

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

In the Matter of	)	
	)	
Service Rules for Advanced Wireless Services in the 2000-2020 MHz and 2180-2200 MHz Bands	)	WT Docket No. 12-70
	)	
Fixed and Mobile Services in the Mobile Satellite Service Bands at 1525-1559 MHz and 1626.5-1660.5 MHz, 1610-1626.5 MHz and 2483.5-2500 MHz, and 2000-2020 MHz and 2180-2200 MHz	)	ET Docket No. 10-142
	)	
Service Rules for Advanced Wireless Services in the 1915-1920 MHz, 1995-2000 MHz, 2020-2025 MHz and 2175-2180 MHz Bands	)	WT Docket No. 04-356
	)	

**REPLY COMMENTS OF LIGHTSQUARED INC.**

LightSquared Inc. and its affiliates (collectively, “LightSquared”) hereby reply to the comments filed in this proceeding on May 17, 2012 in response to the *Notice of Proposed Rulemaking and Notice of Inquiry* adopted on March 21, 2012 (the “2 GHz NPRM and NOI”).

As LightSquared explained in its initial comments, a comprehensive evaluation of spectrum management alternatives would best facilitate the Commission’s ability to free additional spectrum for mobile broadband use. Other parties to this proceeding echo this sentiment and urge the Commission to take a holistic approach in its spectrum management decisions. Moreover, no party takes a position inconsistent with LightSquared’s proposal, one of three presented in its comments, to make a portion of the 1675-1695 MHz band available for use by LightSquared in implementing its competitive mobile broadband network. Notably, the 2 GHz MSS incumbents are not interested in relocating to that band and other commenters have suggested auctioning the adjacent 1695-1710 MHz band. Auctioning the 1695-1710 MHz band

would leave the 1675-1695 MHz band available for LightSquared, while also fulfilling the Commission's obligation under the Jobs Act to auction 15 MHz of spectrum in the 1675-1710 MHz band.

Moving forward in this manner would facilitate the realization of the significant public interest benefits of the LightSquared network, which the Commission previously has acknowledged, by: (i) providing additional broadband capacity at a time when the nation's demand for such services is increasing exponentially; (ii) through LightSquared's role as an additional facilities-based provider, enhancing competition with current mobile wireless service providers; (iii) through LightSquared's role as a wholesale provider of mobile wireless broadband services, catalyzing market-changing developments in innovative mass-market consumer devices; (iv) extending mobile wireless broadband services to traditionally underserved areas, including rural America; (v) providing wireless broadband services during times, such as natural disasters, when they otherwise would be unavailable from terrestrial-only networks; and (vi) facilitating innovation in, and growth of, the U.S. economy.<sup>1</sup>

Accordingly, the Commission should promptly issue a Notice of Proposed Rulemaking adopting a broad and inclusive approach to identifying additional usable spectrum for mobile broadband. Concurrently, the Commission should work with NTIA to expedite commercial use of the 1675-1710 MHz band that is consistent with the planned use of spectrum in this range by NOAA. Exploring these alternatives would be a significant step forward in

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<sup>1</sup> See *SkyTerra Communications, Inc. and Harbinger Capital Partners Funds*, 25 FCC Rcd 3059, at ¶¶ 57, 63 (2010).

implementing the recommendations of the President’s Council of Advisors on Science and Technology to identify and share underutilized government spectrum.<sup>2</sup>

Rather than (as some GPS commenters have suggested) imposing more restrictive out-of-band emissions (“OOBE”) limits on terrestrial use of the AWS-4 band, the Commission should focus on developing performance standards for GPS receivers, in order to ensure that the limited spectrum resource is used as efficiently as possible. As the Commission has acknowledged, focusing on “spectrum efficiency and receiver performance may enable more assured deployment of new services and reduce the necessity for the involvement of regulators.”<sup>3</sup>

## **I. THE RECORD REFLECTS STRONG SUPPORT FOR A COMPREHENSIVE INQUIRY INTO POTENTIAL SPECTRUM MANAGEMENT SOLUTIONS**

In its initial comments, LightSquared expressed strong support for the Commission’s willingness to consider proposals, like the 2 GHz Extension Band Concept (“EBC”), that have the potential to increase significantly the aggregate amount of spectrum available for mobile broadband use. At the same time, LightSquared noted that a comprehensive evaluation of spectrum management alternatives would best facilitate the Commission’s ability to free additional spectrum for mobile broadband use. Thus, LightSquared urged the Commission to refine the EBC after considering all available spectrum resources—including those outside of the 2 GHz band—and all applicable spectrum pairing scenarios.

