

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

*In the Matter of*

MDS OPERATIONS, INC.

Petition for Waiver of Multichannel Video Distribution  
And Data Service Technical Rules

WT Docket No. 07-255

**OPPOSITION OF DIRECTV, INC. TO SUPERSEDING PETITION**

DIRECTV, Inc. (“DIRECTV”) hereby opposes the Superseding Petition filed by MDS Operations, Inc. (“MDSO”) in this proceeding.<sup>1</sup> In 2007, MDSO had requested a waiver of certain fundamental technical limitations applicable to the Multichannel Video Distribution and Data Service (“MVDDS”).<sup>2</sup> MDSO’s Initial Petition would have given it open-ended blanket authority to operate MVDDS systems with unspecified parameters in 80 Designated Market Areas (“DMAs”) at power levels 400 times those allowed under rules adopted by the Commission specifically to protect tens of millions of Americans who receive Direct Broadcast Satellite (“DBS”) service in the same band. In its Superseding Petition, MDSO now limits its request solely to the Albuquerque-Santa Fe DMA and to a power level merely 150 times the level prescribed by the Commission.

DIRECTV has fully rebutted all of the arguments previously asserted by MDSO to justify its broad waiver request, and much of that rebuttal remains applicable to the

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<sup>1</sup> MDS Operations, Inc., Superseding Petition for Rule Waiver (filed June 25, 2009) (“Superseding Petition”).

<sup>2</sup> MDS Operations, Inc., Petition for Rule Waiver (corrected version filed Aug. 29, 2007) (“Initial Petition”). MDSO also filed a Supplement to Petition for Rule Waiver on August 29, 2007.

recently narrowed request as well. Rather than repeat those arguments, DIRECTV hereby incorporates them by reference as if fully set forth herein.<sup>3</sup> The remainder of this Opposition focuses on MDSO's latest assertions, which (like their predecessors) remain inconsistent with Commission precedent, inconsistent with MDSO's own data, and internally inconsistent. Specifically, MDSO's proposal to allow operations at 150 times permitted power will not sufficiently protect DBS subscribers, the scope of the requested waiver is unclear, and its attempt to justify this waiver is based on service claims that are, at best, illusory.

## **I. MDSO's Technical Proposal Will Not Protect DBS Subscribers**

MDSO argues that its latest technical proposal will allow it to operate without interference to DBS subscribers. This is simply not the case. Its proposal to lower its requested maximum effective isotropic radiated power ("EIRP") is grossly insufficient. It used the wrong standard in assessing interference. And it continues to ignore the relevant PFD limits.

### **A. MDSO's Proposed Modest Reduction in EIRP Is Insufficient To Protect DBS Subscribers**

MDSO makes much of the fact that it has lowered its requested maximum EIRP from 40 dBm to 36 dBm per 24 MHz, and that it no longer seeks a waiver of applicable limits on equivalent power flux-density ("EPFD") levels.<sup>4</sup> Yet its proposed EIRP is still orders of magnitude above the 14 dBm per 24 MHz allowed under the Commission's rules. Moreover, even if MDSO's own analysis were to be accepted – and DIRECTV

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<sup>3</sup> See Opposition of DIRECTV, Inc., WT Docket No. 07-255 (filed Dec. 19, 2007); Letter from William M. Wiltshire to Marlene H. Dortch, WT Docket No. 07-255 (filed Apr. 28, 2008).

<sup>4</sup> Although MDSO requested waiver of the limitations on both EIRP and EPFD levels in its Initial Petition, it has now withdrawn its request with respect to the EPFD rules. See Superseding Petition at 2.

does not accept it<sup>5</sup> – its MVDDS system in Albuquerque could operate at an EIRP level no higher than 30 dBm without exceeding the EPFD limitations in the band.<sup>6</sup> MDSO has not explained how it can operate at a power level 6 dB higher without causing interference that exceeds the protection levels established by the Commission.

