



# PUBLIC NOTICE

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**DA 16-1054**  
**Released: October 7, 2016**

## **OFFICE OF ENGINEERING AND TECHNOLOGY ANNOUNCES SCHEDULE FOR TESTING PROTOTYPE U-NII-4 DEVICES**

### **ET Docket No. 13-49**

On June 1, 2016, the Office of Engineering and Technology (OET) issued a Public Notice<sup>1</sup> to refresh the record in the Commission's pending proceeding that is evaluating the potential for unlicensed national infrastructure (U-NII) devices to share the 5850-5925 MHz frequency band with Dedicated Short Range Communications (DSRC) systems operating under the Intelligent Transportation Service (ITS).<sup>2</sup> The *U-NII-4 Public Notice* described a three-phase Test Plan, invited comment on the tests for Phase I of the plan, and solicited the submittal of prototype U-NII-4 devices for testing. Prototype devices have been submitted to the FCC Laboratory and testing has begun in accordance with the testing schedule that is available on the FCC OET website, as described below.<sup>3</sup> In conjunction with the testing schedule, we are also providing parties with the opportunity to visit the FCC Laboratory for in-person observations.

Five parties, Cisco, Qualcomm, KEA Tech, Broadcom, and CAV technologies, have submitted a total of nine devices in response to the *U-NII-4 Public Notice* for Phase I testing. In addition, stakeholders also submitted DSRC devices to use for the testing program.

The U-NII-4 prototype devices consist of the following:

- KEA Tech DSRC/802.11 Detectors w/RSMA stub antennas (two devices – one access point and one client)
- Cisco WS-a-00510 STA detector (one device)
- Cisco WS-a-00637 A0 detector (one device)

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<sup>1</sup> *The Commission Seeks to Update and Refresh the Record in The "Unlicensed National Information Infrastructure (U-NII) Devices in The 5 GHz Band" Proceeding*, ET Docket No. 13-49, Public Notice, 31 FCC Rcd 6130 (2016) (*U-NII-4 Public Notice*).

<sup>2</sup> 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*).

<sup>3</sup> All the prototype devices submitted for evaluation are for use as Wireless Local Area Network (WLAN) devices and based on the IEEE 802.11 protocol. The test plan thus only focuses on the evaluation of such technologies.

- Qualcomm/Triad Magnetics 10-Y9345-203 REVA Cascade SR108 “WiFi” device (2x2) (two identical devices)
- Broadcom OXTK9N U-NII-4 prototype devices with circuit patch antennas (two identical devices)
- CAV Technologies roadside reflector (one device)

The DSRC devices consist of the following. We are working with DoT to obtain additional sample DSRC devices.

- Savari AG2412-B prototype DSRC transceivers (On-Board Units) w/ magnetic mount antennas (four identical devices)
- KEA Tech DSRC Preamble generator with stub antenna (one device)
- Cisco DSRC transmitter w/swivel dipole antenna (one device)

Phase I of the Test Plan involves testing at the FCC Laboratory in Columbia, Maryland, to determine the technical characteristics of prototype unlicensed devices and how they are designed to avoid causing harmful interference to DSRC.<sup>4</sup> The testing is being done in coordination with the National Telecommunications and Information Administration (NTIA) and the Department of Transportation (DoT). Phase I generally includes only laboratory tests to measure the radio frequency (RF) characteristics and performance capabilities of the prototype devices under controlled test conditions. Phases II and III involve field tests.

A detailed description Phase I of the Test Plan can be found on the FCC OET website at [www.fcc.gov/oet/unii-4banddevice](http://www.fcc.gov/oet/unii-4banddevice). The tests and measurements to be performed as a part of this phase are further divided into the three individual components described below:

**RF Characterization Measurements.** This portion of the test and measurement program will focus on determining values associated with traditional EMC-related transmission parameters such as occupied bandwidth (OBW), channel power, and out-of-band emission (OOBE) characteristics.

**Benchtop Interference Susceptibility Tests.** This portion of the test effort will focus on quantifying the potential impact to DSRC basic safety message (BSM) reception from unmitigated co-channel and adjacent-channel transmissions from the prototype devices.

**Interference Mitigation Tests.** This portion of the testing will evaluate the different distinct strategies that have been proposed for mitigating interference to the DSRC BSM operations from proposed U-NII-4 transmissions.

OET will conduct a DSRC Test Plan Open House on October 21, 2016 at its Laboratory to review the Phase I testing. The open house will take place from 10 a.m. to Noon. The FCC Laboratory is located at 7435 Oakland Mills Rd., Columbia, Maryland 21046 (telephone (301)

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<sup>4</sup> See *U-NII-4 Public Notice*, 31 FCC Rcd at 6138-39 & Attachment. The testing program is intended to encompass three phases. Phases II and III will build on the results of this Phase I testing by including “real world” testing on a larger scale. *Id.* at 6139.

362-3000). The Open House will be open to interested parties. However, due to space limitations the number of attendees may be limited. Space has been reserved for each of the parties submitting test samples. Attendance by other parties will be on first-come, first-served basis. Parties desiring to attend must register no later than October 17, 2016 by providing their names and organizations by telephone or e-mail to Reza Biazaran, whose contact information is listed below.

DSRC testing under Phase I of the Test Plan will continue over the next several weeks. The testing schedule can be found on the FCC OET website at [www.fcc.gov/oet/unii-4banddevice](http://www.fcc.gov/oet/unii-4banddevice). The webpage will be updated as testing proceeds. If parties are interested in observing the testing, they must make advance arrangements with the OET Laboratory by providing their names, organizations, and details of their proposed visit by telephone or e-mail to Reza Biazaran. Requests will be considered on a case-by-case basis, based on the timing and nature of tests that parties wish to observe and the availability of OET staff and facilities to host visitors.

Parties interested in attending the Open House, observing the testing or who are seeking general information about testing should contact Reza Biazaran at (301) 362-3052 or by e-mail at [Reza.Biazaran@fcc.gov](mailto:Reza.Biazaran@fcc.gov). Members of the press interested in covering the testing should contact Bruce Romano at (202) 418-2470 or by e-mail at [Bruce.Romano@fcc.gov](mailto:Bruce.Romano@fcc.gov).

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