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Sirius Satellite Radio Inc.
XM Radio Inc.

January 9, 2002

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Ms. Magalie Roman Salas
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, DC 20554

Re: Written *Ex Parte* Presentation
***1998 Biennial Regulatory Review—Amendment of Part 18 of the Commission's Rules to Update Regulations for RF Lighting Devices* (ET Docket No. 98-42).**

Dear Ms. Salas:

On behalf of Sirius Satellite Radio Inc. ("Sirius") and XM Radio Inc. ("XM," or, together with Sirius, the "DARS Licensees"), this letter responds to the *ex parte* letter filed in this docket on November 28, 2001. As explained in more detail below, the Commission is legally obligated to promulgate rules that protect satellite DARS operations. In addition, although Sirius and XM have been prepared to conduct joint tests on one of Fusion Lighting, Inc.'s ("Fusion's") production model lamps, Fusion has no new lamps to test and merely proposes to retest Fusion lights that Sirius, XM, and Fusion have tested already or that Fusion does not intend to market, or both. Finally, notwithstanding Fusion's repeated attempts to divert the Commission's attention from its legal obligations by attacking the integrity and candor of the DARS Licensees, Sirius and XM stand ready to work with the Commission and with Fusion to resolve this matter.

The Commission's Rules Require Establishing Out-of-Band Emission Limits That Protect Satellite DARS

In stating repeatedly that it may continue to market its magnetron-based lamps "even if this proceeding never ends," Fusion overlooks Part 18 of the Commission's Rules, which makes clear that Industrial, Scientific, and Medical ("ISM") equipment, such as Fusion's lights, can only operate if they do not interfere with licensed services, such as satellite DARS.[1] Although Fusion characterizes the DARS licensees' expectation of protection from interference from unlicensed devices as "myth,"[2] the clear and mandatory language of Part 18 suggests otherwise. Specifically, Section 18.111 establishes that the operations of ISM equipment are secondary to

[1] Letter from Terry G. Mahn to Magalie Roman Salas, ET Docket No. 98-42 (Nov, 28, 2001) ("*Fusion November 28th Ex Parte*"), at 7.

[2] *Fusion November 28th Ex Parte*, 7.

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those of licensed services.[3] In fact, Section 18.111 squarely addresses the situation presented by Fusion's lights, which were tested and verified under Part 18 prior to the commencement of this proceeding:

> "Persons operating ISM equipment shall not be deemed to have any vested or recognizable right to the continued use of any given frequency, *by virtue of any prior equipment authorization and/or compliance with the applicable rules.*"[4]

In other words, complying with the out-of-band emission limits in existence at the time of initial testing and verification is not a safe harbor. Rather, the true test of compliance is whether an ISM device causes harmful interference to a licensed service. If it does, Section 18.111(b) of the Commission's Rules makes plain that the operator of such equipment "shall promptly take whatever steps may be necessary to eliminate the interference."[5] These steps include designing adequate filtering and shielding to suppress out-of band emissions before or even after a device is marketed,[6] but these are well-known potential consequences of operating on a non-interference basis.

Moreover, the DARS Licensees' expectation of protection was reinforced by the FCC's 1997 order adopting licensing and service rules for the satellite DARS service as well as the April 1998 Notice of Proposed Rulemaking ("NPRM") that initiated the instant proceeding. These documents make clear that the Commission has long been concerned about the potential of unlicensed devices to interfere with satellite DARS, and that the DARS Licensees, as primary users of spectrum in the 2320-2345 MHz range, are entitled to protection from harmful interference from secondary services.[7] Because Fusion has conceded on the record of this proceeding that satellite DARS systems "will indeed experience harmful interference"[8] from

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[3] 47 C.F.R. §18.111 (2001).

[4] 47 C.F.R. §18.111(a) (2001) (*emphasis added*). Fusion has tried to circumvent the clear language of Part 18 by arguing that the obligation to cure interference applies to "operators" of ISM equipment rather than "manufacturers" of such devices. *See Letter from Terry G. Mahn to Magalie Roman Salas*, ET Docket No. 98-42 (July 3, 2001), at 2. However, as Sirius and XM have explained, on the record in this proceeding, this is a distinction without a difference. Because the Commission can adopt only technical standards that protect authorized radio communications services from harmful interference to licensed services, it cannot permit Fusion to design and market a product that cannot lawfully be used as it intends and expects. *See Ex Parte Presentation of Sirius Satellite Radio Inc. and XM Radio Inc.*, ET Docket No. 98-42 (Aug. 2, 2001), at 3.

[5] 47 C.F.R. §18.111(b) (2001).

[6] 47 C.F.R. §§18.109; 18.115 (2001).

[7] *See* Report and Order Memorandum Opinion and Order and Further Notice of Proposed Rulemaking, IB Docket No. 95-51, FCC 97-70 at 5, n 5 (Mar. 3, 1997).

[8] *See Reply of Fusion Lighting, Inc. to Joint Supplemental Comments of Sirius Radio, Inc. [SIC] and XM Radio, Inc.[SIC],"* ET Docket No. 98-42 (May 31, 2001), at i.

