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

In the Matter of	)	
	)	
Revision of Part 15 of the Commission's Rules to	)	
Permit Unlicensed National Information	)	ET Docket No. 13-49
Infrastructure (U-NII) Devices in the 5 GHz Band	)	

To: The Commission

PETITION FOR PARTIAL RECONSIDERATION OF THE WIRELESS INTERNET SERVICE PROVIDERS ASSOCIATION

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The Wireless Internet Service Providers Association ("WISPA") respectfully requests reconsideration of the Commission's decision to require equipment in the 5725-5850 MHz band to meet more stringent unwanted emission limits. If it stands, the rule change would have dire consequences for equipment manufacturers, wireless Internet service providers ("WISPs") and rural Americans that would lose access to broadband services as grandfathered equipment reaches the end of its useful life.

WISPA appreciates that the Commission may not have understood the magnitude of harm that tightening the emission standards would cause. Although seemingly motivated by a desire to consolidate or "harmonize" the emission rules across the 5 GHz sub-bands into Section 15.407, this objective is far outweighed by the need to preserve the unique benefits stemming from the less stringent out-of-band emission limits of Section 15.247 – benefits that are "unachievable in any other unlicensed band." WISPA urges the Commission to maintain both the Section 15.247 and the Section 15.407 rules so that use of both short-range Wi-Fi devices and longer-distance equipment can continue to flourish.

The gap between urban and rural broadband availability and adoption is well documented – rural Americans are much less likely to have broadband service available in their homes when compared to those living in urban areas of the country. Because of the unique technical rules of Section 15.247, the 5725-5850 MHz band is the only unlicensed band that permits long-distance point-to-point connections to rural areas where wired technologies are not cost-effective to deploy and are therefore not deployed. Nearly all WISPs use the 5725-5850 MHz band to provide fixed broadband Internet service.

The Commission acknowledged that equipment manufacturers could meet the more stringent emission standard by reducing power, decreasing antenna gain or utilizing tighter filters, but it seemingly ignored information in the record that explained how ineffective and cost-prohibitive these modifications would be. The record shows that tightening the out-of-band emission limit would force manufacturers to choose between incorporating filters that will make equipment significantly more expensive and reduce performance by shortening the distance of links and limiting the amount of useable spectrum. What may be true for short-range Wi-Fi devices certified under the tighter emission limits of Section 15.407 is not true of devices certified under Section 15.247.

Moreover, eliminating a rule that has led to the extension of wireless broadband to remote areas is totally unnecessary. The record shows that there is no potential for harmful interference from legally operating devices that comply with Section 15.247, and the Commission's adoption of better dynamic frequency selection rules and software security requirements will be sufficient to prevent interference to Terminal Doppler Weather Radar facilities located at least 75 megahertz from the 5725-5850 MHz band.

Any potential benefits from harmonizing technical requirements pale in comparison to the unique benefits that were enabled for many years under Section 15.247. If the Commission's decision stands, grandfathered equipment will not be replaced when it reaches the end of its useful life because, as the record demonstrates, new equipment with similar coverage and capacity would be too expensive to design, manufacture, deploy and operate. The Commission should act to stop the wholly unnecessary, inexorable degradation and termination of broadband service in rural America by reinstating the out-of-band emission limits of Section 15.247.

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The Wireless Internet Service Providers Association ("WISPA"), pursuant to Section 1.429 of the Commission's Rules, hereby respectfully requests reconsideration of one aspect of the *First Report and Order* adopted in the above-captioned proceeding.[1] The Commission's decision to impose the more stringent out-of-band emission limits of Section 15.407 on all devices and operations in the 5725-5850 MHz band is contrary to the record and, if permitted to stand, would have devastating, if unintended, consequences for rural Americans who rely on wireless point-to-point and point-to-multipoint links to obtain access to fixed broadband service, public safety and other industrial and critical infrastructure services. WISPA therefore asks the Commission to reconsider its decision and to reinstate the more lenient out-of-band emission limits described in Section 15.247, which applied to unlicensed operations in the 5725-5850 MHz band prior to the effective date of the rule amendments adopted in the *R&O*.

[1] *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, ET Docket No. 13-49 (rel. Apr. 1, 2014) ("*R&O*"). A summary of the *R&O* and the rules adopted pursuant thereto were published in the Federal Register on May 1, 2014. *See* 79 Fed. Reg. 24569 (May 1, 2014). Accordingly, pursuant to Section 1.4, this petition is timely filed.

