

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)	
)	
Amendment of Part 15 of the Commission's)	RM-11812
Rules to Allow Higher Power Operation)	
for Point-to-Multipoint Systems, Consistent)	
with the Point-to-Point System Power Limits)	

OPPOSITION OF GLOBALSTAR, INC.

Globalstar, Inc. (“Globalstar”) opposes RADWIN LTD.’s Petition for Rulemaking (“RADWIN Petition”) seeking increased power limits for unlicensed point-to-multipoint systems in the 5150-5250 MHz band (the “U-NII-1 band” or “5.1 GHz band”).¹ RADWIN LTD. (“RADWIN”) fails to justify this rule change or a Notice for Proposed Rulemaking (“NPRM”) on its proposal. RADWIN disregards Globalstar’s recent Petition for Notice of Inquiry. It fails to address how its proposed power increase would affect the ongoing noise floor rise at 5.1 GHz or the threat of harmful aggregate interference to Globalstar’s licensed mobile satellite service (“MSS”). Accordingly, the Federal Communications Commission (“Commission”) should expeditiously deny the RADWIN Petition.

I. Globalstar’s MSS Network and Its Petition for Notice of Inquiry

In 2013, Globalstar completed the launch of a \$1 billion, second-generation non-geostationary (“NGSO”) satellite constellation, and it continues to invest in ground infrastructure upgrades and an expanded line of enterprise, consumer, and government products. Globalstar is

¹ Petition for Rulemaking, RADWIN LTD., RM-11812 (June 18, 2018); *Consumer and Governmental Affairs Bureau Reference Information Center Petition for Rulemakings Filed*, RM-11812, Public Notice, Report No. 3097 (rel. June 29, 2018). Globalstar expresses no view on RADWIN’s request for increased power limits for point-to-multipoint systems operating in the “U-NII-3” band at 5725-5850 MHz.

dedicated to providing state-of-the-art, mission-critical, and safety-of-life services to over 700,000 consumers, businesses, and governmental and public safety users in over 120 countries around the world, including remote, unserved, and underserved areas not reached by terrestrial deployments. Globalstar's MSS network provides critical back-up capabilities for public safety personnel during disasters, when terrestrial networks can be rendered inoperable.

Globalstar is authorized for feeder uplink transmissions from its gateway earth stations to its space stations at 5096-5250 MHz. Each Globalstar satellite has a feeder uplink antenna that "hears" all transmissions at 5096-5250 MHz – including U-NII-1 transmissions at 5150-5250 MHz – within the 7,800 km diameter feeder link coverage area. Globalstar's satellites then translate, amplify, and downlink this traffic to its MSS customers at 2483.5-2500 MHz. Unfortunately, under the "sharing" framework adopted by the Commission in 2014,² an ongoing noise floor rise at 5.1 GHz is beginning to diminish Globalstar's MSS subscriber capacity, drain its satellite power, create gaps in its MSS signal coverage, and degrade its service quality in the United States, adjacent areas of Canada and Mexico, Caribbean nations, and Central and South American countries.

On May 21, 2018, Globalstar filed a Petition for Notice of Inquiry ("Globalstar Petition") providing empirical evidence of this noise floor rise and demonstrating that this rise is being caused by outdoor unlicensed deployments in the U-NII-1 band.³ Globalstar also showed that, absent Commission action, harmful aggregate interference will have a severe, detrimental impact on Globalstar's MSS network and its public safety users and other customers. Globalstar

² *Revision of Part 15 of the Commission's Rules to Permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band*, First Report and Order, 29 FCC Rcd 4127, ¶ 46 (2014) ("2014 5 GHz Order").

³ Petition for Notice of Inquiry of Globalstar, Inc., RM-11808 (May 21, 2018) ("Globalstar Petition"); *Consumer & Governmental Affairs Bureau Reference Information Center Petition for Notice of Inquiry*, RM-11808, Public Notice, Report No. 3092 (rel. June 6, 2018).

requested that the Commission investigate this noise rise, assess the threat of harm to Globalstar's MSS operations, and explore possible regulatory and market-based solutions to this problem.

II. RADWIN Has Failed to Meet the Commission's Threshold for Initiating a Rulemaking Proceeding

In its filing, RADWIN asks the Commission to raise the power limits for U-NII-1 point-to-multipoint systems at 5.1 GHz that utilize directional beams. Its technical showing in support of this request, however, is woefully incomplete. RADWIN fails to provide "sufficient reasons" for this rule change or otherwise meet the Commission's threshold for initiating such rulemaking action.⁴ The Commission should deny RADWIN's request.

RADWIN in its Petition attempts to demonstrate that higher-power point-to-multipoint systems would avoid harmful interference to other terrestrial wireless services.⁵ Meanwhile, RADWIN disregards the Globalstar Petition and completely ignores the threat of harmful aggregate interference to Globalstar's MSS operations. RADWIN's technical exhibit says nothing about the impact of point-to-multipoint facilities with multiple directional beams on the ongoing noise floor rise at 5.1 GHz.⁶ Before the Commission can consider amending its point-to-multipoint rules, RADWIN must demonstrate that its proposed change will not exacerbate this noise rise and cause even greater harm to Globalstar's MSS operations and its public safety users and other customers.

⁴ Under the Commission's rules, RADWIN must provide "sufficient reasons" to initiate a Notice of Proposed Rulemaking. *See* 47 C.F.R. § 1.407.

⁵ RADWIN Petition at 7.

