

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

In the Matter of	)	
	)	
	)	
Amendment of Parts 1, 2, 22, 24, 27, 90 and 95 of	)	WT Docket No. 10-4
the Commission's Rules to Improve Wireless	)	
Coverage Through the Use of Signal Boosters	)	

**COMMENTS OF AT&T SERVICES, INC.**

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**I. INTRODUCTION AND SUMMARY**

AT&T Services, Inc., on behalf of its affiliates, (“AT&T”) respectfully submits these comments in response to the *Second Further Notice of Proposed Rulemaking* (“*Second FNPRM*”) seeking comment on proposed alterations to the Commission’s rules governing Consumer Signal Boosters.<sup>1</sup> In particular, the Commission seeks to identify “ways to make Consumer Signal Boosters more widely useful and available.”<sup>2</sup> AT&T is committed to providing ubiquitous, high-quality wireless coverage to its subscribers, and recognizes that consumers and enterprises can benefit from the signal amplification provided by signal boosters. However, these devices – particularly when installed or used improperly – can interfere with wireless networks in a way that undermines the experience of other users. For this reason, the

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<sup>1</sup> *Amendment of Parts 1, 2, 22, 24, 27, 90 and 95 of the Commission’s Rules to Improve Wireless Coverage Through the Use of Signal Boosters*, Second Report and Order and Second Further Notice of Proposed Rulemaking, FCC 18-35 (2018) (“*Second FNPRM*”).

<sup>2</sup> *Id.* at n. 1.

Commission must exercise caution when adopting or modifying rules relating to signal boosters. AT&T looks forward to continued active participation in this effort.

In the *Second FNPRM*, the Commission seeks to build upon the regulatory framework for Consumer Signal Boosters it adopted in 2013. This framework required booster operators to obtain licensee consent and register their boosters before operating them and required booster manufacturers to comply with labeling requirements and the newly-adopted Network Protection Standard. However, despite the Commission's best efforts to prevent harmful interference caused by signal boosters, AT&T continues to devote significant resources to identifying interfering signal boosters and mitigating their effects. In the last 14 months, AT&T has had to investigate more than 1,100 instances of interference to its network that were ultimately determined to be caused by signal boosters. For this and other reasons,<sup>3</sup> it is difficult for AT&T to gauge the efficacy of the regulatory framework adopted in 2013.

Nonetheless, AT&T is committed to working with the Commission and stakeholders to promote an environment where consumers and enterprises can operate properly-designed and installed signal boosters in a manner that does not cause interference. To that end, AT&T submits that the unique interference environment in the 2.3 GHz band would make the use of boosters in Wireless Communications Service ("WCS") spectrum extremely challenging. Further, the Commission must strike a balance between enabling increased deployment of

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<sup>3</sup> The Commission's 2013 rulemaking did not outright prohibit the use of boosters that do not meet the Network Protection Standard, but instead only prohibited their manufacture, import, sale, and/or marketing. Furthermore, many boosters manufactured before the adoption of labeling requirements contained a FCC "authorization/certification" sticker loosely based on transmitter testing. For these reasons, there remain in operation many boosters that predated the adoption of the Network Protection Standard, and in cases where interference is caused by boosters, it is not always possible to differentiate compliant and non-compliant boosters.

embedded consumer signal boosters and managing their unique interference risks. Finally, the Commission should consider a centralized registration process to address the challenges associated with enterprise use of consumer signal boosters.

## **II. THE INTRODUCTION OF CONSUMER SIGNAL BOOSTERS COULD DISRUPT A DELICATE INTERFERENCE ENVIRONMENT IN 2.3 GHZ SPECTRUM.**

As part of its efforts to “enhance the usefulness of signal boosters,” the Commission has proposed to authorize the operation of Consumer Signal Boosters in, among other commercial bands,<sup>4</sup> the WCS band at 2305-2320 MHz and 2345-2360 MHz.<sup>5</sup> The Commission correctly acknowledges that key considerations in authorizing new spectrum bands for Consumer Signal Booster use are whether licensees consent to such operation and whether other users in the band or adjacent bands would be harmed.<sup>6</sup>

There are a number of issues associated with permitting Consumer Signal Boosters to operate in the WCS bands. First, this band is immediately adjacent to satellite and aeronautical telemetry uses. To enable the use of WCS for mobile services alongside uses with such ultra-sensitive receivers, special rules were devised for WCS regarding power levels and emissions masks, and mobile use was prohibited altogether in the C and D Blocks.<sup>7</sup> Moreover, WCS licensees must coordinate the deployment of all base and fixed stations with SiriusXM, AMT

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<sup>4</sup> As the Commission notes in the *Second FNPRM*, consideration of additional spectrum bands in this proceeding is limited to commercial spectrum, rather than spectrum specifically designated for public safety or other uses. *Second FNPRM* at ¶ 20.

