



Federal Communications Commission  
Washington, D.C. 20554

August 16, 2023

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Re: Requests for Waiver of 5.9 GHz Band Rules to Permit Initial Deployment of Cellular Vehicle-to-Everything Technology, ET Docket No. 19-138

Dear Petitioners:

We, the Public Safety and Homeland Security Bureau, the Office of Engineering and Technology, and the Wireless Telecommunications Bureau (collectively, the Bureaus) have before us seventeen individual waiver requests submitted by certain state, local, and municipal transportation authorities including the Colorado, Florida, Georgia, Hawaii, Maryland, Michigan, Nebraska, New Jersey, Ohio, Oregon, Texas, and Wyoming state departments of transportation, the City and County of Denver, the Macomb County Department of Roads, and the Regents of the University of Michigan, and two equipment manufacturers, Sonamore, Inc. d/b/a P3Mobility and Connex2X, LLC (collectively, the “Waiver Applicants” or “Applicants”).<sup>1</sup> For the reasons stated below, and subject to the technical parameters and conditions set forth herein, the Bureaus grant each of the Applicants’ waiver requests to deploy Cellular Vehicle-to-Everything (C-V2X) technology within the 5.895–5.925 GHz band.

## **I. Background**

Each Waiver Applicant<sup>2</sup> seeks a waiver of certain Commission rules applicable to intelligent transportation systems (ITS) operations to allow C-V2X technology to be used in the upper 30 megahertz

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<sup>1</sup> See Appendix A: List of Waiver Petitions/Applicants, attached hereto.

<sup>2</sup> Hereafter, individual waiver requests and supplemental requests, as referenced in Appendix A, will be referred to as follows: (1) state, local, and municipal transportation authorities for Colorado (*CDOT Waiver Request* or *CDOT Waiver Supplement*), Florida (*FDOT Waiver Request* or *FDOT Waiver Supplement*), Georgia (*GDOT Waiver Request* or *GDOT Waiver Supplement*), Hawaii (*HDOT Waiver Request* or *HDOT Waiver Supplement*), Maryland

(5.895–5.925 GHz) portion of the 5.850–5.925 GHz Band (5.9 GHz band) prior to adoption of final C-V2X-based rules.<sup>3</sup> The C-V2X equipment subject to the Waiver Requests would operate in the 5905–5925 MHz portion of the 5.9 GHz band using a 20-megahertz channel.

*Waiver Requests.* Several Applicants seek a waiver of 47 CFR § 2.106(d)(160)<sup>4</sup> to allow the 5.905–5.925 GHz band to be used for C-V2X safety systems operating in the Intelligent Transportation System radio service.<sup>5</sup> Each Applicant also seeks a waiver of certain part 90 and part 95 rules<sup>6</sup> (47 CFR §§ 90.375, 90.377, 90.379, 95.3159,<sup>7</sup> 95.3163, 95.3167, and 95.3189)<sup>8</sup> governing the operation of Dedicated Short Range Communication (DSRC) based roadside units (RSUs) and on-board units (OBUs) in the upper 30 megahertz of the 5.9 GHz band.

Each Waiver Applicant requests relief pursuant to section 1.925 of the Commission’s rules.<sup>9</sup> Specifically, the state, local, and municipal transportation departments listed in Appendix A seek certain

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State Highway Administration (*SHA Waiver Request* or *SHA Waiver Supplement*), Michigan (*MIDOT Waiver Request* or *MIDOT Waiver Supplement*), Nebraska (*NDOT Waiver Request* or *NDOT Waiver Supplement*), New Jersey (*NJDOT Waiver Request* or *NJDOT Waiver Supplement*), Ohio (*DriveOhio Waiver Request* or *DriveOhio Waiver Supplement*), Oregon (*ODOT Waiver Request* or *ODOT Waiver Supplement*), Texas (*TXDOT Waiver Request* or *TXDOT Waiver Supplement*), and Wyoming (*WYDOT Waiver Request* or *WYDOT Waiver Supplement*), the City and County of Denver (*CCD Waiver Request* or *CCD Waiver Supplement*), Macomb County (*MCDOR Waiver Request*), and the Regents of the University of Michigan (*Regents UofM Waiver Request* or *Regents UofM Waiver Supplement*); and (2) equipment manufacturers, Sonamore, Inc. d/b/a P3Mobility (*P3Mobility Waiver Request* or *P3Mobility Waiver Supplement*), and Connex2X, LLC (*Connex2X Waiver Request* or *Connex2X Waiver Supplement*).

<sup>3</sup> See, e.g., *CDOT Waiver Request* at 1; *FDOT Waiver Request* at 1; *GDOT Waiver Request* at 2; *HDOT Waiver Request* at 1; *SHA Waiver Request* at 1; *MIDOT Waiver Request* at 1; *NDOT Waiver Request* at 1; *NJDOT Waiver Request* at 1; *DriveOhio Waiver Request* at 1; *ODOT Waiver Request* at 2; *TXDOT Waiver Request* at 1; *WDYOT Waiver Request* at 1; *CCD Waiver Request* at 1; *MCDOR Waiver Request* at 1; *Regents UofM Waiver Request* at 1; *P3Mobility Waiver Request* at 1; and *Connex2X Waiver Request* at 1.