⁶ The Commission's *2014 5 GHz Order* limited the amount of energy that outdoor, omnidirectional U-NII-1 access points can transmit above 30° from the horizon, in an effort to protect Globalstar MSS from harmful aggregate interference. Notably, RADWIN in its Petition makes no mention of this requirement or whether its proposed high-power, point-to-multipoint devices with multiple directional beams can or will comply with this rule.

While Globalstar’s engineering consultant – Roberson and Associates, LLC (“Roberson”) – has previously stated that point-to-point operations in the U-NII-1 band have not to date been a material cause of the 5.1 GHz noise rise,⁷ Roberson did *not* conclude that such systems will not be material contributors to this noise rise in the future. In fact, Roberson has indicated that the directional gain dish antennas typically utilized in outdoor point-to-point facilities will contribute more to the 5.1 GHz noise rise on a per-device basis than outdoor omnidirectional access points.⁸ Significantly, if the Commission permitted point-to-multipoint systems with *multiple* directional beams at U-NII-1 to operate at the same power level as existing point-to-point facilities, those systems would have an *even greater* per-device impact on the noise rise than their point-to-point counterparts. If the Commission adopted RADWIN’s proposed rule, these high-power point-to-multipoint operations would constitute a significant interference threat to Globalstar MSS.⁹

The Commission previously adopted higher power limits in the 2.4 GHz unlicensed band for point-to-multipoint devices with multiple directional beams,¹⁰ but that 2004 decision does not require the Commission to adopt an equivalent or similar rule change in the U-NII-1 band. Certainly, the radiofrequency (“RF”) environment at 5.1 GHz contrasts starkly with the environment in the 2.4 GHz band. Unlike at 2.4 GHz, unlicensed operations must share the U-NII-1 band with Globalstar’s MSS feeder uplink operations. Given this shared use, the

⁷ Roberson and Associates, LLC, *Analysis and Impact of Noise Rise in Feeder Uplinks of Globalstar Mobile Satellite Network*, attached as Exhibit B to Globalstar Petition, RM-11808, at 52 (May 21, 2018) (“May 21 Roberson Analysis”).

⁸ Consolidated Reply of Globalstar, Inc., RM-11808, at Roberson Technical Exhibit at 18 (July 23, 2018) (“Globalstar Consolidated Reply”); May 21 Roberson Analysis at 18-19.

⁹ Given the likely per-device impact of RADWIN’s point-to-multipoint systems, the key determinant of their future aggregate interference effect at 5.1 GHz will be the overall number of these systems deployed in the United States. RADWIN provides no information, however, about the number of its facilities that are likely to be deployed nationwide.

¹⁰ RADWIN Petition at 5-7; *Modification of Parts 2 and 15 of the Commission’s Rules for unlicensed devices and equipment approval*, Report and Order, 19 FCC Rcd 13539 (2004).

Commission's technical rules at U-NII-1 must minimize the likelihood of harmful aggregate interference to Globalstar's feeder uplink operations and its MSS offerings to public safety users and other customers.

III. If the Commission Feels Compelled to Consider RADWIN's Proposal, It Should Do So as Part of the Notice of Inquiry Requested by Globalstar

As described above, RADWIN has failed to justify a Commission Notice of Proposed Rulemaking regarding its proposed rule amendments. If the Commission nonetheless feels compelled to take some action on its request (other than denial), it should consider RADWIN's proposal as part of a Notice of Inquiry ("NOI") regarding the noise floor rise at 5.1 GHz and the threat of harmful aggregate interference to Globalstar's MSS network.

Given the rapid noise floor rise at 5.1 GHz over the past two years and the threat of serious harm to Globalstar and its customers,¹¹ the Commission should closely examine *all* of the unlicensed terrestrial wireless systems operating in this spectrum. As Globalstar recently argued in the docket on its own Petition, the Commission's U-NII-1 inquiry should seek information not only on omnidirectional outdoor U-NII-1 access points, but also on fixed outdoor point-to-point operations in this band. In this inquiry, the Commission could also seek relevant information on RADWIN's proposed high-power point-to-multipoint systems. Specifically, the Commission could investigate the number of such systems that are likely to be deployed, the likely elevation angles and duty cycles of such facilities, and other relevant operational and technical parameters.¹² Following the NOI process, the Commission could determine whether it should deny RADWIN's Petition or issue an NPRM on its proposed rules.

¹¹ See, e.g., Globalstar Consolidated Reply at 19.

¹² According to the Wireless Internet Service Providers Association's ("WISPA's") comments on the Globalstar Petition, its members are likely to deploy a large number of outdoor point-to-point systems in the U-NII-1 band. WISPA indicates that WISPs currently use the U-

IV. Conclusion

For the aforementioned reasons, the Commission should deny RADWIN's request for higher power limits for point-to-multipoint systems at U-NII-1 featuring multiple directional beams. If the Commission feels compelled to consider RADWIN's request, it should do so as part of a Notice of Inquiry regarding the ongoing noise floor rise at 5.1 GHz and the threat of harmful aggregate interference to Globalstar's licensed MSS operations.

Respectfully submitted,

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NII-1 band extensively and will continue to do so. Comments of the Wireless Internet Service Providers Association, RM-11808, at 2 (July 6, 2018). Just as WISPA and its members should provide more information on their current and future U-NII-1 operations in conjunction with the requested NOI, RADWIN should similarly provide detailed information regarding potential deployments of its proposed high-power point-to-multipoint systems with multiple directional beams.

Certificate of Service

I hereby certify that on this 30th day of July, 2018, I caused a true and correct copy of the foregoing Opposition of Globalstar, Inc. to be mailed by U.S. mail to:

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