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<sup>2</sup> See President’s Council of Advisors on Science and Technology, *Realizing the Full Potential of Government-Held Spectrum to Spur Economic Growth* (Presented May 25, 2012).

<sup>3</sup> *Public Notice: Office of Engineering and Technology, Wireless Telecommunications Bureau, and Office of Strategic Planning Announce Workshop on “Spectrum Efficiency and Receiver Performance”*, DA 12-378 (Mar. 9, 2012) (“*Receiver Standards Workshop Public Notice*”).

The record reflects strong support for this approach, as well as the “holistic reexamination of the terrestrial mobile band plan” that currently is in effect.<sup>4</sup> For example, Verizon Wireless notes that pairing spectrum in the 2 GHz band with spectrum outside of that band would be “one important step to encourage commercial terrestrial deployment of unused or underused spectrum in order to meet consumers’ needs for the immediate future.”<sup>5</sup> Similarly, CTIA notes that this proceeding offers a prime opportunity for the Commission to “take into account the synergies that exist with other spectrum bands,” particularly since Commission action with respect to one spectrum band could have a significant impact on other spectrum bands.<sup>6</sup> TIA also supports the development of “comprehensive and rounded band plans,” and urges the Commission to explore ways to leverage spectrum outside of the 2 GHz band to enable network operators to use contiguous paired spectrum.<sup>7</sup> These comments all are consistent with AT&T’s earlier suggestion that the Commission “engage in a holistic and comprehensive approach to band-planning in which the 2 GHz MSS frequencies would be addressed as part of a larger, coordinated band plan developed to make the most efficient use of spectrum for terrestrial mobile broadband services.”<sup>8</sup>

Accordingly, LightSquared reiterates its request that the Commission expand the scope of its inquiry in this proceeding to consider other spectrum bands that could be used to

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<sup>4</sup> See Comments of AT&T at 14-15.

<sup>5</sup> See Comments of Verizon Wireless at 4-5.

<sup>6</sup> See Comments of CTIA at 12-13.

<sup>7</sup> See Comments of TIA at 18, 21.

<sup>8</sup> See Comments of CTIA at 12-13; *see also* Comments of Alcatel-Lucent at 17-18; Comments of RCA at 12-13. These comments are consistent with comments by the Satellite Industry Association (“SIA”), which observes that expanding this proceeding to cover additional frequency bands could require the issuance of a separate Notice of Proposed Rulemaking.

support wireless broadband operations. This approach is the one most likely to facilitate the Commission's ability to realize its spectrum management goals as set forth in the *National Broadband Plan*.

## **II. LIGHTSQUARED'S PROPOSAL FOR THE 1675-1695 MHZ BAND IS CONSISTENT WITH THE POSITIONS OF OTHER COMMENTERS**

In its initial comments, LightSquared asked that the Commission consider alternatives to the existing band plan (and the EBC), including alternatives that would make a portion of the 1675-1695 MHz band available to LightSquared for terrestrial downlinks as part of an exchange of spectrum rights.<sup>9</sup> As LightSquared explained, such alternatives would: (i) allow LightSquared to pair downlink spectrum within the 1675-1695 MHz band with uplink spectrum already licensed to LightSquared in the 1626.5-1660.5 MHz band pursuant to its ATC authority; (ii) allow LightSquared to form a contiguous block with leased spectrum rights that LightSquared holds at 1670-1675 MHz; and (iii) pave the way for a longer-term solution through which LightSquared would exchange certain spectrum rights in the portion of the 1525-1559 MHz band that, it has been suggested, may not be usable due to GPS issues.<sup>10</sup>

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<sup>9</sup> LightSquared also asked the Commission to consider: (i) working with NTIA to make available to LightSquared other suitable spectrum that is currently allocated for federal use, in lieu of LightSquared providing terrestrial service in the portion of its licensed L-Band downlink spectrum that, it has been suggested, may not be usable due to GPS issues; or (ii) if (despite their opposition) the existing 2 GHz MSS licensees are relocated from 2000-2020 MHz to 1695-1710 MHz, allowing LightSquared to conduct terrestrial downlink operations in the 2000-2020 MHz band. *See* Comments of LightSquared Inc. at 8.

