, the Petitions would roll the clock back on Commission policy: Instead of endeavoring to maintain harmony between domestic and international standards -- a harmony which has greatly benefited US manufacturers and consumers -- the Petitions would have the U.S. adopt ISM standards peculiar to this country. The Commission should summarily reject attempts to effectuate that kind of result.

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Fusion UV Systems, Inc. ("Fusion"), by its counsel, hereby submits this Consolidated Opposition to the Petitions for Reconsideration filed by Nextel Communications, Inc., Sprint Corporation, and the Wireless Communications Association International, Inc. (collectively, the "Petitioners" or "BRS Parties"). The Petitioners seek to have the Commission reconsider a decision not to relocate industrial, scientific and medical ("ISM") devices operating at 2496-2500 MHz.¹ As set forth below, the Petitions are deficient as a matter of law and policy, and should be dismissed or denied.

* A Motion for Leave to Accept Late-Filed Pleading is being submitted concurrently herewith.

¹ *In the Matter of Review of the Spectrum Sharing Plan Among Non-Geostationary Satellite Orbit Mobile Satellite Service Systems in the 1.6/2.4 GHz Bands*, FCC 04-134, 19 FCC Rcd 13356 (2004) (hereinafter cited as "*Big LEO Sharing Order*").

I.

INTRODUCTION

Fusion UV Systems, Inc. (Fusion) is a US-based company competing globally in the UV curing market. Fusion manufactures and sells microwave-powered UV lamps to users worldwide. UV curing is a value-added, eco-friendly, cost-effective, high speed manufacturing process wherein UV energy from a lamp is used to polymerize a coating or ink applied to the surface of flat as well as complex three-dimensional surfaces. UV curing is used in a large number of key global technologies including the manufacture of flat-screen displays, optical discs, optical fiber, and the application of coatings on automobiles and aircraft surfaces, to name just a few applications.

Fusion is recognized as the global leader in UV lamp technology for curing. To date, Fusion has installed over 37,000 of its lamps worldwide. Fusion's lamps are used in manufacturing operations at some of the world's largest companies and in nearly every country where manufacturing plays a major role in the economy. For example, nearly all the flat panel (LCD and plasma) televisions sold in the world today are manufactured with optical films made using Fusion's microwave UV lamp technology.

II.

BACKGROUND

A. The Commission Decision

In the decision at issue the Commission determined to reallocate the band 2496-2500 MHz to the fixed and mobile service (except aeronautical mobile). This action was taken in

order to create a new home for Broadband Radio Service (“BRS”) operations displaced from the band 2150-2162 MHz.² In making the allocation, the agency rejected arguments that ISM systems in the band should be relocated. Specifically, it stated that it

disagree[d] with those comments arguing that ISM equipment would need to be moved. MSS [Mobile Satellite Service], BAS [Broadcast Auxiliary Service], and private radio licensees have operated in this band for many years under the provisions of footnote 5.150 of the ITU radio regulations without significant interference problems.³

The allocation decision here forms an integral part of the ITFS/MDS realignment effected in WT Docket No. 03-66. In that proceeding the Commission concluded that relocating part of MDS to 2496-2500 MHz (versus other options)

will allow the creation of an optimal band plan with contiguous spectrum, and integrate these licenses into the new [Broadband Radio Service] instead of orphaning MDS operations such that they would be part of a different service.⁴

² MDS has been renamed the Broadband Radio Service (“BRS”). BRS and MDS are used interchangeably herein.

³ *Big LEO Sharing Order* at ¶ 67. International footnote 5.150 designates certain bands for ISM applications including the band at issue here.

⁴ *In the Matter of Amendment of Parts 1, 21, 73, 74, and 101 of the Commission’s Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands*, FCC 04-135, 19 FCC Rcd 14165 (2004) at ¶ 27 (hereinafter cited as “*ITFS/MDS Order*”). The *Big LEO Sharing Order* and the *ITFS/MDS Order* were adopted on the same day. As a result of determinations made in the *ITFS/MDS Order*, MDS was also afforded access to 2500-2502 MHz and 2618-2624 MHz, thereby reconstituting the 12 MHz MDS had had at 2150-2162 MHz.

