PureWave
networks

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Dec 9, 2013

Julie Knapp
Chief
Federal Communications Commission
Office of Engineering and Technology
445 12th Street, SW
Washington, DC 20554

RE: 1072-EX-ST-2013

PureWave Networks Inc, a manufacturer of Long Term Evolution (LTE) equipment, respectfully seeks consent from the Federal Communications Commission (FCC) and FirstNet to continue and operate in the 700 MHz LTE band 14 spectrum to test LTE functionality in Santa Clara California, between January 1st, 2014 and June 30st, 2014. As described in detail below, the grant of this Special Temporary Authority will serve the interests of FirstNet and the overall public interest. The reference FCC file number is 1072-EX-ST-2013.

During our first STA we were successfully able to test the small cell eNodeB in outdoor conditions and will be demonstrating the results to FirstNet consultants and Bay-RICS in the coming weeks:

- We tested the small cell performance in different heights of installation and would be able to recommend what heights to use under different event scenarios
- We connected different types of devices in band 14 that can be used by public safety entities and would be able to explain how they would perform in different expected applications
- We tested the ability to penetrate into building and measure expected performance
- We tested the ability of the small cell to operate in conjunction with the transmission from the Verizon Macro eNodeB in our area.

Unfortunately, due to availability of Eco-system devices, PureWave was not able to complete all the tests it would have liked to. PureWave spent considerable amount of time coordinating with potential vendors in the band 14 Eco-System in order be able to execute our test plans and that used up much of our time. We now have the devices and should be able to complete the tests in time.

PureWave would like to continue the tests in order to achieve the following goals:

- Determine the maximum propagation of the signal from the BTS
- Continue and extend the tests of different installation heights
- Continue and extend the tests of indoor penetration in different heights and angles
- Testing the handover between small cell eNodeBs
- Testing the ability of adaptive algorithms to accommodate effectively the unique devices which are at different stages of maturity
- Testing up to 3 eNodeBs and up to 14 devices from different vendors

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The proposed project will conform to the following parameters:

1. Operation will be confined to the area around the three locations in our previous application, all within Santa Clara California as shown on the map below (Diagram 1). The equipment will be installed initially in one main location at the PureWave Networks office, 3951 Burton Drive, Santa Clara, CA 95054, USA. Once the basic functionality will be proven, interaction between multiple sites will be tested when adding the additional two locations:
    a. 3350 Thomas Rd, Santa Clara, CA
    b. 3255 Scott Blvd, Santa Clara, CA
2. The theoretical calculations shown in diagrams 2 and 3 below, show that the signal may propagate to over 30 miles given the output power of 37dBm per port and the characteristics of the 700MHz band. Therefore we would like to make sure that the application covers an area of 30 miles, so there is no need to down tilt the antennas. In no case PureWave intends to cover an area of more than 30 miles.