<sup>5</sup> *Id.* at ¶ 24.

<sup>6</sup> *Id.* at ¶ 22.

<sup>7</sup> *Amendment of Part 27 of the Commission’s Rules to Govern the Operation of Wireless Communications Services in the 2.3 GHz Band*, Order on Reconsideration, FCC 12-130 (2012).

licensees, and NASA.<sup>8</sup> Even if boosters were constructed to comply with the power and out of band emissions limits, it would likely threaten this delicate spectrum sharing environment to allow the deployment of Consumer Signal Boosters in the band. It simply makes no sense to allow non-licensees to turn up a booster to amplify a signal in a band where available signal level in the area may have been limited as a result of painstaking coordination between licensees.

### **III. ANY NEW RULES REGARDING EMBEDDED CONSUMER SIGNAL BOOSTERS SHOULD REFLECT THE UNIQUE CHALLENGES THEY POSE.**

In seeking comment on rule changes related to embedded Consumer Signal Boosters, the Commission rightfully acknowledges that these boosters pose their own unique challenges. A consumer who purchases a car, boat, or other vehicle with an embedded signal booster will not be able to see the booster itself, nor will they receive the booster's original packaging. In the *Second FNPRM*, the Commission states that this fact makes compliance with the labeling requirements for signal boosters essentially impossible.<sup>9</sup> AT&T agrees with the Commission that there should be a regime that will enable manufacturers of embedded signal boosters to comply with applicable labeling requirements. However, new rules in this area need to be carefully crafted to protect against the unique challenges and potential harms associated with embedded signal boosters.

To facilitate compliance with labeling requirements, the Commission proposes an “alternative advisory” requirement,” where vehicle manufacturers, distributors, and retailers of embedded Consumer Signal Boosters would be required to provide an alternative advisory in

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<sup>8</sup> 47 C.F.R. § 27.73.

<sup>9</sup> *Second FNPRM* at ¶ 26.

materials provided at vehicle delivery and registration.<sup>10</sup> They would remain responsible for ensuring that the alternative advisory is provided in any online, point-of-sale marketing materials and in any print or online owners' manual.<sup>11</sup> The advisory would include all the same warnings to consumers, including the registration requirement, plus the advisory would be required to contain simple instructions for how to disable the device.<sup>12</sup>

While the “alternative advisory” approach should assist consumers in taking the steps necessary to comply with licensee consent and registration requirements, there is a significant risk that the alternative advisory will become separated from the booster itself, thus making it harder to track the booster once it is removed from a vehicle and/or the vehicle changes hands. For example, the Commission notes the challenges associated with secondary market sales of cars with embedded boosters.<sup>13</sup> Further, a consumer may remove (or pay a mechanic to remove) an embedded booster from their vehicle for purposes of upgrading to a new booster, then sell the old one. The purchaser of the booster likely would not receive the alternative advisory. To protect against harms associated with removing an embedded booster from a vehicle and re-using it in another context, the Commission should retain its requirement that the booster itself

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<sup>10</sup> *Id.* at ¶¶ 29-30.

<sup>11</sup> *Id.* at ¶ 29.

<sup>12</sup> *Id.* at ¶ 30.

<sup>13</sup> *Id.* at ¶ 32 (“In addition, how can we address the situation where a vehicle owner who has complied with all obligations associated with the embedded Consumer Signal Booster in his vehicle sells the vehicle to a third party in a private transaction? Would a new signal booster registration be required for this new user? How can we ensure that the new owner will satisfy the requirements for signal booster operation? What would be the responsibilities of a manufacturer, distributor, and/or retailer that has complied with all of its associated obligations for the original sale in such a scenario?”).

be labeled, even for embedded boosters that may not be visible when a consumer first acquires it. Similarly, the Commission could consider a requirement that the vehicle itself contain a label. And, importantly, any printed materials must prominently explain how to shut down the booster if it is causing harmful interference, and that the buyer should be on notice that they may receive such a request.