With reference to BRS sharing with ISM, the Commission observed that “We anticipate BRS operations will be able to coexist with ISM operations because ISM operations use frequencies closer to the center of the band and in a controlled environment.”⁵

B. The Pleadings

The Petitioners challenge these determinations. They argue that the Commission should require ISM devices to meet the in-band emission standard applicable to Part 15 devices, i.e. 500 uV/m at 3 meters, from and after December 31, 2006. By contrast, Commission Rule 18.111 provides that other radio services operating in ISM bands are not entitled to protection from ISM emissions, a rule consistent with international footnote 5.150 (radiocommunication services operating in ISM bands “must accept harmful interference which may be caused by [ISM] applications”).

In support the Petitioners argue that the Commission’s analogy to the peaceful coexistence of MSS, BAS, and private radio, on the one hand, with ISM, on the other hand, is not material to BRS-ISM coexistence. They contend that BRS systems will be more numerous, in more urbanized areas, operating at lower power levels, and in closer proximity to ISM devices than the other services.⁶ They maintain that not all ISM devices are centered at 2450 MHz; that the BAS channel at 2483.5-2500 MHz “is the least used of any of the ten available BAS channels”; that MSS, BAS and private radio represent “niche services with periodic or remote

⁵ *Id.* at ¶ 28.

⁶ *Sprint* at 6.

uses and very small customer bases;” and that, even if there is no interference today, more ISM devices will enter the market “in the future.”⁷

WCA states that the Commission “cites to no technical analysis of the impact ISM will have on the ubiquitous fixed, portable and mobile service BRS channel 1 will be used to offer”⁸ While WCA supplies two technical studies by outside consultants regarding claimed interference to BRS, one dealing with MSS interference and one dealing with BAS interference, it supplied no study relative to ISM.

Finally, in opposition to certain filings by makers of microwave ovens, WCA argues that the opponents have not disputed that the operation of ISM devices “*without any limitation on in-band power exposes BRS channel 1 to a clear and present threat of harmful interference;*”⁹ that the oven manufacturers have fail[ed] to back up their rhetoric [about undue costs and complexity of compliance with the BRS proposal] with data;”¹⁰ and that their oppositions would “block full and fair use” of the spectrum.¹¹

At the end of its Surreply, WCA states that the relief it seeks should apply not just to consumer devices such as microwave ovens, but to

all ISM devices, including higher power non-consumer devices such as industrial microwave heaters, induction or electric heaters used for manufacturing processes, ultrasonic cleaning devices and medical

⁷ Nextel at 10-11.

⁸ WCA at 23.

⁹ WCA Surreply of December 17, 2004 at 6 (emphasis in original).

¹⁰ *Id.* at 9.

¹¹ *Id.* at 11.

diagnostic equipment. The Commission must ensure that BRS channel 1 licensees are protected against interference from *all* unlicensed ISM devices, not just some of them.¹²

II.

ARGUMENT

The WCA and Sprint Petitions are untimely. They should be denied, if not dismissed.

Assuming arguendo that they are not dismissed for this reason, the WCA and Sprint Petitions, as well as the Nextel Petition, lack proper evidentiary support and should be denied on the merits. Finally, all three Petitions are deficient as a matter of policy.

A. The WCA and Sprint Petitions Are Untimely and Should Be Dismissed.

The Rules are clear: A petitioner must not seek to present by way of reconsideration material that it knew of, or should have known, pre-decision. See Rules 1.429(b)(2); 1.106(c). Reconsideration is appropriate only where a petitioner can show either a material error or omission in the original order, or raises new facts not known or not existing until after the petitioner's last opportunity to present such matters. See *WWIZ, Inc.*, 37 FCC 685, 686 (1964), *aff'd sub nom., Lorain Journal Co. v. FCC*, 351 F.2d 824 (D.C. Cir. 1965), *cert. denied*, 383 U.S. 967 (1966). From this it also follows that a petitioner should not be heard to raise arguments that it withdrew pre-decision.