<sup>4</sup> “In the band 5895–5925 MHz, the use of the non-federal mobile service is limited to operations in the Intelligent Transportation Systems radio service.” 47 CFR § 2.106(d)(160). As the Bureaus previously noted in the Joint Waiver Order, section 2.106 merely limits operations in the upper 30 megahertz of the 5.9 GHz band to ITS services, so such a waiver is unnecessary. See Joint Waiver Order at 5. None of the Waiver Applicants contemplates deploying non-ITS operations in the upper 30 megahertz of the 5.9 GHz band. Therefore, the requests for a waiver of this provision are dismissed as moot.

<sup>5</sup> See, e.g., *CDOT Waiver Request* at 1–2; *GDOT Waiver Request* at 2; *HDOT Waiver Request* at 1–2; *MIDOT Waiver Request* at 1; *NDOT Waiver Request* at 1; *NJDOT Waiver Request* at 1–2; *DriveOhio Waiver Request* at 2; *ODOT Waiver Request* at 2; *TXDOT Waiver Request* at 1–2; *WYDOT Waiver Request* at 1; *CCD Waiver Request* at 2; *MCDOR Waiver Request* at 1; *Regents UofM Waiver Request* at 2; and *P3Mobility Waiver Request* at 1

<sup>6</sup> See, e.g., *CDOT Waiver Request* at 1, footnote 2; *HDOT Waiver Request* at 1, fn.2; *SHA Waiver Request* at 1; *MIDOT Waiver Request* at 1; *NDOT Waiver Request* at 1, fn. 2; *NJDOT Waiver Request* at 1, fn. 2; *DriveOhio Waiver Request* at 1, fn. 2; *TXDOT Waiver Request* at 1, fn. 2; *WYDOT Waiver Request* at 1, fn. 2; *CCD Waiver Request* at 1, fn. 2; *MCDOR Waiver Request* at 1–2; *Regents UofM Waiver Request* at 1, fn. 2; and *P3Mobility Waiver Request* at 1, fn. 2.

<sup>7</sup> 47 CFR § 95.3159 is a reserved section and does not presently contain any regulatory information. Thus, we dismiss this aspect of each of the waiver requests where it is made as moot.

<sup>8</sup> See 47 CFR §§ 90.375, 90.377, 90.379, 95.3163, 95.3167, and 95.3189.

<sup>9</sup> 47 CFR § 1.925.

rule waivers under section 1.925 to deploy C-V2X operations, including RSUs and OBUs, within and throughout their respective state and/or local borders, under the FCC ITS licenses each currently holds.<sup>10</sup> The equipment manufacturers listed in Appendix A (P3Mobility and Connex2X) seek certain rule waivers under section 1.925 to allow them to obtain the necessary equipment certifications for their C-V2X equipment.<sup>11</sup>

*Joint Waiver Order.* On December 13, 2021, a group of public and private transportation stakeholders requested a waiver of the Commission's DSRC-based rules to allow them to use C-V2X technology in the upper 30 megahertz of the 5.9 GHz band prior to adoption of final C-V2X-based rules.<sup>12</sup> The *Joint Waiver Request* stated that the C-V2X equipment subject to the request would operate in the 5905–5925 MHz portion of the 5.9 GHz band using a 20-megahertz channel.<sup>13</sup> On April 24, 2023, the Bureaus granted the *Joint Waiver Request*.<sup>14</sup> The Bureaus conditioned the waiver grant on certain technical and operational parameters set forth in the *Joint Waiver Order*<sup>15</sup> and further modified those conditions by our *Waiver Modification Order* on July 5, 2023.<sup>16</sup>

In supplemental filings to each of the Waiver Applicants' initial waiver requests, the Waiver Applicants request that the Bureaus grant their waivers under the same grant conditions specified in the C-V2X *Joint Waiver Order*, as modified.<sup>17</sup>

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<sup>10</sup> See, e.g., *CDOT Waiver Request* at 2–4 (WRAD253); *FDOT Waiver Request* at 1 (WQBS407); *GDOT Waiver Request* at 1–2 (WRAT914); *HDOT Waiver Request* at 2 (WRFF452); *SHA Waiver Request* at 1 (WRKJ514); *MIDOT Waiver Request* at 2–4 (WQXH871); *NDOT Waiver Request* at 2 (WRFE774); *NJDOT Waiver Request* at 1 (WRFR820); *DriveOhio Waiver Request* at 1 (WRAP237 and WRAT821); *ODOT Waiver Request* at 2 (WRDH882); *TXDOT Waiver Request* at 2–3 (WQBT282); *WYDOT Waiver Request* at 1–2 (WQCU203); *CCD Waiver Supplement* at 1 (WQZJ501); *MCDOR Waiver Request* at 2–3 (WRFI757); and *Regents UofM Waiver Request* at 2–3 (WRDT311).

<sup>11</sup> See *P3Mobility Waiver Request* at 1–3; *Connex2X Waiver Request* at 1–2.

