

EXH. 1 - REQUEST FOR EXPERIMENTAL STA

Northrop Grumman Systems Corporation ("NGSC") hereby requests experimental Special Temporary Authority ("STA") for a six-month period beginning October 1, 2026 to enable fixed and airborne experimental testing and demonstration of new satellite communications hardware to a potential government customer. Proposed transmissions would occur on the requested frequency ranges of 25.25 – 27.5 GHz, 29.1-29.25 GHz, 32 – 34 GHz, and 34.5 – 36.0 GHz.

Testing will be both stationary ground and Mobile airborne. Experimental operations would be at the two following locations:

- Naval Air Weapons Station, China Lake, Kern County, California 35-39-27N, 117-38-28 W, 42K Feet MSL altitude, 250 KM radius, Fixed and Mobile.
- Nellis Air Force Base, Clark County, Nevada 36-14-24 N, 114-59-11W, 42K Feet MSL altitude, 250 KM radius, Fixed and Mobile

Antenna Information:

Northrop Grumman Antenna name: MFA

Antenna type: AESA

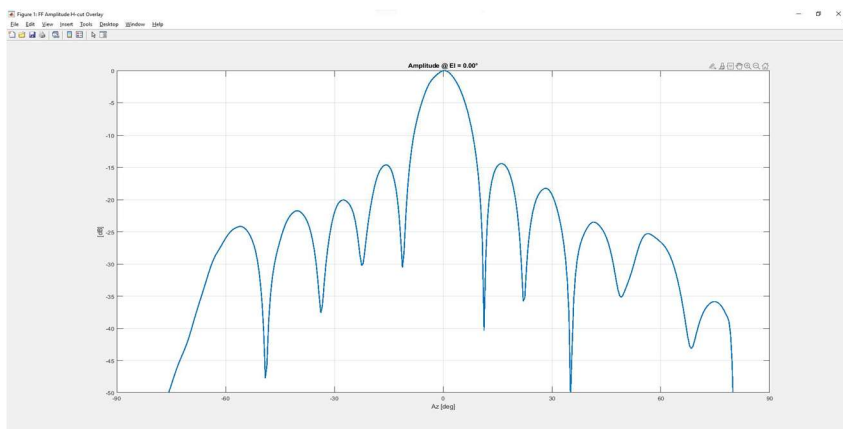
Antenna Gain (dBi): 30.6 dBi

Half-power main beamwidth: 5.3 degrees

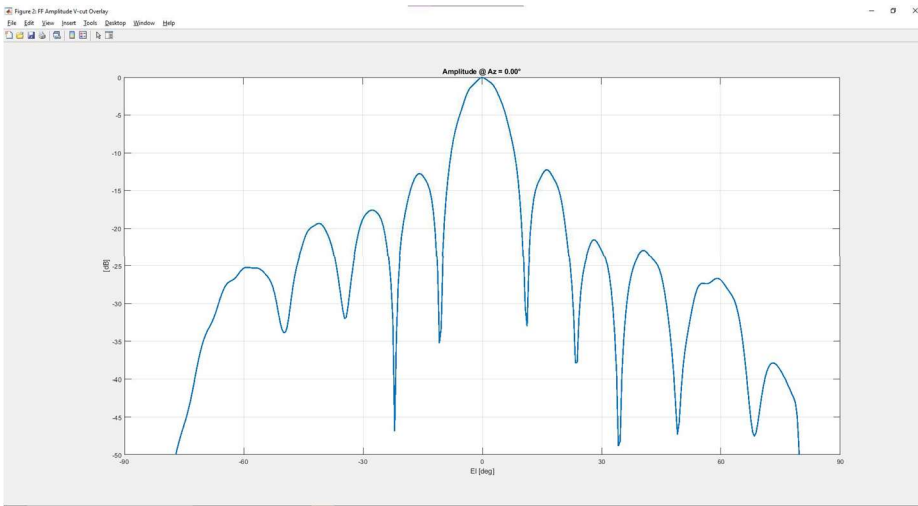
Rotation Rate / Field of Regard: +/- 70 degrees

Polarization: RHC or LHC

The normalized antenna patterns for the experimental phased array when scanned to broadside are presented in the below figures. The array is steerable across +/-70 degrees with the power and sensitivity performance included within this request. The resulting performance is to shift the pattern shown in the figure to the desired scan angle, subject to gain losses and beam broadening due to projected area. The patterns across scan and frequency for the antenna are held as proprietary to Northrop Grumman.



Elevation Scan at Broadside



Azimuth Scan at Broadside

NGSC acknowledges that all experimental operations conducted in the requested bands will be on a non-interference basis and that it will not conduct Jamming, Spoofing, Electronic Attack, and/or Directed Energy Attack under this experimental STA.

Protection to interference to fixed microwave Licensees

The system is used for line-of sight communications by scanning the antenna beam towards the desired communicant. For this application that includes between aircraft in flight as well as from an aircraft to a fixed ground location. The directivity of the beam ensures that the overwhelming majority of the transmitted energy is constrained along the direction the antenna is pointed. The intention of the planned test activities are to form a data link between the test participants, and not scan towards Fixed Microwave Service licensees.

The stop buzzer contact for this project will be Nathan Bushyeager, 443-286-2169.