To encourage compliance with applicable registration requirements, the Commission should consider applying its rules regarding registration to manufacturers or automobile dealers, not consumers. Unlike when a consumer is purchasing a stand-alone signal booster, a consumer purchasing a vehicle with an embedded booster will be overwhelmed with other logistical considerations associated with purchasing a vehicle and may be less likely to comply with registration requirements. And yet, the complications inherent in operating an embedded, mobile booster make device registration all the more important in this context. To facilitate the registration process, stakeholders could develop something similar to the portal employed by SiriusXM to enable car dealers to associate consumer information with factory-activated in-vehicle satellite radios.<sup>14</sup>

Finally, and as the Commission notes, one key consideration is how its proposed rules would apply to parties that have sought and received waivers of the labeling requirement with respect to embedded signal boosters.<sup>15</sup> AT&T agrees with the Commission that these entities should be required to transition to any new regulatory framework adopted with respect to

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<sup>14</sup> SiriusXM Automotive Dealer Portal, at <https://www.siriusxmdealer.com/> (last visited May 7, 2018).

<sup>15</sup> *Second FNPRM* at ¶ 33.



embedded boosters and should be required to do so promptly after adoption of any new rules.<sup>16</sup> Because the justification for these waivers – the lack of a regulatory framework for embedded Consumer Signal Boosters – will extinguish upon the adoption of formal rules, to promote uniformity and fairness those parties who have received waivers should transition to the Commission’s new rules as quickly as possible.

#### **IV. CHALLENGES ASSOCIATED WITH ENTERPRISE USE OF SIGNAL BOOSTERS REQUIRE A ONE STEP, CENTRALIZED REGISTRATION PROCESS.**

If the Commission adopts its proposal to enable widespread use of wideband Consumer Signal Boosters in homes and businesses, it also should adopt clear registration requirements that are easily complied with. Widespread compliance with registration requirements is important because registration is “a key element in providers’ ability to control the devices that operate on their network” and registration “will assist providers in locating problematic boosters in the event interference occurs and will facilitate consumer outreach.”<sup>17</sup> The Commission proposes a variety of rule changes that would enable and obligate users of wideband Consumer Signal Boosters to prepare and submit multiple registrations for a single booster. Specifically, the Commission proposes to make it easier for enterprises to operate wideband Consumer Signal Boosters, and as part of this effort proposes to eliminate the “subscriber relationship” requirement for registering a wideband Consumer Signal Booster.<sup>18</sup> As the Commission notes in

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<sup>16</sup> *Id.*

<sup>17</sup> *Amendment of Parts 1, 2, 22, 24, 27, 90 and 95 of the Commission’s Rules to Improve Wireless Coverage Through the Use of Signal Boosters*, Report and Order, 28 FCC Rcd 1663, ¶ 35 (2013).

<sup>18</sup> *Second FNPRM* at ¶ 46.

the *Second FNPRM*, this will enable consumers and/or enterprise users to comply with the registration requirement for carriers other than their own.<sup>19</sup> The Commission envisions a framework under which wireless carriers would enter into “arrangements” with non-subscriber users that would “serve as a substitute for the subscriber relationship while retaining the consent and registration requirements of [the Commission’s] framework.”<sup>20</sup>

While AT&T agrees that the registration of Consumer Signal Boosters is critically important, it is skeptical that the Commission’s proposed framework will lead to widespread compliance. As it is, many consumers are not in the habit of registering appliances or other products, and many consumers associate the product registration process with an onslaught of additional, unwelcome marketing.<sup>21</sup> Obviously the fact that registration is required by FCC rules makes registering a Consumer Signal Booster a fundamentally different process than, for example, registering a blender. Nonetheless, the Commission should make the process of complying with registration process as simple as possible for consumers, as this will make them more likely to comply. For this reason, AT&T favors a one-stop, centralized registration system that would enable manufacturers or users of wideband Consumer Signal Boosters to submit a single registration.

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<sup>19</sup> *Id.* at ¶ 44.

<sup>20</sup> *Id.* at ¶ 46.