<sup>12</sup> See *Request for Waiver of 5.9 GHz Band Rules to Permit Initial Deployments of Cellular Vehicle-to-Everything Technology*, Ford Motor Company, et al., ET Docket No. 19-138, Appendix 1 at 10–11 (filed Dec. 13, 2021) (*Joint Waiver Request*), [https://www.fcc.gov/ecfs/file/download/DOC-5f6d7d2ef3400000-A.pdf?file\\_name=C-V2X%20Waiver%20Request%2012%2013%202021.pdf](https://www.fcc.gov/ecfs/file/download/DOC-5f6d7d2ef3400000-A.pdf?file_name=C-V2X%20Waiver%20Request%2012%2013%202021.pdf); see also Letter from the C-V2X *Joint Waiver Parties* to Marlene H. Dortch, Secretary, FCC, ET Docket No. 19-138, at 3 (filed Apr. 20, 2022) (*Joint Waiver Request Supplement*), <https://www.fcc.gov/ecfs/document/104201266008794/1>.

<sup>13</sup> *Joint Waiver Request* Appendix 1 at 10–11; *Joint Waiver Request Supplement* at 3.

<sup>14</sup> See *Request for Waiver of 5.9 GHz Band to Permit Initial Deployment of Cellular Vehicle-to-Everything Technology*, Order, ET Docket No. 19-138, DA 23-343 (rel. Apr. 24, 2023) (*Joint Waiver Order*). The Bureaus waived sections 90.375, 90.377, 90.379, 95.3163, 95.3167, and 95.3189 of the Commission's rules, 47 CFR §§ 90.375, 90.377, 90.379, 95.3163, 95.3167, and 95.3189. See *Joint Waiver Order* at 10–11.

<sup>15</sup> *Joint Waiver Order* at 10–11.

<sup>16</sup> See *Request to Modify April 24, 2023 Waiver Order of 5.9 GHz Band Rules to Permit Initial Deployment of Cellular Vehicle-to-Everything Technology*, Order, ET Docket No. 19-138, DA 23-586 (rel. Jul. 5, 2023) (“*Waiver Modification Order*”) (removing the 20 dBm Transmitter Output Power Limit for OBUs from the technical requirements placed on the waiver grant).

<sup>17</sup> See *CDOT Waiver Supplement* at 2; *FDOT Waiver Supplement* at 1; *GDOT Waiver Supplement* at 2; *HDOT Waiver Supplement* at 1; *SHA Waiver Supplement* at 2; *MIDOT Waiver Supplement* at 1; *NDOT Waiver Supplement* at 1; *NJDOT Waiver Supplement* at 1–2; *DriveOhio Waiver Supplement* at 1; *ODOT Waiver Supplement* at 1;

For the reasons stated below, the Bureaus grant each Applicant's waiver request to deploy C-V2X technology in the upper 30 megahertz of the 5.9 GHz band, pending adoption of final C-V2X-based rules, subject to the technical parameters and conditions set forth below, which are consistent with the technical parameters and conditions set forth in the April 24, 2023 Joint Waiver Order,<sup>18</sup> as modified by the July 5, 2023 Waiver Modification Order.<sup>19</sup>

## II. DISCUSSION

### A. Waiver Standard

The Applicants seek waivers pursuant to section 1.925 of the Commission's rules. Section 1.925 states that the agency may grant a waiver if it is shown that the underlying purpose of the rule at issue would not be served or would be frustrated by application to the instant case, and a grant would be in the public interest, or where, "in view of unique or unusual factual circumstances," application of the rule would be inequitable, unduly burdensome or contrary to the public interest, or the applicant has no reasonable alternative.<sup>20</sup> In addition, section 1.3 provides that the Commission may waive any provision of its rules on its own motion for good cause.<sup>21</sup>

Specifically, each of the Waiver Applicants seeks a waiver of certain Commission rules applicable to ITS operations in the 5.9 GHz band (*i.e.*, 47 CFR §§ 90.375, 90.377, 90.379, 95.3163, 95.3167, and 95.3189), the rule sections that establish the technical requirements mandating DSRC-based technology in the upper 30 megahertz of the 5.9 GHz band, to allow the use of C-V2X-based technology in the band and to provide adjustments to the technical parameters where the two technologies differ. As discussed briefly below, and in greater detail in the Joint Waiver Order,<sup>22</sup> we find that a waiver of these rules is warranted under section 1.925, subject to the Waiver Applicants' commitments to adhere to the technical parameters and conditions imposed by the Joint Waiver Order, as modified by the Waiver Modification Order, which are intended to protect DSRC and federal incumbents from potentially harmful interference caused by C-V2X operations in the upper 30 megahertz of the 5.9 GHz band.

We find that, pursuant to section 1.925(b)(3)(i) of the Commission's rules, the underlying purpose of the rules governing ITS operations would not be served by denying these requests and thereby delaying or precluding C-V2X operations in the upper 30 megahertz of the 5.9 GHz band.<sup>23</sup> Furthermore, we find that a waiver in this case will facilitate early C-V2X deployment as the Commission envisioned

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*TXDOT Waiver Supplement* at 1; *WYDOT Waiver Supplement* at 2; *CCD Waiver Supplement* at 2; *MCDOR Waiver Request* at 1–2; *Regents UofM Waiver Supplement* at 1; *P3Mobility Waiver Supplement* at 1; and *Connex2X Waiver Supplement* at 1.

