

BEFORE THE
Federal Communications Commission
WASHINGTON, DC 20554

In the Matter of)	
)	IB Docket No. 11-109
LightSquared, Inc.)	
)	ET Docket No. 10-142
Petition for Declaratory Ruling)	

OPPOSITION TO PETITION FOR DECLARATORY RULING

Lockheed Martin Corporation (“Lockheed Martin”), pursuant to Section 1.2(b) of the Commission’s Rules (47 C.F.R. § 1.2(b)) and the FCC’s *Public Notice* of January 27, 2012,¹ hereby opposes the above-captioned “Petition for Declaratory Ruling” (“Petition”) filed with the Commission by LightSquared, Inc. (“LightSquared”) on December 11, 2011.² The Petition requests relief that is inappropriate to grant via a declaratory ruling. A declaratory ruling is intended to be a mechanism for establishing clarity in areas where the Commission’s rules and policies may be ambiguous, it is not a vehicle for imposing new or different requirements where licensee obligations are well-defined. The Petition appears simply to be an effort by LightSquared to revise the terms of operation for its proposed terrestrial mobile service operating within the L-band allocation for the mobile-satellite service (“MSS”) in a way that is contrary to

¹ *FCC Public Notice, International Bureau Establishes Pleading Cycle for LightSquared Petition for Declaratory Ruling*, DA 12-103, IB Docket No. 11-109 and ET Docket No. 10-142, rel. January 27, 2012 (“*Public Notice*”).

² Lockheed Martin operates Regional Positioning System (“RPS”) satellites in the 1559-1610 MHz (or “L1”) Radionavigation Satellite Service (“RNSS”) band as augmentation for Global Positioning System (“GPS”) satellites. RPS is the only FCC-licensed space network operating in the L1 RNSS band. Lockheed Martin uses these satellites to provide services that are integral to the Federal Aviation Administration’s overall Wide Area Augmentation System, which provides augmentation of GPS signals throughout the entire National Airspace System to improve the accuracy, availability, and integrity of the GPS space-based positioning, navigation, and timing service.

the Commission's established rules for provision of an Ancillary Terrestrial Component ("ATC") to MSS. Were the Petition to be granted, the burden for ensuring that LightSquared's proposed non-conforming use of the MSS band for terrestrial mobile service does not harmfully interfere with RNSS operations such as those of Lockheed Martin's RPS system would fall not on LightSquared – as required by FCC rules,³ the International Telecommunication Union ("ITU") Radio Regulations,⁴ and the FCC waiver order that granted LightSquared conditional operational authority for its service⁵ – but on the very RNSS service providers and users that these authorities are designed to safeguard. For these reasons and others stated herein, the Petition should be denied.

I. The Relief LightSquared Seeks Cannot be Granted in a Declaratory Ruling.

The Petition, in essence, would eviscerate LightSquared's current obligations, expressly imposed by the *2011 Waiver Order* and the Commission's own rules,⁶ to protect L-band services and users from harmful interference that would be caused by its proposed high-power operation of terrestrial mobile service in spectrum allocated exclusively for low-power satellite services. If granted, the Petition would change, not clarify, the rules by which LightSquared has sought to proceed with plans for its terrestrial service.⁷ That is not the function of a declaratory ruling. Such substantive departures from previously considered and settled conditions, when appropriate, require full notice-and-comment proceedings.⁸

³ See 47 C.F.R. § 25.255.

⁴ See ITU Radio Regulation No. 4.4.

⁵ See *LightSquared Subsidiary LLC*, 26 FCC Rcd 566. 585-87 (Int'l Bur. 2011) ("*2011 Waiver Order*").

⁶ See 47 C.F.R. § 25.255.

⁷ *Sprint Corp. v. FCC*, 315 F.3d 369, 374 (D.C. Cir. 2003) ("When an agency changes the rules of the game . . . more than a clarification has occurred.")

⁸ *Id.*

It has been apparent since the completion of Commission-ordered testing last summer that LightSquared would be unable to protect RNSS systems from harmful interference caused by its proposed terrestrial mobile service in the 1525-1559 MHz MSS band. This reality was recently underscored when the Commission proposed to vacate the *2011 Waiver Order* following confirmation from the National Telecommunications and Information Administration (“NTIA”) that it appears to be “highly unlikely that LightSquared will, in any reasonable period of time, be able to satisfy the requirements of the [2011] *Waiver Order* for providing commercial ATC service in the 1525-1559 MHz band.”⁹ With the Petition, LightSquared appears to be trying to avoid its obligations under both the FCC’s rules and the specific requirements that the Commission imposed on LightSquared in the *2011 Waiver Order*¹⁰ by arguing that RNSS receivers are not entitled to protection at all. If LightSquared was dissatisfied with the terms of its conditioned license, it should have sought reconsideration; it cannot wait until test results contrary to its interests are in and then pursue what is in effect a rejection of the key condition of its authorization. The route proposed by LightSquared in its Petition – with its attempt to shift the burden of resolving harmful interference from LightSquared to the RNSS community – is unsupportable, and unacceptably untimely.