Background

In the *R&O*, the Commission made some significant improvements to the rules for unlicensed operations in the 5 GHz band, and WISPA appreciates the Commission's acceptance of a number of WISPA's suggestions. Among these are the adoption of rules permitting outdoor operations on a shared basis in the 5150-5250 MHz band and the preservation of technical rules that do not require a power reduction for any increase in antenna gain for fixed point-to-point operations in the 5725-5850 MHz band.

Notwithstanding these beneficial rule changes, and over the objections of WISPA, manufacturers of 5 GHz equipment[2] and wireless Internet service providers ("WISPs"),[3] the Commission amended its rules to require more restrictive out-of-band emission requirements for equipment in the 5725-5850 MHz band. WISPs "rely heavily" on the 5725-5850 MHz band to provide backhaul and connectivity to rural and remote communities where fiber and other wired solutions are simply unavailable.[4] In informing the Commission prior to adoption of the *R&O* that preservation of the technical rules for the band "are of critical importance," WISPA explained that "the operating rules for the 5725-5850 MHz ISM band allow for affordable, wide-area deployment in areas where the 900 MHz and 2.4 GHz bands are too congested and the technical rules for the other 5 GHz bands are more restrictive."[5] In a subsequent *ex parte* presentation, a WISP indicated that it was using a point-to-point link of 65 miles using high-gain

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[2] *See, e.g.*, Comments of Cambium Networks Ltd., ET Docket No. 13-49 (May 28, 2013) ("Cambium Comments") at 3-4; Comments of Exalt Communications Inc., ET Docket No. 13-49 (July 24, 2013) ("Exalt Comments") at 3-4; Letter from Kevin J. Negus, Chairman, CTO and Founder, Fastback Networks, to Marlene H. Dortch, FCC Secretary, ET Docket No. 13-49 (March 24, 2014).

[3] Comments of First Step Internet LLC, ET Docket No. 13-49 (May 28, 2013) ("First Step Comments"); Comments of SPITwSPOTS Inc., ET Docket No. 13-49 (May 28, 2013) ("SPITwSPOTS Comments").

[4] Comments of WISPA, ET Docket No. 13-49 (May 28, 2013) ("WISPA Comments") at 12.

[5] *Id.* at 3.

antennas and equipment certified under Section 15.247, a distance that is "unachievable in any other unlicensed band."[6]

The Commission acknowledged these unique benefits when it decided, contrary to its initial proposal, to continue to allow use of unlimited gain antennas in the 5725-5850 MHz band.[7] In the next breath, however, and despite record evidence to the contrary, the Commission eviscerated the benefits of this decision by unnecessarily subjecting 5725-5850 MHz band devices to the more stringent out-of-band emission requirements of Section 15.407 beginning two years from the effective date of the rule amendments.[8] To its credit, the Commission recognized that "[m]anufacturers have the flexibility to determine how they should meet the lower out-of-band emissions limit whether by reducing power, decreasing antenna gain, or utilizing tighter filters."[9] The Commission failed, however, to appreciate the magnitude, efficacy or cost of these equipment modifications and the devastating consequences on rural Americans who will, over time, lose broadband service. In addition to WISPs and their subscribers, unless the Commission reverses its out-of-band emissions decision, many critical public safety, industrial and critical infrastructure services also would be negatively affected.

While the Commission's decision may be acceptable for short-range Wi-Fi devices that share the 5725-5850 MHz band and may appeal to the Commission's desire to regulate under a single set of rules, this trade-off would spell doom for the manufacturing, certification and deployment of equipment used with high-gain antennas to provide long-distance point-to-point backhaul connectivity. This would begin the inexorable process of defeating the ability of rural

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[6] Letter from Matt Larsen, WISPA FCC Committee Chair, to Marlene H. Dortch, FCC Secretary, ET Docket No. 13-49 (July 12, 2013) at 1. *See also* WISPA Reply Comments, ET Docket No. 13-49 (July 24, 2013) at 3-4. *See also* First Step Comments at 4; SPITwSPOTS Comments at 4.
[7] *See R&O* at 32.
[8] *See id.* at 33.
[9] *Id.* at 34.