More fundamentally, as the Commission has previously found, an EPFD limitation alone is not sufficient to protect DBS subscribers. Indeed, after painstakingly developing protection criteria over a multi-year rulemaking process, the Commission imposed limitations on *both* EIRP *and* EPFD.<sup>7</sup> The Commission explained that the 14 dBm EIRP limit appropriately balances the interests of both MVDDS operators (because it is sufficient to allow them to provide commercial service) and DBS operators (because it limits the size of exclusion zones surrounding MVDDS transmitters).

The 14 dBm limit provides MVDDS with higher operating power to address their coverage concerns, but eliminates the proposed higher power exceptions to ameliorate the concerns of DBS and NGSO FSS entities that higher power would increase the size of the interference zone. Furthermore, placing a limit on MVDDS EIRP will ensure that DBS entities are not unduly hindered in their ability to acquire customers in areas in close proximity to MVDDS transmit facilities. ***Thus, we are not permitting higher powers over areas containing mountain ridges or over presently unpopulated regions because the higher power may cause too great of an exclusion zone for future DBS and NGSO FSS subscribers.***

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<sup>5</sup> Among other things, MDSO’s test sites were located at distances of 3.73 km to 37 km away from the MVDDS transmitter, with the vast majority falling beyond 20 km. At such distances, it should be no surprise that the MVDDS signal is greatly attenuated. Moreover, the closest sites were located at such severe elevation differentials that the gain of the MVDDS transmitting antenna was approximately 0 dBi, again decreasing the potential impact. MDSO’s own expert recognizes that “it is well known that EPFD generally has its greatest value at sites near the transmitter within the center of the main beam.” Declaration of Dr. Bahman Badipour, ¶ 16 (“Badipour Declaration”) (attached as Exhibit 1 to Reply Comments of MDS Operations, Inc., WT Docket No. 07-255 (filed Jan. 18, 2008)).

<sup>6</sup> Badipour Declaration, ¶¶ 4 (operating at 30 dBm EIRP corresponds to the EPFD limit), 30 (“the EIRP value that met the EPFD limit in that test environment is 30 dBm”).

<sup>7</sup> *See Amendment of Parts 2 and 25 of the Commission’s Rules to Permit Operation of NGSO FSS Systems Co-Frequency with GSO and Terrestrial Systems in the Ku-Band Frequency Range*, 17 FCC Rcd. 9614, ¶ 4 (2002) (“*Second MVDDS R&O*”). These limitations are codified at 47 C.F.R. §§ 101.105(a)(4)(ii)(B), 101.147(p).

We recognize that a higher power benefit for MVDDS providers would not offset the potential constraints placed on other service subscribers in the 12 GHz band.<sup>8</sup>

Thus, the Commission has already determined that any benefits that might arise from allowing MVDDS systems to operate at higher EIRP levels are outweighed by the burdens that such operations would impose on satellite operators. Although the EPFD limit provides some protection against unacceptable interference, the EIRP limit serves an important and independent function that MDSO cannot simply ignore.<sup>9</sup>

### **B. MDSO Used The Wrong Standard In Assessing Interference**

MDSO continually refers to the wrong standard in assessing allowable MVDDS interference to DBS receivers. MDSO's analysis assumes that an MVDDS operator is only required to protect DBS receivers from "harmful interference," which the Commission defines as interference that seriously degrades, obstructs, or repeatedly interrupts a radiocommunications service.<sup>10</sup> Under such an assumption, the interference from MDSO alone would be allowed to consume the entire link margin that has been designed into the DBS system serving Albuquerque.

In the MVDDS proceeding however, the Commission carefully developed the concept of a "permissible" level of interference to DBS receivers, which it defined as an increase in DBS signal unavailability in the range of 10%.<sup>11</sup> For the sake of argument,

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<sup>8</sup> *Id.*, ¶ 198 (emphasis added). *See also id.*, ¶ 88 ("We believe that this power limit reduces the likelihood that MVDDS operations would significantly degrade DBS service to both existing and new DBS customers.").

