

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

In the Matter of)
)
Amendment of the Commission’s Rules with) GN Docket No. 12-354
Regard to Commercial Operations in the 3550-)
3650 MHz Band)

**OPPOSITION AND COMMENTS IN SUPPORT OF
PETITIONS FOR RECONSIDERATION OF
CTIA – THE WIRELESS ASSOCIATION®**

I. INTRODUCTION.

CTIA – The Wireless Association® (“CTIA”) submits the following Opposition to the Petition for Reconsideration filed by the Satellite Industry Association (“SIA”) and Comments in Support of the Petitions for Reconsideration filed by Motorola Solutions, Inc. and Jon M. Peha in the above-captioned proceeding.¹ The 3550-3700 MHz band (“3.5 GHz Band”) offers an important opportunity for innovative spectrum-based services. Establishing a licensing and regulatory framework that encourages providers to make the investments necessary to incorporate and deploy this spectrum into their networks will be key to unleashing this novel band’s potential.

To that end, the Commission should:

- Reject proposals by SIA that would unnecessarily limit out-of-band emissions (“OOBE”) limits and power levels and thereby significantly restrict wireless broadband in the 3.5 GHz Band;

¹ Petition for Reconsideration of Satellite Industry Association, WT Docket No. 12-354 (filed July 23, 2015) (“SIA Petition”); Petition for Reconsideration of Motorola Solutions, Inc., WT Docket No. 12-354 (filed July 23, 2015) (“Motorola Solutions Petition”); Petition for Reconsideration of Jon M. Peha, WT Docket No. 12-354 (filed July 23, 2015) (“Peha Petition”).

- Increase the OOB limits so that licensees operating 20 megahertz-wide LTE channels are not forced to engage in power backoff that diminishes operations in the band;
- Increase power limits to allow for meaningful indoor and outdoor coverage;
- Revise the policy to auction one less Priority Access License (“PAL”) than the total number of PALs applied for in a given census tract to avoid systematically phasing out PALs with each subsequent auction; and
- Issue PALs in census tracts with a single applicant.

In addition, CTIA reiterates that the Commission should adopt the other modifications identified in CTIA’s Petition for Reconsideration, including increasing the license terms for PALs to at least five years; adopting an expectation of license renewal so that the risk of stranded investment does not deter interest in the band; and specifying emission power measurements using a root mean square detector instead of a peak detector.² Taking the steps as outlined below and in CTIA’s Petition will help ensure that the wireless industry has the incentive and ability to invest in the 3.5 GHz Band.

II. THE EMISSION LIMITS ADOPTED IN THE ORDER ARE SUBSTANTIVELY SOUND AND PROCEDURALLY PROPER AND, IN FACT, SHOULD BE EXPANDED.

The OOB limits adopted in the Order are substantively and procedurally sound, contrary to SIA’s claims. The Commission should therefore reject SIA’s request to impose a -40 dBm/MHz emission limit above 3680 MHz. Indeed, as CTIA explained in its Petition for Reconsideration, the Commission should move to relax its emission limits for

² Petition for Reconsideration of CTIA – The Wireless Association®, WT Docket No. 12-354 (filed July 23, 2015) (“CTIA Petition”). As CTIA explained in its Petition, the Commission’s decision to use a peak detector, rather than the typically used root mean square detector, will “require all forms of LTE (and other technologies) to operate at substantially lower transmit power levels . . . effectively crippl[ing] the band’s ability to support mobile broadband operations.” *Id.* at 6-7.

20 megahertz-wide LTE channels because the rule as adopted will force devices on such channels to operate at roughly half power.

First, SIA claims that the OOB limits adopted in the Order threaten C-Band satellite operations in the 3700-3720 MHz band.³ However, these OOB limits – -13 dBm/MHz from 0-10 megahertz of the Spectrum Access System (“SAS”)-assigned channel edge; -25 dBm/MHz beyond 10 megahertz from the SAS-assigned channel edge down to 3530 MHz and up to 3720 MHz; and -40 dBm/MHz below 3530 MHz and above 3720 MHz – will not create interference risks. The existing Part 90 rules for wireless broadband operations in the 3650-3700 MHz band specify the less stringent -13 dBm/MHz OOB limit above 3700 MHz, and the Commission has stated that it is not aware of any related formal complaints filed by C-Band Fixed Satellite Service (“FSS”) operators, despite the fact there are 45,000 wireless broadband site locations.⁴ Nor does SIA present any evidence of complaints regarding 3650-3700 MHz wireless broadband operations. The Commission should retain the OOB limits adopted in the Order relative to emissions above 3700 MHz.