Americans to continue to receive fixed broadband service when grandfathered equipment requires replacement or when new equipment needs to be deployed. These effects also extend to thousands of other networks used for public safety communications, smart grids and critical information infrastructure.

Discussion

If the Commission does not reverse its decision to eliminate equipment certifications under Section 15.247, it would essentially be endorsing the inevitable decline of fixed broadband service to those rural Americans that rely on the 5725-5850 MHz band as a key – and in many cases the only – spectrum band able to deliver fixed broadband and, in some cases voice service. Maintaining Section 15.407 as the sole rule for equipment certifications is totally unnecessary. There is no factual evidence in the record demonstrating that the tighter out-of-band emission rules will have any effect whatsoever in eliminating interference to Terminal Doppler Weather Radar ("TDWR") facilities operating in the 5600-5650 MHz band. But as a number of commenters confirm, the out-of-band emissions from *legally deployed* links in the 5725-5850 MHz band have never been shown to cause any interference to TDWRs operating at least 75 megahertz (or more) away in the 5600-5650 MHz band. With WISPA's support, the Commission established new enhanced software security requirements to prevent devices from being illegally reprogrammed as well as dynamic frequency selection improvements to enable devices to better detect radar signals, a decision intended to alleviate TDWR interference concerns.[10] The Commission's decision to impose additional restrictions is not supported by the record and thus cannot stand.

[10] *See R&O* at 15-22.

Further, consolidating equipment certifications in one rule, Section 15.407, would foreclose continued use and deployment of equipment capabilities that cannot be replicated in any other unlicensed band and that cannot be duplicated cost-effectively in any licensed band. The benefits of preserving existing product lines and operations under the dual regulatory approach that permits equipment to be certified under either Section 15.247 or Section 15.407 drastically outweigh whatever benefits may come from so-called "harmonizing" under a single and more restrictive rule.

The ultimate effect of the Commission's decision will be to clear the 5725-5850 MHz band of all proven long-distance point-to-point links as well as a substantial number of long-distance point-to-multipoint network operations simply to permit ubiquitous deployment of short-range equipment incorporating new wide-channel 802.11ac chipsets. This effect will be felt in rural areas where long-distance links are relied upon to provide the only connectivity to the community. While short-distance Wi-Fi is certainly a beneficial spectrum use and while 802.11ac may help enable higher-bandwidth indoor applications (i.e., video streaming), that is no reason to deny broadband service to those rural Americans that most need fixed broadband access in their homes and businesses.

The Commission has the ability to right these wrongs and make good on its promise to promote broadband access in rural areas of the country by reconsidering its decision to apply the Section 15.407 out-of-band emission limits to both existing and future unlicensed devices in the 5725-5850 MHz band. Consistent with the public interest, WISPA urges the Commission to reinstate the Section 15.247 emission limits option for equipment in the 5725-5850 MHz band.

I. RECONSIDERATION WOULD PROMOTE BROADBAND SERVICE TO RURAL AMERICANS, CONSISTENT WITH THE COMMISSION'S POLICY OBJECTIVES AND THE PUBLIC INTEREST.

The Commission should reconsider the *R&O* to ensure continuity of the public interest benefits flowing from the existing out-of-band emission rules. As discussed in the WISPA Comments, "nearly all" WISPs use some portion of the 5 GHz band, and the operating rules for the 5725-5850 MHz band in particular "allow for affordable, wide-area deployment" where other bands do not.[11] WISPA further stated that "[i]n many cases a WISP would be unable to provide broadband access to distant communities using a link operating under the more stringent requirements of Section 15.407, but can do so under the more permissive rules set out in Section 15.247."[12]

Until the effective date of the rule changes adopted in the *R&O*, the Commission permitted devices in the 5725-5850 MHz band to be certified under either Section 15.407 or Section 15.247. Section 15.247 is the only rule permitting unlimited gain antennas and less stringent out-of-band emissions without requiring a reduction in power. As such, it is uniquely regulated under Part 15 to promote point-to-point connectivity over long distances, and is commonly shared with Wi-Fi devices certified under Section 15.407. The ability to operate long-distance links is especially valuable in areas where other means of connecting to the Internet are not affordable or not available, which is often the case in rural America. WISPs also use the 5725-5850 MHz band for point-to-point uplink communications between subscribers and base stations.

