



PUBLIC NOTICE

Federal Communications Commission
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DA 22-617

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PUBLIC SAFETY AND HOMELAND SECURITY BUREAU SEEKS COMMENT ON WAIVER REQUESTS FROM INTELLIGENT TRANSPORTATION SYSTEM LICENSEES TO USE C-V2X TECHNOLOGY IN THE 5.895-5.925 GHZ BAND

ET Docket No. 19-138

Comments Due: (30 days after date of publication in the Federal Register)

Reply Comments Due: (60 days after date of publication in the Federal Register)

By this Public Notice (PN), the Public Safety and Homeland Security Bureau (Bureau) seeks comment on the filings from the respective Departments of Transportation of the State of Florida and State of Georgia, and State of Maryland State Highway Administration, each requesting a waiver of the Commission's rules to operate roadside units (RSUs) with cellular vehicle to everything (C-V2X)-based technology in the upper 30 megahertz (5.895-5.925 GHz) portion of the 5.850-5.925 GHz (5.9 GHz) band under its Part 90 intelligent transportation system (ITS) license.¹ These waiver requests seek operating authority for C-V2X through the streamlined waiver process described by the Commission in its November 20, 2020 *5.9 GHz First Report and Order*² and the guidance that the Bureau, in conjunction

¹ See Florida Request for Waiver and Waiver Supplement for Call Sign WQBS407:

<https://wireless2.fcc.gov/UlsEntry/attachments/attachmentViewRD.jsp?ATTACHMENTS=n11rv1dGLFqTJyRt8Dh7JDXtr1rwy3fKLTPvhjLtgLhFpQTDyQrV!56013044211071318750?applType=search&fileKey=824024548&attachmentKey=21437925&attachmentInd=applAttach> and

<https://wireless2.fcc.gov/UlsEntry/attachments/attachmentViewRD.jsp?applType=search&fileKey=380862473&attachmentKey=21490155&attachmentInd=applAttach>; Georgia Request for Waiver and Waiver Supplement for Call Sign WRAT914:

<https://wireless2.fcc.gov/UlsEntry/attachments/attachmentViewRD.jsp?applType=search&fileKey=488583324&attachmentKey=21298366&attachmentInd=applAttach> and

<https://wireless2.fcc.gov/UlsEntry/attachments/attachmentViewRD.jsp?applType=search&fileKey=699457663&attachmentKey=21490180&attachmentInd=applAttach>; and Maryland Request for Waiver and Waiver Supplement for Call Sign WRKJ514:

<https://wireless2.fcc.gov/UlsEntry/attachments/attachmentViewRD.jsp?applType=search&fileKey=62040067&attachmentKey=21435297&attachmentInd=applAttach> and

<https://wireless2.fcc.gov/UlsEntry/attachments/attachmentViewRD.jsp?ATTACHMENTS=8T6wvP6cNSKjHVNxfkhyB6RyWQyvJBvwpQKcGdSjCVtkpy8gzF7K156013044211071318750?applType=search&fileKey=470416313&attachmentKey=21488488&attachmentInd=applAttach> (collectively *Waivers*). We have attached a list of the file numbers associated with the *Waivers* to the end of this Public Notice.

² *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, 13464-65, para. 55 (2020) (*5.9 GHz First Report and Order*).

with the Wireless Telecommunications Bureau (the Bureaus), provided in a subsequent Public Notice, as directed by the Commission.³

Guidance PN. Based on the decisions in the *5.9 GHz First Report and Order*, and until the Commission renders a decision on the rule changes proposed in the *Further Notice of Proposed Rulemaking*, the Commission stated that it will permit any existing or future part 90 intelligent transportation system (ITS) licensee to operate C-V2X-based roadside units in the 5.895-5.925 GHz band within their geographic licensing areas by requesting and obtaining a waiver of the Commission's rules, subject to specific conditions. On August 6, 2021, the Bureaus jointly issued the *Guidance PN* detailing the process for such waiver applicants, and providing additional information regarding further waivers that may be required for requesting early deployment of certain other C-V2X operations, and the equipment certification process for C-V2X equipment.

