TOTAL RF

May 19, 2005

Marlene H. Dortch, Secretary
Federal Communications Commission
Office of the Secretary
445 12th Street, SW
Washington, DC 20054

Re: STA Request of XM Radio
SAT STA 20050418-00086

Dear Ms. Dortch,

Enclosed please find Response and Objection of Total RF Marketing, Inc. to Request by XM Radio, Inc. for Special Temporary Authority filed with the International Bureau on April 18, 2005, Public Notice was promulgated on April 22, 2005.

Please file and docket.

If you should have any questions please fell free to give me a call.

Very truly yours,

Fred Fellmeth
General Counsel
Enclosure
FF/cr

Before the
FEDERAL COMMUNICATIONS COMMISSION
INTERNATIONAL BUREAU
Washington, D.C.

In the Matter of	:	
	:	
Request of XM Radio, Inc. for	:	IB Docket No.
Special Temporary Authority	:	SAT STA 20050418-00086
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To: International Bureau
Federal Communications Commission

RESPONSE AND OBJECTION OF TOTAL RF MARKETING, INC. TO REQUEST BY XM RADIO, INC. FOR SPECIAL TEMPORARY AUTHORITY

1. On April 18, 2005 XM Radio, Inc., (XM) filed with the Commission a Request for Special Temporary Authority to operate a terrestrial repeater at each PGA golf event this season beginning in June.

2. In its Application XM requests permission to install what it describes as a "low power" repeater at each Course on the PGA Tour beginning in early June 2005 and continuing thereafter through the remainder of the season – into December 2005. These repeaters would operate (according to the STA application) at a maximum effective radiated power of 2,000 watts[1].

3. Respondent, Total RF Marketing, Inc. (Total RF) is a supplier of wireless broadcast infrastructure and communications facilities to the broadcast industry, other commercial enterprises and local, state and federal governments. We have been in operation for over fourteen (14) years and while providing services worldwide maintain our headquarters outside of Philadelphia, Pennsylvania. We

[1] While this may constitute "low power" within the ambit of XM's primary service, at a PGA event where the host broadcaster relies upon wireless microphones and wireless video systems broadcasting at a power level of 250 *milliwatts*, it is similar to likening a tsunami to a wave in a bathtub. There is no doubt whatsoever that this level of radiated power will simply overwhelm and render immediately useless each and every wireless broadcast device being utilized on that golf course.

have enjoyed the privilege of supplying our equipment and RF engineering services at such events as the Olympics (each one since Barcelona in 1992) and essentially every major professional golf event (PGA and LPGA) in the United States.

4. Total RF has, for over a decade, provided wireless audio and video services and equipment for the National Broadcasting Company's (NBC) coverage of Professional Golf Association (PGA) events. Given our experience and continuing involvement in the broadcast of Professional Golf we are preeminent within the industry in covering these types of events. Our knowledge of and association with the sport as well as the methodology of its broadcast afford us an unparalleled competency to adjudge the effects secondary to a grant of XM's Request.

5. A preliminary engineering analysis of the impact of a localized XM Radio transmitter on the ability of Total RF (or any similar broadcaster) to receive and distribute multiple, on-course, video signals at a NBC golf event has been undertaken. Our findings and conclusions indicate that the consequence of permitting XM's requested operation would be to render the entire broadcast infrastructure immediately inoperable.

6. The RF receiving system in use by Total (or any similar company) at a typical golf event is structured around the utilization of multiple receive sites. These sites are deployed over the entire golf course in a manner so as to maximize broadcast coverage. Each receive site consists of a low gain antenna(s) feeding an RF converter box. The converter box is configured to accept multiple RF signals from the on-course transmitters and then feeds them to a central demodulation location (truck). Due to the already over crowded (and finite number of) sub-band frequencies available to broadcasters (and to make the on-course signals all work concurrently) the current system configuration employs individual channel filters at the truck location.

7. The receive system, by its very nature, must be broadband in order to accommodate the multiple number of different 2 GHz signals. Each one of these signals could be active at anytime (or all of the time) during the telecast of the

event. All must be available at all times for use during the broadcast itself. Therefore, the only filter that can be employed at the remote receive site is a broad band-pass filter that will reject only out of band signals.

8. On-course digital TV signals typically range from –90 dBm to –40 dBm at each remote antenna location. Analog TV signals may range from –70 dBm to more then –30 dBm.

9. In the context of these types of broadcasts (golf) Total generally operates it's transmit radios at 250 mw or less with 10 db directional antennas, (ERP 2.5 watts). Even at this low power level we occasionally see our own signals overloading the receive antenna sites (depending on the proximity of the transmitters to the receive locations).