The record here reflects a decision on the part of Sprint and WCA to support allocation of the 2496-2500 MHz band. The record also reflects that, to the extent they may at one point have

¹² *Id.* at 11-12 (emphasis in original).

had reservations about sharing with ISM, they not only failed to support those reservations, but ended up withdrawing them altogether. The chronology is revealing:

During the course of this proceeding, while the Commission was grappling with the question of where to move MDS, Verizon Wireless made a filing suggesting 2496-2500 MHz.¹³ On July 25, 2003 WCA opposed the suggestion arguing that Verizon Wireless was mistaken when it said that no incumbents would have to be relocated in order to make room for MDS.¹⁴ WCA went on to reference the presence of MSS, BAS, private radio, and ISM in the band.¹⁵ However, WCA did not claim that any interference would be caused by ISM. On the contrary, as with its Petition for Reconsideration, the only interference claims it made related to MSS and BAS. In particular, WCA presented a study by technical consultants, Kessler and Gehman Associates, Inc. While that study contended that MDS use of this band “would be fraught with difficulties,” the only difficulties it identified were those relating to MSS, the MSS Ancillary Terrestrial Component (“ATC”), and BAS, on the one hand, and MDS, on the other hand.¹⁶

Approximately one year later, on June 1, 2004, W.A.T.C.H. TV Company (“WTC”), an MDS operator, filed a lengthy *ex parte* in this proceeding and in WT Docket No. 03-66

¹³ Letter from John T. Scott, Vice President and Deputy General Counsel, Verizon Wireless, filed July 7, 2003.

¹⁴ WCA Reply Comments at 6.

¹⁵ *Id.* at 7.

¹⁶ *Id.*, Exhibit 1. In a subsequent *ex parte* by WCA, Sprint and BellSouth Corp., filed on January 30, 2004, these parties raised the same MSS/BAS interference concerns with nothing whatsoever being said about ISM. To like effect are other *ex partes* filed by these parties. *See, e.g.*, that of March 2, 2004. These filings were made in the course of then-vigorous efforts by the MDS community to secure reallocation of 1910-1916/1990-1996 MHz. These two bands were also under consideration for use in the 800 MHz proceeding (WT Docket No. 02-55) as Nextel replacement spectrum.

supporting reallocation of 2494-2500 MHz from MSS to MDS.¹⁷ Two days later WCA made a filing which “fully endorsed” the WTC proposal.¹⁸ WCA stressed the benefits of such an allocation including the fact that the spectrum was contiguous to the 2500-2690 MHz ITFS band with which it would be operationally a part.¹⁹ The Commission took note of the WCA endorsement in the Order at issue here, i.e. the *Big LEO Sharing Order*.²⁰

In short, WCA and Sprint had ample opportunity to present the same kind of detailed analysis relative to ISM that they had submitted relative to MSS/ATC and BAS long before the *Big LEO Sharing Order* was adopted. They failed to do so. It is only now, after the allocation has been obtained, that they seek to make an issue of ISM interference. This, standing by itself, warrants dismissal of their Petitions relative to ISM. As the Court of Appeals has said:

We cannot allow [an] applicant to sit back and hope that a decision will be in its favor and, when it isn't, to parry with an offer of more evidence. No judging process in any branch of government could

¹⁷ Letter to Chairman Powell at 6-8 (stating WTC’s understanding that the Commission was considering reallocating 2494-2500 MHz for MDS/ITFS, offering its view that “this approach holds great promise,” and indeed urging that MDS licenses be provided “immediate authority to operate in the 2494-2500 MHz band).”

¹⁸ Letter from Paul J. Sinderbrand, counsel for WCA, dated June 3, 2004 at 1. Insofar as interference protections are concerned, the only issue the letter addressed was the presence of MSS. *Id.* at 2. This too tracked the WTC approach. See WTC ex parte at 9-11. By this point it was commonly understood that the 1.9 GHz bands would not be available for MDS, a fact confirmed in the decision in WT Docket No. 02-55 adopted on July 8, 2004. *Improving Public Safety Communications in the 800 MHz Band*, Report and Order, Fifth Report and Order, Fourth Memorandum Opinion and Order, FCC 04-168, 19 FCC Rcd 14969 (2004).

¹⁹ WCA ex parte of June 3, 2004 at 3. The emphasis on MSS continued. *See id.* at 2.

²⁰ *Id.* at ¶ 62. In letters of its own on June 3, Sprint expressed a willingness to consider 2494-2500 MHz subject to certain “prerequisites” such as maintaining separation between MSS/ATC and MDS; none of the prerequisites touched on ISM. See letters from Luisa L. Lancetti, Vice President, Sprint to Marlene H. Dortch of that date and June 4, 2004.

operate efficiently or accurately if such a procedure were allowed.^{21 22}

B. The Petitions Are Substantively Deficient and Should Be Denied.

If, despite the above, the WCA and Sprint Petitions are not dismissed, they along with Nextel's should be denied.