<sup>9</sup> In addition, the Commission decided not to impose a minimum receive antenna gain requirement on MVDDS systems in light of the EIRP limitation. *Id.*, ¶ 203. If that limit were waived, the Commission would have to revisit the need for antenna specifications.

<sup>10</sup> *See* 47 C.F.R. § 2.1.

<sup>11</sup> *See Second MVDDS R&O*, ¶¶ 76-78.

assume that the DBS availability in the area around Albuquerque is 99.7%, which is the minimum availability that DIRECTV designs its downlink beam to support. Under this assumption, the unavailability in this area would be 0.3%, and the permissible increase in unavailability caused by MVDDS interference would therefore be limited to 0.03%. For the Albuquerque area, this translates into a difference of approximately 0.0475 dB in required link margin. In other words, aggregate MVDDS interference that effectively increases the DBS receiver noise floor by 0.0475 dB would be equivalent to a 10% increase in DBS receiver unavailability. It was this protection standard, and not MDSO's "harmful interference" criterion, upon which the EPFD limits were derived. As a result, MDSO's field tests and resulting analysis totally ignore the one metric the Commission established as relevant.<sup>12</sup>

## **II. MDSO's Illusory Service Claims Cannot Support Its Public Interest Arguments**

The Commission should also reject MDSO's Supplemental Petition because its public interest arguments rest heavily on service claims that simply cannot be true. MDSO claims that it will offer two-way broadband service, with especially strong signals in rural areas. The first claim is inconsistent with its spectrum holdings, while the second is technically implausible.

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<sup>12</sup> Once again, MDSO commits that, if it is unable to eliminate interference caused by its high-power operations, it will reduce power to the *greater* of the EIRP at which the harmful interference is eliminated or the maximum EIRP permitted under the Commission's rules. *See* Superseding Petition at 19. The Commission requires MDSO to reduce power to the *lesser* of those two levels. *See* 47 C.F.R. § 101.1440(g). In addition, MDSO continues to ignore the relevant PFD limits contained in Section 101.105 of the Commission's rules, which its own analysis shows will be exceeded – an independent and sufficient reason to reject its waiver request.

MDSO asserts that it will use its MVDDS license in Albuquerque to provide “high-speed, digital broadband data” service.<sup>13</sup> MDSO argues that the “rapid deployment of new broadband services, particularly to rural areas, is foremost among the Commission’s public policy goals,” and that grant of the requested waiver would advance that goal.<sup>14</sup> Yet MVDDS is explicitly defined as a one-way service.<sup>15</sup> While the Commission’s rules do contemplate that “[t]wo-way services may be provided by using other spectrum or media for the return or upstream path,”<sup>16</sup> there is no evidence that MDSO has any other spectrum assets that could be used for this purpose. Without a return path, MDSO cannot provide the broadband service that it has made a centerpiece of its public interest justification for a waiver.

MDSO also asserts that its system design “contemplates that rural communities surrounding Albuquerque will receive the strongest signal levels.”<sup>17</sup> This assertion is directly contradicted by logic – and MDSO’s own expert. Because MDSO’s antenna was aimed at downtown Albuquerque, one would assume that most of the signal’s power was transmitted to the urban core. This logical intuition was confirmed by MDSO’s expert, who (in defense of his testing methodology) stated that the “main beam of the antenna touched ground at approximately 21 km from the transmitter in the downtown area,” making it “entirely appropriate” to perform numerous tests in downtown Albuquerque

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<sup>13</sup> Superseding Petition at 15.

<sup>14</sup> *Id.* at 7.

<sup>15</sup> *See* 47 C.F.R. § 101.1407.

<sup>16</sup> *Id.*

<sup>17</sup> Superseding Petition at 22.

“where the MVDDS transmission is at its maximum power.”<sup>18</sup> Clearly, whatever service MDSO could provide from a single transmitter on a mountain overlooking Albuquerque would be most robust in urban areas, not rural ones.