Unquestionably, and because of the special provisions of Section 15.247, the 5725-5850 MHz band has had a significant positive impact on the ability of rural Americans to receive fixed

[11] WISPA Comments at 3.
[12] *Id.* at 12-13.

broadband service and to help eliminate the rural broadband divide. According to the Commission, the vast majority of Americans that do not have broadband access reside in rural areas.[13] The Commission stated in the *Eighth Broadband Report* that:

> Approximately 14.5 million of the 19 million (or 76 percent) Americans without access to fixed broadband meeting the speed benchmark reside in rural areas. In comparison, 4.5 million of the 19 million (or 24 percent) of Americans living in non-rural areas are without access to these services. The percentage of Americans without access in rural areas is 23.7 percent as compared to 1.8 percent in non-rural areas. These figures indicate that nearly one in four rural Americans lack access to fixed broadband meeting our speed benchmark. These data reflect that rural Americans are more than thirteen times more likely to lack access to fixed broadband than Americans in non-rural areas.[14]

In adopting rules for its Rural Broadband Access Loan and Loan Guarantee Program, the Rural Utilities Service agreed with this assessment, stating that:

> Analysis suggests that rural economies benefit generally from broadband availability. In comparing counties that had broadband access relatively early (by 2000) with similarly situated counties that had little or no broadband access as of 2000, employment growth was higher and nonfarm private earnings greater in counties with a longer history of broadband availability. By 2007, most households (82 percent) with in-home Internet access had a broadband connection. A marked difference exists, however, between urban and rural broadband use – only 70 percent of rural households with in-home Internet access had a broadband connection in 2007, compared with 84 percent of urban households. The rural-urban difference in in-home broadband adoption among households with similar income levels reflects the more limited availability and affordability of broadband in rural settings.[15]

Broadband connectivity enabled by the 5725-5850 MHz band thus is critically important to maintaining existing service to rural Americans and also to extending service to distant communities where terrestrial broadband is not available and may never be available because the

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[13] *See Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act*, 27 FCC Rcd 10342, 10370 (2012) ("*Eighth Broadband Report*"); *Connect America Fund*, 26 FCC Rcd 17633 (2011), ¶ 4 n.3.

[14] *Eighth Broadband Report* at 10370 (footnotes omitted). *See also Technology Transitions, et al.*, Order, Report and Order and Further Notice of Proposed Rulemaking, Report and Order, Order and Further Notice of Proposed Rulemaking, Proposal for Ongoing Data Initiative, GN Docket No. 13-5, *et al.*, FCC 14-5 (2014).

[15] Rural Broadband Access Loans and Loan Guarantees, RIN 0572–AC06, 78 Fed. Reg. 8353, 8353 (Feb. 6, 2013).

sparse population density does not justify the costs of deploying fiber or other wireline technologies.

As discussed below, imposing the more stringent Section 15.407 out-of-band emission limits on WISPs would have a profound impact on the ability of rural Americans to continue to obtain fixed wireless broadband service. If new equipment is available at all, costs would rise substantially, performance would decrease and subscribers who have broadband access today would likely find that is no longer available in the future. In the interests of those hundreds of thousands of rural Americans receiving broadband today via 5725-5850 MHz long-distance wireless connections, and the millions of rural Americans that need to receive such service in the future, the Commission must retain the existing Section 15.247 emission limits, as an option for equipment in the 5725-5850 MHz band.

II. THE RECORD DOES NOT SUPPORT ADOPTION OF MORE RESTRICTIVE OUT-OF-BAND EMISSION LIMITS FOR DEVICES CERTIFIED TO OPERATE IN THE 5725-5850 MHz BAND.

A. Imposition of More Stringent Unwanted Emission Limits Will Adversely Affect the Ability of Manufacturers to Produce Equipment, Resulting in Loss of Fixed Broadband Service to Rural Americans.

In the *NPRM*, the Commission acknowledged that the Section 15.247 emission limits "are somewhat more restrictive" than the Section 15.407 emission limits, but nonetheless stated that:

> Because unwanted emission can be reduced without affecting the utility of the device, and because using the more stringent unwanted emissions requirement will ensure that there is no increase in the potential for interference from unlicensed devices operating under the new combined rule parts, we are proposing that the more restrictive limits in Section 15.407 be required for digitally modulated devices.[16]

[16] *Revision of Part 15 of the Commission's Rules to Permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band*, 28 FCC Rcd 1769 (2013) ("*NPRM*") at 1780.