II. RNSS Systems Operate in Accordance with the Table of Allotments, Unlike LightSquared’s Proposed Use.

LightSquared takes the untenable position that, because GPS and other RNSS receivers are not individually licensed, the desensitization that such receivers will experience in the face of LightSquared’s non-conforming high-power terrestrial operations cannot be considered

⁹ See FCC Public Notice, *International Bureau Invites Comment on NTIA Letter Regarding LightSquared Conditional Waiver*, DA 12-214 (rel. Feb. 15, 2012).

¹⁰ See *2011 Waiver Order*, 26 FCC Rcd at 586 (¶ 41) (The process “addressing the interference concerns regarding GPS must be completed to the Commission’s satisfaction before LightSquared commences offering commercial service”).

“harmful,” and therefore, GPS receivers (and thus users) must accept the interference without recourse. This assessment omits two critical facts. First, GPS receivers, including those augmented to operate with Lockheed Martin’s RPS system, utilize *primary* service allocations consistent with the Table of Frequency Allocations. They utilize spectrum that is allocated to RNSS, which operates on a primary basis in the 1559-1610 MHz band, subject to the FCC’s Table of Allocations.¹¹ RNSS receivers, therefore, are specifically designed to operate in the L-band spectrum environment in which complementary service offerings are provided in adjacent spectrum bands, intentionally clustered in a manner that limits inter-channel interference conflicts.¹² Such “harmonization” is, of course, critical to service interoperability and efficient spectrum use.¹³

That some GPS receivers utilize conforming-use signals from an adjacent service does not render these receivers “poorly designed”¹⁴ or “non-conforming,”¹⁵ as LightSquared alleges. On the contrary, GPS receivers, including high precision receivers, often *intentionally* utilize MSS-augmented signals. These receivers “listen”¹⁶ to signals provided by services that use spectrum in a manner fully consistent with the Table of Allocations; such a design in no way renders the receivers defective or anything less than “state of the art.”¹⁷ Because they operate within a primary service, no “licensing” of GPS receivers is necessary for them to be entitled to

¹¹ See 47 C.F.R. § 2.106.

¹² See Commerce Spectrum Management Advisory Committee, *Interference and Dynamic Spectrum Access Subcommittee Final Report* at 58 (November 8, 2010).

¹³ “Harmonization often incorporates consideration of the optimal grouping of like-dislike services in a technologically neutral fashion. . . . [T]echnology neutrality requires that disparate services not be mixed.” *Id.* at 59.

¹⁴ *Petition* at 27.

¹⁵ *Id.* at 18.

¹⁶ *Id.* at 1.

¹⁷ *Id.* at 23.

protection against other services – especially those that are non-conforming. LightSquared is mistaken in relying upon out of context references to C-band receive-only antennas to support the proposition that satellite receive-only antennas are “completely unprotected.”¹⁸ Such antennas are only unprotected if the operator does not undertake voluntary prior coordination and registration to obtain interference protection from later licensed facilities.¹⁹ This necessity to affirmatively secure interference protection through registration is the unique product of satellite spectrum shared on a co-primary basis with terrestrial fixed facilities, and is inapplicable in circumstances where such coordination between co-primary services is not required, such as the Ku-band and the lower L-band. In these circumstances, a receiver operating within the primary service allocation is “protected against interference from the operations of any other communications service.”²⁰

Second, the Table of Frequency Allocations does not include any allocation to the terrestrial mobile service within the majority of the band that LightSquared proposes to operate (1535-1559 MHz),²¹ meaning that any terrestrial mobile operations LightSquared were to offer would be a non-conforming spectrum use. The band in which LightSquared’s proposed high-power terrestrial service would operate is allocated to MSS – a low-power, space-based service that was not designed for the widely deployed, high power mobile applications that LightSquared