Streamlined Waiver Process for Part 90 Licensees. In the *Guidance PN*, the Bureaus stated *inter alia*, that in order to receive streamlined consideration of a waiver request, consistent with Section 1.925 of the Commission's rules,⁴ applicants would need to provide the following certifications:

- (1) a certification that there are no existing ITS licensees authorized to operate within the same geographic area in which the waiver applicant seeks to operate, OR certification that the waiver applicant has coordinated with every existing ITS licensee licensed (in whole or part) within that same geographic area to ensure that the waiver applicant's C-V2X-based roadside unit operations will not interfere with any Dedicated Short Range Communications (DSRC)-based roadside units operating in the 5.895-5.925 GHz band;⁵
- (2) a certification that the waiver applicant's C-V2X operations will comply with the existing technical rules (e.g., including, but not limited to, power and out-of-band emission limits) for DSRC-based technologies other than the portion of the current rules requiring use of DSRC-based technologies;
- (3) a certification that the applicant's operations will be revised to the extent necessary to comply with any final rules that the Commission adopts for C-V2X operations; and
- (4) a certification that the applicant's C-V2X operations will be limited to transportation and vehicle safety-related communications.⁶

General Waiver Process for Part 90 Licensees. Regarding licensees unable to satisfy the streamlined waiver process, in the *Guidance PN*, the Bureaus stated that:

“If an ITS waiver applicant that seeks authority to operate C-V2X-based roadside units or on-board units in the 5.895-5.925 GHz band is unable to comply with the existing ITS technical rules found in 47 CFR §§ 90.371 – 90.383 or 47 CFR §§ 95.3167-95.3189, respectively, they should include in their general waiver request the certifications from the streamlined waiver process outlined in this PN that they are unable to meet, the specific existing rules that they are unable to comply with, along with a specific proposal

³ *Wireless Telecommunications Bureau and Public Safety and Homeland Security Bureau Provide Guidance for Waiver Process to Permit Intelligent Transportation System Licensees to Use C-V2X Technology in the 5.895-5.925 GHz Band*, Public Notice, DA 21-962 (WTB, PSHSB rel. Aug. 6, 2021) (*Guidance PN*). See also, *5.9 GHz First Report and Order* at 13464-65, para. 55.

⁴ *5.9 GHz First Report and Order*, 35 FCC at 13464-65, para. 55.

⁵ DSRC uses short-range wireless communication links to facilitate information transfer between appropriately equipped vehicles and appropriately equipped roadside systems (“vehicle to infrastructure” or “V2I”) and between appropriately equipped vehicles (“vehicle to vehicle” or “V2V”). See *Revision of Part 15 of the Commission's Rules to Permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band*, ET Docket No. 13-49, Notice of Proposed Rulemaking, 28 FCC Rcd 1769, 1797-98, paras. 92-93 (2013) (*NPRM*).

⁶ *Guidance PN* at 2 (internal citations omitted).

of the technical specifications they seek to use instead, and an explanation of why a waiver is warranted under Section 1.925. To facilitate granting of qualifying waiver requests, and in light of the alternate technical specifications proposed in their waiver, we would generally expect the ITS waiver applicant to include a demonstration showing that their requested waiver would not cause a greater potential for interference to other users operating in the 5.895-5.925 GHz band than DSRC-based operations in this band, and otherwise to address how the public interest would be served by such a waiver under Section 1.925. Based on the proposed change in technical parameters, the waiver request should also address any conditions (e.g., coordination zone radius, per 47 CFR § 90.371(b)) necessary to protect Federal Government Relocation Services.”⁷

Equipment Certification Guidance. The Bureaus’ *Guidance PN* discussed the need for additional waivers of the FCC’s equipment authorization rules to allow for C-V2X on-board units. As noted in the *Guidance PN*, the applicant for equipment certification should identify the specific technical requirements that the C-V2X equipment would meet. In the *Guidance PN*, the Bureaus said:

“The applicant for equipment certification should identify the specific technical requirements that the C-V2X equipment would meet, and explain how those specific technical requirements would be consistent with the associated waiver(s) granted for operation of C-V2X systems in the 5.895-5.925 GHz band. To the extent that the request for waiver of equipment authorization rules to authorize C-V2X-based roadside units or on-board units differs in any respect from the technical rules specified in the Part 90 or Part 95 waiver(s), the application for waiver may require more extensive review, consistent with current practice relating to waiver of equipment authorization rules.”⁸

The Waiver Requests and Supplemental Information. As noted above, the respective state entities each filed an initial request for waiver, and each has subsequently supplemented its request with additional information in support of their requests. Commenters should review each of these requests and supplemental materials for purposes of commenting. Among other things, each state has provided particular technical information on its proposed C-V2X operations. We provide a high-level summary of that information below.

