

NARRATIVE STATEMENT

By this application, and pursuant to Section 5.3 (d), (h) and (i) of the FCC Rules, 47 C.F.R § 5.3 (d), (h), (i)(2010), Airvana LLC (“Airvana”), respectfully seeks a five-year experimental license beginning **August 15, 2011**, to develop, test and demonstrate prototype high-speed mobile data infrastructure communications equipment that will operate in the lower 700 MHz Block A, B and C band (698-716/728-746/ MHz), the upper 700 MHz C block (746-757/776-787 MHz), the 800 MHz band (806-824/851-869 MHz), and the PCS band (1910-1915/1990-1995 MHz).

The following information is provided in support of this request:

A. Need for a 5-Year License:

Airvana seeks a five-year license to accommodate ongoing tests of equipment that are expected to change or evolve over the next five years as a result of Airvana’s research and development. The proposed license will allow the company to conduct tests that will complement the experimentation performed in the 1850-1910/1930-1990 MHz band under call sign WC2XOH authorized for a five-year period to Airvana Network Solutions, Inc. *See* ELS File No. 0006-EX-2011.

B. Purpose of Operation:

The proposed operation will allow Airvana to develop, test and demonstrate new mobile data infrastructure equipment designed to the new LTE performance standards, among others. For example, Airvana will evaluate handoff performance among sectors, network capacity, quality of service, multi-path performance, average data rates, and interference performance.

Airvana does not seek authority to conduct market studies or provide communications services under the requested experimental authority. Nor does it propose to market, sell, or lease prototype equipment to end users in conjunction with this test. The participants in the test will be advised that: (1) the test is being conducted under an experimental authority issued to Airvana, (2) Airvana is the party responsible for the operations, (3) all operations must be conducted on a non-interference basis, and (4) after the test is completed, Airvana will retrieve and recover all devices that do not comply with FCC regulations. In addition, no fees will be charged to entities using the equipment during this test. Airvana understands that the FCC may specify these as well as other conditions on its authorization.

C. Technical Specifications:

1. Power Levels

Power:	200 mW Peak TPO
Effective Radiated Power:	200 mW Peak
EIRP:	200 mW Peak
Necessary Bandwidth:	10 MHz per channel in the 700 MHz bands 1.25 MHz per channel in the 800 MHz band 1.25 MHz per channel in the 1.9 GHz band
Modulation:	BPSK, QPSK, 16QAM
Emissions:	D7D
Antenna:	Omnidirectional

Other emission modes may be utilized, but in no event will the emissions extend beyond the frequency bands requested. All power levels will comply with the limits set forth in the FCC's rules, including those relating to human exposure to radiation.

2. Antenna Information:

The antennae that would be deployed under this license will not extend more than 6 meters above the ground or, if mounted on an existing building, will not extend more than 6 meters above the building. If an antenna is mounted on an existing structure other than a building, it will be installed in accordance with FAA and FCC rules and regulations.

3. Proposed Locations:

Airvana seeks authority to conduct its experimental operations nationwide. Although it will conduct tests primarily indoors at its research and development site at Chelmsford, Massachusetts, Airvana also plans to test and demonstrate equipment indoors at a limited number of sites at other locations in the United States. As it cannot at this time determine the specific locations of such tests, Airvana seeks blanket authority to operate nationwide (within the United States and its territories). Specifically, Airvana seeks authority to operate and demonstrate products: (A) at its own premises; (B) at the premises of entities working under Airvana's authorization in the design and development of the devices and related products; (C) at trade shows or non-residential exhibitions; and (D) at non-residential, business, commercial, industrial, scientific, or medical locations during the design, development, and pre-production stages. Indeed, these operations would be consistent with the requirements set forth in Section 2.803 of the Commission's marketing rules. 47 C.F.R. § 2.803 (2010); *see also* Revision of Part 2 of the Commission's Rules Relating to the Marketing and Authorization of Radio Frequency Devices, ET Docket No. 94-45, *Report and Order*, released Feb. 12, 1997, at 11-13, 19-20 ("Marketing Rule Revisions").

In addition, Airvana seeks authority to operate devices at certain residential locations. It submits that grant of such authority is in the public interest and convenience. The nature of the services and devices associated with LTE services typically involve such usage and therefore should be tested at residential locations.