<sup>21</sup> *See, e.g., Should You Register That New Product? Product-Registration Cards—and the Info You Put on Them—Aren’t Always Needed for Warranty Coverage*, Consumer Reports (Feb. 2014), available at <https://www.consumerreports.org/cro/2013/12/do-you-need-to-register-new-products-you-buy/index.htm> (“Nevertheless, many products include registration cards harvesting personal information that companies then sell to marketers. The companies get money; you get peppered with spam and sales pitches.”).

**A. The Commission’s Proposed Rules Would Make Compliance Highly Burdensome and Therefore Unlikely.**

While it is true that eliminating the subscriber relationship requirement will make it *possible* for users to fully comply with the Commission’s licensee consent and registration requirements, the effect of such a rule change would make compliance more burdensome and, therefore, less likely. Implicit in the Commission’s consideration of this proposal is the notion that the individual responsible for registering a wideband Consumer Signal Booster will be able to identify all of the carriers operating on the booster’s covered frequencies and complete the registration process for all of the carriers operating on those bands. AT&T is skeptical that all – or even most – users of wideband Consumer Signal Boosters will successfully complete these steps, even if the Commission develops a consumer-friendly means of allowing consumers to identify the carriers with whom they are required to register.<sup>22</sup> According to the Commission’s most recent Mobile Wireless Competition Report, approximately 93 percent of the United States population is covered by at least four service providers.<sup>23</sup> This means that 93 percent of wideband Consumer Signal Booster users will need to complete *four or more* registration processes to comply with the Commission’s rules. What is more, the Commission has not addressed how this process would work in instances where a new carrier begins to offer service in a particular user’s market months or years after a booster has been purchased and registered.

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<sup>22</sup> The Commission has suggested in the *Second FNPRM* that it could create a new website that would assist booster users in determining which carriers they must register with. *Second FNPRM* at ¶ 50. To the extent the Commission leaves it to consumers to identify all carriers with whom they must register, any elimination of the subscriber relationship requirement must not take effect until this website has been fully deployed.

<sup>23</sup> *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services*, Twentieth Report, FCC 17-126, ¶ 74 (2017).

The challenges associated with the Commission's proposal are amplified for mobile signal boosters. In the *Second FNPRM*, the Commission asks whether it should require mobile wideband consumer signal boosters to be registered with all providers potentially in range of the booster.<sup>24</sup> While AT&T agrees with this requirement in theory, it believes that compliance would be even less likely than it would be with a fixed wideband Consumer Signal Booster because in this case, the user would not only be required to take all the same steps as in the fixed booster context, they would also be required to predict with accuracy where the booster may travel and comply with the registration requirements for all of those markets.

**B. The Commission Can Simplify the Registration Process and Facilitate Compliance by Deploying a Centralized System.**

AT&T believes the Commission can best promote its twin objectives of enabling wideband Consumer Signal Booster use and maximizing compliance with registration requirements by adopting a centralized, one-step registration system for wideband Consumer Signal Boosters. The Commission could accomplish this either by extending its Class B signal booster registration process to wideband Consumer Signal Boosters, or otherwise adopting a centralized process. In so doing, the Commission will create a unified registration system through which users of wideband Consumer Signal Boosters need only fill out a single form, rather than register with each individual carrier. Such a system would best meet the needs of consumers and carriers alike.

AT&T envisions a system where materials packaged with wideband Consumer Signal Boosters would direct purchasers to a single website to register their product. This website should be hosted by the Commission or, in the alternative, be maintained by manufacturers of

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<sup>24</sup> *Second FNPRM* at ¶ 51.

signal boosters (as they would be the primary beneficiaries of such a portal). Rather than require the consumer to research which wireless providers are operating in their area, the registration system would take relevant information from the purchaser such as the product serial number, model number, where the booster is to be operated, contact information for a responsible person, and whether the booster is mobile. The website would also contain a login function for wireless licensees that would permit them to research all boosters registered and operating in their licensed footprint and on their licensed spectrum. This would provide carriers with the information needed to diagnose and respond to instances of interference, while eliminating the need for purchasers to conduct research and register the booster multiple times. While the creation of this system would require the expenditure of Commission resources, AT&T submits that the construction of this site would not be significantly more complicated than the one the Commission has already contemplated for consumer use.<sup>25</sup>

