



DEPARTMENT OF THE NAVY  
NAVAL AIR SYSTEMS COMMAND  
RADM WILLIAM A. MOFFETT BUILDING  
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PATUXENT RIVER, MARYLAND 20670-1547

IN REPLY REFER TO

08 Feb 2010

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

Re: X-Band Antenna Testing

Gentlemen,

The Avionics Department located at Naval Air Station, Patuxent River, Maryland advocates testing of the new X-Band antennas in a manner specified below. The testing of these newly developed X-Band antennas and other comms-on-the-move technology will support risk reduction for several of the missions we are tasked to support. The applicable mission includes development of effective and affordable integrated warfare systems and life cycle support by performing research, development, test and evaluation, engineering and fleet support for manned and unmanned aircraft, engines, avionics, aircraft support systems and ship/shore/air operations.

This letter is not intended to be an endorsement of the vendors participating in the testing or the specific technology involved in the test. Nevertheless, we believe advancement of the comms-on-the-move technology, described in this letter, is a legitimate use of X-Band satellite frequencies.

The testing will evaluate the EMS Defense and Space X-Band Antenna prototype and its evolutions, which are being designed to provide much needed satellite broadband capability to aircraft.

The commercial companies participating in the testing are:

- EMS Technologies, Inc. - developing the antenna
- Satcom Direct, Inc. - providing subject matter expertise in the mission requirements for broadband on aircraft
- XTAR, LLC - providing X-Band satellite capacity
- SkyPort Global Communications, Inc. - providing ground services and network management

The testing is expected to be conducted in phases using X-Band capacity from the XTAR LAN-T spacecraft that orbits at 30° West in frequencies:

- Uplink frequency range: 7.9 GHz to 8.4 GHz
- Downlink frequency range: 7.25 GHz to 7.75 GHz

The network includes two antennas:

- EMS Technologies antenna prototype at EMS's development facility located at 660 Engineering Drive, Norcross, Georgia
- LHGX antenna at the SkyPort teleport on Ellington Reserve Air Base at 11140 Aerospace Avenue, Houston, Texas

The testing is expected to be conducted in phases that include testing with stationary antennas and moving antennas.

The commercial companies participating in the test are responsible for:

- Acquiring all applicable licenses for this testing
- Providing all required technical and other documentation
- Completing and delivering all applicable reporting
- Providing all RF Technical analysis, such as, but not limited to, Link Budgets, etc.

It is our understanding that SkyPort Global Communications, Inc., EMS Technologies, Inc., and Satcom Direct, Inc. (collectively the "Contractor Team") agree to release, defend, indemnify and hold harmless the United States Federal Government, its agents and representatives, and each of their respective directors, officers and employees from and against any and all losses, claims, demands, causes of action, liabilities and expenses (including attorney's fees and costs) arising out of or relating to the Contractor Team's causing harmful interference relating to antenna demonstrations in the X-band frequencies, as well as operations outside the scope of issued licenses by the Federal Communications Commission and the National Telecommunications Association.

In summary, while the NAVAIR Avionics Department cannot endorse the specific vendors or technologies involved in the testing described above, we believe that the testing will provide valuable research information for our specific missions and will advance the comms-on-the-move technology for the industry as a whole. As such, we believe that the testing described in this letter is a legitimate use of X-Band frequencies.

For further information, please contact:

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Kindest regards,



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