

Ms. Marlene H. Dortch
Secretary Federal Communications Commission
445 12th Street SW
Washington, DC 20554

September 6, 2011

Re: Notice of *Ex Parte* Presentation in LightSquared Subsidiary LLC Request for Modification of its Authority for an Ancillary Terrestrial Component, IB Docket No. 11-109; IBFS File No. SATMOD-20101118-00239

Dear Ms. Dortch:

On September 6, 2011, at the request of Michael Ha, we attended a Teleconference with the following personal from FCC:

Walter Johnston, Division Chief, Office of Engineering and Technology (OET)
Brian Butler, Electronics Engineer, OET
Brett Greenwalt, Electronics Engineer, OET
Chip Fleming, Electronics Engineer, International Bureau (IB)
Julius Knapp, Bureau Chief, OET
Mark Settle, Deputy Division Chief, OET
Michael Ha, Electronics Engineer, OET
Ron Repasi, Deputy Bureau Chief, OET
Sankar Persaud, Electronics Engineer, IB
Steve Jones, Electronics Engineer, OET

From NovAtel the following employees attended the call:

Andrew Levson, Applications Engineer
Jason Hamilton, Director Portfolio Management
Jonathan Auld, Director Technology Development
John Schleppe, Receiver Design Engineer
Michael Ritter, President & CEO
Patrick Fenton, CTO

Among other activities, NovAtel Inc. designs and manufactures a family of GNSS board level components, antennas and receiving electronics. NovAtel Inc. is headquartered in Calgary, AB, Canada with operations in Torrance, CA and Houston, TX. We were extensively involved with the TWG and testing at NAVAIR.

The content of the meeting was mainly NovAtel answering technical questions related to the TWG test report and our product portfolio. The focus was to help the Commission understand why there was such a large variation in the TWG test results between NovAtel Inc. products. We explained that the higher performing receivers require more bandwidth than low performing receivers. With the wider bandwidths, comes more susceptibility to LightSquared interference. We submitted to the TWG test group a set of products with a range of operating bandwidths. Each receiver was paired with a GNSS receiving antenna. NovAtel also designs and manufactures antennas for various applications with different operating bandwidths and filter characteristics. We explained the large variation in test results comes from the wide variation of receiver/antenna bandwidth combinations being tested. The most susceptible receiver was our highest performing (most accurate, most features) GNSS product design that uses very wide band (>50MHz) L1 channel signal processing. It accepts and processes MSS signals as well as

GPS, Galileo and GLONASS signals in the same channel. This was paired with a wide band GNSS/MSS antenna. This combination offers no filtering whatsoever against the LightSquared signals. This very wide band combination is typical for high end geodetic and scientific applications. Other larger, higher power consuming receivers using separate RF paths for MSS and GNSS performed with varying results depending on the antenna used. The most robust receiver, in the face of the LightSquared interference, was a narrow band, low accuracy, L1 only Timing product paired with a very narrow band L1 only antenna (<2MHz).

We supplied the commission, under a "Request for Confidential Treatment", a table of the exact receiver configurations (receiver/antenna models) used in the TWG testing as well as a chart of the TWG test results for these specific receivers during the LightSquared lower L-Band 10MHz Ramp test. A list of the receiver and antenna specifications sheets was provided, which are readily available on our website (www.novatel.com).

We also discussed the use of the MSS (OmniStar/StarFire) differential correction signals and how widely they have been accepted by certain markets where precise, robust positioning is required.

We were asked if we design our receivers to meet published performance standards, relating specifically to performance at certain signal to noise ratios. We replied that we do not. NovAtel attempts to follow "best-practice" design methods and have established our own proprietary set of receiver design standards and requirements. We are not aware of any receiver design standards or requirements covering commercial high performance receivers.

We explained some of the applications of high precision GPS receivers and the key performance indicators our customers demand and the resulting receiver and antenna combinations. We briefly explained the potential impact of GPS L1 LightSquared interference to other GNSS constellations as well as the GPS L2 signal.

Sincerely,

Patrick Fenton
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