Circumstances have changed significantly since the Commission considered and rejected a centralized registration database in 2013, and these changed circumstances support the adoption of a centralized database. In the Commission's initial *Order*, it touted the benefits of a provider-based registration system, benefits that would not apply when the provider in question does not have a subscriber relationship with the registrant. Specifically, the Commission stated that "this is consistent with the way consumers contact their providers to initiate service for

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<sup>25</sup> In the *Second FNPRM*, the Commission describes the proposed website as containing "tools so that a Consumer Signal Booster purchaser/operator could determine whether it needed to register with only one, or with multiple providers and to assist the purchaser/operator in identifying which providers might be within range of the signal booster when operated." *Second FNPRM* at ¶ 50. It appears that what the Commission proposes is a modified version of its Universal Licensing System through which consumers could obtain information on the carriers authorized to operate in the area based on the input of certain location information.

handsets and other devices.”<sup>26</sup> However, if the consumer is required to register a single booster with multiple providers, several of which it had no previous relationship with and which the consumer may not even know will be affected by their booster, this is decidedly *not* consistent with how consumers typically interact with wireless carriers.

Further, the arguments made by the Commission in favor of a centralized registration database for Class B signal boosters also support the adoption of such a system for wideband Consumer Signal Boosters, particularly if the subscriber relationship requirement is eliminated. In establishing a centralized registration system for Class B boosters but not Consumer Signal Boosters, the Commission stated that “an FCC-based system provides licensees with access to information necessary to resolve interference, a licensee-based system would not sufficiently aggregate such information.”<sup>27</sup> While this logic favors a centralized registration database as a general matter, it is particularly important for wideband Consumer Signal Boosters in the absence of a subscriber relationship requirement.

In light of the significant rule changes the Commission proposes to make in this proceeding, a re-examination of the registration process for Consumer Signal Boosters is warranted. Indeed, then-Commissioner Pai noted in his statement to the 2013 *Order* that “the Commission should keep close tabs on how well the registration mechanism works,” supporting

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<sup>26</sup> *Amendment of Parts 1, 2, 22, 24, 27, 90 and 95 of the Commission’s Rules to Improve Wireless Coverage Through the Use of Signal Boosters*, Report and Order, 28 FCC Rcd 1663, ¶ 96 (2013). *See also id.* at ¶ 164 (“Wireless providers have an established relationship with their subscribers and are well-accustomed to obtaining, retaining, and managing information from their subscribers. Subscribers are familiar with the process of contacting their providers regarding their wireless devices, e.g., initializing and upgrading handsets. Further, a provider-based system places necessary information in the hands of wireless providers who are responsible for resolving interference on their networks.”).

<sup>27</sup> *Id.* at ¶ 164.

a 2016 re-examination of the registration requirement.<sup>28</sup> While the Commission did open a comment cycle to collect information on, among other things, the efficacy of registration requirements, no further action was taken.<sup>29</sup> AT&T believes that this proceeding and the Commission's specific proposals provide an opportunity to revisit the registration requirements for signal boosters. If this proceeding achieves the Commission's stated goal – expanding the use of Consumer Signal Boosters – it will be all the more important that the Commission adopt a means of registration that promotes compliance to the fullest extent possible.

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<sup>28</sup> *Id.* at Statement of Commissioner Ajit Pai (“[T]he Commission should keep close tabs on how well the registration mechanism works. Are most boosters that are sold actually being registered? Is the registration system collecting enough information to make it easier for both the Commission and carriers to resolve interference issues? These are just some of the questions that we will need to ask, and I am pleased that my colleagues agreed to the suggestion that I made along with Commissioner McDowell to review our registration requirements in 2016.”).

<sup>29</sup> *Wireless Telecommunications Bureau Seeks Comment on the Current State of Consumer Signal Boosters*, Public Notice, 31 FCC Rcd 1748 (WTB 2016).

## V. CONCLUSION

For the foregoing reasons, AT&T respectfully requests that the Commission: (1) proceed carefully in considering new bands for Consumer Signal Boosters, (2) adopt rules for embedded Consumer Signal Boosters that encourage responsible operation by consumers, and (3) simplify as much as possible the process of registering a wideband Consumer Signal Booster. Wireless carriers work tirelessly to ensure network quality and high-performing, interference-free service for their subscribers. While signal boosters can play an important role in enhancing consumers' experience, the Commission should proceed carefully and avoid upsetting the careful balance it struck with its booster rules.

Respectfully Submitted,

/s/ Jessica B. Lyons

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