The OOB limits adopted in the Order are also procedurally sound. Contrary to SIA’s assertion,⁵ the FNPRM provided adequate notice that the Commission would extend OOB limits for the 3650-3700 MHz band. The OOB limits adopted in the Order are a logical outgrowth of the FNPRM. The Commission specifically sought comment on extending the Part 96 rules to the 3650-3700 MHz band, and the adoption of OOB limits to allow reasonable use

³ SIA Petition at 3-5.

⁴ *Amendment of the Commission’s Rules with Regard to Commercial Operations in the 3550-3650 MHz Band*, Report and Order and Second Further Notice of Proposed Rulemaking, 30 FCC Rcd 3959, 4047 ¶ 293 (2015) (“*3.5 GHz Order*” and “*3.5 GHz Second FNPRM*”) (“[T]he ‘standard’ emissions limit of $43 + 10 \log (P)$ dB, equivalent to -13 dBm/MHz, regulates emissions from the 3650-3700 MHz band into the C-Band. We are not aware of any formal complaints by C-Band FSS operators of harmful interference from over 45,000 wireless broadband site locations.”).

⁵ SIA Petition at 5-6.

of the 3650-3700 MHz band follows logically from that extension.⁶ Other parties recognized this logical outgrowth and commented on extending the OOB limits accordingly.⁷

Although the rules adopted in the Order are substantively and procedurally sound, the Commission should move to relax the emission limits for 20 megahertz-wide channels, as CTIA proposed, in order to enable more robust use of the 3.5 GHz Band.⁸ As adopted, the necessary power backoff for 20 megahertz-wide channels would cause coverage challenges and significantly diminish the utility of the band for wider channels with more throughput. This problem, moreover, applies throughout the 3.5 GHz Band and impacts both Priority Access and General Authorized Access (“GAA”) operations. Therefore, for 20 megahertz-wide channels in the 3.5 GHz Band, a limit of -13 dBm/MHz should apply from 0-20 megahertz outside the assigned channel edge and a limit of -25 dBm/MHz should apply to frequencies more than 20 megahertz outside each assigned channel edge.

The Commission also should revise the stringent OOB limits at the band edges which, as CTIA previously explained, are unnecessary to protect adjacent-band services. First, the Commission should remove the -40 dBm/MHz OOB limit below 3530 MHz and apply the revised channel edge limits identified above (-13 dBm/MHz limit from 3530-3550 MHz and -25 dBm/MHz below 3530 MHz). The Commission does not explain why incumbent systems operating within the 3.5 GHz Band can withstand the less stringent limits while those operating outside the band require the extremely stringent -40 dBm/MHz limit.⁹ This restrictive -40

⁶ *Amendment of the Commission’s Rules with Regard to Commercial Operations in the 3550-3650 MHz Band*, Further Notice of Proposed Rulemaking, 29 FCC Rcd 4273, 4323 ¶ 166 (2014).

⁷ *See, e.g.*, Reply Comments of Qualcomm, WT Docket No. 12-354 (filed Aug. 15, 2014).

⁸ CTIA Petition at 5-6.

⁹ *3.5 GHz Order* ¶ 189.

dBm/MHz OOB limit simply is not necessary to protect operations in the adjacent band below 3530 MHz and should be eliminated.