<sup>18</sup> See Joint Waiver Order, paras. 17–26.

<sup>19</sup> See Waiver Modification Order at 4.

<sup>20</sup> 47 CFR § 1.925(b)(3)(i)–(ii).

<sup>21</sup> 47 CFR § 1.3 ("Any provision of the rules may be waived by the Commission on its own motion or on petition if good cause therefor is shown."); see also *Northeast Cellular Telephone Co. v. FCC*, 897 F.2d 1164, 1166 (D.C. Cir. 1990).

<sup>22</sup> See Joint Waiver Order, paras. 7–14.

<sup>23</sup> 47 CFR § 1.925(b)(3)(i).

in the *5.9 GHz First R&O*.<sup>24</sup> Granting the Waiver Applicants' requests serves the public interest by encouraging widespread deployment of ITS operations using C-V2X technology. "To deny the [requests] and insist on application of the current DSRC-based rules would be contrary to the public interest as it would further entrench the DSRC technology the Commission determined needs to be replaced and preclude rapid deployment of the technology the Commission has identified as best suited to promote the most efficient and effective use of the spectrum."<sup>25</sup> We further find that permitting C-V2X technologies to deploy now, prior to adoption of final C-V2X rules, will serve the public interest by advancing vehicular safety and promoting interoperability.<sup>26</sup>

Based on the record before us, we grant a waiver, to the extent necessary, to each of the Waiver Applicants listed in Appendix A for C-V2X deployments specified below, with conditions to protect incumbent licensees and interests. As to the named Waiver Applicants, we waive the Part 90 and 95 rule requirements that mandate DSRC technology in favor of C-V2X operation pursuant to the conditions articulated in Section II.B. below.<sup>27</sup>

*State, local, and municipal transportation authorities.* Specifically, we grant to the state, local, and municipal transportation authorities listed in Appendix A (Colorado, Florida, Georgia, Hawaii, Maryland, Michigan, Nebraska, New Jersey, Ohio, Oregon, Texas, Wyoming, the City and County of Denver, Macomb County, and the Regents of the University of Michigan) waiver of 47 CFR §§ 90.375 (governing RSU license areas, communication zones, and registrations) and 90.377 (RSU frequencies available, maximum power limit, antenna height, and priority communications).

*State, local, and municipal transportation authorities, and equipment manufacturers.* We grant to the state, local, and municipal transportation departments listed in Appendix A as well as the equipment manufacturers listed in Appendix A (Sonomore, Inc. d/b/a P3Mobility and Connex2X, LLC) waiver of 47 CFR §§ 90.379 (governing Technical Standards for RSUs).

*Equipment manufacturers.* We grant to the equipment manufacturers (Sonomore, Inc. d/b/a P3Mobility and Connex2X, LLC) waiver of 47 CFR §§ 95.3163 (providing that DSRC OBUs are permitted to operate in the upper 30 megahertz of the 5.9 GHz band), 95.3167 (maximum power limit for DSRC OBUs), and 95.3189 (technical standard for DSRC OBUs).

## **B. Waiver Grant Conditions.**

Consistent with the technical requirements and restrictions imposed by the Joint Waiver Order,<sup>28</sup>

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<sup>24</sup> *Use of the 5.850–5.925 GHz Band*, ET Docket No. 19-138, First Report and Order, Further Notice of Proposed Rulemaking, and Order of Proposed Modification, 35 FCC Rcd 13440 (2020), *petitions for review denied sub nom. Intelligent Transp. Soc'y of America v. FCC*, 45 F.4th 406 (D.C. Cir. 2022) (*5.9 GHz First R&O*).

<sup>25</sup> Joint Waiver Order at 5.

<sup>26</sup> *See id.*; *see also 5.9 GHz First R&O* at 13480 para. 99.

<sup>27</sup> We note that each of the Waiver Applicants either expressly requested a waiver of the Part 90 and Part 95 rules governing ITS operations in the 5.9 GHz band or referenced the rule waivers issued to the C-V2X Joint Waiver Parties in the Joint Waiver Order. Accordingly, for the Waiver Applicants that requested a waiver of the ITS rules generally, or that referenced the rules waived in the Joint Waiver Order, we recognize, pursuant to our own authority under Section 1.3 of the Commission's Rules, that these Waiver Applicants have requested a waiver of the same rule sections identified in the Joint Waiver Order, as amended, and grant each such Waiver Applicant a waiver, to the extent necessary, of the rules waived by the Joint Waiver Order, as amended. *See* 47 CFR § 1.3.

<sup>28</sup> *See* Joint Waiver Order, paras. 17–26.

as modified by the Waiver Modification Order,<sup>29</sup> this waiver grant is subject to the technical parameters and conditions set forth below.

*Scope of the Waiver.* With respect to ITS licensees, this waiver is limited to the state, local, and municipal transportation departments listed in Appendix A to allow them to deploy C-V2X infrastructure that satisfies all conditions of this Order, including RSUs and OBUs, within their respective jurisdictions. The geographic area of the waiver is limited to the area encompassing the legal jurisdictions of the listed states, localities, and municipalities.

