

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

In the Matter of	)	
	)	
Expanding the Economic and Innovation	)	GN Docket No. 12-268
Opportunities of Spectrum Through Incentive	)	
Auctions	)	

**REPLY COMMENTS OF FREE PRESS**

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## INTRODUCTION AND SUMMARY

The Commission properly recognized at the outset of this proceeding the substantial benefits generated by unlicensed uses of high quality spectrum. The initial comments demonstrated broad support for and consensus around these positions. There are variations in the value that parties place on unlicensed uses, as well as the amount of spectrum that they believe should be allocated to such uses. Congress clearly delegated the discretion to make such policy decisions to the Commission, however, and the Commission's proposed plan reflects a considered balancing of the competing spectrum demands of broadcasters; mobile carriers that use licensed spectrum; and the carriers, innovators and consumers that all benefit from unlicensed and shared uses in open spectrum.

Free Press urges the Commission to follow through on its commitment to preserving open spectrum for unlicensed uses. Congress granted the Commission ample authority in this regard, and there is substantial support for the Commission's recognition of the significant economic value and technological innovation generated by such uses. To balance competing demands for spectrum while also ensuring maximum protection for licensed operation, Free Press submits that the Commission should adopt sizable guard bands and a sizable duplex gap and reserve such spaces for unlicensed use.

In addition, Free Press reiterates its request for the Commission to assess spectrum acquisitions at auction by applying the rules of general applicability we proposed in the separate spectrum holdings proceeding. Free Press's proposed framework would promote competition and protect against excessive concentration of spectrum without precluding any bidder from auction participation.

**I. The Commission Should Set Aside Significant Guard Bands That Maximize the Amount of Usable Open Spectrum and the Benefits of Such Use.**

**A. There Is Broad Consensus About The Significant Value of Unlicensed Spectrum.**

The initial comments demonstrate that there is wide consensus concerning the value of open spectrum and suggest that the Commission should maintain its commitment to preserving such spectrum in the reconstituted 600 MHz and television bands. Comments filed by diverse and varied parties—including public interest organizations,<sup>1</sup> cable operators,<sup>2</sup> fixed wireless broadband providers,<sup>3</sup> companies producing wireless technologies,<sup>4</sup> and even mobile broadband carriers and manufacturers<sup>5</sup>—unanimously recognize the economic and technological benefits of unlicensed uses.

As outlined in our initial comments, those benefits stem from increased connectivity and consumer choice, increased economic productivity and technological innovation, and enhanced value of licensed spectrum.<sup>6</sup> Even mobile broadband providers

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<sup>1</sup> See, e.g., Comments of Public Interest Spectrum Coalition at 8-21; Comments of the Consumer Federation of America at 34-40; Letter from The Leadership Conference on Civil and Human Rights (filed Jan. 25, 2013).

<sup>2</sup> Comments of The National Cable & Telecommunications Association at 2-4 (“This increase in demand for Wi-Fi creates a corresponding need for additional unlicensed spectrum.... [I]t is important that the Commission pursue a balanced approach in the current proceeding that accommodates both licensed and unlicensed uses.... [L]ower frequency spectrum below 1 GHz has more favorable propagation characteristics, allowing for coverage across wider areas and inside buildings.”); Comments of Comcast Corporation and NBCUniversal Media, LLC at 29-46.

<sup>3</sup> Comments of the Wireless Internet Service Providers Association at 5-12.

<sup>4</sup> Comments of Google Inc. and Microsoft Corporation at 2-27.

<sup>5</sup> Comments of CTIA – The Wireless Association at 3.

<sup>6</sup> Comments of Free Press at 7-13; see also Comments of Google Inc. and Microsoft Corporation at 2 (noting that unlicensed space in the 600 MHz band “will promote economic growth, support innovation, and expand access to broadband,” and that the unique properties of sub-1-GHz spectrum are necessary for supporting expansion of cellular offload and for development of the “coming Internet of Things”); Comments of Comcast Corporation and NBCUniversal Media LLC at 29 (Services relying on unlicensed spectrum “have greatly benefitted consumers, created billions of dollars of

that rely on licensed spectrum are supportive of (or at least not opposed to<sup>7</sup>) preserving unlicensed spectrum in the reconstituted 600 MHz band: “Unlicensed services have played an important role in the provisions of wireless broadband service,” and mobile broadband providers have used “Wi-Fi offloading to improve network coverage and increase capacity for voice and data traffic.”<sup>8</sup> The extensive support for unlicensed spectrum voiced in the initial comments provide the Commission with the record it needs to fulfill its commitment to preserving open spectrum for unlicensed uses.

