Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Unlicensed Use of the 6 GHz Band	)	ET Docket No. 18-295
	)	
Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz	)	GN Docket No. 17-183
	)	

REPLY COMMENTS OF PANASONIC CORPORATION OF NORTH AMERICA

Panasonic Corporation of North America[1] ("Panasonic") respectfully submits its reply comments in response to the above-captioned proceeding regarding unlicensed use of the 6 GHz band. Panasonic, an industry leader in DSRC, C-V2X, and other connected vehicle technologies, continues to deploy innovative vehicle safety and connected highway solutions in the 5.9 GHz band with enormous lifesaving potential. The need for connected vehicle safety applications is growing. 2018 is projected to have been the deadliest year for pedestrians in the United States since the 1990s, according to a recent report from the Governors Highway Safety Association.[2] This follows the across-the-board increase in the number of traffic-related deaths on our Nation's highways reported by NHTSA for 2016.[3]

Panasonic is a leading tier 1 supplier of automotive infotainment and vehicle components. In addition, Panasonic is a leading developer of Intelligent Transportation Systems ("ITS") and has many years of experience with V2X technologies, including the capability to provide both DSRC and C-V2X

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[1] Panasonic Corporation of North America is a leading technology partner and integrator to businesses, government agencies and consumers across the region. The company is the principal North American subsidiary of Osaka, Japan-based Panasonic Corporation and leverages its strengths in Immersive Entertainment, Sustainable Energy, Integrated Supply Chains and Mobility Solutions to enable its business-to-business customers. For more about Panasonic V2X technology, visit: https://na.panasonic.com/us/intelligent-transportation

[2] See: https://www.ghsa.org/resources/Pedestrians19

[3] See: https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812580

communications components for Original Equipment Manufacturer ("OEM") vehicles. In 2017, Panasonic and the Colorado Department of Transportation ("CDOT") began a partnership to deploy a connected transportation program in which real-time data is shared across vehicles, infrastructure and people to improve safety and mobility on the road. This program has progressed significantly, with extensive deployment of V2X systems and roadside units ("RSUs") in a real-world environment along the I-70 Mountain Corridor and other Colorado highways.[4]

The Public Benefits of Unlicensed Spectrum Do Not Outweigh Those of V2X

Panasonic supports the Commission's efforts to promote new opportunities for unlicensed use in the portions of the 1200 megahertz of spectrum in the 5.925 – 7.125 GHz (6 GHz) band. Additional unlicensed spectrum is necessary to support the deployment of innovative wireless solutions for consumer and business use, and these will provide substantial benefits to the public. But these benefits should not supersede the traffic safety and transportation efficiency gains that could be realized by deploying V2X technologies in vehicles and roadway infrastructure.

Panasonic agrees with the concerns noted by the 5G Automotive Alliance ("5GAA"), Toyota Motor Corporation, and Volkswagen Group of America on the need to protect the 5.9 GHz band allocated by the Commission for Dedicated Short Range Communications (DSRC) from harmful interference. V2X solutions make roads safer and reduce carbon dioxide emissions and traffic congestion. Indeed, NTHSA estimated that by 2051, implementing V2V could prevent almost 600,000 crashes and reduce the costs resulting from these crashes by $53-$71 billion.[5]

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[4] *See* CDOT and Panasonic Take First Steps to Turn I-70 into Connected Roadway, CODOT.gov (July 26, 2018), *available at* https://bit.ly/2qT0f3P.

[5] U.S. Department of Transportation, National Highway Traffic Safety Administration, *Federal Motor Vehicle Safety Standards: V2V Communications*, Notice of Proposed Rulemaking, 82 Fed. Reg. 3854, 3863 (Jan. 12, 2017) ("V2V NPRM").

Deployment of V2X services is also a critical step in the progression to higher levels of vehicle autonomy. According to DOT, "[c]ooperative automation allows automated vehicles to communicate with other vehicles and the infrastructure to coordinate movements and increase efficiency and safety."[6]

The Commission Must Protect Intelligent Transportation Systems from Harmful Interference

The Commission must ensure that any unlicensed use of the spectrum adjacent to the 5.9 GHz band adequately protects incumbent, licensed V2X service from harmful interference from OOBE by unlicensed operations in the 6 GHz band. As noted in 5GAA's comments, "without proper safeguards in place, out-of-band emissions ("OOBE") from secondary 6 GHz unlicensed operations will degrade primary licensed vehicle safety communications operations in the 5.9 GHz band."[7]

The proposed OOBE limit of -27 dBm/MHz proposed by the Commission is not sufficient to prevent out of band emissions from outdoor unlicensed equipment in the lowermost portion of the proposed U-NII-5 band. To prevent these OOBE from degrading 5.9 GHz licensed ITS operations, the Commission should establish reasonable restrictions on outdoor operations of unlicensed U-NII-5 devices in order to preserve an interference-free environment for ITS operations. Unlicensed access points mounted outdoors on buildings or fixtures near roadways, and mobile access points in handheld devices – including those operating in vehicles – may be close to vehicles and cause harmful interference to ITS communications. Panasonic does not oppose indoor unlicensed U-NII-5 use; because the building wall will cause enough attenuation to reduce interference to ITS communications.

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[6] U.S. Dept. of Transportation, *Automated Vehicles 3.0: Preparing for the Future of Transportation*, at 13, 16 (Oct. 4, 2018), *available at* https://www.transportation.gov/av/3; *see also id.*, at 16 (providing additional examples of cooperative automation applications).

[7] 5GAA Comments at 2.

Summary

For the reasons described above, Panasonic supports the protection criteria proposed by 5GAA. Specifically, all U-NII-5 operations using a channel with a center frequency below 5925 MHz + BW*3/2 (where BW equals the bandwidth of the channel) should be limited to indoor-only operation, with the exception of portable devices operating as client devices as defined in the Notice.

With 1200 MHz under consideration for unlicensed use, these modest protections will help ensure that the Commission can both promote new opportunities and protect the 70 MHz being used to make roads safer in the 5.9 GHz band.

Respectfully submitted,

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March 18, 2019