All operations authorized pursuant to this waiver are limited to transportation and vehicle safety-related communications.

All C-V2X operations permitted pursuant to this waiver are limited to the 5905–5925 MHz frequencies using a 20-megahertz channel.

With respect to equipment manufacturers, this waiver is limited to P3Mobility and Connex2X and provides them eligibility to obtain the necessary equipment certifications for their RSUs and OBUs. Equipment authorization requirements continue to apply to all RSUs and OBUs under this waiver order.<sup>30</sup> Any application for equipment authorization will need to include a copy of this waiver order.

C-V2X operations under this waiver order are authorized on a secondary basis to the Federal radiolocation service operating on a primary basis within the 5.895–5.925 GHz band and must protect these Federal operations from harmful interference. The NTIA reviewed the technical parameters adopted in the Joint Waiver Order,<sup>31</sup> as modified by the Waiver Modification Order,<sup>32</sup> and agrees that spectrum usage should be limited to 5905–5925 MHz and that EIRP for both OBUs and RSUs be limited to 33 dBm.<sup>33</sup> In addition, “to adequately protect the primary 5.9 GHz band for federal radiolocation services during this waiver period,” NTIA also requests that C-V2X OBUs be limited to an EIRP of 27 dBm at  $\pm 5$  degrees in elevation from the horizontal plane.<sup>34</sup> Pursuant to their supplemental requests to abide by the same grant conditions outlined in the Joint Waiver Order, as modified, each of the Waiver Applicants have agreed to these conditions.<sup>35</sup>

*Technical Requirements and Restrictions.* All RSUs and OBUs authorized under this Order must operate using the technical characteristics and operating parameters, including power, height, and out-of-band emission limits, specified below, in order to ensure compliance with all existing technical rules applicable to ITS operations other than the requirement to use DSRC-based technology:

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<sup>29</sup> See Waiver Modification Order at 4.

<sup>30</sup> See generally 47 CFR §§ 2.901 *et seq.* (subpart J – Equipment Authorization Procedures) and 47 CFR § 2.905 (Marketing of radio frequency devices prior to equipment authorization).

<sup>31</sup> See Joint Waiver Order, paras. 17–26.

<sup>32</sup> See Waiver Modification Order at 4.

<sup>33</sup> See Letter from Charles Cooper, Associate Administrator, Office of Spectrum Management, National Telecommunications and Information Administration, to Ronald T. Repasi, Acting Chief, FCC Office of Engineering and Technology, ET Docket No. 19-138 (filed April 14, 2023) at 3.

<sup>34</sup> *Id.*

<sup>35</sup> See footnote 17, *supra*.

**C-V2X OBU and RSU Operations**

<b>Frequency Range</b>	<b>Channel Bandwidth</b>	<b>OBU Limits</b>	<b>RSU EIRP Limit</b>
5905–5925 MHz	20 MHz	33 dBm EIRP*; 27dBm EIRP within 5 degrees of horizontal	33 dBm EIRP

\*EIRP (equivalent isotropically radiated power)

**C-V2X Out-of-Band Emissions (OOBE) Limits**

<b>Frequency Offset (MHz from Channel Edge)</b>	<b>OOBE EIRP Limits for C-V2X Transmissions (dBm/100 kHz)**</b>
0.0	-16.0
1.0	-22.0
10.0	-30.0
20.0	-40.0

\*\*See IEEE 802.11p-2010 Table I.8

The state, local, and municipal transportation authorities’ C-V2X RSU operations must protect DSRC and primary non-federal fixed-satellite service (Earth-to-space) operations in the 5.895–5.925 GHz band from harmful interference. Prior to commencing C-V2X operations, the state, local, and municipal transportation authorities must successfully coordinate with all DSRC incumbent(s) whose licensed areas either overlap or are within 25 miles of the license areas of the state, local, and municipal transportation authorities. The purpose of this coordination is to ensure that harmful interference will not occur.<sup>36</sup> In addition, within 30 days of commencing operations, the state, local, and municipal transportation authorities must file a report in the Universal Licensing System (ULS) confirming successful coordination (including the names of the DSRC incumbents and dates coordination was completed), or if applicable, certifying that coordination was unnecessary, and include a grandfathered list of state DOT RSU locations that will be converted from DSRC to C-V2X operation. FCC staff will add a C-V2X special condition to these RSU locations and forward the grandfathered state, local, and municipal transportation authority RSU list to NTIA.

*RSU registration requirements.* Licensees must register each RSU in ULS before operating the RSU. RSUs included in the grandfathered DSRC RSU list being converted to C-V2X do not need to be filed in ULS. RSU registrations are subject to the requirements of 47 CFR § 1.923 as applicable (antenna structure registration, environmental review, international coordination, and quiet zones). Additionally, RSUs at locations subject to NTIA coordination<sup>37</sup> may not begin operation until the licensee receives NTIA approval. Registrations are not effective until the Commission posts them in ULS. It is the licensee’s responsibility to delete from the registration database any RSUs that have been discontinued.<sup>38</sup>

*Compliance with Final Rules.* We intend by this Order to enable a fast transition to the next generation of technology in this spectrum band while the Commission contemplates the framework for final rules. Consistent with this goal, we condition the waiver on the requirement that each waiver recipient will ensure that RSU and OBU operations and devices authorized under the waiver will comply with the final rules or other guidance provided by the Commission in any timeframe determined by the

<sup>36</sup> Setting the coordination distance at 25 miles will ensure that C-V2X RSU operators are able to identify any neighboring DSRC incumbents.

