

From: Gil Estrella

To: Doug Young

Date: November 22, 2016

Subject: Request for Info - File #0541-EX-PL-2016

Message:

Reference Information from OET email:

Applicant: General Dynamics

File Number: 0541-EX-PL-2016

Correspondence Reference Number: 34493

Date of Original Email: 10/27/2016

Attention: Mr. Doug Young

Our responses to your questions are provided below.

1) Based on the exhibit document provided, it is not clear if the fixed stations antenna altitude will be 54 feet high but we based our analysis for the worst-case scenario.

GD Response: All of the fixed station antennas will not exceed 46ft. These fixed stations use a mast that can be erected 42ft high in addition to a 4ft of ground clearance between ground and the mounting point of the mast.

2a) Based on the exhibit document, it is not clear how many fixed transmitters will be operating simultaneously in location 1 and location 2. The exhibit describes one Central Node and six Remote Nodes. The Central Node has four transceivers which communicate with the up to six transceivers installed in each Remote Node respectively.

Please let us know how many transmitter will be operating (simultaneously and individually) for each location #1 and location #2)

GD Response: For location #1 (Scottsdale) the amount of fixed transmitters that operate simultaneously can be restricted from seven down to two if necessary. One case scenario can be satisfied by using one transceiver out of four in the Central Node and six transceivers for six Remote Nodes. Similarly, configuration can be scaled to using one (1) transceiver out of four in the Central Node and one (1) transceiver for one of the Remote Nodes.

For location #2 (Gila River Indian Reservation) the amount of fixed transmitters that would be operated simultaneously would be a total of ten. Four (4) transceivers will be deployed on the Central Node and there would be six (6) transceivers for Remote Nodes.

3a) Will each fixed station transmit 360 degrees horizontally?

GD Response: No. The transceivers used in the Central Node each are capable of a 90°; 3dB beamwidth. Since we use a total of four transceivers in the Central Node, this provides the 360°; coverage. The transceiver used in the Remote Nodes is capable of a 16°; 3dB beamwidth.

3b) Is the fixed station capable to transmit only in a 90 degree sector?

GD Response: Each transceiver in the Central Node is only capable of a 90°; sector. The transceiver used in the Remote Node is limited to a 16°; sector.

4) Will each fixed station antenna be tilted toward the ground? If yes, what is the tilt angle?

GD Response: The tilt angle range for all antenna transceivers will be within -0.6°;to 0°;.

5) Please provide a spectrum plot of transmit antenna output for each emission (5 MHz, 10 MHz, 20 MHz, 40 MHz).

GD Response: These transceivers manufactured by RAD had been assigned FCC ID: Q3KRW3XMOD. Please refer to Test Report No. 9312329195 submitted under this FCC ID for several spectrum plots at these different emission modes. The report will also be provided as an attachment.

6) What is the power level at 3699 MHz, 3700 MHz and 3701 MHz?

GD Response: Concerns regarding interfering with the 3700MHz licensed emitters can be alleviated by operating our transceivers away from these frequencies leaving a guard band of at least 2MHz from 3700MHz. These transceivers have the capability to turn frequency channels off based on user input in order to avoid self-interference with co-located transceivers.

7) Is filtering used? If yes, what is the filter edge roll-off attenuation in dB per decade?

GD Response: Yes. There's a band pass filter after the last RF stage. Please refer to Test Report No. 9312329195 submitted under FCC ID: Q3KRW3XMOD for a block diagram as Figure 1 on Page 6. The filter curve will be submitted as an attachment.

8) Is any interference mitigation technique used? If yes, please provide a detail technical description how it works.

GD Response: Yes. These transceivers have the capability to turn frequency channels off based on user input in order to avoid self-interference with co-located transceivers. Therefore, if there's concerns about interfering with stations operating at the 3700MHz band, we'd disable our transceivers' channels closest to the 3700MHz band allowing for a guard band of at least 2MHz from 3700MHz.

Thank you very much.

Regards,
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