1. The Petitions Are Not Properly Supported.

A petitioner may not rely on mere conclusory allegations, but must plead specific facts properly supported.²³ Where the basis for reconsideration is a claim of interference, the burden is on the petitioner to make a proper demonstration.²⁴ In fact, when a party seeks to challenge international standards -- as the BRS Parties do here-- the petitioner must submit "a complete technical analysis supporting alternative standards."²⁵ Judged by these standards, all three Petitions are deficient.

²¹ *Colorado Radio Corp. v. FCC*, 118 F.2d 24, 26 (D.C. Cir. 1941).

²² WCA contends that neither the Notice of Proposed Rulemaking in this proceeding or in WT Docket No. 03-66, nor the Verizon Wireless ex parte, supplied it with legal notice that the Commission might reallocate 2494-2500 MHz or a part thereof for MDS. WCA Surreply at note 16. However, based on its own filings it is clear that WCA had actual notice that the band was in play; thus, WCA lacks standing to now argue that it had anything other than adequate notice. See 5 USC Section 553 (b)(actual notice sufficient); Pierce, *Administrative Law Treatise* (2002) at 426. Moreover, the BRS allocation at 2496-2500 MHz is a logical outgrowth of the Commission's original proposal in this proceeding to consider possible reallocation of portions of the band 2483.5-2500 MHz for additional services. In short, if WCA had a problem with ISM -- as it did with MSS and BAS -- the time to raise it was before the decision, not after.

²³ See Rules 1.106(c) and (d) and 1.429(c).

²⁴ Cf. *Offshore Navigation, Inc.*, FCC 86-194, 1986 FCC LEXIS 3526 (1986) (denying petition which made only "generalized claims about interference" without evidentiary support).

²⁵ See *In the Matter of 1998 Biennial Review -- Conducted Emission Limits Below 30 MHz for Equipment Regulated under Parts 15 and 18 of the Commission's Rules*, Notice of Proposed Rulemaking in ET Docket No. 98-80, FCC 99-296, 14 FCC Rcd 18180 (1999) at ¶ 27.

Despite the radical departure they seek in Commission policy relative to ISM devices and the 2.4 GHz band, the Petitioners have yet to submit a single study analyzing their equipment vis-à-vis ISM. They fail to even reference, much less analyze, factors material to the degree/frequency of any interference, much less demonstrate “harmful” interference. These factors include, for example, the effects of attenuation between ISM devices and BRS devices due to, for example, building shielding, intervening objects, and simple physical distance; the fact that BRS would occupy only 4 MHz out of the 100 MHz available for ISM operations in the 2.4 GHz band -- that 4 MHz being at extreme top end where in-band ISM emissions are at their weakest (most ISM energy, including that from Fusion’s products, being concentrated at the center of the band as the Commission correctly observes); the combined effect of BRS subscriber unit mobility and ISM duty cycles on the probability that a BRS unit would experience harmful interference; and the fact that BRS channel 1 will usually be part of a package of multiple channels utilized by the same entity, thereby affording frequency diversity, to name just a few factors.²⁶

The meagerness of the Petitions’ approach with respect to ISM devices must again be contrasted with their detailed interference studies relative to MSS and BAS. In both cases, one

²⁶ An unspoken assumption of the Petitions appears to be that BRS subscribers must somehow be protected from self-inflicted interference, e.g. interference caused by a subscriber’s microwave oven in his or her own home. However, it is well-established that interference “standards do not attempt to control interference between the user’s own devices [T]he consumer can take steps to control interference between closely-spaced devices in their possession.” *1998 Biennial Regulatory Review*, Notice of Proposed Rulemaking, FCC 99-296, *supra*, at ¶ 23. This principle has relevance not only for consumer devices, but also industrial ISM equipment where any prospective BRS user would be either an employee or invitee of the firm in question, and hence subject to emissions from the plant’s own equipment. Users like these would be in the same situation as users of 802.11 WiFi devices who enjoy no special protections as against ISM. See WCA Petition at 24 (analogizing BRS operations to wireless Internet access like WiFi).

or the other of the Petitioners commissioned and filed elaborate analyses by technical consultants showing, or at least attempting to show, that one, or the other, or both of the two services would cause interference to BRS and therefore should be evicted.²⁷

(It is perhaps a tacit admission of the weakness of their case that one of the Petitioners is left at the end to arguing that it is somehow the ISM community's job to show that the relief being sought is not warranted.²⁸ However, it takes more than bootstrapping conclusions to shift the burden of persuasion.)

