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February 27, 2013

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

PureWave Networks Inc, a manufacturer of Long Term Evolution (LTE) equipment, respectfully seeks consent from the Federal Communications Commission (FCC) and FirstNet to operate in the 700 MHz band spectrum to test LTE functionality in Santa Clara California, between April 30, 2013 and October 29, 2013. As described in detail below, the grant of this temporary experimental license will serve the interests of FirstNet and the overall public interest. The proposed project will conform to the following parameters:

1. We filed an initial request for approval of this equipment test on January 29, 2013 with the FCC requesting operation during the period April 30, 2013 through October 29, 2013, allowing time during that period for setup and testing, demonstrations, and teardown. Due to the above demonstration period, we ask that this supplemental request be expeditiously approved as soon as possible in order to meet logistical timelines in order to complete this demonstration on the original schedule as much as possible.
2. With regard to garnering consent from the public safety licensee (FirstNet), I have contacted Regina Harrison, NTIA, requesting NTIA facilitate the transmittal of this request to FirstNet for their concurrence to the FCC as soon as possible for the reasons noted above.
3. Operation will be confined to the area around the three locations in our 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
4. Additional tests will be done to determine the maximum propagation of the signal from the BTS. 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.

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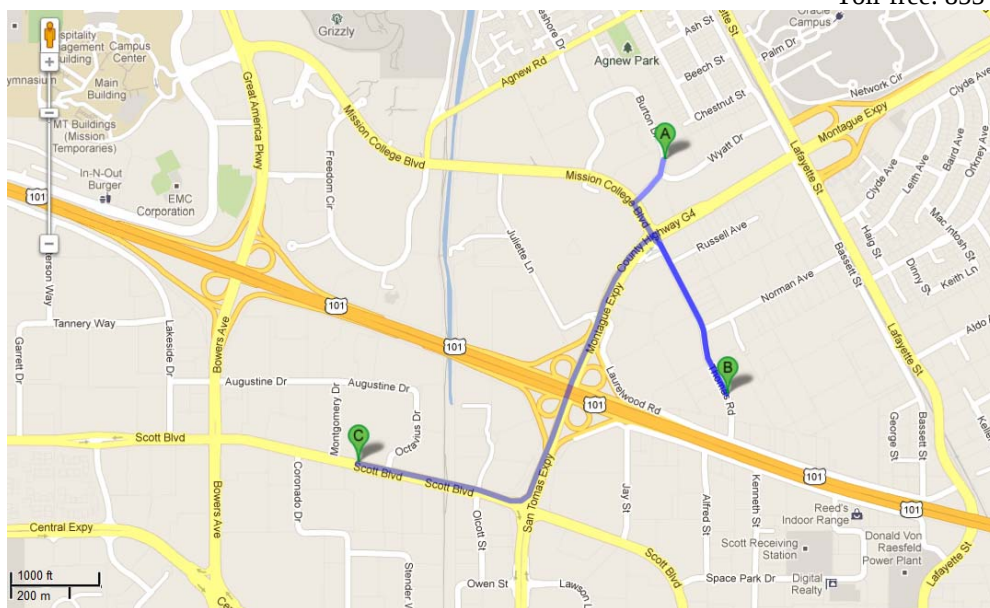
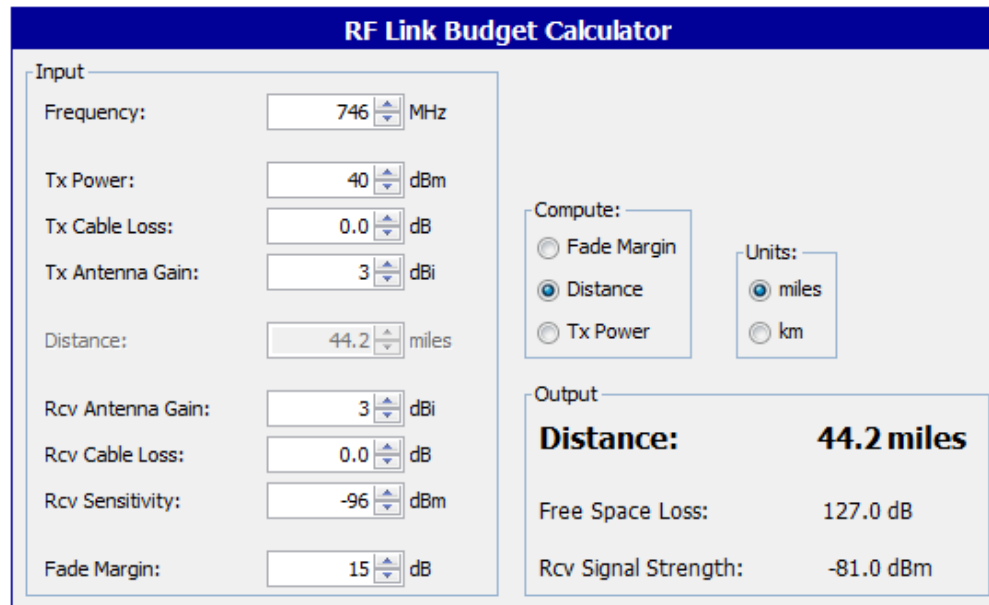


Diagram 1 – Locations of BTS

RF Link Budget Calculator	
Input	
Frequency:	746 MHz
Tx Power:	37 dBm
Tx Cable Loss:	0.0 dB
Tx Antenna Gain:	3 dBi
Distance:	31.3 miles
Rcv Antenna Gain:	3 dBi
Rcv Cable Loss:	0.0 dB
Rcv Sensitivity:	-96 dBm
Fade Margin:	15 dB
Compute:	
☐ Fade Margin ☒ Distance ☐ Tx Power	
Units:	
☒ miles ☐ km	
Output	
Distance:	31.3 miles
Free Space Loss:	124.0 dB
Rcv Signal Strength:	-81.0 dBm

Diagram 2 – Link budget calculation using single port power



RF Link Budget Calculator

Input

Frequency: 746 MHz

Tx Power: 40 dBm

Tx Cable Loss: 0.0 dB

Tx Antenna Gain: 3 dBi

Distance: 44.2 miles

Rcv Antenna Gain: 3 dBi

Rcv Cable Loss: 0.0 dB

Rcv Sensitivity: -96 dBm

Fade Margin: 15 dB

Compute:

☐ Fade Margin

☒ Distance

☐ Tx Power

Units:

☒ miles

☐ km

Output

Distance: 44.2 miles

Free Space Loss: 127.0 dB

Rcv Signal Strength: -81.0 dBm

Diagram 3 – Link budget calculation using MIMO power

5. PureWave Networks requests authority from the FCC to operate over the 746-756/788-798 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.
6. 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.
7. 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.

Respectfully submitted,
 Don Meiners (CEO)

Cc: Regina Harrison, NTIA