

UNITED STATES GOVERNMENT

memorandum

DATE: October 22, 2018

TO: Tim Maguire, Neal McNeil, Robert Pavlak, Sankar Persaud

CC: Rosemary Harold, Julius Knapp, Donald Stockdale, Thomas Sullivan, Matthew Hussey;
William Hurst, Reza Biazaran

FROM: Rashmi Doshi, Chief, Laboratory Division, Office of Engineering and Technology

SUBJECT: Peer Review of U-NII-4 to DSRC EMC Test and Measurement Efforts Phase I Test Report

Thank you for your thorough and detailed review of the test report. We appreciate your guidance and notes about the areas we could explore in our next phase of testing. We have further clarified in our introduction in Section 1 for areas for investigation of adjacent channel issues.

We note your comments about evaluating the performance of DSRC receivers over a wide range of interference power levels. We have reviewed the references in your support comment. We note that within the ability of the available prototypes, we tried to characterize the performance of DSRC receivers in the presence of interfering signal. As discussed in our results in Section 6, we showed the impact of variations of DSRC signal power (desired signal) such that a DSRC receiver was able to establish the link. The interference power level was increased such that the link could not be established. We believe that in principle this set up is very similar to the referenced article. We also agree with your recommendation that the data that we have collected should be used for further testing in live conditions and for simulation of a more complex traffic environment.

You correctly noted that our tests where we included noise were based on additive Gaussian noise. We agree that the real-world noise sources are not always Gaussian and it is necessary to determine the performance in the presence of impulse noise. Our review of the literature for characterization of non-gaussian noise suggests that more work needs to be done to determine how best to represent such sources. Thus, we think that performing such tests in a controlled field tests would be more appropriate in assessment of the receiver performance. We will take this into account as we plan our future tests.

Thank you for pointing out other minor errors in the report. We have now addressed those and updated the report accordingly.

Attachment