But it may be that the most striking deficiency in the Petitions is their failure to recognize that not all ISM devices are alike in their emission profiles. For that matter, virtually the first time they separately address non-consumer ISM devices is in the WCA Surreply, and that treatment is little more than an afterthought conclusion to the effect that the in-band limit should be applied to all ISM equipment.²⁹

That treatment is also wrong-headed: The equation of consumer ISM devices with non-consumer ISM devices belies both everyday experience and Commission case law. Non-consumer ISM equipment such as Fusion's is most often used in factories and industrial locations not accessible to the public, and in buildings made of steel and reinforced concrete. The device itself is often located in a shielded enclosure, not necessarily to control RF emissions,

²⁷ See WCA Petition Attachments A and B. This pattern is consistent with the BRS treatment of ISM pre-decision as discussed previously. Nextel attaches a blanket affidavit from one of its employees, but this document offers only conclusions bereft of analysis.

²⁸ WCA Surreply at 8-11.

²⁹ *Id.* at 11-12. Nextel mentions different types of ISM devices in a footnote, but like WCA and Sprint never analyzes the differences between consumer and non-consumer ISM in terms of interference potential.

but to reduce heat radiation; the location of the devices in such enclosures serves to further minimize RF emissions. The Petitions account for none of this.

The Commission has treated consumer and non-consumer ISM devices as two different classes for regulatory purposes. For example, having in mind “the continued rarity of incidences of interference from the operation of [ISM] equipment,” the Commission determined in 1985 to regulate non-consumer ISM device authorization simply under the verification procedure, while maintaining the stricter certification requirements for consumer ISM equipment.³⁰ It has relieved non-consumer medical ultrasonic diagnostic and monitoring equipment from certain Part 18 requirements on the grounds that such equipment “presents a minimal interference threat to surrounding communities” (consumer equipment was not exempted).³¹ And it has adopted CISPR 11 conduction limits for consumer ISM not out of interference concerns, but rather to harmonize with international requirements. Non-consumer devices were exempted.^{32 33}

³⁰ *In the Matter of Overall Revision of the Rules regarding Industrial, Scientific and Medical (ISM) Equipment under Parts 2, and 18*, FCC 85-445, 58 RR 2d 1096 at ¶¶ 1, 7-9. The agency also rejected a request to require manufacturers of non-consumer equipment to test it at fixed intervals, and deregulated microwave oven authorization from type-approval to certification.

³¹ *In the Matter of Amendment of Part 18 of the FCC Rules to Exempt Medical Ultrasonic Diagnostic and Maintaining Equipment from Technical Standards*, FCC 86-493, 1 FCC Rcd 553 (1986) at ¶¶ 6-7.

³² *1998 Biennial Regulatory Review*, Report and Order, FCC 02-157, 17 FCC Rcd 10806 (2002) at ¶¶ 18 (noting the “wider separation distances between equipment which occur in business and commercial environments [versus residential environments]”).

³³ WCA relies on the *1998 Biennial Review* for the proposition that “there is nothing radical about [the proposed two-year transition to Part 15 Rules].” Surreply at 8. It claims that, since there is no evidence that microwave oven makers have had any difficulty complying with the Commission’s deadlines for meeting the conducted emission limits, “they should have no difficulty complying with the proposed Part 15 limits.” *Id.* However, the cases are quite different. In the Order cited by WCA, the Commission was looking to harmonize FCC standards with CISPR standards which many in the industry already met, a proposal which was roundly supported by ISM makers. *See Report and Order, FCC 02-157*, at ¶¶ 24-25, 29-31.

(Continued...)

The BRS Parties argue that the Commission should not draw an analogy to the ability of MSS, BAS and private radio to coexist with ISM because these are “niche services” and because MSS is used in rural areas whereas most ISM and BRS operations would be in urban areas.³⁴ It is unlikely that the business and industrial concerns which rely on these facilities would agree with the Petitioner’s innuendo that they are unimportant, or that they might not know or care if they were interfered with. But putting that aside, the Commission has repeatedly noted the lack of interference complaints relative to ISM regardless of operating environment.³⁵ None of the Petitioners has offered data -- as opposed to assertions -- contradicting that.