<sup>10</sup> *See Public Notice, International Bureau Invites Comment on NTIA Letter Regarding LightSquared Conditional Waiver*, IB Docket No. 11-109, DA 12-214 (rel. Feb. 15, 2012). LightSquared has explained at length in IB Docket No. 11-109 why the concerns raised regarding GPS are not a basis to halt the deployment of its network in the L Band. LightSquared will not repeat those points here.

LightSquared's proposal is consistent with the positions of other commenters, including DISH Network Corporation ("DISH"), which controls the incumbent 2 GHz MSS operators, and which has disclaimed any interest in relocating to the 1695-1710 MHz band.<sup>11</sup> Furthermore, the recommendations of AT&T, Verizon Wireless, TIA and others to pair the 1695-1710 MHz band with PCS, AWS, and/or other spectrum<sup>12</sup> are fully compatible with the alternative advanced by LightSquared. Because LightSquared seeks to operate only in a portion of the lower 1675-1695 MHz band, nothing in LightSquared's proposal would preclude the Commission from allocating the 1695-1710 MHz band to other terrestrial operations. Moreover, spectrum rights in the 1695-1710 MHz band presumably could be auctioned, thus fulfilling the Commission's obligation under the Jobs Act to auction 15 MHz of spectrum in the 1675-1710 MHz band.<sup>13</sup> Accordingly, the Commission should work with NTIA expeditiously to facilitate these solutions.

### **III. THE COMMISSION SHOULD NOT IMPOSE MORE RESTRICTIVE OUT-OF-BAND EMISSIONS LIMITS ON TERRESTRIAL WIRELESS OPERATORS**

Deere & Company ("Deere") and the U.S. GPS Industry Council ("USGIC") suggest that the Commission should impose more stringent OOB limits on terrestrial operators in the AWS-4 Band than currently are applicable to ATC operations in the 2 GHz Band.<sup>14</sup> The

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<sup>11</sup> See Comments of DISH at 36-38.

<sup>12</sup> See, e.g., Comments of AT&T at 15; Comments of TIA at 17-18.

<sup>13</sup> See Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112-96, § 6401 (the "Jobs Act").

<sup>14</sup> See Comments of Deere at 3; Comments of USGIC at 5.

Commission should reject these proposals and instead focus future efforts to protect GPS on examining GPS receiver reliability standards, as recently discussed at a Commission workshop.<sup>15</sup>

As an initial matter, the currently-applicable OOB limits in the 2 GHz Band were based on the anticipation of ubiquitous terrestrial operations in the MSS bands.<sup>16</sup> In fact, the GPS industry *agreed* to those limits after taking into account the “increased user density from *potentially millions of MSS mobile terminals operating in ATC mode*” and “*tens of thousands of ATC wireless base stations . . .*”<sup>17</sup> Rather than making these limits more stringent, the Commission instead should focus on developing performance standards for GPS receivers in order to ensure that the limited spectrum resource is used as efficiently as possible. This approach would be consistent with the Commission’s recognition at an earlier stage of this proceeding that “responsibility for protecting services rests not only on new entrants but also on incumbent users themselves, who must use receivers that reasonably discriminate against reception of signals outside their allocated spectrum.”<sup>18</sup>

In any event, there is no credible evidence that tighter OOB limits are needed to protect GPS receivers from terrestrial operations in, above, or below the AWS-4 Band. GPS receivers have operated in the vicinity the PCS and AWS-1 bands for years without issue, even

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<sup>15</sup> See *Receiver Standards Workshop Public Notice*; LightSquared Inc., Request for Initiation of Proceeding (Feb. 7, 2012) (“LightSquared Receiver Standards Petition”).

<sup>16</sup> Cf. Comments of USGIC at 7; Comments of Deere at 3 (asserting that the current OOB limits negotiated with the GPS industry do not contemplate the use of ubiquitously-deployed ATC devices in the proximity of GPS receivers).