Both Cambium and Exalt disagreed with the Commission's rationale, explaining that the "utility of the device" would, in fact, be adversely affected by the proposed restrictions on unwanted emissions. According to Cambium:

> For a device operating at the maximum EIRP of 53 dBm, the Section 15.407 limit is approximately 50 dB lower than the Section 15.247 limit. If devices operating in the 5.7 GHz band are to meet the out of band emission limits from Section 15.407, they must incorporate transmitter sections of considerably greater complexity than those found in Section 15.247 devices, including the use of additional high performance RF filters.[17]

Exalt stated that:

> The proposed change will likely result in a more restrictive tuning range, and/or significantly higher manufacturing costs for more stringent filtering. If the restrictive tuning approach is deployed, then there will be increasing interference potential within the operating band, as more devices will need to be tuned to a more restrictive spectrum.[18]

As these comments demonstrate, the change to a more restrictive emission standard would force manufacturers to choose between incorporating filters that will drive up the cost of equipment, or limiting the amount of spectrum actually used and increasing the likelihood of interference and congestion. In either case, contrary to the Commission's conclusion, the "utility of the device" would be severely compromised.

By contrast, Cisco argued that "manufacturers have proven themselves readily capable of complying with the tighter limits set forth in Section 15.407(b) without adversely impacting device performance or materially increasing costs."[19] While perhaps true with respect to lower-power indoor Wi-Fi devices that may be largely unaffected by the new out-of-band emission limits, Cisco's statement is simply untrue with respect to devices intended for longer-distance use that are certified under Section 15.247. Although the *R&O* is silent on this point, the

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[17] Cambium Comments at 3.
[18] Exalt Comments at 3.
[19] Comments of Cisco Systems, Inc., ET Docket No. 13-49 (May 28, 2013) ("Cisco Comments") at 47.

Commission apparently – and incorrectly – inferred that the performance of *all* devices would be unaffected by tightening the emission levels and that the cost of *all* equipment would not be materially increased. But the devices that Cisco produces are much different than the outdoor fixed devices used by WISPs to carry Internet and voice traffic over long distances to provide broadband connectivity to subscribers in distant rural communities.

Although the Commission stated that equipment manufacturers have flexibility to decide how to meet the more stringent Section 15.407 requirements,[20] its suggestions cannot be practically and affordably implemented. Reducing power and decreasing antenna gain will, quite simply, reduce distance and reliability and require the deployment of new access points and new transmission equipment to compensate for the loss of coverage to existing subscribers.[21] Incorporating additional filtering is costly. The Commission did not consider the costs of incorporating additional filtering and the consequent recertification, which may prove to be too much for manufacturers and end users to absorb. As Exalt explained, limiting the amount of useable spectrum by retuning equipment to the middle frequencies of the band would increase the potential for interference.

Because of the high cost of viable equipment modifications, manufacturers may decide not to produce new, more expensive, less functional equipment that complies with the new emission limits because WISPs won't buy higher-priced equipment with lower performance. Over time, as grandfathered equipment wears out, WISPs will face the Hobson's Choice of vastly overspending for inferior equipment and additional infrastructure, or terminating broadband service to remote communities that have few, if any, other means of obtaining broadband service.

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[20] *See R&O* at 34.

[21] *See* WISPA Comments at 14 (stating that each reduction in antenna gain by 6 dBi reduces the link distance by one-half).

B. **There is No Evidence of Potential Harmful Interference to Justify the More Restrictive Emission Limits.**

WISPA, Cambium and Exalt pointed out that changing the emission limits to reduce the potential for interference would essentially be a solution in search of a non-existent problem. In an *ex parte* notice, WISPA stated "there are no on-the-record cases of OOBE [out-of-band emissions] from currently-produced legally-operating Section 15.247 equipment causing interference problems for any other licensed or unlicensed radio system."[22] Cambium likewise stated that it was not aware of any "documented link between out of band emissions for devices certified under Section 15.247 and interference to TDWRs operating at 5600 MHz to 5650 MHz."[23] Similarly, Exalt noted that "there are no specific references indicating that the 15.247 regulations have caused any issues in this regard."[24] No commenter – not even Cisco or the Wi-Fi Alliance which support the Wi-Fi industry[25] – pointed to any case where out-of-band emissions from equipment *legally operating* in the 5725-5850 MHz band has caused harmful interference to TDWR facilities.