Even still, says Nextel, the Commission ignored record evidence of interference concerns, citing to Comments filed by Globalstar with other satellite operators.³⁶ However, a review of the cited material shows that Globalstar was not complaining about ISM, which operates primarily if not exclusively indoors, but rather was opposing the Commission’s proposal in this proceeding to allow unspecified, additional, unlicensed uses outdoors in the band. *See, e.g.*, Joint Comments filed by L/Q Licensee, Inc., Globalstar L.P., and Globalstar USA, L.L.C. at 20-21 filed in this proceeding on July 11, 2003 (“because [ISM] devices, like

(Continued...)

Here, by contrast, the BRS Parties would subject ISM to power restrictions which do not exist in any form today for the 2.4 GHz band, and in so doing place the United States out of step with the rest of the world. Not surprisingly, ISM parties have vigorously opposed the proposal.

³⁴ Nextel at 10.

³⁵ *See* footnotes above and *1998 Biennial Review, supra*, Report and Order, FCC 02-157 at ¶ 25.

³⁶ *Id.* at 10.

microwave ovens, operate primarily indoors, they are unlikely to cause significant harmful interference problems to MSS phones”).³⁷

The Petitioners further argue that the Commission’s reliance on BAS-ISM sharing is misplaced because the BAS channel which includes 2496-2500 MHz is the least used.³⁸ Whatever this may mean, it does not establish that the Commission analogy is inapt: Other BAS channels fall squarely in the heart of the band where ISM emissions are concentrated, and the BRS Parties have again presented no data contradicting the Commission’s determination that BAS and ISM have been able to co-exist.

Finally, Petitioners attempt to argue that the Commission should impose power limits now because of what they think might happen to ISM in the future.³⁹ The argument is based on sheer speculation. It should be rejected out of hand.

2. The Relief Sought Is At Odds with the Strong US Policy In Favor of Internationally Harmonized ISM Standards.

Commission Rule 18.111 confirms that in designated ISM bands, such as 2.4 GHz, licensed services like BRS are not entitled to protection from ISM.⁴⁰ As noted previously, Rule

³⁷ Based on the record compiled in CC Docket No. 92-166, the Commission agreed with the assessment that “2.4 GHz MSS operations should not be adversely affected by ISM transmissions.” That record included a showing relative to urban MSS operations. *Amendment of the Commission’s Rules to Establish Rules and policies Pertaining to a Mobile Satellite Service in the 1610-1626.5/2483.5-2500 MHz Frequency Bands*, FCC 94-261, 9 FCC Rcd 5936 at ¶143-144 (1994), *recon.* 11 FCC Rcd 12861 (1996).

³⁸ Nextel at 10.

³⁹ See WCA Petition at 25 (“as filter technology evolves, the Commission cannot discount the possibility that equipment will be able to operate in the 2496-2500 MHz band at increasingly high signal strength levels …)(emphasis added); Sprint at 7 (“Whether or not ISM devices do in fact operate in the 2496-2500 MHz band today, the potential for ISM operations in that band cannot be ignored.”).

18.111(c) mirrors international standards which impose no in-band radiated emission limit on ISM devices. See International Radio Regulation 5.150.

The Commission has explained the reasons why it is so important to maintain harmony between its equipment rules and those recognized internationally:

Harmonizing our rules with international standards will allow manufacturers to produce products for distribution in several markets without any modification, thus reducing costs. This harmonization will be particularly beneficial to small business entities that have limited resources to maintain separate product lines in order to ensure compliance with region or county-specific requirements. Moreover, this will enhance the value of Mutual Recognition Agreements (MRA) for U.S. manufacturers, thereby promoting the growth and international expansion of U.S. industries.⁴¹

Thus, the agency has frequently pursued international harmonization for its Part 15 and 18 Rules.⁴²

The designation of specific bands like 2.4 GHz has been vital to the development of ISM devices, a wide variety of which are in use today. Moreover, the Commission has repeatedly

(Continued...)

⁴⁰ See also *1998 Biennial Review*, Notice of Proposed Rulemaking, FCC 99-296, 14 FCC Rcd 18180 (1999) at 2 (on frequencies designated for Part 18 devices “all other radio services are required to accept any interference that is received from [such] devices”).