Although a few groups oppose use of guard bands for unlicensed devices,<sup>9</sup> the opinions held by these groups are outliers in this proceeding. Such opposition wrongly assumes that balancing different needs for spectrum must result in a zero-sum game. As recognized by Free Press and others,<sup>10</sup> however, the Commission can both accommodate demands for additional licensed mobile spectrum while also creating space for unlicensed use. Moreover, to the extent that the opposition to use of unlicensed devices in the guard bands rests on an assumption that such devices will interfere with licensed services,<sup>11</sup>

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economic value, supported thousands of jobs, and provided a platform for even more innovation and investment.”); Letter from The Leadership Conference on Civil and Human Rights at 7 (Unlicensed spectrum opens up opportunities “for entrepreneurs who have a hard time accessing capital, like many communities of color and women” because of such spectrum’s “low barriers to entry.”).

<sup>7</sup> Comments of AT&T Inc. at 22-23.

<sup>8</sup> Comments of CTIA – The Wireless Association at 3, 9.

<sup>9</sup> See Comments of Sony Electronics Inc. at 6; Comments of Telecommunications Industry Association at 12; Comments of Qualcomm Incorporated at 23.

<sup>10</sup> See, e.g., Comments of Free Press at 3-4; Comments of CTIA – The Wireless Association at 13 n.38; Comments of Google Inc. and Microsoft Corp. at 28-31; Comments of The National Cable and Telecommunications Association at 3-4.

<sup>11</sup> See Comments of Sony Electronics Inc. at 6 (arguing that no unlicensed devices should be permitted to operate in the guard bands due to potential interference with licensed uses); Comments of Telecommunications Industry Association at 12 (guard band should be licensed in order to hold licensee accountable for any interference to licensed

there is no technical support or analysis in the record supporting such claims. Significantly, groups that oppose unlicensed use of the guard bands based on concerns about potential harmful interference with licensed uses paint too broad a stroke where a more targeted solution could address any problems more efficiently. The rules and technical specifications governing use of unlicensed spectrum in the guard bands can be crafted in such a way so as to maximize unlicensed operations without causing actual harmful interference to licensed uses.<sup>12</sup>

**B. Consistent With The Authority Granted Under The Spectrum Act, the Commission Should Reserve the Guard Bands And Duplex Gap for Unlicensed Use.**

In the Spectrum Act that authorized the TV incentive auction, Congress expressly delegated authority to the Commission to set aside repurposed spectrum for unlicensed use.<sup>13</sup> Consistent with that authority, the Commission articulated in the *Notice* here its rationale for proposing such use. It recognized the important role that open spectrum plays in expanding connectivity and generating commercial activity, as well as the need to accommodate the growing demand for unlicensed spectrum.<sup>14</sup> The initial comments similarly acknowledge both the benefits of and the demand for open spectrum. In light of the broad consensus and agreement regarding the benefits of preserving open spectrum in the reconstituted 600 MHz band, the Commission should set aside the guard bands, including the duplex gap, for unlicensed use.

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users); Comments of Qualcomm Incorporated at 23 (white space devices should not operate in guard bands due to potential interference).

<sup>12</sup> See, e.g., Comments of AT&T Inc. at 22-23.

<sup>13</sup> Comments of Free Press at 3-4.

<sup>14</sup> In the Matter of Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions, *Notice of Proposed Rulemaking*, GN Docket No. 12-268, 27 FCC Rcd 12357, ¶¶ 228-31 (2012) (“*Notice*”).

The Spectrum Act authorizes the Commission to use “relinquished or other spectrum to implement band plans with guard bands” and to “permit the use of such guard bands for unlicensed use.”<sup>15</sup> Because a duplex gap serves as a type of guard band,<sup>16</sup> the Commission’s authority to set aside spectrum for unlicensed uses extends to any duplex gap adopted here. Although the Commission’s lead plan proposes placing broadcasters in the duplex gap between mobile wireless uplink and downlink frequencies, there is uniform opposition to this aspect of the lead proposal because parties claim it “will increase the risk of harmful interference against which current mobile device and base station filter technology cannot protect.”<sup>17</sup> Given the concerns posed by placing broadcasters in the duplex gap, the Commission should instead permit unlicensed devices to operate in the duplex gap because doing so benefits the economy, consumers, and licensees<sup>18</sup> while also “make[ing] productive use of otherwise unused spectrum.”<sup>19</sup>

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<sup>15</sup> Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112-96, §§ 6401 *et seq.*, 126 Stat. 222 (2012) (“Spectrum Act”) §§ 6407(a) & (c).