<sup>37</sup> See 47 CFR § 90.371(b).

<sup>38</sup> See 47 CFR § 90.375(b).



Commission. This approach ensures that waiver recipients, including but not limited to equipment manufacturers, will consider the pendency of the final rulemaking, and incorporate technology that will allow prompt and efficient regulatory compliance with respect to individual RSUs, OBUs, and C-V2X-based operations once any relevant final rules are implemented. Equipment manufacturers, in particular, must take steps to ensure that they can update or disable any OBUs deployed pursuant to this Order to bring these units into compliance with the final rules. Recipients of this waiver should be aware that the Commission may further tailor this and other waiver conditions, if needed and as appropriate, as part of any determination it makes in the rulemaking proceeding.

## II. ORDERING CLAUSES

Accordingly, IT IS ORDERED that, pursuant to section 4(i) of the Communications Act, as amended, 47 U.S.C. § 154(i), and section 1.925 of the Commission's rules, 47 CFR § 1.925, each of the requests by the parties listed in Appendix A, attached hereto, to waive the requirements of sections 90.375, 90.377, 90.379, 95.3163, 95.3167, and 95.3189 of the Commission's rules, 47 CFR §§ 90.375, 90.377, 90.379, 95.3163, 95.3167, and 95.3189, are HEREBY GRANTED subject to the conditions outlined above, and ARE OTHERWISE DENIED.

IT IS FURTHER ORDERED that each of the requests to waive the requirements of 47 CFR § 2.106(d)(160) and 47 CFR § 95.3159 are HEREBY DISMISSED as moot.

These actions are taken under delegated authority pursuant to sections 0.31, 0.131, 0.191, 0.241, 0.331, 0.392, and 1.3 of the Commission's rules, 47 CFR §§ 0.31, 0.131, 0.191, 0.241, 0.331, 0.392, and 1.3, and the *5.9 GHz First R&O*.<sup>39</sup>

FEDERAL COMMUNICATIONS COMMISSION

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Chief, Public Safety and Homeland Security Bureau

Ronald Repasi  
Chief, Office of Engineering and Technology

Joel Taubenblatt  
Chief, Wireless Telecommunications Bureau

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<sup>39</sup> *5.9 GHz First R&O* at 13424–65, paras. 55–56.

## APPENDIX A WAIVER PETITIONS/APPLICANTS

1. Colorado Department of Transportation. See Request for Waiver of 5.9 GHz Band Rules to Permit Deployments of Cellular Vehicle-to-Everything Technology, Colorado Department of Transportation, ET Docket No. 19-138 (filed Aug. 29, 2022) (*CDOT Waiver Request*), <https://www.fcc.gov/ecfs/document/1082991850401/1>; see also Letter from Heather Pickering-Hilgers, Office of Innovative Mobility, Colorado Department of Transportation, to Marlene H. Dortch, Secretary, FCC, ET Docket No. 19-138 (filed Jun. 21, 2023) (*CDOT Waiver Supplement*), <https://appsint.fcc.gov/UlsEntry/attachments/attachmentViewRD.jsp?applType=search&fileKey=807040696&attachmentKey=21812488&attachmentInd=licAttach>.
2. Florida Department of Transportation. See Letter from Jeremy Dilmore, P.E., TSM&O Program Engineer, Florida Department of Transportation District 5 – Traffic Operations Office, to Marlene H. Dortch, Secretary, FCC, ET Docket No. 19-138 (filed Mar. 18, 2022) (*FDOT Waiver Request*), <https://appsint.fcc.gov/UlsApp/ApplicationSearch/applAdmin.jsp?applID=13292042#attachments>; see also Letter from Rudy Powell, Director, Traffic Engineering & Operations Office, Florida Department of Transportation, to FCC, ET Docket No. 19-138 (filed Jul. 25, 2023) (*FDOT Waiver Supplement*), <https://www.fcc.gov/ecfs/document/107251951813037/1>.
3. Georgia Department of Transportation. See Letter from Alan S. Davis, PE, PTOE, Assistant State Traffic Engineer, Georgia Department of Transportation to Marlene H. Dortch, Secretary, FCC, ET Docket No. 19-138 (filed Sep. 16, 2021) (*GDOT Waiver Request*), <https://appsint.fcc.gov/UlsEntry/attachments/attachmentViewRD.jsp?applType=search&fileKey=1222633222&attachmentKey=21298307&attachmentInd=applAttach>; see also Letter from Alan Davis, PE, PTOE, State Traffic Engineer, Georgia Department of Transportation to Marlene H. Dortch, Secretary, FCC, ET Docket No. 19-138 (filed Jun. 21, 2023) (*GDOT Waiver Supplement*), <https://www.fcc.gov/ecfs/document/1062103966980/1>.
4. Hawaii Department of Transportation. See Request for Waiver of 5.9 GHz Band Rules to Permit Deployments of Cellular Vehicle-to-Everything Technology, Hawaii Department of Transportation, ET Docket No. 19-138 (filed Aug. 11, 2022) (*HDOT Waiver Request*), <https://www.fcc.gov/ecfs/document/108110953106667/1>; see also Letter from Sergio George G. Abcede, Highways Administrator, Hawaii Department of Transportation, to Marlene H. Dortch, Secretary, FCC, ET Docket No. 19-138 (filed May 26, 2023) (*HDOT Waiver Supplement*), <https://www.fcc.gov/ecfs/document/105262299604945/1>.
5. Maryland Department of Transportation. See Waiver Request to File for Use of C-V2X RSU on Allocated Part 90 ITS Channels for 5.895–5,925 GHz Band, WRKJ514 (filed Mar. 16, 2022) (*SHA Waiver Request*), <https://appsint.fcc.gov/UlsEntry/attachments/attachmentViewRD.jsp?applType=search&fileKey=714169856&attachmentKey=21435297&attachmentInd=applAttach>; see also Letter from Jason Dicembre, Director, Michigan Department of Transportation, State Highway Administration, to Marlene H. Dortch, Secretary, FCC, ET Docket No. 19-138 (filed Jul. 25, 2023) (*SHA Waiver Supplement*), <https://appsint.fcc.gov/UlsEntry/attachments/attachmentViewRD.jsp?applType=search&fileKey=297487047&attachmentKey=21812495&attachmentInd=licAttach>.
6. Michigan Department of Transportation. See Letter from Bradley Wieferich, Director, Michigan Department of Transportation, to the Honorable Jessica Rosenworcel, Chairwoman, FCC, ET Docket No.

