

HONDA

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May 28, 2013

Commissioner Mignon Clyburn
Acting Chairwoman
FEDERAL COMMUNICATIONS COMMISSION
445 12th SW
Washington, DC 20554

**Subject: ET Docket No. 13-49
Proposed Rulemaking
47 CFR Part 15
Unlicensed National Information Infrastructure (U-NII) Devices in the
5 GHz Band**

Dear Ms. Clyburn:

Enclosed are the comments of Honda Motor Co., Ltd. and American Honda Motor Co., Inc. regarding the above-referenced docket.

We thank you for this opportunity to provide our comments. If you have any questions, require additional data or further clarification, please contact us at your earliest convenience.

Sincerely,

AMERICAN HONDA MOTOR CO., INC.


Jay Joseph
Senior Manager
Product Regulatory Office

JWJ:cfc

Enclosure

**Comments of Honda Motor Co., Ltd.
and American Honda Motor Co., Inc.
in Response to the Federal Communications Commission's (FCC)
Request for Comments on
Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band
ET Docket No. 13-49**

May 28, 2013

Thank you for the opportunity to comment on this important regulatory decision. We are submitting this comment today because we are seriously concerned that the future benefits of connected vehicles – both safety and environmental - could be thwarted by opening up the 5.9 GHz bandwidth for non-Intelligent Transportation System (ITS) uses by unlicensed users.

Honda is a company that dreams of providing our customers, and those that share the road with our vehicles, with the highest levels of safety. The best way for Honda to fulfill this goal is through the design and features applied to our vehicles. To this end, Honda has invested years of research and development in Vehicle-to-Vehicle and Vehicle-to-Infrastructure (V2X) safety systems operating in the 5.9 GHz bandwidth. We have done this work in good faith and with the assumption that the bandwidth would be available at the completion of the research phase. Our aim is still to complete this research phase and work toward solutions that would result in the successful development of these V2X safety systems.

Crash Prevention

Since the enactment of the National Traffic and Motor Vehicle Safety Act in 1966, most Motor Vehicle Safety Standards were focused on mitigating harm to when a crash occurs. Now, five decades later, the focus is beginning to shift to crash prevention. The National Highway Traffic Safety Administration (NHTSA) has previously estimated that traffic crashes cost \$150 billion per year and the AAA estimates the cost to be nearly \$300 billion per year. Studies by the U.S. Department of Transportation (DOT) and others have demonstrated that these costs can be addressed with currently available connected vehicle safety applications with tangible and attainable benefits. We believe that future enhancements hold the promise to add even further benefits down the road, including acting as a technological enabler of automated vehicle control systems.

The ability of V2X systems to enable vehicles to communicate with one another and provide information to either the driver or the vehicle to prevent a crash will cause a paradigm shift in our ability to save lives and reduce injuries. However, given the number of vehicles on the road and the speeds and environments in which they are traveling requires that the communications be reliable, without interference.

Environmental and Safety Benefits

While environmental protection is not a designated purpose of the 5.9 GHz bandwidth, it is worth noting that in addition to safety, there are significant fuel efficiency and clean air benefits from V2X systems. Honda is a company with a history of environmental stewardship, dating back to the early 1970s when Honda was the first automaker to meet the emissions requirements of the Clean Air Act with our innovative CVCC engines. We have maintained that industry leadership throughout the subsequent

decades by producing vehicles that combine low exhaust emissions with fuel efficiency, and having the most fuel-efficient lineup of any major automaker for all but a few of the past 30 years.

The incremental improvements to smoother traffic flow will help the entire U.S. vehicle fleet run more efficiently, with less congestion and fewer unnecessary stops. Reduced congestion promises to reduce crashes and these benefits can combine in a cycle of increasing benefits over time as more vehicles are connected. In addition to these safety and environmental benefits, there are serious financial benefits for the U.S. as a whole.

Global Harmonization

Additionally, the dedicated use of 5.9 GHz for mobility applications has global implications. Through great effort, there is a push for harmonization that will help developers of these systems benefit from economies of scale. Changes to the use of the spectrum could undermine the ongoing harmonization activity, increasing system costs and delaying deployment.

Connected Vehicle Safety

As a committed participant in the research of connected vehicle safety, Honda has worked with the U.S. DOT and other partners to study the practicality and real-world benefits of connected vehicle safety over the past seven years. Prior to that, Honda participated in the Omega Project “smart highway” demonstration program in the late 1990s and globally Honda has initiated and participated in similar research in Japan and Europe involving passenger vehicles and motorcycles. Honda continues to conduct intensive research on highly advanced driving support systems, as well as future automated vehicle control technologies. A stable foundation of dedicated short-range communications (DSRC) in the 5.9 GHz spectrum is a key enabling technology for these additional vehicle enhancements.