⁴¹ *1998 Biennial Review*, Report and Order, FCC 02-157, 17 FCC Rcd 10806 (2002) at ¶ 9 (footnote omitted).

⁴² See, e.g., *In the Matter of Revision of Parts 2 and 15 of the Commission’s Rules to Permit Unlicensed National Information Infrastructure (U-NII) devices in the 5 GHz band*, FCC 03-287, 18 FCC Rcd 24484 (2003) at ¶ 1 (aligning US U-NII bands “with bands in other parts of the world”).

rejected efforts to separate US standards for the band from those followed internationally. In its Order allowing the use of spread spectrum devices at 2400-2483.5 MHz, e.g. WiFi, the Commission said:

Spread spectrum systems are allowed to operate within the ISM bands only on a noninterference basis...[and] must not cause any harmful interference to these operations [i.e. to ISM operations] and must accept any interference which these systems may cause to their own operations.⁴³

Likewise, even though the band 2483.5-2500 MHz was allocated for MSS, that allocation is subject to any interference that may be caused by ISM devices.⁴⁴

International harmonization benefits manufacturers and consumers by lowering costs and increasing economies of scale. It also helps reduce the time necessary for manufacturers to test and certify their products for the international market. Such factors are more and more important as the marketplace for US manufacturers becomes increasingly global. The BRS Parties' efforts to roll back the regulatory clock to an era pre-World War II would damage US manufacturers, and adversely affect US interests in a harmonized marketplace.

In Fusion's case, adoption of the in-band power limit would mean a total re-design of its system and put it and other manufacturers of microwave UV lamps at a serious disadvantage vis-à-vis other, non-microwave UV lamp technologies. It would cost many millions of dollars and several years for Fusion and other microwave UV lamp manufacturers to comply with the

⁴³ See *Authorization of Spread Spectrum and Other Wideband Emissions Not Presently Provided for in the FCC Rules and Regulations*, 58 RR 2d 251, 256 (1985); see also *Amendment of Parts 2 and 15 of the Commission's Rules Regarding Spread Spectrum Transmitters*, 12 FCC Rcd 7488, 7496 (1997); Note to Rule 15.247 (h).

⁴⁴ Rules 18.111 and 18.301.

proposed rules. The re-design would not only significantly increase the cost of microwave UV curing lamps, but would seriously handicap the technology in the marketplace as against lower quality alternatives not subject to ISM regulations. In addition, manufacturers in key consumer technology areas which depend upon UV curing, such as makers of flat panel displays, optical fiber, and optical disc manufacture, to name a few, would be forced to seek out new ways of manufacturing their products if microwave UV lamp technology is no longer cost-effective in their applications. This would entail performance penalties in these key consumer technology areas or increases in the price of their products to the ultimate detriment of the consumer. The injury facing UV curing vendors such as Fusion from adoption of the in-band limit would undoubtedly be felt by other ISM device makers also attempting to compete globally.

III.

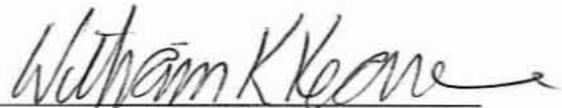
CONCLUSION

The Petitioners have failed to justify imposition of in-band power limits on ISM; indeed, they have not even sustained their threshold burden of justifying a look at an issue which at least two of them manifestly elected not to pursue previously. On the contrary, the facts and the law as set forth here reinforce the wisdom of the Commission's conclusion.

Accordingly, the Commission should deny, if not dismiss, the relief requested by the Petitions with respect to ISM devices generally, and non-consumer ISM devices in particular.

Respectfully submitted,

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January 21, 2005

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I, Tina Long, hereby certify that I have caused the attached Consolidated Opposition To Petitions For Reconsideration to be deposited in the U.S. Mail, first class postage prepaid, this 21st of January 2005, addressed as follows:

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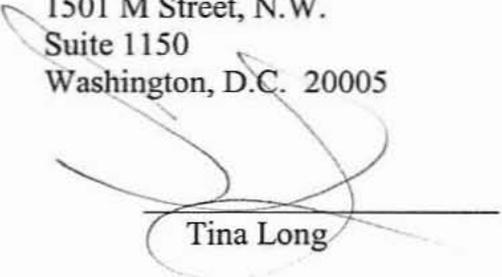
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