### **III. The Scope of MDSO’s Waiver Request Is Not Clear**

At various points in its Superseding Petition, MDSO indicates that its waiver request (as now modified) would apply only to operation “from a single transmitter that will provide coverage throughout the Albuquerque area.”<sup>19</sup> Yet at many other points in that same filing, MDSO indicates that it intends to deploy additional transmitters in this market.<sup>20</sup> Indeed, having requested a waiver for the entire Albuquerque-Santa Fe DMA, MDSO states that it “intends to follow the same design methodology in all systems that it constructs in other areas within this DMA.”<sup>21</sup> Yet at the same time, MDSO states that its decision to narrow the scope of its waiver request “reflects and responds to the unique topographic and geographic characteristics of the Albuquerque metropolitan area in this DMA”<sup>22</sup> – something that DIRECTV pointed out repeatedly in its opposition to the Initial Petition.

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<sup>18</sup> Badipour Declaration, ¶ 17

<sup>19</sup> Superseding Petition at 1. *See also id.* at 2 (“This request would permit MDSO to operate with a single transmitter in the Albuquerque area of the Albuquerque-Santa Fe DMA at EIRP levels of up to 36 dBm per 24 MHz of spectrum”); 16 (“a single transmitter will be located on the same mountaintop location as was used throughout the testing period”); 22 (“MDSO anticipates that essentially all of the Albuquerque market area can be served from this one site”).

<sup>20</sup> *See, e.g., id.* at i (“Higher power operations will reduce the number of transmitters required”); 1 (MDSO “intends to follow the same design methodology in all systems that it constructs in other areas within this DMA”); 2-3 (“MDSO will use only MDSA-designed and built systems in the Albuquerque-Santa Fe DMA”); and 18 (committing to observe notification procedures “prior to the installation of each transmitter”).

<sup>21</sup> *Id.* at 1.

<sup>22</sup> *Id.* at 13.

It is impossible to square these two conflicting positions. In Albuquerque, MDSO placed its experimental MVDDS transmitter on a mountain at an elevation of 3239 meters (over 10,600 feet) AMSL, an elevation that provided a dominant characteristic of the MVDDS interference scenario that was tested. There is no evidence that similar topography is available in any other part of this DMA. To the extent MDSO seeks a waiver that would cover additional transmitters in this DMA, the Superseding Petition suffers the same infirmity as the Initial Petition. As DIRECTV pointed out in its original opposition and as MDSO now concedes, the topographic and geographic characteristics of Albuquerque are unique – meaning that they will not be available for system design and configuration in the other parts of this DMA, just as they are not available in other markets in which MDSO holds MVDDS licenses.<sup>23</sup> At a minimum, MDSO should be required to clarify the exact scope of its requested waiver.

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It is well established that “[a]n applicant for waiver faces a high hurdle even at the starting gate,” and that the petitioner “must plead with particularity the facts and circumstances which warrant such action.”<sup>24</sup> Moreover, a waiver petition is not an appropriate vehicle for rehashing proposals raised and rejected in the rulemaking process. “Thus, a heavy burden traditionally has been placed upon one seeking a waiver to

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<sup>23</sup> For example, MDSO holds MVDDS licenses in Florida (highest elevation: 345 feet), Louisiana (highest elevation: 535 feet), and Mississippi (highest elevation: 806 feet) where there is clearly no such natural elevation available. See Highest Points in the United States (*available at* <http://geology.com/state-high-points.shtml>). Nonetheless, MDSO continues to make the sweeping assertion that “the MVDDS system design and configuration that will be employed in this [Albuquerque] market can be readily duplicated by MDSO in all of its other licensed DMAs.” Superseding Petition at 24. See also *id.* at 13.(asserting that MDSO “could replicate the zero-interference findings of its Engineering Report in those [other] markets”).

<sup>24</sup> *WAIT Radio v. FCC*, 418 F.2d 1153, 1157 (D.C. Cir. 1969) (quoting *Rio Grande Family Radio Fellowship, Inc. v. FCC*, 406 F.2d 664 (D.C. Cir. 1968)).



**CERTIFICATE OF SERVICE**

I hereby certify that, on this 1st day of September, 2009, a copy of the foregoing  
Opposition was served by hand delivery upon:

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