19-138 (filed May 2, 2023) (*MIDOT Waiver Request*), <https://www.fcc.gov/ecfs/document/10502076210156/1>; see also Letter from Bradley Wieferich, Director, Michigan Department of Transportation, to Marlene H. Dortch, Secretary, FCC, ET Docket No. 19-138 (filed Jul. 21, 2023) (*MIDOT Waiver Supplement*), <https://appsint.fcc.gov/UlsEntry/attachments/attachmentViewRD.jsp?applType=search&fileKey=976238320&attachmentKey=21813201&attachmentInd=licAttach>.

7. Nebraska Department of Transportation. See Request for Waiver of 5.9 GHz Band Rules to Permit Deployments of Cellular Vehicle-to-Everything Technology, Nebraska Department of Transportation, ET Docket No. 19-138 (filed Jul. 24, 2023) (*NDOT Waiver Request*), <https://www.fcc.gov/ecfs/document/1072434251874/1>; see also Letter from Vicki Kramer, Director, NDOT, to Marlene H. Dortch, Secretary, FCC, ET Docket No. 19-138 (filed Aug. 9, 2023) (*NDOT Waiver Supplement*), <https://www.fcc.gov/ecfs/document/10809303491650/1>.

8. New Jersey Department of Transportation. See Request for Waiver of 5.9 GHz Band Rules to Permit Deployments of Cellular Vehicle-to-Everything Technology, New Jersey Department of Transportation, ET Docket No. 19-138 (filed Nov. 17, 2022) (*NJDOT Waiver Request*), <https://www.fcc.gov/ecfs/document/1117245967388/1>; see also Letter from Salvatore Cowan, Senior Director, Transportation Mobility, NJDOT, to Marlene H. Dortch, Secretary, FCC, ET Docket No. 19-138 (filed Jun. 5, 2023) (*NJDOT Waiver Supplement*), <https://appsint.fcc.gov/UlsEntry/attachments/attachmentViewRD.jsp?applType=search&fileKey=1211423084&attachmentKey=21771245&attachmentInd=applAttach>.

9. Ohio Department of Transportation/DriveOhio. See Request for Waiver of 5.9 GHz Band Rules to Permit Deployments of Cellular Vehicle-to-Everything Technology, Ohio Department of Transportation/DriveOhio, ET Docket No. 19-138 (filed Jun. 10, 2022) (*DriveOhio Waiver Request*), <https://www.fcc.gov/ecfs/document/10610079723182/1>; see also Letter from Preeti Choudhary, Executive Director, DriveOhio, to Marlene H. Dortch, Secretary, FCC, ET Docket No. 19-138 (filed May 9, 2023) (*DriveOhio Waiver Supplement*), <https://www.fcc.gov/ecfs/document/1050914811190/1>.

10. Oregon Department of Transportation. See Letter from Letter from Galen McGill, P.E., State Maintenance and Operations Engineer, Oregon Department of Transportation, to the Honorable Jessica Rosenworcel, Chairwoman, FCC, ET Docket No. 19-138 (filed Sep. 19, 2022) (*ODOT Waiver Request*), <https://www.fcc.gov/ecfs/document/10916210582277/1>; see also Letter from Galen McGill, P.E., State Maintenance and Operations Engineer, Oregon Department of Transportation, to Marlene H. Dortch, Secretary, FCC, ET Docket No. 19-138 (filed Jul. 20, 2023) (*ODOT Waiver Supplement*), <https://appsint.fcc.gov/UlsEntry/attachments/attachmentViewRD.jsp?applType=search&fileKey=133605612&attachmentKey=21812564&attachmentInd=licAttach>.