Second, although SIA has raised claims regarding the OOB limits above 3700 MHz, the Commission should closely review the opportunities for relaxing those limits. The Commission already is in the process of developing an interference protection regime pursuant to the Second Further Notice of Proposed Rulemaking with the goal of protecting incumbent operations while fostering Citizens Broadband Radio Service spectrum utilization.¹⁰

III. THE POWER LIMITS PERMITTED FOR NON-RURAL CATEGORY B CBSDS ARE REASONABLE AND, IN FACT, SHOULD BE EXPANDED.

As CTIA explained in its Petition for Reconsideration, increasing the power limits is important to deploying operations in the 3.5 GHz Band in an economically feasible manner, for both Priority Access licensees and GAA users.¹¹ The Wireless Innovation Forum, Motorola Solutions, Verizon, and Nokia Networks also filed Petitions for Reconsideration consistent with CTIA's request.¹² As Verizon explained in its Petition, "[b]y increasing the power limits in Section 96.41(b), the Commission can provide operators much-needed flexibility to engineer their small cell networks efficiently, reduce infrastructure costs, and leverage existing small cell infrastructure, while still keeping cell sizes below traditional macrocell levels."¹³

Specifically, the Commission should increase the conducted power limit to 30 dBm and the Equivalent Isotropically Radiated Power ("EIRP") limit to 36 dBm for Category A CBSDs to

¹⁰ 3.5 GHz Second FNPRM ¶¶ 443-445.

¹¹ CTIA Petition at 7-8.

¹² See generally Petition for Reconsideration of Wireless Innovation Forum, WT Docket No. 12-354 (filed July 23, 2015); Motorola Solutions Petition; Petition for Reconsideration of Verizon, WT Docket No. 12-354 (filed July 23, 2015); Petition for Reconsideration of Nokia Networks, WT Docket No. 12-354 (filed July 23, 2015).

¹³ Verizon Petition at 1.

allow for reasonable indoor coverage. The Commission also should increase the maximum EIRP to 49 dBm and the maximum conducted power to 40 dBm for Category B CBSDs in non-rural areas. The Commission should likewise increase the maximum conducted power for Category B CBSDs in rural areas to 40 dBm and increase the maximum EIRP to a total of 56 dBm.¹⁴ There is ample support in the record leading up to adoption of the Order for increasing the maximum EIRP limits.¹⁵ Moreover, SIA's Petition provides no support for its conclusory assertion that the EIRP for Category B CBSDs will increase the potential for interference to incumbent FSS operations.¹⁶ SIA's request should therefore be rejected.

IV. THE COMMISSION SHOULD ISSUE PALS IN CENSUS TRACTS WITH A SINGLE APPLICANT.

The FCC should not reject an entity's desire for a PAL just because no other party in the given census tract seeks a similar level of interference protection – *i.e.*, there is no mutual exclusivity. There are plenty of reasons why an entity would prefer a PAL and its associated interference protections. For example, a hospital might only be willing to use the 3.5 GHz Band if it could ensure the level of interference protection that a PAL provides. The Commission acknowledges in the Order that it has authority to assign PALs on a non-auctioned basis in license areas that have only a single applicant, and the Commission should adopt that approach.¹⁷ CTIA thus supports the Petitions for Reconsideration filed by Motorola Solutions and Jon M.

¹⁴ CTIA Petition at 7-8.

¹⁵ Reply Comments of AT&T at 21; Comments of Motorola Solutions at 5-6; Comments of Google at 25-26; Comments of Qualcomm at 13; Reply Comments of Qualcomm at 8-9; Comments of Verizon at 7-8.

¹⁶ SIA Petition at 6-7.

¹⁷ 3.5 GHz Order ¶¶ 136-137.

Peha to enable PAL licensing on a non-auctioned basis where there is just one applicant in a census tract.¹⁸

V. CONCLUSION.

For the reasons set forth above, the Commission should reject the amendments to the technical rules proposed in SIA's Petition for Reconsideration, and should instead adopt the proposals in CTIA's Petition for Reconsideration. Additionally, the Commission should reconsider its decision not to auction any PALs in a census tract with a single applicant, consistent with the petitions filed by CTIA, Motorola Solutions, and Jon M. Peha.

Respectfully submitted,

CTIA – THE WIRELESS ASSOCIATION®

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¹⁸ See generally Motorola Solutions Petition; Peha Petition; see also CTIA Petition at 4.

CERTIFICATE OF SERVICE

I, Marc D. Knox, hereby certify that on October 19, 2015, I caused a true and correct copy of the foregoing to be served by first-class mail and email on the following:

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