4. Equipment To Be Used:

Airvana proposes to deploy only a limited number of units which, as noted above, would operate at low power levels. It expects that it will be able to complete its experimentation and demonstration with a maximum of 10 base units and 100 mobile units per test site. It will also limit the power, area of operation, and transmitting times of these units to the minimum necessary to evaluate the equipment.

Many of the consumer products Airvana proposes to test are typically sold in quantities of hundreds of thousands. For example, the potential market for its products include the entities that service over ninety million consumers that currently subscribe to cellular and cellular-like services in the United States. To obtain accurate data regarding real-world operations, Airvana must employ a sufficient number of units during its studies to simulate actual usage. It expects that it will be able to conduct its experimentation with 10 or fewer base stations and 100 or fewer mobiles per location and that it would not employ more than a total of 10 base stations and 500 mobiles overall for all of its experiments combined conducted under the requested authority. In other words, 10 base stations and 500 mobiles represents the maximum number of unapproved or unlicensed units that would be in operation at any given time under this authorization. As required, Airvana would seek separate and specific authority if more units are needed to conduct a particular experiment.

D. Restrictions on Operation:

Airvana understands that the FCC permits (1) companies to enter into agreements and contracts to manufacture new products and (2) manufacturers to sell—but not deliver—products on a conditional basis to wholesalers and retailers. Airvana also understands that the FCC permits the operation of equipment for, among other things, compliance testing, demonstration at trade shows and other exhibitions with appropriate notices displayed, and evaluation of product performance and customer acceptability at the manufacturer's facilities or at certain non-residential sites during the developmental, design and pre-production stages. *See* Marketing Rule Revisions, § 2.803; Part 15 Revisions, 6 FCC Rcd 1683, 1685 (1991).

Notwithstanding these general rules, the FCC requires parties to seek authorization to use devices that normally require a license to operate or that will be operated at residential locations. Such authority may be granted under the FCC's experimental rules set forth in Part 5 of the Code of Federal Regulations, 47 C.F.R. Part 5 (2010). Accordingly, Airvana seeks an experimental license to conduct experimental operations permitted under Part 5 of the Commission's rules. Those rules permit such operation provided that: (1) participants are advised that the service or

device is granted under experimental authority and is strictly temporary; and (2) the devices are owned by the licensee.

Airvana does not propose to market, sell, or lease any prototype equipment to end users, however. After the experimentation ceases, Airvana would recall and recover all devices that are not in compliance with FCC regulations. If any different treatment becomes necessary during the course of its experimentation, Airvana will seek separate and additional authority from the agency.

Airvana also recognizes that the operation of any unapproved or unlicensed devices under experimentation must not cause harmful interference to authorized facilities. Should interference occur, Airvana will immediately take reasonable steps to resolve the interference, including if necessary discontinuing operation. To that end, Airvana would advise entities using the equipment that permission to operate the equipment has been granted under experimental authority issued to Airvana, is strictly temporary and may be canceled at any time. It will also advise entities that operation is subject to the condition that the equipment may not cause harmful interference. Specifically, Airvana proposes to label the equipment conspicuously as follows:

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Permission to operate this device has been granted under experimental authority issued by the Federal Communications Commission to Airvana LLC, is strictly temporary, and may be canceled at any time. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received including interference that may cause undesired operation.

This device has not been authorized as required by the rules of the Federal Communications Commission. This device is not, and may not be, offered for sale or sold until the approval of the FCC has been obtained. Thus, the user does not hold a property right in the device and may be required to return the device.

Moreover, Airvana submits that its experimental operations are unlikely to cause interference. First, Airvana plans to coordinate its operations with existing licensees in the areas of proposed operation. Indeed, it expects that many of its experiments will be conducted on behalf of and with the cooperation of existing licensees. Second, Airvana intends to monitor use of the relevant frequencies before commencing transmissions, and it will not operate if the frequencies are in use.

E. Public Interest:

Airvana submits that issuance of a license is in the public interest, convenience, and necessity. Grant of a license will permit Airvana to develop innovative equipment that will accommodate the communications needs of users.

F. Contact Information:

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