Indeed, the *NPRM* makes no mention of any cases of interference resulting from the long-standing Section 15.247 emission limits. There is a demonstrable lack of any specificity regarding who might experience the interference, or where (geographically or spectrally) the interference might occur, or whether such alleged interference would be harmful to users entitled to be protected from interference. Moreover, there is no technical data in the record indicating that out-of-band emissions from legally operating equipment operating under the Section 15.247 limits have ever interfered with TDWR facilities operating 75 megahertz or more away, or that

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[22] Letter from Stephen E. Coran, WISPA Counsel, to Marlene H. Dortch, FCC Secretary, ET Docket No. 13-49 (March 21, 2014) at 2.
[23] Cambium Comments at 4.
[24] Exalt Comments at 3.
[25] *See* Cisco Comments at 38; Reply Comments of Wi-Fi Alliance, ET Docket No. 13-49 (July 24, 2013) at 14.

the Section 15.407 emission levels would eliminate any such hypothetical interference. The Commission's rationale thus is unsupported by the record.

Notwithstanding, some parties concurred with the Commission's proposal to impose more restrictive unwanted emission limits.[26] However, like the Commission, these commenters fail to identify any specific interference threat and simply accept at face value the Commission's erroneous conclusion. Simply stating that a "more stringent protection limit will help limit the risk of harmful interference"[27] or that "the more restrictive limits will help ensure that there is no increase in interference" is not specific enough to justify more stringent emission requirements, to the detriment of hundreds of thousands of rural Americans.[28] Indeed, the Commission rejected claims by the automobile industry that the newly-imposed emission levels would harm Dedicated Short Range Communications licensees in the adjacent 5850-5925 MHz band, and acknowledged that unlicensed operations are already permitted on the 5725-5850 MHz frequencies under the less stringent emission limits.[29]

As the record unequivocally reflects, there is no evidence of any potential interference that requires *a priori* imposition of more restrictive emission levels. The Commission's rationale cannot withstand scrutiny when balanced against the very real harm that will result from the loss of broadband service inherent in restricting out-of-band emissions to Section 15.407 limits.

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[26] *See R&O* at 33, n.178. *See also* Reply Comments of IEEE 802, ET Docket No. 13-49 (July 24, 2013) at 12-13 (acknowledging a preference for "as much flexibility in emissions rules as possible" and that "non-compliant parties operate outside of lawful requirements").
[27] Comments of Motorola Mobility LLC, ET Docket No. 13-49 (May 28, 2013) at 4.
[28] Comments of Wi-Fi Alliance, ET Docket No. 13-49 (May 28, 2013) at 13.
[29] *R&O* at 34.

C. Harmonizing Certain Rules Across the 5 GHz Band is Insufficient Reason to Undermine the Ability of Rural Americans to Continue to Receive Broadband Service.

In the *R&O*, the Commission cited a new reason to justify application of the more restrictive out-of-band emission limits – a desire to be "consistent with" its adoption of Section 15.407 limits for the U-NII 2 bands to "provide clarity and simplicity, while providing appropriate protection to incumbent services."[30] Some commenters supported these objectives and generally stated that devices in the 5725-5850 MHz band should operate under a similar set of rules[31] and be harmonized with U-NII devices operating in other 5 GHz sub-bands.[32]

In its apparent zeal to harmonize and simplify the rules, however, the Commission inexplicably ignored other statements in the record and failed to appreciate the impact its decision would have on rural Americans. The 5725-5850 MHz band has been characterized by two sets of rules, Section 15.247 and Section 15.407, that permit sharing among unlicensed devices. By reconsidering its decision to eliminate one set of rules and reinstating the less stringent emission levels of Section 15.247, the Commission would not harm the ability of Wi-Fi devices to operate with tighter emission standards, but would allow the *status quo* to continue – two sets of rules for two different types of devices.[33] If, however, the more stringent unwanted emission limits apply to all devices, both short-range indoor and long-range outdoor, then vital

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[30] *R&O* at 33.