Proposed Technical Specifications in 5.9 GHz Band C-V2X Waiver Requests

	Current 5.9 GHz ITS Requirements (Part 90 Subpart M)	FL DOT Waiver Request to Deploy 4G- LTE C-V2X (Call Sign WQBS407)	GA DOT Waiver Request to Deploy LTE C- V2X (3GPP Rel. 14) (Call Sign WRAT914)	MDOT SHA Waiver Request to Deploy 4G-LTE C-V2X (Call Sign WRKJ514)
Maximum Roadside Unit (RSU) Transmitter Output Power (dBm)	RSU Classes C/D: 20/28.8	Ch. 180: 17 Ch. 181: 17 Ch. 182: 17 Ch. 184: 28.8	Ch. 180: 22 Ch. 181: 22 Ch. 182: 22 Ch. 184: 22 5905-5925 MHz: Not given	Ch. 180: 23 Ch. 181: 23 Ch. 182: 23 5905-5925 MHz: Not given
Maximum RSU EIRP* (dBm)	Ch. 180: 23 Ch. 181: 23 Ch. 182: 23	Ch. 180: 23 Ch. 181: 23 Ch. 182: 23	Ch. 180: 23/22.8 Ch. 181: 23/22.8 Ch. 182: 23/22.8	Ch. 180: 22.6 Ch. 181: 22.6 Ch. 182: 22.6

⁷ *Id.* at 2-3, n.10.

⁸ *Id.* at 3, note 12.

	Ch. 184: 33/40	Ch. 184: 34.8	Ch. 184: 23/22.8 5905-5925 MHz: 23/22.8	5905-5925 MHz: 33											
Transmit Spectrum Mask (Out-of-Band Emissions (OOBE))	See Table I.8 of IEEE 802.11p-2010.	Stated will comply with existing rules.	Stated will comply with existing rules.	Stated will comply with existing rules.											
				At 5905-5925 MHz: <table border="1"> <thead> <tr> <th>Frequency offset from channel edge (MHz)</th> <th>OOBE PSD** relative to 33 dBm/20 MHz (or 10 dBm/100 MHz)</th> <th>OOBE PSD for C-V2X transmissions (dBm/100 kHz)</th> </tr> </thead> <tbody> <tr> <td>0.0</td> <td>-26.0</td> <td>-16.0</td> </tr> <tr> <td>1.0</td> <td>-32.0</td> <td>-22.0</td> </tr> <tr> <td>10.0</td> <td>-40.0</td> <td>-30.0</td> </tr> <tr> <td>20.0</td> <td>-50.0</td> <td>-40.0</td> </tr> </tbody> </table>	Frequency offset from channel edge (MHz)	OOBE PSD** relative to 33 dBm/20 MHz (or 10 dBm/100 MHz)	OOBE PSD for C-V2X transmissions (dBm/100 kHz)	0.0	-26.0	-16.0	1.0	-32.0	-22.0	10.0	-40.0
Frequency offset from channel edge (MHz)	OOBE PSD** relative to 33 dBm/20 MHz (or 10 dBm/100 MHz)	OOBE PSD for C-V2X transmissions (dBm/100 kHz)													
0.0	-26.0	-16.0													
1.0	-32.0	-22.0													
10.0	-40.0	-30.0													
20.0	-50.0	-40.0													
RSU Antenna Center Line Height Above Roadway Surface	8 meters or less, with EIRP reduced by a factor of 20 x $\log(\text{height}/8)$ if antenna center line height is 15 meters or less (but greater than 8 meters)	7.9 meters above ground level (AGL) at all locations	Less than 8 meters AGL at 114 locations; 8.2 meters AGL at one location with reduced EIRP per 47 CFR § 90.377(b) n.1 to Table	8 meters AGL (One location specified in ULS waiver application)											
Maximum Onboard Unit (OBU) Transmitter Output Power/EIRP (dBm)	Portable: 0/6; Non-portable: 28.8/33 for non-gov., 44.8 for gov.	Not given.	Waiver request does not include any OBU deployments.	20/33											

*EIRP (equivalent isotropically radiated power); **PSD (power spectral density)

Public Comment on Waivers. Prior to evaluating the merits of the instant requests for waivers, and in order to assist in assessing the requests, the Bureau seeks comment on whether the certifications, as supplemented, in the *Waivers* are sufficient to allow the Bureau to make a rigorous evaluation of the requests under the streamlined review process. Under the general waiver process, we seek comment on whether the waiver requests as supplemented contain sufficient information to satisfy the additional requirements set forth in the *Guidance PN* at footnote 10, referenced above, including whether the proposed C-V2X operations would protect others from interference. In addition, we seek comment from manufacturers on equipment authorizations to support the proposed operations in the instant waiver requests.