Honda has invested in this research so that our customers, and society as a whole, can someday reap the benefits of connected vehicle safety. This investment includes thousands of hours of work by our associates in the U.S., Japan and Europe, in addition to investing in technology and the hardware necessary to demonstrate and test vehicle connectivity. This long-term research approach has been necessary to ensure that connected vehicle safety systems can be developed to meet the extremely high reliability standards demanded for vehicle safety systems.

Although the major technological groundwork has been established through prior DSRC research, at this time a great deal of work remains to be done before large-scale deployment of vehicle connectivity on real-world vehicles in the U.S. can be achieved. This work requires vehicle and technology development and testing, consideration of further connected vehicle safety enhancements, as well as infrastructure investment in and adjacent to roadways. Despite the need to create and complete these necessary building blocks, Honda is confident that vehicle connectivity is a realistic and attainable goal and can become a great example of industry and government cooperation to achieve widespread societal benefits, namely the objective of more people traveling on U.S. roads without incident.

Signal Reliability

None of this will come to fruition if the 5.9 GHz spectrum cannot provide the reliable signal throughput to enable these functions. Our immediate view is that it is necessary to complete the development of the identified safety features of the connected vehicle systems, as well as anticipate the requirements of likely future enhanced safety features, then set the specifications and understand the needed bandwidth before determining that the 5.9 GHz frequency can be shared with other uses. Until the safety applications are defined and thoroughly understood, it is not possible for us to assure the proper operation of those future systems. Without a secure and robust connection, Honda cannot commit to continuing research, or any future development of safety applications that depend on this frequency.

Unlicensed Use of 5.9 GHz Spectrum

Since the 5.9 GHz spectrum is currently reserved for specific public safety use, with an emphasis on V2X safety applications, our stance is that the burden of proof that no conflicts or problems will result from unlicensed use of the spectrum falls to those who are requesting unlicensed access. The principles for use of the 5.9 GHz spectrum do allow other ITS uses, provided that they do not interfere with public safety.

Others may hold the view that in the absence of currently operating vehicle safety systems in the 5.9 GHz bandwidth there is no obstacle to allowing other users in this range. Honda disagrees with that view. Allowing any other use of the 5.9 GHz bandwidth may conflict with pending safety applications and if so or how much can only be determined after the bandwidth is in use for its intended and assigned purpose of vehicle-based safety systems. Unless sufficiently comprehensive testing can be designed and conducted with an appropriate number of equipped vehicles and suitably-configured prototype unlicensed nodes prior to large-scale deployment of the 5.9 GHz DSRC safety systems, there does not seem to be any means of assuring that unlicensed use of this spectrum will not interfere with public safety at this time.

While some argue that the safety benefit or the potential conflict must be proven to prevent 5.9 GHz from being opened up for other uses, we believe the opposite is true. This bandwidth has already been reserved for public safety since 1999, with an emphasis on ITS. Any change in the current course must be based on thorough and detailed studies proving that no interference or loss of benefit will occur. Commercial uses in this space can and must wait until the safety applications are developed, deployed, and can serve as a reference point for any other possible use of this bandwidth.

Specifically, Honda feels that it would be a mistake to open this spectrum up for unlicensed use. Such use at this time directly conflicts with potential safety and environmental gains in the future and will serve to effectively undermine the entire V2X efforts to this point.

Protecting 5.9 GHz Spectrum for Automotive Safety Applications

We see an analogous situation in the interoperability of emergency responder broadcast systems. Prior to the events of September 11, 2001, the priority placed on the interoperability of emergency response spectrums was low, though some had recognized and championed the cause. However, that tragic event highlighted the need

to correct decades of uncoordinated emergency response communications. In this case we have an opportunity to assure proper communication between vehicles, and as necessary between vehicles and infrastructure, by protecting the 5.9 GHz spectrum for automotive safety applications. By choosing not to allow unlicensed use of this bandwidth, the FCC will be choosing to ensure properly functioning automotive safety applications in the future. In addition to relieving the immense human toll that each potentially avoidable transportation injury and fatality takes on the families and loved ones of those who are affected, the benefits of V2X safety systems could have a fiscal dividend of potentially saving over one billion dollars or more per year in the US, along with the energy efficiency, congestion and follow-on benefits already mentioned in this comment.

Conclusion

We request that the FCC consider this issue carefully and with a view toward the safety of future generations. We believe that if the FCC views this issue from a perspective of potential safety benefits, the commission will agree that this spectrum must remain a licensed and protected band until more automotive safety applications are deployed and can be protected from any interference that may disrupt their proper performance.