11. Texas Department of Transportation. See Request for Waiver of 5.9 GHz Band Rules to Permit Deployments of Cellular Vehicle-to-Everything Technology, Texas Department of Transportation, ET Docket No. 19-138 (filed Jul. 28, 2022) (*TXDOT Waiver Request*), <https://www.fcc.gov/ecfs/document/1072828277753/1>; see also Letter from Marc D. Williams, P.E., Executive Director, Texas Department of Transportation, to Marlene H. Dortch, Secretary, FCC, ET Docket No. 19-138 (filed Jul. 10, 2023) (*TXDOT Waiver Supplement*), <https://www.fcc.gov/ecfs/document/10712881930604/1>.

12. Wyoming Department of Transportation. See Request for Waiver of 5.9 GHz Band Rules to Permit Deployments of Cellular Vehicle-to-Everything Technology, Wyoming Department of Transportation,

ET Docket No. 19-138 (filed Aug. 22, 2022) (*WYDOT Waiver Request*), <https://appsint.fcc.gov/UlsEntry/attachments/attachmentViewRD.jsp?applType=search&fileKey=845830779&attachmentKey=21560863&attachmentInd=applAttach>; *see also* Letter from R. Vince Garcia, P.E., GIS/ITS/TMC Program Manager, Wyoming Department of Transportation, to Marlene H. Dortch, Secretary, FCC, ET Docket No. 19-138 (filed Jul. 21, 2023) (*WYDOT Waiver Supplement*), <https://appsint.fcc.gov/UlsEntry/attachments/attachmentViewRD.jsp?applType=search&fileKey=1871643475&attachmentKey=21812552&attachmentInd=licAttach>.

13. City and County of Denver. *See* Request for Waiver of 5.9 GHz Band Rules to Permit Deployments of Cellular Vehicle-to-Everything Technology, City and County of Denver, ET Docket No. 19-138 (filed Dec. 7, 2022) (*CCD Waiver Request*), <https://www.fcc.gov/ecfs/document/120716430785/1>; *see also* Letter from John Yu, PE, ATCMTD Program Manager, Senior Engineer, City and County of Denver, to Marlene H. Dortch, Secretary, FCC, ET Docket No. 19-138 (filed Jul. 21, 2023) (*CCD Waiver Supplement*), <https://www.fcc.gov/ecfs/document/1072170179938/1>.

14. Macomb County Department of Roads. *See* Request for Waiver of 5.9 GHz Band Rules to Permit Deployments of Cellular Vehicle-to-Everything Technology, Macomb County Department of Roads, ET Docket No. 19-138 (filed Jul. 11, 2023) (*MCDOR Waiver Request*), <https://www.fcc.gov/ecfs/document/10711003238745/1>.

15. The Regents of the University of Michigan. *See* Request for Waiver of 5.9 GHz Band Rules to Permit Deployments of Cellular Vehicle-to-Everything Technology, The Regents of the University of Michigan, ET Docket No. 19-138 (filed Aug. 11, 2022) (*Regents UofM Waiver Request*), <https://www.fcc.gov/ecfs/document/10811671504488/1>; *see also* Letter from James R. Sayer, Ph.D., Director, UMTRI, The Regents of the University of Michigan, to Marlene H. Dortch, Secretary, FCC, ET Docket No. 19-138 (filed May 8, 2023) (*Regents UofM Waiver Supplement*), <https://www.fcc.gov/ecfs/document/10508192020309/1>.

16. Sonamore, Inc. d/b/a P3Mobility. *See* Request for Waiver of 5.9 GHz Band Rules to Permit Deployments of Cellular Vehicle-to-Everything Technology, Sonamore, Inc. d/b/a P3Mobility, ET Docket No. 19-138 (filed Mar. 3, 2023) (*P3Mobility Waiver Request*), <https://www.fcc.gov/ecfs/document/10303120813893/1>; *see also* Letter from Erin Milligan, Sonamore, Inc. d/b/a P3Mobility, to Marlene H. Dortch, Secretary, FCC, ET Docket No. 19-138 (filed Jul. 6, 2023) (*P3Mobility Waiver Supplement*), <https://www.fcc.gov/ecfs/document/10706146789200/1>.

17. Connex2X, LLC. *See* Letter from Paul T. Porrini, Co-Founder and COO, Connex2X, LLC to Marlene H. Dortch, Secretary, FCC, ET Docket No. 19-138 (filed May 19, 2023) (*Connex2X Waiver Request*), <https://www.fcc.gov/ecfs/document/105191820505104/1>; *see also* Letter from Paul T. Porrini, Co-Founder and COO, Connex2X, LLC to Marlene H. Dortch, Secretary, FCC, ET Docket No. 19-138 (filed May 31, 2023) (*Connex2X Waiver Supplement*), <https://www.fcc.gov/ecfs/document/10531172879674/1>.