Procedural Matters. To develop a complete record on the issues presented by this request, the proceeding will be treated, for *ex parte* purposes, as a “permit-but-disclose” proceeding in accordance with Section 1.1200(a) of the Commission’s rules, subject to the requirements under Section 1.1206(b).

Parties should file all comments and reply comments in **ET Docket No. 19-138** and clearly indicate to which of the three waivers identified in this *Public Notice* the comments apply (i.e., Florida Department of Transportation, Georgia Department of Transportation, or Maryland State Highway Administration).

Filing Requirements. Parties may file comments, identified by **ET Docket No. 19-138**, by any of the following methods:

- Electronic Filers: Comments may be filed electronically using the Internet by accessing the ECFS: <https://www.fcc.gov/ecfs/>.
- Paper Filers: Parties who choose to file by paper must file an original and one copy of each filing.

Filings can be sent by commercial courier or by the U.S. Postal Service. All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.

- Commercial deliveries (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9050 Junction Drive, Annapolis Junction, MD 20701.
- U.S. Postal Service First-Class, Express, and Priority mail must be addressed to 45 L Street, NE, Washington, DC 20554.
- Effective March 19, 2020, and until further notice, the Commission no longer accepts any hand or messenger delivered filings. This is a temporary measure taken to help protect the health and safety of individuals, and to mitigate the transmission of COVID-19. See FCC Announces Closure of FCC Headquarters Open Window and Change in Hand-Delivery Policy, Public Notice, DA 20-304 (March 19, 2020). <https://www.fcc.gov/document/fcc-closes-headquarters-open-window-and-changeshanddelivery-policy>.
- During the time the Commission's building is closed to the general public and until further notice, if more than one docket or rulemaking number appears in the caption of a proceeding, paper filers need not submit two additional copies for each additional docket or rulemaking number; an original and one copy are sufficient.

People with Disabilities: To request materials in accessible formats for people with disabilities (braille, large print, electronic files, audio format), send an e-mail to fcc504@fcc.gov or call the Consumer & Government Affairs Bureau at 202-418-0530 (voice), 202-418-0432 (tty).

Additional Information. For further information regarding this Public Notice, please contact Roberto Mussenden, Senior Attorney, Policy and Licensing Division, Public Safety and Homeland Security Bureau, at Roberto.Mussenden@fcc.gov or (202)-418-1428.

-FCC-

Attachment
List of File Nos. Associated With the Waivers

File Number	Call Sign	Legal Entity Name
0009960580,0009960584,0009960610,0009960620,0009960630,0009960663 0009960678,0009960686,0009960694,0009960705,0009960803,0009960892 0009960953,0009960995,0009961041,0009961049,0009961054,0009961058 0009961062,0009961072,0009961078,0009961083	WQBS407	Florida, State of
File Number	Call Sign	Legal Entity Name
0009714478,0009714605,0009714790,0009714844,0009714864,0009715391 0009744297,0009744319,0009744337,0009744347,0009744369,0009744414 0009744460,0009744578,0009744593,0009744630,0009744652,0009744709 0009744731,0009744744,0009744838,0009744861,0009744983,0009744990 0009745000,0009745021,0009745053,0009745080,0009745097,0009745139 0009745275,0009746434,0009746435,0009746449,0009746761,0009746776 0009746844,0009746861,0009746915,0009746932,0009746975,0009746992 0009748858,0009748869,0009748877,0009748878,0009748881,0009748899 0009748931,0009748938,0009748948,0009749695,0009749738,0009749744 0009749748,0009749763,0009749765,0009749767,0009749778,0009749782 0009749789,0009753306,0009753314,0009753321,0009753326,0009753341 0009753347,0009753354,0009753388,0009753392,0009757666,0009757695 0009757712,0009757720,0009757728,0009757740,0009757747,0009757753 0009757760,0009841930,0009842007,0009842067,0009842096,0009842143 0009842153,0009842162,0009856610,0009856647,0009856693,0009856754 0009856807,0009869883,0009870822,0009870853,0009870854,0009870855 0009870859,0009870864,0009870869,0009870873,0009871104,0009871151 0009871198,0009871340,0009871416,0009871446,0009871630,0009871656 0009871682,0009875485,0009875530,0009875549,0009875579,0009875614 0009875630	WRAT914	Georgia, State of
File Number	Call Sign	Legal Entity Name
0009957505	WRKJ514	Maryland State Highway Administration