¹⁸ *Petition at 12, 13-14 & 27-28, citing Reregulation of Domestic Receive-Only Satellite Earth Stations, 74 F.C.C.2d 205, 214 (¶¶ 27 & 28) (1979) (“1979 Receive-Only Earth Station Order”)*

¹⁹ *See 1979 Receive-Only Earth Station Order, 74 F.C.C.2d at 215 (¶ 27) (“[A]n optional licensing program would enable those who need and/or wish to have protection to obtain an enforceable right to a particular level of interference free reception through the prior coordination process”).*

²⁰ *See, e.g., Letter to David H. Pawlik, Counsel to NW Communications of Phoenix, from Kathryn Medley, Chief, Satellite Engineering Branch, FCC, 24 FCC Rcd 14074 (Sat. Eng. Br. 2009) (“Because the FSS is the only primary allocation in this band, operations to the FSS receive-only Ku-band earth stations are protected against interference from the operations of any other communications service.”)*

²¹ *See 47 C.F.R. § 2.106.*

now proposes. Because its use would be fundamentally non-conforming, LightSquared may proceed *only* if it causes no harmful interference to authorized users, such as RPS.²² The Bureau recognized as much when, in granting LightSquared its conditional waiver, it required LightSquared to demonstrate that its non-conforming operation would not cause harmful interference, *including desensitization of GPS receivers*.²³

These license conditions are entirely in line with the requirements of the FCC's rules, which mandate both that any MSS ATC service be fully integrated with the primary MSS service in the band,²⁴ and also protect from harmful interference all other services that might be impacted "by ancillary MSS ATC operations, either from ATC base stations or mobile terminals."²⁵ The principal reason for adopting this rule was to protect receivers, particularly GPS receivers, from harmful interference of *all kinds*.²⁶

III. LightSquared's Proposed Terrestrial Use Must Protect GPS Operations.

There can be no question that the responsibility to prevent harmful interference to RNSS arising from LightSquared's non-conforming use lies squarely with LightSquared, the non-conforming user. The reality is that if LightSquared were permitted to commence terrestrial mobile operations, RNSS applications, including the augmented GPS applications provided over

²² Under both domestic and international regulations, non-conforming spectrum users must protect authorized spectrum users from harmful interference generated by its proposed service. *See* 47 C.F.R. § 2.102; International Radio Regulation No. 4.4.

²³ *2011 Waiver Order*, 26 FCC Rcd at 586.

²⁴ *See* 47 C.F.R. § 2.106, US380.

²⁵ 47 C.F.R. § 25.255.

²⁶ *See, e.g., Spectrum and Service Rules for Ancillary Terrestrial Components in the 1.6/2.4 GHz Big LEO Bands*, 23 FCC Rcd 7210, 7223 (¶ 35) & n.118 (2008) ("2008 Big LEO MSS ATC R&O") (Section 25.255 places "an absolute obligation on the MSS/ATC operator to resolve any harmful interference to other services"). The Commission explicitly stated that "receiver overload [desensitization] interference ... is among the problems that ATC must take into account in avoiding harmful interference to other services." *Id.* at 7224 (¶ 36) & n.119.

the RPS system, would be subjected to harmful interference. This would endanger safety of life and property and significantly reduce the efficiency of the National Airspace System.

LightSquared's attempt to somehow shift the burden of compliance to users in the adjacent RNSS band who make fully conforming use of their allocated spectrum, is specious.

IV. Conclusion

Transmission characteristics, not reception, govern the nature of authorized services and their consistency with the allocation table. With its Petition, LightSquared attempts to shift the burden for avoiding harmful interference that would be caused by its nonconforming use of spectrum to receiver manufacturers and users who are making fully conforming use of the adjacent RNSS spectrum. The fact that LightSquared has been unable to resolve RNSS receiver desensitization issues that result from LightSquared's nonconforming use of MSS spectrum – as was required by the *2011 Waiver Order* – does not now warrant any change to the manner in which RNSS systems such as GPS and RPS have legitimately been operating and providing service to millions of users on a fully conforming basis. LightSquared's petition for a declaratory ruling is an inappropriate vehicle to make a substantial policy change of the type LightSquared has advocated.

For all of the foregoing reasons, Lockheed Martin respectfully urges the Commission to dismiss LightSquared's Petition for Declaratory Ruling.

Respectfully submitted,

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February 27, 2012

CERTIFICATE OF SERVICE

I, Jennifer Warren, hereby certify that on this 27th day of February, 2012, a copy of the foregoing Opposition to Petition for Declaratory Ruling is being sent via first class, U.S. Mail, postage prepaid, to the following:

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