Fusion's lights, Fusion's lights, as currently designed, cannot be deployed and operated consistent with the Commission's Rules.

Fusion Still Does Not Have A Production Model Lamp That Can Be Tested

Although Fusion claims that the DARS Licensees have refused to engage in joint tests, the correspondence between the DARS Licensees and Fusion and the DARS Licensees' statements on the record in this proceeding belie this assertion. First, contrary to Fusion's claims, the DARS Licensees and Fusion performed joint tests in November 2000 and filed the test results and their interpretations of them in this docket.[9] As noted above, not even Fusion disputes that the November 2000 tests showed that its lights will interfere with satellite DARS operations.

The DARS Licensees explained to OET staff at a November 2, 2001 meeting that, although they are ready and willing to test actual production model DARS receivers with production model Fusion lamps, Fusion has informed XM that it does not have any new production lamps that can be tested at the present time.[10] Because any tests undertaken now (*i.e.*, before Fusion has new production model lamps) would involve lamps used in the November 2000 tests or prototype Fusion lights installed at the Department of Energy building or at the Air and Space Museum—models with switching mode power supplies that Fusion does not intend to market due to their high cost—retesting at the present time would be pointless. Moreover, in its informal tests of an XM receiver, Fusion did not take into account the presence of an XM repeater near the test location in Rockville, Maryland, a location that XM disclosed in its July 2001 request for special temporary authority ("STA") to operate repeaters for commercial service.[11]

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[9] *See Joint Supplemental Comments of Sirius Satellite Radio Inc. and XM Radio Inc.*, ET Docket No. 98-42 (May 4, 2001); *Letter from Terry G. Mahn to Magalie Roman Salas*, ET Docket No. 98-42 (May 7, 2001).

[10] *See Letter of Carl R. Frank to Magalie Roman Salas*, ET Docket No. 98-42 (Nov. 5, 2001), at 2.

[11] *See* Request of XM Radio Inc. for Special Temporary Authority to Operate Digital Audio Radio Service Terrestrial Repeaters, FCC File No. SAT-STA-20010712-00063 (July 12, 2001). Fusion's uncontrolled test of an XM receiver does not address the central question in this proceeding, which is whether emissions from Fusion's lights interfere with the DARS satellite signals. If Fusion had examined XM's STA request, it would have discovered that XM had installed a 5024 W terrestrial repeater (WDC 304A) at 51 Monroe Street in Rockville, Maryland, about 1.5 miles from Fusion's test location. It is likely that Fusion's "test" demonstrates nothing about the potential for interference to DARS satellite transmissions. Approximately 99% of the U.S. land mass is served by the satellite only and is thus subject to interfering emissions from Fusion's "test model" lamps, which Fusion does not plan to market in the United States.

To the extent that Fusion's business is stalled—which was reported in a March 26, 2001 *U.S. News & World Report* article and Fusion has never refuted—the Commission should not wait months or years while Fusion rewrites its business plan and seeks additional funding. Rather, the Commission should request that Fusion provide a new production model lamp by a date certain. If it is not able to do so, there is little point in delaying this proceeding any further—the Commission should then promptly issue revised Part 18 emissions limits recommended by Sirius and XM that protect satellite DARS operations. Especially given the current pause in new U.S. Fusion instillations, if and when Fusion decides to design new lamps, it should design them both to conform to the revised Part 18 limits and to protect licensed services.[12]

Conclusion

Both Sirius and XM have their constellations in orbit, and nationwide delivery of satellite DARS programming to consumers nationwide has begun, with XM already in operation and Sirius' roll-out rapidly approaching. The DARS Licensees have played by the Commission's rules governing regulation of their new radio service. Together, they have pioneered the development of satellite DARS, gained FCC approval for the service, and raised money to fund its development. They won their satellite DARS licenses at auction, paid over $160 million to the U.S. Treasury, and built and launched their satellites well in advance of the "milestone" dates set by its license. XM is already serving the public, and Sirius is poised to commence service next month.

Fusion, meanwhile, undertook to develop and market magnetron-based lamps as ISM devices, knowing full well that such devices could only lawfully operate on a non-interference basis. Once it became clear that Fusion's lights would cause harmful interference to satellite DARS, Fusion sought to derail the businesses of Sirius and XM by requesting that it receive regulatory treatment that flatly contradicts the Communications Act of 1934 and the Commission's Rules and policies. The time has come for the Commission to enforce its own rules and policies and adopt Part 18 out-of-band emission limits that protect DARS operations. Sirius and XM stand ready to work with the Commission and Fusion to resolve this proceeding as expeditiously as possible.

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[12] Fusion's dismissal (without any discussion of redesign) of Dr. Osepchuk's report and Sirius' good faith suggestions regarding inexpensive and practical methods that Fusion could employ to redesign its magnetron to reduce dramatically interference into the satellite DARS bands suggests an unwillingness to adopt the most spectrum-efficient and non-interfering approach, as required by law.

Sincerely,

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