<sup>16</sup> A guard band “prevent[s] harmful interference between licensed services outside the guard bands.” *Id.* § 6407(b). A duplex gap is a type of guard band because it is the “required separation between uplink and downlink bands” to prevent interference between these licensed frequencies. *Notice* ¶ 166; *see also* Comments of Comcast Corporation and NBCUniversal Media, LLC at 44 (“This flexibility [of adopting technically reasonable guard bands] necessarily extends to the Commission’s considerations regarding the duplex gap between the uplink and downlink frequencies, as the duplex gap serves as a type of guard band.”); Comments of Google Inc. and Microsoft Corporation at 34-36 (determination of duplex gap size subject to technical reasonableness standard because the duplex gap, like a guard band, protects against interference).

<sup>17</sup> Comments of Verizon and Verizon Wireless at 19; *see also* Comments of The National Cable and Telecommunications Association at 8; Comments of AT&T Inc. at 24-26; Comments of T-Mobile USA, Inc. at 8

<sup>18</sup> Multiple groups advocate reserving the duplex gap for unlicensed uses. *E.g.*, Comments of Comments of The National Cable & Telecommunications Association at 7-10; Comments of Google Inc. and Microsoft Corporation at 31-37; Comments of Comcast Corporation and NBCUniversal Media, LLC at 44.

<sup>19</sup> Comments of CTIA – The Wireless Association at 3.

The Commission is well within its discretion to set aside guard bands, including the duplex gap, for unlicensed use. In the Spectrum Act, Congress granted the Commission the authority to balance the spectrum needs of broadcast, licensed mobile broadband, and unlicensed uses,<sup>20</sup> and the Commission's Notice reflects a considered analysis of the competing demands for spectrum. The primary objection lodged against use of guard bands for unlicensed devices rests on an unfounded concern for potential interference with licensed uses.<sup>21</sup>

In proposing to designate the guard bands for unlicensed use, the Commission recognizes the substantial innovation and economic growth generated by open spectrum. The Commission should follow through on its commitment to preserving open spectrum in the incentive auction process, recognizing the broad support for its proposals in the record.

## **II. The Commission Should Exercise Its Discretion To Adopt Sizable Guard Bands To Maximize Protection Against Interference And To Accommodate The Growing Demand For Unlicensed Spectrum.**

Under the Spectrum Act's "technically reasonable" standard, the Commission has broad discretion to determine the appropriate size of guard bands, including the duplex gap.<sup>22</sup> Ignoring the statutory language, some commentators attempt to impose a technically necessary standard,<sup>23</sup> a constraint on the Commission's discretion that cannot be found in the statute itself. Nevertheless, the statute's "technically reasonable" standard reflects broad delegation of discretion to the Commission in the determination of

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<sup>20</sup> Comments of Free Press at 3-4.

<sup>21</sup> *See supra* pp. 3-4.

<sup>22</sup> *See* Comments of Free Press at 5-7.

<sup>23</sup> *E.g.*, Comments of Telecommunications Industry Association at 9-10 (arguing that the Commission cannot expand the guard band "beyond that *necessary* to provide interference protection" (emphasis added)).

guard band size. The Commission is not required to ensure a precise fit between the size of the guard band and protection from interference. Because the Commission is held to a standard of reasonableness, its determination regarding guard band size will be upheld so long as the determination is not arbitrary or capricious.<sup>24</sup>

In fact, the initial comments set forth a large range of proposed sizes for the guard band and duplex gap, suggesting that the Commission will have wide latitude in determining the “technically reasonable” sizes. For example, commenters propose a duplex gap ranging anywhere from 10 MHz to 28 MHz<sup>25</sup> and a guard band between the downlink and broadcasters of more than 6 MHz to 10 MHz.<sup>26</sup> Many of the proposals incorporate a number of considerations, including expert technical analyses as well as experience in setting the size of guard bands in other spectrum.<sup>27</sup> And as the Commission itself has recognized, determining the appropriate size of a duplex gap requires consideration of a number of factors, including the width of the pass band (or the amount

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<sup>24</sup> See Comments of Free Press at 5-7; Comments of Google Inc. and Microsoft Corporation at 35-36; Comments of The National Cable & Telecommunications Association at 13-16.