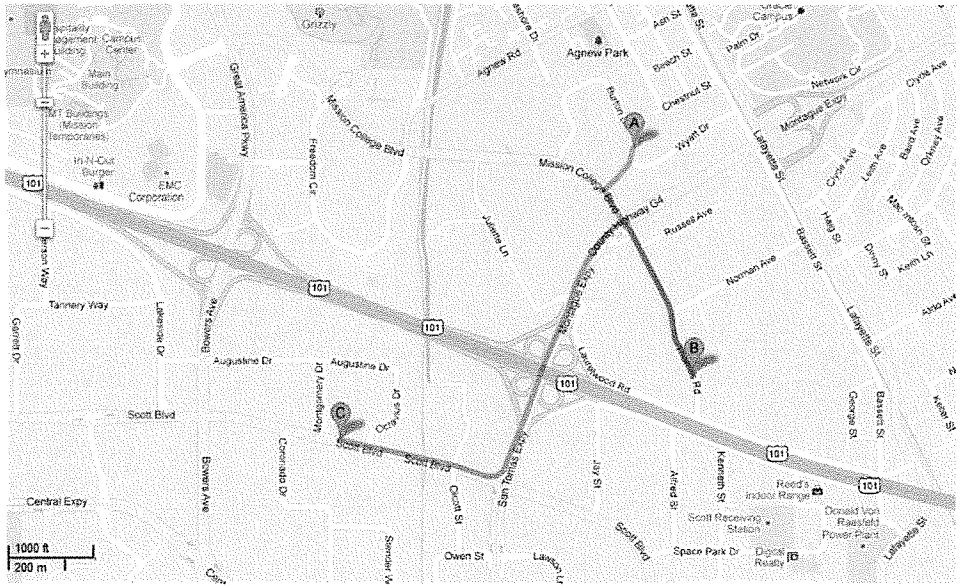

Diagram 1 – Locations of BTS

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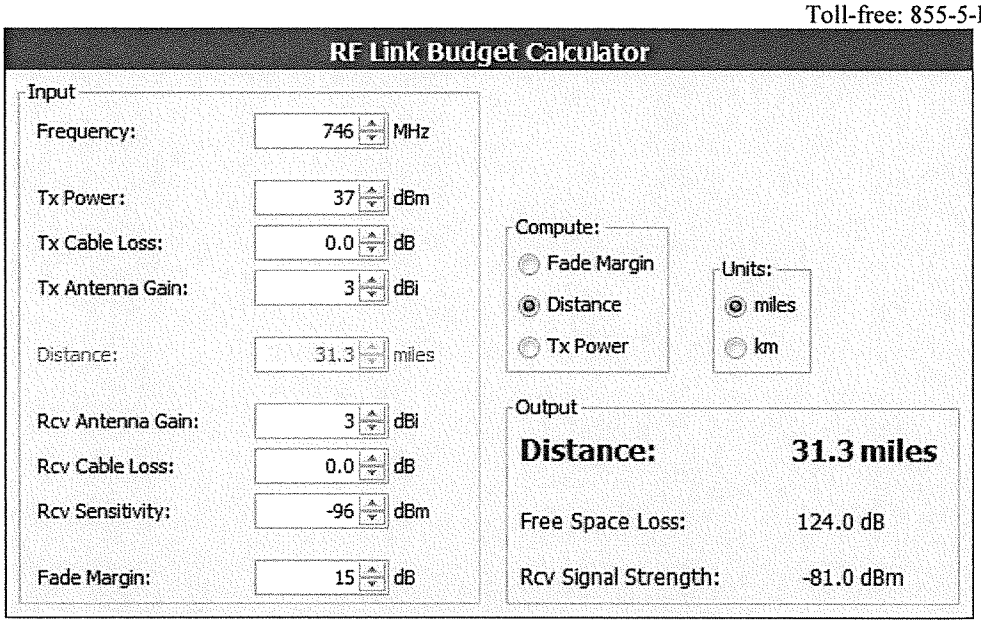

Diagram 2 – Link budget calculation using single port power

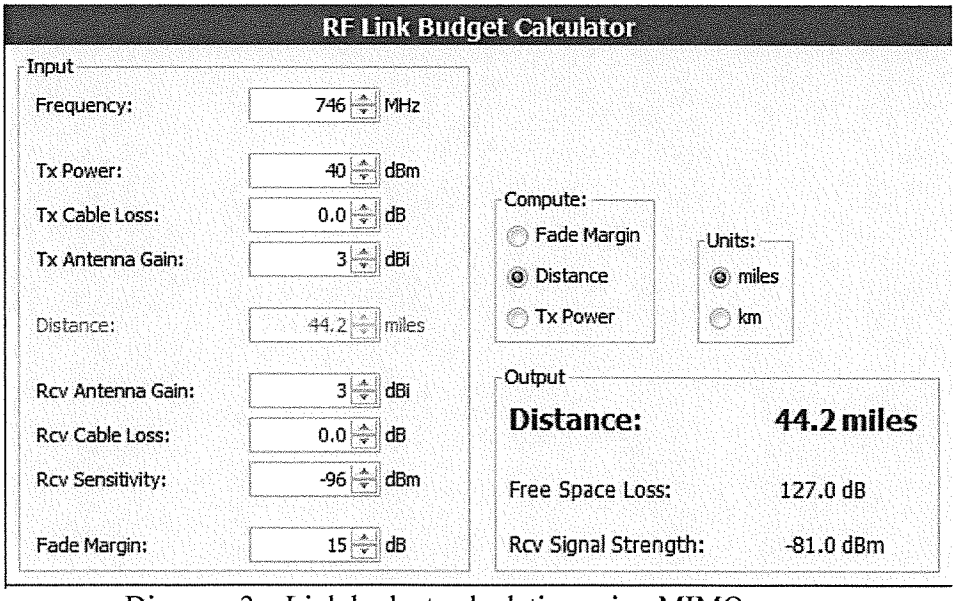

Diagram 3 – Link budget calculation using MIMO power

3. PureWave Networks requests authority from the FCC to operate over the 758-768/788-798 MHz bands for this test in order to maximize the capabilities of this LTE demonstration, utilizing the full 20 MHz spectrum intended for the NPSBN. This would allow the usage of

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FDD 10MHz channels with downlink operation at 758-768MHz and uplink operation at 788-798MHz with high throughput speeds.

4. Information from the FCC's ULS databases has been analyzed and it is determined that the proposed operation would not interfere or create a significant potential for interference with any public safety operations in the 700 MHz band. There were no active public safety licenses granted in the Santa Clara, CA area on frequencies that are co-channel to those proposed in this request.
5. PureWave Networks has coordinated with BayRICS Authority such that the dates and locations of PureWave's testing will not interfere with their planned deployment for FirstNet. PureWave Networks is aware that BayRICS is in discussions with FirstNet regarding the BTOP project and is planning to do testing in that frequency band during the first half of 2014.
6. This network will not be used in mission-critical operations or in the delivery of live transmissions in duties to protect life, property, or safety. The equipment to be used will include a base station and associated antennae located at the sites listed above, and a small number of portable units in testing scenarios only.
7. If we are approved to operate under the requested STA during our requested time period, as specified in the introductory and first paragraphs, we do not intend to seek any extension of this request. We understand from NTIA that any additional requests will require a separate STA application, much like this new application.
8. We understand that other authorities may apply for a similar STA in the same area we plan to operate. If we are approved to operate under the requested STA during our requested time period, as specified in the introductory and first paragraph, we intend to cooperate with such authorities.

Respectfully submitted,
Don Meiners (CEO)

Cc: Regina Harrison, NTIA