<sup>17</sup> See Reply to Comments of USGIC, IB Docket No. 01-185, at 2 (Sept. 4, 2003) (emphasis added). As Deere acknowledges, the limits established in the L-Band context later were later “extended to licenses issued in other bands,” such as the 2 GHz Band. See Comments of Deere at 5-6 n.15.

<sup>18</sup> See *Fixed and Mobile Services in the Mobile Satellite Service Bands at 1525-1559 MHz and 1626.5-1660.5 MHz, 1610-1626.5 MHz and 2483.5-2500 MHz, and 2000-2020 MHz and 2180-2200 MHz*, 26 FCC Rcd 5710, at ¶ 28 (2011).

though terrestrial operations in those bands have proceeded with *less* frequency separation from the GPS band at 1559-1610 MHz (*e.g.*, in the PCS band at 1850-1990 MHz and AWS-1 band at 1710-1755 MHz), and under *more relaxed* OOB limits than the Commission has proposed for the AWS-4 Band.<sup>19</sup> Notably, the OOB limits that generally are applicable to PCS and AWS-1 operations were developed with the understanding that terrestrial handsets would be deployed ubiquitously. There is no assertion that those limits have proven ineffective in protecting GPS, and there is no basis for assuming that those limits would prove ineffective when applied to similar terrestrial operations in the AWS-4 Band, which would be even further removed from the GPS band than many segments of the PCS and AWS bands.

The Commission also should recognize that the GPS industry's argument has no limiting principle; if it were appropriate to impose more restrictive OOB limits on operations in the AWS-4 Band, logic would suggest that it also would be appropriate to impose such limits on other terrestrial operations in the vicinity of the GPS band (including the PCS and AWS-1 bands). This would have an immediate and devastating effect on existing and planned wireless networks, derail national broadband policy, and *reduce* the amount of spectrum usable for the provision of mobile broadband services at a time when Congress has directed the Commission to achieve precisely the opposite result.<sup>20</sup>

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<sup>19</sup> Notably, the power of any emission outside of many PCS and AWS bands must be attenuated by only  $43 + 10 \log_{10}(P)$  dB. *See* 47 C.F.R. §§ 24.238; 27.53(h).

<sup>20</sup> The Commission also should reject the GPS industry's suggestion that Section 25.255 of the Commission's rules, 47 C.F.R. § 25.255, should be extended to the new regulatory regime governing the AWS-4 band. *See* Comments of USGIC at 9-10. LightSquared has provided extensive analysis elsewhere establishing that Section 25.255 is a procedural rule that does not provide GPS receivers with interference protection rights that they do not otherwise have. *See* Comments of LightSquared Inc., IB Docket No. 11-109, 63-69 (Mar. 16, 2012).

Any efforts to ensure the reliability of GPS receivers instead should focus on establishing suitable GPS receiver reliability standards, such as minimum levels of adjacent band power tolerance for GPS receivers. As one commenter notes, by establishing reasonable interference protection criteria for GPS receivers, the Commission could afford them a reasonable level of protection without hamstringing adjacent operations.<sup>21</sup> At the same time, the Commission would afford GPS receiver manufacturers the flexibility to provide greater out-of-band interference rejection if they so choose.<sup>22</sup>

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For the reasons set forth herein, and in LightSquared's earlier comments and letter submission in this proceeding, LightSquared urges the Commission to adopt a comprehensive approach to spectrum management, work with NTIA, and promptly issue a Notice of Proposed Rulemaking to begin consideration of LightSquared's proposed alternatives. These alternatives would include commercial use of the 1675-1710 MHz band in order to pave the way for a long-term solution through which LightSquared would exchange certain spectrum rights in the portion of the 1525-1559 MHz band that, it has been suggested, may not be usable due to GPS issues,<sup>23</sup> while also satisfying the Commission obligation under the Jobs Act to auction 15 MHz of spectrum in the 1675-1710 MHz band.

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<sup>21</sup> See Comments of Pierre de Vries at 6.

<sup>22</sup> *Id.*; see also LightSquared Receiver Standards Petition.

<sup>23</sup> See n.10, *supra*.

Respectfully submitted,

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June 1, 2012