[31] *See, e.g.*, Comments of Ruckus Wireless, Inc., ET Docket No. 13-49 (July 24, 2013) at 3; Comments of IEEE 802, ET Docket No. 13-49 (May 28, 2013) at 26; Comments of Motorola Solutions, Inc., ET Docket No. 13-49 (May 28, 2013) at 3. NCTA simply noted that it "does not object" to a "majority" of the proposed changes to the U-NII-3 band under the mistaken assumption that streamlining the rules will not be burdensome. Reply Comments of the National Cable & Telecommunications Association, ET Docket No. 13-49 (July 24, 2013) at 30.

[32] *See, e.g.*, Comments of Comcast Corporation, ET Docket No. 13-49 (May 28, 2013) at 23; Comments of Ericsson, ET Docket No. 13-49 (May 28, 2013) at 5; Comments of the Telecommunications Industry Association, ET Docket No. 13-49 (May 28, 2013) at 12.

[33] As noted in the WISPA Comments, there are approximately 9,700 devices that have been certified under Section 15.247. *See* WISPA Comments at 14, n.29. The effect of eliminating certification under this rule section would completely eliminate these devices and product lines once the two-year grandfather period expires. The economic effect on the equipment industry will be severe as well, a point the Commission sidestepped in consolidating 5725-5850 MHz equipment under Section 15.407.

broadband service connections to subscribers in distant rural communities will be lost. The Commission's unfortunate rule change thus represents a false choice – "harmonized" Wi-Fi over the need to maintain rural broadband connectivity as well as other critical information infrastructure networks – when no such choice was requested, documented or necessary.

If permitted to stand, the inevitable and irreversible chain of events WISPA described in its initial Comments would begin:

> changing the certification requirements would actually *eliminate* successful product lines and chill future competition. . . . . Over time, these market forces – the inevitable outcome of an ill-conceived rule change – would dismantle an ecosystem that provides WISPs with unique wireless service capabilities, consumers with affordable broadband and equipment manufacturers and vendors with a mature product line.[34]

Neither the record nor the *R&O* presents sufficient reason to upset the *status quo* and perpetuate and accentuate the digital divide.

D. Failing to Reverse the Out-of-Band Emissions Rule Affects More than Just WISPs.

It is not only WISPs who rely on long-distance 5725-5850 GHz links. These links are also used in many industrial and critical infrastructure applications including:

- Electricity, gas, oil and water distribution and pipeline networks
- SCADA systems
- Gas and oil wells and drilling sites, including offshore oil well sites
- Water wells, pipelines, reservoirs, pump stations and wastewater treatment plants
- Electric utility grids, and
- Cell sites that sometimes use unlicensed 5 GHz links to deliver voice and broadband data.

On the governmental level, many local, State and Federal government networks rely on unlicensed 5725-5850 MHz equipment to deliver, maintain and administer multiple public services, including public safety services, not the least of which is video surveillance.

[34] *Id.* at 14-15 (emphasis in original).

The magnitude of the Commission's unnecessary decision to disrupt and destroy the operation of literally thousands of networks with hundreds of thousands of network nodes is almost unimaginable. If permitted to stand, the decision would needlessly obsolete over 9,000 different certified models of wireless equipment.[35] The capital expenditure cost to restore and replace these network operations is, conservatively, hundreds of millions of dollars. The time needed to design, fund, purchase, install, test and integrate these replacement networks could easily range from three to ten years. Regardless of whether the Commission's decision to obsolete hundreds of thousands of wireless network nodes is intentional or unintentional, the consequences to America's infrastructure would be catastrophic – and for no technical reason.

[35] *See* note 33, *supra*.

Conclusion

If permitted to stand, the Commission's unnecessary imposition of Section 15.407 out-of-band emission limits on equipment and operations in the 5725-5850 MHz band would have significant and severe consequences for rural Americans who rely on wireless connections in order to receive fixed broadband and critical infrastructure services. In making its decision despite the lack of any substantiating technical evidence in the record, the Commission apparently did not appreciate the magnitude of the harm that its decision would have. Accordingly, the Commission should reconsider its decision to apply the Section 15.407 emission limits to all equipment and instead preserve the ability of devices to be certified under the emission levels of Section 15.247.

Respectfully submitted,

WIRELESS INTERNET SERVICE PROVIDERS ASSOCIATION

June 2, 2014

By: *\/s/ Chuck Hogg, President*
\/s/ Alex Phillips, FCC Committee Chair
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