<sup>25</sup> E.g., Comments of Comcast Corporation and NBCUniversal Media, LLC at 45-46 (20 MHz); Comments of Verizon and Verizon Wireless at 18 (“The gap must be at least 10 MHz (and possibly larger, depending on the overall band design.”); Comments of AT&T Inc. at 34 (10-12 MHz assuming no supplemental downlink in the duplex gap); Comments of Google Inc. and Microsoft Corporation at 37 (“A band plan with a duplex gap of 28 MHz is technically reasonable.”); Comments of CTIA – The Wireless Association at 28 (10 MHz “and possibly more”).

<sup>26</sup> Comments of Verizon and Verizon Wireless at 19-20 (10 MHz); Comments of AT&T Inc. at 20 (6 MHz proposed by Commission would be “insufficient to protect mobile broadband devices against downlink interference from a 1 MW TV station.”); Comments of Qualcomm Incorporated at ii (10 MHz); Comments of Google Inc. and Microsoft Corporation at 39-43 (more than 6 MHz, with remainder spectrum).

<sup>27</sup> See *supra* nn.25-26; Notice ¶ 167 & nn.248-49; *id.* ¶ 178 & n.262.

of spectrum that will be freed for licensed mobile broadband use) and the effectiveness of guard bands in other bands.<sup>28</sup>

Accordingly, determining a reasonable guard band size is not a precise science: there are many considerations that inform the determination and thus, there is a large range of “technically reasonable” guard band and duplex gap sizes that the Commission has discretion to adopt. Given the broad discretion granted to the Commission in this regard, Free Press urges the Commission to adopt a sizable guard band and duplex gap in order to maximize protection against interference and also provide a large and contiguous nationwide band suitable for robust unlicensed use.

### **III. The Commission Should Adopt and Apply Rules of General Applicability in the Mobile Spectrum Holdings Proceeding To Ensure That No One Carrier Captures a Disproportionate Amount of Auctioned Spectrum.**

Free Press urges the Commission to adopt the framework we proposed in the mobile spectrum holdings proceeding and to apply those measures to auctioned spectrum in this proceeding.<sup>29</sup> Our proposed framework, grounded in antitrust theory, advances the goals of promoting competition while avoiding excess concentration. Significantly, that framework addresses many of the concerns voiced in the initial comments, including ensuring maximum bidder eligibility<sup>30</sup> and differential valuation of sub-1-GHz spectrum holdings.<sup>31</sup> Accordingly, adopting Free Press’s proposed framework ensures that no one

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<sup>28</sup> Notice ¶ 167.

<sup>29</sup> See Comments of Free Press, WT Docket No. 12-269 (filed Nov. 28, 2012); Reply Comments of Free Press, WT Docket No. 12-269 (filed Jan. 7, 2013).

<sup>30</sup> Compare Comments of AT&T Inc. at 79-80 (arguing against *ex ante* limits on bidder eligibility, as a winning bidder “should be free to choose which spectrum it will divest to remedy the anticompetitive harm”), with Comments of Free Press in the instant proceeding at 15 n.44 (no restriction of bidder eligibility because application of the framework would not occur until *after* the auction).

<sup>31</sup> Compare Comments of Competitive Carriers Association at 2-3 (spectrum below 1 GHz considered “beachfront” spectrum because of its superior propagation

carrier captures a disproportionate amount of auctioned spectrum in this or any future proceeding, but without precluding bidder participation.

#### **IV. Conclusion**

Balancing the spectrum demands of broadcast, licensed mobile, and unlicensed uses is not a zero-sum game, as some commenters would suggest. The Commission's general plan reflects a considered approach to balancing these demands, and Free Press urges the Commission to follow through on its commitment to preserving open spectrum for unlicensed use. Not only did Congress delegate this balancing to the Commission, but there is also ample support for the need to preserve unlicensed spectrum as a platform for promoting innovation, expanding connectivity, and generating economic growth. The Commission should use its discretion to adopt a band plan that will maximize the value of auctioned spectrum while also preserving space for unlicensed use.

Respectfully submitted,

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characteristics), *with* Comments of Free Press, WT Docket No. 12-269, at 17 (filed Nov. 28, 2012) (“We urge the Commission to cap the amount of sub-1 GHz that any entity can control in a given local market, and suggest that 35 percent is an appropriate level for this cap [but] it [also] would not be unreasonable for the Commission to set a sub-1 GHz cap at 40 percent.”).