10. If a 2,000-watt effective radiated power XM Radio transmitter operating at 2332 to 2345 MHz is assumed, it would produce an E-Field of 0.245 Volts/Meter at 1000 meters.[2] A 5 dBi gain antenna immersed in that field would deliver a –33 dBm signal to the input of the RF converter box. On the golf course, a signal of this magnitude would reduce the sensitivity of each RF converter box by approximately 30 dB due to the effects of desensitivity and overload. This would render the entire system useless for the reception of on-course video signals.

11. Simply put, there is no doubt whatsoever that the installation of repeaters of the nature described in the XM Request will substantively harm, and perhaps destroy, the ability of the host broadcaster to televise the event to the public. The Request must be denied as its grant would occasion interference that would render the operation of other licensed facilities useless.

12. Further, in addition to the clear deleterious effects on licensed operators such as Total RF and NBC, Total RF requests that the Commission deny the Application as it obviously constitutes a request that is neither "special" nor "temporary" and is one that will have a patently destructive effect upon the broadcast operation of licensees at these events.

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[2] The STA request notes that the repeater would be located on the course. This means (almost invariably) that the transmitter will be much closer then the 1000 meters assumed here and that accordingly the disruptive effects will be substantially greater.

13. While the Commission possesses the legal ability to grant temporary authority in extraordinary circumstances – that authority extends only where such temporary operation is in the public interest and where delay (or denial) in the requested operation would prejudice the public interest.[3] As was recognized by the Commission in the "XM Radio STA Order" cited in XM's Request[4] the "Commission's rules governing satellite facilities, specifically Section 25.120,7 permit special temporary authorization under *extraordinary* [emphasis added] circumstances" stating that "convenience to the applicant, such as marketing considerations… will not be deemed sufficient for this purpose."[5]

14. It is exactly that form of consideration (XM's own particular commercial concerns and marketing considerations) that constitutes the singular genesis of XM's request.

15. XM apparently wishes to address the reception concerns of its subscribers who are part of the "gallery" at a PGA event. It seeks to address the reception issues experienced by perhaps a handful (literally) of its current subscribers to the detriment of (again literally) millions of viewers of the televised coverage of the event.

16. Further, XM incredibly seeks Special Temporary Authority to expand its marketing efforts by providing, for short-term daily rental, its radios to members of the gallery.[6] These are individual commercial issues that fall well outside of the parameters for the grant of Special Temporary Authorization.

17. Every host broadcaster of a PGA event (who in all likelihood is providing coverage of the PGA event to *millions* of over the air and cable viewers) relies upon a plethora of wireless broadcast devices to provide that coverage. Wireless microphones and wireless video cameras are particularly susceptible to interference and signal degradation.

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[3] 47 U.S.C. Section 309(f)

[4] *XM Radio, Inc., Application for Special Temporary Authority to Operate Satellite Digital Audio Service Complimentary Terrestrial Repeaters, Order and Authorization*, DA 01-2172 (released September 17, 2001).

[5] *Supra*, paragraph 5, and 47 C.F.R. § 25.120(b)

[6] Exactly how this expansion of XM's business enterprise fails to constitute *local* programming and thus violate and be directly contrary to XM's broadcast license is unknown.

18. It must be understood that interference during the broadcast of a live television show is much more then an inconvenience. Interference can and does deny the audience with the event coverage they desire and reasonably expect. Its occurrence is not something that is amenable to correction after the fact. Where it occurs, the harm has been done, the coverage adversely impacted and the damages to that broadcast are irreparable. The simple possibility of "on air" interference of a live feed (video or audio) will generally result in the avoidance of the feed itself. This severely limits the coverage opportunities and viewpoints available to a director – and therefore to the viewing public.

19. The Request of XM must be dismissed outright by the Commission as it falls well outside of the parameters requisite to such a "Special Temporary" request (as there is nothing "special" nor "temporary" about the request[7]). .

Respectfully Submitted.
Total RF Marketing, Inc.

Fred Fellmeth
General Counsel

[7] In fact, XM informs the Commission that it will be seeking *repetitive* STA's for this particular operation – there will be nothing "temporary" about this application. See: *XM Request for Special Temporary Authority*, dated April 18, 2005, page 2, footnote 4.

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CERTIFICATION OF SERVICE

I, Fred Fellmeth, Esquire, herewith certify that I did on the 19th day of May 2005, cause a true, correct and complete copy of the attached Response and Objection filed in this case to be served on all Counsel and/or unrepresented parties. Service was made by first-class mail, postage prepaid to such individuals on this date.

Fred Fellmeth, Esquire

May 19, 2005