

EXHIBIT #2 for Modification of License WF2XCV

submitted by ARTEMIS, INC. File # 0027-EX-ML-2013

DIRECTIONAL ANTENNA INFORMATION

Two antennas are included on this experimental license application in order to support a tiered testing approach for the AFRL Sea Dragon X-Band SAR system. This exhibit shows the parameters of each antenna and explains why both are needed.

Antenna Properties

The relevant properties of the two X-Band SlimSAR antennas are listed below.

Low-Gain SlimSAR Antenna Parameters

Physical Size: 10x1.5x3.5"

3-dB Beamwidth: 9°x41°

Peak Gain: 19.1 dBi

High-Gain SlimSAR Antenna Parameters

Physical Size: 50x5.5x4.5"

3-dB Beamwidth: 1.85°x25°

Peak Gain: 26.6 dBi

Antenna Mounting

The SlimSAR antenna is mounted on an aircraft in such a way that a line extending from the antenna boresight forms an angle of nominally 45° with a line that is normal to the ground.

Initial testing of the X-Band SlimSAR for the Sea Dragon program will be done at low power and low altitude. The Low-Gain antenna described above will be flown at altitudes up to 4000 ft AGL with a 25 W power amplifier. This mode will be used as much as possible to prove the system. Final testing will be done with the high-gain antenna at an altitude of 10000 ft AGL and a 150 W power amplifier. The combination of higher altitude and side-looking geometry means that actual radiated power density will be very low on the ground. The radar system radiates for only a few minutes at a time during testing, and all testing is done with the goal of non-interference in mind.

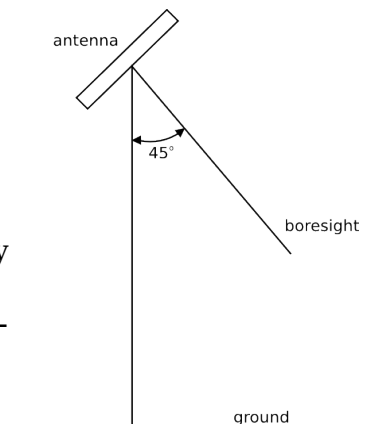


Illustration 1: Angle of antenna boresight relative to ground normal.